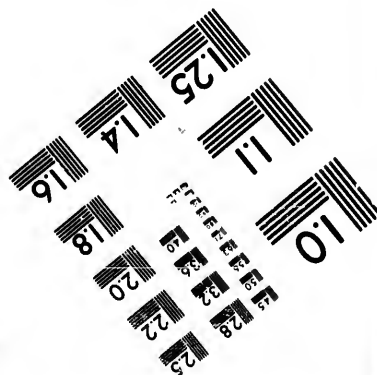
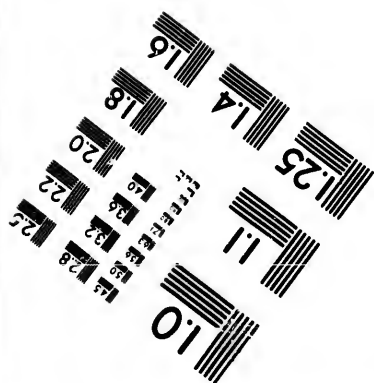
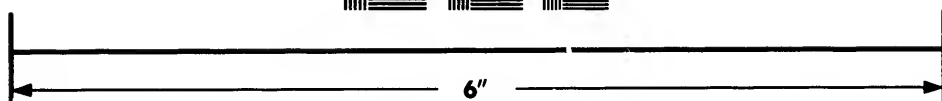
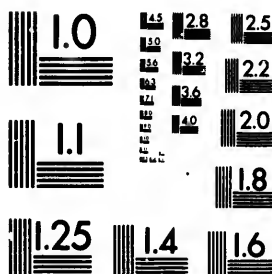


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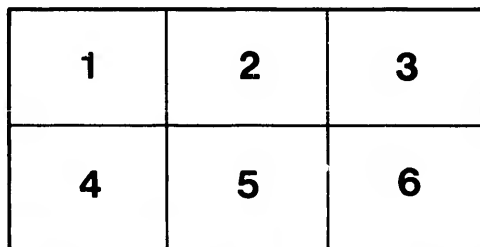
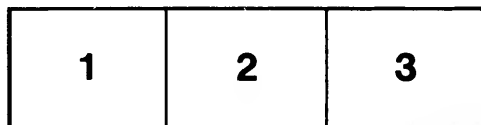
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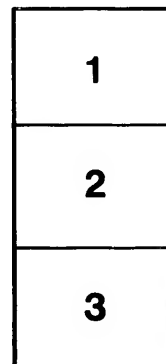
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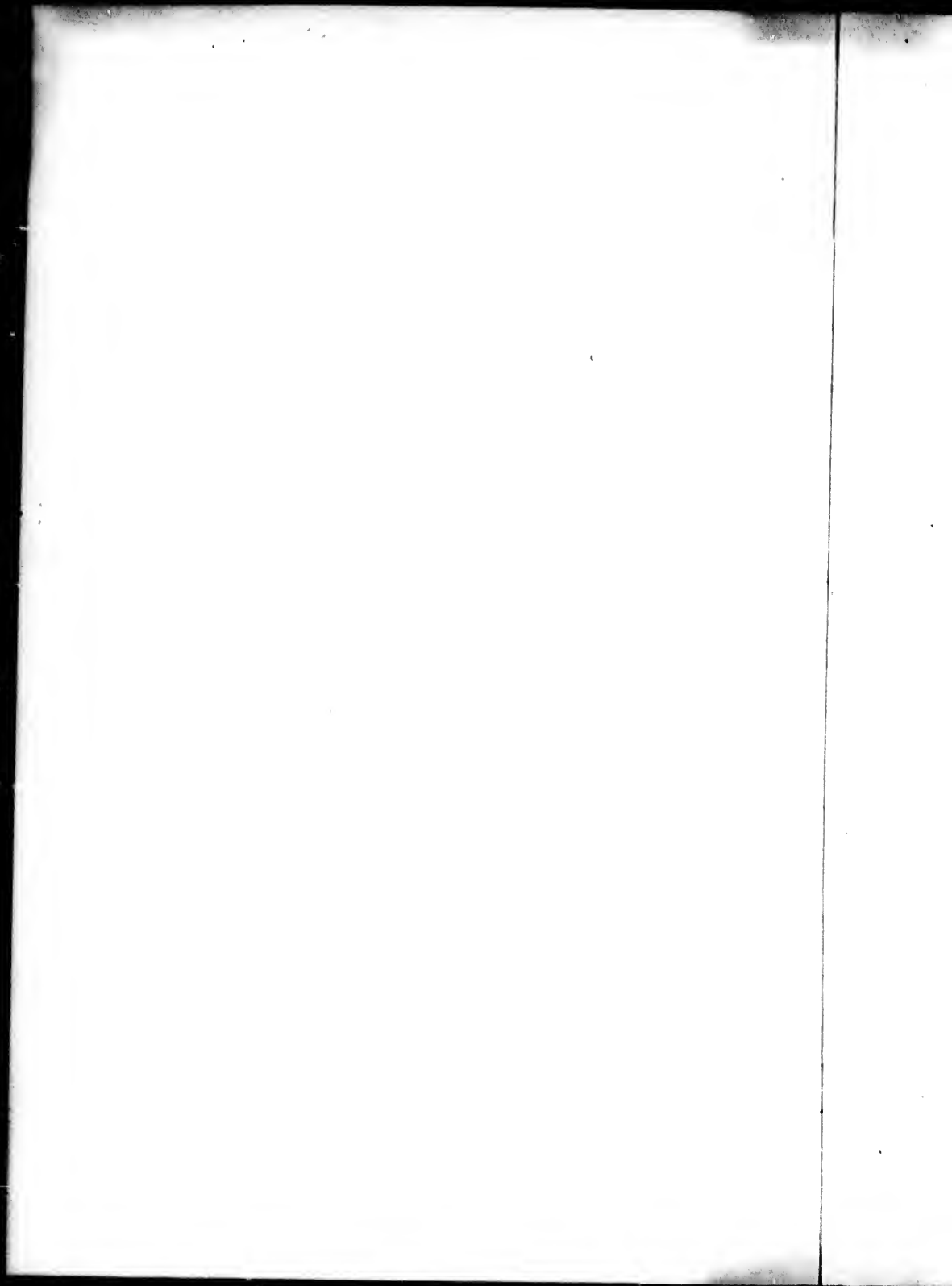
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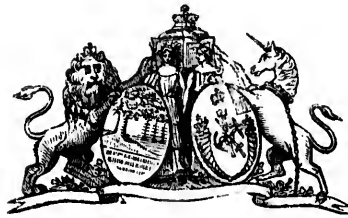




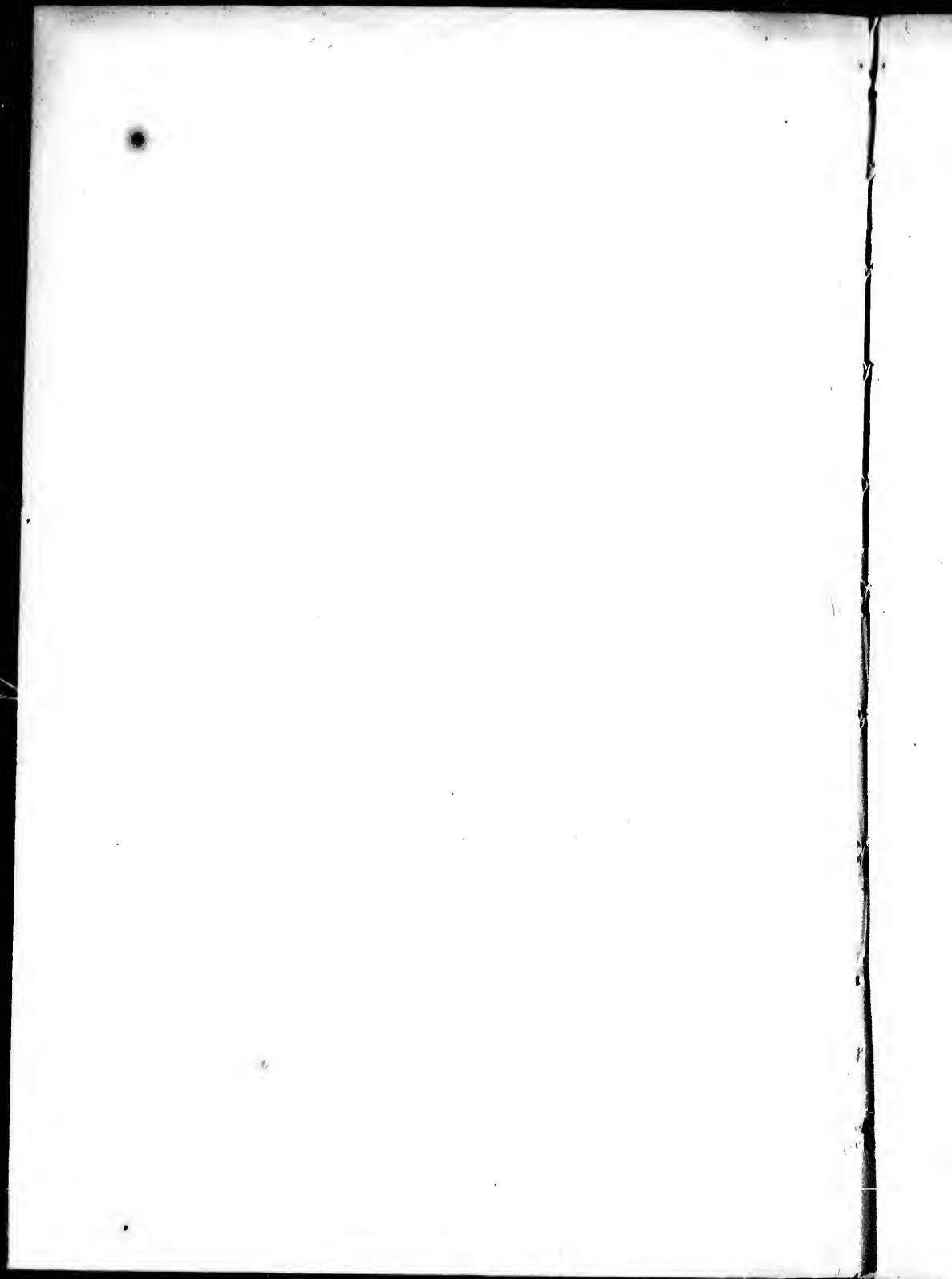
PATENTS
OF
CANADA,

FROM

1824 TO 1849.



TORONTO:
PRINTED BY LOVELL & GIBSON, YONGE STREET.
1860.



Bureau of Agriculture and Statistics,

QUEBEC, September, 1860.

The business of the Patent Office in Canada, having, within the last few years, greatly increased, the Government have deemed it advisable to follow the example of other countries, and to publish from time to time the specifications and drawings of all Patents issued in the Province. The present volume contains the specifications of Patents issued in both Provinces, before and after the Union, from the year 1824, to January, 1844, and of the specifications and drawings from the latter period to May, 1849. It has not been thought advisable to incur the expense of engraving drawings of those Inventions, the Patent right of which expired in January 1858. The publication of the names and specifications of such is sufficient notice of their having existed, and that they have (by the expiry of fourteen years) now become public property. A few drawings of the earlier Patents were not forthcoming at the publication of this volume.

NOTE.—The Forms and Instructions necessary to be observed on taking out Patents in Canada are given herewith.

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FORM OF APPLICATION
FOR
LETTERS PATENT OF INVENTION.

*To His Excellency the Governor General of British North America,
&c. &c. &c.*

The ~~Petition~~ of *(name of Inventor)* of *(place of residence)* in the
County of *(name of County)* in the Province of Canada, *(trade
or profession)*

HUMBLY SHEWETH,—That your Petitioner is a British Subject, and a Resident in this Province. That he hath invented a *(name of discovery)* not known or used in this Province by others before his invention thereof, and not at the time of this application, in public use or for sale, with his consent or allowance. Drawings, Descriptions and Specifications thereof in *Duplicate* have been deposited in the Bureau of Agriculture, pursuant to the Statute in such case made and provided.

Your Petitioner, therefore, humbly prays that your Excellency will be pleased to direct that Her Majesty's Letters Patent may be granted to your Petitioner for the said Invention, for the term allowed by law. And your Petitioner, as in duty bound, will ever pray.

(Signature of Inventor.)

(Place and Date.)

6 FORM OF APPLICATION FOR LETTERS PATENT.

Province of Canada, } *(Name of Inventor)* of *(place of residence*
County of *(name of County)* } *and trade or profession)* hereby solemnly
TO WIT : } declares and saith that he verily believes
he is the true Inventor of the *(name of Invention)* for which he solicits
a Patent by his Petition to His Excellency the Governor General,
dated *(insert date of Petition.)*

SIGNED AND DECLARED }
before me, this *(day of month)* of } *(Signature of Inventor.)*
(name of month) A. D. 186 , at }
(name of place.) }
(Signature of a Justice of the }
Peace, for }
Name of Township or Town.)

SPECIFICATION AND DESCRIPTION.

To all to whom it may concern: Be it known that I, *(name of*
Inventor,) of *(place of residence and trade)* have invented *(name of*
Invention,) and I do hereby declare that the following is a full and
exact description thereof: *(here describe at full length the machine, the*
combination and arrangement of its several parts, and mode of working
the same, &c., said parts to be marked with letters or figures referring
to those on Drawings.) What I claim as my Invention, is *(insert a*
brief statement of the Invention, conveying a correct idea of its nature.)

(Signature of Inventor.)

(Place of Date.)

Signed in the presence of }
(Signatures of two witnesses.) }

INSTRUCTIONS.

Drawings to be in duplicate, on linen tracing paper, with brief references thereon written, explanatory of the figuring and lettering thereof, and having the name of Invention on top; also, a Certificate, thus: "Certified to be the Drawings referred to in the Description and Specification hereunto annexed."

(Signature of Inventor.)

(Place and Date.)

Signed in the presence of

(Signatures of two witnesses.)

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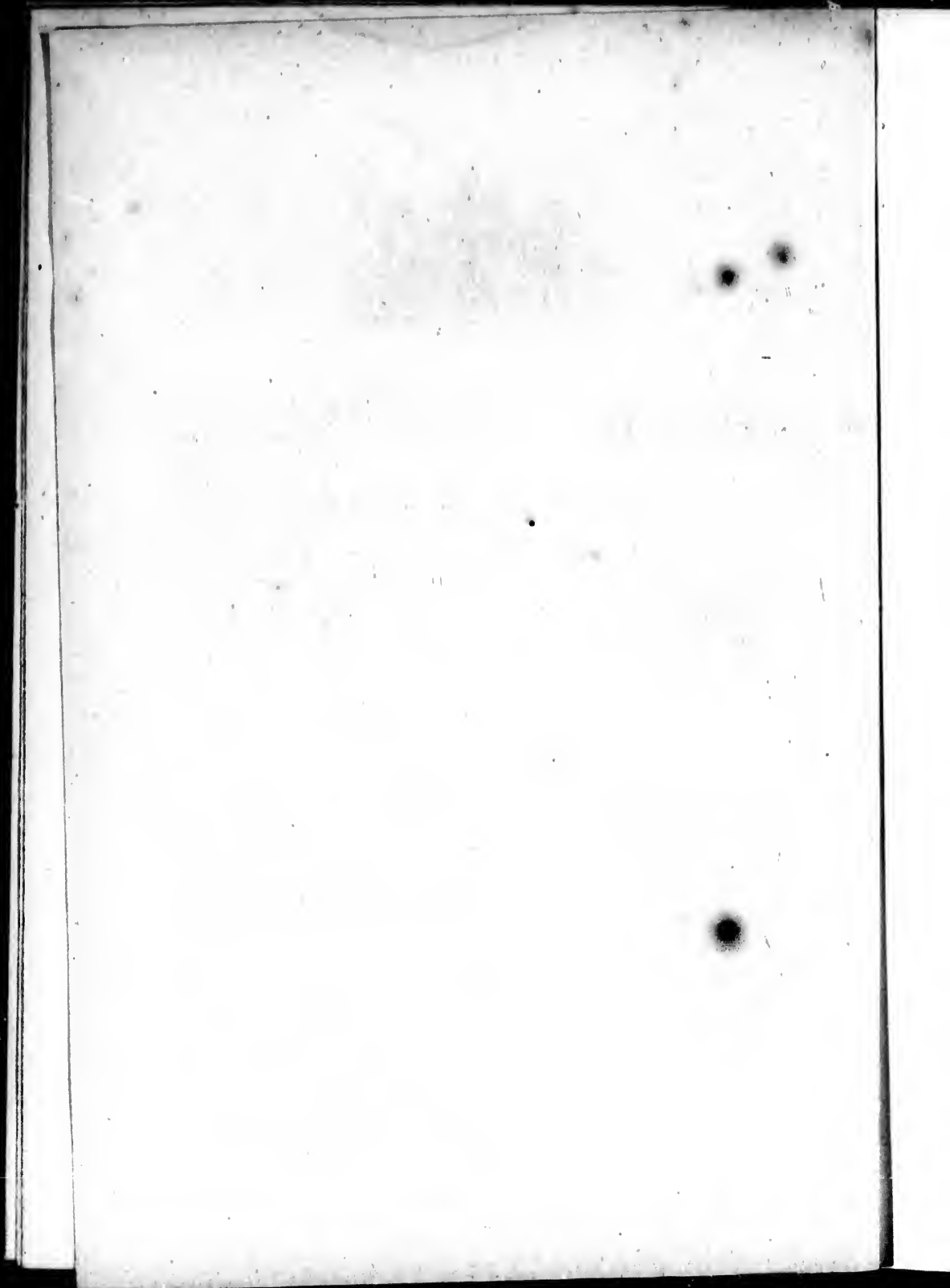
The Drawings to be on the smallest possible scale.

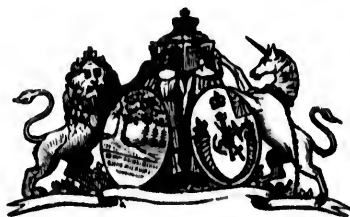
The Documents must be *neatly* drawn out, each separately, and the Inventions so described in the Specifications that they may be distinguished from others adapted to similar purposes, and their advantages and superiority clearly shown.

A small *neat working* model, of strong material, with name of Inventor, that of Invention, and date of application, fixed thereon in a permanent manner, is required by the *Minister* of AGRICULTURE in all cases.

Parties are requested to be very particular in examining the DUPLICATES, and seeing that they are perfectly similar.

The FEE of £5 is to accompany the application. All DOCUMENTS to be addressed to the Secretary of the Bureau of Agriculture and Statistics, Quebec, C. E.





A. D. 1824.—(LOWER CANADA.)—No. 1.

Washing and Fulling Machine.

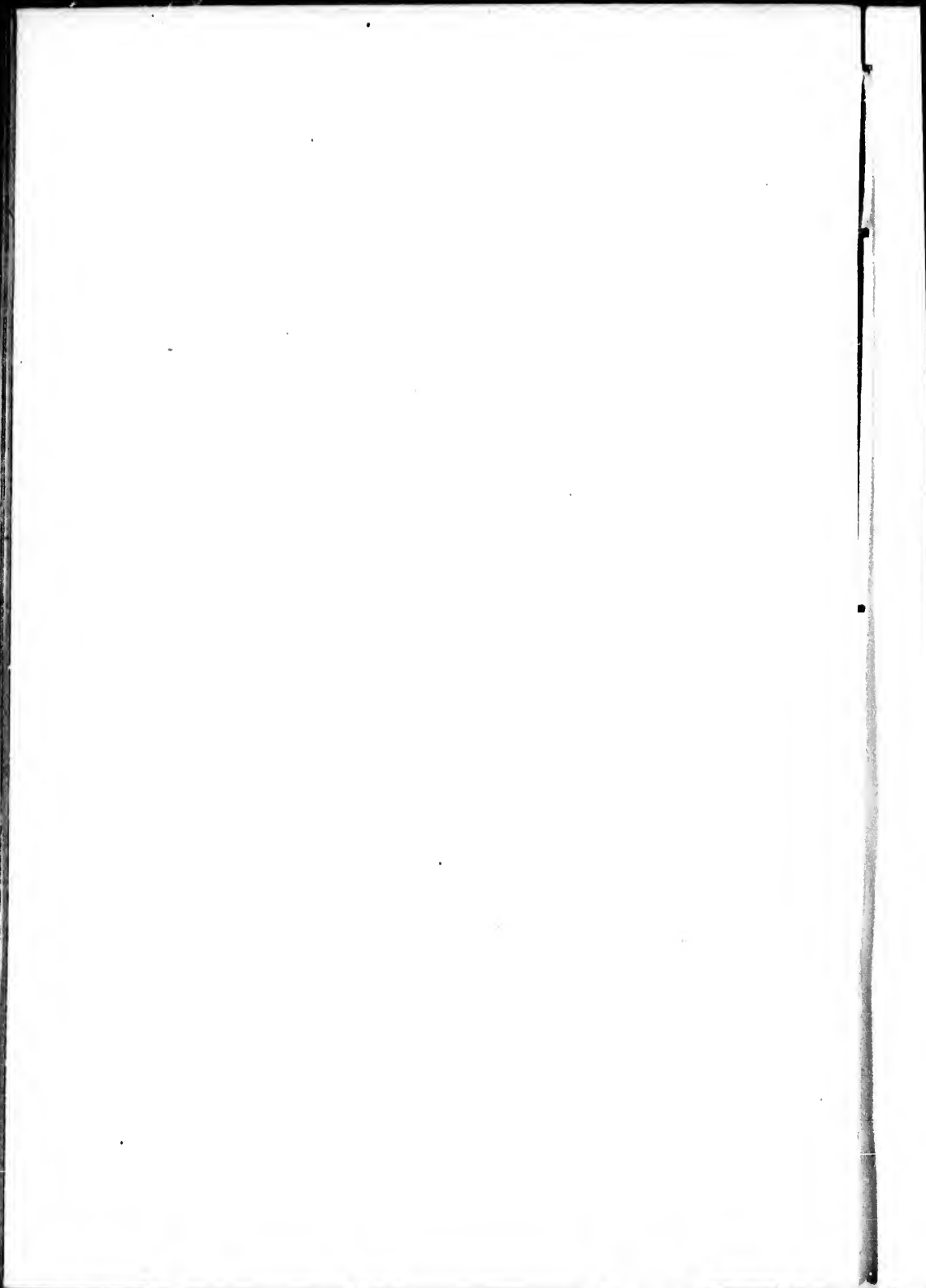
LETTERS PATENT to Noah Cushing, of the City of Quebec, in the District of Quebec, for the Invention of a "WASHING AND FULLING MACHINE."

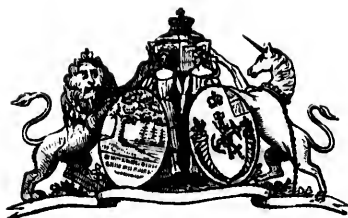
Quebec, dated 8th June, 1824.

BRIEF DESCRIPTION.

There are two sides of board, the bottom forming a segment of a circle, of five feet; the two ends are two boards let into a groove; the partition ends are of the same length, with holes to admit the water into the washing end; there are two uprights, rising above the top of the tub, passing down to the leg; there are two pendulums suspended from the uprights, at the extremity of each of which is a block—one is loaded for washing, the other is grooved, which pendulums are worked and set in motion by a handle which is affixed to two arms, which are attached to the pendulums.

NOAH CUSHING.





A. D. 1824.—(LOWER CANADA.)—No. 2.

Improved Machine for Cutting Nails.

LETTERS PATENT to Isaac Jones Barnard, of the City of Quebec,
for the Invention of an "IMPROVED MACHINE FOR CUTTING
NAILS."

Quebec, dated 21st July, 1824.

BRIEF DESCRIPTION.

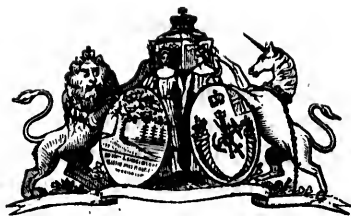
There are two side pieces of iron secured to a bench of solid oak; from the back of these arise upright pieces, fastened at the top; below these are drilled two centres, one in each piece, to receive the conic point of the lever of the common machine. *2nd Improvement.*—A piece of iron flat at each end; through each is a mortise to admit a bolt to secure it to the side pieces, and the whole to the bench; through the middle of this is a bolt, and fixes on to the under cutter, and under the cutter is a projection on which the foot of the cutter rests. *3rd Improvement.*—There is a guage of sheet iron, with a hole in the centre, across one end of which is fixed an iron bar; a second bar is attached to this by two screws, one of which passes through each bar on the front face; close to the upper edge of this bar is a piece of steel, which is brazed to the bar; this being hardened, completes the guage. The guage is

Barnard's Improved Machine for Cutting Nails.

then placed on the face of the lever ; on this is placed a piece of iron, having a counter sink hole to receive the head of a bolt ; on this piece is placed the upper cutter, the lower end of the cutter resting on the steel of the guage, but projecting sufficiently to leave the width of a nail. *4th Improvement.*—There is a crane, consisting of an upright piece of iron, each end having conic centres, one fixed in the floor, the other stands upright, under the front part of the cutting machine ; to the front extends an arm ; on the end of this the end of the carriage rests ; from one side of the upright extends an arm to which is attached the connecting rod from the crank. *5th Improvement.*—Is a carriage, consisting of a flat piece of wood or metal ; through this carriage is a groove for the plyers to move in, with the iron to be cut into nails. *6th Improvement.*—Are the plyers, consisting of a pair of common plyers, with a keel or slide attached to them ; the plyers are drawn forward by a cord and weight.

GENERAL DESCRIPTION.—The side pieces being fixed in their places, with the points of the levers in their centres ; this lever is connected with a connecting rod to the crank, to which the moving power is applied, on which there is a pinion with teeth, which moves a tooth-wheel ; the crank is connected to the short arm of the crane, and this moves the carriage ; one turn of the crank cuts one nail, and moves the carriage to the opposite side of the space that it vibrates in, while the iron being held in the plyers, it is drawn forward on to the guage by the cord and weight W, where it remains until the next nail is cut, and so on.

ISAAC JONES BARNARD.



A. D. 1824.—(LOWER CANADA.)—No. 3.

*Improvement in the Construction of Wooden Rail-
Roads.*

LETTERS PATENT to James George, for the Invention of an
"IMPROVEMENT IN THE CONSTRUCTION OF WOODEN RAILROADS."

Quebec, dated 13th December, 1824.

BRIEF DESCRIPTION.

Take the rough trees of the forest, any kind of wood sufficiently large and firm will answer the purpose, groove or saw out about one-fourth or one-fifth the diameter for a track to run the wheels on, in which a shallow groove or cut must be made to receive a thin plate of hoop, bar, or cast iron, or a flat surface to run a groove wheel on; the logs which form the way are to be laid on cross pieces, notched or tongued, so as to admit of their being firmly fastened with a wooden pin; the logs to be of irregular lengths, that the joints may not be opposite to each other (this will render the work more solid); by the addition of bays at suitable intervals, where a double railway cannot be afforded, to let carriages pass, the necessity of which (the double rail) is obviated, or a side slope, rather inclining upwards, of sufficient length to take the horses and carriage clear out of the rail, until the other has passed by, when, by taking off the drag, the one that has moved out

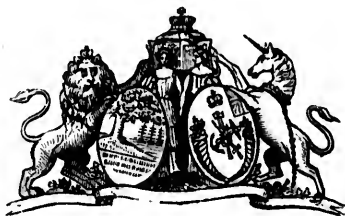
George's Improvement in the Construction of Wooden Railroads.

will return into the Railroad without any great effort. Entrances must also be left at various distances where the ground is suitable, to admit of carriages turning in ; these entrances will also serve the purpose of passing bays, in case of necessity ; the spaces between the cross pieces are to be filled in lengthways, so as to make a firm path for the horses on the outside of the rail, when a pair of horses are driven abreast, and in the middle, between the rails, where a single horse is used. In meeting, the off horse is shifted to the middle road, and the cross-bar of the carriage or waggon is also drawn in to clear the carriage in the bay, as one of its wheels may run on the same piece of timber, having a double groove ; this method also admits of three horses being driven abreast, when boats or heavy weights are to be transported ; the width of the Railroad is to be made suitable to the carriages of the country where constructed, that is, of such width as to admit of carts or waggons of the usual construction passing upon it ; and is also to be used in transporting boats or vessels over land, by the assistance of a steam engine, or such other propelling power as it may be necessary to employ for that purpose, on a double Railroad, by means of an endless chain, or rollers, placed on the rail revolving up on the one side, and down on the other, so that carriages moving in one direction may hook on on the right, and those moving in the opposite direction on the left, thus following the course of the chain, which must be made to turn round on iron sheaves at the extremities of the rails, as described in the plan marked A, filed in the office of the Secretary of our said Province. Cradles whereon to take boats on land, are to be constructed by placing timber of sufficient strength on cross bars of iron, at the extremity of which cast metal wheels are to be placed to run on the rail, the number of iron axles and wheels being determined by the length and weight of the vessel and her cargo ; should more than two pairs be necessary, cross bars, at intervals, whereon the boat is to lie, are to project beyond her sides, wherein holes are to be pierced at the extremities for the reception of bars or stanchions, which may be fixed therein according to the width of the boat or vessel, for the purpose of holding it securely on the cradle ; when keel boats or vessels having bearings are to be transported, fids or chucks of suitable dimensions, according to the size or mould of the vessel to be transported, must be employed.

George's Improvement in the Construction of Wooden Railroads.

The cradles are to be placed under the boat or vessel whilst afloat, and the Railroad being carried for a small distance into the lake or river, the cradles may be immediately drawn upon it, which will supersede the necessity of employing cranes or other apparatus, which would otherwise be necessary to hoist up and place such boats, &c. on the carriage or cradle.

JAMES GEORGE.



A. D. 1825.—(LOWER CANADA.)—No. 4.

Improvement in the Drum-cylinder and Double Drum-cylinder used in the Manufacture of Ropes, Cables, &c.

LETTERS PATENT to Robert Dalkin, the Younger, of the City of Quebec, Rope Maker, for the Invention of an "IMPROVEMENT IN THE DRUM-CYLINDER AND DOUBLE DRUM-CYLINDER, USED IN THE MANUFACTURE OF ROPES, CABLES, &c."

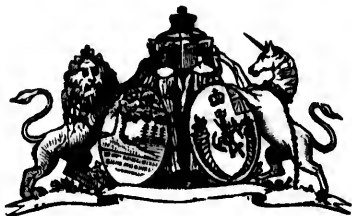
Quebec, dated 30th November, 1825.

BRIEF DESCRIPTION.

The improvement in the Drum-Cylinder and Double Drum-Cylinder used in the manufacture of hemp-lines, twines, ropes, cables, and cordage of every description, is the same, and consists in substituting eight whelps or concave cross-bars in place of the whole convex surface of the Cylinder; eight upright shafts immovably fixed in the axis of the Cylinder, and perpendicular to it, are also substituted for the base or end of the Cylinder. In the single drum, these shafts are placed only at one end; in the Double Drum eight of them are at each end, and the corresponding cross-bars fixed to both; this is the only difference between the single and double Drum, as in the instrument commonly used.

ROBERT DALKIN.

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A. D. 1826.—(LOWER CANADA.)—No. 5.

A Lever Engine.

LETTERS PATENT to Justin Jacob, of the City of Montreal, Joiner,
for the Invention of "A LEVER ENGINE."

Quebec, dated 31st October, 1826.

BRIEF DESCRIPTION.

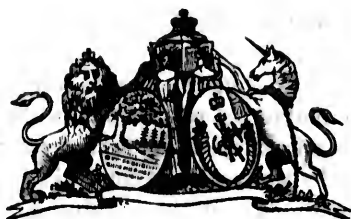
The Lever is hung perpendicularly, like a pendulum, with a weight at the lower end, and the top is fastened into a rolling shaft lying horizontally; across the rolling shaft is an horizontal arm, with perpendicular rods, connected at the ends by a slip mortise and a pin forming a joint; these rods running downwards are connected with another horizontal arm in the same manner as at the top, which crosses another rolling shaft, having a perpendicular arm with a hand connected at each end, and running on a rag wheel; the arm is to be kept in vibration by being pushed just after turning at the extremities. The vibration of the Lever causes the upper rolling shaft to rock, by which means the connecting-rods move up and down, which causes the hands to move to and fro, and by this method the power of the lever is continually bearing upon the wheel, as one hand is pushing while the other is drawing back; the centre of the lever rolling shaft must be

Jacob's Lever Engine.

on a level with the top of the rag-wheel ; on the same shaft on which the rag-wheel is hung is placed a cog-wheel, and from that any power or motion may be gained by the common method of graving machinery.

JUSTIN JACOBS.

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A. D. 1826.—(LOWER CANADA.)—No. 6.

Machine or Instrument called "Loch Terrestre," for accurately ascertaining the number of rotatory motions or revolutions of Carriage-wheels, Millstones, &c.

LETTERS PATENT to Charles Laurier, of the Parish of La Chenaye, in the District of Montreal, Gentleman, for the Invention of a "MACHINE OR INSTRUMENT CALLED 'LOCH TERRESTRE,' FOR ACCURATELY ASCERTAINING THE NUMBER OF ROTATORY MOTIONS OR REVOLUTIONS OF CARRIAGE-WHEELS, MILLSTONES, &c."

Quebec, dated 31st October, 1826.

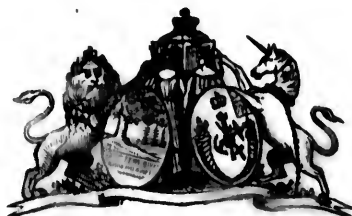
BRIEF DESCRIPTION.

This instrument, by means of dials placed aside of each other, and divided into ten divisions, ascertains of itself in decimals, and almost *ad infinitum*, the number of motions of bodies capable of being moved; these dials, like the hands of a watch or clock, turn to the right; each of the divisions of these dials is marked with an arithmetical figure, beginning with 0, and successively with the figures 1, 2, 3, 4, 5, 6, 7, 8, and 9, in the contrary way to what is usual, that is from right to left, so that the dial turning to the right, these figures succeed each other in their natural numerical order; these dials observe this rela-

Laurier's Machine for ascertaining rotary motions, &c.

tive order. In their motions, that the first to the right, by which the computation is made, makes ten revolutions, while that which is next to it to the left makes only one, and on each revolution of the first dial the second turns one division; this second dial, by the figures of its division, expresses the number of the revolutions of the first, and so on, in like manner, the others which proceed in the same arithmetical order. This instrument, besides the purposes above mentioned to which it is applicable, might also be applied to the ascertaining of the distance run by vessels at sea.

CHARLES LAURIER.



A. D. 1826.—(LOWER CANADA.)—No. 7.

Threshing and Winnowing Machine.

LETTERS PATENT to Noah Cushing, of the Parish of Lotbinière, in the District of Quebec, Mill-wright, and Ranson Welton, of the City of Quebec, Clock-maker, for the Invention of a "THRESHING AND WINNOWER MACHINE."

Quebec, dated 31st October, 1826.

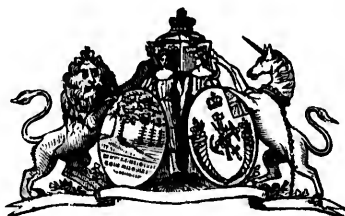
BRIEF DESCRIPTION.

The Mill Frame is made in two parts, connected together with four screw-bolts, one of which is eight feet long, two feet eight inches wide, and seven and a half feet high at one end, and the other four feet long, and two feet eight inches wide; both parts are lined with boards on the sides and top, so as to correspond with the covering of the drum that beats out the grain, and are made of three-inch deals, solidly put together.

NOAH CUSHING.
RANSON WELTON.



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A. D. 1829.—(LOWER CANADA.)—No. 8.

Improved Machine for Dressing Flax or Hemp.

LETTERS PATENT to Robert Hoyle, for the Invention of an
"IMPROVED MACHINE FOR DRESSING FLAX OR HEMP."

Quebec, dated 3rd October, 1829.

BRIEF DESCRIPTION.

Let the machine consist of a set of upper and under rollers of any number, and of any suitable length and diameter, divided into pairs, each pair consisting of one upper and one under roller, and placed upon a proper frame, with sufficient space between each pair of rollers to allow the ligneous particles of the stalk, disengaged by the operation of the machine, to fall through. The rollers may be supported at each end by cast iron stands, attached to the inside of the frame, so constructed as to hold both the bottom and top rollers, with sufficient room for the top rollers to rise and fall according to the quantity of hemp or flax in the machine. The pressure of the upper upon the under rollers may be produced and regulated by weights and spiral springs. The hemp or flax in the stalks is introduced at one end by means of feeding-board or cloth, and is carried away by the motion of the machine between each pair of rollers in succession, until it has been operated upon by all the rollers, and is then delivered at the

Hoyle's Improved Machine for Dressing Flax or Hemp.

other end of the machine. The motion is given to the machine in the following manner:—A shaft, which may be of cast or wrought iron or other suitable material, is placed across the frame of the machine at the end where the hemp or flax enters; this shaft, which may be called the master shaft, lies parallel and level with the centre of the bottom rollers; and at a convenient distance from the first bottom roller, two bevel cog-wheels are placed on this master shaft, so that each wheel projects a little beyond each side of the frame of the machine, the master shaft forming the axle of those two wheels, which may be termed the master wheels; at each side of the machine a shaft, which may be of cast or wrought iron, or other suitable material, is placed on a level with the centres of the lower rollers, but parallel with the side of the frame, and at right angles with the master shaft, forming with it three sides of a parallelogram: those two shafts may be called the side shafts; at the front end of the side shafts, that is to say, the ends nearest to the master shaft, bevelled cog-wheels are fixed, corresponding with, and working in the master wheels on the master shaft; the other ends of the side shafts may be supported on the back ends of the frame, or on stands placed for the purpose, in such manner as to allow those side shafts to turn the axles of the wheels. The side shafts being thus geared to the master shaft by the bevelled cog-wheels receive their motion from it, and communicate motion to the rollers in the following manner:—Each lower roller has an iron arbor passing through its centre, on one end of which a bevelled cog-wheel is fixed, with its back or widest diameter to the end of the roller; the other end of the arbor forms a gudgeon working in the opposite side of the frame of the machine. Those bevelled cog-wheels are placed alternately at the right and left sides of the machine, that is to say, let the first lower roller have the wheel on its right end, the second on its left end, the third on its right end, and so on; the side shafts are geared to those wheels by corresponding bevelled cog-wheels placed at proper distances from each other on each side shaft, such side shaft acting as an axle to its own wheels; in this way each of those wheels on the side shafts works in its corresponding wheel; on the end of every second lower roller, the right side shafts for instance being thus geared and giving motion to the first, third, fifth, seventh and so on of the lower rollers, and the left side shaft to the second, fourth, sixth, eighth, and

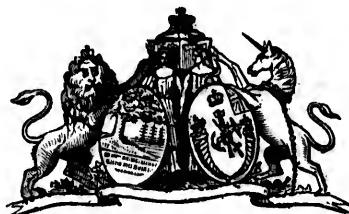
Hoyle's Improved Machine for Dressing Hemp or Flax.

so on ; by this arrangement of the bevelled cog-wheels on the ends of the lower rollers alternately, and on the side shafts, all the lower rollers receive motion when the machine is in operation, which motion they communicate to the upper rollers, which rest and work on them respectively. Instead of connecting each side shaft with every second lower roller alternately in the manner above described, a bevelled cog-wheel may be fixed, at each end of which lower roller, and a corresponding wheel on each side shaft, by which means each lower roller will be operated upon equally by each side shaft ; it is deemed preferable, however, to gear each side shaft to the lower rollers alternately in the manner above described, as about half the number of wheels will answer, and those wheels may be of larger diameters, (and therefore of more power,) there being more room for each wheel by having none on the end of the next roller, each way. The side shafts are thus connected with each other only by the master shaft, and each side shaft gives motion exclusively to its own set of lower rollers. The principle, however, upon which the machine is put in motion is the same whether each side shaft is thus connected with the end of each lower roller or of each alternate one. The side shafts may be supported by stands, and coupled by boxes placed at convenient distances from each other, to prevent them from springing, or being strained. In a machine worked by a master shaft and two side shafts, with bevelled wheels, as above described, the motion of every part is rotatory—this motion is communicated to the whole by any sufficient power applied at either end of the master shaft, of which a simple crank is a sufficient illustration. The master shaft being thus turned, the bevelled wheels fixed to it, called the master wheel, by working in the corresponding wheels on the front ends of the side shafts, turn the side shafts, and the latter being connected with the lower rollers by bevelled wheels working in each other, cause them to revolve, in which operation those lower rollers set the upper rollers resting on them respectively in motion, and thus the hemp or flax is drawn between the upper and lower rollers, and subjected to their breaking or cleansing operation. The rollers must turn inwards upon each other, towards the hemp or flax as it enters between them, from the feeding end of the machine, and for this purpose it is immaterial whether the rotatory motion of the shafts is inwards towards the frame of the machine or outwards from it, as such

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motion will depend upon the relative position of the bevelled wheels on the shaft, which may be placed with their backs or wider diameters either way; but it is considered preferable to have all the shafts turn outwards from the rollers, which has a tendency to throw off every thing which might otherwise come in contact with the wheels, or get between the rollers, and is safer for those who have to attend the machine while in operation; this outward rotatory motion can be given to the shafts by placing the master wheels fixed on the master shaft with their backs or widest diameters inwards, or looking towards each other; this position of the wheels on turning the master shaft outwards from the rollers will cause the side shafts also to turn outwards, and by placing the bevelled wheels which connect with the side shafts, with the lower rollers, with their backs or widest diameters towards the master shaft, or the front of the machine, each pair of rollers will turn inwards upon each other towards the feeding-board or cloth, and draw the hemp or flax forward towards the other end of the machine. The improvement for which a patent is sought consists in the application of shafts and bevelled wheels combined, upon the principles above described to give motion to rollers in a machine for dressing hemp or flax.

ROBERT HOYLE.



A. D. 1829.—(LOWER CANADA.)—No. 9.

Machine for Distributing Ink over Printing Types.

LETTERS PATENT to William John Spence, of the City of Montreal,
Printer, for the Invention of a "MACHINE FOR DISTRIBUTING INK
OVER PRINTING TYPES."

Quebec, dated 19th December, 1829.

BRIEF DESCRIPTION.

There is to be a frame to support the machine as nearly as possible on the same level as the printing press to which it is to be attached, which frame may be made of any length or breadth, and adapted to a printing press of any size. The machine is wound up by the usual motion of a printing press, to the rounce of which its principal shaft is attached by a coupling box. On the end of this shaft A, is a bevelled pinion acting on the two others B and C, on the shaft D; a ratchet wheel Z works between these two pinions, a click attached to each pinion works in this ratchet wheel, but in contrary directions; the pinions B and C are loose on the shaft D, except when fixed by the action of these clicks, that the revolution of the shaft may be in the same direction, whether the carriage of the press be run in or out; these pinions are kept in contact with that on the end of the shaft A by screw collars upon the shaft D, and nearly in the centre of the frame is a large wheel E, about seventeen inches in diameter, five-

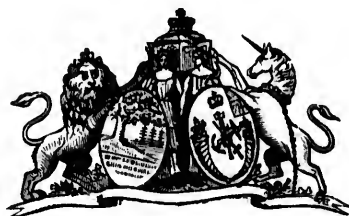
Spence's Machine for Distributing Ink over Printing Types.

twelfths of which is teethed on the vertical edge, and five on the horizontal, leaving a sixth of it without teeth. A pinion O, is fixed upon an axis attached to the cross-bar of the frame, on the side corresponding with the horizontal teeth of the principal wheel E. Upon the shaft D, and close to wheel E, is a ratchet wheel with drum F, and spiral groove G, cast in one piece; the click of ratchet wheel is attached to one of the arms of wheel E, which enables the drum to wind up the cord and weight X, from the falling of which the principal motion of the machine is derived. The ratchet wheel, drum, and spiral groove are kept on the axis D by a screw collar H, to which is attached a box J, to contain a latch, upon which the spring K acts, to keep its point in the spiral groove, except when thrown out by a second moveable collar L. On the point of shaft D, attached to collar L, is a rod M, with a spring S, for withdrawing it. A lever, or tympan of printing press, strikes the rod M, each time the tympan is raised and thrown back, thus freeing the drum-cord and weight. Immediately over the principal wheel E, and pinion O, and travelling between the cross-bars of the frame, in a groove, is the rack N, sufficiently wide to cover both wheel and pinion; the weight X, being freed, gives the wheel E a contrary motion to that received from pinions B and C, thereby pushing the rack across the form in the press, when the five-twelfths of vertical teething in wheel E, are passed over by the rack, the horizontal teeth of that wheel become connected with pinion O; this reverses the motion of the rack only, and after a short pause, accounted for by the unteethed part of the wheel E, returns to its original position. On the top of the frame next to the printing press, are the distributing rollers P, Q, R; P, which passes and returns over the form in the press, is made of the composition commonly used by printers for their rollers; Q is made of wood, with a few folds of soft woollen cloth wrapped round it, and covered with oil-cloth or skin; R is iron correctly turned and polished. The first or travelling roller may be about three inches in diameter, the second from six to eight, and the iron roller from four to five. On the end of the shaft D, is a pinion S, about four inches in diameter; on corresponding end of roller R is another, about eight inches, connected with a polished chain: this gives motion to all the rollers, as they rest on each other, and have their trusses in the frame, except P, the travelling one. To the end of rack N is attached an iron frame

Spence's Machine for Distributing Ink over Printing Types.

T, at the points of which are trusses V, for the travelling roller, with screws attached to raise or depress this roller on the form as may be required. Projecting from principal frame A, are two iron guides W, with screws to raise or depress them, that the travelling roller may be projected upon the plane of the form as nearly level as possible. Immediately behind roller R, and of the same length, on the top of the frame, is placed the ink trough Y, with a bevelled face; between this face and a strap of iron is a thin steel straight edge, on each side of which a ply of leather is laid, and all screwed tight; the leather prevents the ink from escaping to the roller below the steel straight edge. The straight edge may be raised or depressed upon the metal roller by means of the screw Z, at the back of the ink trough; the metal roller consequently obtains the ink from the trough, and distributes it to the other two when the weight X falls, or during the operation of inking the form. To prevent a retrograde motion from being communicated to the carriage of the printing press, through the rounce, a small spring click U, is attached to the principal frame, and resting upon the first ratchet wheel, described between pinions B and C; these pinions being moveable round shaft D, except when stopped by their retrograde clicks, they both retrograde upon the shaft without giving the same motion to the rounce.

WILLIAM JOHN SPENCE.



A. D. 1830.—(LOWER CANADA.)—No. 10.

Machine for Cutting Timber into Sidings, Clapboards, Shingles, Laths, &c. &c.

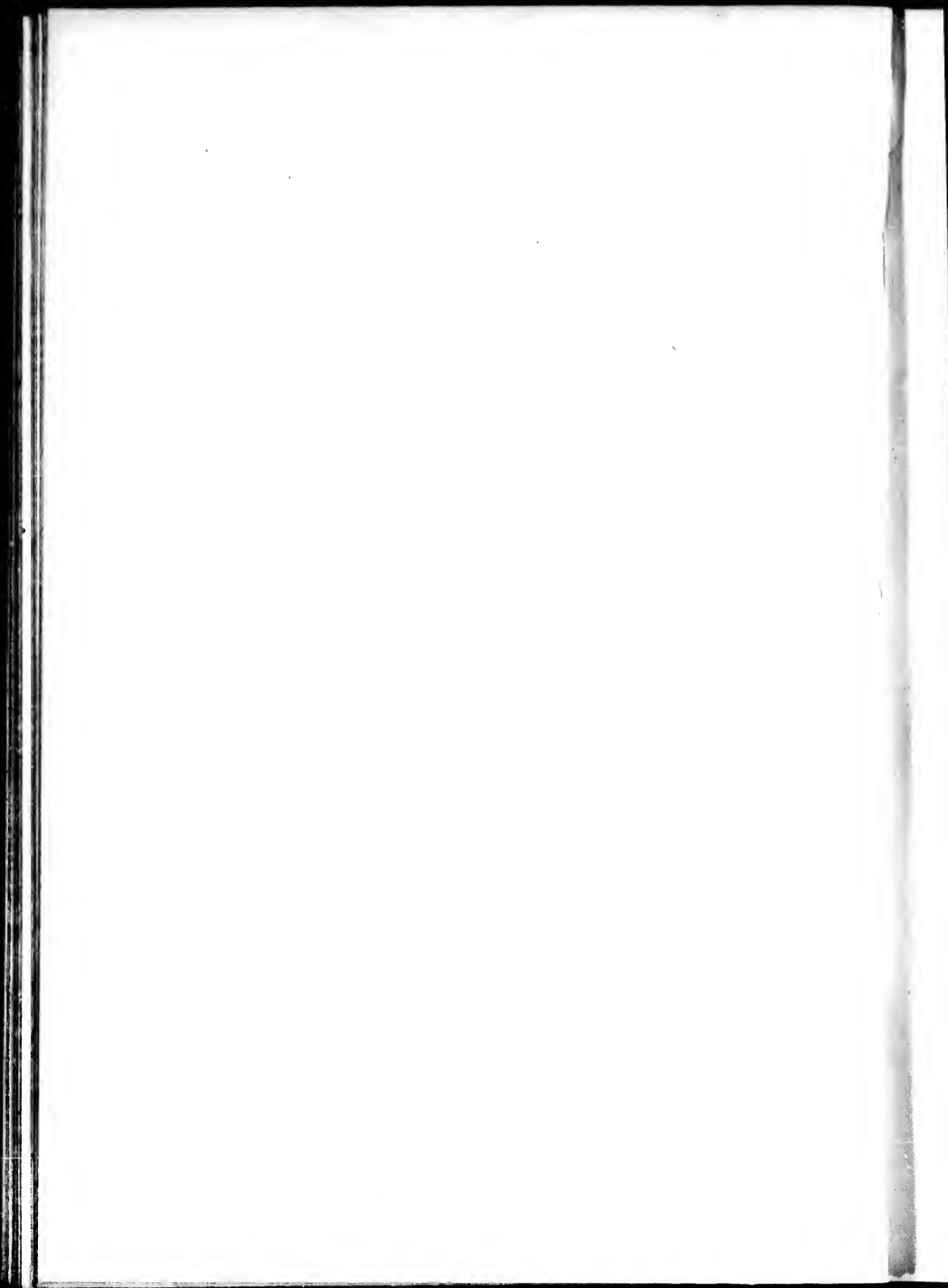
LETTERS PATENT to Philip Schoolcraft, of the Seigniory of St. Armand, in the District of Montreal, Cabinet-Maker, for the Invention of a "MACHINE FOR CUTTING TIMBER INTO SIDINGS, CLAPBOARDS, SHINGLES, LATHS," &c. &c.

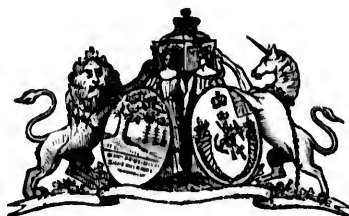
Quebec, dated 15th May, 1830.

BRIEF DESCRIPTION.

Figure 1 represents the ground plan of the said machine. Figure 2 is a side view of the said machine. Fig. 4 represents the knife, which is firmly fixed in a piece of timber prepared for that purpose, which is kept in motion by a crank, connected with a rod jointed to the said piece of timber at fig. 3. Fig. 5 shows the throat through which the wood passes, after it is cut by the knife. Fig. 6 shows the arms or bench on which the timber to be cut is firmly secured, and by the moving of which, by any of the methods commonly in use for similar purposes, the timber to be cut is brought into contact with the knife, Fig. 4.

PHILIP SCHOOLCRAFT.





A. D. 1830.—(LOWER CANADA.)—No. 11.

New and Improved Spinning Machine.

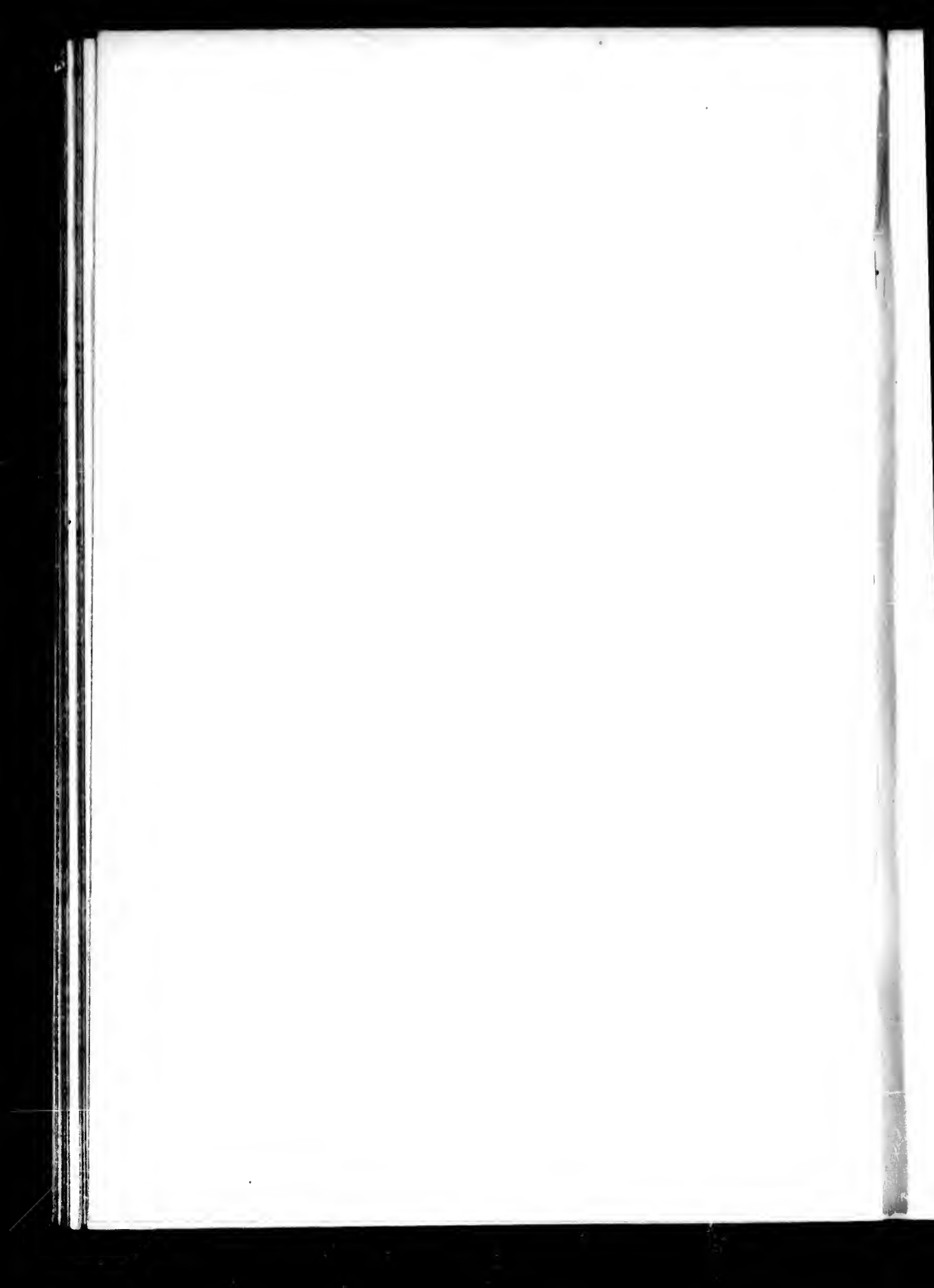
LETTERS PATENT to Philip Schoolcraft, of the Seigniorie of St. Armand, in the District of Montreal, Cabinet-Maker, for the Invention of a "NEW AND IMPROVED SPINNING MACHINE."

Quebec, dated 26th June, 1830.

BRIEF DESCRIPTION.

A A represent the wheels, by which the machine is put in motion, B B the bands on the said wheels, by which the spindles are made to revolve, and C C the spindles on which the thread is wound or taken. D is a wire suspended in the machine for the purpose of conducting the yarn or thread to the spindles. E represents a small beam or timber passing across the machine, and moving up and down in grooves in the side timbers, by which means the rolls are roped, and prepared for use, and thence conveyed to the spindles as aforesaid. The spindles C C can be put in motion by one band only, or by applying a band to each spindle. F, in the end view of the machine, represents the mode of placing the cranks, which are marked A in the other view of the machine. The said machine may be driven by the hand of a single person, or by water, wind, steam, or any other motive power, and it is the intention of the patentee to use it in an upright, inclining, or horizontal position.

PHILIP SCHOOLCRAFT.





A. D. 1830.—(LOWER CANADA.)—No. 12.

Improved Hydraulic Steam Engine.

LETTERS PATENT to Robert Hoyle, of the Seigniorship of Lacolle, in the District of Montreal, Esquire, for the Invention of an "IMPROVED HYDRAULIC STEAM ENGINE."

Quebec, dated 25th June, 1830.

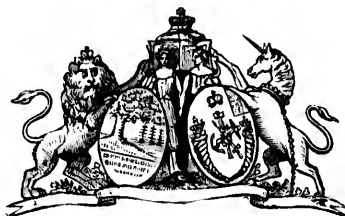
BRIEF DESCRIPTION.

The Engine is composed of two or more wooden cylinders or vessels bound together of sufficient strength, and placed perpendicularly in or near a reservoir, of the same depth as the length of the cylinders or vessels, that they may fill without the aid of a vacuum. In each of these cylinders is placed a float of wood or other buoyant material that is a slow conductor of heat, closely fitted without touching the sides, to separate the steam from the surface of the water, and thereby prevent its condensation; guides are made use of to keep the floats steady; suitable valves are placed in or near the bottom of each cylinder or vessel, in order to prevent the free ingress or egress of the water. A steam chest with its valve or valves, is placed on the tops of the cylinders or vessels, to admit the steam from the boilers into them, and permit it to escape alternately. The action of the engine resembles that of the common single forcing pump, (the steam acting as a piston

Hoyle's Improved Hydraulic Steam Engine.

immersed in the water the length of the piston stroke.) The improvement in the Hydraulic Steam Engine, thus made, consists in the use of wood or other non-conducting materials in the construction of the vessels or cylinders and floats, as above described, and in lining with the same material, iron or other metallic vessels or cylinders, for the alternate reception and discharge of steam and water employed in this form of Engine.

ROBERT HOYLE.



A. D. 1830.—(LOWER CANADA.)—No. 13.

Machine for Manufacturing Hat Bodies.

LETTERS PATENT to Samuel Andres, the younger, of Blairfindie,
in the District of Montreal, Trader, for the Invention of a
“MACHINE FOR MANUFACTURING HAT BODIES.”

Quebec, dated 9th August, 1830.

BRIEF DESCRIPTION.

The wool is carded with a double or single carding machine, with a doffer or finishing cylinder covered with filleting cards, so as to produce a continuous or unbroken web; the web as it comes from the machine is to be spread or wound upon a cylinder, which cylinder is of a certain diameter in the centre, and gradually tapering each way, for a certain distance; and then the ends wound off in an oval form, the size and taper of which should be such, that when two hat-bodies are upon it, one on each end, they should meet in the centre of the cylinder, which may be varied, according to the size of the hat-bodies to be formed upon it; in the process this cylinder is placed upon four conical rollers, which are placed upon a carriage, two on each side, in a position nearly horizontal with their bases, or large ends of each pier, in contact at the centre of the cylinder, and with the small end of each, inclined towards the corresponding small ends of the rollers, on the other side, and in that position be made to rest and revolve upon points, gudgeons,

Andres' Machine for Manufacturing Hat Bodies.

or shafts, from the centre of each, and in such manner as that the sides of the rollers next to the cylinder shall be exactly parallel with it, so far as the same lengthwise is straight; thus forming a bed on which the cylinder may rest, and revolve as upon friction rollers, in the manner hereinafter described. But in addition to such rotary motion of the hat-body cylinder, and in order to have the wool spread and wound smoothly and equally over the entire surface of the cylinder, it must be made to move to the right and left horizontally, on the segments of a circle before the doffer of the carding machine, presenting to the same the convex side of such segments. To effect these movements the conical rollers, with the hat-body cylinder upon them, are to be attached to a frame or carriage, and placed upon two circular railways to be provided for the purpose, and one of these railways on each side of the carriage, parallel to each other as segments of circles from one common centre, with grooves or ridges, in such a manner that a carriage, having its frame and dimensions conformable in the same, being provided with trundles for the purpose, may be easily moved one way or the other upon these railways. This carriage is made by framing four pieces of timber in a square, which square is about four feet and three inches in length, and about sixteen inches in breadth; this frame forms the sills of the carriage; at each corner of this frame there is a post of about ten inches in length; at one end of this frame there are two, and at the other end one girt, that is framed into the posts across the ends, and made fast by joint-bolts in a long mortise, made in the posts for the convenience of placing these girts in a right position, to receive the rollers and the inclined shaft. From each of these posts there is a brace, which unites with the long sills near the centre of the same. Across the centre of this carriage there is a piece of timber fixed, on which the irons are fastened to suspend the large end of the conical rollers. Those irons are four in number, one to support each roller; they are four and a half inches in length, and made to branch at the bottom, for the purpose of better securing them in their proper positions, by bolting them to the cross-piece of timber. The axle-trees which the trundles are to operate upon, are fastened to the carriage in a position fronting to the centre, of which the railways already described are the segments, by which an easy movement is given to the carriage. In order to give the circular movement to the

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carriage, a plank suitable for the purpose is fastened to the axle-trees of the carriage; on the under side of the plank there are segments of a bevel cog-wheel, fastened with the cogs or teeth on the under side; these segments are to be of the same circle, as from their position to that of the railway, shall form a circle. A small bevel cog-wheel is fixed upon a shaft, which is called the counter-revolving shaft, which lies pointing to the centre of the railways, a convenient distance to attach other gearing to it; this shaft is made to revolve first one way, and then the other, and the bevel cog-wheel meshing into the segments thereby moves the carriage, first one way and then the other. On the circular railways on the other end of this counter shaft, another bevel cog-wheel is made to mesh alternately into one or other of the two bevel cog-wheels which are fixed on another shaft, called the sliding shaft, and lies parallel with the doffer of the carding machine, at right angles with the counter shaft. The cog-wheels on this sliding shaft are placed with their teeth facing each other, and at such distance apart that one of them will mesh into one side of the cog-wheel on the counter shaft, and the other wheel clear the other side of the same, and by sliding this shaft endways, these cog-wheels are made to mesh alternately into one or other of the sides of the cog-wheel which is on the counter-revolving shaft, and thereby making this shaft revolve, first one way, and then the other, which gives the movement to the carriage. On this sliding shaft there is a pulley fixed, which is connected by a band to another pulley on another shaft, which is called the driving-shaft, and from whence it receives its motion; this driving shaft lies parallel with the sliding shaft, and will be described in the rotary motion. On one end of the sliding shaft there are two grooves turned, and a dog fixed, so that by means of a spring it will rest in one or the other of these grooves, which keeps the cogs from slipping out of gear; this dog is raised out of the groove by a cam that is fixed to the carriage, which strikes the balance end of the dog, and raises it out of the groove, and then the shaft slides endways, and the dog drops into the other groove, and so alternately, as the shaft is slid endways, by having a cam fixed to each end of the carriage. An upright lever, with a fork on the lower end of it, and a ball or weight on the upper end, is suspended over the sliding shaft, so that the fork may slip on to the shaft, which has a place turned for the purpose of receiving it, and is sus-

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pended in a mortise, in a block of wood or other materials fixed for the above purpose; the lever is suspended by a pin near the lower end of it, and by throwing the top of the shaft over from one extremity of the mortise to the other, the fork operates to slide the shaft endways, which is done by fixing two arms, one at each end of the carriage, and extending at right angles of the same, until it reaches the lever and raises it until it passes the perpendicular centre, when it falls over to the other extremity of the mortise by its own gravity, and thus shifting the gear, so as to give the circular movement to the carriage, as heretofore described. By this means of gearing there is a perpendicular movement of the cylinder and carriage endways to the right and left, whereas the same or nearly the same movement may be produced to the same by a crank and arm extending to an irregular lever, but from the dead motion of the crank, while it moves the carriage on its extreme points, rendering the machine very defective, by not keeping up the movement, whereby the wool is let loose, and is liable to go on to the end of the cylinder in pleats, thereby making the bodies uneven, and liable to work breaks or holes in planking. The range to be given to this movement is to be so near, that the web may be brought to the centre of the ends of the cylinder, and the arms and cams may be so fastened to the carriage, that their position may be easily altered, so as to have them act on the lever and dog, and to effect the same, as it will be necessary to vary them according to the tension of the wood, which will vary in different kinds. This rotary motion of the cylinder may be produced as follows: A conical drum is to be fixed on the lower shaft of the carding machine, as that, for instance, which receives its motion from the main cylinder, and communicates by a band to the doffer cylinder; from this conical drum a band may be made to communicate with a like conical drum, only in a reverse position, to be fixed on the driving-shaft already named; this shaft is placed parallel with the other shaft, and nearly under the doffer cylinder. Upon this driving shaft, in its centre, there is a pulley which is made to communicate by a band to another pulley that is on an upright shaft, at the centre of which the railways are the segments; on this upright shaft there is another pulley fixed, from whence a band is made to communicate with another pulley, which is on a vertical shaft that is suspended under the centre of the carriage, and is attached to the same. On

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this vertical shaft, near the top of it, a small bevel cog-wheel is made to mesh into another bevel cog-wheel which is fixed on the end of an inclined shaft; this inclined shaft lies nearly horizontal, and extends from the lower part of the centre of the carriage to the lower girt on the end of the same; on the other end of this shaft there is a spur cog-wheel meshing into another spur cog-wheel which is on the small end of one of the conical rollers, on which the cylinder rests; on the other end of this conical roller there is another bevel cog-wheel which meshes into a like bevel cog-wheel, which is on the corresponding end of the other conical roller, causing these rollers to revolve together, and these rollers cause the hat cylinder to revolve, and the cylinder in its turn causes the conical rollers on the other side to revolve by the friction of the cylinder upon them. Here, too, it will be perceived that the revolution of the cylinder should be so adapted to that of the doffer cylinder as to receive and wind up the web as fast as it is given off, and no faster, as it is found that the web formed of different kinds of wool possesses more or less tension; these relative movements require to be varied accordingly, and for this purpose the conical form is given to the drum, as heretofore described, connected by one band, in order that by moving the band, for instance, towards the large end of the first mentioned drum, which communicates its motion to the other, it passes at the same time towards the small end of the roller, by which the motion is accelerated, and by moving the band the other way, the motion is retarded, thus allowing all of the relative movements to be adjusted with the necessary exactness. The effect altogether is, that while the rotary motion of the cylinder, thus regulated in velocity to the production of the web, it is carried endways from one extremity to the other, in its circular movements on the railways, presenting its sides and ends alternately, and in repeated succession to the web, until it is wound and spread smoothly and evenly by these combined movements over the entire surface of the cylinder to the thickness required, while the conical rollers press the wool to its surface as it is wound upon it, thus forming two entire hat bodies, which are cut apart in the centre of the cylinder, and so on in succession. Although one specific process is here given for communicating and applying the power necessary for the purposes of these improvements from the carding machine, the particular manner of producing the same or a similar

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effect may be varied, as by taking the power in the first instance from any other part of the carding machine, or by using gearing where drums, pulleys and bands are described to be used, or *vice versa*, or otherwise, as shall be found expedient. Although the hat-body cylinder is here represented as revolving on four conical rollers, it may be made to revolve on two of these rollers, and four geared pulleys or trundles, by placing the rollers in a position under the centre of the cylinder, and fixing these rollers, one at each side of the rollers near the end of the cylinder, in such a position as that the trundles will keep the cylinder in its proper position on the rollers, and the cylinder resting so as to make them revolve by its friction on the same. In this case, the inclined shaft may be dispensed with, and the vertical shaft under the carriage placed in such a position that the small bevel cog-wheel on the top of it may mesh into the bevel cog-wheel which is on the large end of one of the conical rollers, by which the motion is given to the roller, as heretofore described. This last mode of revolving of the cylinder is preferable, as it is frequently the case in commencing the hat body (where the cylinder revolves on the four rollers) that the web drops off the cylinder while it is passing from one roller to the other, and the roller takes the government of the web in whole or in part, thereby causing much difficulty in commencing the body in a smooth and even manner; and from the situation of the cylinder on the rollers it is not so easily adjusted as in the last described mode. By the perfect regularity of this circular movement of the hat body cylinder, or combination with the rotary motion of the same, the web is drawn and strained evenly upon the surface of the cylinder, that the hat bodies may preserve their shape when they are taken off from the same, and keep through all the process of manufacturing, until they are blocked, and from the manner of the position which it presents to the web. The cylinder will admit of its being made much larger on those parts where the square of the hat body is formed than many of the machines now in use, and the body will admit of being blocked, without being liable to break, or unreasonably straining the same. The same, or nearly the same effect may be produced in another manner, as follows, viz.: The carriage of the hat body machine may be divested of its trundles, cams, and segments, and also the fixtures and gears to produce the circular motion which are not necessary,

Andres' Machine for Manufacturing Hat Bodies.

and the carriage is placed before the doffer cylinder, at suitable height and distance from the same, and made stationary. The carding machine is furnished with trundles, and placed upon two or more straight railways, which are placed under the carding machine, and at right angles to the same; the carding machine is made to move sideways to the right and left, upon the railways, to such a distance as shall be necessary to vibrate the web, so that the cylinder may be wound and covered with the wool, as heretofore described. In order to produce the rotary movement of the cylinder, it may be more convenient to extend the vertical shaft that is attached to the carriage down through the floor of the carding room, and fix a small pulley on the shaft of the drum that drives the carding machine, and connect a band from this pulley to another long pulley fixed on another shaft that is suspended near the floor, parallel with the drum; on this shaft there may be another small pulley which is connected by a band to the pulley that is on the lower end of the vertical shaft. In order to give the movement to the carding machine, place a shaft on the drum under the floor of the carding room, and parallel with the carding machine, which shaft is made to revolve each way, and by attaching four chains to it, two of which may be made to pass up through the floor over friction rollers, or pulleys, and communicate with one side of the frame of the carding machine; the other two chains attached to this shaft are made to pass up through the floor over friction pulleys in the same manner, only in a reverse position, and are attached to the other side of the frame of the carding machine. These chains are so attached to the shaft or cylinder, that when the cylinder revolves one way, the chains that are connected to one side of the machine wind up, and the other let loose, and so *vice versa*. These chains are made tight, so that when the cylinder revolves either way, they immediately act upon the carding machine to move it as heretofore described. In order to give this movement to the shaft or cylinder, place a large bevel cog-wheel on one end of it; then fix another shaft at right angles with the same, with two small bevel cog-wheels on it that will mesh alternately into one or the other sides of the large bevel cog-wheel, and make it revolve, first one way and then the other. This last mentioned shaft is made, and operates similar to the sliding shaft described in the circular movement of the machine, and the same apparatus is fixed to slide it, except being made

Andres' Machine for Manufacturing Hat Bodies.

stronger and heavier. A little alteration in the manner of operating upon the shifting lever may be made by cords or arms, or both of them, as shall be found from the location of the same to be most convenient. The manner of communicating the power from the main drum or shaft to this sliding shaft may be by sets of reducing pulleys and bands, or gears, as shall be found most expedient from the size of the drum, and the location of the same. The hat body cylinder may be cut apart at the centre, and used in connection on the four conical rollers, without any material difference; but when they are used on two of these rollers it must be connected. In order to harden or season these hat bodies, a steam box or case of drawers is to be provided, to conduct the steam into the bottom or lower part of it. This box or case may be made of about thirty-two inches square, and three and one-half feet deep. In this case there may be four drawers that are made with flat bottoms, for the purpose of admitting the steam to the hat bodies on all sides. A table or bench is provided, which may be about five feet long, and two and one-half feet wide, which will answer for two basons. This table may be about two and one-half feet high, as may be convenient to tend the same. Next a crank of about four inch sweep, with a pulley attached to its shaft, for the purpose of revolving it with a band, is provided; this crank is placed at about two feet from the back side of the table near the floor, with bearings to revolve upon; to this crank there is a large piece of timber, which stands in a vertical position, rising to nearly the top of the table; through the top of this piece of timber there is a roll, which is made tight or fast in the same, with a bearing turned on each end of it—these two pieces form a cross. Two arms are then provided of about two feet in length, with a box in one end of them, to receive the bearing of the roll; these arms extend from the roll horizontally, and parallel to each other, and are united with the lower edge of a plank, with mortise and tenon or otherwise; the plank is about twenty-two inches long, five inches wide, and two inches thick; it has a gudgeon or bearing turned at each end at the lower edge of the same; two boxes are made which receive the gudgeons of this plank, bolted to the back or on the pleats of the table, about five inches lower than the top of it; from the top edge of this plank two brasses extend near the roll, and are made fast with screws or bolts to the arms; on the upper edge of this plank, near each end of it, there

Andres' Machine for Manufacturing Hat Bodies.

is an iron of about five-eighth inch diameter, about five or six inches long, standing in a vertical position; the upper ends of these irons are turned smooth, so as to admit another iron slipping upon them; next make another iron and turn a bearing on each end, then make two holes near each end of the size to slip on the ends of the turned irons that project from the edge of the plank. Two arms extend from the bearings of this last described iron, and one fastened to the top of the hardening plank, to raise and fall, according to the thickness of the bodies to be hardened, and also to swing or turn up, so as to admit the bodies being placed under it. The hat bodies are now steeped or evened when it is necessary; then take a cloth or paper that is shaped to be bodied, and put in the inner side of it, so as to keep them from sticking together; then lay them on a cloth large enough to wrap a sufficient number of bodies to harden, and lay a cloth on the top that will cover it, then another hat body, and so on, laying a cloth between each body, until there is enough to harden at one time, which will be from four to eight, according to the heft or substance you are making them. When wrapped up together, they are then taken to the chest and steamed, until they are quite damp, then taken out and placed under the hardening plank, and the said plank is set in motion, from five to fifteen minutes, with a weight or pressure upon them, when they are taken out of the cloths, and the folds changed so that those parts hardened are on the outer edge of the body, they are then steeped as before, and are subjected to the former process, only having the hardening plank made wide enough to cover all the parts that were not hardened the first time; then take out the cloths, and they are ready for planking. The plank that is made use of for hardening the bodies the first time is about two feet long, and about eight or ten inches wide at one end, and two or three inches at the other; the under side has the corners rounded off, to prevent it from straining the bodies; it is also covered with canvas to prevent its sliding or slipping on the same.

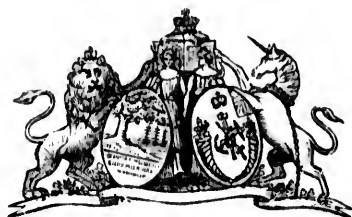
EXPLANATION OF THE FIGURES.—Figure 1.—*a*, Conical drum on the driving-shaft; *b*, central pulley; *c*, a pulley; *d*, the shifting lever; *f*, a block of wood that supports the shifting lever; *g*, sliding shaft; *g*, the dog; *h h*, bevel cog-wheels, of thirty-two teeth each; *i*, counter-revolving shaft; *k k*, the railways; *l l*, the frame of the railways;

Andres' Machine for Manufacturing Hat Bodies.

m m m m, the frame that supports the gears; *n*, a bevel cog-wheel with sixteen teeth; *o*, central pulleys; *p, p*, band. Figure 2—*a*, Section of figure 1; *d*, the shifting lever; *e*, a pulley; *f*, a block that supports the shifting lever; *h, h*, the cog-wheels; *g*, the dog; *m, m*, the frame; *q*, the sliding shaft; *r*, the spiral spring. Figure 3—*A*, a cylinder; *B, B*, conical rollers; *C, C*, guide trundles; *D*, cog-wheel on the vertical shaft, with sixteen teeth; *E*, vertical shaft attached to the carriage; *F*, pulley; *G*, the axles; *H, H*, supporters of the guide trundles. Figure 4—*a, a, &c.*, the four conical rollers; *b*, the inclined shaft; *c, c*, the vertical shaft; *d, d*, cog-wheels on the inclined shaft; *e*, pulley; *f, f*, cog-wheel with thirty-two teeth; *h, h, h*, frame of the carriage; *i, i, i*, the girts; *k, k*, the arms. Figure 5—The under side of the carriage; *LL, &c.*, sills of the carriage; *m, m, &c.*, trundles; *n, n*, axles; *o, o*, cams; *p*, pulley on the vertical shaft; *q, q*, segment; *r, r, r*, supporters of the vertical shaft; *s, s, s*, plank. Figure 6—*A* top view of the two conical rollers and four guide trundles; *t, t*, the frame; *u*, a cross piece of timber on which the irons are fastened that supports the large ends of the conical rollers; *v, v*, cross pieces that receive the supporters of the guide trundles; *w, w*, the guide trundles.

Figure 1—Hardening Box.—*b, b*, the irons with a bearing on each end that stops on to the vertical irons on the edge of the plank; *c, c, c, c*, the arms that are fastened to the plank. Figure 2—The plank or vibrator.—*e, e*, the arms; *f, f*, the braces; *g, g*, the gudgeons; *h, h*, the turned irons of the top of the plank; *i*, the roll. Figure 3 represents the machine in motion. *a*, the hardening plank; *b*, the iron; *c, c*, the arms that are fastened to the hardening board; *d*, the plank or vibrator; *h, h*, the irons which are turned on the top, and which stand on the upper edge of the plank; *i*, the roll; *K, K*, the bench frame; *b*, pulley; *m*, crank.

SAMUEL ANDRES.



A. D. 1830.—(LOWER CANADA.)—No. 14.

A Guage or Instrument to ascertain the Weight or Tonnage of Goods, &c., Shipped on board Canal Boats, &c.

LETTERS PATENT to Samuel Andres, the younger, of Blairfindie, in the District of Montreal, Trader, for the Invention of a "GUAGE OR INSTRUMENT TO ASCERTAIN THE WEIGHT OR TONNAGE OF GOODS, &c., SHIPPED ON BOARD CANAL BOATS, &c."

Quebec, dated 9th August, 1830.

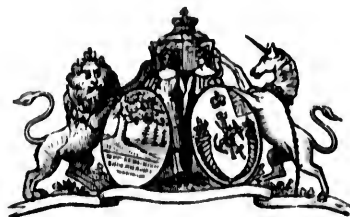
BRIEF DESCRIPTION.

One or more tubes, as occasion may require, are provided, of about an inch in diameter, having a grating in the end to admit the water; also being stopped in the bottom to prevent the rods going through, and to be of a sufficient length to reach from the gunwale, or sides of the boat, to the level of its keel or bottom, with an iron flat rod inside, graduated and numbered from one inch to fifty or more, the rod is hung loose by a hook, to the upper end of the tube, and the tube is provided with a hook to hang upon the gunwale, &c., of the boat; being hung on the gunwale when the boat is entirely light, the graduated rod is drawn out, and the height to which the water rises in the tube, ascertained by the number on the rod, which is noted down and indi-

Andres' Guage to ascertain the Weight or Tonnage of Goods, &c.

cates the basis on which all future calculations, as to the weight of the articles put on board, are to be made; (all the materials, masts, ropes, grappels, poles, utensils, &c., required, must have been previously on board,) the provisions, stores and crew, must then be embarked, and the rod again put down the tube, and drawn up again, and the number to which the water reached also noted down; then a full cargo, no matter what may be shipped, as large as the boat will be allowed at any time to carry, the weight of the whole of which cargo must be previously accurately ascertained, the rod being again put down, &c., the number to which the water reached is noted down, and the distance between that to which it rose, when the boat was light, and when loaded calculated in numbers, and apportioned into tons, hundreds, quarters and pounds, shows the exact weight of an entire cargo. A corresponding table being made of those numbers, viz: representing one ton, one cwt. one qr. &c., that table is the guide for ascertaining the weight of every future cargo, parcel of goods or articles put on board; for instance, the vessel being light, suppose first a quantity of iron is put on board, the rod will shew by the table the weight of that iron, to be, suppose, one ton three cwt.; next so many barrels of pork, and by dipping the rod, compared with the table, the weight of that part will be in like manner ascertained. Punctual care being always taken to note down the graduated numbers on the rod, to which the water ascends each time an additional article has been shipped. When any goods are put on board, the freight of which is calculated by the piece, by the tale or by measurement, the number must equally be taken down, in order to be a guide for the next article, but there is of course no occasion to compare it with the permanent table.

SAMUEL ANDRES.



A. D. 1830.—(LOWER CANADA.)—No. 15.

Improved Grist Mill.

LETTERS PATENT to Samuel Andres, the younger, of Blairfindie,
in the District of Montreal, Trader, for the Invention of an "IM-
PROVED GRIST MILL."

Quebec, dated 25th October, 1830.

BRIEF DESCRIPTION.

This Mill is calculated to grind all kinds of grain, and is possessed of the following advantages over other kinds now in use, viz: First, the stone being very small, from thirteen to twenty-two inches in diameter, makes the expense trifling, takes but very little room, is operative with one-third or one-half the power usually required to operate the common mills, whereby they can be operated on many small water privileges, which are of none or little use, in consequence of the deficiency of water to operate the common mills; and from the deficiency of water privileges in many parts of the country, they may be operated by horse or other power to advantage. Second, these stones are operated in a perpendicular position, or on a horizontal shaft, which gives a greater facility for the meal to discharge, thereby preventing all heating and clogging of the stones, whereby the meal

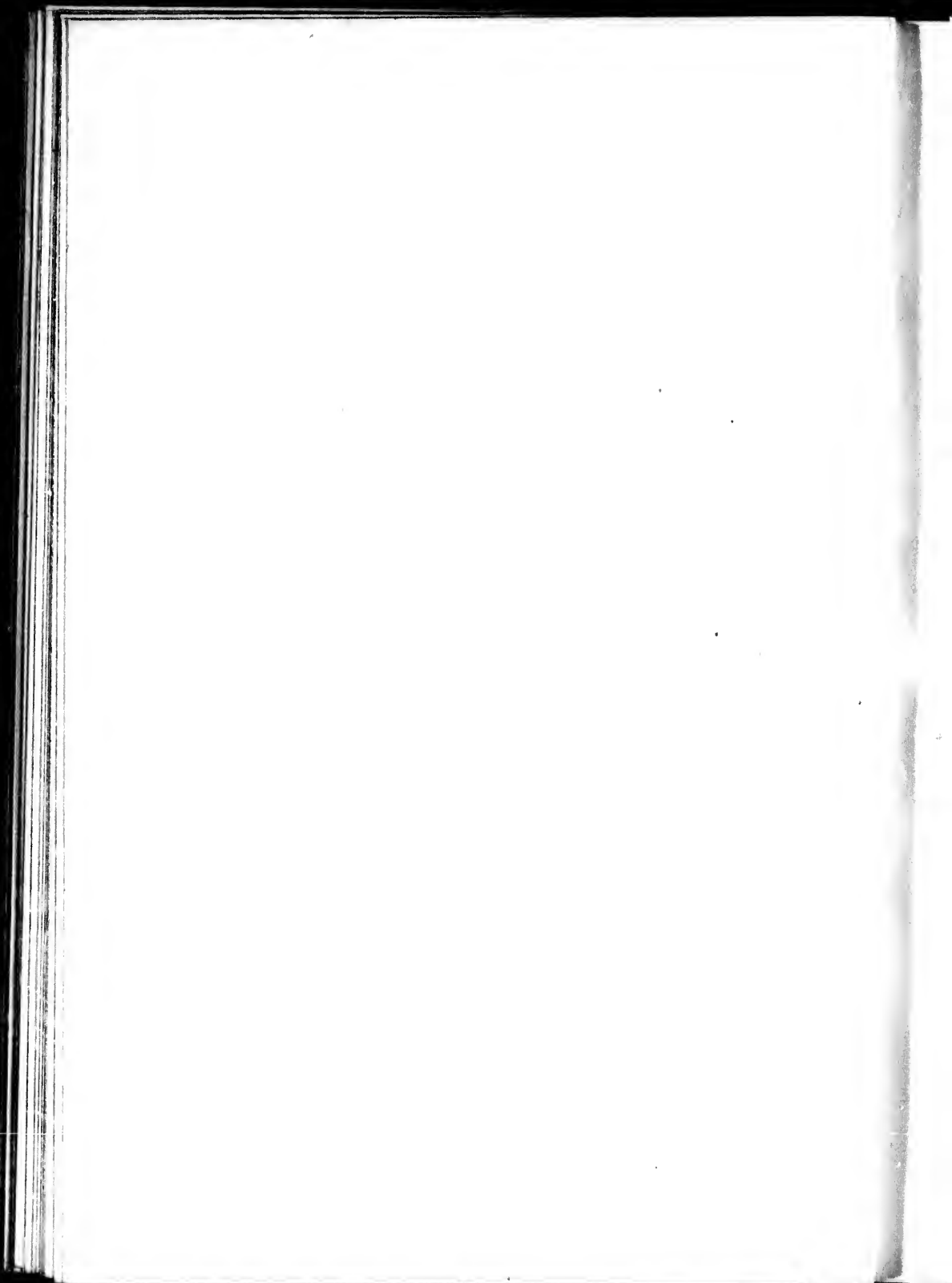
Andres' Improved Grist Mill.

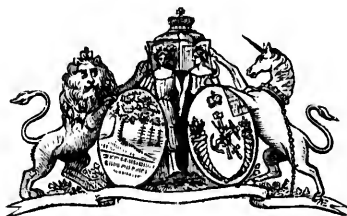
or flour is frequently injured in the common mills. For a mill where the stones are about nineteen inches diameter, prepare an iron shaft of about three and a half feet in length, with suitable bearings to revolve upon, fasten one of the stones on to one end and place it in a horizontal position, with suitable boxes to revolve upon; on the other end of this shaft there is a pulley fixed of about from twelve to thirteen inches in diameter, by which it receives its motion by a band from a drum below; next provide another stone, of the same diameter as the first, which is made with a hole about two inches in diameter, and commences at the back edge of the top of the stone, descending in a diagonal direction through the stone at its centre for the purpose of receiving its feed; at each horizontal edge of the stone there is an iron or trunnion, by which the stone is suspended by irons extending upward, and made fast to the inside of the frame,—at the centre of this bed stone, on the back side of it, there is an iron fixed with a loose joint, so as to admit of the stone to the runner, this iron extends through the frame or plank to a convenient distance, where a lever is attached to it, which lever is fastened to the frame at one end, while the other end is subject to a screw pressure whereby the stones are placed or crowded together, as is found necessary. In order to prepare a convenient frame for this mill to operate upon, join four pieces of timber into a square, which square must be about five feet four inches, by two feet eight inches; this square forms the sills of the frame. Then frame two posts into the long sills, near the centre of the same, these posts may be about two feet in length. There is also a girt which extends from one of these posts to the other, at a suitable height for the bearings of the shaft, next to the mill stone to rest upon; at the same height as this girt there are two more girts or plates, that extend nearly to the end of the long sills, and another girt framed across the end into each of them, which last plate forms a bearing for the boxes to rest which support the other end of the mill shaft; about eight inches from these posts there are two more posts framed into the long sills and a girt framed from each of these to the first mentioned posts. There are two more posts with a plank fastened to the back of them, which make a frame that has hinges attached to the lower end of them which hinges are fastened to the long sills, at such a distance from the other posts as to admit of this frame to turn up against them.

Andres' Improved Grist Mill.

This frame contains the bed stones and their hangs, and will admit of being turned down so as to admit of dressing the stones. There are two long bolts which serve to hold this joint frame in an upright position when the mill is in operation, which bolts are long enough to extend through all the posts. This frame is boarded upon the inside so as to conceal the mill stones. The hopper frame, hopper and shoe, are made similar to other mills. There is an iron attached to the back end of the shoe extending until it comes over the main shaft; from this iron there is another iron, which extends to the side of the main shaft, and the main shaft being made eight square it serves to jar or shake the shoe so as to deliver the grain. The speed to be given to these mills is from two hundred and fifty to five hundred revolutions per minute, according to the size of the stone. These small stones may be operated on a perpendicular shaft by applying the speed necessary; but in this case it will be expedient to fix a weight or pressure to the runner, as it will not be of sufficient weight to do good execution without it. In this case the bed stone must be made stationary, and cannot move to the motion of the runner, as in those mills which operate on the horizontal shaft.

SAMUEL ANDRES.





A. D. 1830.—(LOWER CANADA.)—No. 16.

Machine for Threshing Grain and Hulling Clover Seed.

LETTERS PATENT to John Manning, of the Township of Hinchinbrooke, District of Montreal, Yeoman, for the Invention of a
“MACHINE FOR THRESHING GRAIN AND HULLING CLOVER SEED.”

Quebec, dated 1st November, 1830.

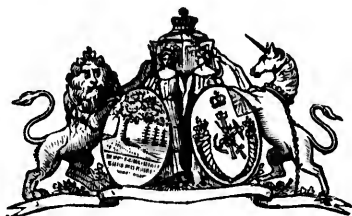
BRIEF DESCRIPTION.

A frame nearly square, and of such dimensions as will suit the power to be applied—one of two or three feet wide is sufficiently large for the power of one horse; within and crosswise to this frame is placed a concave bed of iron bars, of an inch square or something less; two or three of the bars at the upper part of the concave are to be of an octagonal form; the remaining bars in the lower part of the concave may be perfectly round, and the bars are to be placed at such distance from each other as to admit of the grains threshed from the straw to pass between them; and this concave of iron bars is to extend around a cylinder (hereafter to be described) about one-third part of the circumference of it; the uppermost of these bars should be of the same height as the centre of the cylinder. In this concave bed of iron bars is suspended on gudgeons, a cylinder, or skeleton of a cylinder, of about twelve or fifteen inches in diameter, which is sufficiently large for six or eight

Manning's Machine for Threshing and Hulling.

beaters, and the power of one horse; these beaters are cut in the form of a coarse screw, or they may be made of square bars of iron about three-quarters of an inch thick, or square, with notches cut therein, and placed on the cylinder in an oblique direction, so that the coarse thread of the screw, or the notches cut on the bars of iron, run lengthwise of the cylinder, nearly in a parallel line with the centre of it. The obliqueness of the beaters must be so great, that the forward end of one beater strikes upon the unthreshed straw before the hindmost end of the preceding beater has left it; thus no heads of grain pass unthreshed. This cylinder should come within one-fourth of an inch of the surface of the concave bed of iron bars, and there held down by springs, or springs may be placed between the concave bed of iron bars and the cylinder, so that both the bed of iron bars and the cylinder may give way and separate if any hard substance should come between them. The unthreshed grain may be introduced at the upper part of the concave bed of iron bars, by a slanting table or by an apron. This machine is put in motion by a band or belt attached to a wheel, which must be of such size, or be aided by a double gearing in such manner as to produce nearly or quite one thousand revolutions of the cylinder in one minute, and may be moved by hand or horse power. The bars of iron used in this machine may be of cast or wrought iron. The above machine may be made mostly of wood; in such case the beaters must be made of hard seasoned wood, and may extend lengthwise of the cylinder, in a parallel line with its centre; or the cylinder may be made of one solid piece of timber, with a sufficient number of beaters carved thereon, and the concave bed passing round one-third part of the circumference of the cylinder, may be also made of slats of hard seasoned wood, and such machine may do good execution when put in motion by hand power.

JOHN MANNING.



A. D. 1831.—(LOWER CANADA.)—No. 17.

Machine for Threshing Grain.

LETTERS PATENT to Amos Austin, of Bolton, in the District of Montreal, Yeoman, for the Invention of a "MACHINE FOR THRESHING GRAIN."

Quebec, dated 3rd January, 1831.

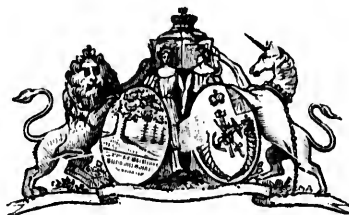
BRIEF DESCRIPTION.

The Machine need not be confined to any particular size, perhaps six feet in length, three in height, two in width, built with posts and beams, with a large wheel in proportion to the size of the frame, and attached to one side of it with an axle made fast to the wheel, reaching across the machine and moving thereon, attached to the frame with blocks and screws; the band passing from the large wheel is crossed and connects with a small whirl attached to the gudgeon of the cylinder, and moves it with great velocity. On the same gudgeon is another small whirl with a crossed band connected with another whirl, made fast to a roller extending across the machine, which moves a canvass that assists in drawing the grain to the cylinder. At the other end of the cylinder is another gudgeon with a fast whirl and band, connected to a whirl on a second roller, situated directly over the first mentioned, which assist in drawing the grain to the cylinder, where it is separated from the straw; the upper roller acts under a spiral spring

Austin's Machine for Threshing Grain.

at each end, which admits of raising when a thicker portion of grain than usual, or any other large substance passes through the machine. The canvass is spread the width and length of the machine, and is moved by a roller. At each end the cylinder has attached to it, six or more grooved pieces of cast iron, an inch and a quarter wide, the length of it, and made fast with large wood screws. Directly under the two wooden rollers which draw the grain to the cylinder, are six small grooved cast iron rollers placed parallel with, and which come nearly in contact with the irons attached to the cylinder, between which the grain and straw passes. There are likewise three small grooved wooden rollers nearly under the cylinder, to assist in throwing the straw from the machine. Each gudgeon of the cylinder moves within six brass rollers, in circular brass springs, which admit of the cylinder raising when any larger substance than usual passes through. The brass boxes are secured by two wooden caps made fast to the machine, with large wood or bed screws; two boards are attached to the top of the machine to keep the grain on the canvass.

AMOS AUSTIN.



A. D. 1831.—(LOWER CANADA.)—No. 18.

Machine for Manufacturing Crackers and Biscuits.

LETTERS PATENT to Samuel Andres, the younger, of Blairfindie,
in the District of Montreal, Trader, for the Invention of a
"MACHINE FOR MANUFACTURING CRACKERS AND BISCUITS."

Quebec, dated 3rd January, 1831.

BRIEF DESCRIPTION.

This improvement in the making and manufacturing of crackers saves much manual labour, and enables two persons to make as many in one day as ten men can in the same length of time by the common operation. The crackers are of a superior quality, and uniform as to size and appearance. The description of the machine will appear by looking at the draft hereto annexed, together with the specification thereof, as below set forth, viz : Plate No. 1 is a horizontal view of the machine, or ground-plan, and described as follows : Letter *a* represents the bed of the table on which the dough is placed, and which moves horizontally from right to left by means of ropes or chains attached to the ends of the table, making the same pass between two rollers, as will more plainly appear by reference to plates Nos. 2 and 4 ; B represents the bottom part of the frame, to which dockers are attached, which press, dock, cut and stamp the crackers ; *i i* represent the uprights in which the frame of the dockers moves or slides, as will

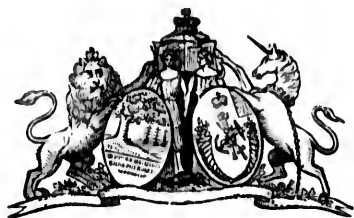
Andres' Machine for Manufacturing Crackers and Biscuits.

more clearly appear in Nos. 2, 3, and 4; *c* represents the top roller moving, as laying on ribbons attached to the table for the purpose of equalizing the thickness of the dough, and preparing it for pressing and cutting up, to the end of which is attached a crank, as represented in letter *D*; *H* represents the cog-wheel of the upper roller; *j j* represent the two uprights in which the rollers are placed, as represented in plates Nos. 3 and 4, by letters *c c*; *e e* represent the side pieces and grooves on which the table moves, as represented in plates Nos. 3 and 4, by letters *e e*; *F* represents the end piece which connects the sides, as is also represented by letter *b*, in plate No. 2; *g g g g* represent the legs on which the frame stands, as represented in plates Nos. 2, 3, and 4, by letters *a a*; *D* represents the crank. Plate No. 2 is an upright end view of the machine, and described as follows: Letters *a a*, the legs; *b*, the end piece connecting the sides; *c, c*, the side pieces passing through the legs, *a a*; *d*, the under roller, as represented by the dotted lines, on which the table rests; *e e e*, pieces fastened to the under side of the table, by means of the screws, and resting on the bottom roller which supports the table, between which the ropes or chains pass which propel the table from right to left; *f*, the end view of the table, represented in plate No. 1, as letter *a*; the perpendicular lines in the shaded part of the letter *g*, represent the space between the dockers; *h*, the bottom piece of the frame to which the dockers are attached, through which wires pass, which, in the operation of the machine, push the crackers from the dockers; *i*, the open space between letter *h* and the perpendicular lines, representing the top of the wires, which are fastened to the frame above, as represented by dots; *j* stands permanent, being fastened in uprights *o o*, through *p p*; *o o*, the uprights of the outer frame; *p, p*, slides of the frame; *k*, the top piece of the docker frame, on top of which is a nut, which receives a screw which moves the frame to dock and press the cracker; *C*, the screw, one-fourth of a revolution of which raises or depresses the frame half an inch, or thereabouts; *m*, the lever attached to the screw; *N*, the top piece of the water frame, to which the screw is fastened, which moves the docker frame; *d*, the crank on the top roller; *r r*, the ends of the rollers on which cog-wheels are placed, of equal size, meshing into each other, as appears by letters *g g* in plate No. 4; the dotted lines through the centre of the above represent the two rollers.

Andres' Machine for Manufacturing Crackers and Biscuits.

Plate No. 3 is an upright view of the right side of the machine, and is described as follows, viz.: Letters *a a*, the legs; *b*, the bottom piece which supports the uprights *c d*; *e e*, side pieces; *c*, the upright in which the rollers are placed, which is attached to the side piece *e*, by bolts or screws; *d*, the upright of the outer frame, as represented in plate No. 2, letters *o o*; *l*, mortises on the top of the outer frame, as represented by the letter *n*, plate No. 2; *k*, the lever which moves the screw, as represented by letter *m*, plate No. 2; *f*, side view of bed of the table *a*, plate No. 1; *g*, the crank represented on the upper roller, which may be thus used if necessary to gain additional power and force; *h h*, boxes or followers which keep the rollers in their places, by wedges or screws; *i*, the cap piece through which the screw *j* passes, to move the box or follower *h*; *j*, the thumb-screw. Plate No. 4 is a left view of the machine; is similar to plate No. 3, with the exception of the crank, having in addition the cog-wheels which move the rollers, to which they are affixed.

SAMUEL ANDRES.



A. D. 1831.—(LOWER CANADA.)—No. 19.

Improved Striking Clock.

LETTERS PATENT to John McCanna, of the Seigniori of St. Armand, Distriet of Montreal, Clock Maker, for the Invention of an "IMPROVED STRIKING CLOCK."

Quebec, dated 1st March, 1831.

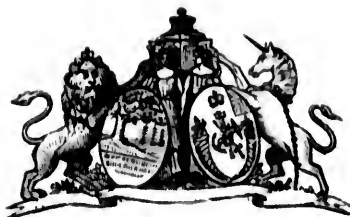
BRIEF DESCRIPTION.

The striking clocks now in use have four wheels in the striking part; in the improved clock there is but one wheel in the striking part; this wheel has seventy-eight teeth, the number of blows that the clock strikes in twelve hours; this wheel turns round twice in twenty-four hours. To regulate the number of blows for the different hours, there are pins in the web of the wheel, as represented on the plan herewith transmitted; for one blow there is left the space of one tooth between the pins; for two blows the space of two teeth, and so on around the wheel. Figure 1 represents the hammer. Figure 2 represents a piece attached to the hammer handle, which rests on the pins in the wheel; this piece is made to turn or raise by a joint, when it is attached to the hammer handle. Figure 3 represents the lifting piece. Figure 4, a lever, one end of which is attached to an arbor, the teeth of the wheel resting on the other end of it. Figure 5, a balancee which is attached to the same arbor with the hammer; the object of this

McCanna's Improved Striking Clock.

balance is to assist in raising the hammer after it falls back. A pallet (so called) is formed in the arbor on which the hammer is fastened, as described by figure 7 in No. 2; the teeth in the wheel strike against this pallet; by this means the blows are effected. Figure 6 represents a snail which turns round once in each hour. This snail raises the lifting piece described by figure 3; the lifting piece raises the piece described by figure 2 off the pin or pins in the wheel; the hammer then falls back; at the same time the lever described by figure 4 falls back from the tooth; a tooth of the wheel then strikes the pallet, which raises the hammer and gives a blow; at the same time the lever (figure 4) is raised to its place by a spring and catches the next tooth, the spring being attached to the two arbors. The clock as now described has struck one blow; thus it continues to strike until the next pin comes to the piece described by figure 2, which then rests on the pin, and stops the clock from striking till raised off by the snail and lifting piece at the next hour.

JOHN McCANNA.



A. D. 1831.—(LOWER CANADA.)—No. 20.

New and Improved Threshing Machine.

LETTERS PATENT to Frederick Singer, of St. Philip, District of Montreal, Merchant, for the invention of a "NEW AND IMPROVED THRESHING MACHINE."

Quebec, dated 2nd March, 1831.

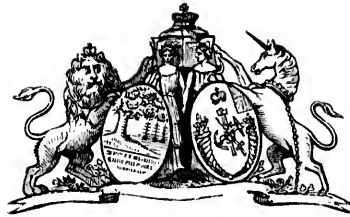
BRIEF DESCRIPTION.

1st. A frame of wood from five to six feet long, from two to four feet wide, and from two feet nine inches to three feet high. 2nd. An inclined hopper into which the grain is put, and slides to the rollers. 3rd. A pair of fluted rollers, one three and three quarter inches, the other seven inches, which feed the unthreshed grain into the wire pickers of the open cylinder; the pickers carry the straw over the top, between the cover and the cylinder; the grain dropping down through the openings. 4th. A girt framed in, over the fluted rollers, made concave, of the circle of the periphery of the pickers, and cover of boards; one hundred and fifty degrees of a circle, to where the straw is thrown off the prickers, after passing up over the cylinder. 5th. Crown wheel, on the upper fluted roller shaft, about two feet in diameter, and pinion on cylinder shaft of such size as to give the cylinder from six to eight revolutions, to the rollers one. 6th. Levers

Andres' New and Improved Threshing Machine.

with weights on one end, and boxes on the other, on which the journals of the lower fluted rollers rest: The weights let the lower roller yield when the grain feeds through the roller. 7th. An open cylinder made with a shaft through its centre, heads or arms, at each end, and eight parallel pieces two inches square, through which the pickers of wire are put that thresh the grain; said parallel pieces are made fast to the circumference of the heads or arms, the pickers to project twelve inches beyond the parallel pieces, their points revolving close to the rollers' concave girt, and covering the teeth, four times the size of the wire apart. What is claimed as new, and considered as the improvement in the above described machine, and what the exclusive privilege asked for, is the manner of feeding; and its operation on the grain being backwards, which threshes the loose heads, and its being new in almost all its parts.

SAMUEL ANDRES.



A. D. 1831.—(LOWER CANADA.)—No. 21.

*Tread - Wheel or Endless Chain for propelling
various kinds of Machinery, with either Water or
Horse-Power, &c."*

LETTERS PATENT to Samuel Andres, junior, and Stephen R. Andres, of Blairfindie, District of Montreal, Traders, for the Invention of a "TREAD-WHEEL OR ENDLESS CHAIN FOR PROPELLING VARIOUS KINDS OF MACHINERY, WITH EITHER WATER OR HORSE POWER, &c."

Quebec, dated 14th March, 1831.

BRIEF DESCRIPTION.

This improvement in the propelling of machinery by the tread-wheel or endless chain enables various kinds of machinery to be erected in places destitute of falls of water or other conveniences, and also possessing advantages over the wheels now in use, in requiring less space and force to propel the machinery attached to them, and by the deficiency of water privileges in many parts of the country; they may be operated by horse or other power to advantage; and also a superior power can be obtained by the use of the endless chain or band, as specified in plate No. 1, known by the name of a current wheel, which enables machinery of any kind to be operated by a swift or gentle current of water. Plate 1 represents a current wheel which can be propelled by a swift or gentle current of water; letters *a a* show the endless chain or band, to which the paddles are fixed, and which

Andres' Tread-Wheel for propelling Machinery

revolves round the leading wheel, marked *b*, and the follower, marked *d*, placed in a swift or gentle current of water; letter *b* represents the leading wheel placed at the head of the current, and is formed of such dimensions as the force and depth of the water may require, having a shaft attached to it which carries the spur-wheel, denoted by the letter *c*; letter *c* marks the spur-wheel, which moves the machinery; letter *d* shows the following wheel placed at any particular distance from the leading wheel, as the force of the current may require, and by use of which the endless chain performs its various revolutions; letter *e* represents the moving paddles which are attached to the endless chain or band, and which extend to catch the force of the water in their descent, and regulated to their position by the brace chain, marked by the letter *g*; in their descent falling back on the endless chains or bands, on their return towards the leading wheel. Letters *fff* represent a side view of the frame, with the upright posts, ground plate, braces and friction roller beam, which supports the leading wheel, marked *b*, and the following wheel, marked *d*, the frame being sunk in the current or bed of water by weights placed on the bed of the ground plates; letter *g* represents an end view of the friction rollers which support the chain from sagging; letters *e e*, figure No. 2, represent a ground view of the said paddles, attached to the endless chain by means of bolts and screws. Plate No. 2 shows the plan of a tread-wheel, the similar frame being used as to the current wheel; letter *a* represents the endless chain or band moved by one or more horses, on an inclined plane, made the difference of the dimensions, resulting from the diameters between the leading wheel *b*, and the following wheel *d*, supported under the floor on which the horse or horses walk, by friction rollers, to prevent the sag of the endless chains or bands; letter *b* represents the leading wheel, round which the chain revolves, and to which is attached the spur-wheel by a shaft, as in plate No. 1 letter *b*; letter *c* shows the spur-wheel which moves the machinery; letter *d* marks the following wheel, to which is attached the balance wheel, which steadies the motion of the tread-wheel, and is connected to the follower by a shaft; letters *e e* represent the floor, attached to two or more chains or bands, as may be required, the floor being formed of strips of timber or plank, on which the horse or horses move to propel the machinery; letters *h h* represent the horse treading

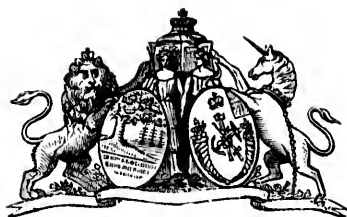
Andres' Tread-Wheel for propelling Machinery.

on the inclined plane, marked *e e*; letter *I* shows the balance attached to the following wheel, marked by a shaft, which gives a regular motion to the tread-wheel and machinery; letter *j* shows an end view of the friction rollers resting on the beam, as marked by letter *g*, plate 1. Plate 3 shows the plan of a Shelling Machine, with its various appendants, for shelling wheat, rye, barley, peas, beans, oats, Indian corn, and for breaking flax or hemp—shelling, dressing and cutting the straw at the one operation, and taking the tares from the wheat by means of endless chains; letters *a a* represent the endless chains or bands, which shell the grain by means of long strips of fluted iron, which are attached to the endless chains and bands, fastened to them with nuts and screws, and the fluted irons mashing into each; the strips of iron being placed at regular distances from each other, form apertures for the grain to fall down on the shoe, marked by the letter *d*; letter *b* represents the circular wheel, on the surface of which cutters are fixed for cutting the straw, after having passed through the mashers, is thrown out at an opening at the outer part of the machine, moved by a band which revolves round a wheel fixed on one of the leading wheels, marked letter *I*, No. 2; the circular wheel can be taken off at pleasure by the unscrewing of a nut marked *b*, when the machine is to be used for the breaking of hemp or flax; letter *c* represents the apron spread between two rollers, marked *k k*, which is attached by a band to one of the leading wheels, (marked *I*, No. 1), and round the innermost roller, marked *k*, which causes the apron to revolve round the rollers *k k*, and feeds the machine by spreading the sheafed grain on the apron; letter shows the side view of the shoe which conducts the grain to sieves, and is shaken by a rod, which is connected by a crank to the winged shaft, marked *m*; letters *e e e e* represent the sieves and screws which are placed on the shoe dressing the grain, the chaff passing off by an opening at the end of the mill; letters *f f f f* represent the side view of the frame, in which the said moving machinery is placed; letter *g* represents the fan, which being attached by a band to one of the leading wheels, marked by letter *i*, No. 1; the said fan blows out the dust and chaff from the solid grain, which escapes as before mentioned; letters *i* No. 1, *i* No. 2, *i* No. 3, and *i* No. 4, show the four leading wheels, round which the endless chains or bands revolve; letters *i* No. 1, and *i* No. 2, are stationary

Andres' Tread-Wheel for propelling Machinery.

wheels, and only to be removed when dressing or taughtening the lower chain or band; but the leading wheels, marked *i*, Nos. 3 and 4, can be removed at pleasure, and instead of the upper chain or band, leading wheels, Nos. 3 and 4, small rollers can be used as represented by figure No. 5—plate 4, by letters *n n*; letter *h* shows the front view of a box, into which the grain falls, and by a small door in front can be taken out at pleasure; letters *k k* represent two small rollers which serve to taughten the apron, and by the band attached to letter *i* No. 1, revolves round the centre, and moves the apron to feed the mashers; letters *B E* represent the nut which screws the circular wheel, marked *b*; letter *m* shows a small crank fixed on to the fan, marked *g*, which is connected to the shoe by a rod; letter *n*, figure 5, represents an end view of the rollers or cylinders, on which pieces of fluted iron are fastened, which move by small cogs or mashers; letter *a* represents an end view of the friction rollers, placed so as to hinder the endless chain from lowering in the centre; letter *P* shows a ground view of the pieces of fluted iron attached to the endless chain; letter *g* represents a ground view of the sieves and views. Plate No. 4 represents the endless chains or bands when placed in a perpendicular position, revolving round two drums or wheels, with buckets attached to them, requiring less water to effect the same purposes than that required by an overshot wheel. Figure 1 shows a front view of the endless chains and buckets; letters *a a* show a front view of the buckets attached to the endless chains; letters *b b* show the endless chains to which the buckets are hung, which wind round the drums. Figure 2 shows a side view of the machine and an end view of the buckets; letter *a* represents the buckets which are attached to the endless chains, in the centre of the buckets; letter *b* represents the endless chain; letters *c c* show the drums round which the endless chains revolve; letter *d* shows the upright post in which the gudgeons play, and which the drum revolves on; letter *e* marks the spout from which the water issues that fills the buckets; letter *f* marks the water falling into the buckets; letter *g* marks the staple that confines the buckets to the endless chains; letter *h* marks the cogs that play into the open spaces of the endless chains.

SAMUEL ANDRES.
STEPHEN R. ANDRES.



A. D. 1831.—(LOWER CANADA.)—No. 22.

New and Useful Machine for Threshing Grain.

LETTERS PATENT to Edouard Belanger, of River Ouelle, County of Kamouraska, District of Quebec, for the Invention of a "NEW AND USEFUL MACHINE FOR THRESHING GRAIN."

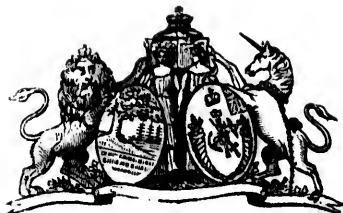
Quebec, dated 30th March, 1831.

BRIEF DESCRIPTION.

A frame of wood of about six feet long, two feet six inches wide, and three feet six inches high, with a cloth on rollers, which cloth is in the form of a hopper, and the rollers being turned by a wheel, draw in the grain which is threshed by a cylinder, and six bars of iron, which strike close to six others of iron, and three of wood; there is a roller that turns with about one quarter the velocity of the cylinder, which holds the straw while the cylinder threshes it; the roller and cylinder are on springs, so as to prevent the straw from bursting them. The cylinder is placed on a box that opens in two, inside of which there are six rollers, on which the cylinder rolls so as to work easy. The whole is performed by wheels turned by straps, and no cranks, and by horse or manual power.

EDOUARD BELANGER.

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A. D. 1831.—(LOWER CANADA.)—No. 23.

New and Useful Grist Mill.

LETTERS PATENT to Uriah Daily, of Bolton, County of Stanstead,
District of Montreal, Yeoman, for the Invention of a "NEW AND
USEFUL GRIST MILL."

Quebec, dated 7th April, 1831.

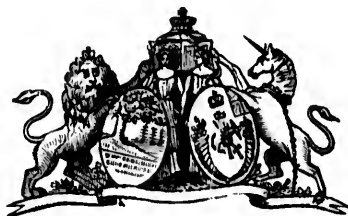
BRIEF DESCRIPTION.

The frame should be built of heavy timber, three feet in height, three feet in width, from four to eight feet in length; deep timbers must be attached to support the stones, which may be from one foot to four in diameter; the bed stone must be bedded into the deep cross timbers, half the thickness of it, and confined with iron bolts and screws; a curb must be made in two parts, one-half to be placed under and the other over the stones; a small part of the curb being cut away from the under sides of the stones, and a wooden spout being attached, will convey the meal to the bolt or trough; the mill to be fed as usual from a hopper and shoe, through a hole drilled obliquely, the bed stone to the centre; these stones may not only stand perpendicular (as seen on the draft), but may be placed horizontally, and the under one move and feed through the centre of the top one, which must be made fast with iron screws. Both stones may run by having the shaft of one stone hollow, and a deep screw braced within it, to conduct the

Daily's New and Improved Grist Mill.

grain between the stones for grinding. Instead of one leather band connecting with a drum underneath the machine, and over a whirl on the shaft the stones hang on, there may be two straps, one acting on the whirl of one shaft, the second in like manner on the other, and one crossed, to cause an opposite motion of the stones. The stones must be brought in contact by means of a screw, to grind fine or coarse; the face of the stones must be in the fashion of common mill stones; the mill may be propelled by hand, horse, or water power. The point of the screw that is used to bring the stones closely together, for the purpose of grinding fine, must be pointed with steel, and the shaft or shafts must run on cast iron or flint stone.

URIAH DAILY.



A. D. 1831.—(LOWER CANADA.)—No. 24.

*New and Useful Improvement in the Construction
of Steam Engine Boilers, called "Safety Steam
Boiler."*

LETTERS PATENT to John C. Douglass, of the City of Montreal,
Engineer, for the Invention of a "NEW AND USEFUL IMPROVE-
MENT IN THE CONSTRUCTION OF STEAM ENGINE BOILERS, CALLED
SAFETY STEAM BOILER."

Quebec, dated 27th September, 1831.

BRIEF DESCRIPTION.

The particular improvement for which I, the said J. C. Douglass, claim a patent, is the application or combination of well-known machinery in the manner hereinafter stated, to prevent a highly rarified state of steam, or a vacuum from being formed within the boiler, at the bottom thereof, or parts most directly exposed to the action of the fire, and thereby to prevent the explosion of steam engine boilers, as pointed out and delineated on the accompanying diagram, being No. 2, liable to be varied in size and proportion to a very great extent, and also in parts of the combination, as is hereinafter set forth; K is intended to represent a longitudinal section of the steam engine boiler, of which *ff* represent the lower surface, or surface more directly

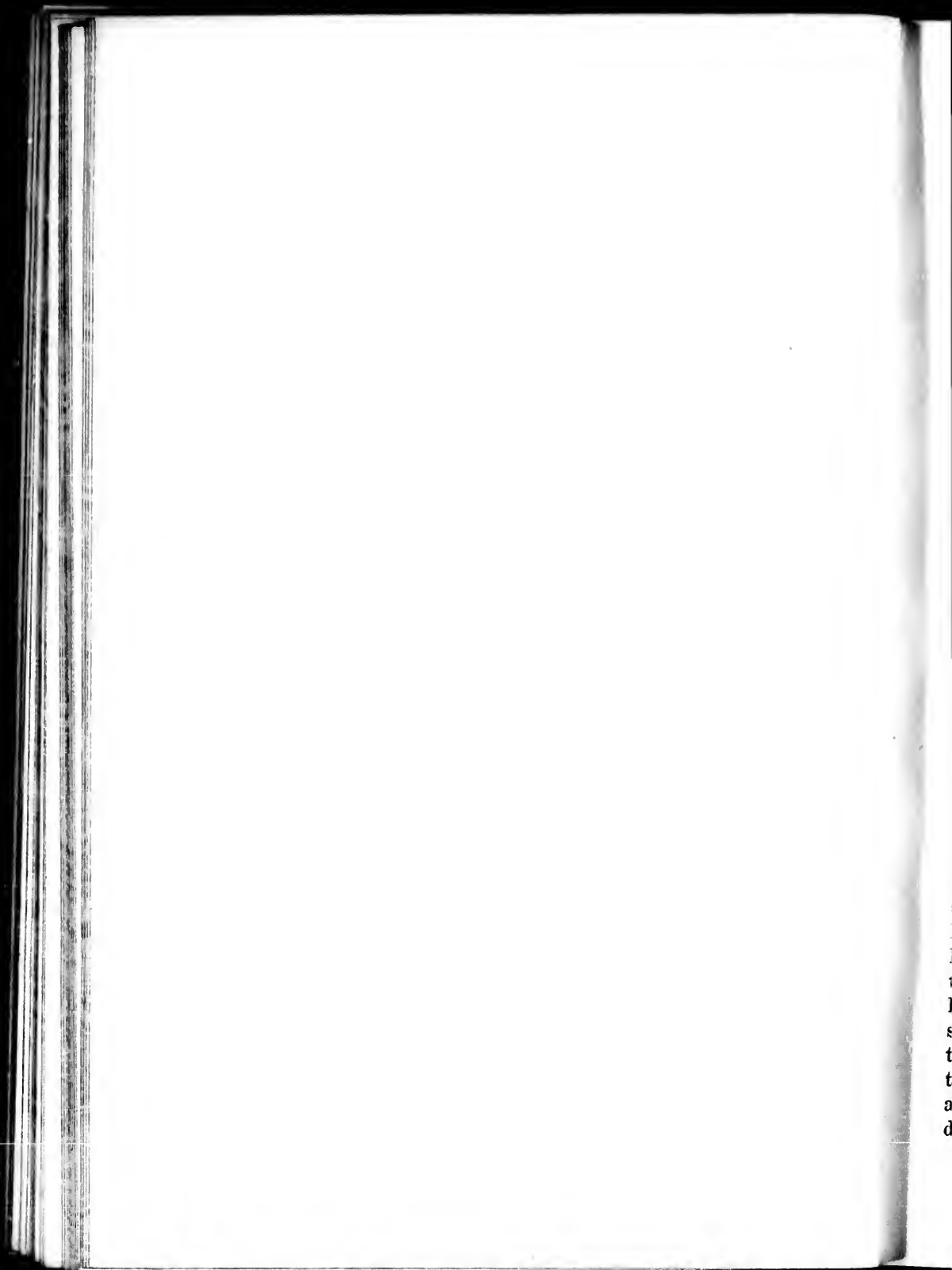
Douglass' Safety Steam Boiler.

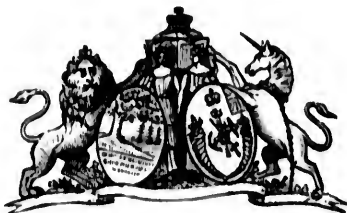
exposed to the action of the fire; E, a conduit constructed of metal or other firm material, introduced into, and connected with the boiler, as near as can be to the lower surface of it; the conduit is turned upwards to a height corresponding with the height which is required for the water to stand in the boiler; at the termination of the external end of the conduit, a valve, D, is placed so, that when the pressure from the boiler, through the conduit, exceeds the ordinary pressure without, the valve will close. When there is a vacuum or rarification within, whereby the internal pressure is wholly or partially removed, then the valve will open and admit the atmospheric air, and such is all the combination required for the admission of air into the boiler. But the combination may be more usefully extended for the purpose of introducing water instead of air into the boiler; for this purpose the conduit E, with the valve D, is formed and prepared as before; this conduit may be varied in size, both for air and water, and be introduced into the boiler, either through the lower surface thereof, or contiguous thereto, or nearly so, and the valve may be constructed in the end or the side of the conduit, as in the diagram. For the purpose of creating a supply of water, the said conduit terminates in cistern G, which may be constructed of any size or shape; this cistern should be so located, and of such dimensions, that the water in the cistern can always be kept on a level with the water in the boiler, at its ordinary height, without filling the cistern. On the top of the cistern a reservoir, H, is placed for the purpose of supplying the cistern and boiler with water when necessary; B is a valve fixed on the bottom of the reservoir for the purpose of permitting the water to flow into the cistern; the reservoir may be placed, if more convenient, not on the top, but at the side, or near the cistern, so as to discharge the water when the valve is open into the cistern, by a conduit; and the valve B may be placed in any other place more convenient than in the bottom of the reservoir, or in the conduit for the purpose of discharging the water from the reservoir into the cistern; G is a ball float, or weight, suspended from the end of the beam A; to the other end of which beam is attached, by a proper fastening, a rod to the valve B, so that as the end of the beam to which G is attached, descends, the valve B is opened. Now when, in consequence of the deficiency of water in the boiler, the water passes from the cistern G into the boiler, the float ball or weight G, which is sustained

Douglas' Safety Steam Boiler.

by the water in the cistern, descends, and thereby raises the beam which opens the valve B, from the reservoir to the cistern, and thus permits the water to pass out of the reservoir into the cistern, until it receives a sufficient supply, when the valve B is again closed by the ascent of the float ball or weight G. The pivot of the beam A may be either in the centre or approaching one end, as is found most convenient; R is the piston chamber; S is the piston; I is the steel yard attached to the piston, which serves as a balance, and at the same time shows the force the steam has attained, by the pressure of the steam upon the piston which presses it upwards, and brings down the end of the safety valve beam, which uplifts the valve, and allows the surplus steam to escape; as the steam gains force, it shows every pound, by pulling up the index of the steel yard; N is the safety valve; P, the pulley for working the end of the lever, by means of the piston; M is the balance of the given weight the boiler is calculated to carry. It is not the safety valve, nor the beam with the weights, but the appendages annexed thereto, that I claim as part of my improvements. The object and benefit of the said discovery and invention is to prevent such a vacuum or rarified state of steam within the boiler, nearest to the lower surface, or surface exposed most directly to the action of the fire, by a combination of machinery, for the purpose of keeping the lower interior surface of the boiler, or surface most directly exposed to the action of the fire, at all times covered with water, or a sufficient supply of steam and air to prevent a vacuum or too great rarification.

JOHN C. DOUGLASS.





A. D. 1831.—(LOWER CANADA.)—No. 25.

*New and Useful Invention and Composition for
Preparing Lamps and Chandeliers for producing
Light similar to Gas.*

LETTERS PATENT to John Ratcliff, of Odelltown, in the District of
of Montreal, Trader, for the Invention of a "NEW AND USEFUL
INVENTION AND COMPOSITION FOR PREPARING LAMPS AND
CHANDELIERS FOR PRODUCING LIGHT SIMILAR TO GAS."

Quebec, dated 3rd October, 1831.

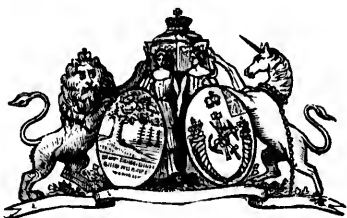
BRIEF DESCRIPTION.

Specification of Lamps and Chandeliers in which spirits of turpentine and alcohol are used for producing light similar to gas. Ordinary Lamps and Chandeliers must necessarily undergo an alteration, by lengthening or shortening the tubes, as occasion may require, together with the tightening thereof, namely, the stopping air holes in common Oil Lamps and Chandeliers, to prevent unnecessary evaporation. To produce light from alcohol and spirits of turpentine, mix equal or unequal parts of each; agitate them well together, let them stand awhile and the alcohol will be combined with a proportion of the turpentine, which will be about one-sixth part; draw off the top which is the combination, and it is ready for use.

Ratcliff's Chandeliers for producing Light similar to Gas.

Let the alcohol be ninety per cent. above proof. Take one part of the turpentine to five of alcohol, shake them until the turpentine is completely cut. The same kind of wick to be used as in common lamps and chandeliers. This composition produces a peculiar steady agreeable light, without the inconvenience of snuffing, as is unavoidably necessary with oil and candles, this effect is also produced without the least stain or soiling the vessels, which is most desirable; and when the light is blown out, it is perfectly extinguished without any disagreeable smell or fire remaining on the wick, as the wick does not consume by the flame.

JOHN RATCLIFF.



A. D. 1831.—(LOWER CANADA.)—No. 26.

*Machine for Threshing all kinds of Grain and
Hay Seed.*

LETTERS PATENT to John Ratcliff, of Odelltown, in the District of
Montreal, Trader, for the Invention of a "MACHINE FOR THRESH-
ING ALL KINDS OF GRAIN AND HAY SEED."

Quebec, dated 3rd October, 1831.

BRIEF DESCRIPTION.

Specification of the threshing machine, for threshing all kinds of grain and hay seed, to be propelled by horse, steam, or other power attached thereto. This machine is composed of a cylinder from ten to fifteen inches in diameter, having three heads of hard wood, from two to three inches in thickness, these heads are secured by firm plates of iron and banded, each being made fast by screws and rivets, the heads being covered by staves or logs which form the body of the cylinder at regular distances. On the said cylinder are placed wrought or cast iron beaters, firmly secured by screws or rivets, which run through the staves or logs into the heads, and are also secured by two wrought iron bands, or may be dispensed with. The cylinder has through its centre a wrought iron shaft, being from one to two inches square with its arbours made round and smooth, the same being made to run in regular friction bushes, either composed of copper or bell metal. Around the arbour are placed six rollers, two callers and case. The

Ratcliff's Machine for Threshing Grain and Hay Seed.

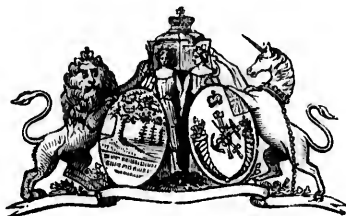
cylinder has under it a bed or concave, of from six to ten cast iron rollers, which revolve only by the friction of the straw as it passes through the machine. The grain being put into the machine by means of an apron on which the straw is laid, which feeds the machine; said cylinder is relieved by spiral springs, to accomodate a large or small quantity of grain; being placed in a frame of suitable size.

JOHN RATCLIFF.

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A. D. 1831.—(LOWER CANADA.)—No. 27.

Improvement in the Lever Power, so as to be applicable to the movement of all Machinery.

LETTERS PATENT to Hugh Henry, of St. Francois, District of Three Rivers, Esquire, for the Invention of an "IMPROVEMENT IN THE LEVER POWER, SO AS TO BE APPLICABLE TO THE MOVEMENT OF ALL MACHINERY."

Quebec, dated 19th November, 1831.

BRIEF DESCRIPTION.

This machine is composed of a frame, in which are placed two cog or spur-wheels, each upon a main shaft, connected by two cranks in the centre, working into two spur-pinions, having two fly-wheels upon the same shaft with the spur-pinion wheels; to the main shaft also are attached two paddle-wheels, of the nature of the paddle-wheels used in propelling steamboats. This machine is also composed of an upright supporter or stander, which supports a lever connected with the cranks of the main shafts, by means of a connecting rod or pitman; at a certain distance from the above supporter or stander, are two other supporters or standers, which support two other compound levers by means of two centres, which they act upon; these compound levers are

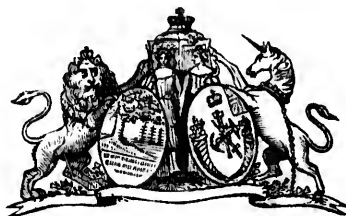
Henry's Improvement in the Lever Power.

attached to the first lever by means of another pitman or connecting rod, which increases the power of the first lever. This machine will answer to raise the greatest weight, and is also applicable to put in motion mills of all kinds, or boats of any description, or any other machinery which water or wind, or any other moveable power require. What I claim a patent for, is the compound lever to be used jointly and separately, according to circumstances.

HUGH HENRY.

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A. D. 1831.—(LOWER CANADA.)—No. 28.

*Improvement in the manner of Building or
Constructing Bridges.*

LETTERS PATENT to Amable Duchaine, of Ste. Marie de la Nouvelle
Beauce, District of Quebec, for the Invention of an "IMPROVE-
MENT IN THE MANNER OF BUILDING OR CONSTRUCTING BRIDGES."

Quebec, dated 30th November, 1831.

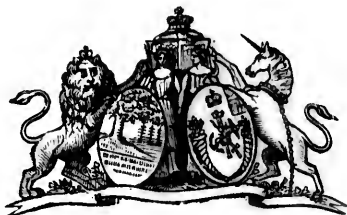
BRIEF DESCRIPTION.

This bridge need not be supported in the middle, to the end that the current or ice may not shake or injure it, by overthrowing the piles and the supports; it need only be sustained by its two extremities, placed on each bank of the river. This bridge will, by its construction, resist invincibly the force of gravity, which occasions other bridges to fall in the middle; it will also counterbalance that force of gravity. The principles upon which the strength and solidity of this bridge repose are these:—The first and fundamental principle is the centre of gravity; this bridge is composed of two parts, of which each is placed upon a base, which serves it as a point of support, but in such a manner that the extremity planted on the shore may be at least as heavy, and indeed heavier than the part which advances over the water, to cross or cover the river. The second principle is, that the two halves

Duchaine's Improvement in Building or Constructing Bridges.

of the bridge unite in the middle of the river, and support each other mutually, so as to preclude the one or the other from yielding, weighing down, or falling into the river, supposing that the counterpoise of the part supported on the land was not altogether sufficient to prevent that part which extends over the water from gravitating. The third principle is, that the pieces placed upon one another, to form each of the two halves of the bridge, advancing always over the water, at five feet more or less in each row, are so fastened, bound with, and inserted into each other, as never to disunite, and form of the two halves of the bridge, but one whole, as if it was altogether formed of one piece. The models also present a variety of bridges invented upon these principles, &c. One of these constructions, instead of having but two parts, the bridge has many parts constructed upon similar bases, whenever the river is intersected by one or more islands in the middle of such elevation that neither the stream nor the ice could injure the edifice upon them.

AMABLE DUCHAINE.



A. D. 1831.—(LOWER CANADA.)—No. 29.

Soap Cutting Machine.

LETTERS PATENT to John Mathewson, of the City of Montreal,
Soap and Candle Manufacturer, for the Invention of a "SOAP
CUTTING MACHINE."

Quebec, dated 27th December, 1831.

BRIEF DESCRIPTION.

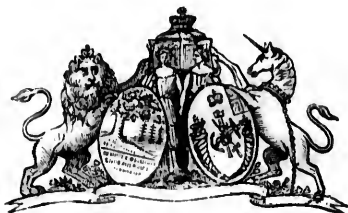
B A, Blocks where the soap stands whilst cutting, notched in such a way as to allow wires to cut the soap to the bottom; C, a frame of soap, four feet high by four feet long, fifteen inches wide, when cut by seventeen wires each way, produces three hundred and twenty-four bars, weighing four pounds each, equal to one thousand two hundred and ninety-six pounds in the frame; D, a cylinder worked by one bevelled wheel and a pinion, and two smaller wheels and pinions, possessing the power of nine men, which cylinder works with two lathes, for guiding the wires, as exhibited in the annexed drawing; E, a piece of iron to move round about the soap, with wires attached to it, which wires cut the soap horizontally—an operation called stabbing the soap; F, a roller for cross-cutting the soap, with one wheel and pinion, and worked by a double crank, and grooved, to guide the wires, as in letter

Mathewson's Soap Cutting Machine.

B; G, a roller used as a conductor for the wires, running as mentioned in letter F, to the other side of the soap, which wires are fastened to a piece of iron, as in letter E, and having two lathes, as conductors for the wires whilst cutting.

JOHN MATHEWSON.

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A. D. 1832.—(LOWER CANADA.)—No. 30.

A Chromatometer.

LETTERS PATENT to Theodore Frederick Molt, of the City of
Quebec, Professor of Music, for the Invention of a "CHROMATO-
METER."

Quebec, dated 6th April, 1832.

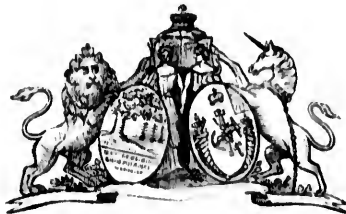
BRIEF DESCRIPTION.

The Chromatometer is a square box about twenty-five inches long, nearly two inches high, and about three and three inches in breadth; this box is constructed on a solid bottom board, at each end of which is a block, for the purpose of holding a pin; the upper part of this box is a sounding board, over the centre of which is extended a string, which is fastened to the pin on the left, and turned round the one to the right, where its turning is effected. This string rests near each extremity of the sounding board, on a fixed bridge; and between the two fixed bridges is a moveable one; part of this moveable bridge is inside the box, and part of it outside; the part which is outside touches the string underneath, (the same as the two fixed bridges), and by its being moved from right to left, shortens the string gradually, and the sound consequently gets higher in proportion as the bridge is moving on towards the right; this outside part of the moveable bridge serves at

Molt's Chromatometer.

the same time as a pointer, the use of which will be explained hereafter; near the bridge to the left is a damper, the function of which is to avoid vibration on that part of the string which is to be inactive, as also to keep the string firm on the moveable bridge, in order to produce clear sounds. On the active part of the string, the motion of the moveable bridge is effected by the following arrangement: at the bottom of the box, right across the centre of it, is a knob, formed like the screw of a violin, or violincello, as far as it is visible; at the outside of the box, from on each side of this knob, (inside the box), proceeds a violin string passing over a roller at each inner extremity of the box, and coming round to the side of the inner part of the moveable bridge, where it is fastened again; thus, by turning the knob one way or the other, the moveable bridge will shift accordingly. On the sounding board are clearly marked out the different positions in which the moveable bridge is to be placed, in order to proceed through all imaginable intervals, the sounds being measured out chromatically. The Chromatometer admits of a cover and certain parts, as, for instance, the knob, the inner part of the bridge, &c.; it may be made either of wood, as in the model, or of metal, according to the wish of the purchaser.

T. F. MOLT.



A. D. 1832.—(UPPER CANADA.)—No. 31.

Improvement in the Threshing Machines now in use.

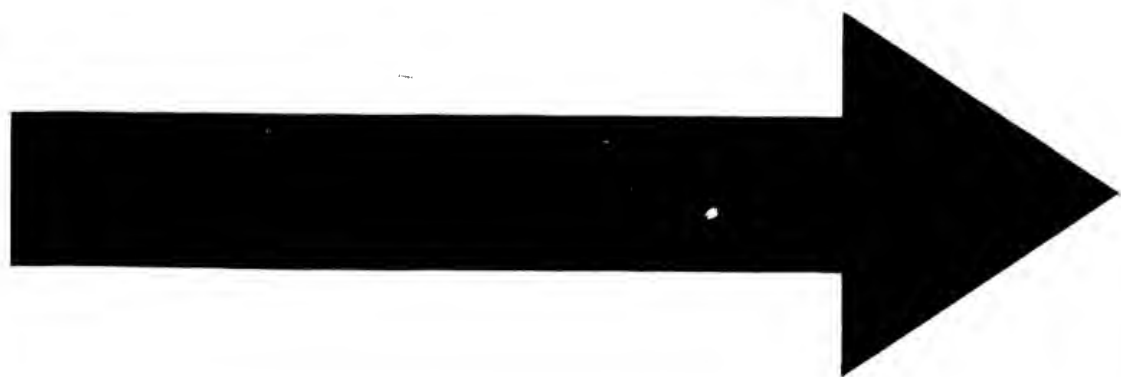
LETTERS PATENT to Edward Jewet French, of Saint Armand, in the District of Montreal, Yeoman, for the Invention of an
"IMPROVEMENT IN THE THRESHING MACHINES NOW IN USE."

Quebec, dated 18th December, 1832.

BRIEF DESCRIPTION.

The grain is laid on the cloth, which carries it into the concave bed, and is threshed by means of the bars on the cylinder, and those which form the concave bed, the grain falling directly under the machine. The straw is thrown out by the motion and force of the cylinder. One of the greatest improvements in this machine is, for threshing Indian corn, which is effected by a box under each end of the cylinder and two screws under each box, to raise the cylinder a sufficient height to admit the ears of corn into the concave bed. Another great improvement is, for threshing grass seed of all kinds, which may be done by filling up the vacancies in the concave bed, to prevent the heads or parts of heads of grass from dropping through before they are sufficiently shelled. This machine may be worked by water, steam, or animal power. One man and horse will thresh with this machine, two hundred bushels of Indian corn in a day, while a man cannot thresh more than twenty bushels by the present mode of threshing.

E. J. FRENCH.



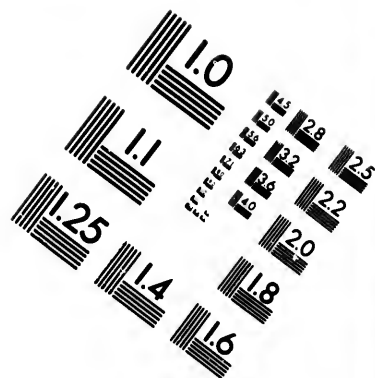
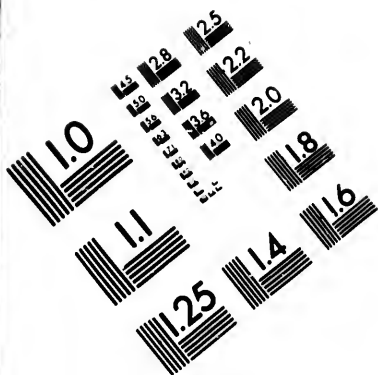
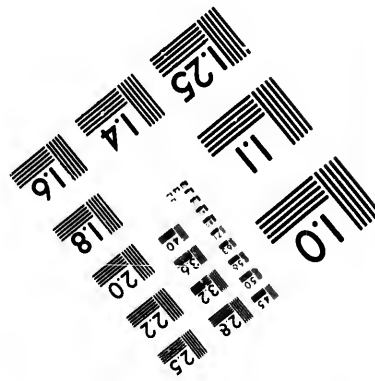
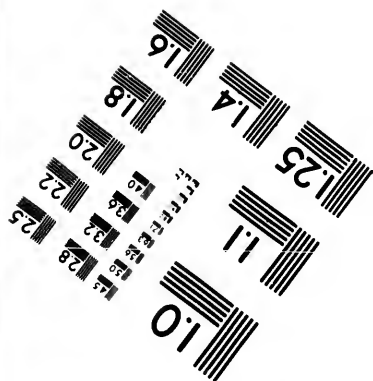
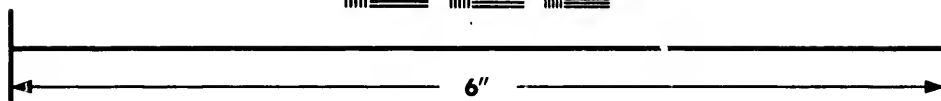
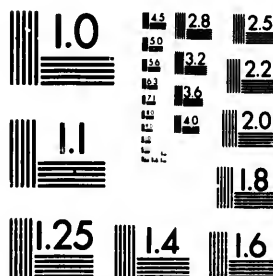


IMAGE EVALUATION TEST TARGET (MT-3)

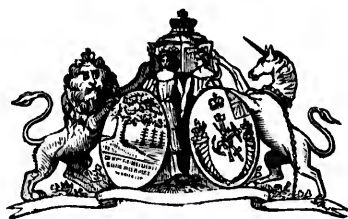


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A. D. 1833.—(LOWER CANADA.)—No. 32.

✓ *New Mode of Constructing Suspension Wooden
Bridges.*

LETTERS PATENT to Nicol Hugh Baird, of the City of Montreal,
Civil Engineer, for the Invention of a "NEW MODE OF CON-
STRUCTING SUSPENSION WOODEN BRIDGES."

Quebec, dated 29th April, 1833.

BRIEF DESCRIPTION.

A wooden suspension bridge on combined principles, to consist of two, three, or more series of links in suspension, connected with pins and couplings, from which suspenders are attached at each coupling, which support the roadway stretchers, connected therewith in like manner by means of pins; across the roadway stretchers so formed lie sleepers, acting as braces to the suspenders, and supporters to roadway planking. The roadway may be of such dimensions as to suit the traffic. The intermediate spaces between the supporters, to have diagonal braces, as shown on the elevation, properly keyed in; these diagonals to be supported by butts properly keyed up, as shown on the elevation, to consist of two truss alignments properly secured and braced back, which alignments must always bear a proportionate height to the required span. The descriptions and dimensions are as follows: 1st. Suspending links to be of elm, or any other suffi-

Baird's new mode of constructing Suspension Wooden Bridges.

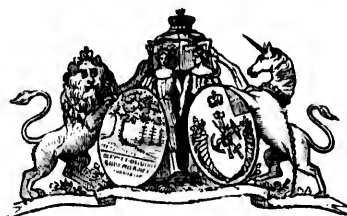
ciently tough wood, or when such cannot be had, of red pine; dimensions fifteen feet more or less from centre to centre, twelve by two and a half inches, more or less, in thickness, marked A, on the annexed plan. 2nd. Perpendicular suspenders, on lengths to suit the different parts, of similar stuff and dimensions with the former, marked B, on the annexed plan. 3rd. Roadway stretchers to be of pine, of similar dimensions with the above, and in lengths suitable to break proper band, to be connected to the suspenders by pins of hard wood, four inches in diameter, marked C, on the annexed plan. 4th. Diagonal braces between suspenders and roadway stretchers to be of pine, twelve by two and a half inches, placed on edge, as shown, marked D, on the annexed plan. 5th. The butts to be of the same dimensions, and of pine, placed on flat, and properly secured by keys, as shown by the elevation and plan marked E. 6th. Cross sleepers for roadway to be of pine, sixteen by four inches, secured in the ends by tree-nails, properly dovetailed wedged, marked F, on the annexed plan. 7th. Roadway scantling to be of pine plank, two and a half to three inches in thickness, the longest that can be procured, to be properly tree-nailed down by one or more tree-nails to each sleeper, marked G, on the annexed plan. The whole to be erected independently of centres, by commencing on each side of the river or ravine to be crossed, and closing in the centre.

N. H. BAIRD.

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BAIRD.



A. D. 1834.—(LOWER CANADA.)—No. 33.

Machine for Extracting Stumps from New Lands.

LETTERS PATENT to William Augustus Leggo, of Quebec, Copper-plate Printer, for the Invention of a "MACHINE FOR EXTRACTING STUMPS FROM NEW LANDS."

Quebec, dated 28th January, 1834.

BRIEF DESCRIPTION.

The Machine consists of two supports, A A, terminating at the bottom in feet of sufficient size to prevent their sinking into the ground; these supports are placed at any distance which may be found convenient, on each side of the stump to be extracted; from these supports rise a screw, or rack, or other mechanical contrivance, by means of which the beam B can be raised or lowered at pleasure; the beam B is trussed so as to unite strength with lightness, and the long beam, C, rests on the middle of it, having a pin through it to keep it in its place. The other end of the beam C rests on a third support, similar to the supports A A, and having similar machinery for lowering and raising the end of the beam C. In using the machine, a chain is fastened to the stump, and to the beam C, near the beam B, which is raised by the machinery until the chain is tight; and if the stump be not very large, it may be raised at once by so raising the beam B; but if the resistance be found too great to do this, the other end of the

Leggo's machine for extracting Stumps from new Lands.

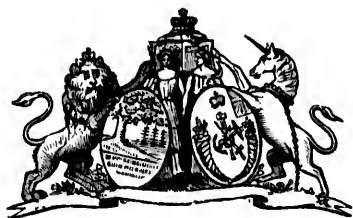
beam C is raised by the machinery thereunto attached, when the leverage will be found sufficient to overcome the resistance offered by the stump—all which will more fully appear on reference being had to the drawing, model, description, or specification so fyled as aforesaid.

WILLIAM AUGUSTUS LEGGO.

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A. D. 1834.—(LOWER CANADA.)—No. 34.

*Improvement in the Construction of Steam Vessels
and other Water Craft.*

LETTERS PATENT to Norman Bethune, City of Montreal, Esquire,
for the Invention of an "IMPROVEMENT IN THE CONSTRUCTION OF
STEAM VESSELS AND OTHER WATER CRAFT."

Quebec, dated 4th February, 1834.

BRIEF DESCRIPTION.

Figure 1 in the accompanying plan represents the shape of the parabolical tube or cylinder. The letters *a a a* show the heads of the bolts (in two sections) which pass through the three inner rings, with their relative positions to each other, and the space to be observed between each section throughout the whole length of the tube or cylinder. Figure 2 represents the view of the section of the three inner rings, with their bolts, *B, C, D*, each of which passes through a separate inner ring, and are secured by the screw nuts *E, F, G*, throughout the whole circle. Figure 3 represents an end view of a section, showing how the three tubes or cylinders are secured to each other and to the vessel. The letters *H H* show one of the beams across the vessel; *I I I* the three tubes or cylinders with their distances from each other; *K K* the saddles on the tubes or cylinders,

Bethune's improvement in the construction of Steam Vessels.

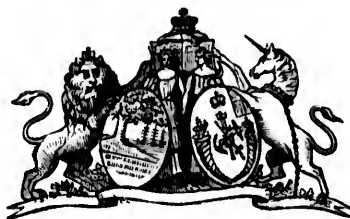
which are secured to them by screw bolts ; L L, the knees which overlap the saddles K K, and which are bolted through them, as well as upright staunchions, M M, and the beam K K, thereby securing the beams N N N, which run parallel to each other the whole length of the vessel, and fastening the whole together.

NORMAN BETHUNE.

vessels.

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THUNE.



A. D. 1834.—(LOWER CANADA.)—No. 35.

*Machine for rendering Linens, Woollens, Cottons,
&c., &c., impervious to Water by means of a
Preparation of Indian Rubber.*

LETTERS PATENT to James McKenzie, of the City of Quebec,
Cabinet Maker, for the Invention of a "MACHINE FOR RENDER-
ING LINENS, WOOLLENS, COTTONS, &C. &C., IMPERVIOUS TO
WATER, BY MEANS OF A PREPARATION OF INDIAN RUBBER."

Quebec, dated 19th January, 1834.

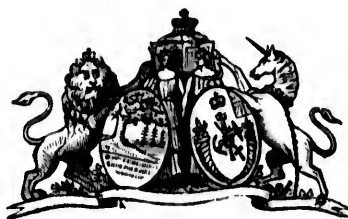
BRIEF DESCRIPTION.

1st. The cloth is prepared and put on the rollers B B ; coming off these passes on the rollers C C, between which and the rollers D D, the preparation of indian rubber or other composition is laid on the cloth by means of a revolving roller, or other feeder for that purpose, and is spread regularly on the cloth by the regulators, O O and N N ; the cloth then passes between the pressing rollers, D D, by which they are united together, and rolled on the large roller L, which is set in motion by the crank W, and wheels 1 2 3, or other machinery for that purpose; the cloth is then taken off the roller Z, and put up to dry. A A A A, framing; B B, the rollers on which the cloth is placed; C C, the roller over which the cloth passes; D D, the pressing rollers;

McKenzie's Machine for rendering Linens, &c., impervious to Water.

E E, the feeding rollers; F F, the reservoir for the composition; G G, the framing which supports the feeding apparatus; H H, the upright framing in which the regulators are fixed; I I, the pressing frames; S, upright sword to guide the long shaft L; K K, levers to press upon rubbers M M; L, a long shaft; M M, rubbers to keep the cloths tight; N M and O O, the regulators; P, a pressing lever on the roller; D, 2, a lever and weight connected with the pressing lever; P R, pullies for raising or lowering the weights on the pressing frames, I I; S S, levers and weights connected with the regulators, to vary the the pressure at pleasure; T T, levers to raise or lower the feeding apparatus; U, a roller and crank to raise or lower the long shaft, L; W, straight fenders under the regulators, O O; W, the crank which, being turned, gives motion to the wheels, 1 2 3, by means of which, or other power, gives motion to the whole; X X, handles to the raising levers, T T; Y Y, frames to support the wheels 5 5; Z, the large roller to receive the cloth when finished; 1, small toothed wheel; 2, connecting wheel to give motion to wheel 3; 3, toothed wheel on the end of roller Z; 4 4, toothed wheels on the end of the feeding rollers; 5 5, the connecting wheels; 6 6, the large toothed wheels on the ends of rollers, B B. The moving power of the said machine may be either manual, horse, water, wind or steam, weights or springs; all the different motions may be given by tooth-wheels, belts and pullies, screws or cranks, levers or wedges, as the different parts require.

JAMES MCKENZIE.



A. D. 1834.—(LOWER CANADA.)—No. 36.

*Improved Cribble for Separating Indian Peas from
Wheat.*

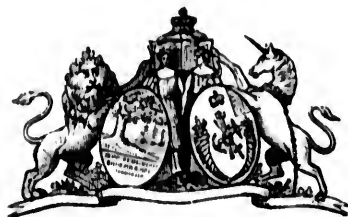
LETTERS PATENT to Joel Spalding, of Farnham, County of
Shefford, Yeoman, for the Invention of an "IMPROVED CRIBBLE
FOR SEPARATING INDIAN PEAS FROM WHEAT."

Quebec, dated 30th June, 1834.

BRIEF DESCRIPTION.

The cribble need not be confined to any particular size ; that of the plan attached is five feet six inches inside, by two feet six inches ; the feet of the frame five inches broad, by one and three-fourths inches thick ; the rails three inches broad ; the fans five feet long, and one foot eight inches broad, with steps, as in plan ; the wheels to be three inches diameter ; one wheel nine inches diameter ; five wheels outside, and four inside ; the hopper, the whole length, varying in depth for different purposes ; a wire screen at the bottom, as marked in the plan ; the whole to work with a strap, according to the dotted lines ; gathering boards at the bottom to keep the grain together. All which will more fully appear, reference being had to the drawing, model, description or specification so filed, as aforesaid.

JOEL SPALDING.



A. D 1834.—(LOWER CANADA.)—No. 37.

New and Useful "Weighing Balance."

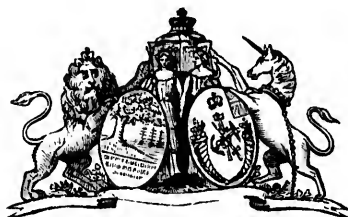
LETTERS PATENT to Otis Warren, of Stanstead, in the District of St. Francis, Mechanic, for the Invention of a "NEW AND USEFUL 'WEIGHING BALANCE.'"

Quebec, dated 30th June, 1834.

BRIEF DESCRIPTION.

The said weighing balance is composed of a series of equivalent compound levers, perfectly suspended in a horizontal position by metallic staples, and rings or hooks attached to a frame for that purpose. On the said levers rests the platform to receive the articles to be weighed, one end of the lever is supported by a rod or rods suspended from a beam; on one side of the box prepared to receive the indicating weights applied at the extreme end, upon the principle of weighing with weights, in the common balance by weights of fifty-six pounds, each of sufficient weight and corresponding to the power applied to the platform, after the platform is equally balanced against the receiver for weights either by shot or a slide weight attached by a screw when equally balanced.

OTIS WARREN.



A. D. 1834.—(LOWER CANADA.)—No. 38.

A New and Useful Model for Building and Constructing Steam Vessels and other descriptions of Water Craft.

LETTERS PATENT to Norman Bethune, of Montreal, Esquire, for the Invention of "A NEW AND USEFUL MODEL FOR BUILDING AND CONSTRUCTING STEAM VESSELS AND OTHER DESCRIPTIONS OF WATER CRAFT."

Quebec, dated 14th August, 1834.

BRIEF DESCRIPTION.

Figure 1 shows the outlines of a horizontal section of a vessel of an elliptical form, combining the shape of a body of a fish called the Flounder, and the throat and chest of a common frog, which may be constructed either of wood or of iron. If constructed of iron, the iron rings and bolts, as exhibited in figure 3, will not be required, but simply the wooden frame work exhibited in figure 2; E E E E are the plank of which the vessel is built, and show the shape of the vessel horizontally divided in the centre; A A are the blocks of wood at each end of the vessel, upon which the planks terminate, and are there secured; D D D are the floor timbers of the vessel, which are placed loose on the bottom; B B is the curtain or main keelson, locked into

Bethune's Model for Building Steam Vessels, &c.

and over the floor timbers, and secured to them with iron bolts; C C C C are the two side keelsons, secured over the floor timbers in the same way as the main keelson; upon both side keelsons upright stanchions are placed, at every four feet in their length, and exactly when they cross the floor timbers. Thus the top and bottom of the vessel are kept from closing towards each other in the slightest degree. Figure 2 is a longitudinal section of the vessel, showing its own length directly through the centre; E E E E are the plank of which the vessel is built, terminating upon the blocks A A, at each end; D D D D are the floor timbers; B B is the centre or main keelson, locked into and over the floor timbers, as described in figure 1; G G is the fore and aft string piece, corresponding in length with, and placed directly above the main keelson, and locked into the upper beams in the same way as the keelsons are secured over the floor. Timbers H H H are the upper beams, supported by the fore and aft string piece, and the stanchions stepped on the two side keelsons; L L L L are a row of diagonal braces, locked into each other, and which run fore and aft directly in the centre of the vessel, stepped on the main keelson, and supporting the upper string piece, as well as the beams and the weight above them. These diagonal braces stiffen the vessel fore and aft, and thereby prevent her from hogging. N N N are stanchions which step upon the main keelson, and intersect the diagonal braces where they cross each other, so as to support the intermediate beams above, and to prevent the diagonal braces from springing. M M M M are stanchions at both ends of the vessel, stepping on the floor timbers, and supporting the upper beams in those parts to which the diagonal braces do not extend. O O O O O are dovetail plates made of iron and bedded into the seams of the vessel, one half their thickness into each end of the plank; they are fitted in water-tight; the other ends of the dovetail plates are half an inch within the outside of the plank, so as not to show any bolt heads on the outside; they are fast secured between the edges of the plank by an iron dowel passing through them into both edges of the plank, and are of such length as may be required in proportion to the breadth of the plank. The plates have two shoulders resting against the inside of the plank, so as to resist any blow, and thus save the plank from being splintered outwards. The inner end of these dovetail plates have a hole in them, to receive

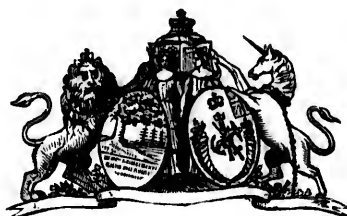
Bethune's Model for Building Steam Vessels, &c.

the iron rods that pass through the inner rings, and by which the whole planking of the vessel is drawn towards the centre of the vessel, as tight as a cask, without caulking. X X X X X X X are the iron rods or boards fastened to the dovetail plates, and which are placed at intervals of four feet apart, in the whole length of the vessel, occupying the centre of the space between each floor timber. Q Q Q Q show the situation and thickness of the inner rings, with the screw nuts inside of them. Figure 3 is a transverse section at her centre breadth, showing the number of planks in the circumference of the ellipses. Q Q Q Q is the inner iron ring of an elliptical shape, which receives through it an iron bolt from each seam of the plank in the whole circumference, which bolts are drawn tight by screw nuts on the inside of the ring, each bolt having a counteracting one exactly opposite to it, so that by tightening any one of the nuts the plank attached to the bolt is brought so much nearer to the centre, as well as the plank directly opposite to it, and has a proportionate influence in drawing the whole of the plank in the circumference of the ellipsis towards the centre, thereby making the joints water tight. But as the natural pressure of the water under the vessel is upwards, and the specific gravity of the superstructure and cargo of the vessel will press downwards, these counter pressures might cause the ellipsis to collapse, to prevent which the wooden frame work, beams, floor-timber and stanchions described in figure 2 are placed in the inside of the vessel; and as these pressures will act upon the inner iron rings exactly in the same way as upon the outside of the vessel (if they were left unsupported) the tops and bottoms of them would close towards each other, and thereby allow the sides of the vessel to burst outwards, to prevent which the wooden stays S S S S S are placed within the ring, and secured to it by an iron strap at each end, enclosing the ring in it, and bolted to the stay; to strengthen the inner ring in a transverse direction the iron bolts T T T T T are placed. These wooden stays and iron bolts will keep the iron rings in their proper shape, and as a consequence, the whole vessel will be kept in its proper shape and full strength. Figure 4 is a full size figure of the dovetail plate described in figure 2, and shows how it is placed on the edge of the plank. Figure 5 is also a full size figure of the iron dowel, which passes through the hole Y, at the outer end of the dovetail plate, and show-

Bethune's Model for Building Steam Vessels, &c.

ing by its bend in the centre the shape necessary to give it, when the bevel of the edge of the plank is one quarter of an inch, and the hole on the plank for receiving the dowel is bored square with the outer face of it. By giving the dowel this shape the edges of the plank will fit close from the inside to the outside. Much more advantage will accrue by giving the bevel to the dowel than by boring the hole which receives it with a bevel, and that the fastening is stronger with a hole bored square than when bored with a bevel. This iron dowel answers the two-fold purposes of securing the dovetail plate and of keeping the outside face of the plank always fair, where the bevel must necessarily be small, such as in the flattest parts of the ellipsis; as in and by a certain specification, herewith fyled, reference being thereunto had, may more fully and at large appear.

NORMAN BETHUNE.



A. D. 1834.—(LOWER CANADA.)—No. 39.

New and Useful Water Cement.

LETTERS PATENT to Frederick Henry Baddely, Quebec, Lieut.
Royal Engineers, for the Invention of a "NEW AND USEFUL
WATER CEMENT."

Quebec, dated 9th-October, 1834.

BRIEF DESCRIPTION.

The said water cement consists in the use and employment of a certain rock or rocks in Lower Canada, largely developed in the neighbourhood of Quebec, and upon which considerable portions of that metropolis and its suburbs are built, which rock or rocks is or are there known by the name of the "Black Rock" or "Pierre Noire." This rock or rocks, I cause to be first broken into fragments, then burnt in a kiln, until the carbonic acid they contain is almost or altogether expelled, under the form of gas; after which these fragments are ground into powder, and this powder is passed through a fine sieve, in order to render it as nearly as possible impalpable, in which state it forms with water a paste or plaster, which paste or plaster is a true water cement, and is adapted in all respects to answer the purpose to which the well known Roman, Harwick, Yorkshire, Sheppy or any other similarly constituted cements have been applied, including the

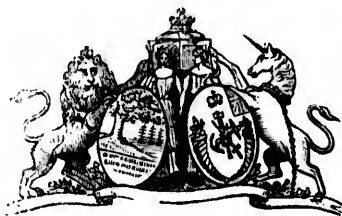
Baddely's Water Cement.

setting, facing and pointing of all stone works, constituted on the one hand to retain or exclude water, and on the other hand to resist the disintegrating action of the atmosphere; together with all exterior and interior plasterings and stuccoings.

F. H. BADDELY.

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A. D. 1835.—(LOWER CANADA.)—No. 40.

*New Method of Constructing Suspension Bridges
of Wood or Metal.*

LETTERS PATENT to Gustavus William Wicksteed, of Quebec,
Advocate, for the Invention of a "NEW METHOD OF CONSTRUCT-
ING SUSPENSION BRIDGES OF WOOD OR METAL."

Quebec, dated 31st October, 1835.

BRIEF DESCRIPTION.

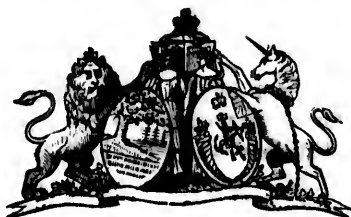
The main principle of the said Invention, method, or plan, without prejudice to the minor points of detail in the said description, specification and drawings so filed, (as aforesaid set forth), is the suspension of the arch or portion of the bridge over the opening to be crossed by it, from fixed points of support outside such opening, by means of straight and inflexible suspending pieces, or bars of wood or metal, the same being so disposed (and braced if necessary) as to be as nearly as possible inflexible, and to oppose the direct cohesive force of the wood or metal to the weight of the arch, and its load at every point of suspension, without any moveable or flexible joints whatever; the points of suspension outside the arch being also supported and rendered as nearly as possible immoveable by similar bars or suspending pieces,

Wicksteed's Suspension Bridges.

extending in an opposite direction to the others, and securely fastened down to the lower ends as by the said description, specification and drawings so fyled as aforesaid, reference being thereunto had will more fully and at large appear.

G. W. WICKSTEED.

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A. D. 1835.—(LOWER CANADA.)—No. 41.

*New and Useful Discovery in the Process of
Fermentation.*

LETTERS PATENT to Sampson Buttery, of William Henry, District
of Montreal, Brewer, for the Invention of a "NEW AND USEFUL
DISCOVERY IN THE PROCESS OF FERMENTATION."

Quebec, dated 4th November, 1835.

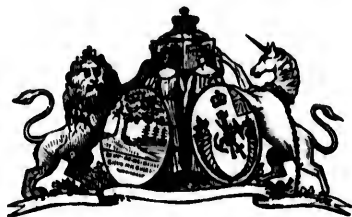
BRIEF DESCRIPTION.

1st. As to malt liquor : whenever the temperature of the weather is from seventy-four to ninety-four degrees Faht., for every one hundred and twenty gallons of liquor, one pound of raisins is requisite, to be applied in the following manner : the raisins are to be put into a bag made of straining cloth, of one foot in length, and eight inches in breadth ; the bag is then to be put on the bottom of the working vat, about the centre, the end of which is to be secured to the top of the vat by means of a string or cord ; the liquor may then be let down at sixty-five, or as high as seventy degrees Faht. ; the bag containing the raisins must remain in the vat until the process of fermentation is so increased as to produce a white cream all over the surface of the liquor, which will probably take place in about twenty-four hours ; the bag must then be taken out, and the liquor left until the fermentation

Buttery's Discovery in the process of Fermentation.

ceases. The degree of heat in the place where the working vat is placed, should not exceed sixty-six, nor be less than sixty degrees. 2nd. For fermenting distillers' wash, the raisins must be chopped and put into the wash without a bag; the wash may be let down into the working vat at seventy-five or eighty degrees; in the warmest weather, the temperature of the place where the working vat may be does not exceed seventy degrees, and two pounds of raisins so used will be sufficient for one hundred and fifty gallons of wash. To prevent the liquor from becoming acid in hot weather, while it remains upon the malt, one pound of hops must be put into the wash vat for every eight bushels of malt, at the time of mashing, and three-quarters of a pound of hops for every bushel of malt brewed, to be boiled in the liquor in the copper.

SAMPSON BUTTERY.



A. D. 1836.—(LOWER CANADA.)—No. 42.

*A Composition of Matter distinguished by the name
of "Lime Water."*

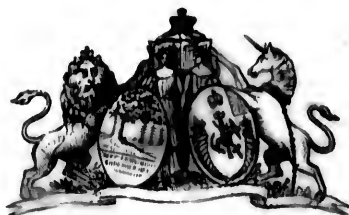
LETTERS PATENT to Elisha William Harrington, of Foucault,
District of Montreal, Yeoman, for the Invention of a "COMPOSITION
OF MATTER DISTINGUISHED BY THE NAME OF LIME WATER."

Quebec, dated 20th February, 1836.

BRIEF DESCRIPTION.

Take two-fourths of common gravel, one-fourth of common sand,
and one-fourth of water lime, made from burnt lime-stone ground or
well pulverized; mix them together with water until they become
about the consistency of common lime-water, and it is fit for common
use.

E. W. HARRINGTON.



A. D. 1837.—(LOWER CANADA.)—No. 43.

*New Discovery in the Application of Steel Springs
as a Propelling Power, with a moveable Iron
Rim, for the purpose of applying the Lever.*

LETTERS PATENT to Samuel Andres, junior, and Stephen R. Andres, of Chambly, District of Montreal, for the Invention of a
"NEW DISCOVERY IN THE APPLICATION OF STEEL SPRINGS AS
A PROPELLING POWER, WITH A MOVEABLE IRON RIM FOR THE
PURPOSE OF APPLYING THE LEVER."

Quebec, dated 2nd February, 1837.

BRIEF DESCRIPTION.

Figure 1 is an elevation of the main wheel; A A, a wood cil for the purpose of fastening the wheel to the ground, or any other frame, with a binding of iron, C, bolted to the frame of wheel B; D, the shaft or axle of wheel; E, the ratchet wheel made fast to the shaft or axle; H, the dogs working on the ratchet wheel, with small springs to keep them in their place, secured to arms F, of main wheel, with screws or bolts; O, a moveable iron rim with projections to receive the levers, working on a circle, N, attached to the principal wheel, M, for the purpose of winding up the spring, which is done in the following

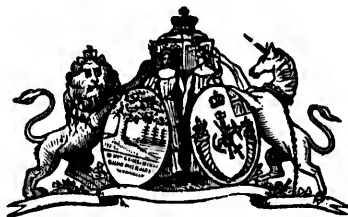
Andres' application of Steel Springs as a Propelling Power.

manner : when the levers are applied, move back the rim so that the spring dogs, I, may hold it fast for the purpose of winding up ; this circle or rim may be made to any size ; between the extremity of the main wheel and the centre, the spring dogs are secured to the circle N, with screws or bolts. It is here necessary to observe that there may be a greater number of spring dogs and levers applied than are shown on the drawing. Figure 2. Elevation of a semicircular spring wound up ; A A, wood cil for the purpose of fastening the cil to the ground, or securing the spring to the ground, or any frame, &c., or to prevent the chain or rope wheel raising it ; O O, iron bands for the purpose of securing the spring to the cil ; H, a binding of iron for the purpose of preventing the wood from splitting or bending ; N N, the spring in leaves ; P, rope for attaching ropes or chains ; R, rope or chain. Figure 3rd is a section or end view of three wheels, with frames ; R, cil of wood to prevent the frame of wheels from spreading ; F, iron band on top of wood to secure the frame together ; D D, ends of iron bands ; N, frame of wheels ; L, axle of wheel that runs in frame ; K, shaft of wheels ; B, cavity for the ropes or chains ; O, moveable rim, showing the cavities, I, to place the levers ; P, the cylinder ; W, a cog-wheel for the purpose of attaching any other machinery required. Figure 4 represents an eccentric, to be placed on the other face of wheel to that shown on the drawing, for the purpose of stopping the machinery at any moment, similar to that of any common steam or locomotive engines. Figure 5 is a top or bird's-eye view of the cil and semicircular spring ; D D, iron bands to secure the spring to the cil ; A, that part of the wood bound on the spring to secure it from rising ; E shows a part of the spring ; C C, the wood cils. Figure 6. A top or bird's-eye view of the cils or frame for wheels ; R R, a cross piece of timber to bind the outside pieces together ; P, a band of iron welded to the rims of iron on the outside pieces of wood ; B B, are the cils or outside pieces of frame. Figure 7 represents a spiral spring ; A, shows one end with a hole perforated, for the purpose of fastening it to any power ; D, shows the end to be secured to the ground, or any frame. Figure 9 is a top or bird's-eye view of the spiral spring ; C shows the breadth and circumference of the steel for the spiral spring. Figure 8 is a side view of a circular spring ; O is the shaft or band which the spring winds on, and which may be

Andres' application of Steel Springs as a Propelling Power.

fastened to the ground or any description of frame; P is the steel spring; B is the yoke for fastening the chain or rope. Figure 10 represents a top or bird's-eye view of the circular spring.

SAMUEL ANDRES, Junior.
STEPHEN R. ANDRES.



A. D. 1837.—(LOWER CANADA.)—No. 44.

A Moveable, Falling or Draw Iron and Wooden Bridge, applicable to Rapids and other Streams.

LETTERS PATENT to Samuel Andres, junior, and Stephen R. Andres, of Chambly, District of Montreal, for the Invention of a
"MOVEABLE, FALLING OR DRAW IRON AND WOODEN BRIDGE,
APPLICABLE TO RAPIDS AND OTHER STREAMS."

Quebec, dated 4th February, 1837.

BRIEF DESCRIPTION.

Figure 1, which accompanies the specification before mentioned, is a top or bird's-eye view of the framing or foundation, having preparations for a double truck; P, beams of timber running longitudinally to receive the stanchions, and filled in with stones, represented by letters B B; E, cross or transverse beam to secure the longitudinal beams, P, into the bank or abutment; O, plates of iron, with an eye worked in them, for the gudgeons of stanchions to work in, secured to beam by spikes. Figure 2 is an elevation, showing the bridge longitudinally; I, represents the bank with a cut stone or rubble pier built against it; H, is the stone pier that the bridge is fastened to; P P, two rows of beams to form the foundation, filled in with stone, as shown by figures 1 and 3, to prevent the stream from injuring the stanchions, I, which are wrought iron, working at top and bottom, represented by the letters *n n*, with a hook and eye, similar to the hook and hinge of a door; the shoulder and gudgeon to be kept in the eye by means of a

Andres' Moveable, Falling or Draw Iron and Wooden Bridge.

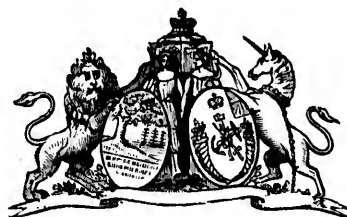
washer and key, put on the outside; these beams to be secured to the bed of the river, N, by bolts, provided the said bed is a rock; these bolts to be put on with a wedge, and should it be clay or sand, it should be secured with piles; O, plate on which the eye is worked to receive the gudgeon N of the stanchion; E, a transom of iron, having eyes worked at every stanchion, the same as the plates secured to beams. In the width of a bridge there are three longitudinal pieces of iron supported by the stanchions, having eyes worked on them to receive the gudgeons of stanchions, the same as the plates below; this will allow the bridge to fall forward or longitudinally; these transoms receive likewise the flooring B, which flooring may be either wood or iron, and secured with bolts; C, uprights working with a hinge to fall down, as occasion requires, to receive the chain D, and to serve as a hand rail; R, a plate of iron having two eyes, one to be put on gudgeon of stanchion next pier, and the other on gudgeon secured into a pier, and to be fastened on with nuts; a plate of this description to be put on each side of the bridge to keep it secure. Figure 3 is a transverse section of bridge; P, beams of woods secured to bed of river in two or more thicknesses, filled in with stones, represented by letter F; I, iron stanchions or uprights; O O, gudgeons and eyes to stanchions; I, transoms to support flooring, having eyes worked on to receive the gudgeons to stanchions; D, flooring of wood or iron transoms; C, perpendicular posts to carry chain or hand rail. The bridge may be made for one or more than two trucks; it may also be made to any height, and extended to any length, the transoms being connected by being halved on each other at the joinings, and bolted through with nuts during the navigable season; the bridge is to stand as shown on the drawings previous to the navigation closing; the flooring may or may not be removed, and the bridge let down by means of a chain and crab; it will also be raised by the same means; the object of this is, that it may remain under water and allow the floating ice to pass over it, otherwise the ice would carry away the stanchions; after the ice has passed off, the bridge will be put up.

SAMUEL ANDRES, Junior.
STEPHEN R. ANDRES.

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A. D. 1837.—(LOWER CANADA.)—No. 45.

*Fire-proof Safe, as applicable to Vaults, Cells for
Gaols, &c., constructed of Hydraulic Cement, or
Water Lime.*

LETTERS PATENT to Samuel Andres, junior, and Stephen R.
Andres, of Chambly, District of Montreal, Yeomen, for the
Invention of a "FIRE-PROOF SAFE, AS APPLICABLE TO VAULTS,
CELLS FOR GAOLS, &c., CONSTRUCTED OF HYDRAULIC CEMENT,
OR WATER LIME."

Quebec, dated 1st April, 1837.

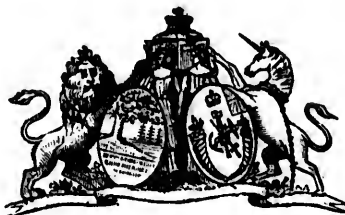
BRIEF DESCRIPTION.

Figure 1 is an elevation of the safe, showing the front; A shows the exterior of safe, the total being covered completely with sheet or plate iron, from a sixteenth of an inch to half an inch thick; HH, iron frame on the front, back, end, bottom and top, the same as shown on the drawing, to secure the casing of sheet iron; D, opening for door of safe; C represents the rabbet of door. Figure 2 is a longitudinal section of safe, with dotted lines drawn to represent the manner of building vaults, magazines, and cells for gaols, or any description of fire proof buildings; DD, outside and inside frame of cement;

Andres' Fire-proof Safe.

C C, vacuum or space, to be filled with lime water to prevent fire from penetrating, the water being made strong with lime, or well salted, to prevent its becoming stagnant. R R, a binding of cement from inside to outside frames, to prevent the part that forms the deposit from moving; N N, openings in the said binding, to allow the water to have free course between the interior and exterior frames; P, interior of safe or place of deposit, which is to have a lining or box of tin, with doors, &c., &c., and arranged as may be desired with shelves, and this lining or tin box to be three inches less all round than the safe, and to be suspended with wire, the space to allow of a free circulation of air; B, valve or opening for filling the vacuum with water. Figure 3 represents a top or bird's-eye view of safe; B B B, inside and outside frame of cement; D D, vacuum to be filled with water; R, door and opening to safe; H, interior of safe. Figure 4 is a drawing of the safe door; P, frames of cement inside and outside; O, vacuum to be filled with water. Figure 5 is a transverse section of the safe; A A, inside and outside frame of cement; O O O, vacuum to be filled with water; H, vacuum in door to be filled with water; D, inside and outside frame of cement to door; P, valve or opening in top of door for filling the vacuum with water; R, interior of safe.

SAMUEL ANDRES, Junior,
STEPHEN R. ANDRES.



A. D. 1837.—(LOWER CANADA.)—No. 46.

New and Useful Stove.

LETTERS PATENT to John Vannovous, of Quebec, Yeoman, for
the Invention of a "NEW AND USEFUL STOVE."

Quebec, dated 7th November, 1837.

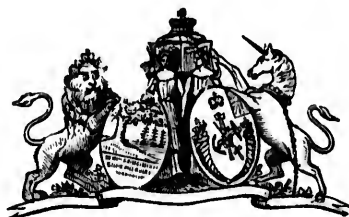
BRIEF DESCRIPTION.

The material of which the said stove is composed is pottery ware or porcelain, formed into tiles and joined together as below specified. In the usual and most common form, the stove stands on an oblong base varying in size, on which it is raised perpendicularly to the height of six feet, more or less. The fire place is closed with a door and communicates with a series of ascending and descending flues, occupying and filling up the body of the stove, through which the smoke and heated air circulates, communicating heat to the tiles, and through them to the external air. The flues are separated by partitions composed of clay or pottery, the support of the base may be of wood or of iron, or of any other material. The tiles may be of various forms and sizes, they are of two sorts, namely, those forming the middle of the sides, and the corner pieces, which latter are in most respects similar to the former, except in so far as it is necessary to vary them, to adapt them to their peculiar places. The tiles for the sides are of an oblong shape and are framed with a *flanch* on each side, running

Vannovous' Stove.

round their whole circumference; the flanch being curved or hollowed on the outside as represented in the plans and descriptions fyled as aforesaid, so that when two tiles are set edge to edge, there is a channel or interval between the flanches; the side of the tile not occupied by the flanch is smooth. The flanches are also sometimes perforated to admit of more strongly binding together. The tiles may be made rounded, or otherwise shaped, to adapt them to the different forms of the stoves: in building the stove, the tiles are joined close together end to end, the flanches being directed inwards, and the intervals between them formed as above mentioned are filled up with clay which is left to dry and harden. In the horizontal intervals, an iron plate is embedded in the clay, to brace the work. The top or ceiling of the stove is formed of clay. Explanation of the description and plans fyled as aforesaid. Figure 1 represents the elevation of the stove in its usual form, with ornamental mouldings and cornice. Figure 2 a horizontal section of the stove and flues, in which the compartments marked (*u*) represent ascending, and those marked (*d*) descending flues. Figure 3 a fore and aft vertical section, showing as does also, figure 2, the junctions of the tiles, their flanches and the intervals to be filled up with clay, and the supports of the base. Figure 4, a similar section from side to side.

JOHN VANNOVOUS.



A D. 1838.—(LOWER CANADA.)—No. 47.

*A method of connecting Stove Pipes and other
Tubes of thin Metal.*

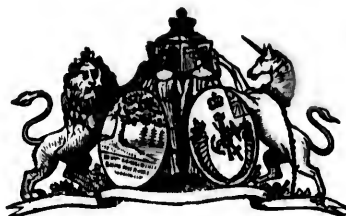
LETTERS PATENT to William Pople Johnson, of Riviere du Loup,
District of Quebec, Blacksmith, for the Invention of a "METHOD
OF CONNECTING STOVE PIPES AND OTHER TUBES OF THIN METAL."

Quebec, dated 8th June, 1838.

BRIEF DESCRIPTION.

The main principle of the said invention consists in forming a screw on the internal and external surfaces of the pipes or tubes, to be connected by so working the ends thereof with a hammer or die, by means of a machine or tool described in the said specification and drawings, and to which these Our Letters Patent also extend, as that the end of one tube or pipe may be inserted and as firmly screwed into the other as if the said screws had been cut out of the solid metal, the said tubes being made thick enough to allow of this being done, as by the said specification and drawings, reference being thereunto had, will more fully and at large appear.

WILLIAM POPLER JOHNSON.



A. D. 1839.—(LOWER CANADA.)—No. 48.

Improved Planing and Matching Machine.

LETTERS PATENT to Zebediah Sisson, of Quebec, Master Carpenter, for the Invention of an "IMPROVED PLANING AND MATCHING MACHINE."

Montreal, dated 13th June, 1839.

BRIEF DESCRIPTION.

1st. The Frame to be made of hard wood, well bolted together at the joints. 2nd. The piece on which the ways are placed for the carriage to run on is to be of sufficient strength, so as not to spring under the pressure of the rollers; the ways to be made of cast iron, one of them to be level on the top, the other to be the shape of a V, with ears on each side to secure them down. 3rd. The carriage to be of pieces nine inches long, six inches wide, and one and a quarter inch thick, those pieces to be of seasoned hard wood, and to be connected by leather belts; the rack in which the pinion works is to be placed in the centre of the pieces, and the irons to correspond with the ways near the end. 4th. The roller on which the carriage revolves. 5th. The rollers for keeping the plank down. 6th. The levers across the top of the pieces in which the rollers are fixed. 7th. The main cylinder in which the knives are fixed for planing the face of the plank; the shaft and arms of what we call the cylinder are to be in

Sisson's Improved Planing and Matching Machine.

one casting, with proper turns for fastening on the knives; on the back of these knives must be a separate plate, of sufficient thickness to tap for the screws to hold them; on this shaft is a mitre wheel, which drives another wheel of the same size on the upright shaft, on which is a pulley for the purpose of driving the matching irons. 8th. The shaft on which the matching irons are fixed. These shafts and the screws on which they run must be steel pointed. 9th. The blocks in which the screws are fixed. These blocks are allowed to move out and in, so as to suit the different breadth of planks, and are secured by a screw bolt. 10th. The wheels for driving the carriage. These wheels are put in motion by a screw on the right hand, matching iron shaft, by working into a wheel of six inches diameter, which works into one of twelve in diameter; this is on the shaft with the pinion that works into the rack under the carriage, which pinion is to be four inches in diameter. 11th. The bearers of the main cylinder. 12th represents the plank on the carriage. 13th. Matching irons. These must be secured to pieces of iron similar in shape to the main cylinder.

ZEBEDIAH SISSON.



A. D. 1839.—(LOWER CANADA.)—No. 49.

*New and Improved Method of Grinding Plaster
of Paris.*

LETTERS PATENT to James McKenzie and Thomas Bowles, of
Quebec, Cabinet Makers, for the Invention of a "NEW AND
IMPROVED METHOD OF GRINDING PLASTER OF PARIS."

Montreal, dated 7th August, 1839.

BRIEF DESCRIPTION.

The main principle of the said invention (without prejudice to the minor points of detail in the said specification and drawings set forth) consists in grinding the substances in question by means of a stone and a heavy circular disk of cast iron, revolving vertically on the two ends of an arm, fixed in an upright shaft, which is itself turned slowly round by means of horse or other power, and passes through the centre of a circular trough of stone or cast iron, on the bottom of which the said stone and disk rest, and in which they travel slowly round by the motion of the said upright shaft; the edge of the said disk is indented in a manner adapted to break the substance submitted to the action of the mill; but the edge of the stone is plain; each has a scraper attached to it, and the scraper for the disk is pressed forward by a spring, so as to follow the indentations aforesaid. The trough is made wider than the edges of the stone and disk, and another arm from the

McKenzie and Bowles' method of Grinding Plaster of Paris.

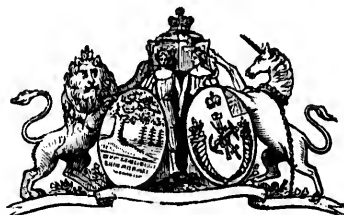
upright shaft carries certain contrivances called spreaders and stirrers, which can be set so as to spread the substance to be ground, in the manner most favorable to the action of the mill, and to throw such substance either into or out of the path of the stone or disk, by means of which the substance is ground without heating, and in a greatly superior manner to the method hitherto practised, as by the said specification and drawings so fyled as aforesaid, reference being thereunto had, will more fully and at large appear.

JAMES McKENZIE.
THOMAS BOWLES.

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A. D. 1839.—(LOWER CANADA.)—No. 50.

Certain New and Useful Improvements in the Construction of Steam Engines.

LETTERS PATENT to William Nunns, of Sorel, District of Montreal, Engineer, for the Invention of "CERTAIN NEW AND USEFUL IMPROVEMENTS IN THE CONSTRUCTION OF STEAM ENGINES."

Montreal, dated 4th December, 1839.

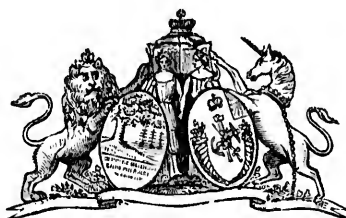
BRIEF DESCRIPTION.

The first of the said improvements consists of an invention or contrivance by which the steam can be cut off from the cylinder at any portion of the stroke at pleasure, and without stopping the engine, by means of a piece of wood, metal, or other substance, upon which the cam on the crank shaft acts, and the position of which can be so readily altered by certain simple and easy means, described in the specification aforesaid, as to cause the action of such cam to continue on it for a longer or shorter portion of the revolution of the shaft, and the *cut-off* valve connected with the said piece to remain open in consequence during a longer or shorter portion of the stroke. The second of the said improvements consists of an invention or contrivance for feeding the boilers of high pressure engines without using a forcing pump, by

Nunns's Improvements in the construction of Steam Engines.

a certain arrangement of cisterns and valves and stop cocks, or other contrivances described in the said specification and drawings, and by means of which the pressure on the water in the cistern nearest to the boiler and lowest, being made equal to that in the upper cistern, and to that in the boiler alternately, the water will flow of itself, first from the upper cistern to the lower, and thence into the boiler, so as to maintain the latter at the proper level. And the third of the said improvements consists of an invention or contrivance in which by a pipe or partition pierced with small openings, and placed inside the boiler extending through its whole length, so that the steam must pass into it by the said small openings, in order to get to the steam pipe leading to the cylinder, or to the safety valve; the water is prevented from passing with the steam to the cylinder or safety valve, as by the said description, specification and drawings, reference being thereunto had, will more fully and at large appear.

WILLIAM NUNNS.



A.D. 1840.—(LOWER CANADA.)—No. 51.

New and Improved Windlass Propeller.

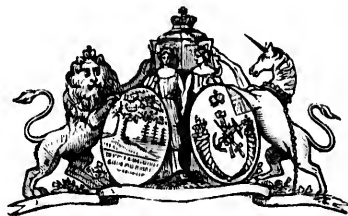
LETTERS PATENT to James McKenzie of Quebec, Cabinet Maker and Machinist, for the Invention of a "NEW AND IMPROVED WINDLASS PROPELLER."

Montreal, dated 13th March 1840.

BRIEF DESCRIPTION.

The main principle of the said invention consists in propelling the windlass by means of a ratchet-wheel fixed firmly to the windlass, and acted upon by a ratchet or hand jointed to a lever, which is moveable on a centre, or so placed and arranged that the ratchet or hand can be acted upon or moved, (either directly or by the intervention of a lever), to be worked by men, and to be fixed at any distance from the ratchet and lever aforesaid, and in such place and position as may be found most convenient and effective for working it; while the length of the lever at which the men work, and the distance of the centre on which it works from that point in it to which the rod leading to the ratchet or to the ratchet lever is attached, can be so varied as to give any degree of leverage or power that may be required, as by the said description, specification and drawings so filed as aforesaid, reference being thereunto had, will more fully and at large appear.

JAMES MCKENZIE.



A. D. 1840.—(LOWER CANADA.)—No. 52.

*New method of constructing Steamboats and other
Vessels propelled by Paddle-wheels.*

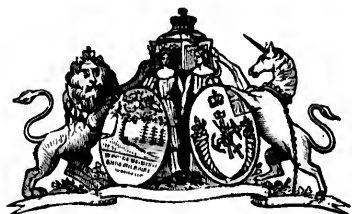
LETTERS PATENT to William Nunns, of Sorel, District of Montreal, Engineer, for the Invention of a "NEW METHOD OF CONSTRUCTING STEAMBOATS AND OTHER VESSELS PROPELLED BY PADDLE-WHEELS."

Montreal, dated 20th June, 1840.

BRIEF DESCRIPTION.

The main principle of the said invention (without prejudice to the minor points of detail : the said description, specifications, and drawings so fyled, as aforesaid set forth), consists in so constructing and arranging the water-wheel shafts, water-wheel flanges, water-wheel beams, boxes, coverings and other apparatus, and parts of steamboats and other vessels propelled by paddle-wheels, as that the whole of such apparatus and parts as do, when the paddle-wheels are in use, project beyond the stern or over the sides, or above the gunwale of the vessel, may, upon occasion, and with great facility, be removed, lifted up, or drawn in, and the vessel may thus be enabled to pass through a lock of little or no greater width or length, or under a bridge or other work of little or no greater height than would be necessary to enable her to pass the same, if she had no paddle-wheels.

WILLIAM NUNNS.



A. D. 1840.—(LOWER CANADA.)—No. 53.

Net or Seine for the capture of Porpoises.

LETTERS PATENT to Moyse Morin, of Rivière du Loup, District of Quebec, for the Invention of a "NET OR SEINE FOR THE CAPTURE OF PORPOISES."

Quebec, dated 5th August, 1840.

BRIEF DESCRIPTION.

The net or seine is thirty arpents in length, by thirty-two feet in height; the height is composed of two pieces, one of which is twenty-two feet high, and the other twelve feet, and each piece is composed of thirty pieces, of an arpent each in length, on the height of the two large pieces respectively, of which they form parts. To this end and in order to facilitate the conveyance and the setting and unsetting of the said net or seine, which could not be effected otherwise on account of its bulk and great weight, the mesh of the said net or seine is of seventeen square inches, made with a cordage known by the description of *garant de hunier*, of about an inch and three-quarters in circumference. The meshes are not made like the meshes of an ordinary net, the cordage being crossed, and bound with a small cord on the four sides; the principal cord on the sides of each large piece is four inches in circumference, an arpent in length, with an iron at each end, and attached by fastening the said irons with a pin and a rope, braced in

Morin's Net or Seine for the capture of Porpoises.

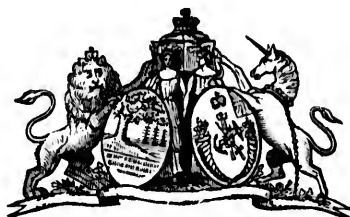
the first fastening of each end of the pieces. The two large pieces are also attached in the same manner, with a cord binding the two fastenings together. The net or seine will be set by attaching one end to the land, and running out about eight arpents, more or less, according to the circumstances, and then will be bent, and form a parallel line towards the shore. The net will be attached to the bottom of the water by anchors, to the feet of each of which will be attached a rope with buoys to raise them at pleasure. There will be buoys on the net to cause them to float on the surface of the water, and also sinkers at the bottom of the net to keep it spread; and when the porpoises shall have entered the net, the end of the net or seine which will be the farthest out will be drawn towards shore by a cylinder or steamboat.

MOYSE MORIN.

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A. D. 1841.—(LOWER CANADA.)—No. 54.

*Improvement upon "Smith's Patent Archimedian
Screw."*

LETTERS PATENT to Nelson Walker, of Montreal, Gentleman, for
the Invention of an "IMPROVEMENT UPON 'SMITH'S PATENT
ARCHIMEDIAN SCREW.'"

Montreal, dated 24th March, 1841.

BRIEF DESCRIPTION.

A stout rim of wrought iron is to be formed, about one half of the diameter of the propeller, and secured to a centre flange of cast iron by three arms or spokes of the same material as the rim, and placed at the angle decided upon, according to the use for which the same may be intended, say, from forty to fifty degrees; upon the circumference of the rim are placed six or more leaves of wrought iron, fastened by screw bolts and set to the same angle as the arms which complete the propeller; it is fastened upon the shaft in the usual manner, by two square keys of iron.

NELSON WALKER.



A. D. 1842.—(LOWER CANADA.)—No. 55.

*An improved method of constructing the Propellers
by him discovered and invented, and for which he
obtained a Patent, dated 24th March, 1841.*

LETTERS PATENT to Nelson Walker, of Montreal, Gentleman, for
the Invention of "AN IMPROVED METHOD OF CONSTRUCTING THE
PROPELLERS BY HIM DISCOVERED AND INVENTED, AND FOR WHICH
HE OBTAINED A PATENT, DATED 24th MARCH, 1841.

Kingston, dated 18th January, 1842.

BRIEF DESCRIPTION.

The rim described in the specification of the propellers invented by the said Nelson Walker, as aforesaid, is removed, and the improved propeller is constructed by fixing on the shaft intended to carry the propeller, a flange or centre of cast iron, or other suitable material, and affixing to it by bolts, rivets or other suitable and known contrivances, the leaves or arms of the propeller, made of boiler plate or other suitable material, radiating from the centre to the circumference, and forming at the centre or flange an angle of about forty-five degrees with the plane of motion, and at the circumference an angle of about forty-five degrees with the said plane, the said angles being proportioned to the diameter of the propeller, and to the use for which it is

Walker's improved method of constructing Propellers, &c.

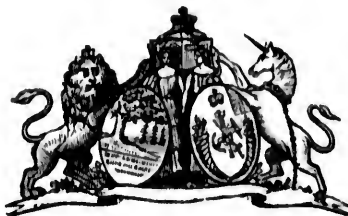
intended, but being always less at the circumference than at the centre, and diminishing regularly, so as to give a twisted form to each leaf or arm. The outside edges of the leaves or arms are to be secured at the circumference by two or more hoops of wrought iron, or other suitable material, firmly fastened to the said leaves or arms, but having in all cases sufficient space or spaces left between the said hoops, to allow the water to pass freely away.

NELSON WALKER.

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A. D. 1842.—(LOWER CANADA.)—No. 56.

*New and improved Paddle-wheel called the
"Osculatory Propeller."*

LETTERS PATENT to Peter Fleming, of Montreal, Civil Engineer,
for the Invention of a "NEW AND IMPROVED PADDLE-WHEEL
CALLED THE 'OSCULATORY PROPELLER.'"

Kingston, dated 12th March, 1842.

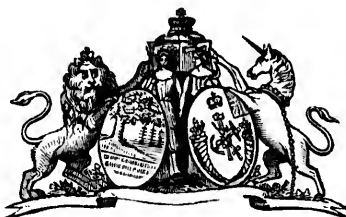
BRIEF DESCRIPTION.

The invention consists in making the paddle boards or buckets of the wheel move on hinges or joints, and in causing the wheel which carries them to revolve in a water-tight case, which may be fixed in any convenient part of the vessel to be propelled, and so as to be wholly or partially under water. An opening is to be left in the said case, and in the bottom or side of the vessel, throughout the space in which it is intended that the paddles should act, and through which opening the paddles project when in action; at each extremity of the opening thus made the case is formed into a curve, osculatory to the circle in which the paddles revolve, and so that each paddle, after passing through the said open space, in which it acts, may be impinging on that part of the case which is formed into the said osculatory curve, and is smoothly and yet rapidly thrown into a position co-incident with,

Fleming's new and improved Paddle-wheel, &c.

or tangential to the circle in which it revolves, in which position it will be kept by the case, which, except at the said opening, and at the said osculatory curves, will be a cylinder whose axis is the centre of the paddle shaft, and whose interior diameter and length will be just sufficient to allow the paddles to revolve or work clear of it when they are in the position last named; on their arrival at the osculatory curve on the other side of the opening in the case, the paddles will, by the oblique action of the water on their edges or under sides, (which are bevelled off for that purpose), be thrown smoothly but rapidly into the position of efficient action, in which they will remain until, having passed the opening aforesaid, they again come in contact with the osculatory curve as before; the action will be the same in which ever direction the wheel revolves, and the wheel may revolve either horizontally or vertically, or the axis may be inclined, as may be found most convenient and best adapted to the construction of the vessel to be propelled, all which, with the details of the construction of the said osculatory propeller, and the various modes in which its construction may be varied so as to use the principle of the said invention.

PETER FLEMING.



A. D. 1842.—(LOWER CANADA.)—No. 57.

*A method of propelling Vessels by means of Heated
Air acting on the fluid in which they float.*

LETTERS PATENT to Isaac Gouverneur Ogden, Town of Three Rivers, Esquire, for the Invention of "A METHOD OF PROPELLING VESSELS BY MEANS OF HEATED AIR ACTING ON THE FLUID IN WHICH THEY FLOAT."

Kingston, dated 27th June, 1842.

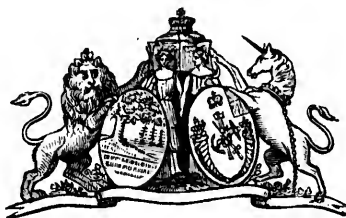
BRIEF DESCRIPTION.

The apparatus consists of a furnace with a funnel or conduit for its smokes, gases, &c. The furnace may be constructed of any shape most convenient to the place where it may be required, or according to the taste of its projector, and it may be built of any metal or materials capable of resisting a great heat. In the furnace there should be one or more small apertures near to, or in the bottom thereof, through which atmospheric air may by the help of a bellows or other machine be forced into the furnace. On the cylinder or tube which connects the bellows or forcing machine with the furnace, there should be a valve to prevent the air returning from the furnace after being forced into it. On the the top or near the top of the furnace there should be an aperture through which fire and fuel may be introduced, and to which must be attached a door or cover made to fit tight, so as to

Ogden's method of propelling Vessels, &c.

prevent the escape of air when the machine may be said to be at work, another aperture should be in the furnace, to which should be affixed the funnel or conduit pipe, strong and air tight, to be of any form, or of such form as may be most convenient; this conduit pipe should have its discharge or discharges under water, and it may have only one or many discharges, the discharge or discharges should be in a direction opposite or nearly so, to the direction in which it is intended the vessel or floating body shall be propelled; there may also be tubes to convey the smoke, gases, heated air, &c., in an opposite direction to those described above, to be used occasionally, when intending to back water, &c.

ISAAC GOUVERNEUR OGDEN.



A. D. 1842.—(LOWER CANADA.)—No. 58.

Machine called a Smut Machine, for cleaning Grain.

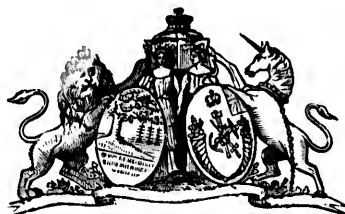
LETTERS PATENT to William Arms, of Sherbrooke, District of St. Francis, Iron Founder, for the Invention of a "A MACHINE CALLED A SMUT MACHINE FOR CLEANING GRAIN."

Kingston, 25th July, 1842.

BRIEF DESCRIPTION.

The machine consists of an outer and fixed cylinder, the inner surface of which is properly grooved, and within which an inner and moveable cylinder, furnished with properly constructed beaters, revolves with very great velocity; the grain being admitted (from a hopper) into the space between the cylinders, is thrown by the great centrifugal force communicated to it by the beaters on the inner cylinder, with such force against the grooves in the outer or fixed cylinder, as completely to beat off any smut or other impurity, and by a suitably arranged set of fanners, the impurities, lighter than the grain, are blown out at the top of the machine, while those which are heavier may be separated from it by a circular sieve fixed at the bottom of the machine, and having meshes for the proper size.

WILLIAM ARMS.



A. D. 1842.—(LOWER CANADA.)—No. 59.

*New and Useful Machine, hung with Nets, for the
fishing and taking Eels.*

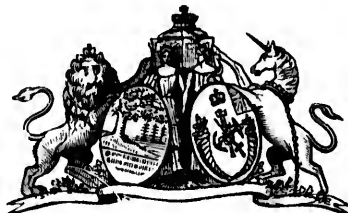
LETTERS PATENT to Edouard Belanger, River Ouelle, District of
Quebec, Trader, for the Invention of a "NEW AND USEFUL
MACHINE, HUNG WITH NETS, FOR FISHING AND TAKING EELS."

Kingston, 25th August, 1842.

BRIEF DESCRIPTION.

An Invention for catching eels by means of nets hung on poles, of which the basis can be formed of fascines of variable height fixed at a distance of four or five feet apart, when the bottom will permit it; but when the bottom is rocky, the poles must be fixed in hurdles loaded with stones; at the extremity of the machine is a piece of net commonly called *engoulement*, which communicates with another piece formed of fascines or nets, which are called *bourolle*; this *bourolle* communicates with a wooden box, which is placed at the extreme end of the machine, and from thence is a trough which joins another wooden box, which can be reached at low water, so that the fish can be taken when the first box is covered with water.

EDOUARD BELANGER.



A. D. 1842.—(LOWER CANADA.)—No. 60.

Certain new improvements in the Stoves cast in Scotland, and Three Rivers, in Canada, commonly called "Canada Box Stoves."

LETTERS PATENT to David Alexander Ross, of Quebec, Funder,
for the Invention of "CERTAIN NEW IMPROVEMENTS IN THE
STOVES CAST IN SCOTLAND, AND THREE RIVERS, IN CANADA,
COMMONLY CALLED 'CANADA BOX STOVES.'"

Kingston, dated 31st August, 1842.

BRIEF DESCRIPTION.

These improvements consist, first in the position of the holes in the division plate, through which the smoke escapes passing over the oven into the pipe hole, which, in the stove invented by him, are placed outside of the lower and top end plates, on one or either side, instead of being situated inside between those plates and the oven, and in consequence a slight difference of formation is made on the end, top, and division plates to cover the opening; by this means a larger oven is obtained than by the old method. 2nd. Another difference consists in the manner of securing the pins on which the hinges revolve: in all

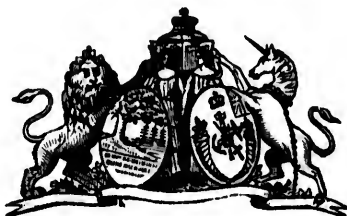
Ross' Improvements in Box Stoves.

other stoves, these pins are secured to the plate by malleable iron bands inserted into it and riveted on; in these stoves, the pins, by a different process, are enclosed in a projection forming part of the substance of the plate itself.

DAVID ALEXANDER ROSS.

the iron bands
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A. D. 1842.—(LOWER CANADA.)—No. 61.

*New and useful method of constructing Wheels to
be driven by Water.*

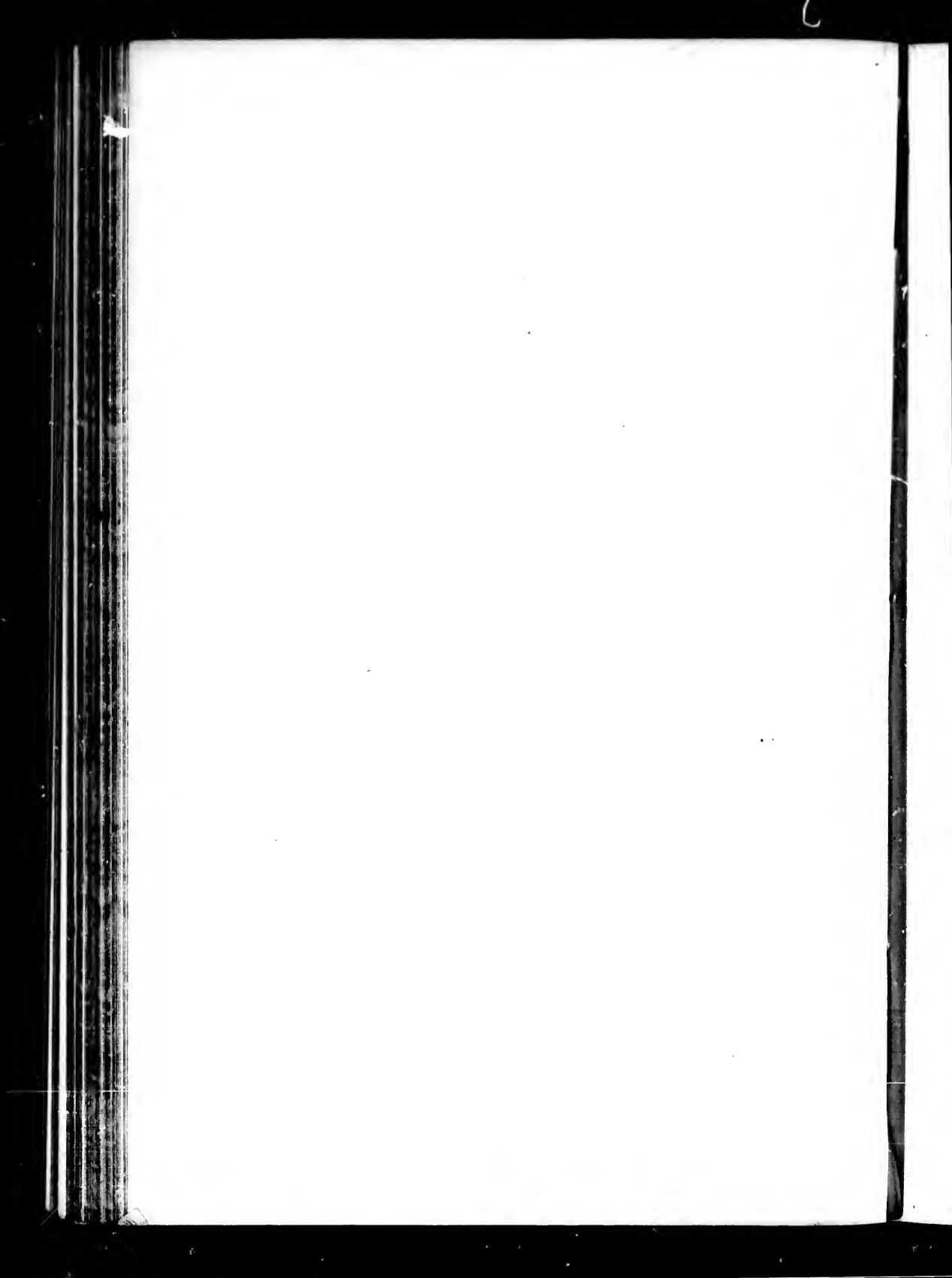
LETTERS PATENT to Harvey Tripp, of the Seigniory of Vaudreuil,
for the Invention of a "NEW AND USEFUL METHOD OF CON-
STRUCTING WHEELS TO BE DRIVEN BY WATER."

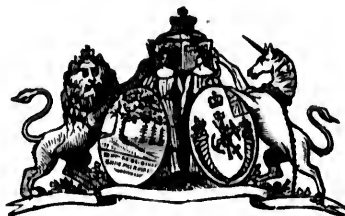
Kingston, 12th December, 1842.

BRIEF DESCRIPTION.

The said invention consists in bringing the water from the cistern or head water, through a close trunk of peculiar form and construction, so that it may act as well by its pressure as by its impulse, upon the oblique buckets of a wheel, also of a peculiar construction, and to which, from its construction and property of working under water, the inventor has given the name of "The Submerged Aufractuous Water-wheel."

HARVEY TRIPP.





A. D. 1842.—(LOWER CANADA.)—No. 62.

Drilling Machine, for the purpose of boring and drilling holes in Rocks, Canal Quarries, or for any other purpose.

LETTERS PATENT to Donald Alexander McDonald, of Beauharnois, Gentleman, for the Invention of a "DRILLING MACHINE FOR THE PURPOSE OF BORING AND DRILLING HOLES, &C., IN ROCK, CANAL QUARRIES, OR FOR ANY OTHER PURPOSE."

Kingston, dated 19th December, 1842.

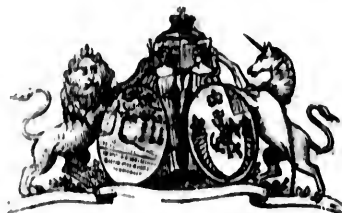
BRIEF DESCRIPTION.

The framing is put together with iron pins and nuts, and slides on the beam to any given distance that may be required, as the boring proceeds; the beam is framed and braced, and also revolves on a platform, so that the machine may have a circular movement from side to side. There is a slide board for wedging the framing on the beam, and a connecting rod from the eccentric to the gate; the gate is worked by a connecting rod, up and down in the slides on each side, on which the sheers are fixed; for lifting the drill, a noddle pin passes through the sheers and gate, being two inches in diameter at top, with an angle, which angle, as it passes through the sheers, and strikes a pivot on the top of slide, forces the sheers open, thereby letting the drill fall, and

McDonald's Drilling Machine.

when the noddle strikes the bottom pivot, it sends the noddle up to its proper place, and so on in rotation; a spring shuts the sheers, so that when the gate has descended, and in the up stroke the sheers grip the mandril and lift it, until they are opened by the noddle pin before specified. There is an eccentric wheel or crank, on which the connecting rod is fixed, for giving the ascending and descending motion to the gate; the eccentric is fixed on the same axle with the drum, worked by a strap from the propelling power, either horse, steam or manual labor.

D. A. McDONALD.



A. D. 1843.—(LOWER CANADA.)—No. 63.

New and Improved Water-wheel.

LETTERS PATENT to John Lamb, of Montreal, for the Invention
of a "NEW AND IMPROVED WATER-WHEEL."

Kingston, dated 3rd April, 1843.

BRIEF DESCRIPTION.

The design of the invention is to propel water-wheels by means of the water being passed through oblique orifices placed round the circumference of the wheel. The working of the wheel may be illustrated by stating, that the orifice apparatus in which the wheel is contained, may be placed in a cistern, with a circular large enough to admit the wheel, which is partly opposite the orifices in the apparatus, and partly below it, through the cistern, thus securing the unimpeded discharge of the water; the floats being identified with the wheel, those of them which are opposite the orifices are parallel with the shaft, and perpendicular to the great plane of the wheel; the other floats are inclined against the water as it presses through the orifices, and passes partly through the cistern below. To move the wheel, the water is let into the cistern in such quantities as to raise the whole head of water upon the orifices, through which it is pressed upon those floats which are paral-

Lamb's New and Improved Water-wheel.

lel to the shaft or axes. The impulse given to the wheel is then continued by the water pressing upon the inclined portion of the floats, and thus passing from the wheel.

JOHN LAMB.



A. D. 1843.—(LOWER CANADA.)—No. 64.

Machine for extinguishing Fires, to wit, a Fire Engine.

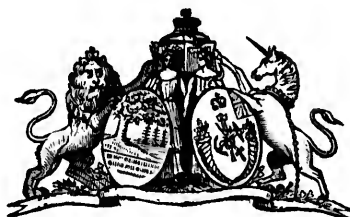
LETTERS PATENT to Louis Lemoine, of Quebec, for the Invention of a "MACHINE FOR EXTINGUISHING FIRES, TO WIT, A FIRE ENGINE."

Kingston, dated 1st June, 1843.

BRIEF DESCRIPTION.

This engine has but one cylinder, instead of two or three, as in ordinary engines, but its action is double, having the power of throwing water constantly and continually, as the piston rod ascends or descends, and with such force as to discharge nearly a ton of water per minute; it has also the advantage of having attached to it a furnace, by means of which the water with which the engine is supplied is kept sometimes hot, but always prevented from freezing during the coldest weather in Canada. Attached to it also is a receiver, as in ordinary engines, whose action is derived from the pressure of the air it contains against the superabundant water which is thrown into it, thereby giving a continuous motion to the external jet of water, proportioned to the force employed.

LOUIS LEMOINE.



A. D. 1843.—(LOWER CANADA.)—No. 65.

New and Improved Trusses.

LETTERS PATENT to John O. Brown, of Montreal, for the Invention of "NEW AND IMPROVED TRUSSES."

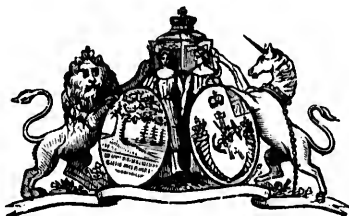
Kingston, dated 7th July, 1843.

BRIEF DESCRIPTION.

The single inguinal truss, the double inguinal truss, on a single spring, and also on two springs, and the femoral truss, the said trusses being composed of block pads, covered so as not to chafe the skin, the inner surfaces of which to be something similar to the oval of an egg, but thicker at the lower edges; plates of iron or other material are sunk to the surface at the back of the pads, having two screw holes to attach them to necks or yokes, descending from the ends of springs in which necks or yokes long square openings are left to raise or depress the pads as required; soft pliable pads, with straps to admit of their sliding easily on the backs of the springs, are attached; the springs are formed of the best refined steel, to be covered with some soft material, and are to be worn from two-thirds to three-fourths round the body, having straps attached to be carried round the remaining portion, and fastened to a button or screw on the springs.

JOHN O. BROWN.

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A. D. 1843.—(LOWER CANADA.)—No. 66.

*New and useful method of constructing Springs
for Carriages.*

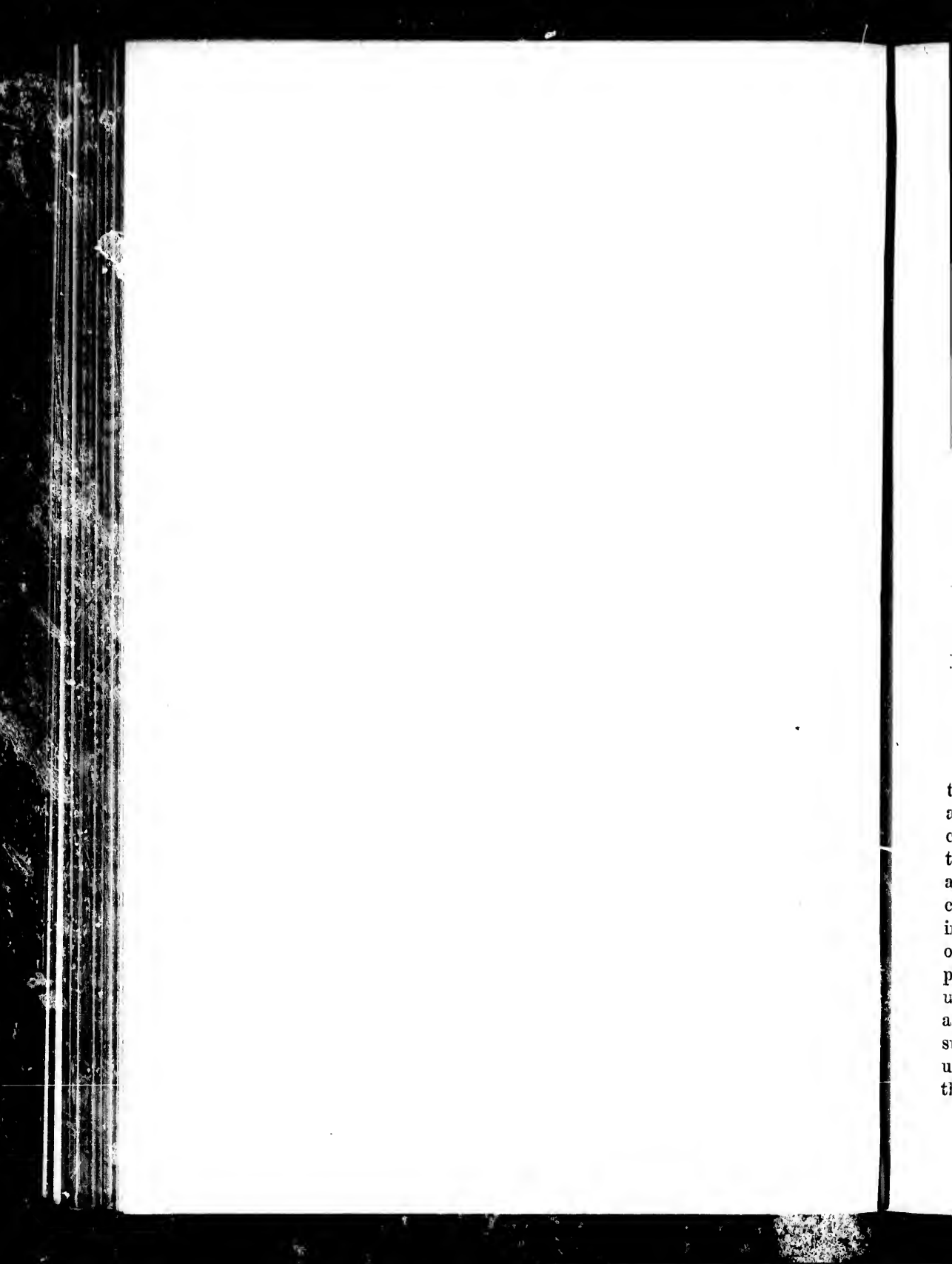
LETTERS PATENT to Edouard Gingras, of the City of Quebec,
Coach Builder, for the Invention of a "NEW AND USEFUL METHOD
OF CONSTRUCTING SPRINGS FOR CARRIAGES."

Kingston, dated 16th September, 1843.

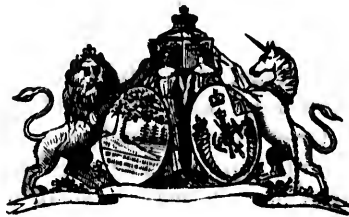
BRIEF DESCRIPTION.

The said method consists in making the carriage spring a compound bow spring, formed of two steel bows connected together at the point, forming the centre of the compound bow (by a link having two pin joints, each of which receives the end of one of the single bows, and a stem at right angles to the line connecting the said two joints, and rising or descending to the axle-tree, to which it is firmly secured); and the string or cord of which said compound bow is formed of five or more links jointed to each other, and to the outer end of the single bows aforesaid, the centre link being firmly connected with the upright ascending or descending stem aforesaid, and therefore to the axle-tree.

EDOUARD GINGRAS.



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A. D. 1844.—(LOWER CANADA.)—No. 67.

Machine for grinding Clay.

LETTERS PATENT to Austin Adams, of the City of Montreal,
Brick Maker, for the Invention of a "MACHINE FOR GRINDING
CLAY."

Kingston, dated 8th January, 1844.

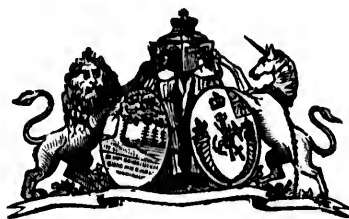
BRIEF DESCRIPTION.

There is first the hopper, into which the clay is put when dug; in this revolves a horizontal cylinder, enclosed by an iron grating, and armed with teeth, by means of which the machine is fed, and the clay cut up and divided; immediately below the cylinder is a set of horizontal rollers, with an opening between them sufficient to admit the clay as it falls, after having been partially cut up and divided by the toothed cylinder; next below is another set of horizontal rollers, with an opening between them, somewhat smaller than in the upper set, by means of which the clay is still further ground up, when it falls into a conical pit or tunnel immediately beneath; in this pit or tunnel, revolves an upright shaft, with arms projecting at right angles, in which knives are inserted; water is admitted into the pit or tunnel in quantities sufficient to reduce the clay to a proper consistency, which is easily and uniformly accomplished by the arms and knives on the upright shaft; the clay, when thus properly ground and mixed, then passes from the

Adams' Machine for Grinding Clay.

lower part of the pit or tunnel upon a table or shelf, when it is at once put into moulds and disposed of in the usual manner. The motive power is applied to a bevel wheel on the lower part of a perpendicular shaft; on this shaft, near the top, is another bevel wheel, which acts on a mitre wheel fixed on a transverse shaft, which latter shaft, by means of mitre wheels, acts upon and turns the perpendicular shaft, which revolves in a pit or tunnel, into which the clay passes from the lower set of rollers; in the middle of the upright shaft to which the motive power is applied, is a mitre wheel, which acts on another mitre wheel fixed on a horizontal shaft which passes between and in front of the upper and lower set of rollers; on this horizontal shaft, and fixed to the mitre on this shaft, is a spur wheel by which motion is at once communicated to the upper and lower sets of rollers by means of the spur wheels attached to each of the rollers, and turning outside of the frame; motion is communicated to the horizontal toothed wheel which revolves in the hopper by one of the spur wheels on the upper set of rollers, which acts upon, and turns a spur wheel; on the said toothed cylinder, scrapers are applied to the rollers, to secure their uninterrupted action.

AUSTIN ADAMS.



A. D. 1844.—(LOWER CANADA.)—No. 68.

New and Improved Revolving Drying Kiln.

LETTERS PATENT to Hiram Bigelow, Coteau du Lac, District of Montreal, Miller, for the Invention of a "NEW AND IMPROVED REVOLVING DRYING KILN."

Kingston, dated 9th January, 1844.

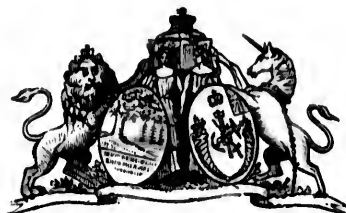
BRIEF DESCRIPTION.

This kiln is composed of a cylinder made of cast iron, having an iron shaft passing through the centre, on which revolves the said shaft, and driven by a pulley or wheel attached to one end of it. This cylinder is placed in an oblique position having about eighteen inches fall from the upper to the lower end, and is enclosed either in another metal cylinder or in a brick arch, thus leaving a space between the two cylinders or arch all round, through which space the fire is conducted from a fire place or grate at the lower end, and passed out by a chimney at the upper end. The grain or whatever is required to be dried is conducted by a tube into the upper end of the inner cylinder, and is discharged by another tube at the lower end, and when cool will be found to be completely dry. The cylinders may be made of greater or less dimensions, in proportion to the quantity of work proposed to be done.

HIRAM BIGELOW.

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A. D. 1844.—(LOWER CANADA.)—No. 69.

Spike Machine.

LETTERS PATENT to John M. Holland, Sault au Recollet, District of Montreal, for the Invention of a "SPIKE MACHINE."

Kingston, dated 6th March, 1844.

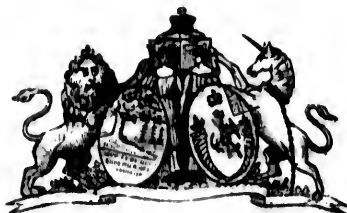
BRIEF DESCRIPTION.

The principle of this machine and one of its leading improvements and characteristics is, that the spikes are formed with hammers instead of being formed by wedging or pressure. These hammers are fixed in a carriage on the main shaft, which works against a rod passing through the centre of the shaft, and which carriage is pushed forward in time to commence pointing the spikes as soon as it is held in the proper position by the gripping jaws, the carriage being drawn gradually backward whilst the hammers are in motion communicated by the cam wheels working the vertical hammers. The cams that lift the vertical levers are so graduated that at the third and last blow the heels of the vertical hammers are brought together and point the spike; in the mean time the horizontal hammers are giving intermediate blows to keep the spike at its proper width at the point. The machine is put in motion by a band on a pulley with balance wheel. The rod of iron from which the spikes are to be made, is put in red hot at the end of the machine between the gripping jaws, where it is stopped by a gauge between the hammers that point the spike, the cutting lever, contain-

Holland's Spike Machine.

ing a knife, is brought by the cam lever on the side of the machine, and the spike is cut off at the end of header. A wedge is then forced forward by a cam on the main shaft between a block on the frame and moveable gripping jaw, and the spike is held fast in the dies between the moveable and stationary gripping jaws, while the head is formed by the header, and the point is made by the vertical and horizontal hammers. The wedge is then drawn back, also the moveable jaw and the spike falls out, finished into a spout or trough. It is to be noticed that the machine may be worked either by bevel or cam wheels on the main shaft.

JOHN M. HOLLAND.



A. D. 1844.—(LOWER CANADA.)—No. 70.

*Method of Pumping Ships and other Vessels,
called the "Seaman's Friend."*

LETTERS PATENT to Thomas Proudlock, of the Township of Wentworth, District of Montreal, Ship Wright, for the Invention of a
"METHOD OF PUMPING SHIPS AND OTHER VESSELS, CALLED THE
'SEAMAN'S FRIEND.'"

Montreal, dated 16th October, 1844.

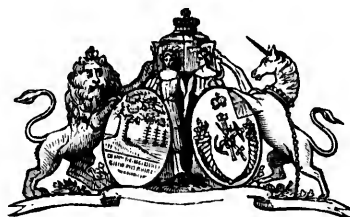
BRIEF DESCRIPTION.

The said apparatus or machine is upon the circumrotary principle, which, being attached to a ship or vessel, will cause her to pump herself, and do nearly all the laborious work on board a ship or vessel at sea in strong weather, with little or no assistance from manual labor; attached to it is a perpetual water gauge, telling the depth of water in the hold, and giving an alarm at every inch the ship makes; it is open to the view of every person on the deck or in the cabin. There is also an apparatus for finding the rate at which the ship is sailing with more correctness than the log and line. The apparatus or machine, with the pumps, four in number, are fixed in a frame round the main mast, in the space of about six feet, or nearly the same as the pumps now in use. The machinery consists of the frame marked A; crank shaft, marked B; toothed wheels on the crank shaft, marked C C; pinion on the end

Proudlock's method of pumping Ships, &c.

of the main shaft, marked D D; pumps, four in number, marked E E; connecting bars between the pump spears and crank, marked F; fly-wheel, marked C C; rate screw, scale and index, marked H; tiller, marked I; great wheel, marked K; float-wheel with suspending rods, marked L; end of the main shaft with the flanges, marked M; inner end of the main shaft, with the pinion, marked N; index, marked O O; floats in the act of ascending with their expanding on rods, marked P; floats descending into the water, marked Q; floats as when at work, marked R; pump spear, marked S; water guage, marked T; chains that connect the float and drive the great wheel, marked V V; expanding rods to allow the floats to expand and contract as they pass the centre of the wheels.

THOMAS PROUDLOCK.



A. D. 1844.—(LOWER CANADA.)—No. 71.

New method of constructing Piano Fortes.

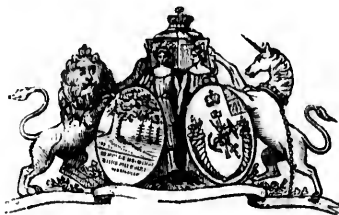
LETTERS PATENT to George Milligan, of Quebec, Piano Forte Maker, for the Invention of a "NEW METHOD OF CONSTRUCTING PIANO FORTES."

Montreal, dated 21st November, 1844.

BRIEF DESCRIPTION.

The Invention consists in applying a metallic rest plate to piano fortes, and in perforating the rest plate, so as to receive the tuning or rest pins of piano fortes; this rest plate to have a metallic rest plate bridge perforated so as to receive the pins of the said bridge. This metallic rest plate is to be united with the metallic linking plate now in use, which will make the rest plate and linking plate one piece, joined by connecting bars, the whole forming one complete metallic frame; this frame to be made of any and every description of metal or composition of metal, and to be adapted to every description of piano fortes now in use or hereafter to be in use—the object of this metallic frame being the prevention of contraction of piano fortes.

GEORGE MILLIGAN.



A. D. 1844.—(LOWER CANADA.)—No. 72.

*New cast iron Cooking and Caloriferous Stove, and
an alteration in the construction of the Crockery
or Brick Stove, being an improvement on the Stove
introduced by one John Vannovous.*

LETTERS PATENT to Joseph Smolinski, of the City of Quebec,
Gentleman, for the Invention of a "NEW CAST IRON COOKING AND
CALORIFEROUS STOVE, AND AN ALTERATION IN THE CONSTRUCTION
OF THE CROCKERY OR BRICK STOVE, BEING AN IMPROVEMENT ON
THE STOVE INTRODUCED BY ONE JOHN VANNOVOUS."

Montreal, 21st November, 1844.

BRIEF DESCRIPTION.

The said cast iron cooking and caloriferous stove, and the alteration in the construction of the crockery or brick stove differs materially from the crockery stove described in the patent dated the seventh day of November, 1837, although its exterior appearance may, in some cases, be the same, the apparatus which forms the improvement being placed in the interior with apertures, which the other had not; by this one the mode of heating is considerably facilitated, made more useful, and the construction of the stove rendered of greater durability; this forms the

Smolinski's new cooking and caloriferous Stove.

improved portion. The invention consists in the addition of a cooking apparatus, which, at the same time, serves for all caloriferous purposes; the stove is of larger or smaller dimensions, according to the size of the rooms or apartments to be heated, and varying in shape, color and material according to taste or fashion; there are cold air holes through which air introduces itself, and when heated in the space between the iron work and crockery stove, it expands, becomes therefore lighter, and finds its way into the apartment through hot air holes, or through crockeryware tubes which conduct it, if desired, to other apartments; there is an interior section of the stove seen from the cooking side; there is a wooden frame forming the basis of the stove, the interior of which is filled with bricks and fire mortar resting on the floor; bricks are placed at intervals endwise or otherwise to support two or three layers of bricks, and forming in the meantime passages for exterior air, the circulation of which, besides the thickness of the layers, prevents the lower part of the stove from being heated too much; the intervals may be wider or narrower at will; there are layers of brick on which the cast iron frame rests; a drawer or ash-pan is fixed between the bricks with an iron frame flinged outside to guard the crockery, and through which the ash-pan is drawn out to be cleaned; there is a hearth-box in which the wood consumes, with a door to the same; there are flues through which the smoke circulates, and passes to the chimney; there are openings to the lower and to the upper cooking furnace; there is an iron tube flinged at the top, which is suspended upon iron bars inserted in the crockery work—this disposition of the above tube is necessary to connect the iron flues with the crockery ones, isolating it at the same time from the iron work, which, by the action of the heat, expands, whilst the crockery contracts; the lower part is imbedded into sand kept outside by a flinge attached to the upper plate, and inside, by a smaller tube, through which the flame and smoke pass to the above larger tube, and afterwards to the crockery flues; there is a space between the crockery wall and the iron work through which the outside air circulates, and is heated; this space is broader or narrower, according to the size of the stove; from the space above the upper iron stove, which contains hot air, tubes can be inserted to conduct it to any part of the house; there is a key or door to shut the flue when the wood is consumed; there is an iron

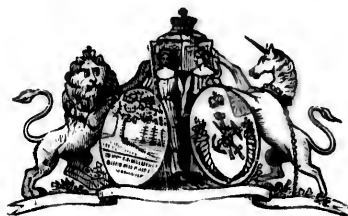
Smolinski's new cooking and caloriferous Stove.

frame on which rest the side plates of the lower stove or furnace, a grate through which air passes to the burning wood, and the ashes fall into the ash-pan, and fire bricks inserted in the iron frame, and resting on the layer; the end plate of the three furnaces is grooved, in order to receive the side plates—the end plate of the lower furnace is lower; there is a side plate of the lower furnace, as also a front plate, to which are attached the hinges of the door; the neck prolongs, to leave room for the front wall; there are plates which cover the lower furnace, and form the ground or floor of the two cooking furnaces, and an aperture through which the smoke passes; there are two grooves, into which fit the end of the dividing plate; there are flanges (in the back part) which hold the dividing plates which form the channel through which flame and smoke circulate, partly around the cooking furnaces. The neck in the front of the cooking apparatus is necessitated by the thickness of the crockery wall; to the flange are attached door hinges; there are two end plates, and an upper dividing plate of the cooking furnaces; a hole shut by a moveable cover serves to clean the smoke flue, and can be opened when grease or any other matter falls upon the floor of the cooking furnace, and by burning, causes an unpleasant smoke or smell, which can then escape into the chimney; there is an upper plate or cover of the upper cooking furnace; a flange attached to the plate; an ash-pan or drawer, the front of which has holes which can be shut at will, and through which air passes to the fire grate, and an iron frame inserted into the crockery work, and which receives the drawer or ash-pan. The improvement consists in the introduction of one, two or more cooking stoves into the crockeryware stove, which cooking stoves are, in themselves, much more efficient and commodious than the isolated ones; it at the same time improves the drawing-room, passage, bed-room, or state-room crockeryware stove, by the introduction of cast iron furnaces, single, double or treble, which emit a greater quantity of heat, and make the stove more durable than in the former mode of construction. The same iron work or cooking apparatus can be adapted to chimneys for summer use; that contrivance prevents the overheating of kitchens or other apartments where cooking is done. The same cooking stove might be used by country people, who then might use bricks instead of crockeryware. A dumb stove constructed upon the same principle as the above, but without

Smolinski's new cooking and caloriferous Stove.

the fire furnace, can be placed above the other, receiving its heat from the lower one, and communicating it to the apartment in the same manner, that is to say, as well by smoke as by communication given from the cavity containing hot air.

JOHN SMOLINSKI.



A. D. 1845.—(LOWER CANADA.)—No. 73.

*Improvement in the Truss for the alleviation and
cure of Hernia.*

LETTERS PATENT to Chandos Hoskyns, of Montreal, Esquire, for
the Invention of an "IMPROVEMENT IN THE TRUSS FOR THE
ALLEVIATION AND CURE OF HERNIA."

Montreal, dated 31st January, 1845.

BRIEF DESCRIPTION.

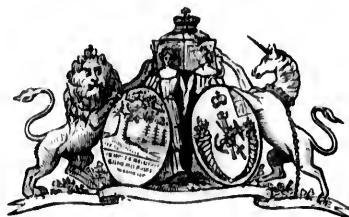
The said improvement consists in the manner in which the front pad is constructed. The sliding plate and the springs are so constructed that they may be attached to each other by means of a screw, which screw, when loosened, allows the pad to range to any point within a given circle, either in a perpendicular, horizontal or oblique direction, and also allows the sliding plate which attaches the front part of the springs to be lengthened or shortened at the wearer's pleasure, and then retained in the desired position by means of tightening the screw, and the mode by which the back parts of the springs are attached to each other, and to the back pad.

CHANDOS HOSKYNs.

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A. D. 1845.—(LOWER CANADA.)—No. 74.

*A New method of propelling Vessels, Carriages,
&c. &c., by machinery, without the agency of fuel.*

LETTERS PATENT to Jean F. C. Ouellet, of Montreal, Gentleman,
for the Invention of a "NEW METHOD OF PROPELLING VESSELS,
CARRIAGES, &c. &c., BY MACHINERY, WITHOUT THE AGENCY OF
FUEL."

Montreal, dated 26th March, 1845.

BRIEF DESCRIPTION.

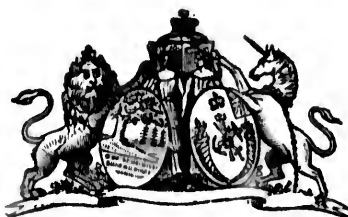
The invention consists of an arm, being the principle power to move the engine, or main spring to restrain the too free action of the arm above mentioned, a spring to aid the main spring in its working, and a chain to aid the leg of the engine in its movements; two wheels for propelling the vessel; a chain to aid the arm; an arm to aid the wheels in their evolutions; a chain uniting and aiding the arm which propels the wheel; a leg which is secondary aid to movements; a spring to confine the arm; a spring to restrain the too free action of the leg; a chain for the shafts; a post for the superior arm; a shaft; a principal or first chain of the shaft; and finally, the body of the vessel.

JEAN F. C. OUELLET.

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A. 1245.—(LOWER CANADA.)—No. 75.

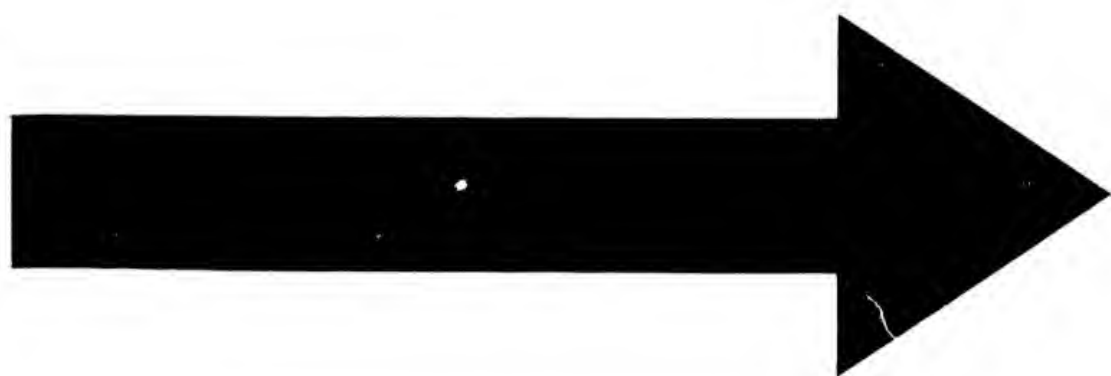
New Method of constructing Water-wheels.

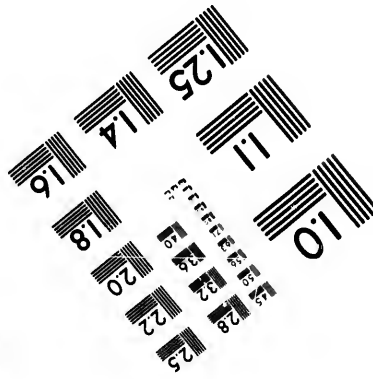
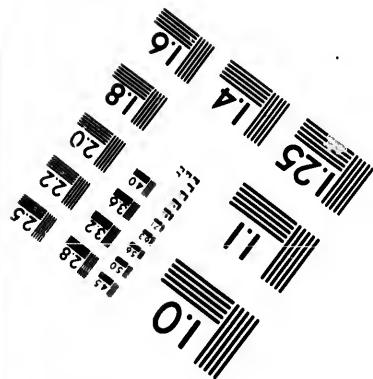
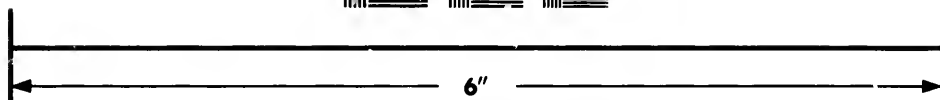
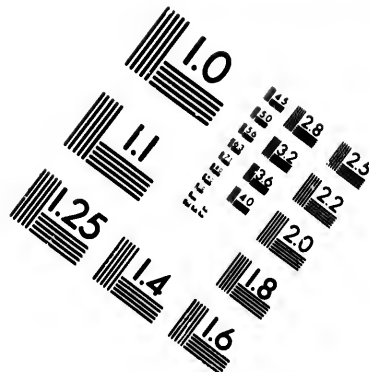
LETTERS PATENT to Elias Nichols, of the Town of Sherbrooke,
District of St. Francis, Millwright, for the Invention of a "NEW
METHOD OF CONSTRUCTING WATER-WHEELS."

Montreal, dated 4th April, 1845.

BRIEF DESCRIPTION.

The superiority of this wheel over all others is, that the water enters on a diminishing, while the floats revolve in a complete circle, by which arrangement the floats approach the power by degrees, and receive the impetus of the water on three or more of their number at once; to obtain this on an upright shaft, floats or paddles are inserted in, or fastened to the shaft; a floor is placed beneath the floats, with space for the water to fall out and escape; a curb is made to surround the wheel, which is high enough to receive the covering of the wheel; into this curb, as inserted in the gate or gates, and at each, it is so placed as to commence a diminishing circle, which runs in towards the points of the floats, until it strikes the true circle; the wheel being covered, and the gate or gates hoisted, the water rushes in, pressing the outside of the diminishing circle, which, by curbing the water, inclines it towards the true circle, and forcing the water upon the points of the floats, carries them with it, until having expended its power it falls through the space cut in the wheel floor. On a horizon-





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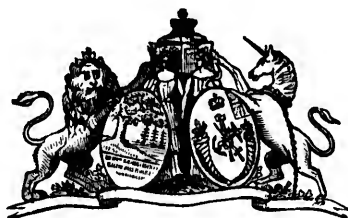
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Nichols' new mode of constructing Water-wheels.

tal shaft, the water is let in at the side on a diminishing circle, which is brought to a true circle as it passes round the wheel, being surrounded by a curb as far as the water is required to operate, when the water passes out at one side, left open for that purpose, or at each end round the shaft, as the length or largeness of the wheel may require.

See Drawing No. 75.

ELIAS NICHOLS.



A. D. 1845.—(LOWER CANADA.)—No. 76.

*New and useful method of constructing Counter-
balance Machines.*

LETTERS PATENT to Ebenezer E. Gilbert, of Montreal, Gentleman,
for the Invention of a "NEW AND USEFUL METHOD OF CON-
STRUCTING COUNTER-BALANCE MACHINES."

Montreal, dated 21st May, 1845.

BRIEF DESCRIPTION.

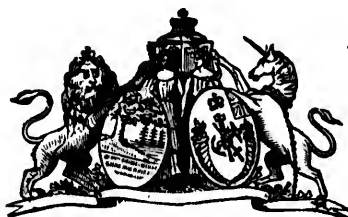
The said machine applies to practical purposes, in raising and lowering casks, the well-known principle of the accumulation of force obtained by a person ascending a ladder or inclined plane, and expending the power thus accumulated in descending, and thus raising the weight to be lifted. The machine consists of a ladder firmly attached to two skids or guides, between which a carriage passes, in which the operator descends, after having mounted to the top of the ladder; at the upper end of the ladder is a gin or wheel, over which passes a rope attached at one end to the carriage above alluded to, and at the other to two ropes, which are connected with the two ends of a stretcher, or bar of wood or iron; this bar passes through a hem or tabling in an apron of canvass; the cask to be raised is rolled over the bar or stretcher into the apron; the operator having ascended the ladder, places himself in the carriage, and by his weight in descending, raises the cask to the required elevation, when it rolls off; the operator then leaves

Gilbert's method of constructing Counter-balance Machines.

the carriage, the apron descends, and is ready for repeating the operation. For lowering the casks, a counterpoise is attached to the carriage, causing it to descend, and elevating the apron. The gin or wheel to increase friction is prevented from turning; the cask rolled against the apron, descends to the floor, and rolling over the bar, permits the apron to re-ascend.

See Drawing No. 76.

EBENEZER E. GILBERT.



A. D. 1845.—(LOWER CANADA.)—No. 77.

New method of constructing Paddle-wheels of the description termed "Sweeping Paddle-wheels," for propelling steam and other Vessels.

LETTERS PATENT to Nicol Hugh Baird, of Montreal, Civil Engineer, for the Invention of a "NEW METHOD OF CONSTRUCTING PADDLE-WHEELS OF THE DESCRIPTION TERMED 'SWEEPING PADDLE-WHEELS,' FOR PROPELLING STEAM AND OTHER VESSELS."

Montreal, dated 30th May, 1845.

BRIEF DESCRIPTION.

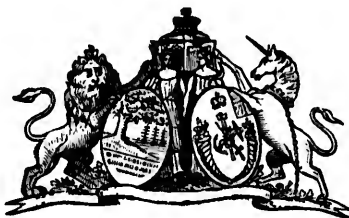
The said invention consists of eight arms, more or less, as the case may be, to be made of good sound white oak or other suitable material, with one or more range of arms of such diameter as may be found suitable, varying from fifteen to thirty feet, more or less; the said arms to be from six to nine inches square at the axis, tapering towards the point, and placed diagonally or otherwise to the axis, in iron flanges, or otherwise, as may be deemed most advisable; on these arms, and properly secured with a sufficient number of bolts and fastenings, the paddles are to be placed, forming an angle of forty-five degrees, or any other angle that may be found or considered more advisable, so that they may enter the water obliquely, and come out obliquely at any of

Baird's new method of constructing Paddle-wheels, &c.

the before mentioned angles, and without back water; such paddles to resemble in form and shape the Indian paddle, to be placed vertically on the arms of the aforesaid angles; to be five, six or ten feet in length vertically, more or less, in proportion to the draught of the vessel; to be, for a vessel of eight feet draught of water, three feet in breadth at the point, and one foot at the wrist or extremity of the paddle nearest the axis; to be of good sound oak, one to have two inches in thickness, or other timber, or of strong boiler plate, to be secured at the periphery by strong substantial one or two-inch wrought iron bolts, with regulating nuts or tempering screws, and also of semi-radius, by substantial iron bands, three inches by one inch of wrought iron, and to be properly bolted together, and through the arms, or with wooden rims and iron plates, as practised on the common wheel; to have wrought iron shafts, from seven to nine and ten inches diameter, more or less, or cast iron, as from the shortness of the bearings the latter may be found sufficient, of the common dimensions; in either case, to be attached to the engine in the common mode, or otherwise. The paddles may go within one foot of the bottom of the vessel; the breadth of wheel need not, in ordinary cases, exceed one foot six inches to two feet six inches. In application to sea-going vessels (merchantmen), the outside bearing and paddle-boxes may be dispensed with by having the wheel hung "cantilever," and properly keyed on the square or octagon of the shaft; the wheel to be placed longitudinally with, or parallel to, the side of the vessel, or at any angle or position that may be deemed advisable. The sweeping paddle wheels may be placed to throw the water out from the boat, or against, or underneath the same, as may be considered advisable, or in any other position.

See Drawing No. 77.

NICHOL H. BAIRD.



A. D. 1845.—(LOWER CANADA.)—No. 78.

*Method of constructing "Harmonic" attachments
for Piano Fortes.*

LETTERS PATENT to Samuel R. Warren, of Montreal, Piano Forte
Manufacturer, for the Invention of a "METHOD OF CONSTRUCTING
'HARMONIC' ATTACHMENTS FOR PIANO FORTES."

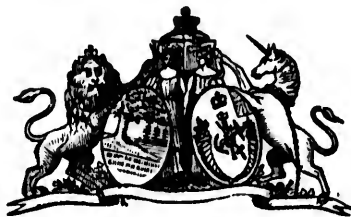
Montreal, dated 9th July, 1845.

BRIEF DESCRIPTION.

The said invention consists of a rail and a projecting damper, the latter of which may be made of any yielding substance, such as leather, felt, or the like, which by means of the pedal hereafter mentioned and the arm, is brought into contact with the strings, producing the harmonic sounds at the pleasure of the performer; the rail being hinged in the frame of the piano, is moved in a downward direction by means of the pedal, but is kept elevated above the strings by means of a spring during ordinary action. The invention is the construction of the harmonic rail and its application to the piano forte under any or every modification of the instrument.

See Drawing No. 78.

SAMUEL R. WARREN.



A. D. 1845.—(LOWER CANADA.)—No. 79.

Method of constructing "Instruments for digging potatoes, called Potato Diggers."

LETTERS PATENT to William Watts, of Montreal, Nursery and Seedsman, for the Invention of a "METHOD OF CONSTRUCTING 'INSTRUMENTS FOR DIGGING POTATOES, CALLED POTATO DIGGERS.'"

Montreal, dated 19th July, 1845.

BRIEF DESCRIPTION.

The said invention consists, in the first place, of a beam about four and a half feet in length, of size and shape similar to that of a common plough, with two handles also similar to those of a plough, at the forward end of this beam are placed two cast iron wheels about sixteen inches in diameter, the rims of which are about one and a half inch wide, these wheels are connected by a curved axle made of wood or iron; as may be most convenient, about two feet in length, the beam rests on the centre of the axle, at about a foot from the forward end, where it is secured by a bolt, the purpose of these wheels is to run on each side of the potato drills and thereby keep it steady in its place; the articles which remove the potatoes, and which is called the digger is composed of nine iron prongs, the centre or mean one being about nineteen inches in length from the extreme point to the heel, the

Watt's Potato Digger.

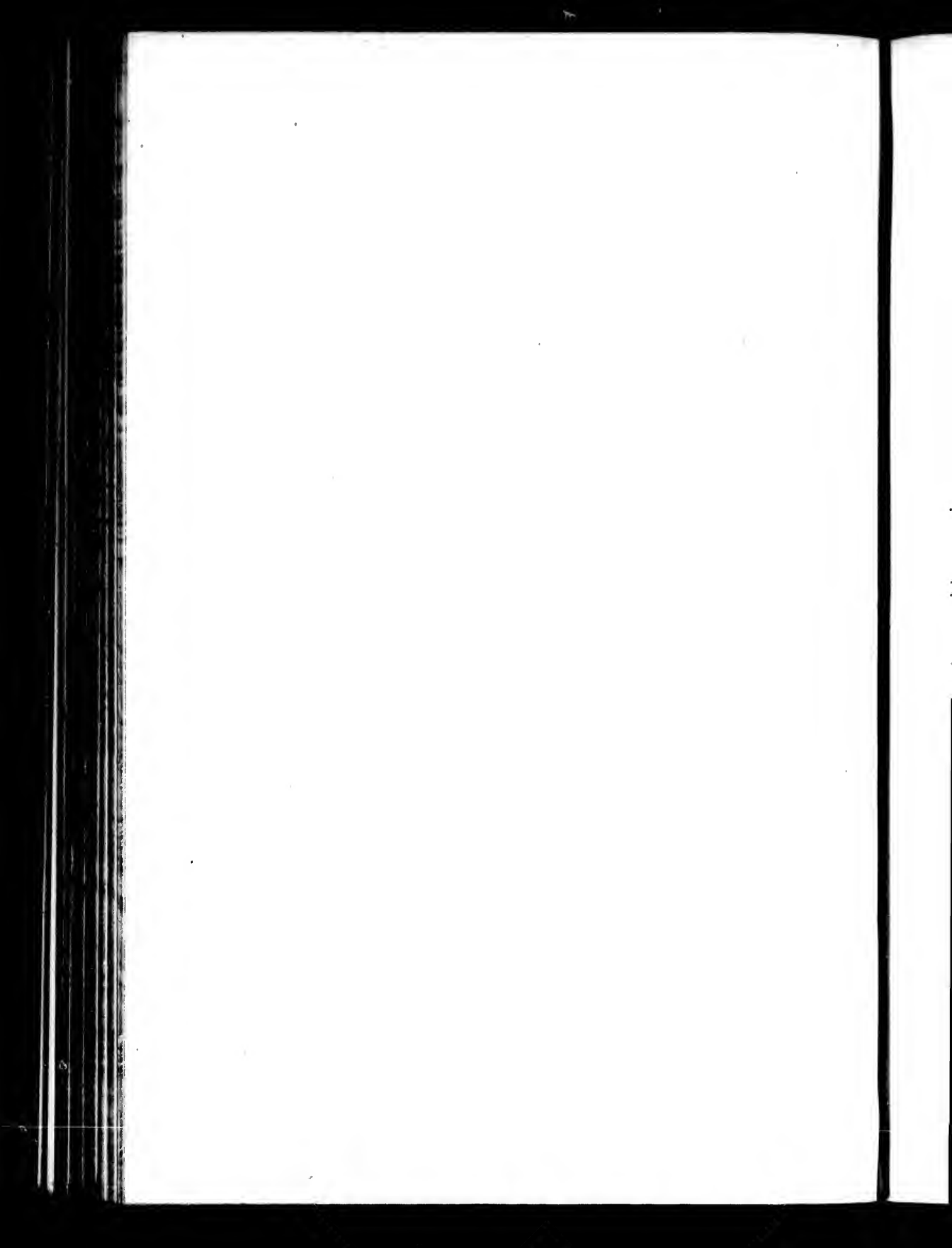
size of this prong is about one and a half inches in breadth by two inches in thickness, gradually reduced towards the bottom and ending in a flat steel point, the other end of this prong from the heel is made like the shank of a colter or common plough, and runs through a mortice in the beam about two feet from the handles, where it is held by means of a pin, this may be raised or lowered to accommodate it to the depth of mould in which it is required to be worked by means of holes, the other prongs are placed four on each side of this centre one, the length of those next to the centre is seventeen inches, the next on each side two inches shorter still, and the remaining two on each side two inches shorter still, the width of these prongs is three quarters of an inch and their thickness a quarter of an inch, the open spaces between each of these prongs is an inch and three quarters at the points, increasing to two inches at the tops, which gives to the digger a greater width at the discharging than at the receiving end, which is necessary to prevent its choking with the mould and potatoes; these prongs are all held together by two cross bars passing over the whole of them and either welded or riveted securely to each; these cross bars are of the same thickness and width as the smaller prongs, the lower cross bar sets about two inches from the points of the prongs, the upper cross bar sets four inches from the upper ends of the prongs, and instead of passing over, passes through the centre one; the outside bar on each side is turned up nearly at right angles the whole length, thus forming sides or edges to the diggers, the ends of the smaller prongs are all on a line at the back or discharging end, which necessarily causes them to recede back from each other at the points and gives the machine a pointed appearance, the centre or main prong is bevelled down at the top, about a quarter of an inch on each side, nearly down to the point, the two next bars on each side follow the same direction, thus giving the digger an arched appearance from side to side, the prongs are all covered lengthwise. When the digger is properly adjusted in the beam, the heel should be elevated about fifteen degrees above the point, the back ends of the three prongs on each side of the centre one are turned down from the upper cross bar, the upper surface of the machine when completed should be as smooth as possible, and the spaces between the prongs on the lower cross bar should be sharpened at the lower end to prevent resistance. The digger should be so ad-

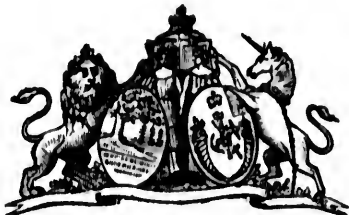
Watt's Potato Digger.

justed as that the points of it, when in operation, should pass through the drills under the potatoes, thus lifting both earth and potatoes into the digger, where the earth being broken is separated from the potatoes and falls through the open spaces, while the potatoes are forced up and discharged over the prongs behind. Three inches behind the digger is placed a small cast iron wheel about eight inches in diameter, which runs on an iron shank an inch and a half wide, by half an inch in thickness, and passes through the beam above, in which it may be raised or lowered at pleasure, by means of holes and a pin; the purpose of this wheel is to support the back end of the machine, and to adjust it to the requisite depth; six inches behind this wheel is placed a rake or small harrow; this may be raised or lowered by a pin to accommodate it to the other parts of the machine. In all light, well cultivated soils the machine will work better without this, when it may be removed, but when the soil is stiff or clayey, it may be used for breaking it up, and discovering the potatoes that might otherwise be concealed. The machine is drawn by two horses attached to the beam by a clevis, as to an ordinary plough; the tops of the potatoes being first removed from the hills or drills, it may be made to perform the labor of at least twenty men, or dig three acres a day; it will take the potatoes clean out from the ground, and leave them free from cuts and bruises. What is claimed by this instrument is, the whole design and construction of the article which lifts the potatoes, and the rake in the rear, with the arrangements of the other parts, so as to form a new, efficient and valuable desideratum to agriculturists.

See Drawing No. 79.

WILLIAM WATTS.





A. D. 1845.—(LOWER CANADA.)—No. 80.

New method of making Rakes for Hay and Grain.

LETTERS PATENT to Albert Young, of the Township of Stanstead,
Carpenter and Joiner, for the Invention of a "NEW METHOD OF
MAKING RAKES FOR HAY AND GRAIN."

Montreal, dated 22nd August, 1845.

BRIEF DESCRIPTION.

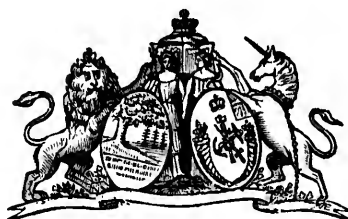
This invention, which is called the "Metallic Coil Spring-tooth Horse Rake," consists of a rake to be drawn by a horse, and is composed of twenty-four teeth, placed at a distance of about four inches and three-quarters of an inch apart, and firmly screwed horizontally into a transverse beam, to which, from above the shafts, are attached each tooth, which is made of elastic steel wire of about three-eighths of an inch thick, and in all about three feet in length; has a screw in one end by which it is firmly screwed into the transverse beam aforesaid, the wire running out horizontally for two inches from the transverse, is then coiled twice round, making a circle of about two and a half inches, the wire then running still further out horizontally for about three inches makes a gradual bend downwards, and the wire or tooth then reaches down for about a foot, and is at right angles with the ground while in operation. The peculiarity and distinguishing excel-

Young's new method of making Rakes, &c.

lence of this rake is, that by means of the elasticity of the teeth, and the turns of the wire above described, such of the teeth as may come in contact with stones or irregularities of the ground, will spring back and give way, while the adjacent teeth, not being bent from their position, will rake up all the hay or grain that comes in their way, thus rendering the machine available on the roughest ground, as well as on the smoothest. Through the opening of the coil passes a bar of wood parallel with the transverse beam above alluded to, for the purpose of increasing action and elasticity of the coil, which bar of wood is fastened to the large transverse beam at its centre, by an iron rod, and by means of two screws, one at each end of the said bar; it is firmly attached to the transverse beam, so as to prevent motion.

See Drawing No. 80.

ALBERT YOUNG.



A. D. 1845.—(LOWER CANADA.)—No. 81.

New and improved Steam Engine.

LETTERS PATENT to James McKay, of the City of Montreal,
Engineer and Smith, for the Invention of a "NEW AND IMPROVED
STEAM ENGINE."

Montreal, dated 10th September, 1845.

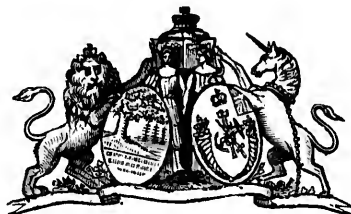
BRIEF DESCRIPTION.

The engine (which is called the "Single or double Piston or Lever-revolving and Revolutionary Steam Engine," for propelling vessels, locomotive carriages and all kinds of machinery by land or water), consists of a wheel and shaft resembling a fly-wheel, but with a broad flat surface on its periphery, projecting on each side of the main body; in these projections a groove is formed to contain packing, either metallic or any other suitable material for making a steam-tight joint; on the periphery of this wheel are attached two or more inclined planes, termed saddles, leaving a space between them corresponding with the groove made in the wheel, for a piston to work in, to which, being enclosed, the steam is applied in order to produce motion. These pistons are kept against the inner surface of the cylinder, as they revolve with the wheel and shaft by a spring or other suitable means; the cylinder and wheel may be made of any required dimensions for ordinary purposes; on the cylinder are formed two flanges, in order to bolt the side plates to; and on the inside of the cylinder is attached a

McKay's new and improved Steam Engine.

double curved saddle or saddles, leaving a space in the centre corresponding with the groove made in the cylinder for the abutment slide or piston to work in, against which the steam acts as against the top or bottom of a common cylinder of a steam engine, and while the double curved saddles in the cylinder cause the pistons in the saddles on the wheel to recede into the groove, level with the top of the saddle, the inclined planes on the wheels operate on the same and the abutment slide or piston, and the instant the piston and abutments pass each other, as on an even surface, and are kept against the surface of the curved saddle and inclined planes, to the surface of the wheel and cylinder by a spring or other means; the inner surface of the cylinder and the outer surface of the wheel are turned smooth, and the saddles are so fitted on the wheel and cylinder as to form a continued smooth surface, that the pistons and abutments may slide easy and smoothly along.

JAMES MCKAY.



A. D. 1845.—(LOWER CANADA.)—No. 82.

New and improved mode of constructing Windows.

LETTERS PATENT to Francois Nadeau, of the City of Quebec,
Joiner, for the invention of a "NEW AND IMPROVED MODE OF
CONSTRUCTING WINDOWS."

Montreal, dated 18th September, 1845.

BRIEF DESCRIPTION.

The said method of constructing windows consists in making them open to the outside, and in so fashioning the same, sills, uprights and top cross piece of the frame into which they are fitted, as to make it almost impossible that any rain can penetrate, and more especially in giving to the said window sills, uprights, and to top cross pieces the form shown in the drawings, bringing the windows, when needs shall be, so that they may open flat against the outside of the building, and fashioning the said sills, uprights and top cross pieces so as to afford proper conveniences, and recesses, for fitting in double windows and shutters.

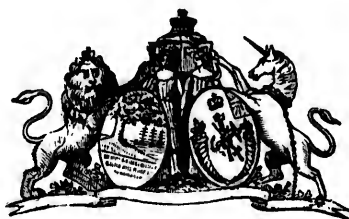
See Drawing No. 82.

FRANCOIS NADEAU.

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A. D. 1845.—(LOWER CANADA.)—No. 83.

New and improved Sawing Machine.

LETTERS PATENT to Alexis Hébert, of Napierville, in the District of Montreal, Cabinet Maker, for the Invention of a "NEW AND IMPROVED SAWING MACHINE."

Montreal, dated 10th October, 1845.

BRIEF DESCRIPTION.

This invention consists of a large wheel, the nave of which has twelve spokes and a cross piece, the end of each spoke having also a tenon at each end; there must be a wheel at each end of the arm, fastened with tenons, which wheels will, taken together from the large wheel, be covered or decked over with planks, and in which will be placed a horse on each side of the spokes, and the wheel having six spokes, and surrounded with cogs, will be fastened and bound to one of the ends of the nave of the largest wheel, each of the spokes of which to have a fuse at each end, with mortises into the fellows of the wheel, and each spoke to be secured or fastened with a screw; there is a small fly-wheel to turn on the cogs of the large wheel; an iron axle fixed to the small nave by one end joined to another larger wheel at the other end, which last must be surrounded with large cogs; there is an iron chain with proportioned links for the cogs; this chain must also turn a small nave, which must also have cogs proportioned to the links; this last

Hébert's Sawing Machine.

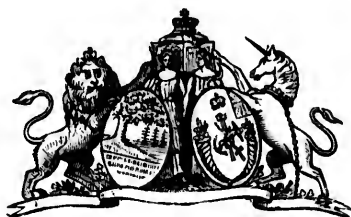
mentioned small nave must have a large iron axle at one end, joined to a jack-wheel at the other end; the above mentioned iron axle must be placed so as to be at right angles with the large wheel, having the cogs also fastened by a chain to one of the spokes of the end wheel. Nine inches from the centre of this wheel, a crank is formed which impels the movements, and drives the machine.

ALEXIS HEBERT.

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A. D. 1845.—(LOWER CANADA.)—No. 84.

*New and improved Nets for taking Seals and
Porpoises.*

LETTERS PATENT to Moyse Morrin, of Rivière du Loup, in the
District of Quebec, Notary, for the Invention of "NEW AND
IMPROVED NETS FOR TAKING SEALS AND PORPOISES."

Montreal, dated 15th October, 1845.

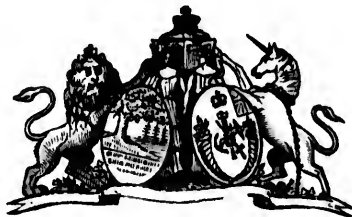
BRIEF DESCRIPTION.

The said nets to be twenty-five arpents long, by twenty feet in height; the meshes of the net to be eight inches square, made with thread generally used in making nets to catch seal; the principal rope on the edges of the net to be one inch in diameter; the nets to be formed of twenty-five pieces, one arpent long each, solidly joined together with cords, so as to loosen when required to facilitate the transport, and setting and unsetting of the nets. One end of the net will be fixed on the shore, and the other will extend in the stream six or seven arpents, and afterwards changing its direction, it will follow a line parallel to the land for about twelve arpents, and it will then form an angle towards the shore; the whole solidly settled at the bottom of the water by anchors weighing about forty pounds, fastened about eight fathoms apart at each side of the net, and at a distance of two arpents from one another on the length of it; there are not to be any corks to support the upper

Morrin's Nets for taking Seals and Porpoises.

part of the net above water, it will sink to the bottom ; but there will be fixed to the top of the net an Indian rubber pipe, an inch and a half in diameter, forming several pieces one arpent in length, furnished at each end with a screwing cross socket, similar to those used in the hose of engines, but they may be solidly united together ; the said pipe containing no air, sinks to the bottom of the water with the net. A recipient air vessel will be on the shore, and an opening, shut with a cock, to communicate from the interior of the recipient air vessel into the end of the pipe. At the moment the porpoises and seals, passing above the net without seeing it, will find themselves inside of the net ; a man, placed near the recipient vessel full of compressed air, will turn by degrees the cock, and the air will introduce itself with such rapidity that in less than five minutes the pipe will be filled from one end to the other ; the net is to be set without any noise, and the porpoises, seals and other large fish, being inside of the net, will be taken before noticing it.

MOYSE MORRIN.



A. D. 1845.—(LOWER CANADA.)—No. 85.

New and improved Steam Engine.

LETTERS PATENT to Benjamin F. Tibbets, of the City of Montreal,
Engineer, for the Invention of a "NEW AND IMPROVED STEAM
ENGINE."

Montreal, dated 10th November, 1845.

BRIEF DESCRIPTION.

The invention consists in using an expansion vessel or reservoir, introduced between a non-condensing and a condensing engine, (so combined as to work together on the same crank); the steam from the cylinder of the non-condensing engine passing into the said reservoir, and being there expanded to six or seven times its former bulk, and afterwards passing in its expanded state from the said reservoir into the cylinder of the condensing engine, where it may be again made to work expansively to any extent that may be desired, by which means the sudden blow and heavy strain upon the machinery, occasioned in the ordinary expansion engines by the use of high pressure steam in a large cylinder, are effectually avoided, and the power rendered more equable at every portion of the stroke.

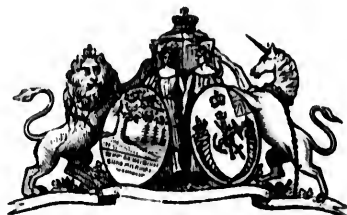
See Drawing No. 85.

BENJAMIN F. TIBBETS.

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A. D. 1846.—(LOWER CANADA.)—No. 86.

New and improved Churn.

LETTERS PATENT to Jasper Ball, of the Township of Stanstead, in the District of St. Francis, Yeoman, for the Invention of a "NEW AND IMPROVED CHURN."

Montreal, dated 7th January, 1846.

BRIEF DESCRIPTION.

An oblong box is made with a close fitting cover the whole size of the top; this box is placed on a base that runs lengthways, and in the middle of the length of the box there is a cross partition with holes through it; on each side of this partition there is a dasher, which is nearly the size of the space, from the centre of which a handle stands up through a hole in the cover, and above the cover it is joined to the end of a horizontal arm that stands out from a shaft or roller, supported on stands attached to the box, one of the said shafts being across each end; another arm extends downwards from the end of each of the shafts outside the box, and they are connected by a horizontal connecting bar that reaches from one to the other; to the centre of this is joined a lever, the fulcrum of which is near the bottom of the box, and its upper end projects up some distance above the top thereof to a handle, by which the machine is worked; by this arrangement the

Ball's Churn.

cream is churned into butter in the most expeditious manner. The machine is operated by moving the upright lever to and fro, which works the dashers up and down, thus throwing the cream through the partition till the butter is made.

JASPER BALL.



A. D. 1846.—(LOWER CANADA.)—No. 87.

New and useful House-pump or Fire Engine.

LETTERS PATENT to Albert Young, of the Township of Stanstead, in the District of St. Francis, Wheelwright, for the Invention of a "NEW AND USEFUL HOUSE PUMP OR FIRE ENGINE."

Montreal, dated 26th February, 1846.

BRIEF DESCRIPTION.

The peculiar excellence of this invention consists in the use of two or more cylinders opening into a case, instead of one, and in diminishing the friction by the shortness and small size of the cylinders, thus adding to the power of the machine; and also in the use of the revolving conductor, and its adaption to two different reservoirs or fountains. Its operation may be described as follows: the crank or break to which the piston rods are attached is so constructed, as that one or more pistons ascend, whilst the others descend; as the pistons ascend, the water passes through the revolving conductor into the hollow base, and from thence passes through the valves opening upwards into the cylinder; these valves are shut as the pistons descend, whilst the valves on the sides of the cylinders, opening into the case connected with the cylinders, are shut as the piston descends, and through them the water is forced by the descending pistons with great force into the discharging tube.

ALBERT YOUNG.

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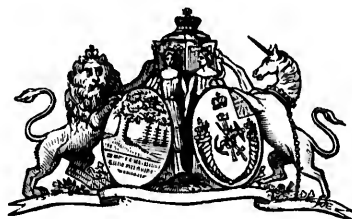
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A. D. 1846.—(LOWER CANADA.)—No. 88.

New and useful Machine for working Stone.

LETTERS PATENT to Augustin Trepanier, of the City of Quebec,
Master Mason and Stone Cutter, for the Invention of a "NEW
AND USEFUL MACHINE FOR WORKING STONE."

Montreal, dated 4th March, 1846.

BRIEF DESCRIPTION.

The said invention or machine consists of a series of mechanical contrivances for cutting, dressing, polishing, sawing, boring and otherwise working stone, to be moved by any kind of power whatsoever, whether steam, water, wind, animal, manual or otherwise, the whole being worked by the turning of a single shaft, with which such machinery may be connected, and each of the said contrivances being also susceptible of being constructed and worked separate from the others.

See Drawing No. 88.

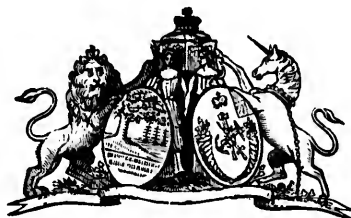
AUGUSTIN TREPANIER.

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A. D. 1846.—(LOWER CANADA.)—No. 89.

New and improved Still for Distilling and Rectifying Spirituous Liquors.

LETTERS PATENT to George Riley, of the City of Montreal, Distiller, for the Invention of a "NEW AND IMPROVED STILL FOR DISTILLING AND RECTIFYING SPIRITUOUS LIQUORS."

Montreal, dated 18th March, 1846.

BRIEF DESCRIPTION.

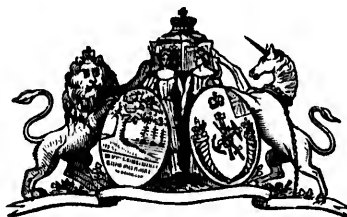
A steam-tight vessel is made either of wood or metal, the former being the preferable material, of various sizes, according to the quantity of work required to be done thereby; this vessel may be made of various shapes, the square shape being the best, and is secured together by means of strong wooden grips; in this vessel several pipes and a plate are inserted, to serve the purposes for which they are respectively intended, and a thermometer to ascertain the heat of the still while running. What is claimed by this invention is, the admission of steam through a body of stones, pebbles, broken glass, earthenware, coal, charcoal, or any similar material, which is impregnated or wetted with alcohol or any substance containing it, for the purpose of distillation or rectification.

GEORGE RILEY.

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A. D. 1846.—(LOWER CANADA.)—No. 90.

New and improved Yoke for Oxen.

LETTERS PATENT to Horatio A. Rockwell, of the Township of Farnham, in the District of Montreal, Farmer, for the Invention of a "NEW AND IMPROVED YOKE FOR OXEN."

Montreal, dated 24th March, 1846.

BRIEF DESCRIPTION.

The newly constructed non-restricting slide yoke possesses the properties of extension and contraction, which allows the cattle to accommodate themselves to the road, as it may vary in width, and yet at all times an exact medium is observed in the draught. This yoke possesses other advantages and admits of being regulated, so as to enable the ploughman to plough narrow or wide furrows, as the case may require.

See Drawing No. 90.

HORATIO A. ROCKWELL.

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A. D. 1846.—(LOWER CANADA.)—No. 91.

*New and useful improvement in the method of
constructing Knitting Looms.*

LETTERS PATENT to Jonas Philip Lee, of the Town of Sherbrooke,
in the District of St. Francis, Manufacturer, for the Invention of
a "NEW AND USEFUL IMPROVEMENT IN THE METHOD OF CON-
STRUCTING KNITTING LOOMS."

Montreal, dated 4th June, 1846.

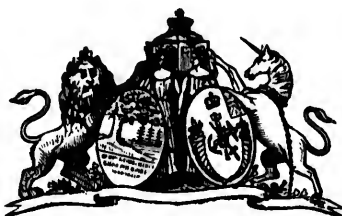
BRIEF DESCRIPTION.

In the common machines, such as have hitherto been used, the needles, which are cast into the metal girth, projected outwards at right angles from the girth or horizontal metal plate, and the jacks or sinkers played up and down upon a horizontal bar or wire, and by playing downwards between the needles, made a loop for the stitch. In the improved machine the needles are cast or fastened vertically into the girth or metal plate, and horizontal sliding stitchers are substituted for the falling jacks or sinkers, diminishing the friction to a great extent, and also lessening the chances of breakage, the falling jacks and sinkers being exceedingly liable to accidents. Another improvement characterizing this invention consists in the vertical arrangement of the needles, which are placed with their backs towards the face of

Lee's Knitting Looms.

the frame, the depressor being behind the needles under the stitchers, by which arrangement the work is elevated, and exposed to the eye of the operator at all times. The horizontal sliding stitchers in the actual machine are about four and half inches long, and their general width about three-fourths of an inch ; these stitchers are cut in with square shoulders, so as to reduce them to half an inch in width, forming a recess in the stitcher, so as to admit a regulator or bar, which is about five-eighths of an inch less than the recess in the stitchers, and serves to move the stitchers backwards preparatory to their being acted upon by the slur, and to stop them correctly as they are thrown forward by it ; this regulator is attached to the frame, and stretches across the whole width of the machine, parallel with the line of the needles ; this arrangement and combination of the regulator with the stitchers, so that by its vibration it will move the stitchers backwards and forwards by its action, in the manner above described, is one of the chief characteristics of the invention, as also the horizontal position of the stitchers, the vertical position of the needles, and the manner of combining the bar, as regulator, with them, rendering unnecessary the use of springs or other analogous devices for retracting the shoulders. The application of the power by means of a shaft does not differ in this from that which is used in the ordinary loom.

JONAS PHILIP LEE.



A. D. 1846.—(LOWER CANADA.)—No. 92.

New and improved Churn.

LETTERS PATENT to Ephraim Duell, of the Parish of St. Armand West, in the District of Montreal, Carpenter, for the Invention of a "NEW AND IMPROVED CHURN."

Montreal, dated 6th May, 1846.

BRIEF DESCRIPTION.

The trunk of the new churn to be two feet in length, one foot in width, and seventeen inches in height; there is to be a crank at each end thereof, of seventeen inches in length, attached to a shuttle, on one side, of the same length; the dashers, of which there are two in number, will be connected with the pitman and bearings, and will be acted upon by a lever in the centre, in such a manner as to compel the dashers alternately to ascend and descend, by which means the cream is projected through the centre-board, which has twenty-four holes bored in it for the purpose of allowing the cream to pass and repass; the lever is acted upon until such time as the cream is churned, and the butter made. The peculiar advantage of this species of churn is, that it requires but a moderate degree of force to put and keep it in operation, and not only produces better butter, but produces it in much less time than is ordinarily required for that purpose.

EPHRAIM DUELL.

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A. D. 1846.—(LOWER CANADA.)—No. 93.

New and improved "Gas Generator."

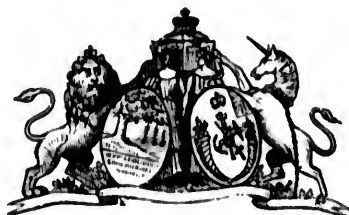
LETTERS PATENT to Harrison Colby, of the Parish of Abbotsford, in the District of Montreal, Farmer, for the Invention of a "NEW AND IMPROVED 'GAS GENERATOR.'"

Montreal, dated 22nd June, 1846.

BRIEF DESCRIPTION.

This invention consists of a stove or furnace, which is so constructed that the fuel which is used for culinary purposes, or for heating, will serve the purposes of generating gas, either for lighting the building in which it is prepared, or it may be conveyed to other buildings by means of a conducting pipe. The retort is placed directly over the fire, or in such manner as may be most convenient for heating the same. The separator is so constructed that it may sit in the same apartment with the stove, or the furnace, or it may be placed in any other apartment most convenient for the purpose, by having a conducting pipe from the stove or furnace to such apartment. The separator and the receiver may be made of wood, tin, copper, or sheet iron; there are simply three tubes or vessels: two of these vessels are so placed that one of them stands inside of the other, having a space between them of about six inches; the receiver is simply a tube turned with the mouth down, and placed in the space between the other two.

HARRISON COLBY.



A. D. 1846.—(LOWER CANADA.)—No. 94.

Towing Machine, for towing vessels up Rapids.

LETTERS PATENT to James Campbell, of South Georgetown, in the District of Montreal, Carrier, for the Invention of a "TOWING MACHINE, FOR TOWING VESSELS UP RAPIDS."

Montreal, dated 22nd June, 1846.

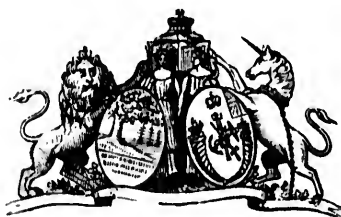
BRIEF DESCRIPTION.

This invention consists of a large vessel, in shape resembling an ordinary flat-bottomed boat, which may be moored in any strong running stream; one end of the vessel, made in the form of a wedge, faces the current, and is intended to divide the water, and make it flow equally along both its sides, while the other end or stern is square, and has two bottoms, the lower one of which is intended to be filled, if required, with stones or other heavy material, in order to sink it to the bottom of the stream, or to such depth as may be required; upon the other bottom it is intended to place any kind of machinery which it may be requisite to work; there is also a large axle which rests upon the sides of the vessel, and is connected at both ends with two large bucket-wheels; these wheels are fixed upon the axle, and are intended to be driven by the current which flows on each side of the vessel; there is a large barrel which is moored, when required, by a pinion in connection with the wheel; on the barrel two ropes are placed which wind and unroll as the said pinion is moved by the wheel. At different

Campbell's Towing Machine.

places on the sides of the vessel are placed a rack and wheel, the first of which is intended to rest upon the bed of the river —Inverted one way, the wheel is intended for the purpose of raising the said rack, inverted the other way, it is intended for the purpose of raising the vessel and keeping it stationary, so that it may resist the action of the water and the wind in moving it. The bore, in which the cylinder moves, is supported on the sides of the vessel ; underneath on the sides are two screws, which are intended to raise the cylinder with the wheels out of the water. There are two ropes which are intended to ascend and descend, and are in connection with the barrel ; these ropes should be supported on buoys. There are chains, by which the vessel can be moored to rocks or anchors of any description, dropped into the river so as to prevent the action of the current from driving it below its accustomed place, and an axle to wind up the ropes by which the vessel is moored, as also a pinion in connection with the wheel for the purpose of turning the axle last mentioned, and two pulleys to guide the ropes on the axle. The rack on each side of the stern should be fixed so as to help to resist the action of the water on the vessel.

JAMES CAMPBELL.



A. D. 1846.—(LOWER CANADA.)—No. 95.

New and improved hoisting Machine.

LETTERS PATENT to Gordon Warren Johnson, of the City of
Montreal, Gentleman, for the Invention of a "NEW AND IMPROVED
HOISTING MACHINE."

Montreal, dated 24th June, 1846.

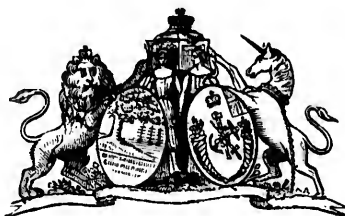
BRIEF DESCRIPTION.

This machine is capable of raising twenty hundred barrels of flour, in one regular day's working time, with four laborers, and can be applied to any store; in the hatchway of any store are erected wooden shears or uprights, faced with iron, with a groove in the centre of each, as a vertical guide for the machine, which consists of a series of iron radius bars acting from their own centres, connected as links with iron pins projecting on each side, sufficient to enter the groove and cause a vertical motion; when put in action the levers of the bottom and top act upon fixed pivots; the extending bars of the second and third floors are connected with radius bars half their length, which cause the motion to be reversed, one extending and the other depressing alternately. When the machine is worked, the hoisting rope running over a wheel or large pulley is fastened to the centre of the extending bars, and the stretchers of the apron or parbuckle, which is also secured

Johnson's Hoisting Machine.

to the upper floor; when the machine is to be put to work the apron or parbuckle is lowered to the floor, then the barrel is rolled into the apron, and the men placed at the ropes begin hoisting, the levers acting upon the extending bars, close or rise them, the hoisting rope being attached, and the apron lifts the barrel in its lap, and deposits it on the floor above. In lowering the barrel the same action takes place, but reversed. In hoisting to the third and fourth floors it is necessary to use cant hooks instead of the parbuckle.

GEORGE WARREN JOHNSON.



A. D. 1846.—(LOWER CANADA.)—No. 96.

New method of constructing portable Grist Mills.

LETTERS PATENT to Noah Shaw, of Montreal, Builder, for the
Invention of a "NEW METHOD OF CONSTRUCTING PORTABLE GRIST
MILLS."

Montreal, dated 3rd August, 1846.

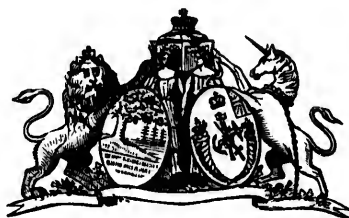
BRIEF DESCRIPTION.

This invention and improvement consists, chiefly, in the arrangement of the spindle, and the mode of suspending the upper or running stone, and of adjusting it to the degree of fineness of flour desired, and the manner of connecting or fastening the upper stone to the spindle; that is to say, the stone and spindle are connected and fastened as follows: in the eye of the upper or running stone is inserted transversely, about midway, the thickness of a stone, a bail or driver of iron, the ends whereof are firmly cemented in the stone; said iron bail or driver being of a size adequate to the end designed, depending, as is obvious, upon the size of the stone, and having a hole in its centre, at which point it is thickest, and gradually falling off from thence by a curved line to the edges of the bail, which are perhaps about one-third of the thickness of the centre; the lower end of the spindle, having a cleft or fork-like opening in it, with parallel sides, of a proper thickness to admit said bail, is placed over it, and there fastened by a pin or screw bolt, (or other equivalent device), passing through the spindle

Shaw's Portable Grist Mill.

and hole into the bail, thus suspending the upper stone, and by applying the power to the spindle, causing it to revolve at the same time. The mill, when in running condition, and ready for the application of the motive power, is portable, and weighs only from seven hundred to twelve hundred pounds, according to the size.

NOAH SHAW.



A. D. 1846.—(LOWER CANADA.)—No. 97.

*New method of constructing Planing Machines for
planing Boards, Planks, &c.*

LETTERS PATENT to Charles Midgley, of Montreal, Machinist, for
the Invention of a "NEW METHOD OF CONSTRUCTING PLANING
MACHINES FOR PLANING BOARDS, PLANKS, &c.

Montreal, dated 10th August, 1846.

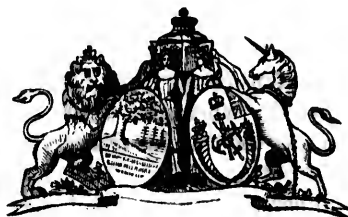
BRIEF DESCRIPTION.

The construction of this invention is as follows: a suitable frame is made of cast iron or other material; at the sides are posts which are connected together by a sufficient number of wooden braces; on the inside of each of the side pieces are guiding ways, for the purposes hereinafter described; a series of castings or metal plates are made, which form a section of the carriage, on which the board or other article rests; through the centre of this plate, from end to end, are apertures made so as to leave an open rack, into which cog-wheels play; each of the plates has two strips of wood affixed to its upper side, one on each side of the rack, and covering the rest of the surface of the plate; the plates move along horizontally, guided by the ways under the revolving cutter, at which point they are sustained by ribs supported in, and attached to the frame, they slide over these and form a solid bed for the stuff to be planed on, at each end of the machine; the guide ways descend and form a groove, which allows the outer

Midgley's Planing Machine.

end of the plate to descend about half way down to the position they assume on returning, at which time the inner end of the plate arrives at the cog-wheel, situated the distance of the length of a section plate from the end of the machine; and in the guide ways there is a semi-circular branch concentric with the said cog-wheel; this arrangement permits the section to fall and be carried under the cog-wheel, it being kept in gear by said guides. At the opposite end a similar arrangement is made, for the purpose of raising the sections, by means of another wheel; a third feeding cog-wheel is placed at the centre, by which the segments are moved, and this is connected with the moving power in any convenient way, so as to adjust the feed; there is a bar affixed to the frame at each end that extends the whole length thereof directly over the racks above named, in the sections, and of the same width as the space between the strips of wood that cover the plates, into which it fits, and forms a level even surface, under the plane, to support the article to be planed; above the centre of the bed there is a gallows frame bolted to the frame, which stands in an inclined position, within which, or on the upper side of which, a frame or gate slides, in which the cutter is hung; the cutter is of ordinary construction, having three knives in it, but with double, instead of single irons, as are generally used; a guiding roller is attached to the gate, by strong springs, on a level with the lower line of the circumference of the cutter, and in front thereof behind the cutter; when the stuff to be planed is entered there is another roller that is kept down upon it with weights, and between which and the bed or carriage the stuff is held; a shield plate is put behind the cutter, to prevent it clogging with chips; the gate with the cutter can be graduated to any height, while the machine is in operation, by means of a screw that is attached to the centre of the gallows and turns in a nut in the gate, which moves it up and down; it is obvious that there can be two cog-wheels instead of those below, one on each side, which will save the necessity of an opening in the centre.

CHARLES MIDGLEY.



A. D. 1846.—(LOWER CANADA.)—No. 98.

*New method of constructing Furnaces, for heating
houses and other buildings with hot air, called
"Hot Air Generators."*

LETTERS PATENT to Henry Ruttan, of Montreal, Gentleman, for
the Invention of a "NEW METHOD OF CONSTRUCTING FURNACES,
FOR HEATING HOUSES AND OTHER BUILDINGS WITH HOT AIR, CALLED
'HOT AIR GENERATORS.'"

Montreal, dated 23rd August, 1846.

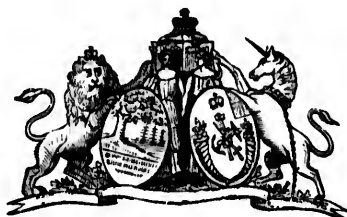
BRIEF DESCRIPTION.

The furnace, by means of which houses and other buildings may be heated with hot air, is called "A Hot Air Generator;" which furnace is of cast iron of a rectangular form; the bottom, back and two ends are double plates, and so cast that, when they are set up, they will have a hollow place under and around the furnace; besides these cavities through which the air is drawn, and by means of suitable divisions made to circulate backwards and forwards, there are hollow metal bars six inches in diameter, through all of which the air circulates; these bars form the grate, and are laid against the back and over the fire lengthwise of the furnace; the cold air is brought from the outside of the buildings to be heated through a pipe, and introduced into the furnace through the aperture in the under bottom plate; the air circulates through the hollow between the two bottom

Ruttan's Hot Air Generators.

plates, and then enters another aperture between the double backs, there it circulates upwards, when the whole body, partially heated, will be at the same end of the furnace that it first entered, but separated now by the upper bottom plate. The partially heated air now enters the hollow metal bars, between the end plates, and traversing the fire several times, comes out at the opposite end at nearly the heat of a blaze of fire, and immediately ascends to the top of the hollow space, where, by a suitable construction of the castings, it is received into a tube, and is ready for use; the cold air is regulated in quantity by a slide or gate within the entry pipe.

HENRY RUTTAN.



A. D. 1846.—(LOWER CANADA.)—No. 99.

*Method of constructing Coupling Machines for
Railroad Cars, or Self-detachers.*

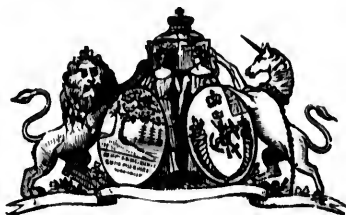
LETTERS PATENT to Amos Taylor, of the Township of Compton,
District of St. Francis, Yeoman, for the Invention of a "METHOD
OF CONSTRUCTING COUPLING MACHINES FOR RAILROAD CARS,
OR SELF-DEATCHERS."

Montreal, dated 26th September, 1846.

BRIEF DESCRIPTION.

The nature of this invention consists in connecting the cars to the locomotive and tender, and to each other, in such manner that the elevation or depression of the locomotive, above or below the line of the rails, will disconnect the locomotive and tender from the cars attached to them, and at the same time disconnect the cars from each other. What is claimed, thereby, is the manner in which a car is connected or disconnected to and from the tender, by means of the jaws, connecting tongue, sliding gate, lever and fulcrum arms combined; and also the manner in which the sliding gate of the coupling apparatus between the remaining cars of a train is operated, by means of the lever, roller, shafts, connecting-rod and lever combined.

AMOS TAYLOR.



A. D. 1846.—(LOWER CANADA.)—No. 100.

New and useful method of constructing Beehives.

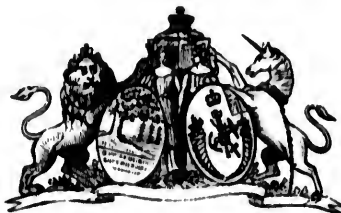
LETTERS PATENT to Amos Taylor, of the Township of Compton,
District of St. Francis, Yeoman, for the Invention of a "NEW
AND USEFUL METHOD OF CONSTRUCTING BEEHIVES."

Montreal, dated 26th September, 1846.

BRIEF DESCRIPTION.

The nature of this invention consists, in constructing a beehive in such a manner as to concentrate a swarm of bees in separate drawers, and at the same time give all the advantages of open chambers, and give the bee-keeper the entire control of his bees, to multiply his number of hives without swarming, and renew the comb in all parts of the hive without destroying the bees. What is claimed thereby is the connection of the drawers with the apparatus for holding the slides, the fifth drawer, and also the attachment of the feeder.

AMOS TAYLOR.



A. D. 1846.—(LOWER CANADA.)—No. 101.

*Snow Excavator, for removing the snow from the
tracks of Railways.*

LETTERS PATENT to Amos Taylor, of Compton, Yeoman, for the
Invention of a "SNOW EXCAVATOR, FOR REMOVING THE SNOW
FROM THE TRACKS OF RAILWAYS."

Montreal, dated 26th September, 1846.

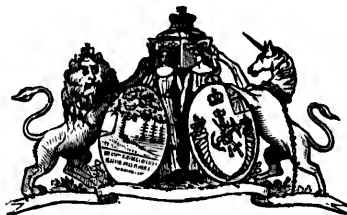
BRIEF DESCRIPTION.

The improved excavator is constructed of sheet metal, or other suitable material, and is mounted on a car frame, constructed in the usual manner, the sides inclined outwards to the right and left, as they ascend to the upper plate, for the purpose of forming a clear path, and preventing the snow at the sides of the path from falling inwards after the passage of the excavator, and retarding the train of cars; the excavator is placed in front of the locomotive, and as it is pushed forward by the same, the snow enters at the mouth, and is discharged at the lateral aperture, passing out of the same, by an upward lateral movement, which throws it clear of the cars. Two of the excavators may be combined in one, with their inclined winding discharge passages reversed, so as to discharge the snow at both sides. To the excavator a screw is attached in the rear part, and a hinge in the front, by means of which it is raised or depressed at pleasure, and according to the

Taylor's Snow Excavator.

depth of snow through which it passes, which gives it the power of discharging freely. What is claimed by this invention is the manner in which the upper, lower and side plates are combined with each other, forming the horizontal and side cutting edges for clearing the snow, and a winding inclined passage for the discharge of the same.

AMOS TAYLOR.



A. D. 1846.—(LOWER CANADA.)—No. 102.

*Method of constructing a Spark Arrester and
Extinguisher.*

LETTERS PATENT to Amos Taylor, of Compton, Yeoman, for the
Invention of a "METHOD OF CONSTRUCTING A SPARK ARRESTER
AND EXTINGUISHER."

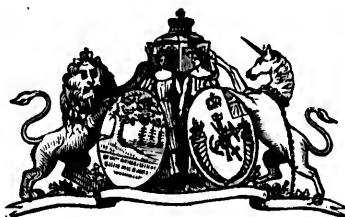
Montreal, dated 26th September, 1846.

BRIEF DESCRIPTION.

The nature of this invention consists, in constructing a smoke pipe or chimney for Locomotives, in such a manner as entirely to arrest and extinguish the sparks and cinders passing through the same, thereby avoiding all risk of fire; what is claimed, is the double perforated cone, the air chamber within and forming part of the outer chimney, and the water reservoir with wells.

See Drawing No. 102.

AMOS TAYLOR.



A. D. 1846.—(LOWER CANADA.)—No. 103.

*New Method of constructing Hot Air Furnaces for
generating, and the diffusion of Heat, in and
about dwelling houses and other buildings.*

LETTERS PATENT to John Mills, of Montreal, Gentleman, for the
Invention of a "METHOD OF CONSTRUCTING HOT AIR FURNACES
FOR GENERATING, AND THE DIFFUSION OF HEAT, IN AND ABOUT
DWELLING HOUSES AND OTHER BUILDINGS."

Montreal, dated 10th October, 1846.

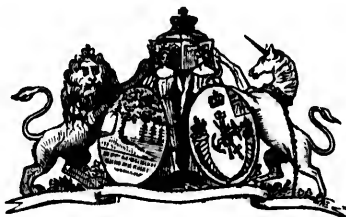
BRIEF DESCRIPTION.

The improved furnace provides a mode of generating and diffusing heated air, in and about dwelling houses, and other buildings, so as to procure any temperature required, in any of the apartments. Its principal excellence, and that which mainly distinguishes this invention, consists in the substitution of pipes of very thin iron, in place of heavy cast iron drums, and in the smaller dimensions of the chambers, and the great consequent diminution of fuel necessary for generating heated air. The furnace or stove may be made of any size and dimensions. When wood is used, a furnace, which must be air tight, is constructed, composed of plates of cast iron or other suitable material. On the top and back part of the furnace or stove, are two apertures with a collar on each to receive pipes, through which the smoke and heat pass into

Mills' Hot Air Furnace.

cross pipes, which should be at least five in number; the lower pipes of larger diameter than the upper, as rarified air and smoke pass more slowly through a large pipe than through a small one, the fine ashes and particles which accompany the smoke in its ascent, settle in the lower pipes. The material of the cross pipes may be of thin iron, the heat being more easily radiated, and the soot thereby prevented from adhering to the pipes prevents the condensation of pyroligneous acid. Through the front of the stove are apertures, four in number, to admit air with a sliding plate, having corresponding openings, to which may be attached a rod, so adjusted that the apertures may be opened and shut in another apartment, thus diminishing the heat without varying the fuel. This furnace or stove is placed in a floor of brick, and is enclosed by a brick wall, so made as to enclose the cross pipes above referred to, and to leave a space four inches, more or less, between the stove and the walls, forming an air tight chamber. This brick wall is enclosed by another brick wall, with an interval of about four inches between them to prevent the radiation of heat. Apertures are made, in or near the top of the hot air chamber, in which pipes are inserted, or flues constructed to receive the heated air and convey it to any or all of the apartments of the house. At the termination of these pipes, ventilators are fixed, which when opened admit, and when shut, wholly exclude the heated air.

JOHN MILLS.



A. D. 1846.—(LOWER CANADA.)—No. 104.

*Method of constructing Stills, for distilling and
rectifying Spirituous Liquors.*

LETTERS PATENT to George Riley, of Montreal, Distiller, for the
Invention of a "METHOD OF CONSTRUCTING STILLs, FOR DISTILL-
ING AND RECTIFYING SPIRITUOUS LIQUORS."

Montreal, dated 1st October, 1846.

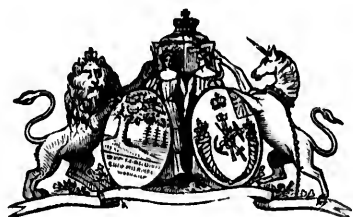
BRIEF DESCRIPTION.

A steam-tight vessel of wood is made of various heights and sizes, according to the work required to be done; this vessel is made square, or nearly so; in the bottom there is a pipe three inches in diameter, for the purpose of admitting steam; and on one side, level with the inside of the bottom, there is a hole into which a pipe is inserted, which connects the still with an inverted syphon; this syphon is for the purpose of letting out the spent wash or beer, and at the same time to prevent the steam from escaping along with it, which would destroy the well working of the still. This syphon is made either of wood or metal, and of two equal lengths, or nearly so. At about six feet from the bottom of the still is inserted a thermometer, through a bung, the bulb inside and the scale outside; this is

Riley's Still.

for the purpose of ascertaining the heat of the still while at work. The still being now filled, to within two feet of the top, with stones, coal, broken glass, earthenware, or any similar material that will suspend the beer or wash for some time in the still. and at the same time allow a passage for the steam. In the side, near the top or in the top itself, a pipe is placed which connects the still with the worm; and at eighteen inches from the top, there is another pipe for the purpose of letting in the beer or wash to be distilled; the top is made air-tight, and the steam now admitted into the still; and when it is hot a quantity of beer or wash is admitted, which, falling through the obstructions, meets the steam in its ascent, causing it to boil, and the vapor or spirit passes off into the worm where it is condensed. The supply of beer or wash is regulated, in such a manner, that the thermometer will indicate the heat of the still, at the place where it is inserted, to be two hundred and ten, or two degrees below the boiling point of water. What is claimed by this invention, and desired to be secured by Letters Patent, is firstly, the square or right angled shape of the still, and secondly, the use of the inverted syphon for the letting out of the spent wash or beer.

GEORGE RILEY.



A. D. 1846.—(LOWER CANADA.)—No. 105.

*New and useful improvement in the method of
constructing Wooden Bridges.*

LETTERS PATENT to Stephen Mills, of Montreal, Civil Engineer,
for the Invention of a "NEW AND USEFUL IMPROVEMENT IN THE
METHOD OF CONSTRUCTING WOODEN BRIDGES."

Montreal, dated 28th November, 1846.

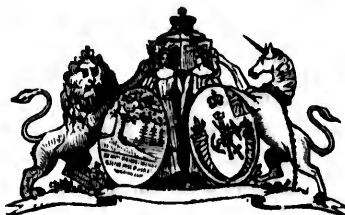
BRIEF DESCRIPTION.

This bridge is constructed upon the principle of the arch and truss; the want of strength and firmness in the old bridges having been obviated, by placing a stretcher on each side of the posts, at the top and bottom, checked on and firmly bolted to them, thereby binding them in their proper places, the braces having a tendency to displace them, and also by the addition of a second brace parallel to the first, and bound together with a block between them in the centre, and on each end by iron bolts passing through the posts at the ends, thereby gaining two important advantages: firstly, the power of regulating the pressure on the arch and braces; secondly, by obtaining greatly increased strength without augmenting the quantity of timber. There are also introduced, at each pier and abutment, two diagonal braces, secured at the bottom of the posts, placed by the side of the piers and abutment chords, and tightened by an iron bolt passing through the

Mills' Wooden Bridge.

chords on each side of the bridge, at the end of the said braces, thereby securing the span in a straight and perpendicular position, which is essential to the strength of the superstructure; there has also been introduced a short brace, from the bottom of the end posts to the bottom of its own chords at the second post, to assist the bearing of the arch on the pier or abutment, and also to prevent the possibility of the bottom chords giving way, at the centre, from the great strain that will come on that place; one iron bolt has been introduced which passes through the three centre posts, thereby effectually securing strength at an important point; also for spans of an extra length, a long truss brace has been added, which extends from the bottom of the post, at the pier or abutment, to the top chord, half way from the centre of it to the centre of the span, on both sides of the segment, and bolted through the posts, and crossing the arches with two strong iron rods, screwed through iron plates above the top and below the bottom chord, at the joining of the braces, to support what has always been considered the weakest part of wooden bridges; at each abutment is placed an iron rod to be firmly secured in the masonry, or other material of the abutment, and fixed to the top chord to hold down the terminating section of the segment.

STEPHEN MILLS.



A. D. 1846.—(LOWER CANADA.)—No. 106.

*New method of constructing Rakes, for raking hay
and grain, called the "Improved Revolving Joint
Tooth Spring Lever Horse Rake."*

LETTERS PATENT to Joseph Paradis, of Montreal, Merchant, for
the Invention of a "NEW METHOD OF CONSTRUCTING RAKES FOR
RAKING HAY AND GRAIN, CALLED THE 'IMPROVED REVOLVING
JOINT TOOTH SPRING LEVER HORSE RAKE.'"

Montreal, dated 8th October, 1846.

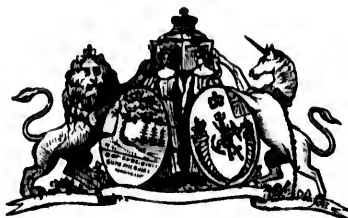
BRIEF DESCRIPTION.

This Rake has usually nineteen teeth placed five inches apart on the beam, each tooth having two arms connected by a joint, the lever arm of which is about twenty inches long and the upper three inches. It is drawn by a horse, and has a bent spring lever nine inches long and one end of which, at its fulcrum, is fastened and bolted to the tooth beam, by the staple or upper arm of the tooth; on the back part of the tooth beam or roller, this spring passes round the roller, which revolves on its own axis in two cast iron collars, of about two inches in diameter, with edged flanges driven in and fastened to the roller, thirty inches from the centre, by iron bearings or straps which are fastened to or upon the ends of the shafts. The edged flanges play or revolve on these iron bearings, and thus is prevented any lateral

Paradis' Horse Rake.

motion of the beam. Through a series of holes in the other end of the bent springs, which have been passed through a staple the size of the spring on the lower side of the beam, to prevent any lateral motion of the spring, passes a series of teeth, about two inches below the joints of the lower arm, thus when any of the teeth meet an obstruction or irregularity of the ground, such tooth moves back on its joint, and slips on a small slide or roller through the said hole in the spring, straining the spring towards the beam until the tooth is free, when the spring brings it to its natural position; while at the same time by joining the tooth to the beam, and applying to each tooth and beam, such spring and staple acting in combination, the teeth are thereby preserved in their true position to each other and to the beam. From the cross bar, attached to the shafts at right angles, passes a lever to another cross bar near the handles. In this lever, over the tooth beam or roller, is a break or catch, against which falls, on every revolution of the beam an iron rod or secondary tooth driven or screwed at one end into the top of the tooth beam, thus preventing it from revolving; the upper end of the lever is supported by a staple about two inches long, fixed in the under side of the cross bar, near the handles on the outside of the lever, about seven inches below the said staple. At its fulcrum is fixed a bent spring whose other end rests against and plays upon the said staple; by pressing the bar outwards upon the said spring, the brake is freed from the secondary tooth, and the traction of the rake causes the beam and teeth to make a complete revolution, being aided, and the rake supported, by another secondary tooth, about a foot long, fixed on the centre of the tooth beam parallel to the shafts; coming in contact with the ground, the hand being removed from the lever, the spring forces it and the brake or catch back into its former position, at right angles with the cross bars, and thus the operation is again continued at pleasure; by means of this revolution the hay and grain are discharged from the rake, or the teeth raised at pleasure, while the rake is thus made available, and its perfect working secured on the roughest, as well as on the smoothest, ground.

JOSEPH PARADIS.



A. D. 1847.—(LOWER CANADA.)—No. 107.

*Machine for making Wooden Shavings suitable for
the fabrication of Band-boxes for hats, matches,
and cases of all descriptions.*

LETTERS PATENT to Louis Lemieux, of the City of Quebec, Book-
binder, for the Invention of a "MACHINE FOR MAKING WOODEN
SHAVINGS SUITABLE FOR THE FABRICATION OF BAND-BOXES FOR
HATS, MATCHES, AND CASES OF ALL DESCRIPTIONS."

Montreal, dated 25th January, 1847.

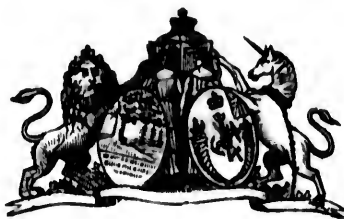
BRIEF DESCRIPTION.

This invention consists of two horizontal pieces of great solidity, supported by legs also of great solidity, and joined together by transversal pieces; there is a wheel through whose centre passes an axis immovably fixed to the wheel; this axis turns with the wheel in semi-circular grooves of metal, placed at particular places in the two horizontal pieces; there are two semi-circular boxes fixed on the extremities of the axis to maintain them in the grooves, one of the projections perpendicular to that part of the axis which passes through the centre of the wheel, and rests in the grooves; the axis forms an elbow, and the parallel projection passes through the head of a knee; there is an axis which unites the knee with the arm; this arm communicates with a horizontal table by means of a crook; on this table, and firmly fixed to it is

Lemieux's machine for making Wooden Shavings for Band-boxes, &c.

the block of wood to be cut into bands ; this table slides backwards and forwards in two grooves, and the block is so placed that its fibres are in a horizontal position ; there are two vertical cast iron supporters, in each of which there is a groove ; in these grooves slides a transversal piece fixed to the cutting plane ; the piece may be raised or lowered a few lines with the plane, by means of a handle and an axis, around which rolls a strap fixed by its other extremity to the transversal piece ; on the large wheel being set in motion, a rotatory movement is communicated to the head of the knee, which, being transmitted by the arm to the sliding table, becomes for the latter an alternate motion of retreating and advancing. When the large wheel is first put in motion the plane is to be raised by means of the handle, the next instant the plane is lowered upon the block, when it is pushed forward, and the motion of the wheel drags the block under the blade of the plane, the band passing out through the mouth of the plane ; manual labor, horse, steam, or water power may be used to put the wheel in motion ; all forces are to be applied to the extremity of the axis.

LOUIS LEMIEUX.



A. D. 1847.—(LOWER CANADA.)—No. 108.

New and improved method of constructing Cisterns.

LETTERS PATENT to Jonathan B. Massey, of the City of Montreal,
Trader, for the Invention of a "NEW AND IMPROVED METHOD OF
CONSTRUCTING CISTERNS."

Montreal, dated 3rd April, 1847.

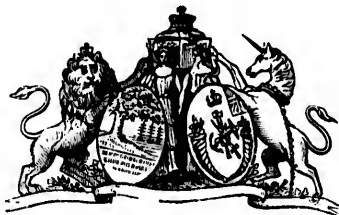
BRIEF DESCRIPTION.

This invention consists of a standard, pointed at the lower end, so that it can be driven in the earth at the bottom of the hole in which the cistern is to be built, and provided with a cross bar at the top, the ends of which are secured to the surface of the earth by means of pins; on this standard there is a ferule that slides and turns on it freely, and held at any elevation by means of a ferule and thumb screw; to the lower part of the ferule is jointed an arm, made in two parts, the one having loops in which the other slides, so that it can be secured and held in its place by means of a set screw, and to the outer extremity of the part is attached the segment curve, made of wood faced with metal; the extent of its surface is arbitrary. To the upper end of the ferule is attached a metallic sector, which passes through a mortise in the part of the arm, so that it can be held in any desired inclination by a pin that passes through a hole in the arm and sector. The

Massey's Cistern.

method of operating with the apparatus is as follows: A hole is dug in the earth of the required depth, and nearly the required diameter; the standard is then driven down in the centre thereof in a vertical position, and there held by the bar secured to the earth by pins. The segment curve is then set to the required diameter for the outside of the cistern, and the hole trimmed to it all around from top to bottom; the curve is then set to the inner diameter of the intended cistern at the bottom, and the cement mortar poured in, and the stones pounded into the mortar between it and the earth; the curve is then moved around through a distance to the length that is filled up, and so on to the end of the circuit; the curve is then raised, and the ferule and screw raised one course up, the same operation being carried on until the top of the cylindrical part of the cistern is reached; the ferule is then let down a little, and the arm inclined, for the purpose of turning the curved top, to narrow in the aperture of the cistern; when all is completed, the pin that connects the arm with the sector is taken out, and the apparatus removed; the segment curve should be so connected with the arm as to afford ready means of taking it off, and substituting another of a different curve.

JONATHAN B. MASSEY.



A. D. 1847.—(LOWER CANADA.)—No. 109.

*Useful method of constructing Steel Rings for
fastening the Scythe to the Snath.*

LETTERS PATENT to Horace H. Davison, of Montreal, Mechanic,
for the Invention of a "USEFUL METHOD OF CONSTRUCTING STEEL
RINGS FOR FASTENING THE SCYTHE TO THE SNATH."

Montreal, dated 14th April, 1847.

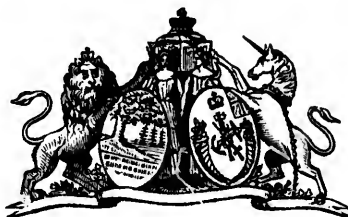
BRIEF DESCRIPTION.

The nature of this Invention consists in the following: First, make a ring either of wrought or malleable cast iron, of the right size for the lower end of the snath, and with that part of the ring which bears on the craw of the scythe flat, and the flat spot should be at least one inch and one-fourth on the inside of the ring, so that the scythe may be moved out or in, without coming in contact with the circle of the ring; next, a block of cast iron about seven-eighths of an inch in diameter is let into the snath; on the upper side, under where the heel ring passes, a hole is bored in the snath with a centre bit about half an inch deep; the block of iron, that is to fill it, is flat on the bottom, so as to make a solid bearing, the side a little bevelled, so that it may drive easily, and the top or outside of the block of the same form as the snath, so that it shall be even with the wood, and

Davison's Steel Ring for fastening the Scythe to the Snath.

fitting the place from which the wood was removed by the bit, as though the hole had not been made; the heel ring is a little heavier on the top of the snath; that part of the ring that sits immediately over the block of iron let into the snath, as before described, and a screw passes through that part of the ring, so that when the scythe is to be fastened, the screw is turned with a small wrench made for that purpose; when the point of the screw coming in contact with the block of iron in the top of the snath, the pressure of which, as the screw is turned, presses the snath downwards, drawing the ring upwards, which motion fastens the scythe on the bottom of the snath by the flat part of the ring pressing the crow of the scythe against the snath, and to adjust the scythe to the place of choice. There is a screw through the ring, just back of the crow of the scythe; the screw is to be turned with the same wrench already named, which screw, when turned, moves the scythe in, or allows it to move further out, as the user may choose to have it. This screw will hold the scythe in one position until moved again, as before described.

HORACE H. DAVISON.



A. D. 1847.—(LOWER CANADA.)—No. 110.

New method of compounding portable Lamp Fluid.

LETTERS PATENT to Horace H. Davison, of Montreal, Mechanic,
for the Invention of a "NEW METHOD OF COMPOUNDING PORTABLE
LAMP FLUID."

Montreal, dated 15th April, 1847.

BRIEF DESCRIPTION.

To one gallon of alcohol, worth eighty-five per cent., add two drachms of nitre, one-fourth of an ounce of olive oil, three-fourths of an ounce of gum camphor, two ounces of the spirits of turpentine, one pint and a half of camphene, and if the alcohol should be stronger than eighty-five, it will bear more camphene; the whole must be well shaken together, and when the composition becomes clear, it is fit for use; it must be corked tight, and used in air-tight lamp, and when not burning, the tube through which the wick passes, must be covered with an extinguisher, to prevent the evaporation of the fluid. The lamp fluid may also be burned in the form of gas, and while burning, in any form, is free from smoke or disagreeable smell.

HORACE H. DAVISON.

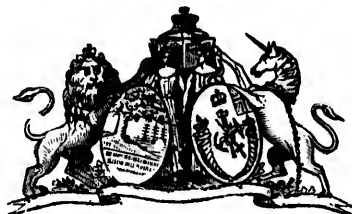
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A. D. 1847.—(LOWER CANADA.)—No. 111.

*Method of constructing portable Fire Extinguishing
Machines.*

LETTERS PATENT to William Armstrong, of Montreal, Tinsmith,
for the Invention of a "METHOD OF CONSTRUCTING PORTABLE
FIRE EXTINGUISHING MACHINES."

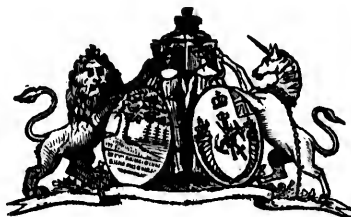
Montreal, dated 3rd May, 1847.

BRIEF DESCRIPTION.

This invention consists of a strong portable wooden case, forming a reservoir for the water, firmly bolted to the bottom of the case; there are two working barrels or pumps, with a lifting valve in each, and having their bottoms perforated with small holes to admit the water; from each barrel, two tubes, having flat valves, project, and connect the pumps with a strong metallic air chamber of oval or other shape. By means of two solid pistons, with iron rods, worked by a lever, which is supported by iron standards, the water is forced into the air chamber, and projected through an ejection-pipe at the top, having a leather hose attached; and at the bottom of the air chamber, is a cock, by which the water is let off.

See Drawing No. 111.

WILLIAM ARMSTRONG.



A. D. 1847.—(LOWER CANADA.)—No. 112.

*New method of constructing double Revertable Flue
Steam Generators and Boilers.*

LETTERS PATENT to Horace H. Davison, of Montreal, Mechanic,
for the Invention of a "NEW METHOD OF CONSTRUCTING DOUBLE
REVERTABLE FLUE STEAM GENERATORS AND BOILERS."

Montreal, dated 19th April, 1847.

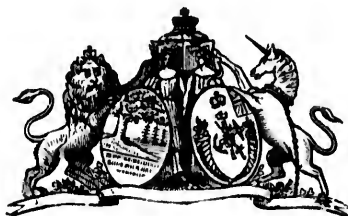
BRIEF DESCRIPTION.

The double revertable flue steam generator and boiler may be adapted to the following purposes, viz.: locomotives, local and steamboat boilers, also boilers for tanners, dyers, hatters, tallow chandlers, glue makers, morrocco dressers, brewers, distilling of every kind, salt, sugar and soap boiling, washing, cooking and all culinary and steaming purposes; the boiler, which is cylindrical, may be made either of tin, copper, or boiler iron, and of any size, so as to be suitable for the purposes for which it is designed. The fire rests on grates or bars at the bottom of the boiler, which drop down, so as to form an air feeder beneath them through its whole length, and a receiver for the ashes that drop through; to save the heat of the fire, two cylinders are made of the same shape but differing in diameter; place one inside the other, so as to have a space between them equal at all parts, which space is to be covered by a narrow head on the front ends of the boiler, but on the

Davison's Steam Generator, &c.

back, the head shall be entire ; a smoke-pipe is made, oval at the bottom, with a flange round it to contain the oil of smoke as it condenses ; in the boiler are pipes or water flues, made a little oval, extending its whole length, with space between each, the bottom one having more capacity for holding water than the next, and so on in decreased proportion to the top, the whole being closed at the ends with heads made for the purpose ; the fire ascends through the alternate spaces, and battens against the different flues, till it rises to the smoke-pipe, when its heat is entirely exhausted ; behind, and attached to the boiler, stands a reservoir, extending from the bottom of the boiler to some distance above it, which reservoir is closed with a cone-formed cover, having a wide flange to shut inside of the reservoir, which, when used for engine purposes, must be a packed joint, formed by another flange fastened to the inside of the reservoir, so as to allow that on the cover to pass inside and be tight ; the cover is shut with a strap and eye, and a key passing through the eye to hold the strap ; at the upper end of the reservoir, is a feeding tube for cold water, funnel-shaped at the top, and extending to the bottom, where the heat is greatest ; and from the cone of the cover projects a steam pipe bent, to conduct the steam from the boiler to any place required ; from the reservoir, tubes pass and convey the water into the pipes, or water flues in the boiler, and also into a space between the two cylinders, which is returned back as steam ; the front end of the boiler may be covered by a head, made of a sheet of iron or copper, turned up at the edge, which can be fastened with straps in the same way as the cover of the reservoir ; opposite the fire, is a door with an air flue, as well as opposite the ash receiver : the boiler and reservoir may be placed on a wooden frame with long handles, that they may be carried about, if required.

HORACE H. DAVISON.



A. D. 1847.—(LOWER CANADA.)—No. 113.

*Apparatus for raising all kinds of Nets, or other
Instruments, used in taking Porpoises and other
species of Fish.*

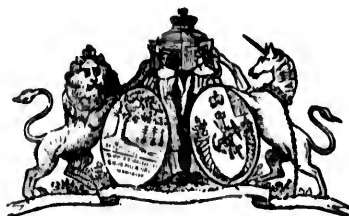
LETTERS PATENT to Louis Lemoine, of the City of Quebec,
Armorer and Mechanic, for the Invention of an "APPARATUS
FOR RAISING ALL KINDS OF NETS, OR OTHER INSTRUMENTS, USED
IN TAKING PORPOISES AND OTHER SPECIES OF FISH."

Montreal, dated 6th April, 1847.

BRIEF DESCRIPTION.

The under part of the net is held to the ground by anchors or pickets, and a sufficient quantity of lead or other heavy matters; the upper part of the net is raised and lowered at pleasure, by means of a set of cords, which are passed through the rings of the anchors, and once raised, the cords hold the net in a solid vertical position.

LOUIS LEMOINE.



A. D. 1847.—(LOWER CANADA.)—No. 114.

*Improvement in the method of constructing an
Electro-Magnetic Telegraph.*

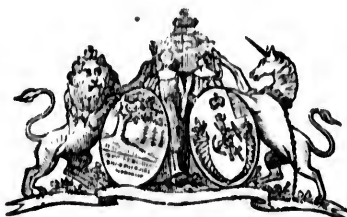
LETTERS PATENT to Gilbert McMicken, of Montreal, Esquire, for
the Invention of an "IMPROVEMENT IN THE METHOD OF CON-
STRUCTING AN ELECTRO-MAGNETIC TELEGRAPH."

Montreal, dated 29th June, 1847.

BRIEF DESCRIPTION.

The Notifier is an instrument, similar in all respects to the relay instrument used in telegraph offices, to be used for preventing delay in connecting a line after a break has been repaired, to divide long lines into several sections, each being enabled to do business by itself without interference one with another, and to point out when the relay sticks are fast. The Connector or Transfer Magnet is an instrument operated in the same manner as the register in telegraph offices, and used for connecting side lines to the main ones, or in other words, enabling one line of telegraph to operate instantaneously with another line, or any number of lines of telegraph that may be put in connection therewith.

GILBERT McMICKEN.



A. D. 1847.—(LOWER CANADA.)—No. 115.

New method of compounding a Preparation for all kinds of Oil Paints, for House Painting, and other kinds, especially to be used with Lead Paint.

LETTERS PATENT to Peter Deal, of Philipsburgh, District of Montreal, Painter, for the Invention of a "NEW METHOD OF COMPOUNDING A PREPARATION FOR ALL KINDS OF OIL PAINTS, FOR HOUSE PAINTING, AND OTHER KINDS, ESPECIALLY TO BE USED WITH LEAD PAINT."

Montreal, dated 7th August, 1847.

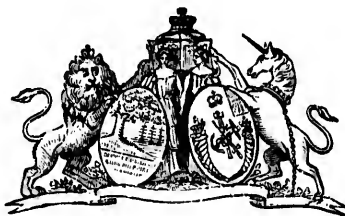
BRIEF DESCRIPTION.

In order to prepare and use the said compound, take three pounds of gum shellac, five quarts of clear soft water, seven ounces of pearl ash or saleratus, one-half of one gill of linseed oil, mix and boil them slowly over a fire until the gum shellac is thoroughly dissolved; when it is cold mix the composition thus made with twice the quantity, in bulk or value, of the common and ordinary house paints, composed of oil and leads, or other usual materials in common use amongst, and well known to, mechanics or house painters; this is about the proportion in which it is most common to use it, but it may be used in greater or less proportions, as may be found necessary, in different kinds of

Deal's Compound for Paints, &c.

paint, in order to leave the ultimate mixture of a proper consistency or thickness to lay or spread with the brush to advantage, as some paints are ordinarily thicker or stiffer than others; the paints, before the addition of the compound, will be prepared, under all the circumstances, the same as though no such mixture was intended, and may be prepared with or without turpentine. The advantages resulting from this composition are: firstly, increase of quantity; secondly, great saving of expense; these ends are attained without much, if any, depreciation in the value and durability of the article, but thus far appear to improve it. What is claimed is the composition first described, and the proportions in which the same is mixed or made of said materials, or with such slight variations and modifications as shall serve the like purpose, (the above being found on experience, thus far, the best adapted for the purpose); that is to say, the discovery thereof in such combination, and also the combining of said composition with common paint, in the manner, or similar manner, and for such or similar purposes as aforesaid; and also the combination of the gum shellac with any other alkali, to serve the same purpose as the pearl ash, either with or without the addition of the oil, which improves it, but is not indispensable for the purposes aforesaid.

PETER DEAL.



A. D. 1847.—(LOWER CANADA.)—No. 116.

*New and useful method of constructing Flour
Sifters.*

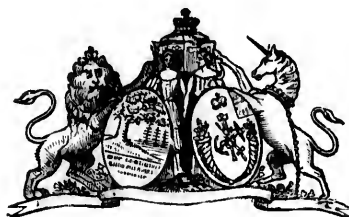
LETTERS PATENT to Edward Sylvester de Rotter nund, of the
Parish of St. Césaire, in the District of Montreal. Esquire, for the
Invention of a "NEW AND USEFUL METHOD OF CONSTRUCTING
FLOUR SIFTERS."

Montreal, dated 26th August, 1847.

BRIEF DESCRIPTION.

The improvements consist, firstly, in the method of passing flour through sieves of different degrees of closeness, and separating the siftings from each sieve by a continuous and simultaneous movement; secondly, in the application of rollers, placed across, moved by an eccentric arm and by a lever, with the same action, for effecting the motion required by the sifting machine.

EDWARD SYLVESTER.



A. D. 1847.—(LOWER CANADA.)—No. 117.

*An improvement in the method of constructing
Grist Mills.*

LETTERS PATENT to Edward Sylvester de Rottermund, Parish of
St. Césaire, District of Montreal, Esquire, for the invention of an
“IMPROVEMENT IN THE METHOD OF CONSTRUCTING GRIST MILLS.”

Montreal, dated 21st August, 1847.

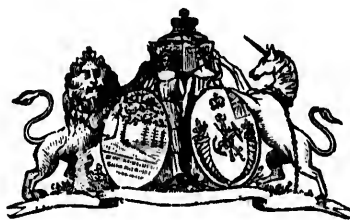
BRIEF DESCRIPTION.

What is claimed is, Firstly : The diminution of friction on the lower bearing of the main shaft. Secondly : The easy adjustment of the lower Mill stone, with the advantage of working it with safety, for a greater length of time than is practicable by the means now in use. Thirdly : For the easy adjustment of the upper stone. The first improvement is effected by means of three balls of steel, or other proper material, which traverse on a metal ring, and are maintained in their places by means of three points or prongs on the lower arms of the carriage plate; these balls, sustaining the weight of the stone and its plate, relieve the shaft thereof, and consequently the friction of the pivot is reduced or relieved. The second improvement consists in using a metal bed plate, which is furnished with lugs through which small screws are passed. There are also other screws which pass through bosses on the arms of the plate. The main shaft is keyed

Sylvester's method of constructing Grist Mills.

into the lower part of the plate. The stone being laid on the plate is set perfectly true and level by means of the set screws, and then carefully centred and held tight by means of the screws; by this arrangement the stone will wear till reduced to a very small thickness. The third improvement consists in the adjustment of the upper stone by means of the set screws. The lever is a further adjustment of the wheel and shaft, to the lower arms or carriage of the bed plate.

EDWARD SYLVESTER.



A. D. 1847.—(LOWER CANADA.)—No. 118.

*New and useful method of Rotting Hemp and Flax
by artificial means.*

LETTERS PATENT to James McGee, of the City of Montreal, Flax
Merchant, for the Invention of a "NEW AND USEFUL METHOD OF
ROTTING HEMP AND FLAX BY ARTIFICIAL MEANS."

Montreal, dated 6th August, 1847.

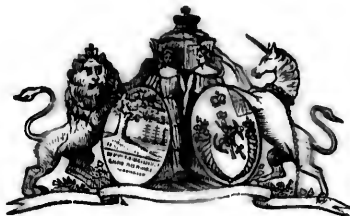
BRIEF DESCRIPTION.

The straw having been first properly rippled (that is having the seed taken off,) placed in a vat, similar in construction to the one mentioned in the annexed description, or any other that may be found most convenient, either made of wood, or built of brick, cemented and made water-tight, fastened down at the top of the vat to prevent the swelling, occasioned by the fermentation, raising it out. Cold water is let run on, so as nearly to fill the vat, thoroughly immersing the straw; this being done, steam is turned in the metal pipes at bottom of vat, heating the water to a temperature of about ninety degrees, at which it is kept until the process is complete. This temperature, in the course of about fifteen hours, causes fermentation to take place, which, in the course of three days, produces entire decomposition of the glutinous vegetable matter, connecting the fibre with the straw, and thereby prepares it in a very superior state (after being dried,) for the future process of breaking and scutching. The vats may be constructed of wood, brick or stone, care being required to make them thoroughly

McGee's method of Rolling Hemp and Flax.

water-tight, the size to be about fifty feet long, six feet wide, and four and one half feet deep. The steam pipes to be run up along one side of the vat, turning with a circular bend, and down the other side, going out at same end as entrance, to be placed within eighteen inches of either side of the vat, so as to divide the heating power equally. The entrance end of pipe to be within four inches, and the exit end within one inch of bottom of vat, thereby allowing a fall of three inches for the condensed steam to run off; the entrance end to have a guage cock to regulate the heat, and the exit a smaller one to regulate the escape of condensed steam. Immediately over the steam pipes a false bottom of wood is placed, on which to put the flax, so as to keep it from contact with the pipes. This false bottom to be made in compartments, and perforated to permit the water to rise equally over the flax. The water to be introduced by a pipe lying in the centre of the vat and rising through the perforated bottom.

JAMES MCGEE.



A. D. 1847.—(LOWER CANADA.)—No. 119.

Revolving Brick Receiver

LETTERS PATENT to Austin Adams, of the City of Montreal,
Brick Maker and Machinist, for the Invention of "A REVOLV-
ING BRICK RECEIVER."

Montreal, dated 14th August, 1847.

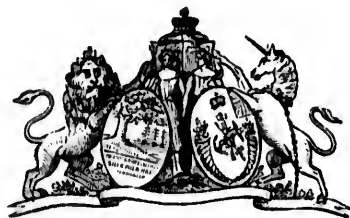
BRIEF DESCRIPTION.

The machine consists of a circular wooden frame, of eight, ten, or twelve sides, more or less, as may be required, which revolves horizontally on its own axis, and is supported at its circumference or sides by six or more iron rollers or wheels, revolving each on their own axis, at right angles to the radius of the machine, and which are fastened into perpendicular posts under the circumference of the same, being kept from moving laterally out of its position, by an iron pin, projecting upwards from a post planted (either in the ground or mortised into a sunk frame), immediately under the centre of the frame, and passing through the cross beams to which the rim is bolted. The rim is composed of two rows of plank, two inches thick, and about ten inches wide, which are fastened or pinned together; break joints are bolted to the cross beams, and surrounded, on the outer edge, by an inch plank which rises about an inch above the upper plank of the rim; on the edge of this upright plank the mould with the newly made bricks being placed, is thrown forward, thus discharging the

Adams' Revolving Brick Receiver.

bricks upon the pallets, when the frame, being turned round on its own axis, carries the bricks to the place where they are placed upon the harrows. The great advantage of this machine is, in allowing the regular distribution of the work among the different hands employed in making and removing the bricks, and in preventing them from interfering with each other, by which great delay and expense is saved.

AUSTIN ADAMS.



A. D. 1847.—(LOWER CANADA.)—No. 120.

Hot Air Furnace.

LETTERS PATENT to George Fales Prowse, of the City of Montreal, Tin and Copper Smith, for the Invention of a "HOT AIR FURNACE."

Montreal, dated 11th September, 1847.

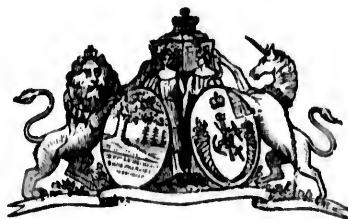
BRIEF DESCRIPTION.

This invention is one by means of which caloric, in greater quantity and more intense in quality, is generated with an equal quantity of Fuel, than can be done by any other method yet invented. The hot air furnace exposing a large surface to the air, by means of the generators, causes the external air, which has been admitted through the cold air passages, to become heated, and thereby heats the air of the apartment in which the furnace is placed; and the air, which has thus been heated, may be conveyed, by pipes or tubes of any size, or in any number, or by means of regulating ventilators, or by keys or valves in the pipes, to any other apartment, and so diffuse the heat produced from one furnace over the whole house. The hot air produced by this furnace, may be rendered very pleasant by fixing in the hot air chamber an evaporator, or any other vessel containing water, and perfuming it, so that a grateful odour is scattered round. The evaporator may be fixed in the floor or in any part connected with the furnace. Another benefit obtained by this mode of heating is, that during the summer, when the furnace is not in use, the air from the

Prowse's Hot Air Furnace.

basement, or out of doors, continually passing through the hot air pipes, which act as ventilators and convey the cold air into all the apartments forming an excellent mode of ventilation. The hot air chamber, or cockle, is built either of brick, tin, sheet iron, or other similar material, admitting the cold air either at the top or bottom, or at any other part to the furnace. If the cockle is of brick it is generally built with a double wall, allowing the cold air to pass down between them and admitting the cold air again through the opening in the bottom, into the hot air chamber. And on the side or end a door is generally made to allow admission, to make repairs when necessary. What is principally claimed by this invention, is the mode of obtaining heat, and having the same equally diffused, by means of the generators; the invention containing however many other and obvious advantages which it is unnecessary to specify.

GEORGE FABES PROWSE.



A. D. 1847.—(LOWE CANADA.)—No. 121.

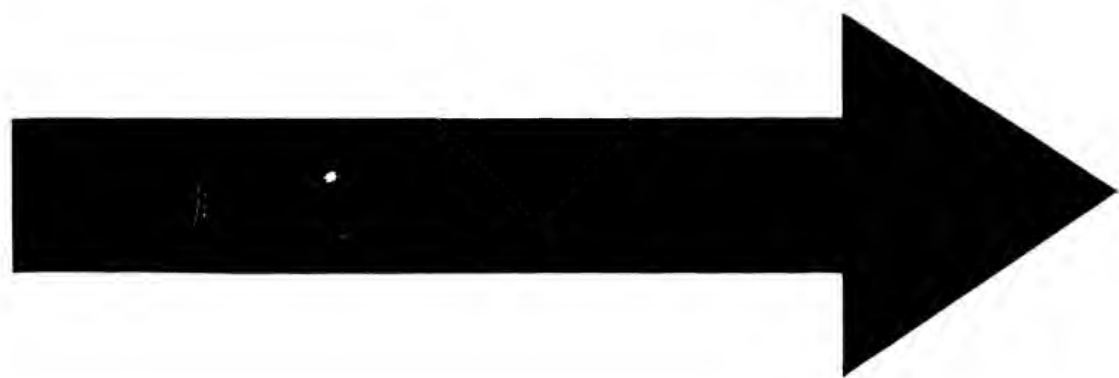
*New and improved Water Wheel, called the "Screw
right and left reversed Water Wheel."*

LETTERS PATENT to Thomas Brill, of the Parish of Saint Armand,
East, in the District of Montreal, Mechanic, for the Invention of
a "NEW AND IMPROVED WATER WHEEL, CALLED THE "SCREW
RIGHT AND LEFT REVERSED WATER WHEEL."

Montreal, 3rd September, 1847.

BRIEF DESCRIPTION.

The usual dimensions of the said wheel are from twenty-five to thirty inches in diameter, the length of the wheel for two heads is five feet, the number of buckets on each end of the wheel may be varied from eight to ten; the greater number of buckets used, the less water is required; the length of the buckets is fifteen inches; they are placed upon the shaft in such a manner as to form a screw from the centre of the shaft in opposite directions. The wheel is placed in a cylinder of size and circumference barely sufficient to contain it, the bulk head is formed so as to let the water on the wheel in the centre, from whence it passes out by the ends of the cylinder; the shafts and buckets may be formed from one entire piece of wood, or the shaft may be turned and bevelled and cast iron buckets attached to it. The cylinder may be made in such a manner as to have it turn with the wheel, and the whole may



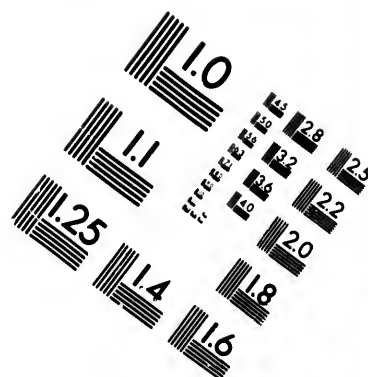
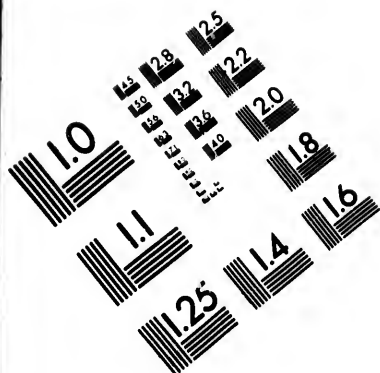
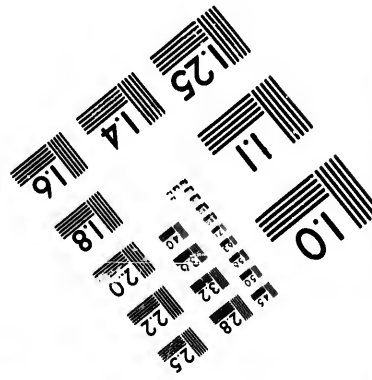
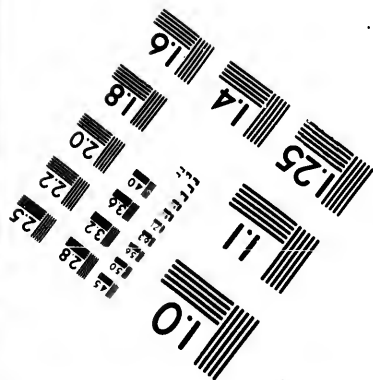
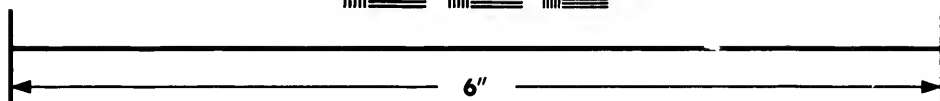
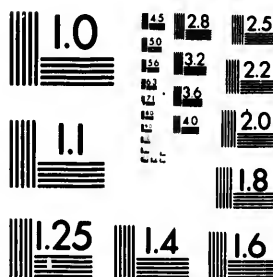


IMAGE EVALUATION TEST TARGET (MT-3)



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23 WEST MAIN STREET
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(716) 872-4503

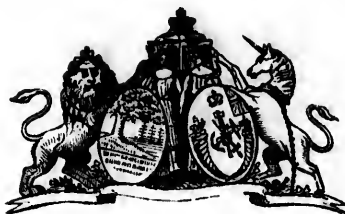
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Brill's Water Wheel.

be made of cast iron. The great superiority of this wheel over all others hitherto invented is, that it runs well entirely under water, and a less quantity of water is required to propel it than any other wheel in use. It may be attached to an upright as well as to a horizontal shaft.

THOMAS BRILL.



A. D. 1847.—(LOWER CANADA.)—No. 122.

New mode of constructing the Bed Plates of end working Fire Engines, and in the method of placing the supply and delivery Valves of such Engines.

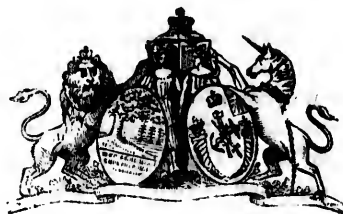
LETTERS PATENT to William Muir, of the City of Montreal, Merchant Tailor, for the Invention of a "NEW MODE OF CONSTRUCTING THE BED PLATES OF END WORKING FIRE ENGINES, AND IN THE METHOD OF PLACING THE SUPPLY AND DELIVERY VALVES OF SUCH ENGINES."

Montreal, dated 27th October, 1847.

BRIEF DESCRIPTION.

The bed plate, made of proper material, is provided at the sides with passages tapering to their extremities, whereon the joints for the branch pipes are screwed; on either end of the bed plate the delivery valve is suspended from the seat of these valves, the plate is curved upwards and terminates in a circle arranged to receive the end of the working barrel of the engine in the curved part, and immediately below the barrel is the supply valve, fitted to the curve, which, hinged upon its lower edge, opens upwards and allows the water to flow into the barrel, whence it is directly discharged into the air vessel, of which the bed plates form a part.

WILLIAM MUIR.



A. D. 1847.—(LOWER CANADA.)—No. 123.

New method of constructing Shower Baths.

LETTERS PATENT to Michael Dwyer, of the City of Montreal, Coach Maker, for the invention of a "NEW METHOD OF CONSTRUCTING SHOWER BATHS."

Montreal, dated 10th November, 1847.

BRIEF DESCRIPTION.

There is a platform and a base upon which the platform rests. There is leather which encloses the space between the ends of the platform and the base, and space for water between the apparatus and the sides of the tub. The vacancies are enclosed by leather formed for the admission of water through the valves in the base, and there are also valves in the platform, as well as an entrance for the pipe into the platform; the circular top is a box of tin perforated through the under side, and the water is introduced into it through one side by the pipe. There is a square box or tub, into which the apparatus is placed, which is lined with lead up to the height to which the top of the platform rises when placed in it. Upright posts are placed at the four corners of the tub, supported at the top by four cross bars, to one of which bars the pipe is fastened. Pieces are screwed on to fasten the leather to the sides of the platform and base, and similar pieces are screwed on the ends of the base, and project in such a manner as to raise it sufficiently above the tub or box to allow the water ingress to the valves; the water being poured into the tub, until it is about two-thirds full, rises through the valves into the vacancies. A person standing upon the

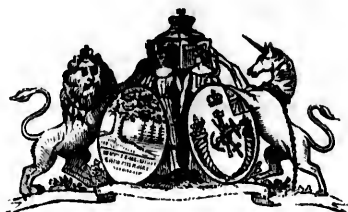
Dwyer's Shower Baths.

platform, by a slight movement of his body, or by allowing his weight to rest alternately upon either foot, causes either side of the platform successively to rise and fall. The water is by this means forced through the valves into the pipe and through it into the top, from which it falls on the person on the platform. The frame is covered with oil cloth, with a door in the front.

MICHAEL DWYER.

is weight
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through
which it
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A. D. 1848.—(LOWER CANADA.)—No. 124.

New and improved Horse Collar.

LETTERS PATENT to William Walsh, of the City of Quebec,
Saddler, for the Invention of a "NEW AND IMPROVED HORSE
COLLAR."

Montreal, dated 8th January, 1848.

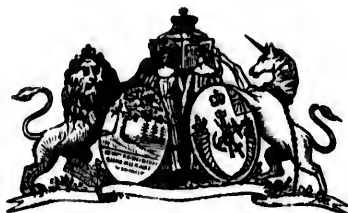
BRIEF DESCRIPTION.

In the first place, in the construction of the rim, the substituting in it for straw, (the only article now in use,) cane, whalebone, or any other pliant or flexible material that may be deemed suitable. The advantages to be derived from the use of these articles are, that the collar will be quite elastic, it will stretch in such a manner as will render its being put over the horse's head a matter of perfect ease, and when on, it will return to its original shape, and will retain it; it will be infinitely more durable, less liable to break, and much lighter than that now in use. In the second place, in the introduction of a second or double body-side, there being only one body-side to the collar now in use. The body-sides of the collar are constructed, in the first instance, in the same way as those now in use; over these there is an outside covering or double body-side stuffed with flax, wool, hair, or any other article desirable for the purpose. The advantage derived from the double body-sides is, that the collar will fit better and easier; it will lay easier on the horse's neck, will always retain its original

Walsh's Horse Collar.

shape, as it can be repaired by merely removing the outside covering on the double body-side, the inside body-side remaining untouched; it will also be impossible for the rim of the collar to touch the horse's neck.

WILLIAM WALSH.



A. D. 1848.—(LOWER CANADA.)—No. 125.

Method of constructing Smut Mills for cleaning Grain.

LETTERS PATENT to Thomas Brown, of the Township of Dunham, District of Montreal, Miller, for the Invention of a "METHOD OF CONSTRUCTING SMUT MILLS FOR CLEANING GRAIN."

Montreal, dated 16th March, 1848.

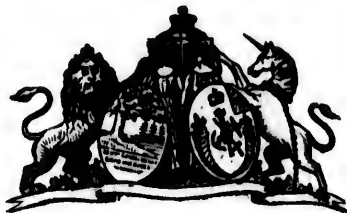
BRIEF DESCRIPTION.

This machine is composed of an upright wooden frame, two feet ten inches square, the upper part of the frame being arched. From the centre of the bottom sill of the frame rises a cast iron shaft or cylinder two inches in diameter, and three feet eight inches in length, which, at the bottom, turns in a cast steel foot, and at the top in a cast iron box. At the upper extremity of said shaft is a pulley, to which the motive power is attached; on and around said shaft, at its centre, and secured in its place by a cast iron collar about nine inches in diameter, revolves about five hundred times per minute, a circular running table or head, composed of wood thirty inches in diameter, and two inches thick, banded and covered on both sides with strong sheet iron, and having on its upper surface two hundred and sixty-four wrought iron spikes a quarter of an inch square, driven into the said table or head corner-wise, and rising two inches above the surface; said table or head having on its upper surface eight stationary iron sheets at right angles to the axis, four inches long, and two inches high, which serve both as wings and beaters; three inches above said head is another stationary head, lined with sheet iron, and having on its lower surface a like

Brown's Smut Mills.

number of iron spikes of half an inch in length ; through a hopper in this stationary head the grain is admitted, and falling upon the running table or head is, by its revolution, thrown violently against both sets of heads and spikes, wings and beaters ; the dust and smut thus being loosened and separated from the wheat, while four fans, which also serve the purpose of beaters, attached to the lower side at right angles to the running table or head, together with the said eight stationary iron sheets, drive the dust and smut from the machine into the smut room, while the wheat, falling over said running head or table, is still driven against the beaters and also against a curb or outside cylinder of iron rods, five sixteenths of an inch in diameter and half an inch distant from the running table, and fastened, perpendicularly at the top, into the upper stationary head, and at the bottom, one foot distant, into another stationary head or table parallel to the lower side, and so placed as to prevent the wheat escaping, but sufficient to allow the free passage for dust and smut, and falls into a box in which is an additional fan or blower, driven by the upright shaft, and which serves to free the wheat from any large chaff which might have been left. To the upper stationary table or head there is attached a circular wire curb, of eight inches diameter, which rises to the upper frame ; and to the under stationary table or head is attached a similar wire curb, of ten inches diameter, extending seven inches up to the running table or head, and thus full and free ventilation is admitted into the machine from the top and bottom, and the wheat prevented from escaping, while the smut and dust is driven, by the centrifugal force of the running table, out through the outside cylinder into the dust room. The great advantages of this smut machine over all others consist in its durability, in being able to cause the running table to revolve and work in both directions, the machine itself, by this means, keeping the spikes sharp ; in the amount of grain which can be cleaned in a given time, and the ease of regulating its motion, the amount and power of ventilation into and from the machine, the large surface and number of beaters to which the grain is exposed during its passage from the machine, and in the small motive power required to work it, the grain being scoured among the spikes, while in others the grain is lifted up and borne around with the machine.

THOMAS BROWN.



A. D. 1848.—(LOWER CANADA.)—No. 126.

*Improvement in the construction of Saw Gates for
Saw Mills.*

LETTERS PATENT to James Bailie, Village of Aylmer, District of
Montreal, Cabinet Maker, for the invention of an "IMPROVEMENT
IN THE CONSTRUCTION OF SAW GATES FOR SAW MILLS."

Montreal, dated 12th April, 1848.

BRIEF DESCRIPTION.

The said saw gate, to avoid friction, is made to run on wheels, pulleys, or rollers, to be placed between the fender posts, which wheels, pulleys or rollers, will turn on their axis by the reciprocating motion of the saw gate; the said wheels, pulleys, or rollers, to move on steel points and sockets, also turned centre points, these sockets are in screws, cut their whole length and screwed to peices of wood. The said wheels, pulleys, or rollers, may be made to run on gudgeons with boxes made of brass or other metal.

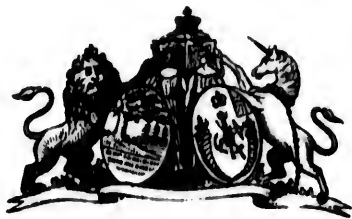
JAMES BAILIE.

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A. D. 1848.—(LOWER CANADA.)—No. 127.

*A method of constructing Saw Mills for Slabbing
Logs and Sawing Slabs.*

LETTERS PATENT to John Ritchie, of Etchemin, District of
Quebec, Millwright, for the invention of a "METHOD OF CON-
STRUCTING SAW MILLS FOR SLABBING LOGS AND SAWING SLABS."

Montreal, dated 19th June, 1848.

BRIEF DESCRIPTION.

The said invention consists in placing and securing the logs or slabs to be sawn, upon certain moveable blocks, sliding or moving upon ribbons or other like contrivance for guiding them, fixed upon the floor of the mill, and along which the said blocks are driven by a pitch chain or screw, moved by the machinery of the mill, and into the spaces between the links or threads certain projections on the under side of the said blocks fit and fall. Each block, when it has done its work of conveying one log through the saw gates, being returned to that part of the mill in front of the saw gate, and replaced upon the ribbons to receive another log upon the blocks; the projections, which are engaged in the pitch chain or screw, push forward the log upon the block, the projections upon which are disengaged, so that a continual stream of logs or slabs is passed through the gate, without even stopping the mill.

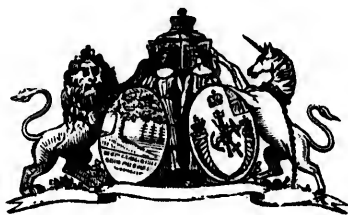
JOHN RITCHIE.

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A. D. 1848.—(LOWER CANADA.)—No. 128.

Improvement in the construction of Four-wheeled Carriages, to wit, a plan for facilitating the turning of the same in a short space.

LETTERS PATENT to Edward T. Jones, of Carrillon, District of Montreal, Esquire, for the Invention of an "IMPROVEMENT IN THE CONSTRUCTION OF FOUR-WHEELED CARRIAGES, TO WIT, A PLAN FOR FACILITATING THE TURNING OF THE SAME IN A SHORT SPACE."

Montreal, dated 27th June, 1848.

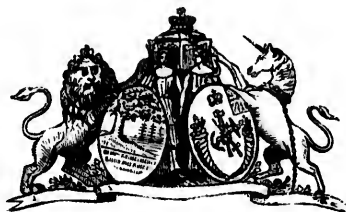
BRIEF DESCRIPTION.

The back axle is made to turn on the centre, exactly like the front one, with a bearing circle to steady the carriage, beneath the spring bar, and reach the front axle, but a little larger; and on the ordinary freight waggon, sections of a large circle, placed under the spring bar or body, with merely friction plates of iron on the axle will suffice. There are then two guides or rods placed between the axle, one end of each being fastened by a joint in the opposite sides of the centre of each axle, crossing each other in the middle, and thereby causing an inverse action of the back to the front axle; that is, as the front wheels turn to the right the back wheels turn to the left, or vice versa, and in order that it may so operate correctly, as intended by the plan, it is necessary to fasten the guides, they being

Jones' Four-wheeled Carriages.

precisely of the same length, by a joint or hinge exactly at equal distances from the centre of each axle, otherwise the front and back wheels would not turn alike, nor run in the same track; the wheels should be all the same size, in order that they may turn equally, or without striking the body of the carriage.

EDWARD T. JONES.



A. D. 1848.—(LOWER CANADA.)—No. 129.

A method of constructing Hay Rakes.

LETTERS PATENT to Antipas M. Byron, Township of Compton,
Carriage Maker, for the Invention of a "METHOD OF CONSTRUCT-
ING HAY RAKES."

Montreal, dated 19th June, 1848.

BRIEF DESCRIPTION.

Firstly, there is a round shaft, with double coil teeth, composed of hard wood, eight feet long and three inches in diameter, and on this shaft there will be sixteen coil teeth spread six inches apart, from centre to centre, the coil teeth to be composed of three-eighth inch wire; there are four spike teeth to pass through the round shaft composed of half-inch wire, and to be twenty inches long, to be spread twenty inches apart from centre to centre. Secondly, there is a circular guage, placed vertically, in the centre of the round shaft, and playing between the centre bar of the rake frame, to be composed of hard wood, ten inches in diameter. Thirdly there are arms or a frame to be placed horizontally, one-and-a-half inches square; the arms to be four and three feet long, to be chambered, and to fasten together with oak treenails.

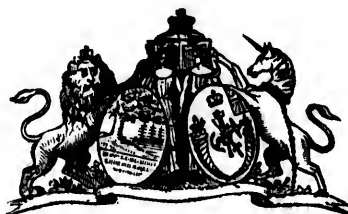
ANTIPAS M. BYRON.

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A. D. 1848.—(LOWER CANADA.)—No. 130.

*A new mode, or art, of Ventilating Buildings,
called the Canadian Ventilator.*

LETTERS PATENT to Henry Ruttan, of the District of Montreal,
for the Invention of a "NEW MODE, OR ART, OF VENTILATING
BUILDINGS, CALLED THE CANADIAN VENTILATOR."

Montreal, dated 25th July, 1848.

BRIEF DESCRIPTION.

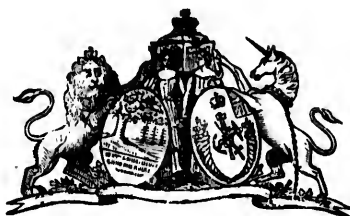
Firstly, for filling the whole building with, and keeping it full of pure air, and causing a constant circulation of the whole body downwards, without local currents; operating in the same manner as if water were let off a room, by opening a gate at the bottom. Secondly, for the ventilating, and at the same time warming, (if in cold weather) any one, or all of the rooms in a building, whatever the number, without a single pipe, either within or without the walls; the whole being accomplished by an aperture at the top and bottom of each room, which apertures are to be so constructed, as to be opened and closed, at pleasure. If the doors may be left open, these apertures are not necessary. Thirdly, for the ejection, at the same time, of all the coldest and most contaminated air, and the retention, at the same time, of all the warmest, and purest of the air. Fourthly, for ventilating and warming as effectually, those parts of the building which may be situated below the machinery constructed for conducting and warming the air, as those parts situated above it. Also a philosophically constructed fire chamber, of metal, for warming the ventilating air, or for

Ruttan's Canadian Ventilator.

use as a common metal heater or stove; it may be thus shortly described: suppose a common rectangular six plate stove, set upon one of its angles, the two sides then forming the top, lengthened out, to several, say four feet; this would make a very acute angle at the top; the fire flues are then set over apertures, made at proper distances, on these two sides, the whole length of the fire chamber, so that a current of fire will pass along with, and between two currents of cold air, to such height as may be convenient. Thus the air, which is brought (in quantity from eight to twenty square feet) from the outside of the building under the fire chamber, sweeps, in its upward ascent, the metal from bottom to top, absorbing the radiated heat from every part of its surface. Also the combination of a cooking apparatus, with this fire chamber, as represented in the Drawing, for performing the operations of cooking, and warming the ventilating air at the same time. Also the machinery, and process for bringing in the air from the outside of the building; facilitated by its own operation, by means of a moveable cap over a large funnel, and extended to such height, as may insure a constant supply from a strata of pure air. Also, a self-cleaning coal grate which, with one or more raised parts, with projecting tops or caps, brings the combustion air out horizontally, unimpeded by the coal which is kept off by the projecting tops. The whole of this machinery being mainly for one object, the ventilation of buildings.

HENRY RUTTAN.

See Drawing, No. 130.



A. D. 1848—(LOWER CANADA.)—No. 131.

A useful method of Constructing an Apparatus for taking off the Friction of the Axle of a Bell, and for making the Tongue of a Bell strike the top, when elevated.

LETTERS PATENT to George P. Warren, of the City of Montreal, Machinist, for the Invention of a "USEFUL METHOD OF CONSTRUCTING AN APPARATUS FOR TAKING OFF THE FRICTION OF THE AXLE OF A BELL, AND FOR MAKING THE TONGUE OF A BELL STRIKE THE TOP, WHEN ELEVATED."

Montreal, dated 16th August, 1848.

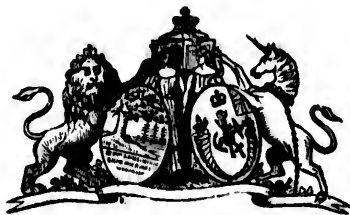
BRIEF DESCRIPTION.

The apparatus for taking off the friction, consists of parts of circles, whole circles, or rollers suspended on sharp edges, resting on steel bearings; which circles or rollers support the axle of the bell, by taking off the friction. The bell can be balanced on its axle, which will diminish the power required in ringing it. The apparatus for making the tongue strike in the top, when elevated, is comprised of a weight and lever power; which weight and leverage, being more than that of the tongue, will always have a downward tendency, and the motion of the bell, aided by the gear in it, and the weight and leverage, compels the tongue to strike in the top, when elevated; producing a greater sound than when the tongue strikes in the bottom. There are

Warren's Bell Apparatus.

springs at the sides, to prevent the tongue striking more than once, each swing of the bell. By this apparatus, for regulating the tongue, the bearings of the axle can be placed low enough to have the bell balanced, without loading the axle, which will not prevent the tongue from striking in the top, when elevated.

GEORGE P. WARREN.



A. D. 1848.—(LOWER CANADA.)—No. 132.

New and improved Paddle Wheel for Steam and Horse-boats, and for propelling Vessels.

LETTERS PATENT to Charles Midgley, of the City of Montreal, Machinist, for the invention of a "NEW AND IMPROVED PADDLE WHEEL FOR STEAM AND HORSE-BOATS, AND FOR PROPELLING VESSELS."

Montreal, dated 10th August, 1848.

BRIEF DESCRIPTION.

The said discovery and invention consists in a new form and arrangement of the paddles or buckets upon the wheels, in such a manner as to relieve the wheel, in its revolutions, from the loss of power in the right direction, occasioned by the lifting of the water by the bucket after it passes a point perpendicular to its surface, which, by the usual method, tends to depress the vessel into the water, loading the wheels, and so far exerts a force in a downward direction instead of forward and upward. The said wheel is constructed as follows:—The wheel in all respects, except the buckets and their arrangement, may be constructed upon the plan and in the proportions usually employed in vessels as now used, which are propelled by means of paddle wheels. The buckets are also of the same width proportionally in the direction of the diameter of the wheel with those now in use, or they may be a little under or narrower, and the arms of the wheel should, at their extremities, be at about the same distance, so as to leave the buckets about as far apart as those in ordinary use.

Midgley's Paddle Wheel.

For a wheel which, on the usual plan, is constructed for one set of paddles only, which of course requires but two sets of arms to support the buckets at each end. This wheel requires four sets of arms, to be adjusted in flanges upon the shaft in the ordinary way, except that each of the four sets of arms should be placed so as to radiate from the axis in the same direction, that is, if there be twenty arms in each set, they should be equi-distant from each other, and the arms of each set should radiate from the axis in the same direction, so that, in revolving, one arm of each set should strike the surface of the water at the same time, and not one to follow the other in order of time. The buckets should not be placed on the two corresponding arms of the wheel so as to strike the water in their whole length at the same time; but the end of the bucket, which is fastened to the outer or outside arm of the wheel, should first strike the water, and the other or inner end of the bucket should be carried back and fastened on to that arm of the next inner set of arms, which would, in revolving, next strike the water, so that the bucket will along its edge on the periphery strike the water in succession, beginning with its outer and proceeding to its inner end, which, it will be seen, will cause the bucket to press or gather the water towards the centre set of arms. There should be another set of buckets on the other two sets of arms, adjusted in the same manner, so that the faces of the two sets of buckets which strike the water look inwards and towards each other, so that in revolving the water is gathered by both sets inwards to the centre set of arms. The centre sets of arms, which support respectively the inner ends of both sets of buckets, and also the inner ends of both sets of buckets should be a few inches apart, proportioned to the length of the buckets on the wheel and its power and diameter, so as to allow the water to pass through instead of being lifted up as the bucket ascends; this space may be about one-tenth part of the distance across from the outer end of one bucket to the outer end of the corresponding one on the opposite set of arms, but may be enlarged or diminished as is found necessary, though that proportion is believed to be nearly correct. The buckets should be made of iron, or any other material of the requisite strength, but are not straight. The buckets are curved to strike the concave surface first on the water, so that that end of the bucket which first strikes the water enters it nearly in the direction of

Midgley's Paddle Wheel.

the plane of its longitude, at that end or near it, and is thence curved round, so that, as the water strikes the inner end of the bucket, it does so at nearly a right angle to the face of the bucket, thus each bucket constitutes nearly the segment of a circle. The edges of the buckets farthest from the axis should also curve in a line corresponding with the line of the periphery, if measured in the direction of the bucket, and the buckets and each bucket should be of uniform width. The bucket should be so curved or twisted that a line in the direction of the radius of the wheel would, at every point of the concave side of the bucket, if moved along perpendicularly to the axis, be in a line with the concave side of the bucket. It is obvious that the degree of curvation of the bucket may be increased or diminished, but the curve, which is believed to answer the purpose, is such that each pair of buckets which act together should, including the space left for escape of water form, say, about two-fifths of what appears to be a circle.

CHARLES MIDGLEY.

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A. D. 1848—(LOWER CANADA)—No. 133.

The Hydro-pneumatic Water Wheel.

LETTERS PATENT to Walter Perkins Newman, of the Village of Elora, in the Wellington District, Upper Canada, for the Invention of "THE HYDRO-PNEUMATIC WATER WHEEL."

Montreal, dated 12th September, 1848.

BRIEF DESCRIPTION.

This machine differs from all others hitherto used for water power in the circumstance that the prime mover is the pressure of the atmosphere, which at the level of the sea is equal to fourteen pounds and seven-tenths of a pound on the square inch; the gravity of the water is not taken into account, except as removing the resistance to that pressure. If a tube be filled with water and closed at the upper extremity while the lower remains open, the column of water in such tube will be sustained by the pressure of the atmosphere against the open mouth, unless the vertical height of the column of water exceeds thirty-three or thirty-four feet, for a column of water of that vertical height (more or less) is of exactly the same weight as a column of air of the same area of base whose height is that of the atmosphere, and any addition to the height of the column of water or any pressure on such column at the upper extremity destroys the equilibrium between it and the column of air which supports it, and the water is discharged at the mouth of the tube until the equilibrium is regained or the pressure removed. In Figure two the tube marked A.A. ascending vertically from a point at or below D. where it is represented as broken off; the water in this tube may be considered to represent the above

Newman's Water Wheel.

mentioned column of water, and may for the purpose of illustration be supposed to equal thirty-four feet in height, in which case, if we suppose the air and water excluded from B.B. and C.C., there will be a vacuum in those parts of the tube, because the power of the atmospheric pressure will not raise the column of water higher than thirty-four feet. Now, if we suppose the portion of the tube marked C.C. to communicate with a reservoir at or beyond the point G., where it is represented as broken off, the atmosphere will press on the surface of the water of the reservoir with precisely the same force with which it presses on the vertical tube A.A., viz.: fourteen pounds and seven-tenths of a pound to the square inch. The water of the reservoir would consequently be forced into the tube C.C., and meeting (in the case we have supposed) no resistance, would proceed onwards to B.B., which is a continuation of the same tube (but in the form of a cylinder with the wheel or drum E. revolving in it on the shaft F.) and striking on the floats H., would carry round with it the drum E., and reaching the column of water in A.A. would force it out at the mouth of that tube, and if the communication with the reservoir were cut off, would occupy the place of that water, leaving a vacuum in B.B. and C.C. as before; the available power of the water entering from the reservoir at G. is therefore due to the vertical height of the column of water in A.A., for if the height of that column instead of thirty-four feet were only sixteen feet, the water at the line M. being supported at D. by a force which would be capable of raising it sixteen feet higher, would offer a proportionate resistance to the pressure of the incoming water, which resistance would be equal to one half of that pressure, or more than seven pounds per square inch. The floats marked H. are made to move freely on a hinge O., in such a manner that they open with the current of water until they are vertical to the centre of the drum,) but are restrained from folding back. When, by the revolution of the drum they arrive at the point I., they close until that point is passed, when they are thrown open by the centrifugal force, aided by the current, and are again acted on as before, causing an uninterrupted rotary motion of the drum on its axle. The whole of the machine is air tight and the shaft or axle at K. (figure number three) works in an air tight box or journal J., and is connected with the machinery to be propelled in the usual way. The area of the tube

Newman's Water Wheel.

C.C. should be equal to that of the floats H., and sufficient space should be left between the circumference of the drum and that of the cylinder B.B., to allow the floats when open to move without touching the area of the upper extremity of A.A., should also equal the area of the floats, but this tube may gradually diminish to the orifice as shewn in the plan, but this is not essential to the working of the machine. The machine may be variously modified to suit different situations and circumstances, it may be horizontal instead of vertical, or may be made to receive water at the upper part instead of the lower, or water may enter abreast.

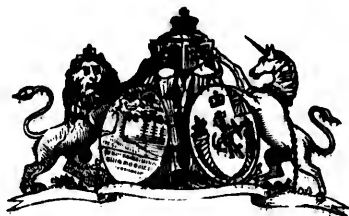
WALTER PERKINS NEWMAN.

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A. D. 1848.—(LOWER CANADA.)—No. 134.

New and Improved Washing Machine for washing clothes, &c.

LETTERS PATENT to Martin Pierce, of the Township of Stanbridge, in the County of Missisquoi, for the Invention of a "NEW AND IMPROVED WASHING MACHINE, FOR WASHING CLOTHES, &c."

Montreal, dated 15th September, 1848.

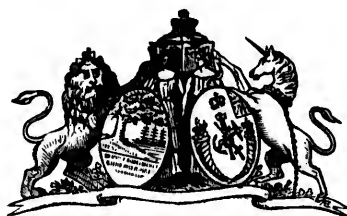
BRIEF DESCRIPTION.

There is a water-tight wooden box, supported on four feet, two of feet five inches in length, bottom measurement, by twenty inches in breadth, seven inches in depth in front, and thirteen inches in depth at the back, the bottom sloping down in that degree. To the box is attached a support, on each side, for suspending the dash or float, formed of an angular piece of wood, cut out in grooves on the inner face, moving freely over the bottom of the box; and which is worked forwards and backwards toward the back of the box, by a handle or lever connected with it by two iron braces attached to the bottom of the dash or float, at equal distances from the side of the box. The dash is hung from the supports by connecting braces. The handle or lever is connected by a screw and nut, to an iron bar or rod firmly fixed at the back, and outside of the box, upon which it plays and is moved up and down, thereby raising the dash as high in front as may be convenient, and in rear forcing the clothes against the back of the box, which is lined with half circles of wood, at equal distances, of an inch in thickness. The water, after washing, escapes by a hole at the

Pierce's Washing Machine.

back and near the bottom of the box, which is stopped by a plug when required. The handle or lever may be turned over the back altogether, by which means the dash or float may be entirely lifted out of the box, and the box itself used as a tub or reservoir for water. The foregoing is the ordinary size, but may be increased or diminished, as may be required, in proportion to the work to be done.

MARTIN PIERCE.



A. D. 1848.—(LOWER CANADA.)—No. 135.

*New and useful invention called the Aeriform, or
Atmospheric Churn.*

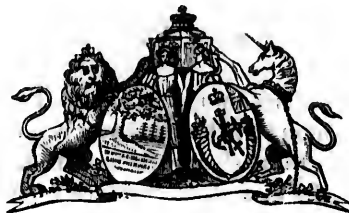
LETTERS PATENT to Walter Holt Wells, of the City of Montreal,
Machinist, for the Invention of a "NEW AND USEFUL INVENTION,
CALLED THE AERIFORM, OR ATMOSPHERIC CHURN."

Montreal, dated 13th November, 1848.

BRIEF DESCRIPTION.

The said machine is a churn, in which butter is produced by driving a current of air through the milk, or cream, contained in the body of the churn. The body of the churn is made in a square form, or box of wood, or metal; to it are attached two upright standards, or arms, connected at the top by a cross piece or cap, which supports the cog wheel, and the top of the spindle connected with the pinion wheel, and joined to the cylinder. From the bottom of the churn, a hollow cylinder extends upwards, passing through the cover, and united to the spindle of the pinion wheel; to the bottom and top of this cylinder, are attached two or three open pipes, communicating with the interior. The cog wheel is moved by a crank, which, meshing with the pinion wheel, causes the rotary motion of the cylinder; and the air entering at the pipes, passing down the cylinder, and escaping through the bottom pipes, into the milk or cream, causes an ebullition, or motion of the same, sufficient to decompose it, or separate the butter therefrom. The churn is also made without any top pipes attached to the cylinder, but orifices are made in the side of the cylinder, in lieu thereof.

WALTER HOLT WELLS.



A. D. 1848.—(LOWER CANADA.)—No. 136.

*A new and useful Coiled Spring Tooth revolving
Horse Rake.*

LETTERS PATENT to Peleg Bowen, of the City of Montreal,
Mechanic, for a new and useful "Coiled Spring Tooth revolving
Horse Rake."

Montreal, dated 14th November, 1848.

BRIEF DESCRIPTION.

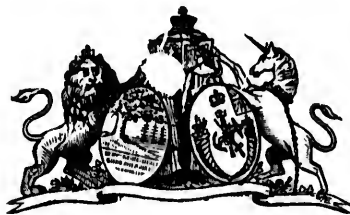
A round piece of timber forms what is called the head, two other pieces of wood of nearly equal length, placed one on each side parallel to it, about half an inch from the head, form what are called the coil heads; being fastened by the teeth they revolve round with it, and to permit of their revolving, where they would otherwise be interrupted by the shafts, pieces are cut out of each so as to permit of the shafts passing to the head, the coil heads being thereby each cut into three pieces. The teeth of the rake, a row of which project from each of the coil heads, are formed by pieces of strong wire, of convenient length and thickness; one end of each tooth is secured tightly into the head, it is then coiled three times round the coil head, and the tooth, formed in the shape of a curve, becoming more straight towards the point. A row of these teeth projects from each coil head on opposite sides of the head. Two pieces of wood, acting as levers, pass through the head parallel to each other, and one end of each of them rests upon the extreme points of two latches. Two shafts are placed parallel to each

Bowen's Horse Rake.

other, and at right angles to the head, in the usual form and of the size of cart shafts, ending at the head in a round socket, within which the head revolves, by these shafts the head is drawn. A piece of wood passes across the shafts at a short distance from the head, to which it is parallel, and to which it is also equal in length; two iron rods connect this cross piece with the head, these rods end in round sockets in which the head revolves. Two traces pass from the shafts, near the extremities, where the horse is yoked, to the ends of the cross piece outside the shafts to strengthen the rake, and two handles, similar to plough handles, are fastened on to the shafts; near their sockets ends a piece of wood, called the cross handle, passing between the two handles, at a convenient distance from their extremities; a wire, called a latch rod, passes through the centre of the cross handle, which is connected with two latches, acting as levers, fastened by joints to the shafts at the cross piece on the side towards the head, and having their ends projecting on each side of the shafts opposite the cross piece. These latches cause the head to revolve by pulling the latch handle and clear the rake of whatever grain or hay may be in it, and the latches being then allowed to resume their former position, the opposite row of teeth acts upon the ground till the rake again requires clearing.

PELEG BOWEN.

See Drawing, No. 136.



A. D. 1848.—(LOWER CANADA.)—No. 137.

New and improved Carriage and Waggon Wheel.

LETTERS PATENT to Omie La Grange, of the Parish of St. Armand,
District of Montreal, Woollen Manufacturer, for the Invention of
a "NEW AND IMPROVED CARRIAGE AND WAGGON WHEEL."

Montreal, dated 6th November, 1848.

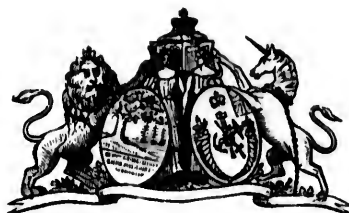
BRIEF DESCRIPTION.

This iron wheel is constructed as follows: The tire is bent in a true circle, and welded at the ends, then spaced off into thirty equal parts, and holes drilled of the size of the spokes, these holes are rimmed from the outside of the tire, making the hole the largest on the outside, with a true taper to the inside. The spokes or wires are cut into proper lengths, thirty in number, and one end is a head made to fit the hole in the tire, and on the other end is a thread, or screw and nut. The spokes are put into the tire from the outside. The inside of the hub, is made of cast iron, the spokes stand bracing in it. One spoke goes into one end of the hub, and the next goes into the other. The hub is cast hollow so as to receive the nut, it is spaced off at each end, at three quarters of an inch, into fifteen equal parts, and holes drilled the size of the spokes. There is a chamber inside of the hub, to hold oil or grease; also a box for the axle tree. There are washers that slip on to each end of the hub, to cover up the nuts, and ends of the spokes.

OMIE LA GRANGE.

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A. D. 1848.—(LOWER CANADA.)—No. 138.

An Office Sliding Calendar.

LETTERS PATENT to John P. Bostwick, of the Township of Compton, District of St. Francis, for the Invention of "AN OFFICE SLIDING CALENDAR."

Montreal, dated 20th November, 1848.

BRIEF DESCRIPTION.

The said calendar consists of three columns; one on a slide, containing the numerals of the days of the month, from one to thirty-one, between two fixed columns, each consisting of the initial letters of the several days of the week, in five weekly divisions, each commencing with Sunday; and one other division in which there are but the first two days of the week; one of the two last mentioned columns, answering to the English, and the other to the French Language.

JOHN P. BOSTWICK.

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A. D. 1849.—(LOWER CANADA.)—No. 139.

*A new and useful improvement in the machinery of
a Ships' Windlass.*

LETTERS PATENT to Patrick McQuilkin and Joseph Henry, of the
City of Quebec, Brass and Iron Founders, for the Invention of a
"NEW AND USEFUL IMPROVEMENT IN THE MACHINERY OF A SHIPS'
WINDLASS."

Montreal, dated 20th January, 1849.

BRIEF DESCRIPTION.

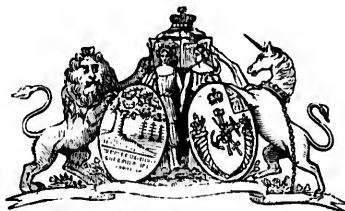
This windlass, like some previously invented, has an iron purchase wheel, placed on each side of it, which is acted upon by a ripping lever attached to each wheel, and which is confined thereto by a traveller, which takes hold of the rim, reciprocating upon the wheel and forcing the windlass round to its ascent alternately, by means of the iron levers with handles fitting in a socket at the top of the pawl bit. The improvement consists in the iron purchase wheel, on each side of the windlass, being regularly indented about half an inch deep, and the top of the nipping levers being made to fit exactly in the indentations, so that while they force the windlass round to its ascent, it is effectually prevented from slipping or revolving back, an inconvenience not hitherto remedied. The force of the nipping levers is also greatly increased by the pin being placed almost at the end farthest from the wheel.

PATRICK McQUILKIN.
JOSEPH HENRY.

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A. D. 1849.—(LOWER CANADA.)—No. 140.

A Limited Horse Swing.

LETTERS PATENT to Nirum W. Rockwell, of Farnham, District of
Montreal, for the Invention of "A LIMITED HORSE SWING."

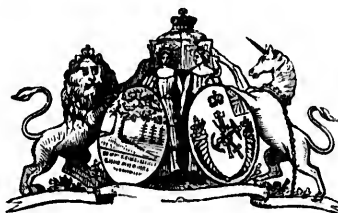
Montreal, dated 5th February, 1849.

BRIEF DESCRIPTION.

It consists of a platform, on which the horse stands, suspended by four chains or ropes, or otherwise, as shall be deemed best, so as to cause it to swing or vibrate easily; being elevated above the ground, or floor, being limited to prevent swinging too far; it is easily made stationary, by two bolts or pins, passing through the swing, and into the ground or floor below; which are easily drawn out, or thrust in, to cause the swing to vibrate, or remain stationary, at the will of the smith.

NIRUM W. ROCKWELL.

See Drawing, No. 140.



A D. 1849.—(LOWER CANADA.)—No. 141.

*An Improvement in the method of constructing
Threshing Machines.*

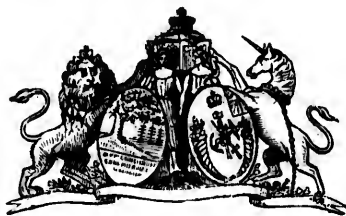
LETTERS PATENT to Elias Jas. Severance, Township of Ascot,
District of St. Francis, Machinist, for the Invention of "AN IM-
PROVEMENT IN THE METHOD OF CONSTRUCTING THRESHING MA-
CHINES."

Montreal, dated 6th March, 1849.

BRIEF DESCRIPTION.

The two horses by which the machine is worked, stand on an in-
clined plane, or revolving floor, or endless connecting chain, attached
to the part of machinery connected with the fly wheel, from which the
connecting powers are attached to the threshing and cleansing appara-
tus by a common leather belt. The enclosure for the horses, with the
machinery below, is easily attached, or detached from the threshing
machine, and the power can be applied to any other purpose. The
whole of the machinery is connected and propelled by belting straps,
simple and not complicated, and not subjected to damage or breakage,
beyond the ability of the most inexperienced artizan to repair. The
sheaves of grain are put in at the feeder, and pass through the thresh-
ing apparatus. The straw is discharged on the opposite side from the
receiver for the grain and chaff, the same is conveyed, by means of ele-
vators, to the fanning or winnowing machine, by which the grain is
perfectly cleaned, and the chaff separated in an opposite direction, the
grain falling into a box in a fit state for the flouring mill.

ELIAS JAS. SEVERANCE.



A. D. 1831.—(UPPER CANADA.)—No. 142.

Method of constructing Bridges, on combined principles called the Suspension Wooden Bridge.

LETTERS PATENT to Nicol Hugh Baird, of Nepean, District of Bathurst, Esquire, for the Invention of a "METHOD OF CONSTRUCTING BRIDGES ON COMBINED PRINCIPLES, CALLED THE SUSPENSION WOODEN BRIDGE."

York, 14th July, 1831.

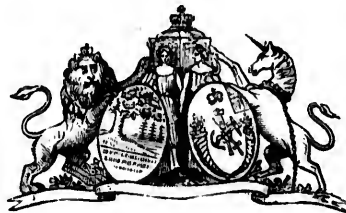
BRIEF DESCRIPTION.

The Bridge, consist of two, three, or more series of links in suspension, connected with pins and coupling, from which suspenders are attached, at each coupling, which support the roadway; also stretchers connected therewith in like manner, by means of pins. Across the roadway stretchers, so formed, lay sleepers, acting as bracers to the suspenders and supports for roadway planking. The road may be of such dimensions as to suit the traffic. The intermediate spaces between the suspenders to have diagonal braces, properly keyed in. These diagonals to be supported by butts properly keyed up, and to consist of two truss abutments, properly secured, and braced back; which abutments must always bear a proportionate height to the required space. Firstly, the suspending links to be of elm, or any other sufficiently tough wood; or where such cannot be had, of red pine; dimensions, fifteen feet from centre to centre, $12 \times 2\frac{1}{2}$, more or less. Secondly, perpendicular suspenders, in length to suit the different parts, of similar stuff and dimensions with the former. Thirdly, diagonal

Baird's Suspension Wooden Bridge.

braces, between suspender and roadway stretchers to be of pine, $12 \times 2\frac{1}{2}$, placed on the edge. Fifthly, the butts to be of the same dimensions and of pine, placed on flat, properly secured by keys; six cross sleepers for roadway, to be of pine, 16×4 , secured in the ends, by trenails, properly dovetail-wedged. Seventhly, roadway scantling, to be of pine plank, from two-and-a-half to three inches, the strongest that can be procured; to be properly trenailed, by one or more trenails to each sleeper. The whole to be erected independently of centres, by commencing on either side of the river to be crossed, and closing in the centre. To be painted with mineral paint, or coal tar, every two years.

NICOL HUGH BAIRD.



A. D. 1831.—(UPPER CANADA.)—No. 143.

A Machine for Threshing Grain.

LETTERS PATENT to John W. Cleghorne, of Cobourg, District of Newcastle, Innkeeper, for "A MACHINE FOR THRESHING GRAIN."
York, dated 13th September, 1831.

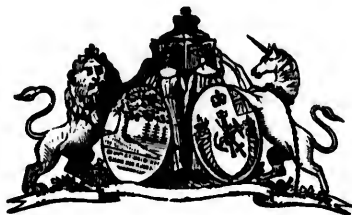
BRIEF DESCRIPTION.

The frame may be made of any size, proportionate to the work required to be done, say from three to seven feet long, and from two to three feet wide; in this frame is a cylinder, the dimensions of which will depend upon the size of the frame, say from two to three feet in length, and in diameter from twelve to twenty-four inches. On the surface of the cylinder are placed beaters, spikes or teeth made either of iron or wood, both have been found to answer. The cylinder revolves in a concave, either under or over it, formed of bars of iron or wood, spikes or pins set in the concave may be advantageous. It is governed by springs placed either under or over, or by weights, but neither are essential. The grain which is to be threshed is placed on an inclined plane or table, and conducted to the cylinder between fluted, nicked, or smooth rollers, or by hand without the rollers. In front of the cylinder is placed a revolving rake to carry off the straw when necessary. Below the cylinder is a shaking sieve, through which the grain, when threshed, passes from the cylinder on to an inclined plane or screen below the shaking sieve. Underneath the screen is a box to receive the screenings; below, a little in front, or behind the cylinder, is a wind wheel to winnow the chaff from the grain as it falls from the screen.

JOHN W. CLEGHORNE.

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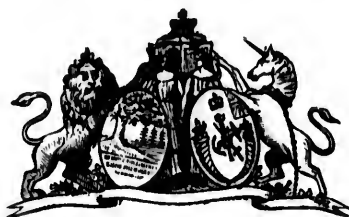


A. D. 1832.—(UPPER CANADA.)—No. 144.

A Machine for Planing and Grooving Flooring.

LETTERS PATENT to Zebediah Sisson, of Cobourg, District of
Newcastle, Carpenter, for the Invention of "A MACHINE FOR
PLANING AND GROOVING FLOORING."

York, dated 27th June, 1832.



A. D. 1832.—(UPPER CANADA.)—No. 145.

A Cooking Stove, called the Hot Air Cooking Stove.

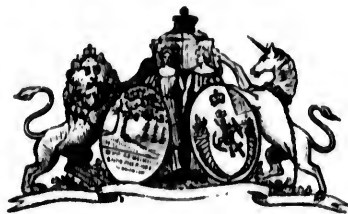
LETTERS PATENT to Jonathan G. Hathaway, of the Town of Hamilton, for the Invention of "A COOKING STOVE CALLED THE HOT AIR COOKING STOVE."

York, dated 24th December, 1832.

BRIEF DESCRIPTION.

The stove is divided by a hearth or plate, horizontally, which forms two apartments, the one above the other. In the upper apartment the fire is made, and the lower forms the oven. Two flues are formed by means of plates, in the back and under the oven, through one of which the heat and smoke pass down the back end under the oven and return through the other flue to the pipe which carries them off. In the back or fire plate there are two holes or apertures, through the lower of which the heat and smoke pass into the flues when the oven is heating; this hole may be closed by means of a damper, in which case the smoke passes into the pipe without entering the flues or heating the lower part of the stove. In the front plate below the hearth is a door which opens into flues by which they may be kept clean. There are boiler holes through the top plate.

JONATHAN G. HATHAWAY.



A. D. 1833.—(UPPER CANADA.)—No. 146.

An Improvement in the Steam Engine, called the Re-acting Engine.

LETTERS PATENT to Ambrose Foster, of Kingston, in the Midland District, Engineer, for the Invention of "AN IMPROVEMENT IN THE STEAM ENGINE, CALLED THE RE-ACTING ENGINE."

York, dated 21st November, 1833.

A. D. 1834.—(UPPER CANADA.)—No. 147.

New and useful improvement in the principle of building Steam Vessels.

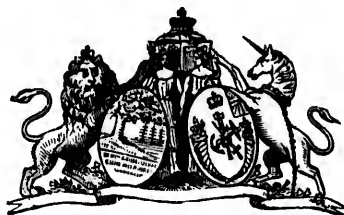
LETTERS PATENT to Nathan Sandford, of Prescott, in the District of Johnstown, Architect, for the Invention of "A NEW AND USEFUL IMPROVEMENT IN THE PRINCIPLE OF BUILDING STEAM VESSELS."

Toronto, dated 23rd May, 1834.

BRIEF DESCRIPTION.

The improvement consists in a steam vessel being constructed and built upon two oval Cylinders or Hulls.

NATHAN SANDFORD.

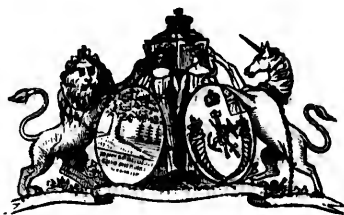


A. D. 1834.—(UPPER CANADA.)—No. 148.

A Revolving Flue, as applied to a Cooking Apparatus, &c.

LETTERS PATENT to Alexander Carpenter, of the Town of Hamilton, District of Gore, Merchant, for the Invention of "A REVOLVING FLUE, AS APPLIED TO A COOKING APPARATUS, &c."

Toronto, dated 17th February, 1834.



A. D. 1834.—(UPPER CANADA.)—No. 149.

An improved method of building Ships, Boats, and other craft suitable for navigation on seas, rivers, lakes and canals, to be propelled with steam or any other power.

LETTERS PATENT to Jos. Burlingham of the town of Hamilton, U. C., and Thomas Bewley, of Laprairie, L. C., Shipbuilder, for the Invention of "AN IMPROVED METHOD OF BUILDING SHIPS, BOATS, AND OTHER CRAFT, SUITABLE FOR NAVIGATION ON SEAS, RIVERS, LAKES, AND CANALS, TO BE PROPELLED WITH STEAM, OR ANY OTHER POWER."

Toronto, dated 6th November, 1834.

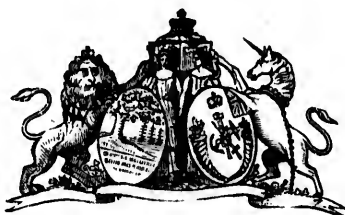
BRIEF DESCRIPTION.

Firstly, in a new form of building vessels, namely: flat bottomed, and round at both ends, with a peculiar sheer, fore and aft, which raises each end out of still water, about one fourth the whole length, and the whole of the lower hold, being made air tight. Secondly, in a new and improved method of constructing, fixing, and moving the paddles of such vessels, such paddles being intended to be fixed in the centre of the vessel, (or on either side) on two wheels or drums, the aft wheel having iron segments for the purpose of moving three chains, to which the paddles are affixed; the said paddles having a horizontal movement. Also another method of constructing, fixing, and moving paddles, by a double crank, revolving with its axle, or

Burlingham's improved method of building Ships, Boats, &c.

moving an equally efficacious stroke, by the alternate motion of the steam engine beam, without revolving, or to any other application of a lever movement, by means of a third crank, connecting it with the rod of a steam engine, or other sufficient power.

JOS. BURLINGHAM.



A. D. 1834.—(UPPER CANADA.)—No. 150.

*A new method of Propelling Vessels and Carriages
designated by the name of Talbot's Atmospheric
Propelling Engine.*

LETTERS PATENT to Edward Allen Talbot, Township of London,
Esquire, for the Invention of "A NEW METHOD OF PROPELLING
VESSELS AND CARRIAGES, DESIGNATED BY THE NAME OF TALBOT'S
ATMOSPHERIC PROPELLING ENGINE."

Toronto, dated 18th July, 1834.

A. D. 1835.—(UPPER CANADA.)—No. 151.

*A new method of Propelling Vessels navigated by
Steam, &c.*

LETTERS PATENT to Thomas Graham, Township of Thorold, Dis-
trict of Niagara, Yeoman, for the Invention of "A NEW METHOD
OF PROPELLING VESSELS NAVIGATED BY STEAM," &c.

Toronto, dated 25th March, 1835.

BRIEF DESCRIPTION.

Steam vessels constructed upon this plan are to be without the usual
heavy wings, guards, and water-wheels, and without water-wheels at
all, and are to be propelled by five wooden or metal pins to be fixed on
each side of the vessel.

THOMAS GRAHAM.

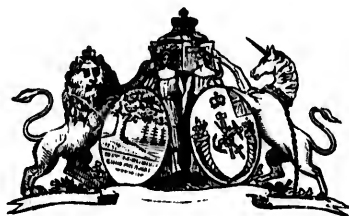
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A. D. 1835.—(UPPER CANADA.)—No. 152.

A certain Apparatus to be attached to Saw Mills.

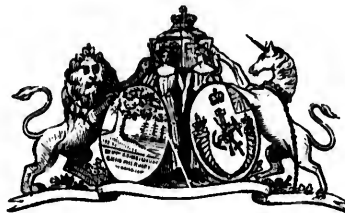
LETTERS PATENT to Martin Rich and William M. Jackson, of the
Town of Kingston, Machinists, for the Invention of "A CERTAIN
APPARATUS TO BE ATTACHED TO SAW MILLS."

Toronto, dated 28th April, 1835.

BRIEF DESCRIPTION.

The one to effect the fixing or setting of the log by hand, for the purpose of cutting the stuff truly parallel, without any stump end; and the other to effect the same purposes, in a more effectual manner, by a self-acting of the log by a combination of cast iron levers.

WM. JACKSON.
MARTIN RICH.



A. D. 1835.—(UPPER CANADA.)—No. 153.

New improvement in the Cooking Stove.

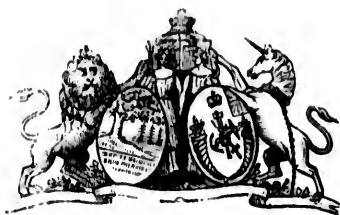
LETTERS PATENT to Joseph Van Norman, of Long Point, District of London, Ironmonger, for the Invention of "A NEW IMPROVEMENT IN THE COOKING STOVE."

Toronto, dated 1st June, 1835.

BRIEF DESCRIPTION.

The improvement consists in a different mode of applying heat to the oven, and in letting it off without heating the oven, or making the room in which it is placed too much heated in the summer season.

JOS. VAN NORMAN.



A. D. 1835.—(UPPER CANADA.)—No. 154.

A Cooking Stove upon a new and improved principle.

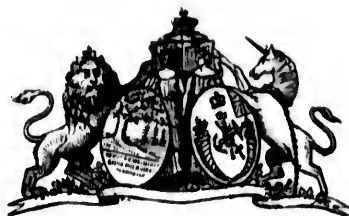
LETTERS PATENT to James Cahill, of the Town of Hamilton,
Gentleman, for the Invention of "A COOKING STOVE UPON A NEW
AND IMPROVED PRINCIPLE."

Toronto, dated 1st June, 1835.

BRIEF DESCRIPTION.

Being of a square form or shape, and having the back and bottom pieces of the oven divided on the outside, by dampers, into two parts, the draft passing down the divided back of the oven, thence under the half of the divided bottom of the oven, thence turning at the end of the damper under the other half of the divided bottom of the oven, and thence up the other division of the back of the oven to the stove-pipe.

JAMES CAHILL.

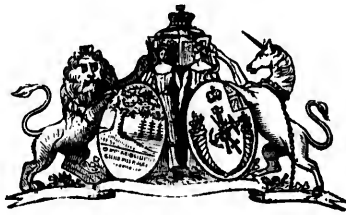


A. D. 1835.—(UPPER CANADA.)—No. 155.

A Machine for planing, jointing, grooving, tonguing, levelling, rebating, beading, and otherwise preparing for immediate use Boards, Plank, and other description of timbers.

LETTERS PATENT to Samuel Judson, of the Township of Burges, and Lyman Judson, of the Township of Yonge, both of the County of Leeds, for the Invention of "A MACHINE FOR PLANING, JOINTING, GROOVING, TONGUEING, BEVELLING, REBATING, BEADING, AND OTHERWISE PREPARING FOR IMMEDIATE USE BOARDS, PLANK, AND OTHER DESCRIPTION OF TIMBERS."

Toronto, dated 25th March, 1835.



A. D. 1836.—(UPPER CANADA.)—No. 156.

An improved method of producing Charcoal from wood.

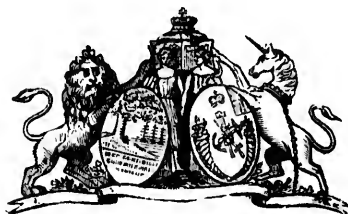
LETTERS PATENT to Joseph Van Norman, of Normandale, in the District of London, Iron Founder, for the Invention of "AN IMPROVED METHOD OF PRODUCING CHARCOAL FROM WOOD."

Toronto, dated 29th January, 1836.

BRIEF DESCRIPTION.

The wood being collected together in the shape of a cone, and metal covering placed over the same, such covering being made of any size or shape, to suit the quantity or extent of business required, the wood is then set on fire and ventilated, as circumstances may require, until the process of charring is complete.

JOSEPH VAN NORMAN.



A. D. 1836.—(UPPER CANADA.)—No. 157.

*A new improvement in the Cooking Stove, and a
new method of carrying off the steam.*

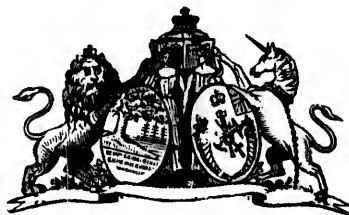
LETTERS PATENT to Levi R. Brown, of the City of Toronto,
Agent, for the Invention of "A NEW IMPROVEMENT IN THE COOK-
ING STOVE, AND A NEW METHOD OF CARRYING OFF THE STEAM."

Toronto, dated 15th April, 1836.

BRIEF DESCRIPTION.

Which invention consists in placing a draft hole in the centre of the lower part of the back plate of the lower story of the stove, by which means the heat is drawn off through the flues under the bottom of the oven, to perform the business of heating, baking or roasting, as the case may be, without contradiction from other drafts; and by inserting a draft hole in the pipe proceeding from the back of the top plate, and fixing a bonnet or cape, as the case may be, the steam proceeding from the stove is drawn off.

LEVI R. BROWN.



A. D. 1837.—(UPPER CANADA.)—No. 158.

A new improvement in the Cooking Stove.

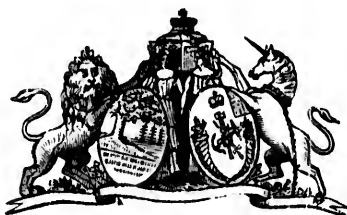
LETTERS PATENT to James Lorenzo Wilson, of the Town of Hamilton, in the District of Gore, Merchant, for the Invention of "A NEW IMPROVEMENT IN THE COOKING STOVE."

Toronto, dated 26th January, 1837.

BRIEF DESCRIPTION.

The fire place is above the oven, and the fire is made to descend by closing a damper in the end door and one placed in under the pipe. By opening the damper in the front door the draft of hot air and smoke will descend in the back part of the stove, and pass under the oven, heating all sides equally; rising in front of the stove and then passing off into the pipe, which is at the left hand of the stove.

JAMES LORENZO WILSON.



A. D. 1837.—(UPPER CANADA.)—No. 159.

New and useful Machine for removing smut from wheat.

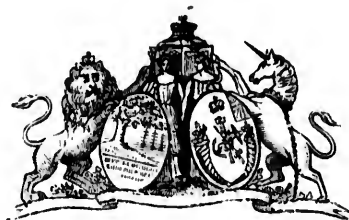
LETTERS PATENT to William White, of the Township of Hamilton, in the Newcastle District, Miller, for the Invention of "A NEW AND USEFUL MACHINE FOR REMOVING SMUT FROM WHEAT."

Toronto, dated 23rd February, 1837.

BRIEF DESCRIPTION.

The said machine consists of a wooden cylinder, the exterior of which is composed of a cast iron hoop, placed in the centre of the length of the cylinder, which hoop contains a groove, on each edge, to receive a certain number of wrought iron rods. The con of the cylinder is composed of a shaft on which are placed three horizontal arms, the four divisions of the horizontal arm, being at right angles, receive five wrought iron square spiral rods, forming two-thirds of a twist, with a view to retain, which enter the head of the cylinder through an aperture, on which is placed a spout or hopper; the wheat by the rotation of the spiral con, is projected against the upright iron rods forming the exterior of the cylinder, leaving the clean wheat to pass off through an aperture at the bottom of the cylinder, similar to that placed at the head. The size of the machine may be profitably increased to thirty inches in length, and of a proportional spiral con, and diameter of cylinder.

WILLIAM WHITE.



A. D. 1839.—(UPPER CANADA.)—No. 160.

*New method of applying a multiplying Lever to
the working gear of Saw Mills.*

LETTERS PATENT to Duncan Scrimger, of the Township of Dumfries, District of Gore, Upper Canada, Yeoman, for the Invention of "A NEW METHOD OF APPLYING A MULTIPLYING LEVER TO THE WORKING GEAR OF SAW MILLS."

Toronto, dated 10th May, 1839.

BRIEF DESCRIPTION.

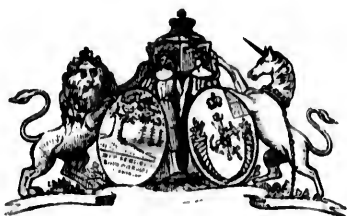
This invention consists in the manner of applying the mechanical power, termed the lever, in such a way as to render available the force wasted by the present method of gearing saw mills, together with the multiplying power of the lever, to gain an increase of work really equal to three times that now obtained with the same expenditure of force. An advantage is also gained in the method contemplated for propelling the carriage on the same principle, that is to say, the multiplying lever.

DUNCAN SCRIMGER.

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A. D. 1840.—(UPPER CANADA.)—No. 161.

Certain improvements in the Steamboat Paddle.

LETTERS PATENT to George Josiah Mackelcan, of Guelph, in the District of Gore, Gentleman, for the Invention of "CERTAIN IMPROVEMENTS IN THE STEAMBOAT PADDLE."

Toronto, dated 8th February, 1840.

BRIEF DESCRIPTION.

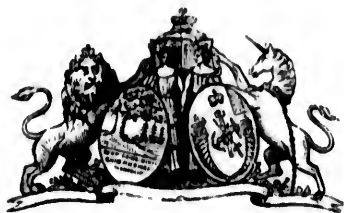
The said improvements are attained by giving to each bucket or paddle an axis of its own, and having a crank attached to the end of the axis which is farthest from the boat, which crank revolves between the paddle and guard, and the buckets are maintained in a parallel and perpendicular position by means of a governor, revolving on an axis fixed in the guard, as much higher than the axis of the paddle as the cranks of the buckets are in length, such arm of the governor being attached to the small end of the bucket crank. The governor is carried round by the action of the paddle, the purpose of which is to do away with the splashing and resistance of the back water caused by the present paddle.

GEORGE JOSIAH MACKELCAN.

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A. D. 1840.—(UPPER CANADA.)—No. 162.

New method of constructing Timber Bridges.

LETTERS PATENT to John G. Howard, of the City of Toronto,
Architect and Civil Engineer, for the Invention of "A NEW
METHOD OF CONSTRUCTING TIMBER BRIDGES."

Toronto, dated 24th February, 1840.

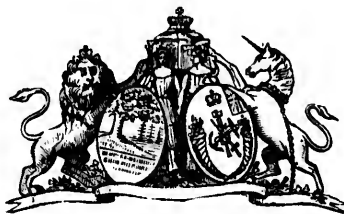
BRIEF DESCRIPTION.

Bridges constructed in this manner are particularly adapted to rivers subject to freshets, and large accumulation of ice, as they are capable of being extended several hundred feet in one span, thus superseding the necessity of having either piers or cribs. Each piece of timber is to be hewn to the length and size required, according to the span of the bridge, and to have an iron screw bolt, with a nut and two iron plates at each end, well screwed and rivetted; it is then to be sawed through, the narrow way, from the centre to within three feet of each end, and the upper part cut exactly in the centre, and wedged out from the lower part to the space of two feet at the notch. An oak suspender or key is fitted into the notch. The iron screw bolt, aforesaid, passes through the key and the timber of the bridge, with the nut downwards; an iron screw jack is then applied from above, with shifting plates underneath, which, by turning the handle, cambers the under side of the timber to the required curve, and the nut is screwed fast and rivetted. The bridge should commence at the centre of the abutment, and the second timber should be carried over from the cen-

Howard's Timber Bridges.

tre of the first, so as to cause each piece to extend half its length past the other one. When the whole are fixed, a solid compact arch is formed, capable of sustaining an immense weight. This principle can also be applied to the floors of buildings requiring a great space between them.

JOHN G. HOWARD.



A. D. 1840.—(UPPER CANADA.)—No. 163.

New improvement in the construction of Piano Fortes, by means of which their durability is much prolonged, and the tone of the instrument preserved.

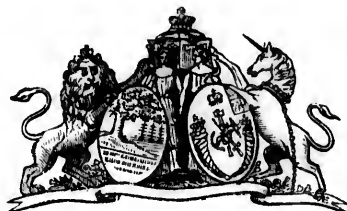
LETTERS PATENT to John Morgan Thomas, and Alexander Smith, of the City of Toronto, Piano Forte Makers, for the Invention of "A NEW IMPROVEMENT IN THE CONSTRUCTION OF PIANO FORTES, BY MEANS OF WHICH THEIR DURABILITY IS MUCH PROLONGED, AND THE TONE OF THE INSTRUMENT PRESERVED."

Toronto, dated 23rd March, 1840.

BRIEF DESCRIPTION.

The block, where the tuning pins are placed, has a metal plate screwed on it, through which the tuning pins are put, and attached to the common metal plate on which the strings are hitched; and then, between the two plates, a metal bar is attached that runs parallel with the lowest string on the instrument, which makes a complete metal frame, and takes the pressure entirely off the case. This invention is likewise applicable to every kind of piano.

JOHN MORGAN THOMAS,
ALEXANDER SMITH.



A. D. 1840.—(UPPER CANADA.)—No. 164.

*Further improvement in the Steamboat Paddle
(former Patent dated 8th February, 1840.)*

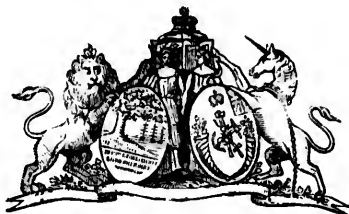
LETTERS PATENT to George Josiah Mackelcan, of Guelph, in the
District of Gore, Gentleman, for the Invention of "A FURTHER
IMPROVEMENT IN THE STEAMBOAT PADDLE."

Toronto, dated 29th February, 1840.

BRIEF DESCRIPTION.

The improvement is attained by placing the governor inside the paddle, which will cause the bucket cranks to revolve between the paddle and the boat's side, whereby the shaft of the paddle will pass at once to the guard, as in the common paddle. The axis of the governor being a ring bolted against the gunwale of the boat, with the shaft of the paddle passing through it, the centre of the ring being as much above, or below, the centre of the shaft, as the bucket cranks are in length, from centre to centre.

GEORGE JOSIAH MACKELCAN.

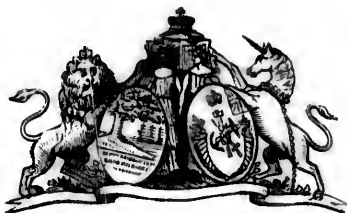


A. D. 1840.—(UPPER CANADA.)—No. 165.

*Ainslie's Clay Slate and Ainslie's Clay Slate
Machine.*

LETTERS PATENT to James Ainslie, of the Village of Galt, in the
District of Gore, Gentlemen, for the Invention of "AINSLIE'S
CLAY SLATE AND AINSLIE'S CLAY SLATE MACHINE."

Toronto, dated 21st August, 1840.



A. D. 1841.—(UPPER CANADA)—No. 166.

*An improved Paddle-wheel for propelling Steam
or other vessels.*

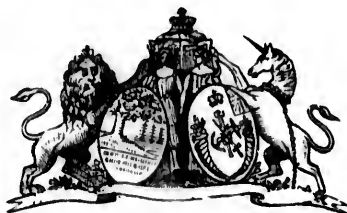
LETTERS PATENT to Richard Dover Chatterton, of the Town of
Cobourg, in the District of Newcastle, Gentlemen, for the Inven-
tion of "AN IMPROVED PADDLE-WHEEL FOR PROPELLING STEAM
OR OTHER VESSELS.

Kingston, dated 22nd June, 1841.

BRIEF DESCRIPTION.

It consists of a shaft and three rows of arms as in the common paddle-wheel, the distinction of the supposed improvement being in the position of the floats or buckets, which, instead of extending the whole width of the wheel at right angles with the periphery, as heretofore, are divided into two longer halves and fastened obliquely to each alternate arm, whereby the floats are made to cover each other and a continuous and even pressure is maintained, and the downward jar and back lift are removed and the swell caused by the common wheel avoided.

RICHARD DOVER CHATTERTON.



A. D. 1841.—(UPPER CANADA.)—No. 167.

Improved Water-wheel called the Submerged Anfractuous Water-wheel.

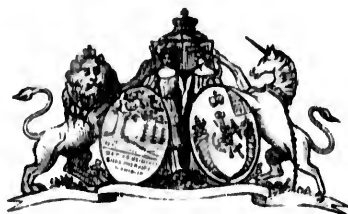
LETTERS PATENT to Harvey Tripp, of the Township of Haldimand, in the Newcastle District, Turner in wood, for the Invention of an IMPROVED WATER-WHEEL CALLED "THE SUBMERGED ANFRACTUOUS WATER-WHEEL."

Kingston, dated 1st September, 1841.

BRIEF DESCRIPTION.

Said water-wheel is not in any way impeded by back water. It can be applied either perpendicularly, horizontally, or raised or depressed to any angle in the range of ninety degrees, and it may be altogether immersed. It can also be double, in the form of a cylinder, where great power is required with a small supply of water, which latter method is applicable to the use of saw mills. The water acting below the wheel, entirely lightens the friction.

HARVEY TRIPP.



A 1841.—(UPPER CANADA.)—No. 168.

Improved Water-wheel called the Vertical Percussion Re-action Water-wheel.

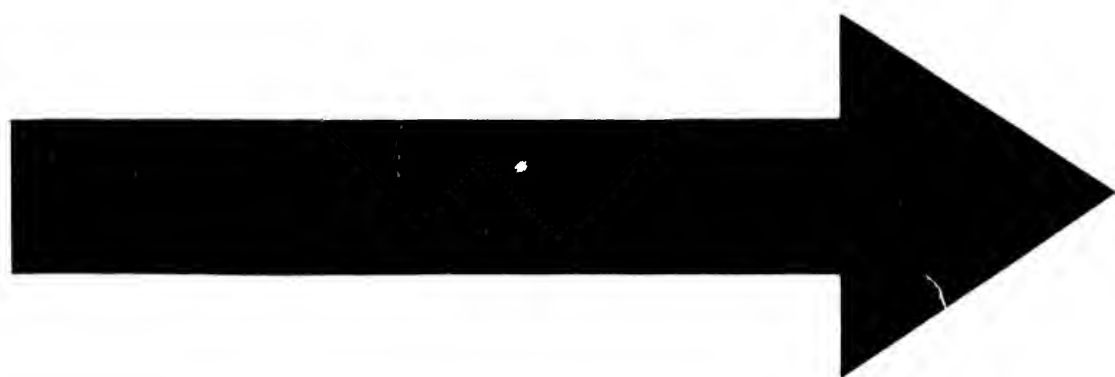
LETTERS PATENT to George Rogers, of the Township of Haldimand, in the Newcastle District, Gentleman, for the Invention of an
"IMPROVED WATER-WHEEL CALLED THE VERTICAL PERCUSSION
RE-ACTION WATER-WHEEL

Kingston, dated 3rd December, 1841.

BRIEF DESCRIPTION.

Said water-wheel consists of two vertical percussion wheels, having certain divisions, separated by arms, running to the centre block, against which and the said block the water acts in its descent from the flume, the said wheel is encased in a frame fitting tight in the inside all round, leaving the outside free, with an inclined off-let for the escape of the water, which, in its passage, divides and serves both buckets at right angles and discharges itself by re-action apertures at the end of each bucket. The delivery of the water into the feeder is governed by a slide.

GEORGE ROGERS.



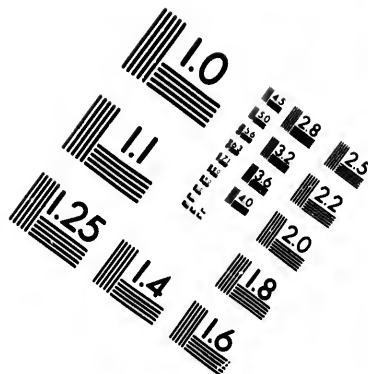
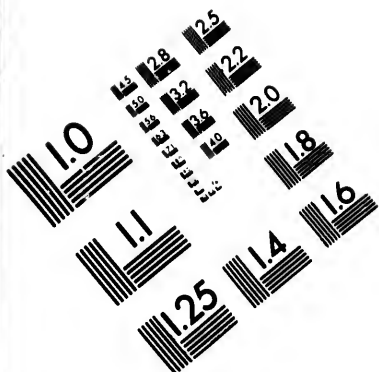
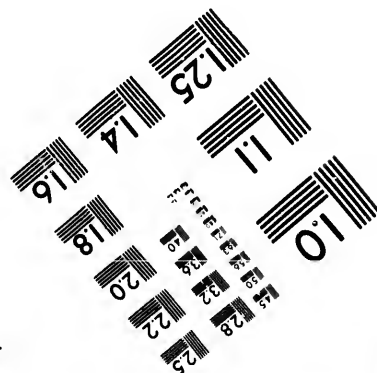
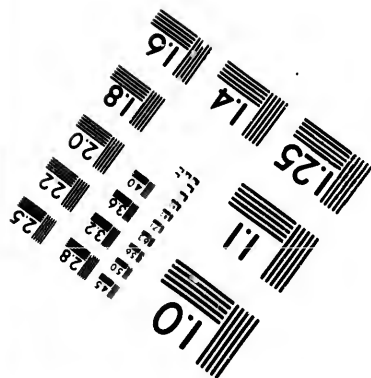
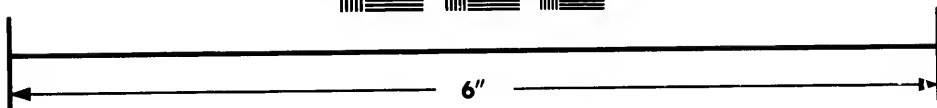
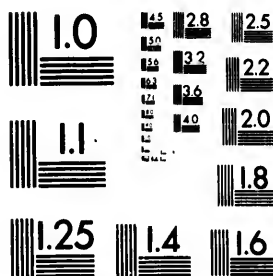


IMAGE EVALUATION TEST TARGET (MT-3)



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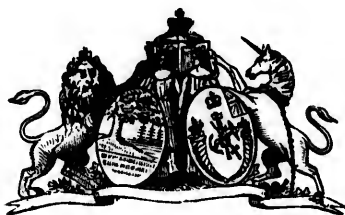
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A. D. 1842.—(UPPER CANADA.)—No. 169.

An Improved Guard Propeller.

LETTERS PATENT to Nelson Walker, of the City of Montreal, Gentleman, for the Invention of "AN IMPROVED GUARD PROPELLER."

Kingston, dated 15th January, 1842.

BRIEF DESCRIPTION.

To a flange, or centre, of cast or wrought iron, fitting the shaft, are to be bolted six or more arms, or leaves, of iron boiler or plate, radiating from the centre to its circumference, forming an angle of forty-five degrees at centre, and fifty degrees at its circumference, the whole surmounted by two or more wrought iron rings, of suitable strength, acting in the double capacity of a support to the outer ends of the leaves, and a guard against drift wood, or any floating substance, and giving the improved propeller superior advantages over the one now in use, from its increased power and combined strength.

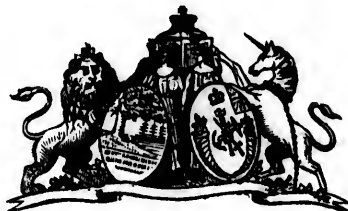
NELSON WALKER.

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A. D. 1842.—(UPPER CANADA.)—No. 170.

*An improved method of giving motion and efficacy
to the Propeller in Steam Boats and other
vessels.*

LETTERS PATENT to Charles Maitland Tate, of the Town of
Kingston, Civil Engineer, for the Invention of "AN IMPROVED
METHOD OF GIVING MOTION AND EFFICACY TO THE PROPELLER
IN STEAM BOATS AND OTHER VESSELS."

Kingston, dated 13th of January, 1842.

BRIEF DESCRIPTION.

Two cylinders are fixed in corresponding situations, on each side of a frame, made of wood or iron, placed at an angle best adapted to the boat, or vessel, it is intended for. On the upper part of this frame, are plumber blocks, for carrying a crank shaft, which is connected to the piston of each cylinder by connecting rods, from which it receives motion, one rod being favourably situated for giving power, whilst the other is least effective. On the shaft is fixed a drum, or spur wheel, from which motion is transmitted to the propellers, by straps or belts passing mutually round the drum and pulleys, or pinions, as the case may be, which are fixed on the shafts or spindles of the propellers. By the two engines acting upon one crank, a continuous rotary motion is communicated to the shaft, and consequently to the drum, and by

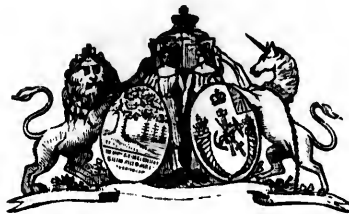
Tate's Propeller in Steamboats.

it to the propellers. The diameter of the drum being much larger than that of the pullies, a greater velocity can be obtained than by driving the propellers in the way hitherto practised.

CHARLES MAITLAND TATE.

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A. D. 1842.—(UPPER CANADA.)—No. 171.

*An improved method of constructing Cambs for the
purpose of opening the cut-off, or other valves of
Steam Engines.*

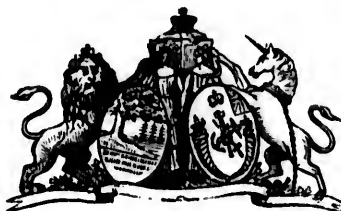
LETTERS PATENT to Charles Maitland Tate, of Kingston, Civil
Engineer, for the Invention of "AN IMPROVED METHOD OF
CONSTRUCTING CAMBS FOR THE PURPOSE OF OPENING THE CUT-OFF,
OR OTHER VALVES OF STEAM ENGINES."

Kingston, dated 21st January, 1842.

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A. D. 1842.—(UPPER CANADA.)—No. 172.

A new method of Tanning Hides or Skins.

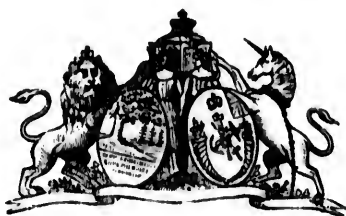
LETTERS PATENT to Charles Maitland Tate, of Kingston, Civil Engineer, for the Invention of "A NEW METHOD OF TANNING HIDES OR SKINS.

Kingston, dated 27th January, 1842.

BRIEF DESCRIPTION.

By this new and improved method, the tanning principle, extracted from bark, is caused to enter more rapidly into skins or hides than has hitherto been effected. The process being as follows:—The tanning principle, or liquor, being extracted from bark by means of heat, the steam generated is allowed to rush through a pipe, into a condenser which has been filled with skins, or hides, already deprived of hair, and soaked in weak liquor or leech, and wrapped round basket, or wicker work, so that no two come in contact. When this has been continued for some little time the steam is cut off, and the liquor itself allowed to flow into the condenser, from a reservoir, which causes a partial vacuum, then the atmosphere excites a pressure on the surface of the liquor in the reservoir, and consequently in the condenser, the liquor filling the space previously occupied by the steam, thereby causing the tanning principle to penetrate the hides, or skins, more effectually.

CHARLES MAITLAND TATE.



A. D. 1842.—(UPPER CANADA.)—No. 173.

A new method of extracting the Tannin from Bark.

LETTERS PATENT to Charles Maitland Tate, of Kingston, Civil Engineer, for the Invention of "A NEW AND IMPROVED METHOD OF EXTRACTING THE TANNIN FROM BARK."

Kingston, dated 27th January, 1842.

BRIEF DESCRIPTION.

By this method a greater quantity of Tannin is extracted from a given quantity of Bark, than has hitherto been obtained, by causing a rapid and continued circulation of water through it, by means of heat. The operation is as follows:—A vessel, called a digester, connected with a Feeder, is constructed, having a pipe attached close to the bottom, projecting horizontally from it, and entering a fire box, when it is turned or bent, so as to form a spiral or worm, running up to the top of the fire box and then entering the digester horizontally. A Tray, or Sieve, perforated with holes, with a cover, and filled with ground or broken bark, is suspended half way down the inside of the digester, the lid of which is then bolted down; The digester and Feeder being then filled with water, a fire is kindled in the fire box, and the property of liquids, when subjected to heat applied to the bottom of the vessel containing them, being for the lower portions to rise up and displace the upper parts, a constant circulation is produced through the spiral or worm and the digester, its rapidity or speed being increased so long as the fire is kept up, and the liquid, constantly passing through the bark in the Tray, extracts the Tannin principle therefrom.

CHARLES MAITLAND TATE.

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A. D. 1842.—(UPPER CANADA.)—No. 174.

A Paddle Wheel for propelling vessels by Steam.

LETTERS PATENT to Peter Fleming, of the City of Montreal,
Civil Engineer, for the Invention of a "PADDLE WHEEL FOR
PROPELLING VESSELS BY STEAM."

Kingston, dated 7th March, 1842.

BRIEF DESCRIPTION.

The chief object of this is its working under the surface of the water, and at any desired depth, to be of such construction as not to require any projecting parts beyond the proper sides, or bottom of the vessel, and consequently capable of being adapted to every vessel, built for sailing only, with little or no alteration in her figure and construction, and to afford the greatest attainable speed in sailing by steam power. It may be said to consist of three parts, the drum, the flanges of the drum, and paddies suspended or hinged thereto, either by single or double hinges, and the case or box enclosing the drum and paddles, the inner side or circumference of which is to be a circle, or curve of osculation, to the circumference of the drum which revolves in it.

PETER FLEMING.

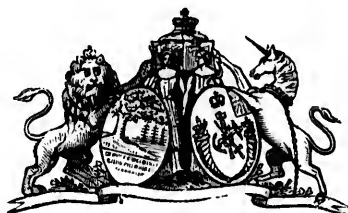
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A. D. 1842.—(UPPER CANADA.)—No. 175.

A new and useful description of Threshing Mills.

LETTERS PATENT to Mahlon Beach, of the Township of Oxford,
Yeoman, for the Invention of "A NEW AND USEFUL DESCRIPTION
OF THRESHING MILLS."

Kingston, dated 27th April, 1842.

BRIEF DESCRIPTION.

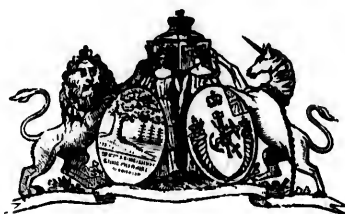
Two horses are attached to levers passing through an upright shaft, and having a driven drum fixed to it; a band goes round the latter, which runs between two friction rollers round a wheel attached to one end of a horizontal shaft, a drum is fixed to the other end of this, round which a band also runs, extending to a second whirl, fixed, together with a drum, on an iron axle—a band is carried from this last to a third whirl, which is attached to a cylinder constructed similar to those at present in use.

MAHLON BEACH.

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A. D. 1842.—(UPPER CANADA.)—No. 176.

A new and useful description of Paddle Wheel.

LETTERS PATENT to Nichol Hugh Baird, Town of Cobourg, Civil Engineer, for the Invention of a "NEW AND USEFUL DESCRIPTION OF PADDLE WHEEL."

Kingston, dated 12th January, 1842.

BRIEF DESCRIPTION.

The paddles of this wheel are to resemble, in shape and form, what is known as the Indian Paddle, and to be placed on any number of arms of the wheel, so that they may enter the water and come out obliquely at the angle that may be found most advisable with reference to the draft of the vessel. The paddles may go within one foot of the bottom of the keel, or under the same. The advantages of the above being as follows; the inconvenience of the breadth of the present paddles is obviated, the resistance being acquired from the depth,—the power lost by back water is saved,—the increased speed is gained by increase of diameter, without the inconvenience of higher paddle boxes,—in a heavy sea, the Paddles are always sufficiently in the water to steady the vessel, and they are not so liable to be injured from presenting an oblique face to obstructions.

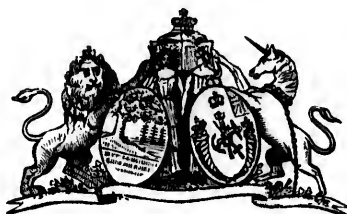
NICHOL HUGH BAIRD.

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A. D. 1842.—(UPPER CANADA.)—No. 177.

*A new and improved method of laying down Marine
Railways.*

LETTERS PATENT to Thomas Dissett and James Smith, of Portsmouth Harbour, Kingston, Shipwrights, for the Invention of a
"NEW AND IMPROVED METHOD OF LAYING DOWN MARINE RAIL-
WAYS."

Kingston, dated 16th May, 1842.

BRIEF DESCRIPTION.

It consists in having Iron Rollers placed at the requisite distances from each other, resting upon rails, and kept in their places by bolts passing through the axis, and fastened in the parallel planks, or beams, forming the carriage, the lower parts or under sides of the said beams embracing the rail, and the upper ones being placed on each side of the beams of the cradle, on which the vessel rests when drawn out of the water, thereby preventing the cradle from going off the rails. The whole weight of the cradle, and vessel placed thereon, rests on the circumference surface of the rollers, instead of on the axles of wheels, in the usual mode, by which a greatly increased facility of locomotion is acquired, and friction is entirely avoided.

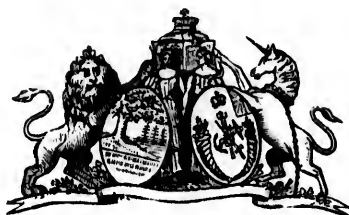
THOMAS DISSETT.
JAMES SMITH.

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A. D. 1842.—(UPPER CANADA.)—No. 178.

A new and useful description of "Shower Bath."

LETTERS PATENT to William Hallowell, of the Town of Kingston,
Physician, for the Invention of "A NEW AND USEFUL DESCRIPTION OF "SHOWER BATH."

Kingston, dated 16th July, 1842.

BRIEF DESCRIPTION.

It consists in the arrangement of a system of cisterns, tubes, valves, and stop cocks, so contrived and placed, that a person using the apparatus can, at pleasure, direct a number of jets of fluid against one part or many parts of his body, and thus obtain the advantage of a tropical or general bath, as may be deemed best. The whole contrivance being enclosed in a light case, and capable of being easily taken to pieces, and again put together, and thus made readily portable, while the parts are so arranged, that in case of any medicated, or valuable fluid being employed, it can be used twice, or oftener if necessary.

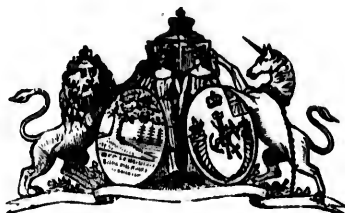
WILLIAM HALLOWELL.

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A. D. 1842.—(UPPER CANADA.)—No. 179.

*An improvement in the construction of Penstocks
and Water-wheels.*

LETTERS PATENT to Jacob Baker, Township of Vaughan, Home
District, Millwright, for the Invention of "AN IMPROVEMENT IN
THE CONSTRUCTION OF PENSTOCKS AND WATER-WHEELS.

Kingston, dated 20th Sept., 1842.

BRIEF DESCRIPTION.

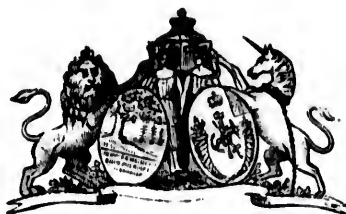
This improvement can be used in Saw, Grist or any other kind of mill propelled by water. The throat of the penstock, being inclined from the bulk-head of the flume to the edge of the buckets next the concave, in such a manner, and at such an angle with reference to the size of the wheel and the head of water, that the whole force of the water shall be directed to the outer point of each bucket and contained there until it escapes at the tail race.

JACOB BAKER.

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A. D. 1842.—(UPPER CANADA.)—No. 180.

A new and useful description of Water-wheel.

LETTERS PATENT to John Lamb, Township of Hawkesbury, Millwright, for the Invention of "A NEW AND USEFUL DESCRIPTION OF WATER-WHEEL."

Kingston, dated 3rd October, 1842.

BRIEF DESCRIPTION.

The said wheel is propelled by the water being forced through oblique orifices placed round its circumference, and having one portion of each float parallel with the shaft on which the wheel revolves, and the other inclined against the direction of the water as it passes through the said orifices. The water thus acting, first upon the parallel portion of the float, and afterwards upon the inclined part as it leaves the wheel. The wheel has circular gates round the orifices for admitting the water at pleasure, and is enclosed in a cistern having flood gates, and when it is in motion the whole head of water is raised in the cistern for the purpose of pressing the water through the said orifices, and the wheel-house is capable of being made frost proof, as it is not affected by being immersed entirely in the water.

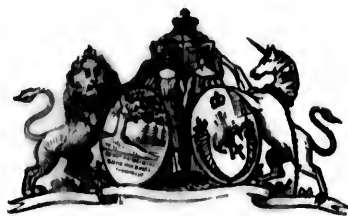
JOHN LAMB.

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A. D. 1842.—(UPPER CANADA.)—No. 181.

*An improved method of Brewing Ale, Beer, Porter
and other Malt Liquors.*

LETTERS PATENT to George Riley, of the town of Kingston,
Brewer, for the Invention of "AN IMPROVED METHOD OF BREWING
ALE, BEER, PORTER AND OTHER MALT LIQUORS."

Kingston, dated 6th July, 1842.

BRIEF DESCRIPTION

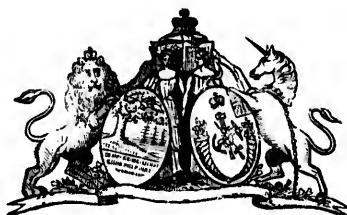
Firstly by the addition of cut straw or chaff, for the purpose of causing the the wort to run more freely from the malt or grain. Secondly, by a new kind of Refrigerator, or Temperator, fixed in the quill tuns, by which the worts may be cooled down to any required heat, and then run into the said quill tuns for the purpose of fermentation; which temperator or cooler may be also applied to the purpose of cooling distillers mash, or any other liquid for which it may be required. Thirdly, by a new method of connecting the quill tuns together for the purpose of conveying the carbonic acid gas generated in one tun to another, by which means the liquor is prevented from imbibing oxygen from the atmosphere and thereby becoming acid.

GEORGE RILEY.

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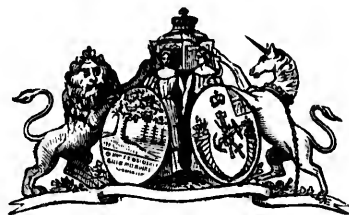


A. D. 1843.—(UPPER CANADA.)--No. 182.

*An improvement upon a newly constructed Suction
and Forcing Pump.*

LETTERS PATENT to Asa H. Hough, of the Town of Kingston,
Gentleman, for the Invention of an "IMPROVEMENT UPON A NEW-
LY CONSTRUCTED SUCTION AND FORCING PUMP."

Kingston, dated 20 February, 1843.



A. D. 1843.—(UPPER CANADA.)—No. 183.

An improvement in the Rotary Steam Engine, heretofore in use.

LETTERS PATENT to William Creighton, of the Town of Niagara, Engineer, for the Invention of "AN IMPROVEMENT IN THE ROTARY STEAM ENGINE, HERETOFORE IN USE."

Kingston, dated 31st March, 1843.

BRIEF DESCRIPTION.

Firstly, the Piston is divided into steam compartments, made to counterbalance each other. Secondly, the steam is let in, and exhausted in an improved manner, that is, through the cover into the piston, thence through the wings or teeth of the piston, to the space in the cylinder, unoccupied by the piston, through which the wings or teeth travel, and where it acts thereon, thence acting on the opposite sides and ends of the wings or teeth, and passing through the opposite cover, escapes either into the atmosphere, or a condenser. Thirdly, the metallic rings or packing, are cut angular wise, so that the springs underneath press the one half inwards to the centre, and the other half outwards, making them steam-tight at their internal and external circumferences, as well as at the ends of the piston, and rollers. And lastly, the friction is greatly reduced, and a continuous action of the piston obtained, with increased power, by the economy of steam.

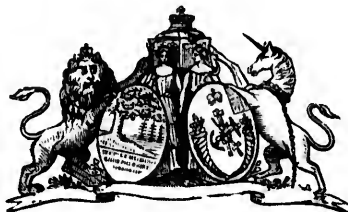
WILLIAM CREIGHTON.

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A. D. 1843.—(UPPER CANADA.)—No. 184.

Certain Improved Trusses.

LETTERS PATENT to John O. Brown, of the Town of Kingston, in the Midland District, Gentleman, for the Invention of "CERTAIN IMPROVED TRUSSES."

Kingston, dated 5th July, 1843.

BRIEF DESCRIPTION.

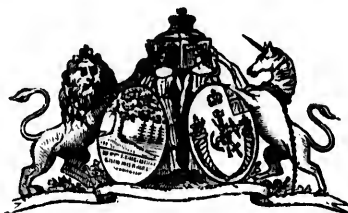
The Trusses are composed of Block Pads, covered so as not to chafe the skin, the inner surfaces of which, to be something similar to the oval of an egg, but thicker at the lower edge. Plates of iron, or other material, are sunk to the surface at the back of the pads, having two screw holes to attach them to necks or yokes descending from the ends of springs; in these necks or yokes, long square openings are left, to raise or debase the pads, as required. Soft pliable pads with straps to admit of their sliding easily on the backs of the springs, are attached. The springs are formed of the best refined steel, to be covered with some soft material; and are to be worn from two-thirds to three-fourths round the body, having straps attached, to be carried round the remaining portion, and fastened to a button or screw on the springs.

JOHN O. BROWN.

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A. D. 1843.—(UPPER CANADA.)—No. 185.

Improved Washing Machine.

LETTERS PATENT to Peter R. Lamb, of the City of Toronto, Store-keeper, for the Invention of "AN IMPROVED WASHING MACHINE." Kingston, dated 7th July, 1843.

BRIEF DESCRIPTION.

It is composed of an oblong trough to contain the water and clothes to be washed. A dash board is placed within the trough, having various perforations through which the water passes, and on the interior of the trough are several protusions, against which the clothes are pressed and rubbed when the machine is put in motion. The motion to the dash board is communicated by two journals worked by a lever. The dash board can be removed at pleasure, by the withdrawal of certain pegs, and the water drained from the trough, by means of a spigot.

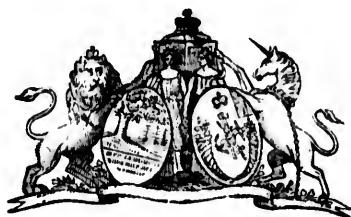
PETER R. LAMB.

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A. D. 1843.—(UPPER CANADA.)—No. 186.

*A Composition for preventing and extinguishing
Fires.*

LETTERS PATENT to John Montgomery, of the Township of
Pittsburgh, Midland District, Canteen Keeper, for the Invention
of "A COMPOSITION FOR PREVENTING AND EXTINGUISHING FIRES."

Kingston, dated 9th August, 1843.

BRIEF DESCRIPTION.

It consists, firstly, of a ley formed of wood ashes and lime, reduced by boiling to a strong consistency. And secondly, of urine passed through the ashes first used, then boiled down, and mixed with first ley, and the whole is rendered fit for use, by a further reduction in boiling. To extinguish fire, the mixture must be thrown by a fire-engine, against the greatest body of fire, which it will entirely overcome. To render wood fire-proof, two coats of the mixture must be applied hot, or the wood must be well saturated therein, in a vat, and be well dried afterwards.

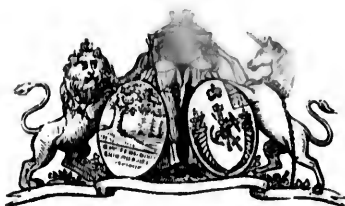
JOHN MONTGOMERY.

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A. D. 1843.—(UPPER CANADA)—No. 187.

Machine for propelling vessels, or other floating bodies, by the action of heated air, gases, steam, or other expansive, or explosive materials, on the fluid in which they are intended to act.

LETTERS PATENT to Isaac Gouverneur Ogden, of Three Rivers, Esquire, for the Invention of "A MACHINE FOR PROPELLING VESSELS, OR OTHER FLOATING BODIES, BY THE ACTION OF HEATED AIR, GASES, STEAM, OR OTHER EXPANSIVE OR EXPLOSIVE MATERIALS, ON THE FLUID IN WHICH THEY ARE INTENDED TO ACT." Kingston, dated 14th August, 1843.

BRIEF DESCRIPTION.

It consists of a forcing air pump, with tubes leading therefrom, to convey the atmospheric air, gases, steam, or other matter to a furnace; and a conduit pipe or pipes to carry them, when heated, from the furnace to the outside of the vessel. The conduit pipe or pipes being so bent, that from the outward end, the air, gases, or steam, shall be discharged under water, and in a direction opposite to that in which it is intended to propel the vessel or floating body; the force of the discharge of the expansive matter driving the vessel ahead. There may also be conduit tubes leading in a reverse direction, to be used when it is required to back water.

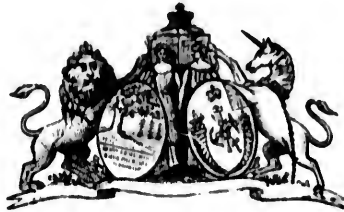
ISAAC GOUVERNEUR.

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A. D. 1843.—(UPPER CANADA.)—No. 188.

*A Revolving Drying Kiln, for the purpose of drying
Wheat, or other Grain.*

LETTERS PATENT to Hiram Bigelow, of the Township of Tecumseth, in the District of Simcoe, Miller, for the Invention of "A REVOLVING DRYING KILN, FOR THE PURPOSE OF DRYING WHEAT, OR OTHER GRAIN."

Kingston, dated 29th September, 1843.

BRIEF DESCRIPTION.

It is composed of a cylinder made of cast iron, having an iron shaft passing through the centre on which it revolves; the said shaft being driven by a pulley or wheel attached to one end of it; this cylinder is placed in an oblique position, having about eighteen inches fall, from the upper to the lower end, and is enclosed either in another metal cylinder, or in a brick arch, thus leaving a space between the two cylinders or arch, all round, through which space the fire is conducted from a fire place or grate, at the lower end, and passes out by a chimney at the upper end. The grain, or whatever is required to be dried, is conducted by a tube, into the upper end of the inner cylinder, and is discharged by another tube at the lower end, and when cool, will be found to be completely dry. The cylinders may be made of greater or less dimensions, in proportion to the quantity of work proposed to be done.

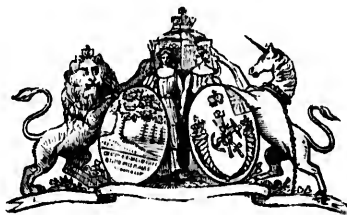
HIRAM BIGELOW.

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A. D. 1843.—(UPPER CANADA.)—No. 189.

A new mode of applying heat, in the process of Cooking with Stoves, by means of a horizontal and perpendicular return flue.

LETTERS PATENT to Alexander Carpenter, of Hamilton, District of Gore, Stove-dealer, for the Invention of "A NEW MODE OF APPLYING HEAT, IN THE PROCESS OF COOKING WITH STOVES, BY MEANS OF A HORIZONTAL AND PERPENDICULAR RETURN FLUE."

Kingston, dated 10th October, 1843.

BRIEF DESCRIPTION.

It consists in the uniformity of heat imparted to the oven, the facility of roasting, and the superior durability and general convenience of the stove. The uniformity of heat is thus attained: the fire is made in the front part of the stove; from the back of the part in which the fire is placed, the bottom rises abruptly, and the oven is elevated above the general surface of the stove; the heated air is introduced underneath the bottom of the oven, ascends through two side flues, and passing over the top of the oven from the rear to the front, escapes through the pipe which issues from the front; at the root of this pipe is placed a damper, which has the effect of completely stopping the draft, and diminishing the consumption of the fuel; there are also two other dampers to close the side flues; the elevation of the bottom obviates the use of those plates known as fire plates, which ensures additional durability; and its peculiar shape, being at right angles with the back of the fire-place, exposes two sides of the roaster to the heat at the same time.

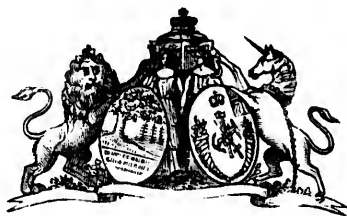
ALEXANDER CARPENTER.

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A. D. 1843.—(UPPER CANADA.)—No. 190.

A new construction of Mangle, for mangling Clothes.

LETTERS PATENT to George J. Meckelcan, of Guelph, District of Wellington, Gentleman, for the Invention of "A NEW CONSTRUCTION OF MANGLE FOR MANGLING CLOTHES."

Kingston, dated 24th November, 1843.

BRIEF DESCRIPTION.

It consists of a strong frame of hard wood, well put together with mortise and tenon, of one or more powerful levers, and three rollers; the ends of the upper roller are fixed in upright slides, and it is moved by a winch handle, or pinion, worked in a cogged wheel; the two lower rollers work in the side frame of the mangle, moving either by friction or wheels, and are enveloped by canvass, tightly sewn round them. The upper roller is pressed down upon the lower, by the levers which rest on a cross bar of the two slides. The short end of the levers are under a fixed fulcrum, and the long ends carry a loaded box, made moveable, to produce greater or lesser pressure at pleasure; the mangle has a plain table attached, resting on transverse stays, and the articles to be mangled pass between the upper and lower rollers, and descend over the inclined plane beyond.

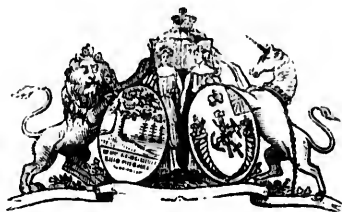
GEO. J. MECKELCAN.

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A. D. 1843.—(UPPER CANADA.)—No. 191.

A new mode of Distilling and Rectifying Spirituous Liquors.

LETTERS PATENT to George Riley, of Toronto, Distiller, for the
Invention of "A NEW MODE OF DISTILLING AND RECTIFYING
SPIRITUOUS LIQUORS."

Kingston, dated 15th December, 1843.

BRIEF DESCRIPTION.

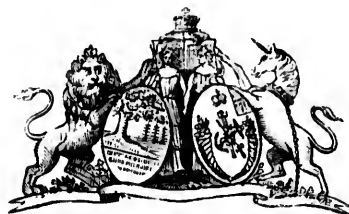
It consists in the admission of steam through a body of coal, charcoal, small stones, pebbles, broken glass, or any similar substance impregnated, or wetted, with alcohol or any substance containing it, for the purpose of Distillation or Rectification; this is done by means of a steam tight vessel, called the Rectifier, made either of wood or metal, having at the bottom a stop cock for letting off the spent wash. A little above the bottom is a pipe for admitting steam, and near the top a funnel-shaped pipe; in the funnel is a moveable plate pierced full of holes, for distributing the spirit equally, and a little above this plate is a pipe, regulated by a stop cock, for letting in the liquor to be distilled or rectified; a stream of the spirit or wash being admitted at the top and a body of steam at the bottom, the latter, as it rises through the coal, or other substance with which the rectifier is filled, meets the former in its descent and boils it, and the vapour passes off into a worm to which the machine has been previously attached.

GEORGE RILEY.

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A. D. 1844.—(UPPER CANADA.)—No. 192.

A Machine called a Self-propelling Gate.

LETTERS PATENT to Frederick Hutt, Township of Stamford, Yeoman, for the Invention of "A MACHINE CALLED A SELF-PROPELLING GATE."

Kingston, dated 27th January, 1844.

BRIEF DESCRIPTION.

It is constructed upon such a principle as to admit of its application to gates of every description, as also to carriage, house, and other doors. The great advantage which it possesses being the power of opening and shutting itself, by means of weights and pulleys placed underneath a platform, in such a manner as to occupy little space and not liable to get out of order. The Gate consists of two divisions, each division runs back in a horizontal direction upon two friction rollers, and closes again by means of the weights and pulleys. The power applied to open the gate is merely the weight upon the platform of what is passing through, which platform acting upon the machinery below gradually settles down in a horizontal position, and again rises to its former place after the passing is effected, and the gates closed; all of which is accomplished, if by a carriage, without the driver leaving his seat. To prevent the gate opening at ordinary times, a horizontal spring is placed under the platform, which, on being slightly shifted by means of a cord attached to the end of a

Hutt's Self-propelling Gate.

small lever, prevents the platform from yielding. This cord extends to the top of a post on the right hand, as the gate is passed through, runs over a small pulley and can be easily reached by the hand.

See Drawing, No. 192.

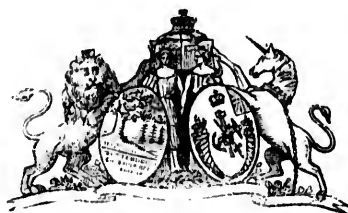
FREDERICK HUTT.

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A. D. 1844.—(UPPER CANADA.)—No. 193.

A mode by which power, to be derived from the use of the wheel and screw, may be applied to any kind of Machinery.

LETTERS PATENT to William McCall, of Dumfries, District of Gore, Millwright, for the Invention of "A MODE BY WHICH POWER, TO BE DERIVED FROM THE USE OF THE WHEEL AND SCREW, MAY BE APPLIED TO ANY KIND OF MACHINERY."

Kingston, dated 30th May, 1844.

BRIEF DESCRIPTION.

This power may be applied to almost any kind of machinery in mills or manufactories, in place of gearing and straps; the advantages of which are, a steady motion and avoidance of vibration or check, a great velocity acquired from the first mover, whereby less space is occupied and intermediate gearing prevented. The motion may be reversed without change of position of wheels or shafts, and any angle of shafting may be taken, or a horizontal shaft may be taken either from a horizontal or vertical wheel.

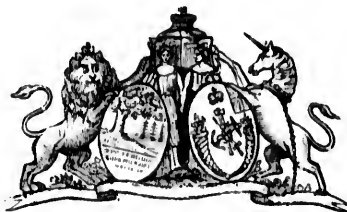
WILLIAM MCCALL.

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A. D. 1844.—(LOWER CANADA.)—No. 194.

An improvement in the manufacture of Cooking Stoves.

LETTERS PATENT to William Langmead Distin, Town of Hamilton, Tinsmith, for the Invention of "AN IMPROVEMENT IN THE MANUFACTURE OF COOKING STOVES.

Montreal, dated 29th June, 1844.

BRIEF DESCRIPTION.

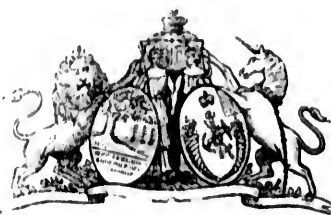
It consists, firstly in the fire being above the oven and, by means of two descending flues, being equally distributed to every part thereof; secondly, in the oven being of twice the dimensions obtained in other stoves of the same size, when the fire is below; thirdly, in there being flues in the oven which carry off all the steam generated as also all smeli, the meat thereby retaining the same flavour as if roasted before an open fire; fourthly, in the top plate of the stove projecting over the side and more space thereby allowed for boiling; fifthly, in the fire coming in immediate contact with the boiler, the operation of cooking being thus facilitated; and lastly, in the heat being retained a longer time by passing all round the stove before escaping by the centre flue, which saves fuel.

W. L. DISTIN.

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A. D. 1844.--(LOWER CANADA.)—No. 195.

An improved Engine Pump, or Fire Engine.

LETTERS PATENT to John Hearle, of Galt, in the District of Gore,
Engineer, for the Invention, of "AN IMPROVED ENGINE PUMP,
OR FIRE ENGINE."

Montreal, dated 29th June, 1844.

BRIEF DESCRIPTION.

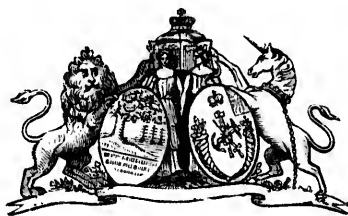
It is applicable to every purpose for which a pump may be wanted, can in a few minutes be removed from a well or tank, in the event of fire, or for any purpose requiring water to be discharged to a distance, and demands only two thirds of the labour to work it, from the reduction of friction and substituting a drawing box in lieu of the solid plunger, that the forcing engine does, of the same sized cylinder now generally used, and which, from the internal arrangements of its parts, will at all times, in the severest frost, be found in a fit state for use ; this machine is composed of an air vessel with a pump fixed in it, the water is discharged through an aperture, at the upper part of the cylinder, down a descending pipe into the air vessel, a valve at the bottom closing on the descent of the piston, and preventing the return of the water into the pump. The bed of the pump is screwed to the bottom flange of the air vessel for attaching the pipe or hose to a screw for a supply of water. The cover of the pump and air vessel is screwed down, on a lead or leather washer, air tight, and the piston rod works

Hearle's Engine Pump or Fire Engine.

through a stuffing box also made air tight. Two pumps may be also attached by a junction pipe, and will form a powerful engine. There is also a screw for admitting hot water in case of frost, and a valve for discharging the water from the cylinder of the pump.

See Drawing No. 195.

JOHN HEARLE.



A. D. 1844.—(LOWER CANADA.)--No. 196.

Portable Fire Extinguishing Machine.

LETTERS PATENT to William Armstrong, of the Town of Niagara,
Tinsmith, for the Invention of a "PORTABLE FIRE EXTINGUISHING
MACHINE."

Montreal, dated 3rd September, 1844.

BRIEF DESCRIPTION.

Firstly, it consists of a strong portable wooden case, forming a reservoir for the water. Firmly bolted to the bottom of the case are two working barrels, or pumps, with a lifting valve in each, and having their bottoms perforated with small holes to admit the water. From each barrel two tubes, having flap valves, project and connect the pumps with a strong metallic air chamber of an oval or other shape. By means of two solid pistons, with iron rods worked by a lever, which is supported by iron standards, the water is forced into the air chamber and projected through an ejection pipe at the top, having a leather hose attached, and at the bottom of the air chamber is a cock by which the water is let off.

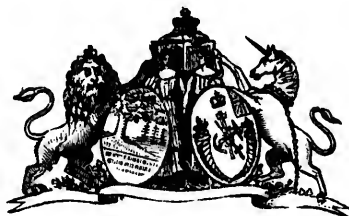
WILLIAM ARMSTRONG.

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A. D. 1845.—(LOWER CANADA.)—No. 197.

A new method of constructing Counter Balance Machines, for raising and lowering casks or other weights.

LETTERS PATENT to Ebenezer E. Gilbert, city of Montreal, Gentleman, for the Invention of "A NEW METHOD OF CONSTRUCTING COUNTER BALANCE MACHINES, FOR RAISING AND LOWERING CASKS OR OTHER WEIGHTS."

Montreal, dated 25th June, 1845.

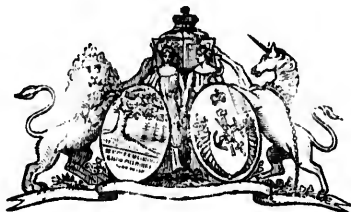
BRIEF DESCRIPTION.

The said machine applies to practical purposes, in raising and lowering casks, the well known principle of the accumulation of force obtained by a person ascending a ladder, or inclined plane; and expending the power thus accumulated in descending and raising the weight to be lifted. The machine consists of a ladder firmly attached to two skids, or guides, between which a carriage passes in which the operator descends, after having mounted to the top of the ladder. At the upper end of the ladder is a gin or wheel, over which passes a rope, attached at one end to the carriage above alluded to, and at the other to two ropes, which are connected with the two ends of the stretcher, or bar, of wood or iron:—This bar passes through a hem, or tabling, in an apron of canvass. The cask to be raised is rolled over the bar or stretcher into the apron; the operator, having descended the ladder,

Gilbert's Counter Balance Machines.

places himself in the carriage, and by his weight in descending raises the casks to the required elevation, when it rolls off; the operator leaves the carriage, the apron descends and is ready for repeating the operation. For lowering casks, a counterpoise is attached to the carriage, causing it to descend and elevating the apron. The gin or wheel to increase friction, is prevented from turning. The cask is rolled against the apron, descends to the floor, and rolling over the bar, permits the apron to re-ascend.

EBENEZER E. GILBERT.



A. D. 1845.—(LOWER CANADA.)—No. 198.

An improvement in the Riding Saddle.

LETTERS PATENT to John Griffiths, City of Toronto, Saddler, for
the Invention of "AN IMPROVEMENT IN THE RIDING SADDLE."

Montreal, dated 14th July, 1845.

BRIEF DESCRIPTION.

This saddle differs from the ordinary one, inasmuch as the front part of it, to a certain extent, is elastic, being composed of steel, so that the point of the saddle-tree expands or compresses just as the formation of the horse's back may require; this invention is more particularly adapted for giving perfect ease to the horse than the rider, as the front part, or commonly called point, of the saddle, comes in contact with the action of the horse's shoulder and the elastic part of the same acting with the animal when performing its duty.

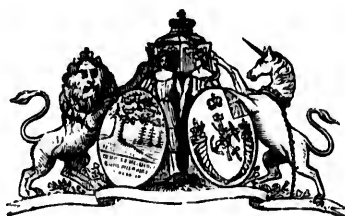
JOHN GRIFFITHS.

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A. D. 1845.—(LOWER CANADA.)—No. 199.

Improved Capstan for loading or unloading merchandise, or timber, from vessels, denominated "Ives' connected Capstan."

LETTERS PATENT to Lewis Ives, of the Town of Kingston, Ship builder, for the Invention of "AN IMPROVED CAPSTAN FOR LOADING OR UNLOADING MERCHANDISE, OR TIMBER, FROM VESSELS, DENOMINATED 'IVES' CONNECTED CAPSTAN.'"

Montreal, dated 16th July, 1845.

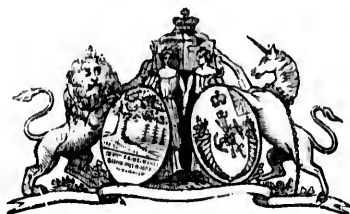
BRIEF DESCRIPTION.

To a piece of wood or iron in the shape of the capstan at present in use, or any other more convenient shape, is affixed a cog-wheel running horizontally, (the capstan acting as the axle,) of a diameter applicable to the power required. At a distance from this, sufficient to bring the wheels in connection, are placed any additional number of capstans with wheels affixed to them, in the same manner as upon the main capstan, and upon which the cogs of the main capstan wheel act, so that the power by which the main capstan is conveyed to the additional capstan by means of the cog-wheel. This power may be applied, either by horses or manual labour, to a bar passing through the head of the main capstan, which is higher than those intended to be added. The use of this application of wheels is to increase the number of moving powers with the same outlay of labor, or application of propelling force, as is required in the single capstan, and, in the

Ives' connected Capstan.

event of being applied to a vessel, it may be made to pass through the deck with the head of the capstan above deck and the lower part resting on a pivot on the beams or lower timbers of the vessel—the additional capstan being placed in a line, or at an angle, or circularly, as most convenient. The whole being guarded from injury by contact with the loading by sills placed so as to enclose the capstans.

LEWIS IVES.



A. D. 1845.—(LOWER CANADA.)—No. 200.

Improved method of loading and unloading timber vessels, denominated "Ives' improved method of Loading and Unloading Vessels."

LETTERS PATENT to Lewis Ives, of the Town of Kingston, Ship-builder, for the Invention of "AN IMPROVED METHOD OF LOADING AND UNLOADING TIMBER VESSELS, DENOMINATED 'IVES' IMPROVED METHOD OF LOADING AND UNLOADING VESSELS.'"

Montreal, dated, 19th July, 1845.

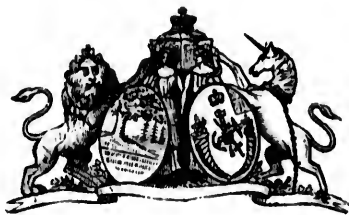
BRIEF DESCRIPTION.

In the stern of the vessel below the taffrail, or in the bow, one or more port holes are made, over each of which are inserted blocks or pulley wheels; at the bow or stern of the vessel, as one or other is to be used, is placed either a simple capstan, or Ives' connected capstan where two or more pieces of timber are to be drawn on board at the same time, to which is attached, or passed round, a chain or cable with clips, or a dog, as it is termed, at the end thereof, which chain or cable is passed along the vessel and through the block or pulley wheel. There is also a second chain or cable passed round, or attached to the capstan with a clip or dog at the end, which passes along the vessel and through the port. When in the act of loading, the first mentioned clip or dog, passing through the block or pulley wheel, is fastened to the piece of timber intended to be drawn on board at the nearest end of the vessel, and the power attached to the capstan or

Ives' method of Loading and Unloading Vessels.

intended to draw the timber on board, is put in motion; when, by the drawing in of the chain or cable, the piece of timber is raised to or nearly to the port, the clip or dog attached to the chain or cable passing through that port is to be fastened to it, the other end having length enough to be expended on the capstan while the first mentioned chain or cable is raising the timber to the port, and the first mentioned chain or cable being detached from the capstan or other moving power, the revolutions of that capstan, or continuance of the other moving power, haul the timber on board and the clip or dog is then detached, and the chain or cable run out for another piece. The two chains or cables may be otherwise attached to the capstan, or other moving power, in opposite directions, so that the capstan while revolving, the first mentioned chain or cable winding in one direction so as to raise the timber to the port, may unwind the second chain or cable which may at the same time be drawn towards the port through which the timber is to be received.

LEWIS IVES.



A. D. 1845.—(LOWER CANADA.)—No. 201.

Improved method of constructing instruments for digging potatoes, called "Potato Diggers."

LETTERS PATENT to William Watts, of the Town of Cornwall, Nursery and Seedsman, for the Invention of "AN IMPROVED METHOD OF CONSTRUCTING INSTRUMENTS FOR DIGGING POTATOES, CALLED 'POTATO DIGGERS.'"

Montreal, dated 19th July, 1845.

BRIEF DESCRIPTION.

It consists, in the first place, of a beam of size and shape similar to that of a common plough with two handles; at the forward end of this beam are two cast-iron wheels connected by a curved axle; the beam rests upon the centre of this and is secured by a bolt. The purpose of these wheels is to run on each side of the potato drill, and thereby to keep it steady. The digger which removes the potatoes consists of nine iron prongs; the centre or main one, being the longest, is gradually reduced in thickness towards the bottom, and ends in a flat steel point; the other end is made like the shank of a colter of a common plough, and runs through a mortice in the beam, where it is held by a pin. This may be raised or lowered, by means of holes, as required; the other prongs are placed four on each side of the centre one, and decrease in length according to their distance from the centre. They have vacant spaces between to prevent the digger from choking, and are held together by two cross iron bars. The outside bar on

Watts' Potato Digger.

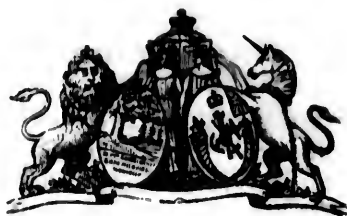
each side is turned up nearly at right angles, forming sides or edges to the digger. The bars are all bevelled, giving the digger an arched appearance, and are curved lengthwise. The digger, when adjusted, passes through the drills under the potatoes, thus lifting both earth and potatoes into it, and the earth being broken is separated, and falls through the spaces, while the potatoes are forced up and discharged over the prongs behind. Just behind the digger is a small iron wheel, running in an iron shank, which passes through the beam above, and may be raised or lowered by holes and a pin. The wheel is to support and adjust the back part of the beam. Behind this wheel is placed a small rake or harrow, the handle passing through the beam, which may be also raised or lowered, and may be used in stiff or clayey soils for breaking it up, and discovering the potatoes, which might otherwise be concealed. The machine is drawn by two horses attached to the beam, in the same manner as an ordinary plough.

WILLIAM WATTS.

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A. D. 1845.—(LOWER CANADA.)—No. 202.

Revolving Horse Rake.

LETTERS PATENT to John Harris, of Mount Pleasant, in the Gore District, Yeoman, for the Invention of "A REVOLVING HORSE RAKE."

Montreal, dated 4th August, 1845.

BRIEF DESCRIPTION.

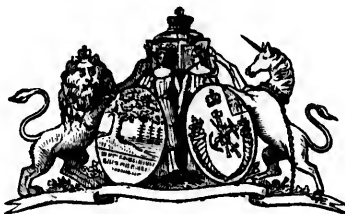
It consists of the head, which is square and tapered from near the centre to each extremity, except at four places made round by turning, two near each end, and at two equal distances from the centre, and having mortises made through it for the reception of the teeth. The teeth are pointed at the ends and pass through the head to their centres. The four middle teeth are of the same length, the remainder on each side are decreased gradually. Two handles, having their ends hollowed out, are fitted to the two centre round places in the head, and are fastened by bands passing round, receiving the handles between their ends, and strongly rivetted, but sufficiently loose to allow the head to revolve and the handles to have play. A dove-tail is cut upon the inside of the handles, one foot from the head, to receive catches placed perpendicularly, as across the tooth, but in an angular direction, as across the handle; the handles are tapered to their upper ends, which are bent for the convenience of holding; the catches have a notch on the inside, to receive a tooth in each; the arms, by which

Harris' Revolving Horse Rake.

the rake is drawn, are fitted on to the two ends of the head in the same manner as the handles are. The rake can be drawn by one horse harnessed to the two arms by ropes or traces; the handles are pressed towards each other so as to keep the catches on the teeth until sufficient hay is gathered, then, by raising the hindmost part, by the handles, upon the points of the teeth, and when they catch the earth separating the hands so as to throw the catches from the teeth, the rake will revolve and leave the hay in winnow; and, by bringing the hands together again, the rake is caught as before.

See Drawing, No. 202.

JOHN HARRIS.



A. D. 1845.—(LOWER CANADA.)—No. 203.

*New principle of Distillation and Rectification, by
means of a new Still condenser and Rectifier.*

LETTERS PATENT to John Maitland, of the City of Toronto,
Distiller, for the Invention of "A NEW PRINCIPLE OF DISTILLA-
TION AND RECTIFICATION, BY MEANS OF A NEW STILL CONDENSER
AND RECTIFIER."

Montreal, dated 12th August, 1845.

BRIEF DESCRIPTION.

The still, or percolator, is proposed to contain either perforated plates of metal, glass, earthenware or wood, or balls of glass, metal, earthenware, wood or bone, interstitially arranged; into which is introduced near, or at the top, or near, or at the bottom, steam or heated air, or steam tubes, by which the wash is brought up to the required temperature, it having about the same time been admitted near the top; the offal falling down, leaves the percolator near the bottom, the spirit escaping near, or at the head, into the vessel or condenser, having pipes supplied with water, also interstitially arranged; which spirit is so far condensed, that, being the weaker, it returns back by a syphon to the still or percolator, the stronger part not condensed, passing on to the rectifier, where it is rectified, and passing through the worm, is finally condensed, flowing out at the end a pure and flavourless spirit.

See Drawing, No. 203.

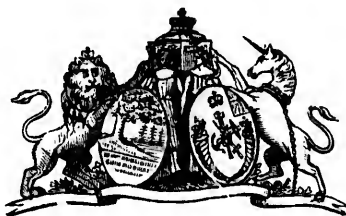
JOHN MAITLAND.

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A. D. 1845.—(LOWER CANADA.)—No. 204.

New and useful Machine, termed a Metallic Coil Spring-tooth Horse Rake, for raking hay and grain.

LETTERS PATENT to Albert Young, Township of Stanstead, District of St. Francis, Carpenter, for the Invention of "A NEW AND USEFUL MACHINE, TERMED A METALLIC COIL SPRING-TOOTH HORSE RAKE, FOR RAKING HAY AND GRAIN."

Montreal, dated 16th August, 1845.

BRIEF DESCRIPTION.

It is composed of teeth, made of elastic steel wire, passing through, or firmly screwed into, a transverse wooden beam; the wire or tooth runs out horizontally for a short distance, and is then coiled twice round a bar of wood parallel with the said beam, to which the bar is firmly fastened by iron rods at the centre and ends with screws so as to prevent motion. The wire, or tooth, then continues horizontally from the coil for a short distance, and then makes a gradual bend downwards, and is at right angles with the ground when the rake is in operation; the shafts for the horse are fixed to the beam. The peculiarity of the said rake is, that the elasticity of the teeth causes such of them as may come into contact with stones, or irregularities, to spring back, while the others will rake up all the hay or grain that comes in their way, thus rendering the machine available on the roughest ground as well as on the smoothest.

See Drawing, No. 204.

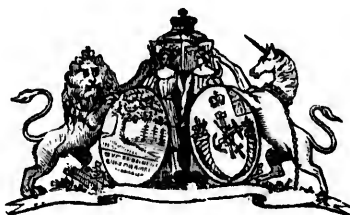
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A. D. 1845.—(LOWER CANADA.)—No. 205.

New principle in the construction of a Still for the distillation and rectifying of spirituous liquors, called a Combination Still.

LETTERS PATENT to James Cull, junr., and Charles Cull, of Bath, Midland District, for the Invention of "A NEW PRINCIPLE IN THE CONSTRUCTION OF A STILL FOR THE DISTILLATION AND RECTIFYING OF SPIRITUOUS LIQUORS, CALLED A COMBINATION STILL.

Montreal, dated 29th November, 1845.

BRIEF DESCRIPTION.

It consists of one or more wooden or metal vessels, either larger at the bottom than at the top or not, and divided into a number of compartments; each compartment communicates with the other by tubes of wood, copper, or some other metal; one series of which are bent in the form of syphons, or in an angular shape, and the others are straight. The beer for distillation is admitted at the top and descends through a pipe till it reaches within an inch of the bottom of the first compartment, in which it again rises to the height of two other descending pipes, through one of which it passes into the second compartment, and through the other into the third compartment, where it again rises to a certain height, and again descends in the same manner into all the lower compartments successively, until it reaches a discharge pipe at the bottom of the still. Steam is admitted into the bottom compartment of the still by a pipe, and rises through

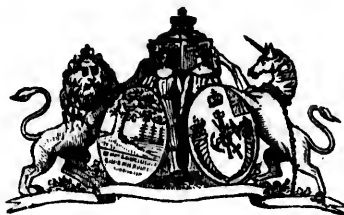
Cull's Combination Still.

the ascending syphons or bent pipes, boiling the beer in each compartment till the spirit arises at the top, where it passes out by a pipe direct to the worm, from whence it is delivered in the usual manner. The advantages of the said still being, that spirit is generated much quicker, and the quality is greatly superior, as no low wines are brought over. The saving of fuel is great. It is adapted to a manufactory of any extent. It extracts all the spirit generated in the beer, and is as equally applicable to the rectifying of spirits as to the process of distillation.

See Drawing, No. 205.

JAMES CULL, JUNR.

CHARLES CULL.



A. D. 1846.—(LOWER CANADA.)—No. 206.

New and improved Cast Iron Plough.

LETTERS PATENT to Jenkins Lloyd, of Oshawa, in the Home District, Plough Manufacturer, for the Invention of "A NEW AND IMPROVED CAST IRON PLOUGH."

Montreal, dated 17th January, 1846.

BRIEF DESCRIPTION.

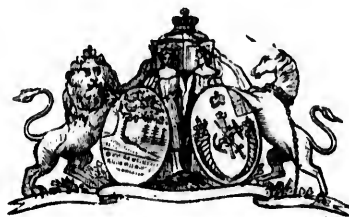
The principal part of this invention is the peculiar manner of constructing the mould board. It can be made on this plan, to throw a furrow of from thirty to fifty degrees; is much longer and higher than those generally used, and so formed that a straight wedge applied to any part from point to heel, although very much curved in the vertical section, is perfectly straight, and the angle being very acute, makes it of more easy draft than those in general use, while the extra height prevents the earth from falling over into the furrow. The share is put on with two screw bolts, and there being no lip or catch on the bottom, it can be made very easily of wrought iron, and for about half the price of common wrought shares. The land side of the plough is different to any in use excepting the bolting of it to the mould board; there are two bolts in the land side for bolting on the handles; there are also two bars cast on the land side so as to bring the handle in a line with the beam. At the upper bolt of the land side there is a wrought iron stay running across to the mould board, with a bolt passing through at each end to confine each part firmly to the other. A box is cast in the mould board for the right hand handle

Lloyd's Cast-iron Plough.

to lay in firmly, with a bolt running through it. There is also cast on the mould board a stay from the box to the end of it, to support the corner, and a socket running through the beam with a hole in it for a key. The wrought iron key has a hole punched in it through which the iron stay is passed with a screw and nut, on the end, to draw the two handles firmly up to the beam, and a wrought iron rod is fixed between the handles instead of wood; there are only three pieces of wood in the plough—the two handles and the beam.

See Drawing, No. 206.

JENKINS LLOYD.



A. D. 1846.—(LOWER CANADA.)—No. 207.

Improved House Pump or Fire Engine.

LETTERS PATENT to Albert Young, of Stanstead, in the District of St. Francis, Wheelright, for the Invention of "AN IMPROVED HOUSE PUMP OR FIRE ENGINE."

Montreal, dated 14th February, 1846.

BRIEF DESCRIPTION.

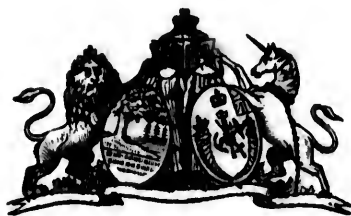
It consists of two or four cylinders, of small dimensions, connected with a case forming an oblong box, or reservoir, into which a valve from each cylinder opens perpendicularly. On the top of this reservoir is an opening to admit of a discharging tube of any required height. The lower ends of the cylinders are to be closed and resting on a base closely fitted to prevent the escape of air or water. This base is to form a hollow case, having at the bottom an opening for a tube leading to a well, spring, or cistern, and on the top of it are two openings with valves opening upwards, to prevent the return of the water while forcing it up. Below the base is a double base with an opening at the top, and two at the bottom, with a revolving conductor between the upper and lower openings. This revolving conductor is connected with the well, spring, or cistern, and is arranged on the principle of the stop cock, so that by turning the conductor half round, one of the openings is shut and the other opened, and one pipe may thus bring up water from a well and the other from a cistern, or tank, as may be necessary. The peculiar excellence of the said invention consists

Young's Pump or Fire Engine.

in the use of two or four cylinders instead of one, and in the diminishing of friction by the shortness and smaller size of the cylinders, thus adding to the power. And also in the use of the revolving cylinder, and its adaption to two different reservoirs at once. The crank, or brake, to which the piston rods are attached, is so constructed that one or more pistons ascend while the others descend.

See Drawing, No. 207.

ALBERT YOUNG.



A. D. 1846.—(LOWER CANADA.)—No. 208.

New method of making Presses for the purpose of pressing clay, and other ductile substances, into any form, such as Bricks, Tiles, &c.

LETTERS PATENT to George Kirk Burrows, of Toronto, Joiner, for the Invention of "A NEW METHOD OF MAKING PRESSES FOR THE PURPOSE OF PRESSING CLAY, AND OTHER DUCTILE SUBSTANCES, INTO ANY FORM, SUCH AS BRICKS, TILES, &c."

Montreal, dated 27th February, 1846.

BRIEF DESCRIPTION.

The ductile substance is first worked in the usual way, and when partly dry, is placed in the box of the press; a cast-iron cover, one end forming a piston, turned and polished, which passes through steps or boxes, moving in a steady horizontal position, and lubricated with oil from a reservoir, is then moved forward. Cams or excentrics, fixed upon pivots, are brought to bear on the under side of the bottom of the box, within one inch of the brick, which is then compressed with a powerful lever of wrought iron, fixed in a wooden handle, and bolted on to the cam or excentric. The lever is then moved backwards, and the foot is placed upon a treadle, which raises the bottom of the box, with the brick on it, to the surface, when it is carried off and placed ready for burning. Bricks, or mouldings of any shape, can be pressed, as by turning some capstan-headed screws the mould can be taken out,

Burrows' Presses for pressing Bricks, Tiles, &c.

and others substituted, and made fit for use, by tightening the screws. The inside of the box is cast-steel, polished to form an even surface, and the top has a raised panel in the centre, making an indent in the brick, and thereby rendering it immovable when set.

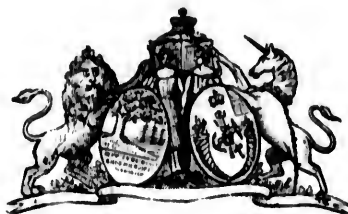
See Drawing, No. 208.

GEORGE KIRK BURROWS.

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A. D. 1846.—(LOWER CANADA.)—No. 209.

Improvement in Horse-threshing Machines.

LETTERS PATENT to William McKinlay, Township of West Flamboro', District of Gore, Iron Founder, for the Invention of
"AN IMPROVEMENT IN HORSE-THRESHING MACHINES."

Montreal, dated 27th February, 1846.

BRIEF DESCRIPTION.

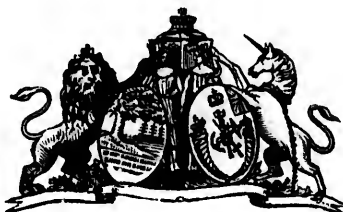
A large main wheel, for horse power, turns on a male gudgeon fastened to the upper frame of the machine, there being a hole in the centre of the wheel to receive it. Cogs are on the under side, which extend within one inch of the inside of the rim, which is left plain to receive three small balance wheels that are fastened on three arms of the upper frame;—there is a large pinion on the other arm, and to secure the wheel in its place there are two pulley stands fastened on the long arm; a lever box is fastened on the centre of the wheel with four bolts; on the other end of the large pinion shaft is a spur wheel, which drives a small pinion; on the end of the small pinion shaft, is a coupling that turns the travelling rod, on the end of which is hung a band wheel, which drives a cylinder with a leather belt. The cylinder consists of a wrought iron shaft with two heads and pulley, of cast iron, keyed on it; the beaters of the machine are faced with iron and bolted on the heads; the concave consists of eight bars with two rows of teeth in each bar; the bars are reversed, having an open space between each for the threshed grain to pass through, and there are three

McKinlay's Horse-threshing Machine.

bars on the back side for strengtheners. This concave, which is one piece of casting only, is far superior to the close concave; as the grain passes through it, the wind from the cylinder blows a great part of the chaff out with the straw.

See Drawing, No. 209.

WILLIAM MCKINLAY.



A. D. 1846.—(LOWER CANADA.)—No. 210.

Hot-air Furnace.

LETTERS PATENT to Henry Ruttan, of the Town of Cobourg,
Sheriff, for "A FURNACE BY WHICH HOUSES AND OTHER BUILD-
INGS MAY BE HEATED BY HOT AIR."

Montreal, 2nd May, 1846.

(Surrendered 29th November, 1850)

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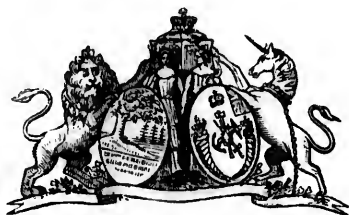
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A. D. 1846.—(LOWER CANADA.)—No. 211.

Improved method of making Mill Stones, for the purpose of grinding grain, without heating the meal so much as with the ordinary Mill Stone.

LETTERS PATENT to Richard Hawkins Oates, of the City of Toronto, Founder and Mill Stone Maker, for the Invention of
“AN IMPROVED METHOD OF MAKING MILL STONES, FOR THE PURPOSE OF GRINDING GRAIN, WITHOUT HEATING THE MEAL SO MUCH AS WITH THE ORDINARY MILL STONE.”

Montreal, dated 25th April, 1846.

BRIEF DESCRIPTION.

A certain number of holes are made in the mill stone, of a size proportioned to the dimensions of the stone and the rapidity with which it runs. The holes are broader at the back than on the face of the stone, and are placed at an angle leaning against the course the stone runs; this angle must be varied according to the speed of the stone. The holes are made at any part of the stone between the eye and the run, but the centre between these points is the best, and they admit the air for the purpose of keeping the meal cool, while in the act of grinding.

See Drawing, No. 211.

RICHARD HAWKINS OATES.

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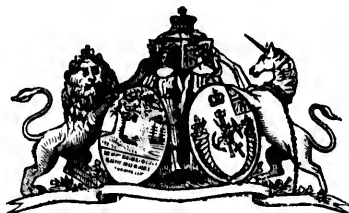
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A. D. 1846.—(LOWER CANADA.)—No. 212.

Improved Machine for making Brick.

LETTERS PATENT to David Jacob Ellis, of the Township of Southwold, in the London District, Yeoman, for the Invention of
"AN IMPROVED MACHINE FOR MAKING BRICK."

Montreal, dated 25th April, 1846.

BRIEF DESCRIPTION.

A large wheel, worked by horse power, communicates with a small wheel having an upright shaft, the lower end being fitted into the mill where the clay is ground, and supplied with knives to grind it, and so arranged as to press the clay out of an orifice; the mill should be sufficiently low to allow a man with ease to pitch in the clay, or it can be so arranged as to supply itself by means of the horse power. The moulds for the brick are carried by a slide moving in grooves in the stand under the mill, by means of a crank, when a stop is raised and the clay immediately fills the moulds. A packer or presser is then pressed down by the left hand, the crank turned by the right, and the mould withdrawn from under the presser, it is then thoroughly packed by a roller attached to it, and levelled and cleaned off by a scraper, also attached to the presser, out upon a table placed between the stand to which the presser is fixed and the roller, and the moulds are ready to be carried to the yard. The crank then being left to itself, the slide, with an empty mould, immediately returns under the mill ready for filling by means of a strong spring at the back of the mill. The supply of clay at the orifice is regulated by the stop.

See Drawing, No. 212.

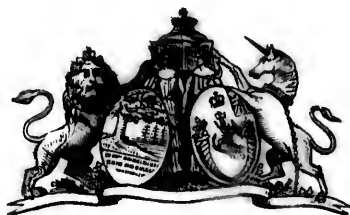
DAVID JACOB ELLIS.

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A. D. 1846.—(LOWER CANADA.)—No. 213.

Revolving Battery.

LETTERS PATENT to William McLean, of the City of Toronto,
Millwright and Engineer, for the Invention of "A REVOLVING
BATTERY."

Montreal, dated 26th May, 1846.

BRIEF DESCRIPTION.

The Revolving Battery, which is circular, is supported by an upright shaft of cast or wrought iron, or wood, having a bevel wheel on its lower end, and which is driven by two pinions and cranks. At the extremity of the circle, there are rollers revolving on a plate of cast iron under each gun, to keep it steady; while the gun in front is being discharged, those in the rear can be sponged by the artillerymen on the platform, and a continued and steady fire can thus be maintained. This battery can be erected either on board ship or on shore. It can be placed three or four feet below ground, out of reach of an enemy's shot, and the guns can be discharged in any direction.

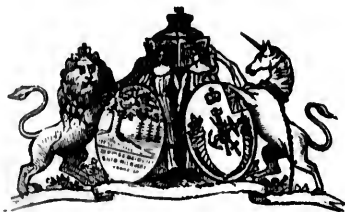
See Drawing, No. 213.

WILLIAM McLEAN.

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A. D. 1846.—(LOWER CANADA.)—No. 214.

An improved Cooking Stove.

LETTERS PATENT to Samuel S. Jones, of Hamilton, in the Gore District, Clock and Watch maker, for the invention of "AN IMPROVED COOKING STOVE."

Montreal, dated 13th June, 1846.

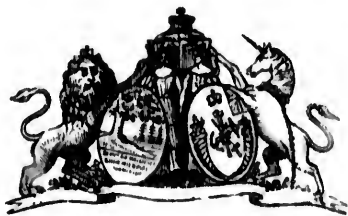
BRIEF DESCRIPTION.

The form of the stove is an oblong box, the front section of which is little more than half the height of the back of the depth of the fire chamber. In this part are two boiler holes on top, and a double door in front, under which the hearth projects, as in ordinary stoves, for the same purpose, and the inside of the fire chamber is furnished with a grate. If coal is to be used as fuel, the back plate of the fire chamber is pierced with holes near the centre, at which point it projects a little. The row of holes extend horizontally across from side to side. The upper edge of the plate curves back till it touches the front upper edge of the oven, which is situated just behind and on a level with the fire chamber, and is surrounded by a flue. Above the top plate of the oven and the top of the fire chamber there is flue space; the said top plate extends through to the back of the stove, and has an aperture at its back edge; in the centre, above this plate, is another flue and above that another oven which is also surrounded, on the front, top and back, by a continuation of the flues; at the back of the plate over the oven, last named, is the opening for the smoke pipe. A damper, which revolves, is placed just along the upper edge of the back

Jones' Cooking Stove.

plate of the fire chamber and is for the purpose of closing the flue at that point, this turns the fire through the back plate and down under the lower oven and up the back. At the upper back edge of the upper oven another damper is put, when this is turned down it prevents the heat from passing up behind the upper oven into the smoke pipe, but turns it down round the front of the oven and up over the top. By the above arrangement of flues a more equal distribution of heat is effected, and a consequent economy of fuel and efficiency of operation is obtained.

SAMUEL S. JONES.



A. D. 1846.—(LOWER CANADA.)—No. 215.

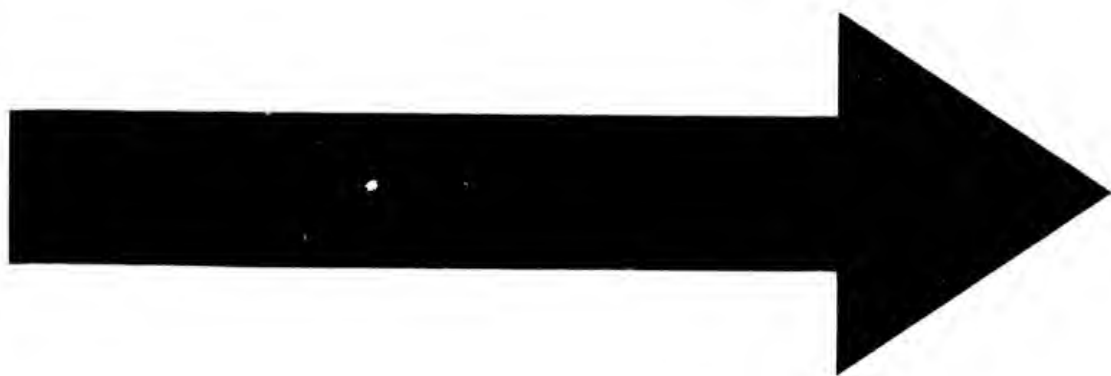
Improved Hoisting Machine.

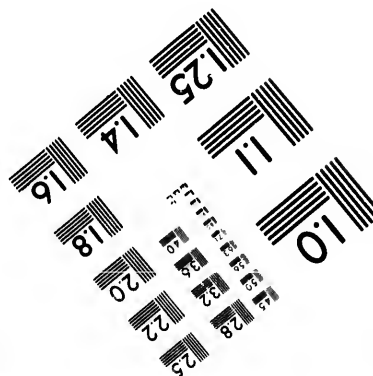
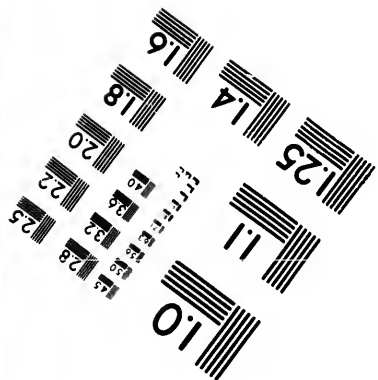
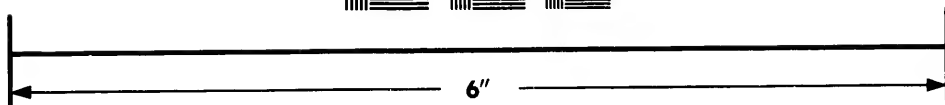
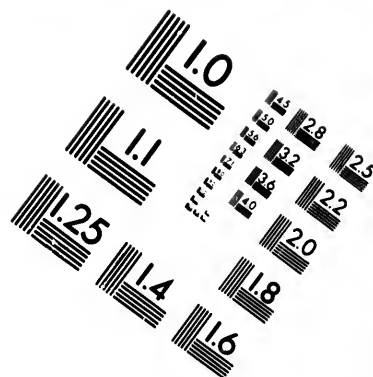
LETTERS PATENT to Gordon Warren Johnson, of Williamstown,
in the County of Glengarry, Gentlemen, for the Invention of "AN
IMPROVED HOISTING MACHINE."

Montreal, dated 26th June, 1846.

BRIEF DESCRIPTION.

This machine is capable of raising two thousand barrels of flour, in one regular day's working time, with four labourers, and can be applied to any store. In the hatchway of a store are erected wooden shears or uprights, faced with iron, with a groove in the centre of each as a vertical guide for the machine, which consists of a series of iron radius bars acting from their own centres connected as links with iron pins projecting on each side sufficient to enter the grooves and cause a vertical motion, when put in action. The levers of the bottom and top act upon fixed pivots; the extending bars of the second and third floors are connected with radius bars, half their length, which will cause the motion to be reversed, one extending and the other depressing, alternately, when the machine is in work, the hoisting rope, running over a wheel or large pulley, is fastened to the centre of the extending bars and the stretchers of the apron or parbuckle which is also secured to the upper floor. When the machine is to be put to work the apron or parbuckle is lowered to the floor, then the barrel is rolled into the apron, and the men placed at the ropes begin hoisting, and the levers,





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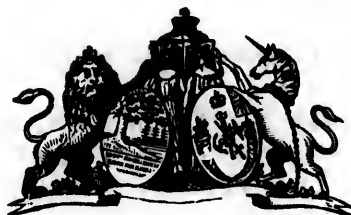
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Johnson's Hoisting Machine.

acting upon the extending bars, close or raise them, the hoisting rope being attached to them and the apron thus lifting the barrel in its lap and depositing in on the floor above; in lowering a barrel the same action takes place but reversed. In hoisting to the third and fourth floors it is necessary to use cant hooks instead of the parbuckle.

See Drawing, No. 215.

GORDON WARREN JOHNSON.



A. D. 1846.—(LOWER CANADA.)—No. 216.

*Improved method of Generating and Distributing
Heated Air.*

LETTERS PATENT to John Mills, of the Town of St. Catharines,
in the Niagara District. Gentleman, for the Invention of "AN
IMPROVED METHOD OF GENERATING AND DISTRIBUTING HEATED
AIR."

Montreal, dated 1st September, 1846.

BRIEF DESCRIPTION.

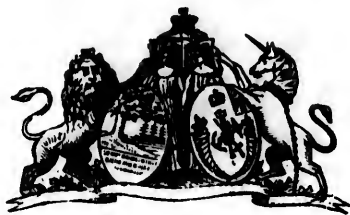
An air-tight furnace, or stove, may be made of any size, shape or dimensions required, and coal or wood used for fuel. At the back part of the top, two apertures, with a collar on each, are made to receive upright pipes, through which the smoke and heat are introduced into cross pipes, placed over each other, and having a strong draft passing from one to the next in succession. The end of the upper one is connected with a chimney flue or pipe to carry off the smoke. The bottom cross pipe should be made of larger diameter than the others, that the fine ashes and other particles which may accompany the smoke may settle therein, and the upper tier not be obstructed. There are holes in the upright pipes opposite the ends of the large cross pipes through which the particles deposited may be removed. Through the front of the furnace are apertures, with moveable plates to close them air tight, or to admit more or less air, and attached to the plates is a rod, to be carried by joints and sections to any room, that the air may be

Mills' method of Generating and Distributing Heated Air.

increased or diminished by any person in such room without varying the fuel or going to the furnace. The furnace and pipes are enclosed in a brick or fire-proof air-tight chamber, having inside and outside walls, with spaces between them as well as the furnace. The cold air is admitted by holes at the bottom of the walls. Near the top of the hot air chamber are inserted pipes or flues to receive the heated air, which pipes or flues are so branched and arranged as to conduct the hot air to the various apartments of the building. At the end of each of the pipes or flues in each apartment, are ventilators, which will either admit or entirely exclude the hot air.

See Drawing, No. 216.

JOHN MILLS.



A. D. 1846.—(LOWER CANADA.)—No. 217.

*Improved description of Tue Iron to be used in
Blacksmith's Forges.*

LETTERS PATENT to William T. Barnes, of the Town of Hamilton,
in the District of Gore, Blacksmith, for the Invention of "AN
IMPROVED DESCRIPTION OF TUE IRON TO BE USED IN BLACKSMITH'S
FORGES."

Montreal, dated 21st October, 1846.

BRIEF DESCRIPTION.

It consists of a receiver connected with the tube through which the wind, or blast, from the bellows passes. On the top of the receiver a grate is fastened through which the blast passes into the fire. At the bottom of the receiver is a flange or neck of a tube to discharge any dust or other matter falling in the receiver through the grate, as well as to serve the purpose of an air furnace; to this flange or neck a tube is fixed which may either be stopped at the end by a plug or by a valve placed in any part of it. The said improvement does not require so strong a blast and makes it act more regularly upon the fire, and it also causes a saving of fuel, and produces heat sooner, in consequence of the constant supply of hot air in the receiver and tube, thereby, causing a more rapid expansion of air entering from the bellows. The machine is made of iron and of any convenient size and being properly embedded in a forge never becomes red, the cold air from the bellows keeping it cool, so that its durability is ensured.

See Drawing, No. 217.

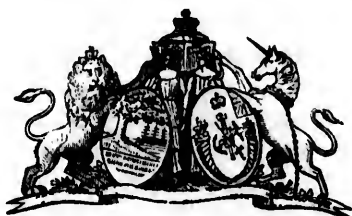
WILLIAM T. BARNES.



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A. D. 1846.—(LOWER CANADA.)—No. 218.

Revolving Joint-tooth Horse Rake.

LETTERS PATENT to Joseph Paradee, of the Town of Barrie, in the District of Simcoe, Machinist, for the Invention of "A REVOLVING JOINT-TOOTH HORSE RAKE."

Montreal, dated 24th December, 1846.

BRIEF DESCRIPTION.

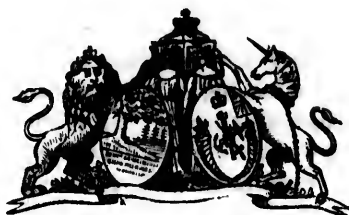
This rake has usually nineteen teeth, placed five inches apart on the beam, each tooth having two arms connected by a joint, the lower arm being much longer than the upper. It is drawn by a horse, and has a bent spring lever, one end of which, at its fulcrum, is fastened and bolted to the tooth beam, by the staple or upper arm of the tooth on the back part of the tooth beam or roller. This spring passes round the roller, which revolves on its own axes, in two cast iron collars, with edged flanges driven on, and fastened to the roller by iron bearings or straps, which are fastened to or upon the ends of the shafts. The edged flanges play or revolve in the iron bearings, and thus prevent any lateral motion of the beam. Through a series of holes in the other end of the bent springs, which have been passed through a staple, the size of the spring on the lower side of the beam to prevent any lateral motion of it, passes a series of teeth below the joints of the lower arm, and thus, when any of the teeth meet any obstruction or irregularity of the ground, such tooth moves back on its joint, and slips on a small slide or roller, through the said hole in the spring,

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Paradee's Horse Rake.

straining the spring towards the beam, until the tooth is free, when the spring brings it to its natural position, while, at the same time, by joining the tooth to the beam, and applying to each tooth and beam, such spring and staple acting in combination, the teeth are thereby preserved in their true position to each other, and to the beams. From the cross bar attached to the shafts, at right angles to it, passes a lever to another cross bar near the handles. In this lever, over the tooth beam or roller, is a break or catch against which falls, on every revolution of the beam, an iron rod or secondary tooth, driven or secured at one end into the top of the tooth beam, and thus prevents it from revolving. The upper end of the lever is supported by a staple, fixed in the under side of the cross bar near the handles; on the outside of the lever, below the said staple at its fulcrum, is fixed a bent spring, whose other end rests against and plays upon the said staple. By pressing the bar outward and upon the said spring the brake is forced from the secondary tooth, and the traction of the rake causes the beam and teeth to make a complete revolution being aided, and the rake supported, by another secondary tooth about a foot long, fixed in the centre of the tooth beam, parallel to the shafts, coming in contact with the ground. The hand being removed from the lever, the lever spring forces it, and the break or catch, back into its former position at right angles with the cross bars, and thus the operation is again continued at pleasure. By means of its revolution the hay or grain is discharged from the rake, or the teeth raised at pleasure, while the rake is thus made available, and its perfect working secured on the roughest as well as on the smoothest ground.

JOSEPH PARADEE.



A. D. 1846.—(LOWER CANADA.)—No. 219.

A new description of Water Wheel.

LETTERS PATENT to John Livingston, of Cavan, Newcastle
District, Carpenter, for the Invention of "A NEW DESCRIPTION
OF WATER WHEEL."

Montreal, dated 14th December, 1846.

BRIEF DESCRIPTION.

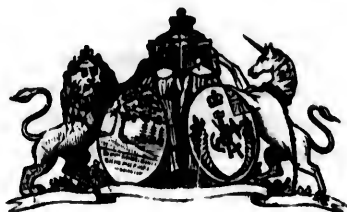
Round the wheel a band, having buckets or flying plates to catch the water, revolves in a band race, having a half circle at the lower end, with a screw for pulling it out. The water is let on to the wheel in three places or spouts, one spout is for opening the buckets or flying plates, and the other two are for giving the power to the wheel; these spouts are supplied from a floom. The wheel stands with rather a slanting upright shaft, causing level wheels to be used instead of spur wheels, which will throw the round of the band to have all the fall of water. On the rim of the wheel are two cogs to catch each bucket as it comes round. The band is composed of boards or iron plates, hinged between each bucket, and each bucket is hinged to the centre of the plate of the band. The band will be made long enough to go round the wheel and the band races. The buckets will lie close to the band going up against the stream, and fall out square coming down. Each plate of the band will run on rollers through the band race, and the screw will draw out the half circle to lighten the plates on the cogs

Livingston's Water Wheel.

of the wheel. At the first or lower spout is a board stopping up the band race and water, and leaving only space enough for the plates on the band to pass through when shut. Each bucket has a mitre on its outer end to catch the water from the lower or first spout, and open it out square with the band to be ready for the water from the other two spouts.

JOHN LIVINGSTON.

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A. D. 1846.—(LOWER CANADA.)—No. 220.

Steamboat Regulator.

LETTERS PATENT to William McLean, of Toronto, Millwright
and Engineer, for the Invention of "A STEAMBOAT REGULATOR."
Montreal, dated 17th December, 1846.

BRIEF DESCRIPTION.

This self-acting of the regulator or trimmer is, firstly, put in motion by the list of the boat; secondly, by the laws of gravity; and thirdly, by the mechanical levers of the first and second order. A brass tube, that works in an under case, contains a quantity of mercury, and by its running leeward with the assistance of the above mentioned levers, will counteract a larger quantity in a top case hard to the weather side. In the top case this trimmer will not occupy much of the boat, as it stands under the main deck from starboard to larboard. It will not require more than from two to three feet; it can either be worked by mercury or a small portion of steam from the boiler, or by water or any other fluid, and it will act as a great preserver of life and property. Admitting there was an eighty or a one hundred horsepower engine driving one boat, and this boat to list either to starboard or larboard, the full force of this engine must then act upon one wheel, consequently some part of the engine must give, providing the draftsman has not made calculations to allow every working part the ultimate cohesive rule to guard against those dangers. This trimmer would also be of service in war steamers, in order to keep them steady;

McLean's Steamboat Regulator.

in case of a rush of men to either side, the regulator would guard against all disorders of trim. Three hundred weight in the under case will counteract thirty hundred weight hard to the weather side in the top case. The upper case is concave, to admit as much mercury in it with the weight of the iron case, as will trim the boat, in proportion to its weight or tonnage.

WILLIAM McLEAN.



A. D. 1846.—(LOWER CANADA.)—No. 221.

New Gas Generator.

LETTERS PATENT to Harrison Colby, of Lancaster, in the Eastern District, Yeoman, for the Invention of "A NEW GAS GENERATOR."

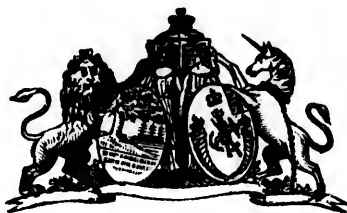
Montreal, dated 12th December, 1846.

BRIEF DESCRIPTION.

It consists of a stove or furnace which is so constructed that the fuel which is used for culinary purposes, or for heating, will serve the purpose of generating gas, either for lighting the building in which it is prepared, or it may be conveyed to other buildings by means of a conducting pipe; a retort is placed directly over the fire, or in such manner as may be most convenient for heating the same. A separator is so constructed that it may sit in the same apartment with the stove or furnace, or it may be placed in any other apartment more convenient for the purpose, by having a conducting pipe from the stove or furnace to such apartment. The separator and the receiver for holding the gas may be made of wood, tin, copper or sheet iron. There are simply three tubes or vessels, two of these vessels are so placed that one of them stands inside of the other, having a space between them of about six inches, which is to be filled with water to make it air tight. The receiver is simply a tube turned with the mouth down, and placed in the space between the other two.

See Drawing, No. 221.

HARRISON COLBY.



A. D. 1846.—(LOWER CANADA.)—No. 222.

*Metal Heater for houses, &c., and a Cooking Range
and Hot Air and Vapour Generator.*

LETTERS PATENT to Henry Ruttan, of Cobourg, Esquire, for the
Invention of "A METAL HEATER FOR HOUSES, &c., AND A
COOKING-RANGE AND HOT AIR AND VAPOUR GENERATOR."

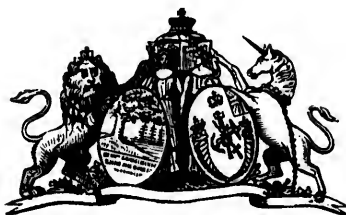
Montreal, dated 12th December, 1846.

(Surrendered 29th November, 1858.)

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A. D. 1847.—(LOWER CANADA.)—No. 223.

Stump Extractor.

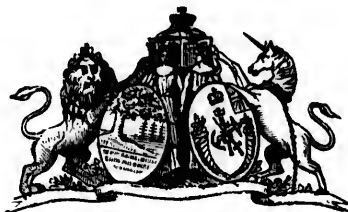
LETTERS PATENT to John McLaren, Township of Nelson, Gore District, Yeoman, for the Invention of "AN IMPROVED STUMP EXTRACTOR."

Montreal, dated 11th January, 1847.

BRIEF DESCRIPTION.

The base is formed of two timbers joined at an angle, the under sides rounding, upon which are erected three upright timbers, joined at the top, and upon which is fastened a circular iron bound block of wood, having on the top surface a groove of iron, or worker with a flange near the outside rim. Through its perpendicular centre passes a wooden screw, and upon it is a square wooden iron-bound nut of wood, through which the same screw works, and fixed to one side of this nut is the end of a long piece of timber, running horizontally by means of two staples of iron, one of which is broad, so that the projecting end may rise and fall, at which end is placed the horse-power which moves in a circular direction, and rises the screw. At the lower end of this screw is appended an iron chain, or two pieces of timber loosely attached at their ends.

JOHN McLAREN.



A. D. 1847.—(LOWER CANADA.)—No. 224.

A new method of setting Boilers and arranging the Flues for applying heat to the same, for Steam Engines.

LETTERS PATENT to Daniel Cleal, City of Toronto, Baker and Miller, for the Invention of "A NEW MODE OF SETTING BOILERS, AND ARRANGING THE FLUES FOR APPLYING HEAT TO THE SAME, FOR STEAM ENGINES."

Montreal, dated 23rd January, 1847.

BRIEF DESCRIPTION.

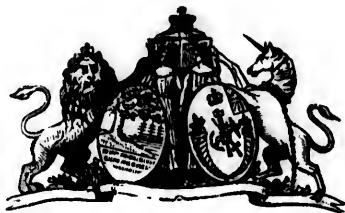
The boilers may be made of various lengths and diameters, with two iron flues passing through the centre. The far end is set in solid brick, and the front end is placed on iron columns, thus exposing a surface to the action of the fire. The fuel is put into a box or furnace, so placed as to cause the flame to strike upon the boiler one-third up the side, then following to the far brickwork, which it strikes, and returning back in the face of the flame, thereby burning the smoke; it enters the two iron flues at the front of the boiler, pursues its course through them, and enters the mouth of a register at the far end, which is regulated by a damper on slides, and from thence passes up the chimney, by which time the whole heat is consumed. A hollow box, or chamber, is made round the sides and on the top of the furnace where the fuel is consumed, to save the inside of which from burning

Cleal's method of setting Boilers.

out, the first supply of water is made to flow into it, and the main boiler afterwards supplied therefrom. The whole is cased in brickwork, with a cold water supply pipe from without.

See Drawing, No. 224.

DANIEL CLEAL.



A. D. 1847.—(LOWER CANADA.)—No. 225.

Cooking Range and Hot-air Vapour Generator.

LETTERS PATENT to Henry Ruttan, of Cobourg, in the District of
Newcastle, Esquire, for the Invention of "AN IMPROVED COOK-
ING RANGE AND HOT-AIR VAPOUR GENERATOR."

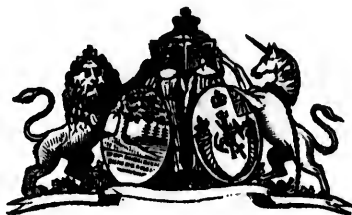
Montreal, dated 27th January, 1847.

(Surrendered 29th November, 1858.)

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A. D. 1847.—(UPPER CANADA.)—No. 226.

Improved Portable Lamp Fluid.

LETTERS PATENT to Horace H. Davison, of the Township of Sidney,
in the District of Victoria, Mechanic, for the Invention of "AN
IMPROVED PORTABLE LAMP FLUID."

Montreal, dated 10th April, 1847.

BRIEF DESCRIPTION.

It is composed as follows: To one gallon of alcohol, worth eighty-five per cent, add two drachms of nitre, one fourth of an ounce of olive oil, three fourths of an ounce of gum camphor, two ounces of spirits of turpentine, one pint and a half of camphene, and if the alcohol should be stronger than eighty-five it will bear more camphene, the whole must be well shaken together, and when clear the composition is fit for use. It must be corked tight and used in air tight lamps, and when not burning the tube through which the wick passes must be covered with an extinguisher to prevent the evaporation of the fluid. The fluid may also be burned in the form of gas, and when burning is free from smoke and smell.

HORACE H. DAVISON.

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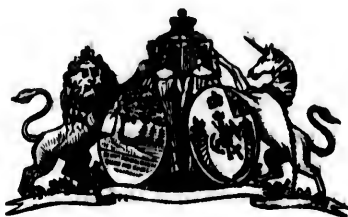
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A. D. 1847.—(UPPER CANADA.)—No. 227.

Improved Heel Ring for fastening the Scythe to the snath.

LETTERS PATENT to Horace H. Davison, of the Township of Sidney, in the District of Victoria, Mechanic, for the Invention of "AN IMPROVED HEEL RING FOR FASTENING THE SCYTHE TO THE SNATH.

Montreal, dated 10th April, 1847.

BRIEF DESCRIPTION.

Make a ring either of wrought or malleable cast iron of the right size for the lower end of the snath, and with that part of the ring which bears on the crow of the scythe flat, and the flat spot should be at least one inch and a quarter on the inside of the ring so that the scythe may be moved out or in without coming in contact with the circle of the ring. Next let a block of cast iron, about seven-eighths of an inch in diameter, be let into the snath on the upper side under where the heel ring passes, a hole being bored for the purpose in the snath, with a centre bit, and the block of iron that is to fit it being flat on the bottom, to make a solid bearing, and the sides a little bevelling so that it shall drive snug, and the top or outside of it of the same circular form as the snath, that it may be even with the wood, and fitting the hole accurately. The heel ring is to be a little heavier on the top of the snath, being that part of the ring that sits immediately over the block of iron let in the snath, as before described, and a screw passes through that part of the ring, so that when the scythe is to be fastened the screw is turned with a small wrench made for the purpose.

Davison's Heel Ring for fastening the Scythe to the Snath.

The point of the screw comes in contact with the block of iron on the top of the snath, which is pressed downwards, and the ring is drawn upwards, which motion fastens the scythe on the bottom of the snath by the flat part of the ring pressing the crow of the scythe against the snath. To adjust the scythe a screw passes through the ring just back of the crow of the scythe, by turning which it allows it to move in or out and keeps it fixed in one position.

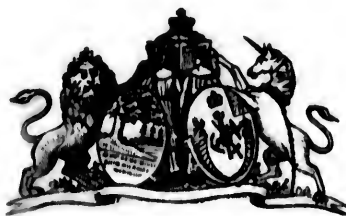
HORACE H. DAVISON.

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A. D. 1847.—(UPPER CANADA.)—No. 228.

*Improved Double Revertable Flue Steam Generator
and Boiler for Locomotives, Steamboats, and other
purposes.*

LETTERS PATENT to Horace H. Davison, of the Township of Sidney, in the District of Victoria, Mechanic, for the Invention of
"AN IMPROVED DOUBLE REVERTABLE FLUE STEAM GENERATOR
AND BOILER FOR LOCOMOTIVES, STEAMBOATS, AND OTHER PURPOSES."

Montreal, dated 10th April, 1847.

BRIEF DESCRIPTION.

The boiler, which is cylindrical, may be made of either tin, copper, or boiler iron, and of any size suitable to the purposes for which it is designed. The fire rests on grates or bars at the bottom of the boiler, which drops down so as to form an air feeder beneath them, through its whole length, and a receiver for the ashes that drop through. To save the heat of the fire, two cylinders are made of the same shape, but differing in diameter, place one inside the other so as to have the space between them equal at all parts, which space is to be covered by a narrow head on the front end of the boiler, but on the back the head shall be entire. A smoke pipe is made oval at the bottom, with a flange round it to contain the oil of the smoke as it condenses. In the boiler are pipes or water flues, made a little oval, and extending its whole length, with spaces between each, the bottom one having more capacity for holding water than the next, and so on in decreased pro-

Davison's Double Revertable Flue Steam Generator.

portion to the top one, the whole being closed at the ends with heads made for the purpose. The fire ascends through the alternate spaces, and battens against the different flues till it rises to the smoke pipe, when its heat is entirely exhausted. Behind, and attached to the boiler, stands a reservoir extending from the bottom of the boiler to some distance above it, which reservoir is closed with a cone-formed cover, having a wide flange to shut inside of the reservoir, which, when used for engine purposes, must be a packed joint formed by another flange fastened to the inside of the reservoir, so as to allow that on the cover to pass inside and be tight. The cover is shut with a strap and eye, and a key passing through the eye holds the strap. At the upper end of the reservoir is a feeding tube for cold water, funnel-shaped at the top, and extending to the bottom, where the heat is greatest, and from the centre of the cover projects a steam pipe bent to conduct the steam from the boiler to any place required. From the reservoir tubes pass and convey the water into the pipes or water flues in the boiler, and also into the space between the two cylinders which form it, which is returned back as steam. The front end of the boiler may be covered by a head made of a sheet of iron or copper turned up at the edge, which can be fastened by straps in the same way as the cover of the reservoir. Opposite the fire is a door with an air flue, as well as opposite the ash receiver. The boiler and reservoir may be placed on a wooden frame with long handles, that they may be carried about if required.

See Drawing, No. 228.

HORACE H. DAVISON.

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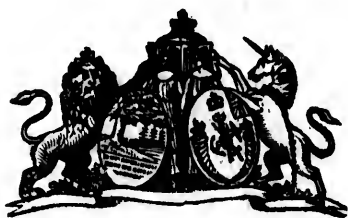
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A. D. 1847.—(UPPER CANADA.)—No. 229.

*Improved Machine for cutting Shingles, Staves,
Veneers, &c.*

LETTERS PATENT to Jason C. Gillett, of the Township of Sandwich,
in the Western District, Millwright, for the invention of "AN
IMPROVED MACHINE FOR CUTTING SHINGLES, STAVES, VENEERS,
&c.

Montreal, dated 1st May, 1847.

BRIEF DESCRIPTION.

The machine is composed of a frame within which revolves a table which is furnished with two knives. The frame consists of four posts connected below the table by two cross pieces, and above it by four, the latter forming boxes for the reception of the blocks or bolts to be cut. The table is propelled by the action of a band on the circumference, or in any other way suited to the power employed. The shaft of the table has its lower end running in a box fixed to the centre of the lower cross pieces, and its upper one in a box formed by the intersection of the four upper cross pieces. The two knives or cutters are so let into the table that their edges are even with its surface, a portion of the sides of the knives are bevelled, and the lower one is slightly concave, and they are so arranged that one of them only shall be in action at a time, which is effected by the particular angle at which they are placed, as also their action for cutting, which is diagonally from corner to corner of the block, their surfaces coinciding with that of the table; the shape of the shingle, or article to be cut, is of course formed in the table, by lowering its surface, the manner of doing

Gillett's Machine for cutting Shingles, Staves, &c.

which is, to commence near the back of each knife and gradually reduce the surface of the table around to the edge of the other, where it is to be so much lowered that the throat of each knife shall exactly correspond to the form of the shingle, or article to be cut. Cast iron plates are let into the surface of the table, after it is lowered, before each knife, to preserve the throat of the knife or shape of the shingle, and are to be raised and lowered by a screw, so as to vary the thickness of the article to be cut. Levers are attached to the posts by a joint at their outer ends allowing them to rise and fall freely over each box. They are made with an arm or dog to bear on the blocks, and are so weighted as that their pressure shall increase as the block to be cut diminishes. Slides can also be let into the boxes to vary the width of the articles to be cut, and any number of the boxes may be formed for the blocks, and the knife cuts the article in each at every revolution.

See Drawing No. 229.

JASON C. GILLETT.

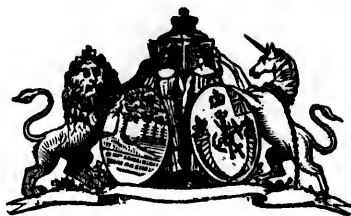
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A. D. 1847.—(UPPER CANADA.)—No. 230.

*The original Inventor of a Machine usually known
by the name of Bellows.*

LETTERS PATENT to Joseph Westman, City of Toronto, Bellows
maker, for the Invention of a "MACHINE USUALLY KNOWN BY
THE NAME OF BELLOWES.

Montreal, dated 9th May, 1847.

BRIEF DESCRIPTION.

The middle and under boards may have two or more valves (as high as four) of a different shape to the valve generally used, being oblong instead of square, longer, narrower, and placed further back, by which a greater width is obtained at the neck of the bellows, and more air can be taken in. They may be made with a single or double pipe, by means of which latter the blast can be increased or diminished at pleasure. The bellows are prevented from warping by being stayed diagonally on the inside and horizontally on the outside. By this improvement a less lever is required to work the bellows, more power is given, and a quicker action is had.

See Drawing No. 230.

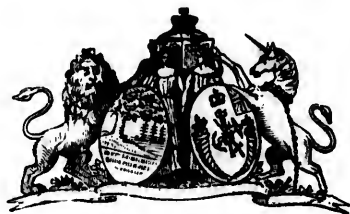
JOSEPH WESTMAN.

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A. D. 1847.—(UPPER CANADA.)—No. 231.

Certain improvements in the application of the principle of the Electro Magnetic Telegraph, designated the Notifier and Connector, or Transfer Magnet.

LETTERS PATENT to Gilbert McMicken, of Queenston, District of Niagara, Esq., for the Invention of "CERTAIN IMPROVEMENTS IN THE APPLICATION OF THE PRINCIPLE OF THE ELECTRO MAGNETIC TELEGRAPH, DESIGNATED THE NOTIFIER AND CONNECTOR OR TRANSFER MAGNET."

Montreal, dated 8th June, 1847.

BRIEF DESCRIPTION.

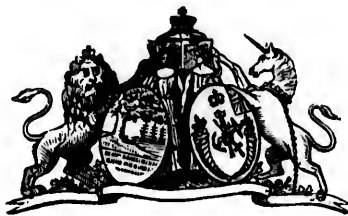
The notifier is an instrument composed of an electro magnet, similar to that in the relay instrument now used in Telegraph offices, and an armature of iron at the end of a lever, with a spring and regulating screw. The armature is drawn towards the magnet, when made such, by the fluid making its circuit through and round the coils, and the lever is forced back to its place of rest by the spring when the magnetic circuit is broken. The uses of the notifier are to notify the operator that the wire is again mended after a break has occurred, and to divide long lines, so that different parts may do business at the same time, and not interfere with each other, the operator where the division is made, being kept in knowledge through the notifier of what is taking place in each part, so as to place the line in full connection whenever necessary. Two minor uses of the notifier are to discover to the operator on which side of his office a break occurs, and to show him

McMicken's Electro Magnetic Telegraph.

when his relay sticks or is fast. The notifier should be in the main or primary circuit on the side of the relay towards the break, that is the same as when the wire was cut in two near the other instruments, and the notifier placed in between the two ends, each of which is made fast in the connecting cups, the ground wire being attached to the main wire between the notifier and relay, thus completing the circuit through the notifier as soon as the break is mended. The operator being thus informed that the line on that side is made whole again, connects the two parts by simply disconnecting his ground wire and thus prevents hours of delay. The notifier performs its functions by the lever striking upwards and downwards corresponding to the movement of the pen lever in the register, thus making it sound whatever is written on the line in which it is placed. The connector or transfer magnet is simply an electro magnet formed with two or more coils of fine insulated wire passing round bars of soft iron. It has a lever supported upon a standard with an armature of iron, and a spring to keep the lever in its place of rest, and to form a connection of the current of electricity. The standard is separated from the other metal parts of the instrument by a platina point set in a screw, to be elevated or depressed to suit the action of the electricity, and on the end of the lever is also a platina point corresponding to the one on the standard. The uses of the connector are to enable communications to be repeated between the main line and any number of side lines or independent circuits at the same instant, thus obviating the necessity of re-writing. The connector is placed in, and operated by the local circuit on account of its greater force (although it may be operated on by the main circuit) in the same manner as the register. The poles of the side lines being separated or connected by the platina points, the wire in such line being connected to the spring, which carries the fluid to the lever. The fluid passing thro' the lever and the platina points, down the metal standard to which the wire is again connected. The connector takes the place of a key, and operates instead of the operator. The key, when the instrument is in use, being closed, and when not, the platina points are kept in contact by a binding screw.

See Drawing No. 231.

GILBERT McMICKEN.



A. D. 1847.—(UPPER CANADA.)—No. 232.

Invention of a new method of propelling Locomotives.

LETTERS PATENT to Sandford A. Fleming, of the Town of Peterborough, district of Colborne, Civil Engineer, for the Invention of "A NEW METHOD OF PROPELLING LOCOMOTIVES."

Montreal, dated 4th June, 1847.

BRIEF DESCRIPTION.

It consists in having the driving wheels of the locomotive placed horizontally, and pressed by springs against the sides of a central rail. The pressure of these springs can be increased or diminished at pleasure, so that the bite of the driving wheels can be increased when necessary, as when starting, or when going up or down steep gradients, and diminished when the train comes to a level. The central rail is raised above the side ones. The supporting wheels have no flanges on their tires, as the guide wheels prevent the locomotive from getting off the rails, and the pressure of the driving wheels, when they are made to revolve, draws the locomotive forward.

See Drawing No. 232.

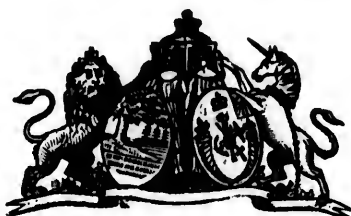
SANDFORD A. FLEMING.

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A. D. 1847.—(UPPER CANADA.)—No. 233.

A new description of Machine for Churning.

LETTERS PATENT to Peter Fraer, of Dundas, Gore District, Machinist, for the Invention of "A NEW DESCRIPTION OF MACHINE FOR CHURNING.

Montreal, dated 26th June, 1847.

BRIEF DESCRIPTION.

The churn is of an elliptical or oval form, and made of wood. In the centre stands an upright shaft turned by a bevel wheel working into a bevel pinion. The upright shaft is held by a cross bar or cross head over the churn and kept in its place by means of a key or wedge on each side, and can be detached at pleasure, thus enabling the butter and milk to be removed, and the churn cleaned. At each end of the churn is fastened an upright piece of wood of triangular shape, against which the milk is thrown with force by means of dashers, or flat boards, attached to opposite sides of the upright shaft in an inclined position and having a hole bored through, and which are put in motion by the bevel wheel and pinion turned by a crank.

See Drawing, No. 233.

PETER FRAER.

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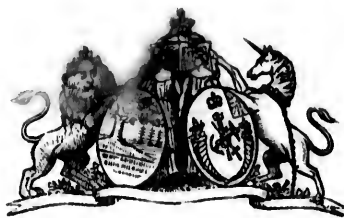
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A. D. 1847.—(UPPER CANADA.)—No. 234.

Improvements in the manner of making, using, and working a lifting and floating Marine Dock.

LETTERS PATENT to Peter R. Beauprè, City of Kingston, Shipwright, for the Invention of "IMPROVEMENTS IN THE MANNER OF MAKING, USING, AND WORKING A LIFTING AND FLOATING MARINE DOCK."

Montreal, dated 19th July, 1847.

BRIEF DESCRIPTION.

In the original dock each section is constructed of two separate sub-sections, consisting of one tank to each sub-section, and connected by bearers. The tanks and bearers are made of wood, with pumps working perpendicularly within the tanks, and having a tank valve at the end of each tank. In the improvements, each section of the tank, being constructed in one, has bearers running lengthwise, and across the deck of the tank. There are also two bulkheads at a distance of one-third from each end of the tank, with one valve in each bulkhead, making a feeder for either side of the tank, which latter is divided by mere wooden partitions. There are horizontal pumps working with greater force than the perpendicular pumps in the original, and with half the labor. The principle of the bulkheads, with the valve in each, is to feed either end of the tank, should one side of the tank happen to rise faster than the other. The valve opens and feeds that side which is highest, and restores the level as the whole dock rises.

See Drawing, No. 234.

PETER R. BEAUPRE.

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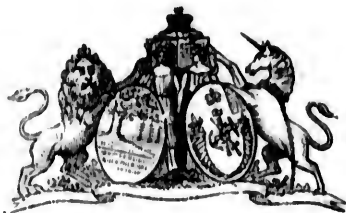
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A. D. 1847.—(UPPER CANADA.)—No. 235.

*A new method or process for rotting of hemp and
flax by artificial means.*

LETTERS PATENT to James McGee, City of Toronto, Flax Merchant, for the Invention of "A NEW METHOD OR PROCESS FOR ROTTING OF HEMP AND FLAX BY ARTIFICIAL MEANS."

Montreal, dated 14th August, 1847.

BRIEF DESCRIPTION.

The straw, having first been properly rippled, that is, having the seed taken off, is placed in a vat made of wood, brick, or stone, and water tight, and is fastened down at the top of the vat so as to prevent the swelling, occasioned by the fermentation, raising it out, cold water is then let run on so as nearly to fill the vat and thoroughly immersing the straw; this being done, steam is turned on into metal pipes at the bottom of the vat, heating the water to a temperature of about ninety degrees, at which it is kept until the process is complete. This temperature, in the course of about fifteen hours, causes fermentation to take place, which, in the course of three days, produces entire decomposition of the glutinous matter connecting the fibre with the straw, and thereby prepares it in a very superior state, (after being dried) for the future process of breaking and scutching. The vats may be constructed of wood, brick, or stone, care being taken to make them thoroughly water tight. The steam pipes run up along one side of the vat, turning with a circular bend, and down the other side, going out at the same end as at entrance, and are placed at such a dis-

McGee's process for Rotting Hemp and Flax.

tance from either side as to divide the heating power equally. The entrance end of the pipe is placed higher than the exit end, so as to allow the condensed steam to run off, and the entrance end has a guage cock to regulate the heat, and the exit end a smaller one to regulate the escape of the condensed steam. Immediately over the steam pipes a false bottom of wood is placed on which to put the flax, so as to keep it from contact with the pipes; this false bottom is to be made in compartments, and perforated to permit the water to rise equally over the flax, and the water is introduced by a down pipe to one lying in the centre of the vat along the bottom and rising through the perforated bottom.

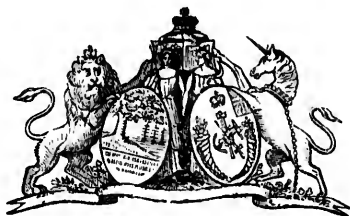
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A. D. 1847.—(UPPER CANADA.)—No. 236.

An improved Churn.

LETTERS PATENT to Melzer Turner Thomas, of the Township of Clinton, in the District of Niagara, Mechanic, for the Invention of "AN IMPROVED CHURN."

Montreal, 14th August, 1847.

BRIEF DESCRIPTION.

It is a box nearly square, worked with a crank by hand passing through a cylinder by which the cream is propelled or agitated. Below the upper chamber, when the cream is received, there is a second one between two zinc plates for the reception of water either hot or cold, as required, introduced by means of a funnel at the side of the churn, by which the cream is either heated or cooled and brought to a proper temperature, which is sixty-two degrees, and ascertained by the insertion, on the side of the churn, of a thermometer coming in contact with the cream. Butter is produced in about fifteen or twenty minutes, the butter-milk passing off by means of a tube at the bottom of the upper chamber, and the water by a tube at the bottom of the lower one.

See Drawing, No. 236.

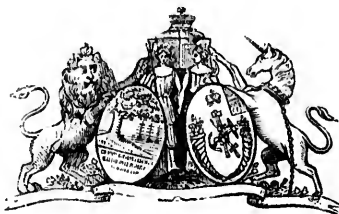
MELZER TURNER THOMAS.

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A. D. 1847.—(UPPER CANADA.)—No. 237.

A new Coiled Spring Tooth Revolving Horse Rake.

LETTERS PATENT to Peleg Bowen, of the Township of Clarke, in the District of Newcastle, Mechanic, for the Invention of "A NEW COILED SPRING TOOTH REVOLVING HORSE RAKE."

Montreal, dated 18th December, 1847.

BRIEF DESCRIPTION.

A round piece of timber forms what is called the head ; two other pieces of wood, of nearly equal length, placed one on each side, parallel to it, about half an inch from the head, from what are called the coil heads, being fastened by the teeth to the head that revolves round with it ; and to permit of their revolving, where they would otherwise be intercepted by the shafts, pieces are cut out of each so as to permit of the shafts passing to the head, the coil heads being thereby each cut in three pieces. The teeth of the rake, a row of which projects from each of the coil heads, are formed by pieces of strong wire of convenient lengths and thickness, one end of each tooth is screwed tightly into the head ; it is then coiled three times round the coil head, and the tooth formed into the shape of a curve, becoming more straight towards the point ; A row of these teeth projects from each coil head on opposite sides of the head ; two pieces of wood, acting as levers, pass through the head parallel to each other and one end of each of them rest upon the extreme points of two latches ; two shafts are placed parallel to each other and at right angles to the head, in the usual form, and of the size of cart and shafts, ending at the head in a

Bowen's Horse Rake.

round socket, within which the head revolves ; by these shafts the rake is drawn ; a piece of wood passes across the shafts at a short distance from the head to which it is parallel, and to which it is also equal in length ; two iron rods connect this cross piece with the head ; these rods end in round sockets in which the head revolves ; two braces pass from the shafts near the extremities where the horse is yoked, to the ends of the cross piece outside the shafts to strengthen the rake, and two handles, similar to plough handles, are fastened on to the shafts near their socket ends. A piece of wood, called the cross handle, passes between the two handles at a convenient distance from their extremities. A wire, called a latch rod, passes through the centre of the cross handle, which is connected with two latches acting as levers and fastened by joints to the shafts at the cross piece on the side towards the head, and having their ends projecting on each side of the shafts opposite to the cross piece. These latches cause the head to revolve by pulling the latch handle, and clear the rake of whatever grain or hay may be in it, and the latches being then allowed to resume their former position, the opposite row of teeth acts upon the ground till the rake again requires cleaning.

PELEG BOWEN.

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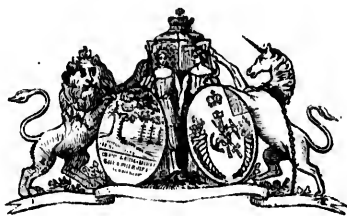
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A. D. 1848.—(LOWER CANADA.)—No. 238.

*New and useful Machine or Smut Mill for cleaning
Grain.*

LETTERS PATENT to Thomas Brown, of Dunham, in the District of
Montreal, Miller, for the Invention of "A NEW AND USEFUL
MACHINE OR SMUT MILL FOR CLEANING GRAIN."

Montreal, dated 2nd March, 1848.

This machine is composed of an upright wooden frame, the upper part of it being arched. From the centre of the bottom sill of the frame rises a cast iron shaft or cylinder, which, at the bottom, turns in a cast steel foot, and at the top in a cast iron box; at the upper extremity of said shaft is a pulley to which the motive power is attached; on and around said shaft, at its centre, and secured in its place by a cast iron collar, revolves a circular running table or head composed of wood banded and covered on both sides with strong sheet iron, and having on its upper surface wrought iron spikes driven into the said table or head cornerwise, and rising above the surface, said table or head having on its upper surface stationary iron sheets, at right angles to the axis, which serve both as wings and beaters. Above said running head is another stationary head lined with sheet iron and having on its lower surface iron spikes. Through a hopper in this stationary head the grain is admitted, and falls upon the running table or head, and, by its revolution, is thrown violently against both sets of heads and spikes, wings and beaters, the dust and smut thus being loosened and separated from the wheat, while fans, which also serve the

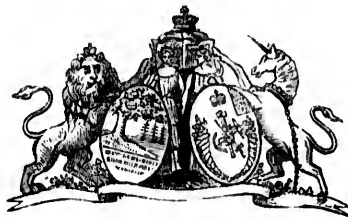
Brown's Smut Mill.

purpose of beaters, attached on the lower side at right angles to the running table or head, together with the said stationary iron sheets, drive the dust and smut from the machine into the smut room, while the wheat, falling over said running head or table, is still driven against the beaters, and also against a curb, or outside cylinder, of iron rods, about half an inch distant from the running table, and fastened perpendicularly at the top into the upper stationary head, and at the bottom into another stationary head or table parallel to the lower sill, and so placed as to prevent the wheat escaping, but allowing the free passage for dust and smut. The wheat falls into a box in which is an additional fan, or blower, driven by the upright shaft, and which serves to free the wheat from any large chaff which might have been left. To the upper stationary table or head there is attached a circular wire curb which rises to the upper frame, and to the under stationary table or head is attached a similar wire curb extending up to the running table or head, and thus full and free ventilation is admitted into the machine from the top and bottom, and the wheat prevented from escaping, while the smut and dust is driven, by the centrifugal force of the running table, out through the outside cylinder into the dust room.

THOMAS BROWN.

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A. D. 1848.—(UPPER CANADA.)—No. 239.

✓ Improved Machine for Manufacturing Bricks.

LETTERS PATENT to John Butter, of the City of Toronto, Brick Manufacturer, for the Invention of "AN IMPROVED MACHINE FOR MANUFACTURING BRICKS."

Montreal, dated 2nd May, 1848.

BRIEF DESCRIPTION.

A box or plug mill is constructed, in which, at a sufficient distance from the top, a bottom is inserted, and below this bottom weys are placed to sustain a carriage, and on the inside of the carriage are two frames, each containing rollers, to permit the moulds to slide in and out; these frames contain the rollers, and are supported in their proper places by rods and canes, and attached to the rods, that have the canes on, are levers to elevate or depress the same. In the centre of the box or mill a shaft is inserted, extended below the bottom, and upon the shaft, above the bottom, a wing is placed to fill the moulds, and above the wing on the shaft are placed knives or shanks, each forming a segment of a circle; the shaft whereon the knives are placed is of an octagon shape, and with the knives forms an unconnected double screw, and acting with the wing gives the required pressure. In the bottom are apertures with guards or false moulds, five on each side of the shaft, under which the real moulds are forced or propelled by means of a cleat attached to each side of the carriage. The carriage is propelled by a crank attached to the bottom of the shaft by a chain, and the slack of the chain causes the carriage to remain stationary sufficient time to put on the moulds.

Butter's Brick Machine.

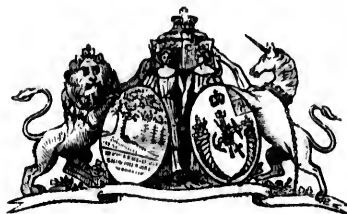
The apertures or false moulds are perpendicular on one side, and on the other side at an angle of about forty-five degrees, said angle causes the clay to get more easily into the moulds, and the perpendicular is to prevent the clay escaping until the moulds are filled. The carriage is made by two pieces of oak lying parallel with the ways, and connected with a cross piece at each end where the chain is attached. The moulds are made the usual shape, but the bottom is separate, and between the bottom and the moulds pallets are placed for each brick. In each pallet there is an aperture to admit a stock which answers two purposes, one to indent the brick, and the other to keep the pallets in their places. The stocks are fastened to the bottom at equal distances to keep the pallets directly under each brick. When the moulds come out filled they are raised up and leave the bricks on the pallets. The five are lifted at once upon the wheelbarrow ready to be taken to the hack. The bottom has a cleat on the same side as the stocks, fastened at each end to prevent the mould moving from the bottom but by being raised perpendicular from it.

See Drawing, No. 237.

JOHN BUTTER.

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A. D. 1848.—(UPPER CANADA.)—No. 240.

Ditching Machine.

LETTERS PATENT to William Partridge, of the Town of Windsor,
in the Western District, Farmer, for the Invention of a "DITCH-
ING MACHINE."

Montreal, dated 22nd April, 1848.

BRIEF DESCRIPTION.

At the forward end of a solid beam of wood, having handles affixed to the other end, a tongue is attached to an axle-tree to assist in giving the machine its proper motion; on the end of the beam is also a clavis, to which the moving power is applied. The wheels may be made of wood with a broad tire, or wholly constructed of iron, and may be raised and lowered, according to the depth of ditch required, by means of a screw passing through the axle-tree and turning a lever. The axle-tree may be straight or cranked. Cross beams are bolted to the beam through the centre, and at each end also receive a screw bolt from iron supports of two outside cutters. A centre cutter, connected with a share, is bolted through the main beam and end cross beam nearest the wheels. The cutters are of iron; the share is also made of iron, of a pointed shape, and has iron shelvings, by means of which the earth is thrown up on each side of the ditch. The machine has a bottom piece made of wood, the under side of which is to be of the width required for the ditch, and is connected with the main beam by posts, and they are bolted together. The supports for the shelvings are of iron fastened to the bottom piece and shelvings by bolts. Cross

Partridge's Ditching Machine.

bars of iron are also bolted at the top of the shelvings and main beam. The main beam and bottom piece are also held together by iron supports bolted through each. The machine is set in motion by a windlass placed at a convenient distance a head-to which it is attached by a chain or cable, and turned with a lever by horse or other power.

See Drawing, No. 240.

WILLIAM PARTRIDGE.

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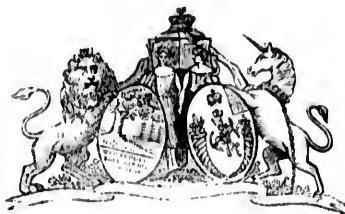
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A. D. 1848.--(UPPER CANADA.)—No. 241.

Improvement or addition to a Stump-Extracting Machine.

LETTERS PATENT to John McMichael, Township of Dumfries, Gore District, Yeoman, for the Invention of "AN IMPROVEMENT OR ADDITION TO A STUMP-EXTRACTING MACHINE."

Montreal, dated 26th May, 1848.

BRIEF DESCRIPTION.

At the extremity of the lever there is a handle, six feet long, with a crook at one end, with pins fixed in it for the convenience of lifting up and drawing down the lever.

There can be a windlass placed in a position convenient for the purpose of assisting in working the lever; it is made of plank fixed in a piece of timber about eight by four. The sides, which contain the top pulley are made to incline towards the machine, in order to suit the sweep the lever will make; in moving up and down, the rope passes through a pulley at top and one in the bottom piece, and round the windlass, and, by being reversed, will lift the lever up and down. This windlass will be required only in extreme cases; it can be worked by a boy, by means of the handles, which are intended to be moved from one mortise to the other, as the windlass moves round.

See Drawing, No. 241.

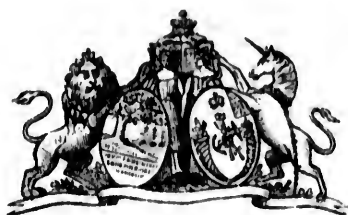
JOHN McMICHAEL.

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A. D. 1848.—(UPPER CANADA.)--No. 242.

*Certain improvements in the construction of Mills
for the Manufacture of Lumber with Circular
Saws.*

LETTERS PATENT to John Helm, of the Town of Cobourg, Iron
Founder, for the Invention of "CERTAIN IMPROVEMENTS IN THE
CONSTRUCTION OF MILLS FOR THE MANUFACTURE OF LUMBER
WITH CIRCULAR SAWS."

Montreal, dated 28th June, 1848.

BRIEF DESCRIPTION.

Firstly, the improvement, in *altering and regulating the feed*, is effected by means of a winch, pinion, and rake, to which is attached a slide with guides or grooves to move the belt to and fro on a pair of cones or granating pullies, which pullies drive the shaft upon which is the rack under the carriage by means of a pair of cast iron cog wheels, which pinions propel the carriage. Secondly, the improvement, in *dogging the log or fastening it upon the blocks of the carriage*, consists of two moveable upright cast iron standards, in the upright part of which is a dog sliding horizontally and fastened with a clamp screw; the said standard being perpendicular and at right angles with the blocks, and moving in a groove in said block and underneath the upright part receiving a screw to move it. Thirdly, the improvement, in *setting the Log or of gauging the width or thickness of the lumber manufactured*, consists, and is effected by means of an iron rod, near

Helm's Mills for the Manufacture of Lumber with Circular Saws.

each end of which is a level or mitre wheel corresponding and working into another on the screw that moves the upright standard, which rod runs lengthwise of the carriage and is worked by means of a crank or hand wheel, and one of the before mentioned bevel or mitre wheels is loose from the rod when the pinching screws are detached, and moveable at pleasure enabling the block to be moved to answer for various lengths of logs.

See Drawing, No. 242.

JOHN HELM.

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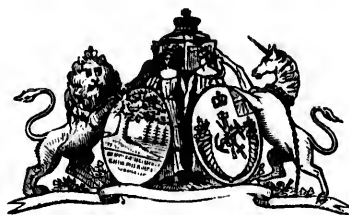
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A. D. 1848.—(UPPER CANADA.)—No. 243.

*An Economical power or Hydraulic Force Pump
Machine, for raising Buildings, Stumps, &c.*

LETTERS PATENT to Angus McQueen, of the Township of Trafalgar,
District of Gore, Yeoman, for the Invention of "AN ECONOMICAL
POWER OR HYDRAULIC FORCE PUMP MACHINE, FOR RAISING
BUILDINGS, STUMPS, &c.

Montreal, dated 24th June, 1848.

BRIEF DESCRIPTION.

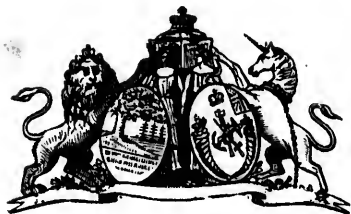
This machine is composed of a reservoir to contain water, and to be made of wood, in which is placed a cylinder of wood banded with iron, or made wholly of cast iron, and containing a piston of equal size with the inside of the cylinder, also made of solid wood. In the reservoir is a force pump drawing water from it and forcing it into the lower part of the cylinder under the piston. At the lower part of the cylinder, on the opposite side from the force pump, there is a stop cock, to let the water off when the piston lowers, thus the water is forced under the piston which is thereby raised, by which means the power is gained for the purposes intended.

See Drawing, No. 243.

ANGUS McQUEEN.

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A. D. 1848.—(UPPER CANADA.)—No. 244.

*The true Philosophical principles upon which
Buildings may be Ventilated; and also of
Machinery by which the Ventilating air may be
warmed.*

LETTERS PATENT to Henry Ruttan, of Cobourg, Esq., for the
Invention of "THE TRUE PHILOSOPHICAL PRINCIPLES UPON WHICH
BUILDINGS MAY BE VENTILATED; AND ALSO OF MACHINERY BY
WHICH THE VENTILATING AIR MAY BE WARMED.

Montreal, dated 23rd June, 1848.

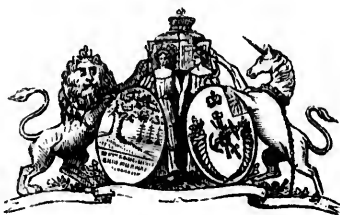
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A. D. 1848.—(LOWER CANADA.)—No. 245.

A plan for facilitating the turning of Four-Wheeled Carriages in a short space.

LETTERS PATENT to Edward Thomas Jones, of Carrillon, District of Montreal, Esq., for the Invention of "A PLAN FOR FACILITATING THE TURNING OF FOUR-WHEELED CARRIAGES IN A SHORT SPACE.

Montreal, dated 23rd June, 1848.

BRIEF DESCRIPTION.

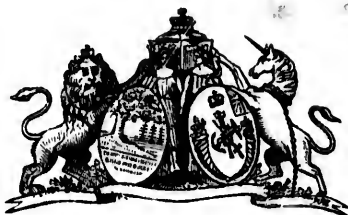
The back axle is made to turn on the centre, exactly like the front one, with a bearing circle, to steady the carriage, beneath the spring bar and reach, as usual on the front axle, but a little longer. And on the ordinary freight waggon sections of a large circle placed under the spring bar or body, with merely friction plates of iron on the axle will suffice. There are then two guides or rods placed between the axles, one end of each being fastened by a joint in the opposite sides of the centre of each axle, crossing each other in the middle, and thereby causing an inverse action of the back to the front axle; that is, as the front wheels turn to the right, so will the back wheels turn to the left, and vice versâ. And in order that it may so operate correctly, as intended by the plan, it is necessary to fasten the guides, they being precisely of the same length, by a joint or hinge, exactly at equal distances from the centre of each axle, otherwise the front and back wheels would not turn alike nor run in the same track, and the wheels should be all the same size, in order that they may turn equally far with out striking the body of the carriage.

See Drawing, 245.

EDWARD THOMAS JONES.

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A. D. 1848.—(UPPER CANADA.)—No. 246.

An improved method of Manufacturing Glue.

LETTERS PATENT to Peter R. Lamb, of the City of Toronto, Glue Manufacturer, for the Invention of "AN IMPROVED METHOD OF MANUFACTURING GLUE.

Montreal, dated 26th June, 1848.

BRIEF DESCRIPTION.

A cast iron boiler is placed directly over the furnace, within the boiler a tin or copper vessel is placed, separated from the boiler by a space of two or three inches round, and supported below by legs or props resting on the bottom of the boiler. Within the steamer, and running from its surface downwards, is a tube open at top and pierced with holes, this tube passes through the steamer and boiler, and conducts the glue after it is formed and until it is finally passed off. The principle of the improvement is to obtain the immediate action of steam instead of fire on the raw material. The steam may be introduced into the space between the boiler and steamer from a vessel outside of the boiler, and the Inventors method is to fill this space partially with water, and by closing the top of the boiler and steamer and applying the fire to the boiler, thus to generate the steam.

PETER R. LAMB.

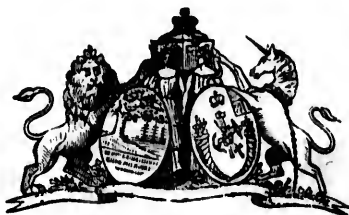
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A. D. 1848.—(UPPER CANADA.)—No. 247.

Improved Air-tight Box Stove.

LETTERS PATENT to Reuben P. Colton, of the Town of Brockville,
Founder, for the Invention of "AN IMPROVED AIR-TIGHT BOX
STOVE."

Montreal, dated 1st August, 1848.

BRIEF DESCRIPTION.

The bottom of the stove extends beyond the front sufficiently to prevent the possibility of coals falling on the floor or carpet, and contains in itself a sunk hearth and an ornamental edge. The sides of the stove are formed by half columns and circular sunk recesses both fluted and supporting a tablet charged with the national symbols, the rose, thistle and shamrock.

The back of the stove is similar. The front has a fuel and air door with raised and ornamental carved panels. The top of the stove consists of an enriched edge of Grecian border pattern and a frame, the centre part being raised about one inch and a half on a large oval enriched moulding running round. By the undulating line of the sides, ends and top, three-fourths more surface is heated than in other shapes, and accordingly three-fourths more heat given out than by any other form of stove now in use.

See Drawing, No. 247.

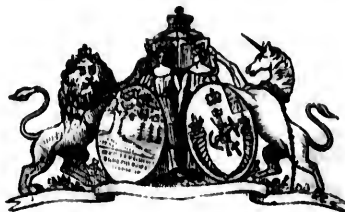
REUBEN P. COLTON.

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A. D. 1848.—(UPPER CANADA.)—No. 248.

Improvement on "Buck and Hathaway's Patent Cook Stove," called "the Canadian Hot Air Stove."

LETTERS PATENT to Reuben P. Colton, of the Town of Brockville, Founder, for an Improvement on "BUCK AND HATHAWAY'S PATENT COOK STOVE," CALLED "THE CANADIAN HOT AIR STOVE."

Montreal, dated 1st August, 1848.

BRIEF DESCRIPTION.

The ash-pit is so enlarged that the stove will take wood longer and wider than Buck and Hathaway's. In front of the ash pit are placed two double doors, the inside doors next the fire have a grate so that on opening the two outer doors the fire is brought to view. The oven of the improved stove is heated in the same manner as that of Buck and Hathaway's, that is, the heat is carried round in it the same way, but the flues are enlarged under it so as to give more draft, the top of the oven is also raised much higher and an open grate division is added through the upper part of it, thus forming two ovens with a free circulation of hot air from one to the other. The general appearance of the stove is also improved by Gothic carving on the oven doors, by a Gothic panel on each end of the front plate and on each side of the front doors; also on the door at the end of the ash-pit, commonly called "the fire door," is a plain panel with a carved ornament in the centre. At the opposite end of the ash-pit there is a

Colton's improved Cooking Stove.

similar panel, and under the ash-pit, on each side of the stove, and next to the oven doors, is also placed a panel with carved ornaments. On the upper oven door are two small panels with carved ornaments, and on the opposite side of the stove are two panels, precisely similar to correspond. The bottom part of the stove is also surrounded by a carved border of husk and check work. There are also similar borders round the stove hearth and across the hearth.

See Drawing, No. 248.

REUBEN P. COLTON.

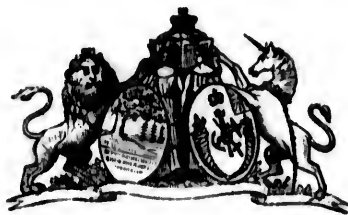
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A. D. 1848.—(LOWER CANADA.)—No. 249.

*New process for Tempering and Hardening the teeth
of saws used for Milling and other purposes.*

LETTERS PATENT to Nathan Wharton, of the Town of Johnstown,
in the District of Johnstown, Millwright, for the Invention of
“A NEW PROCESS FOR TEMPERING AND HARDENING THE TEETH
OF SAWS USED FOR MILLING AND OTHER PURPOSES.”

Montreal, dated 1st August, 1848.

BRIEF DESCRIPTION.

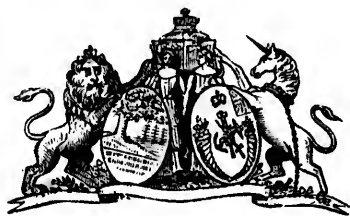
A sheet iron box, seven feet in length, twelve inches in depth, and six inches in width, to contain charcoal, is made with an opening at the bottom to contain air. A plate, or shelf of iron, seven inches wide, projects horizontally from the box whereupon to lay the saw, having an opening to admit the teeth to be heated. On the top of the iron box is a range of funnels, or chimnies, having an air valve, or damper, in each to regulate the heat; there is also a water trough the length of the saw, having an iron bolt across within both ends, to be filled with water, oil, or other fluid, to the proper height required to temper the points of the teeth, but not to harden those parts to be bent by the saw set. After hardening the points the temper will require to be drawn or brought out by the application of a hot iron bar, or ignited oil, together with a wet sponge until they will admit the action of a file.

See Drawing, No. 249.

NATHAN WHARTON.

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A. D. 1848.—(UPPER CANADA.)—No. 250.

Hydro-Pneumatic Water Wheel.

LETTERS PATENT to Walter Perkins Newman, of the Village of Elora, in the Wellington District, Gentleman, for the Invention of "A HYDRO-PNEUMATIC WATER WHEEL."

Montreal, dated 5th September, 1848.

BRIEF DESCRIPTION.

This machine differs from all others hitherto used for water power, in the circumstance, that the prime mover is the pressure of the atmosphere, which, at the level of the sea, is equal to fourteen pounds and seven-tenths of a pound on the square inch; the gravity of the water is not taken into account except as removing the resistance to that pressure. If a tube be filled with water, and closed at the upper extremity while the lower remains open, the column of water in such tube will be sustained by the pressure of the atmosphere against the open mouth, unless the vertical height of the column of water exceeds thirty-three or thirty-four feet, for a column of water of that height is exactly of the same weight as a column of air of the same area of base whose height is that of the atmosphere, and any addition to the height of the column of water, or any pressure exerted on such column at the upper extremity, destroys the equilibrium between it and the column of air which supports it, and the water is discharged at the mouth of the tube until the equilibrium is regained, or the pressure removed. The tube A ascends vertically from a point at or below D, where it is represented as broken off; the water in this tube may be

Newman's Hydro-Pneumatic Water Wheel.

considered to represent the above mentioned column of water and may, for the purpose of illustration, be supposed to equal thirty-four feet in height, in which case, if we suppose the air and water excluded from B and C C, there will be a vacuum in those parts of the tube, because the power of the atmospheric pressure will not raise, or sustain, a column of water of greater height than thirty-four feet. Now, if we suppose the portion of the tube marked C C to communicate with a reservoir at or beyond the point G, where it is represented as broken off, the atmosphere will press on the surface of the water in the reservoir with precisely the same force with which it presses on the mouth of the vertical tube A, namely, fourteen pounds and seven-tenths of a pound to the square inch. The water of the reservoir will be accordingly forced into the tube C C, and meeting, in the case supposed, no resistance will proceed onwards to B, which is a continuation of the same tube, but in the form of a cylinder with the wheel or drum E revolving in it on the shaft F, and striking on the floats H, would carry round with it the drum E, and reaching the column of water in A, would force it out at the mouth of that tube, and if the communication with the reservoir were then cut off, would occupy the place of that water, leaving a vacuum in B B and C C, as before. The available power of the water entering at G is therefore due to the vertical height of the column of water in A A, for if the height of that column instead of thirty-four feet were only sixteen feet, the water at the line M being supported at D by a force which would be capable of raising it sixteen feet higher, would offer a proportionate resistance to the pressure of the incoming water, which resistance would be equal to one-half of that pressure, or rather more than seven pounds per square inch. The floats marked H are made to move freely on a hinge in such a manner that they open with the current of water until they are vertical to the centre of the drum, but are restrained from folding back; when, by the revolution of the drum, they arrive at the point I, they close until that point is passed, when they are thrown open by the centrifugal force aided by the current, and are again acted on, as before, causing an uninterrupted rotary motion of the drum on its axle. The whole of the machine is air tight, and the shaft, or axle at K works in an air tight box or journal J, and is connected with the machinery to be propelled in the usual manner. The area of the tube

Newman's Hydro-Pneumatic Water Wheel.

C should be equal to that of the floats H, and sufficient space should be left between the circumference of the drum and that of the cylinder B to allow the floats to move, when open, without touching. The area of the upper extremity of A should also equal the area of the floats, but this tube may gradually diminish to the orifice, but this is not essential to the working of the machine. It may be variously modified to suit different situations and circumstances, it may be horizontal instead of vertical, or may be made to receive the water at the upper part, or abreast, instead of at the lower part.

See Drawing, No. 250.

WALTER PERKINS NEWMAN.

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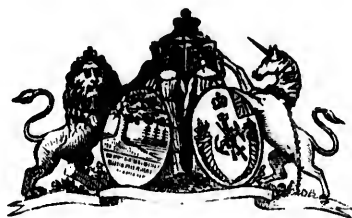
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A. D. 1848.—(UPPER CANADA.)—No. 251.

*Improved method of constructing Horse powers to
be applied to Threshing machines and other
description of machinery.*

LETTERS PATENT to James Stewart, of the City of Hamilton,
Machinist, for the invention of "AN IMPROVED METHOD OF CON-
STRUCTING HORSE POWERS TO BE APPLIED TO THRESHING MA-
CHINES AND OTHER DESCRIPTION OF MACHINERY.

Montreal, dated 14th October, 1848.

BRIEF DESCRIPTION.

The first, or main spring, is an internal spur wheel; on a projecting flange are bolted boxes to receive the levers, also the arms, which are made of oak or ash, on the under side of which is a female centre, and on the top a centre calculated to receive the ends of levers, the two centres and arms are bolted together, on the flange of which is a piece cast to keep the arms clear of the pinions, and between said pieces and the female centre are fitted, and fastened with wood screws, four pieces of wrought iron, to prevent the centre from shifting. There are two pinions that work into the first wheel, being the same pitch they are each keyed on to a wrought iron shaft, and on each shaft there is likewise keyed a spur wheel, which wheels are strengthened by a flange on the rim and arms, these two wheels, being keyed at the same level on the shafts, communicate the motion to an intermediate pinion that is keyed on a shaft of wrought iron, on which is also fastened, or keyed, a bevel wheel that drives a pinion fastened

Stewart's improved Horse-power.

on a wrought iron shaft, on the extremity of which is a coupling to form a connexion with what may be required to be driven. The advantages to be derived from the present arrangements of wheels are, that the friction is divided and offers less resistance to the moving power to accomplish the effect desired; the machine will be more durable for the same reason; and the wood work will stand in the original position, as the strain is equable and has no tendency to force the framing in one particular direction, as has been the case with former powers; the speed necessary to drive a Threshing cylinder is got up within the Horse power, thereby dispensing with detached gearing. This patent is intended to embrace the part where two spur wheels drive one pinion.

See Drawing, No. 251.

JAMES STEWART.

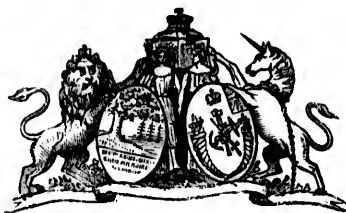
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A. D. 1848.—(UPPER CANADA.)—No. 252.

*A new and useful Machine called the Æraform, or
Atmospheric Churn.*

LETTERS PATENT to Walter Holt Wells, City of Toronto,
Machinist, for the invention of "A NEW AND USEFUL MACHINE,
CALLED THE ÆRAFORM, OR ATMOSPHERIC CHURN."

Montreal, dated 17th November, 1848.

BRIEF DESCRIPTION.

There is a wooden or metallic reservoir to contain the milk or cream intended to be churned, having in it a hollow metallic cylinder turning on a pivot in the bottom. There are two open pipes or orifices attached to, and communicating with, the interior of the cylinder, both at the top and bottom. Attached to the spindle of the cylinder is a pinion wheel, in which plays a cog wheel, moved by a crank, by which a rotary motion is communicated to the the cylinder; by this motion a current of air is created through the cylinder into the reservoir, entering at the top pipes or orifices and escaping through those at the bottom. The churn can also be made with three pipes or orifices.

See Drawing, No. 252.

WALTER HOLT WELLS.

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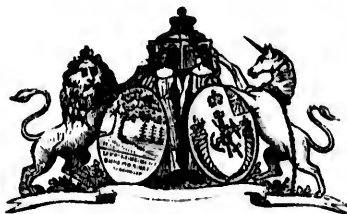
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A. D. 1849.—(LOWER CANADA.)—No. 253.

A new and useful Paddle Wheel for steam and horse-boats, and for propelling vessels.

LETTERS PATENT to Charles Midgley, City of Montreal, Machinist,
for the invention of "A NEW AND USEFUL PADDLE WHEEL FOR
STEAM AND HORSE BOATS, AND FOR PROPELLING VESSELS.

Montreal, dated 27th January, 1849.

BRIEF DESCRIPTION.

It consists in a new form and arrangement of the paddles or buckets, upon the wheel, in such manner as to relieve the wheel, in its revolutions, from the loss of power in the right direction, occasioned by the lifting of the water by the Bucket after it passes the point perpendicular to the surface of the water, which, by the usual method tends to depress the vessel into the water, loads the wheels, and so far exerts a force in the downward direction instead of the forward and upward. The wheel, in all respect, except the buckets and their arrangement, may be constructed upon the plan, and in the proportions usually employed in vessels, as now used, which are propelled by means of paddle wheels; the buckets are also of the same width, proportionably, in the direction of the diameter of the wheel with those now in use, or they may be a little wider or narrower, and the arms of the wheels should be at their extremities, about the same distance so as to leave the buckets about as far apart as those in ordinary use. For a wheel, which on the usual plan, is constructed for one set only of paddles, which of course requires but two sets of arms to support the

Midgley's Paddle Wheel.

buckets at each end, the newly invented wheel requires four sets of arms to be adjusted in flanges upon the shaft in the ordinary way, except that each of the four sets of arms should be placed so as to radiate from the axis in the same direction; that is, if there be twenty arms in each set, they should be equi-distant from each other, and the arms of each set should radiate from the axis in the same direction, so that in revolving one arm of each set should strike the surface of the water at the same time, and not one follow the other in order of time. The buckets should not be placed on the two corresponding arms of the wheel so as to strike the water in their whole length at the same time: the end of the bucket which is fastened to the outer or outside arm of the wheel should first strike the water, and the other, or inner end of the bucket, should be carried back and fastened on to that arm of the next inner set of arms which would, in revolving, next strike the water, so that the bucket will, along its edge on the periphery, strike the water in succession, beginning with its outer end and so proceeding to its inner end—which, it will be seen, will cause the bucket to press or gather the water towards the centre set of arms.—There should be another set of buckets, on the other two sets of arms, adjusted in the same manner, so that the faces of the two sets of buckets which strike the water look inwards and towards each other, so that, in revolving, the water is gathered by both sets inwards to the centre set of arms. The centre sets of arms, which support respectively the inner ends of both sets of buckets, and also the inner end of both sets of buckets, should be a few inches apart, proportioned to the length of bucket on the wheel, and its power and diameter, so as to allow the water to pass through, instead of being lifted up, as the bucket ascends from the water, this space may be about one-tenth part of the distance across from the outer end of one bucket to the outer end of the corresponding bucket, on the opposite set of arms, but may be enlarged or diminished as is found necessary, though that proportion is believed to be nearly correct. The buckets should be made of iron, or any other material of the requisite strength, but are not straight, being curved so as to strike the concave surface first on the water, so that that end of the bucket which first strikes the water enters it nearly in the direction of the plane of its longitude, at that end, or near it, and is thence curved round so that as the water strikes the inner end of

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Midgley's Paddle Wheel.

the bucket, it does so at nearly a right angle to the face of the bucket—thus each bucket constitutes nearly the segment of a circle or parabola. The edges of the buckets furthest from the axis, should also curve in a line corresponding with the line of the periphery, if measured in the direction of the bucket, and the buckets, and each bucket should be of uniform width. The buckets should be so curved or twisted, that a line in the direction of the radius of the wheels would, at every point of the concave side of the bucket, if moved along perpendicularly to the axis, be in a line with the concave side of the bucket. It is obvious that the degree of curvature of the bucket may be increased or diminished, but the curve which is believed to answer the purpose is such, that each pair of buckets which work together should, including the space left for escape of water, form about two-fifths of a circle, or what appears to be a circle, or nearly so to the eye of the observer, the curve not being, as before stated, a perfect circle, or a segment of one, but an irregular curve, the buckets curving less near the outer end than in the middle so as to require them to be fastened nearly flat on the inside surface of the outer arms, while at the other end, where the water leaves them and flows through the space above mentioned, the curve has not reached the direction requisite to enable them to be fastened upon the front side of the arm, but strikes the same at a small angle, giving the pair of buckets the appearance of having such a curve as would if continued across said space, be uniform at that point, or, in other words, meet each other perpendicularly. The advantages of this wheel, among other things, are the avoiding of the lift in the ascension of the bucket, above spoken of; the buckets enter the water gradually and at slight angles, thus avoiding the splashing of the water into spray and leaving it in a compact position for the bucket to act upon; the effect of the curve is to gather the water inwards without disturbing that outside of the wheel, keeping it as compact as possible, which more than overcomes the loss occasioned by the space for its escape, which space also assists in preserving it from splashing and breaking, besides relieving the vessel from the usual heavy swell which attends the ordinary wheel, and saves, as is believed, one-fourth part of the power; besides a heavy sea, as it cannot strike perpendicularly on the buckets, except on a small surface, affects the wheel but little, while the space and curve

Midgley's Paddle Wheel.

prevent a foundering of the wheels. It is obvious that where the vessel is of the size to require it another wheel or set of buckets can be added to the same shaft.

See Drawing, No. 253.

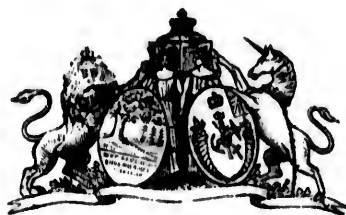
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A. D. 1849.—(UPPER CANADA.)—No. 254.

A new and useful Air Distributor, or Grate, for the purpose of burning saw-dust, tan, peat, turf, coal, or any other fine fuel, in stoves or any other chambers of combustion.

LETTERS PATENT to Ananias Smith, of Simeoe, Talbot District, Machinist, for the Invention of "A NEW AND USEFUL AIR DISTRIBUTOR, OR GRATE, FOR THE PURPOSE OF BURNING SAW-DUST, TAN, PEAT, TURF, COAL, OR ANY OTHER FINE FUEL, IN STOVES OR ANY OTHER CHAMBERS OF COMBUSTION."

Montreal, dated 30th January, 1849.

BRIEF DESCRIPTION.

A cast-iron plate is substituted in the place of a common grate, and perforated with holes. On the said plate, and at suitable distances apart, and along one edge, are raised upright tubes or flues, with a hollow which holds nearly its full size in diameter, until it comes near the top, and then contracts to a small aperture before it comes out at the top. The sides of the said tubes are perforated with holes all round, and at suitable distances apart, along the middle of the said plate, are raised another row of tubes or flues perforated with holes, and of the same shape as the side ones, but shorter; all the holes in the said plate and tubes to be smaller on the outside or burning surface. In a large grate it is intended that the edges should lie against each other, and the tubes be so arranged that they will stand,

in relation to each other, half way between—also, the rows of short tubes to stand in the same manner. The stoves, plates and tubes, may be both plain and fluted, and of various shapes and sizes, or dirk bars may be used for the flues.

See Drawing, No. 254.

ANANIAS SMITH.

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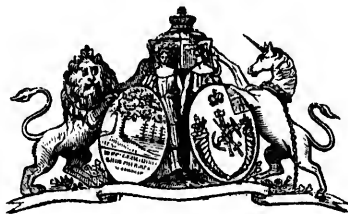
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A. D. 1849.—(UPPER CANADA.)—No. 256.*

*Improvements in the arrangement and construction
of the Steam Engine.*

LETTERS PATENT to John Baird, City of Toronto, Engineer, for
the Invention of "IMPROVEMENTS IN THE ARRANGEMENT AND
CONSTRUCTION OF THE STEAM ENGINE."

Montreal, dated 5th May, 1849.

BRIEF DESCRIPTION.

Firstly, they consist in the placing an intermediate shaft over the cylinder, where one cylinder is used, and between the cylinders where two are used, thereby allowing the cranks to revolve alongside of the cylinder or cylinders; and in the use of two piston rods to allow of an intermediate shaft being placed as above described. The shaft has a crank, each end of which is attached to the cranks on the paddle shafts, and which moves along with them and causes the paddle shafts to move together uniformly in the same direction.

Secondly, in a method of using return rods from the cross heads over the cylinder to cross bars alongside of the cylinders to which the connecting rods are attached.

See Drawing, No. 256.

JOHN BAIRD.

* No. 256 is an English Patent, registered in Canada.

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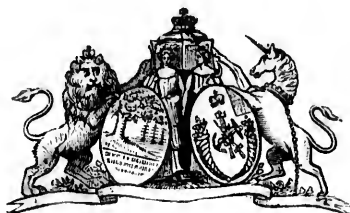
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A. D. 1849.—(LOWER CANADA.)—No. 257.

*An improvement in the manufacture of Thrashing
and Winnowing Machines.*

LETTERS PATENT to Elias James Severance, of the City of Montreal, Machinist, for the Invention of "AN IMPROVEMENT IN THE MANUFACTURE OF THRASHING AND WINNOWER MACHINES."

Montreal, dated 5th May, 1849.

BRIEF DESCRIPTION.

The machine is worked by two horses standing on an inclined plane, or revolving floor, on endless chains, supported on rollers and connected with the fly-wheel, from which the connecting power is attached to the threshing and cleansing apparatus by a common leather belt. The enclosure for the horses, with machinery below, is easily attached to or detached from the threshing machine, and the power can be applied to any purpose. The whole of the machinery is connected and propelled by bolting straps, not complicated, and not subjected to damage or breakage beyond the ability of the most inexperienced artizan to repair. The sheaves of grain are put in at the feeder and pass through the threshing apparatus; and the straw is discharged on the opposite side. From the receiver for the grain and chaff they are conveyed, by means of elevators, to the fanning or winnowing machine, by which the grain is thoroughly cleansed and the chaff separated in an opposite direction, and the grain falls into a box in a fit state for the flouring mill.

See Drawing, No. 257.

ELIAS JAMES SEVERANCE.

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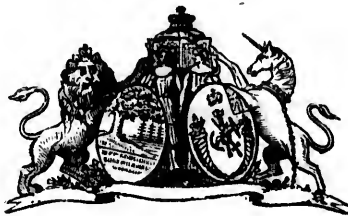
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A. D. 1849.—(LOWER CANADA.)—No. 258.

Improved method of raising and lowering weights.

LETTERS PATENT to Charles Maitland Tate, of the City of Montreal, for the Invention of "AN IMPROVED METHOD OF RAISING AND LOWERING WEIGHTS."

Montreal, dated 11th May, 1849.

BRIEF DESCRIPTION.

If a body be suspended at the one end of a lever, or arm, which moves open upon its axis at the other end, and the motion or momentum which this body acquires in describing the arc formed by its descent with the arm, from the vertical to the horizontal position, be transmitted, by means of pulleys, drums, wheels, or levers, to a body of similar weight, that body will be raised to such height as will be proportionate to the space passed through by the descending weight, less the friction of the medium used in transmitting the motion from one body to the other, and the momentum necessary to be acquired by the one to overcome the inertia of the other. The method of applying or using this principle is, in practice, as follows :—a load of barrels having been raised by manual or other labor, and placed in a swing, the machine is prepared to receive a corresponding load on a rising platform or frame. The carter having delivered his load, signifies to the operator, by means of a bell or in any other convenient manner, that he has done so; the operator then withdraws a small catch, which holds the swing in its place, and permits it to hang free; he then relieves the weight or a friction strap, and the load on the

Tate's method of raising and lowering weights.

swing begins to descend, carrying out with it the arms from which it hangs. The swing, when held in its position, having its centre of gravity in advance of the axis of the arms, is consequently at the end of a lever whose length equals the distance between its centre and the centre of the axis of the arms. A curved lever has its shortest end at this moment engaged by the lifting end of the platform, and this short end, (the descending load connected with it, by the means described above,) causes it to rise. The swing in descending describes an arc of a circle, and, as it leaves its original position, increases its leverage; the curved lever also, as it revolves upon its axis, increases gradually the length of its arms which equalizes the motion of the descent, and enables the person about to apply this principle, to obtain such height of lift as he may require by adjusting the parts one to the other. When the swing has descended with its load as far as the arms will allow, the platform is in its upper position, and is held there by means of four small catches, a small flap falls down, and the barrels roll forward towards the swing. Should it be requisite to allow the barrels to descend still lower, the operator relieves a weight on a clip or lever, and the barrels in the swing, outweighing the counterpoise, cause the swing to descend as far as is requisite, when it is unloaded by withdrawing the pins which hold the top and rolling out the barrels. The operator, being notified, again relieves the weight on the clip and the counterpoise causes the swing to ascend to its original position; the ascending platform is unloaded; the catches which held it are withdrawn by pressing on a pedal; the friction strap is relieved of its weight, and the arms with the swing, are raised up to their original position by a balance weight which is attached to their lower end; at the same time the platform descends, the small catch again secures the swing, the top is raised, the barrels roll in whilst another load is delivered into the rising platform below, when the whole operation is again gone through and another load deposited in the hold of the ship or vessel, as the case may be.

CHARLES MAITLAND TATE.

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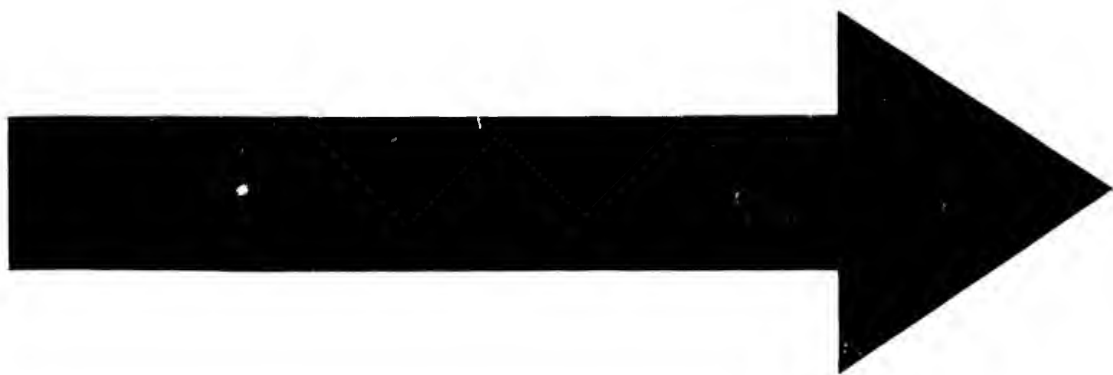
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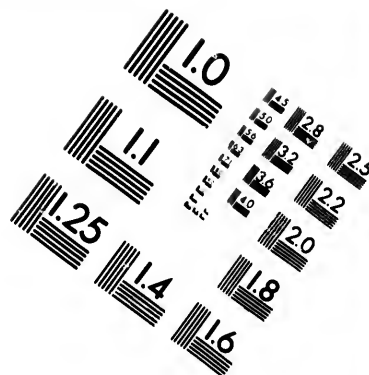
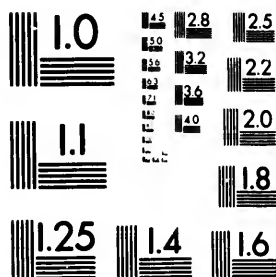
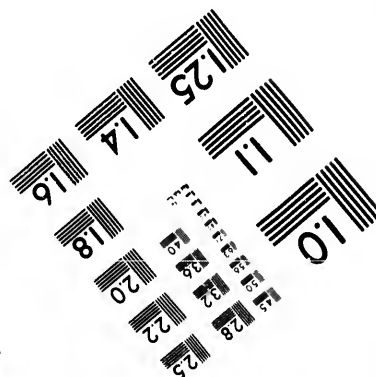
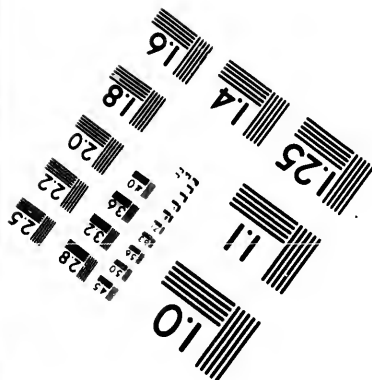


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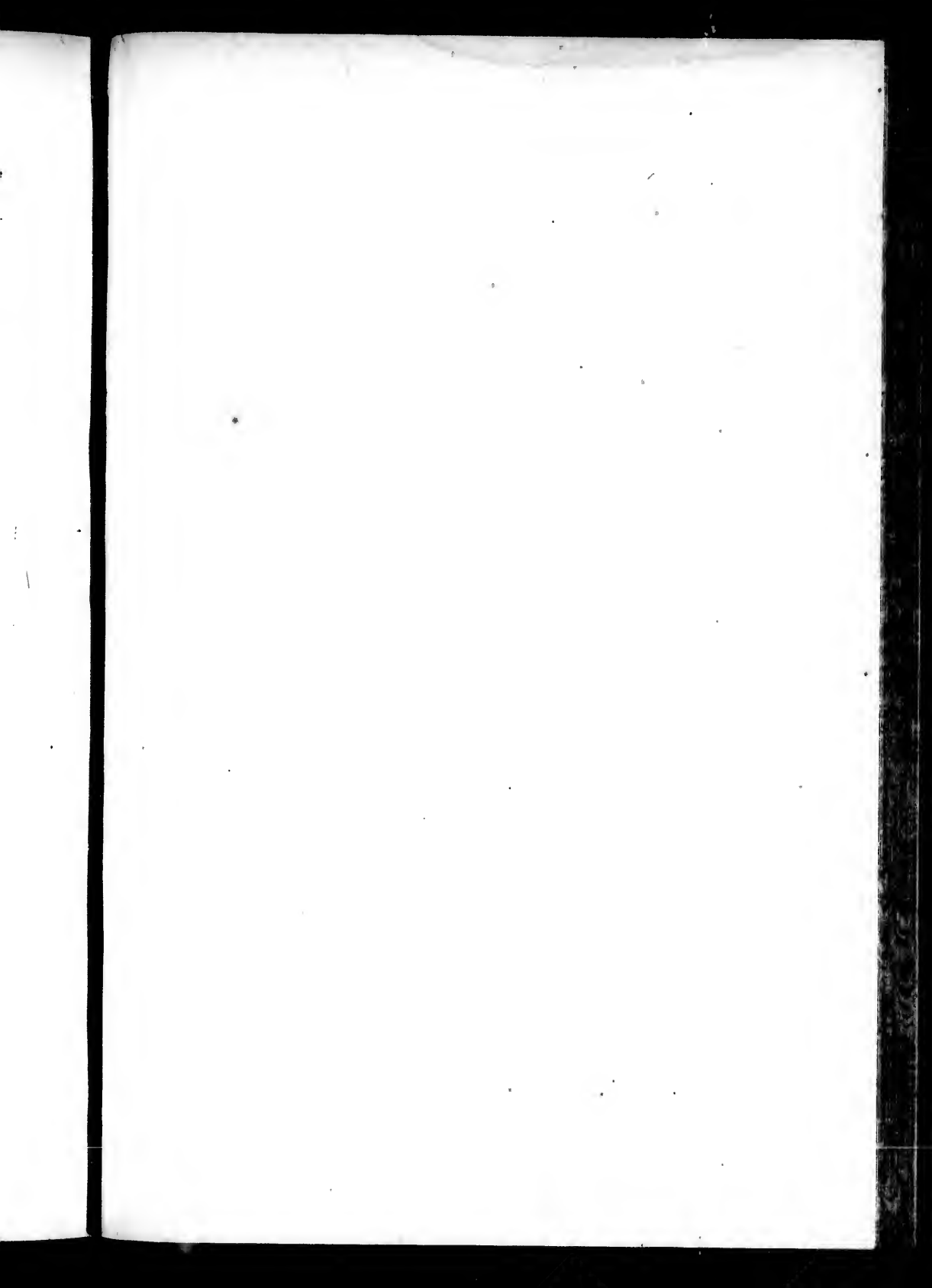
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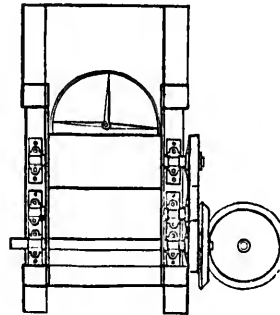
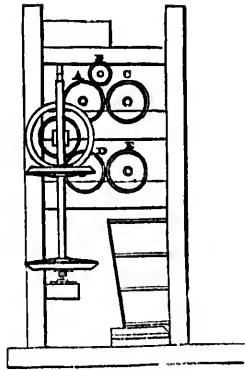
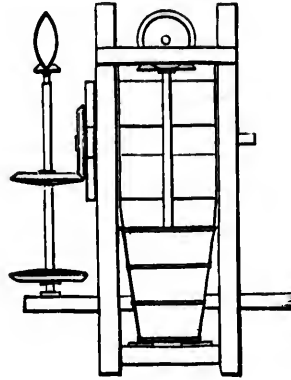
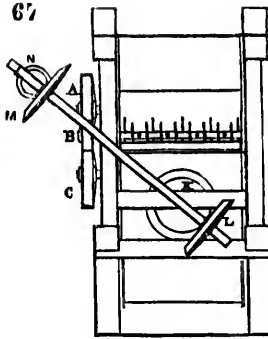
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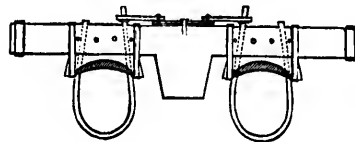
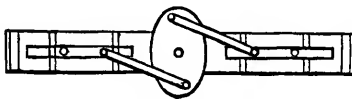
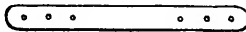
Adams' Machine for Grinding Clay.

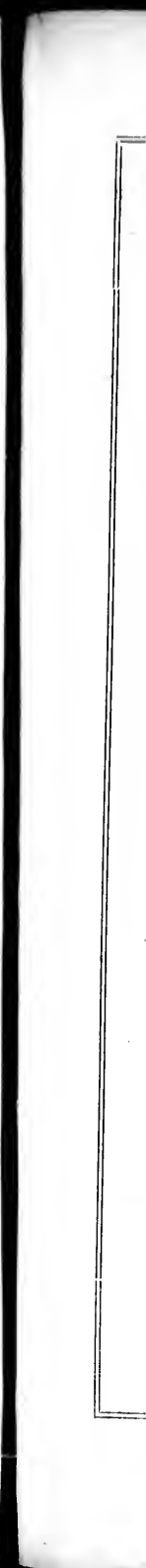
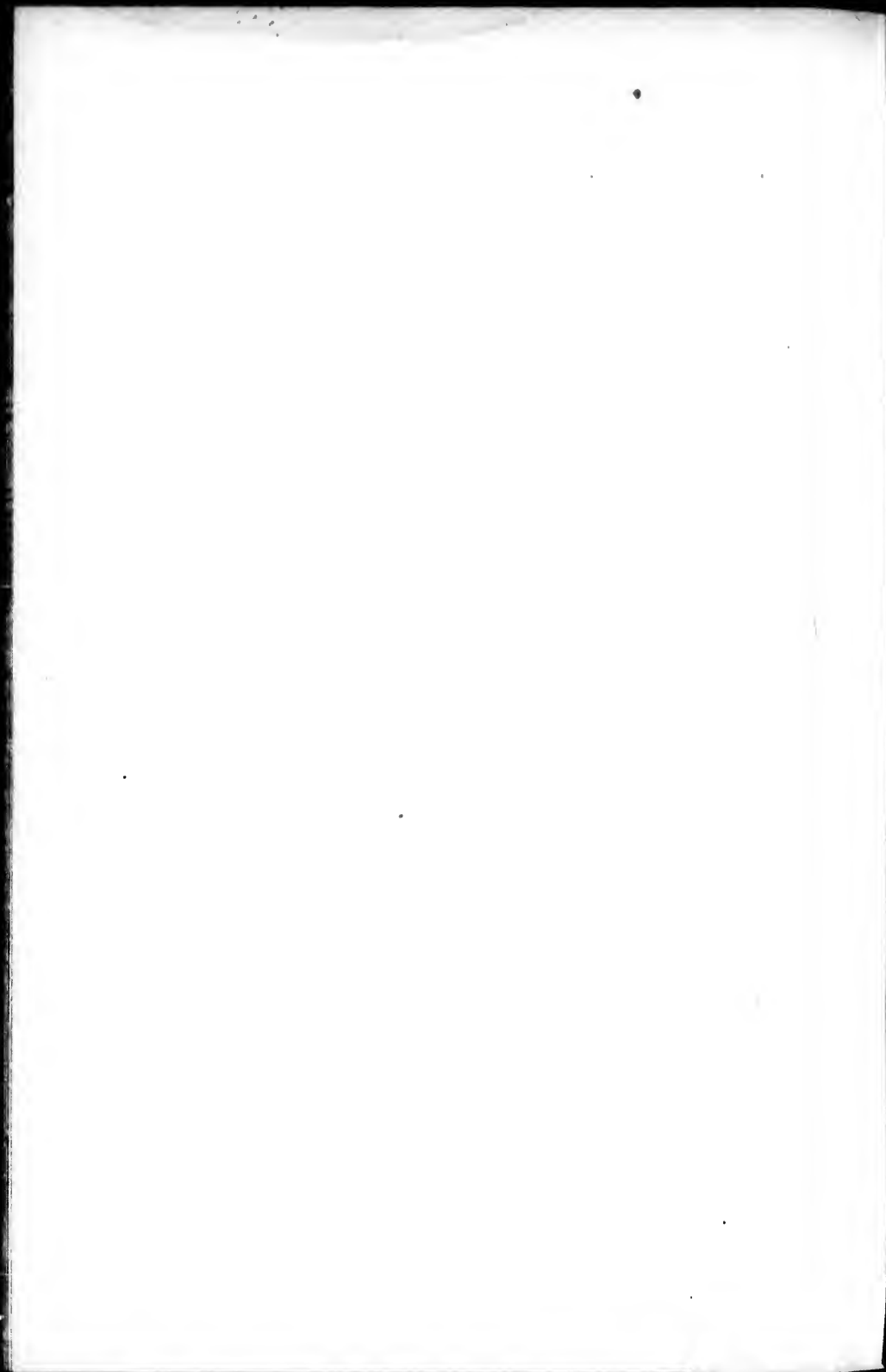
67



Rockwell's new and improved Yoke for Oxen.

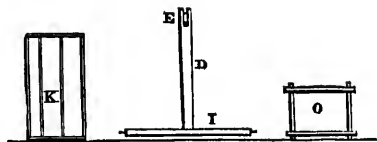
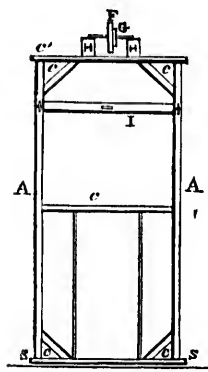
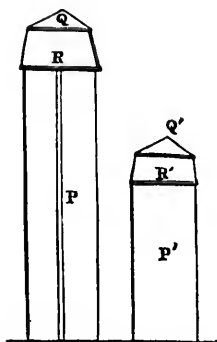
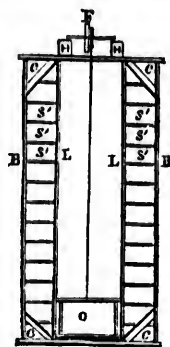
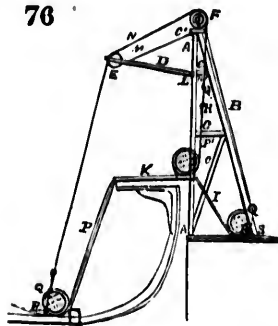
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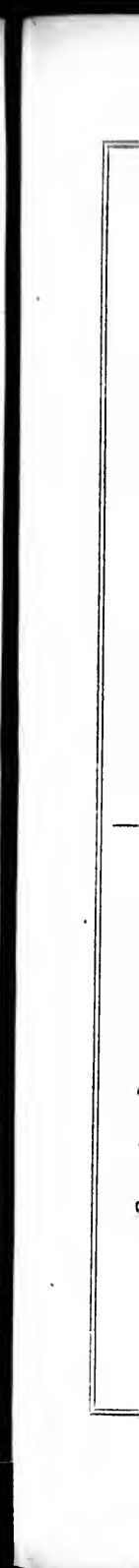
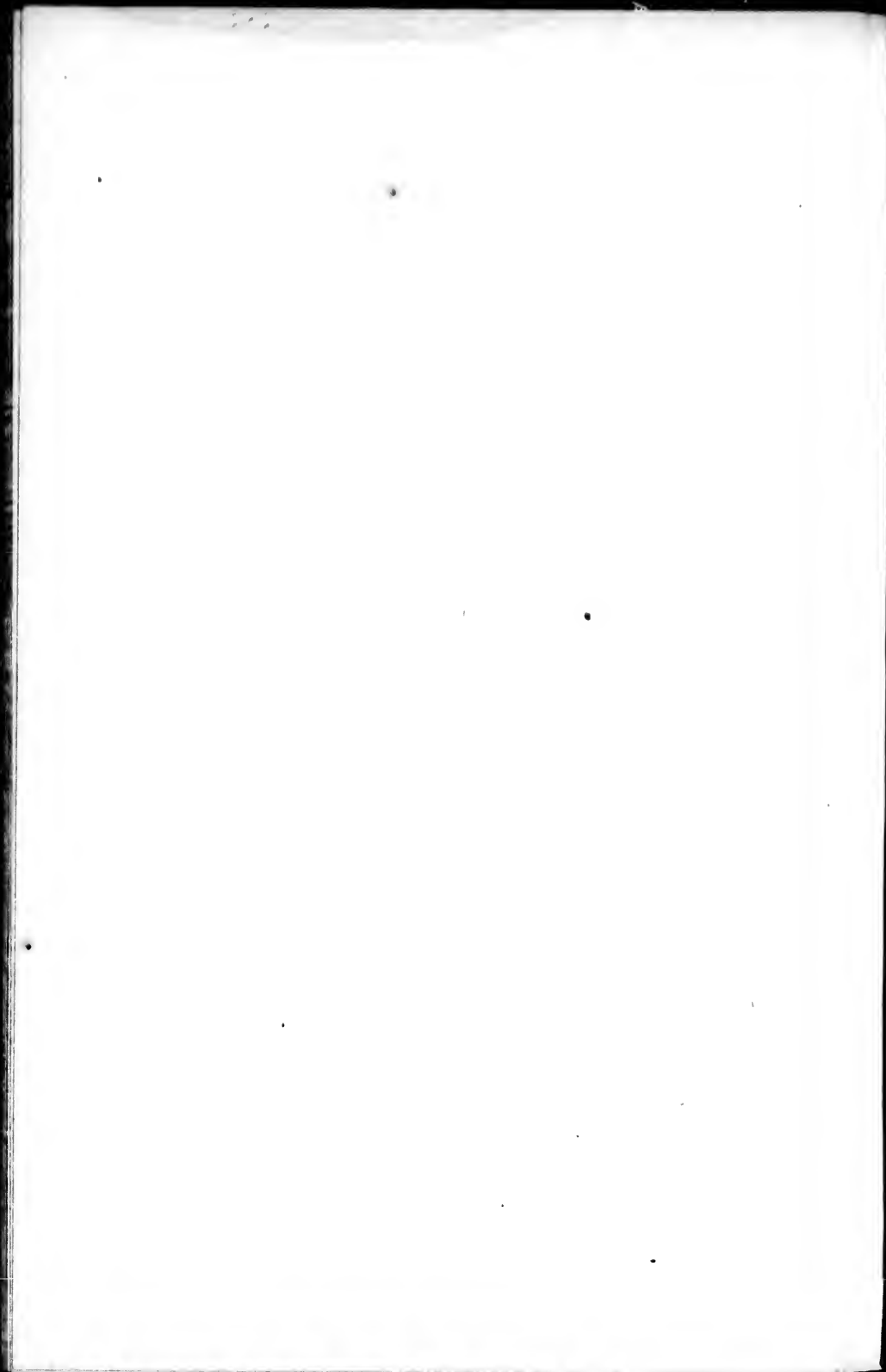




Gilbert's method of constructing Counter-balance Machines.

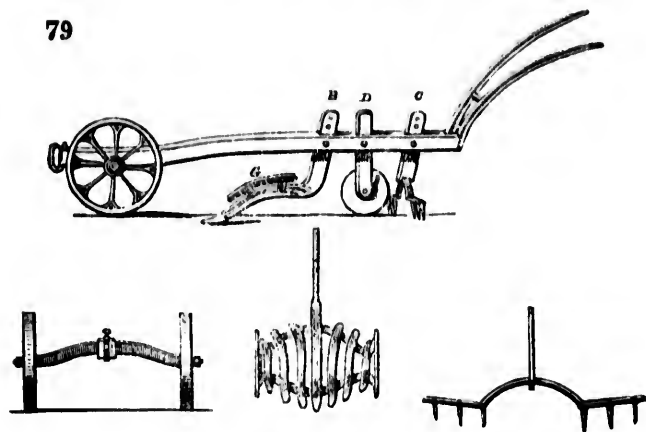
76





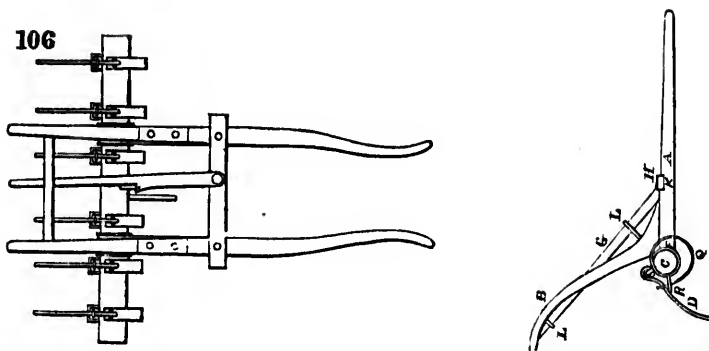
Watt's Potato Digger.

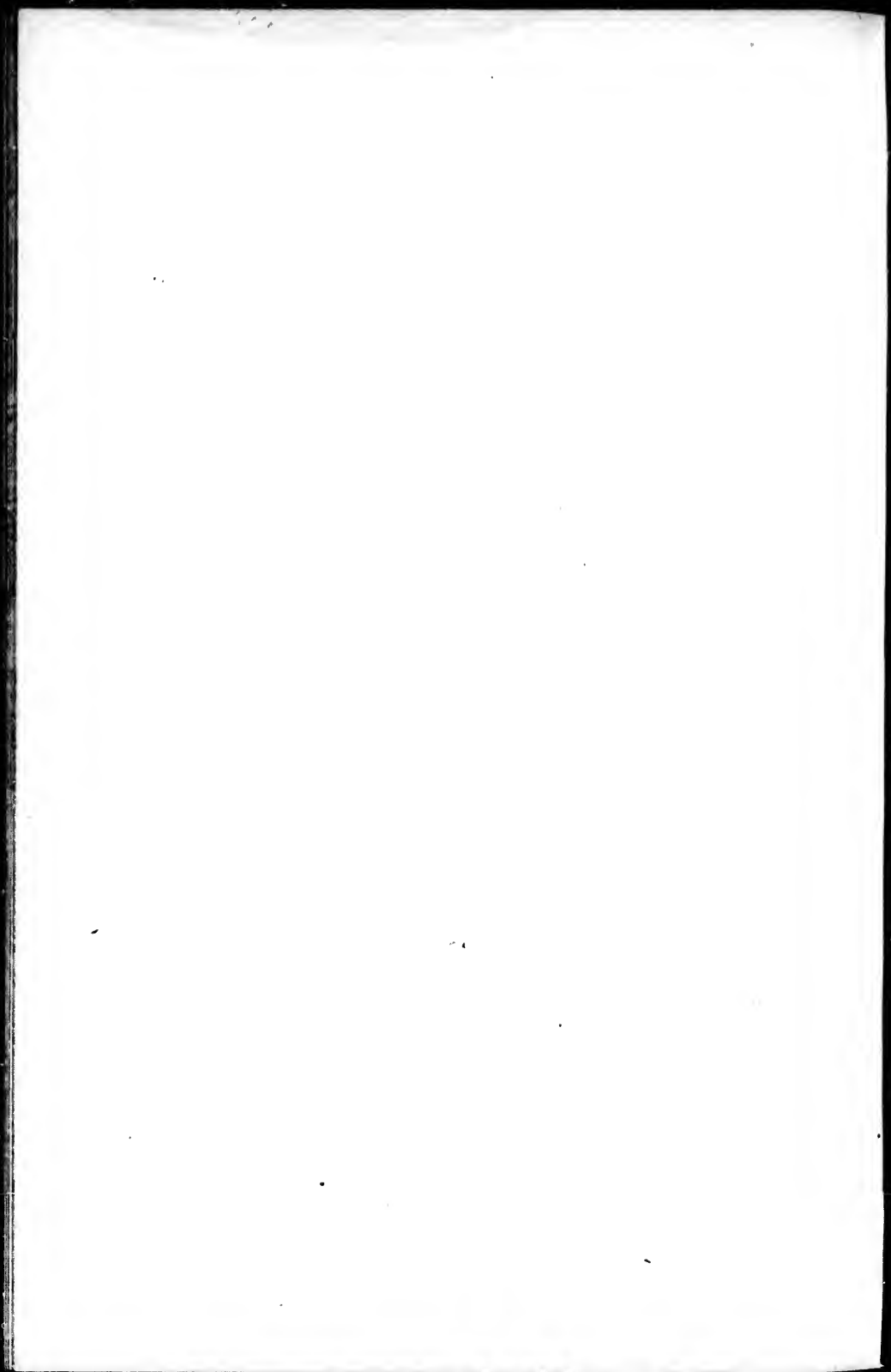
79



Paradis' Horse Rake.

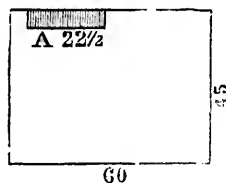
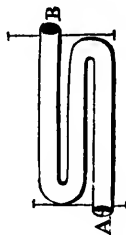
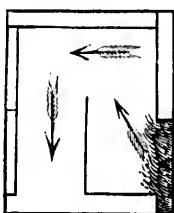
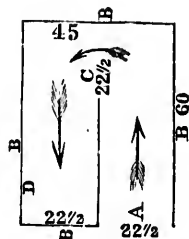
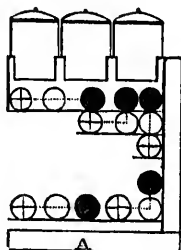
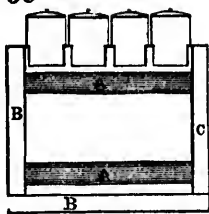
106





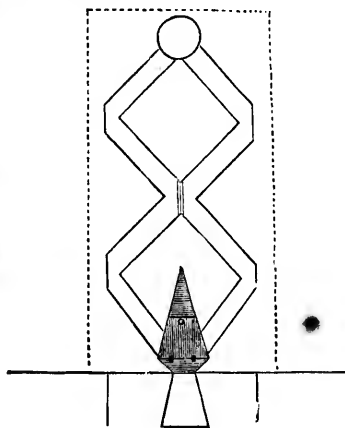
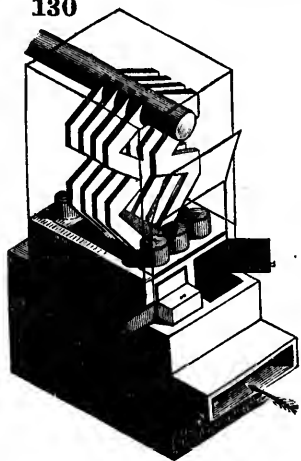
Ruttan's Hot Air Generators.

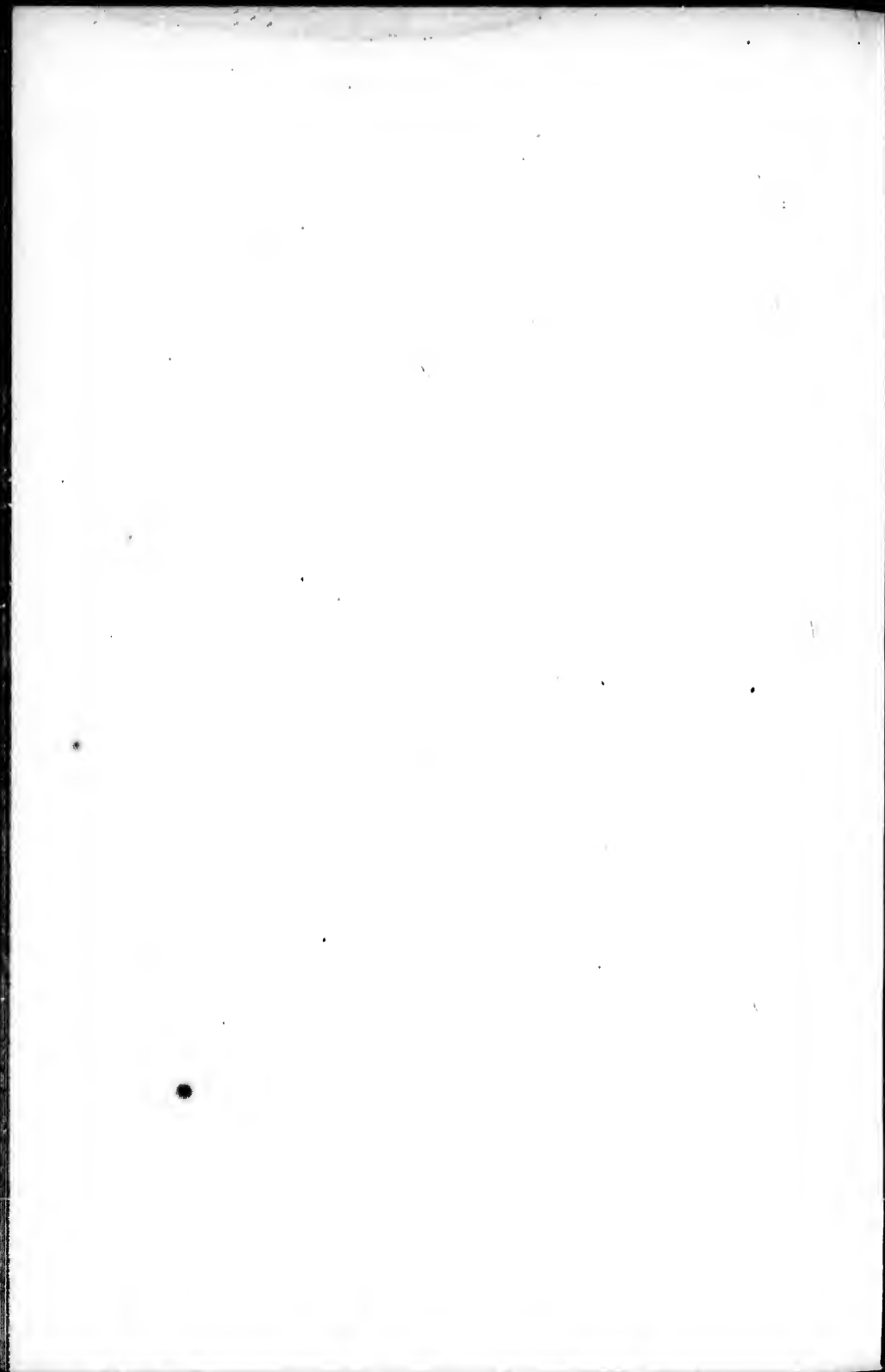
98



Ruttan's Canadian Ventilator.

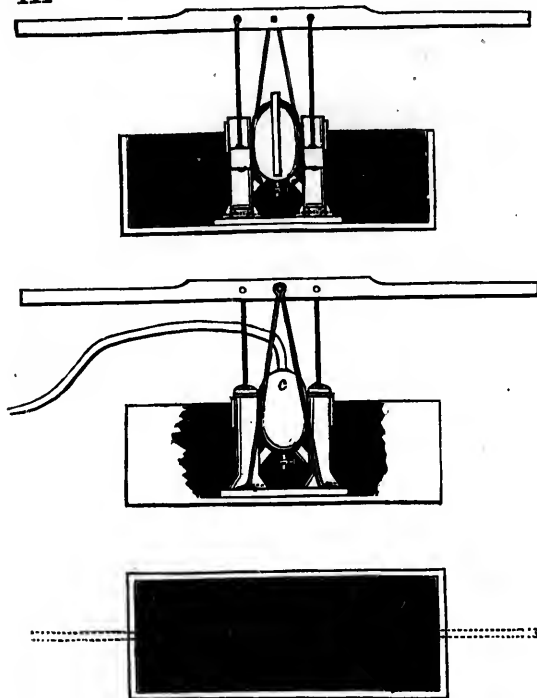
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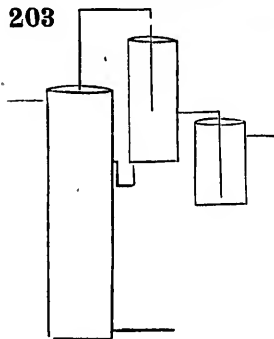
Armstrong's Fire Extinguishing Machines.

111

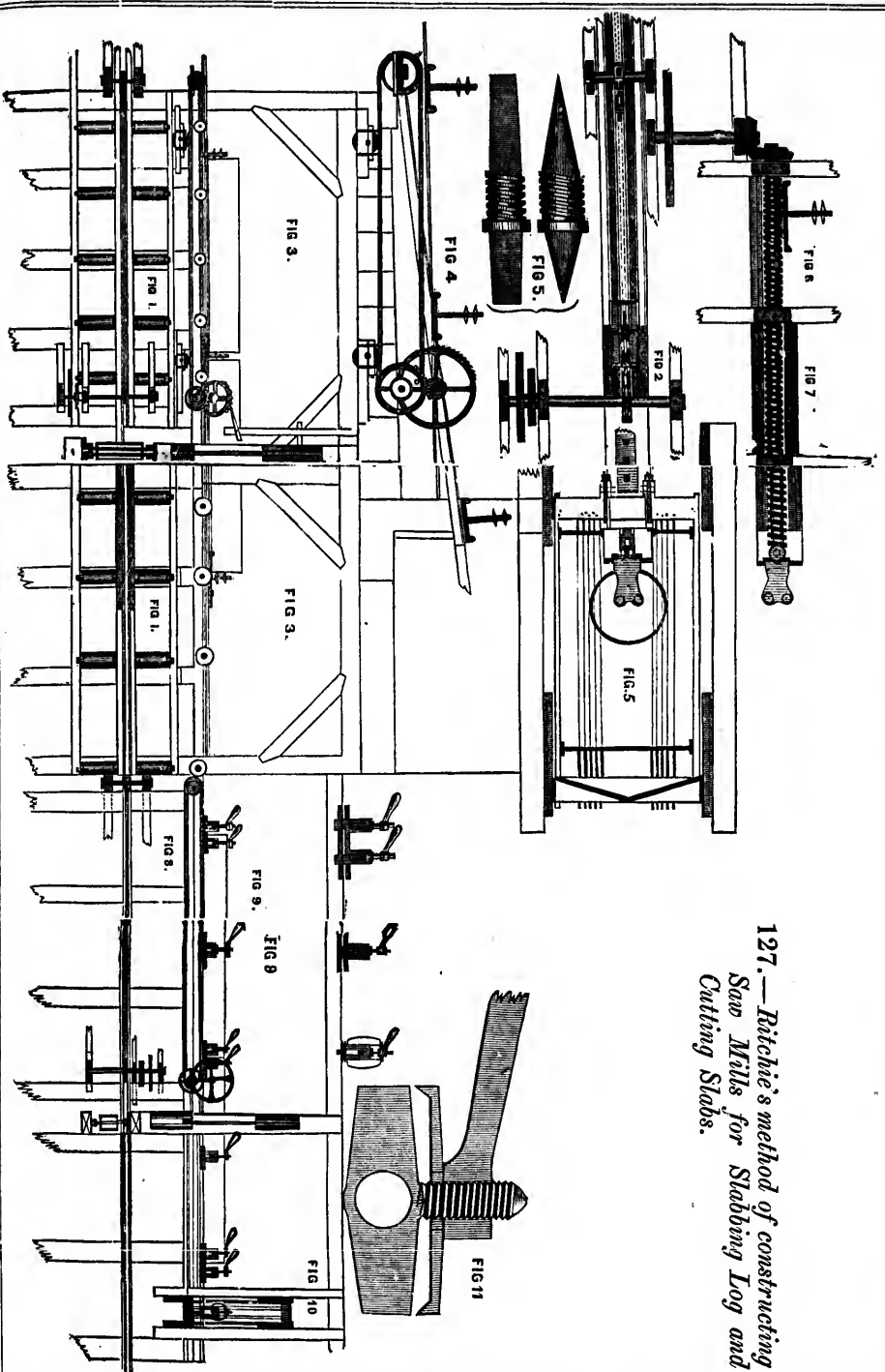


Maitland's principle of Distillation and Rectification.

203



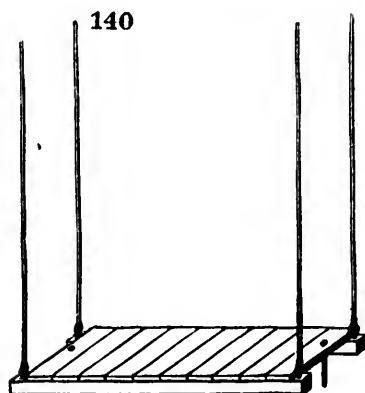




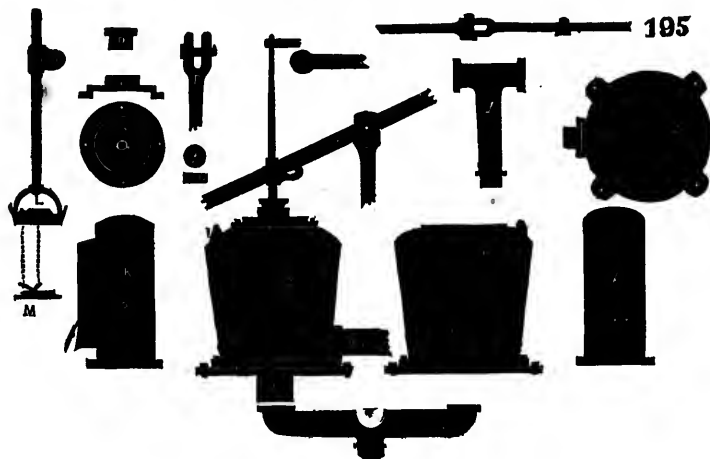
127.—Ritchie's method of constructing
Saw Mills for Stabling Log and
Cutting Slabs.



Rockwell's Horse Swing.



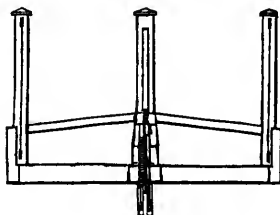
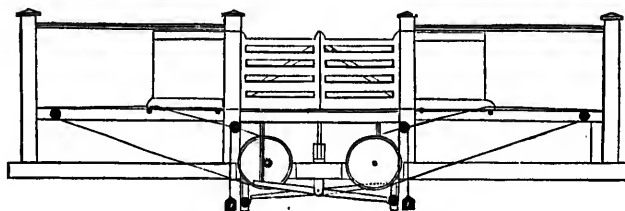
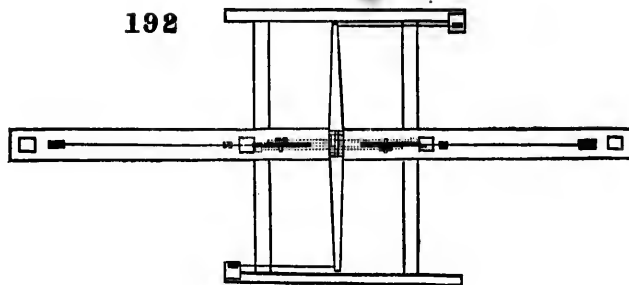
Hearle's Engine Pump or Fire Engine.





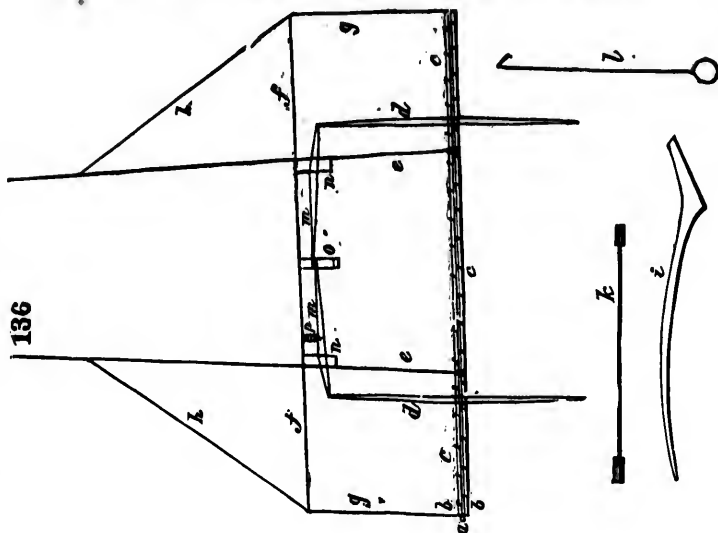
Hutt's self-propelling Gate.

192

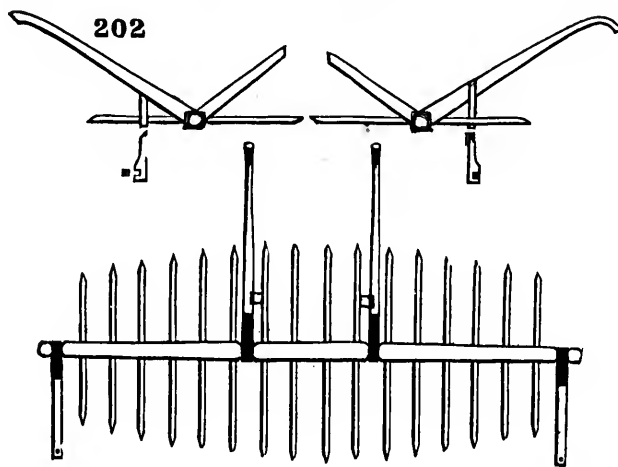




Bowen's Coiled Spring-tooth Revolving Horse Rake.

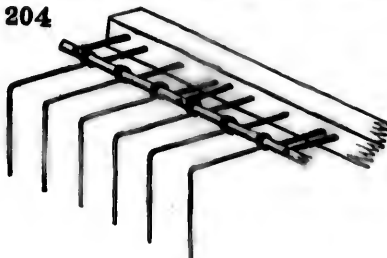


Harris' Revolving Horse Rake.



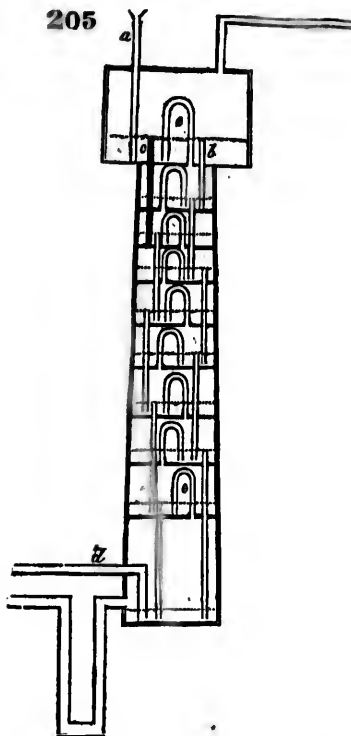
Young's Metallic Coil Spring-tooth Horse Rake.

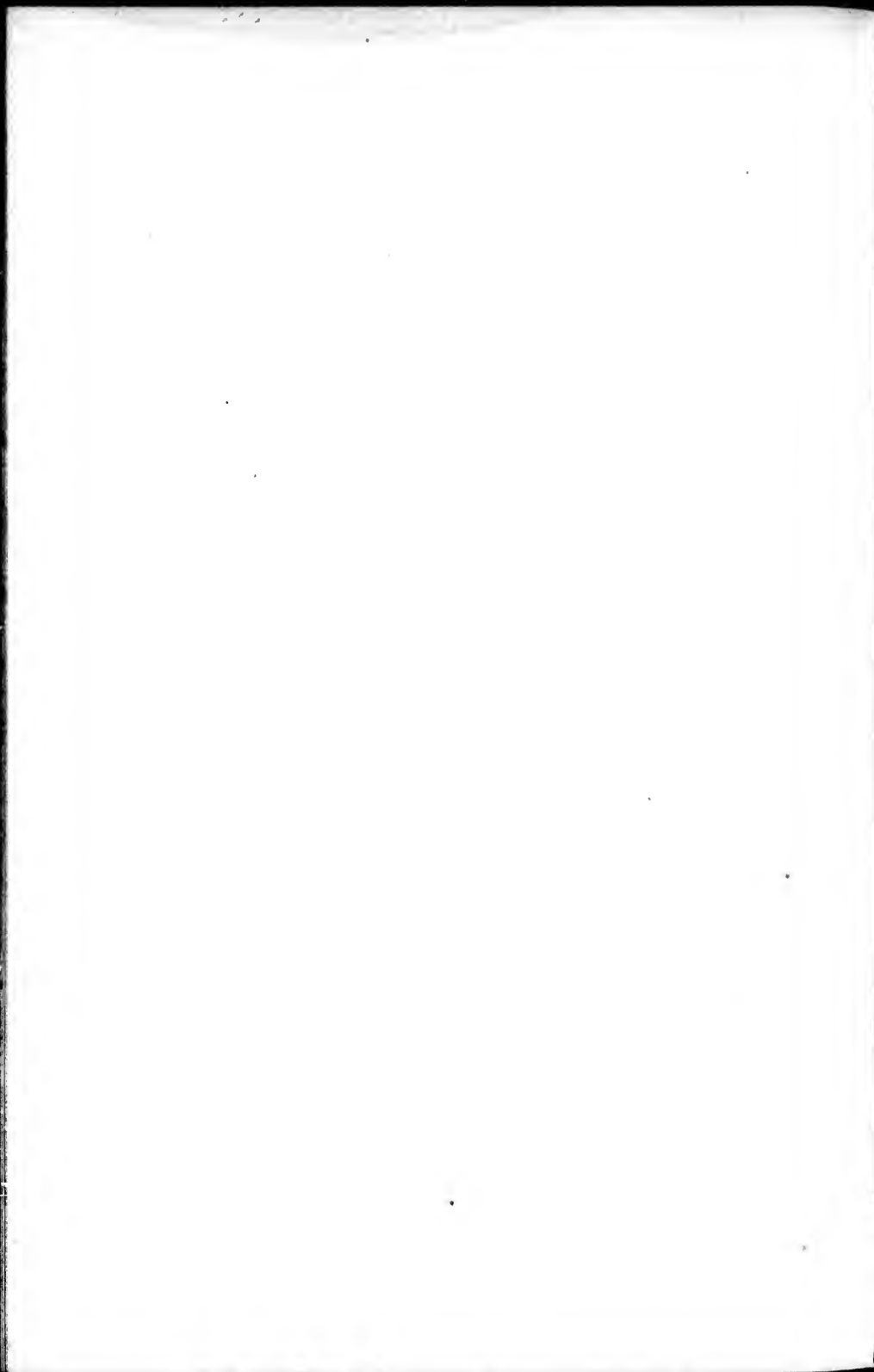
204



Culls' Combination Still.

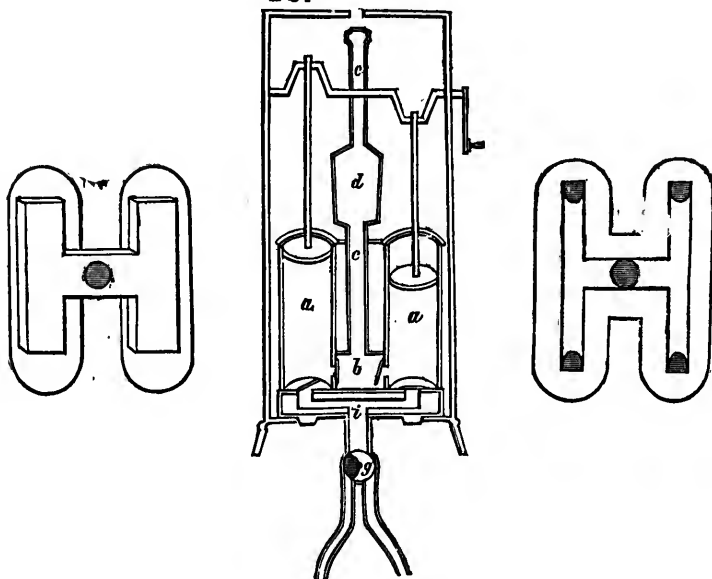
205





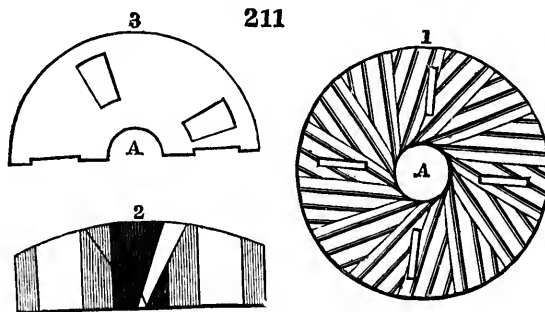
Young's Improved House Pump or Fire Engine.

207

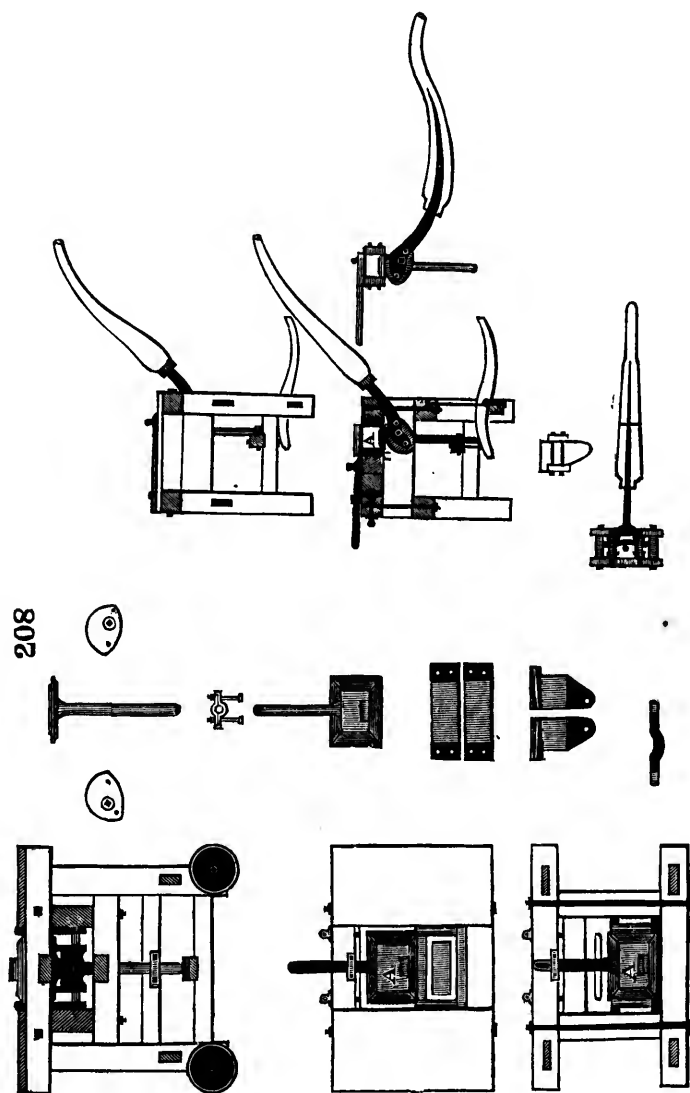


Oates' Mill Stones for Grinding Grain.

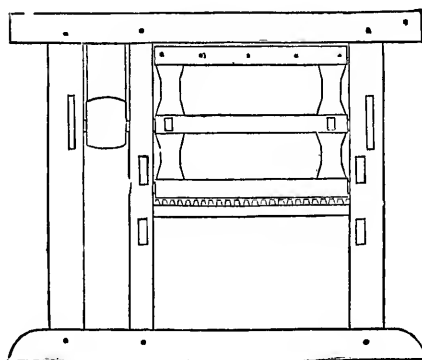
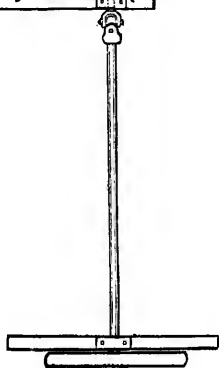
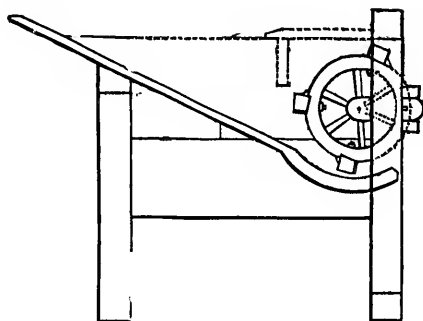
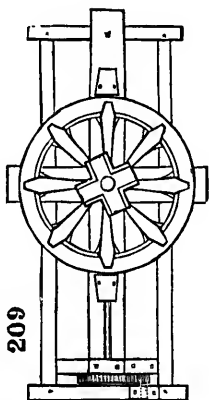
211



Burrows' Presses for making Bricks, Tiles, Stove-pipe holes, &c.



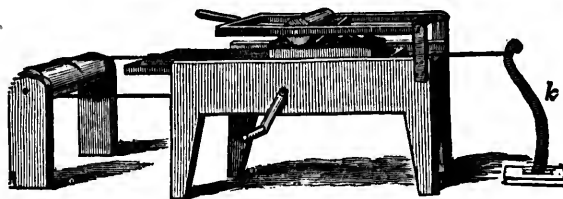
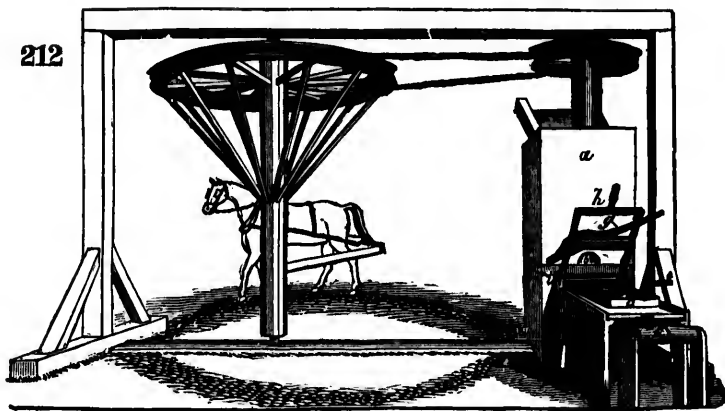
McKinlay's Horse Threshing Machine.





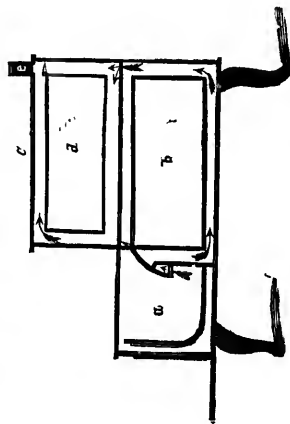
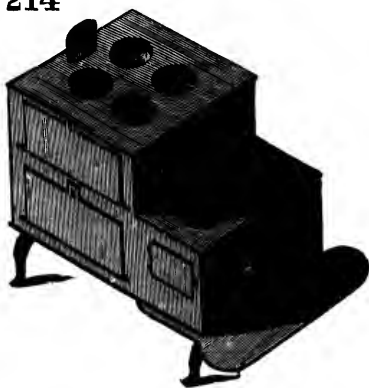
Ellis' Machine for making Bricks.

212



Jones' Cooking Stove.

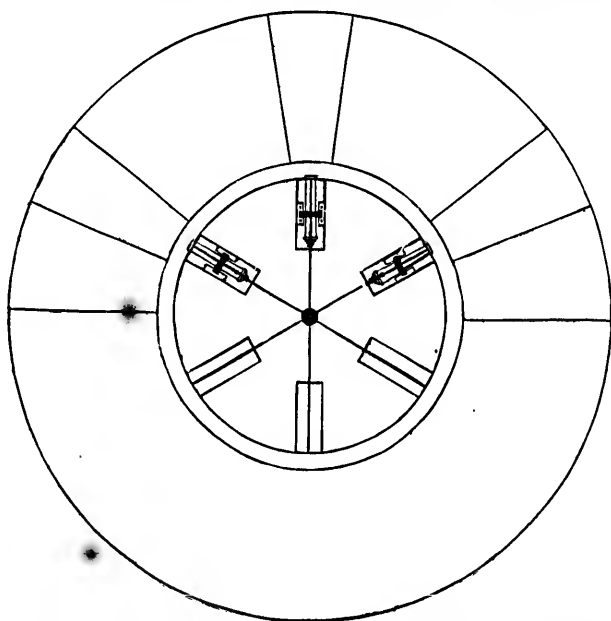
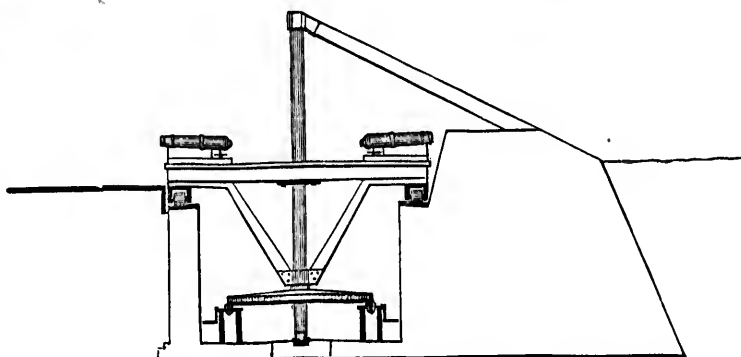
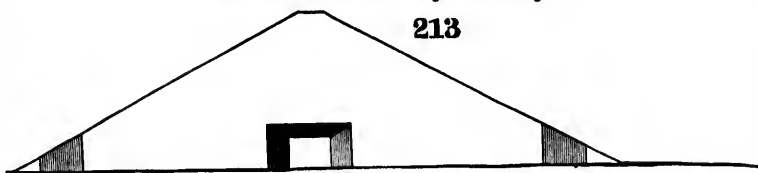
214





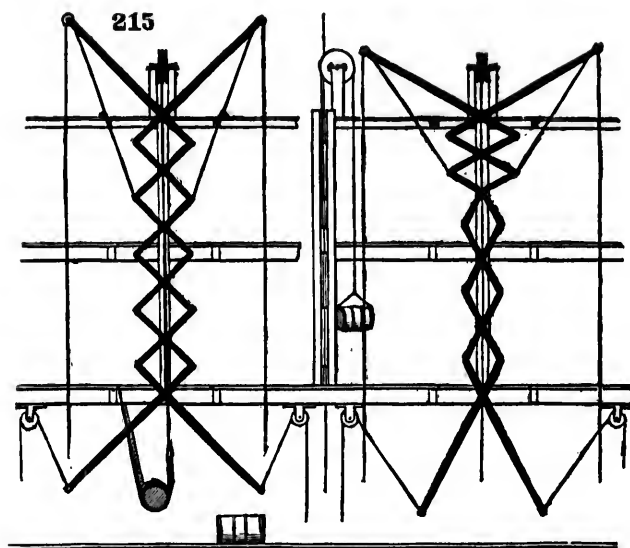
McLean's Revolving Battery.

213





Johnson's Hoisting Machine.

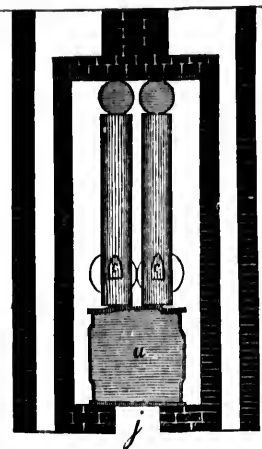
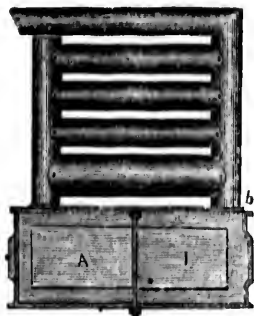


Barne's Tve Iron.



Mills' mode of generating and distributing Heated Air.

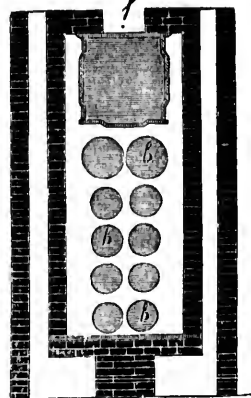
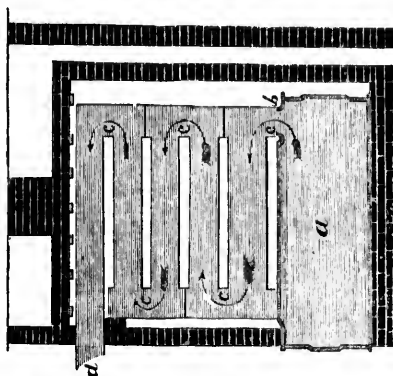
216



i

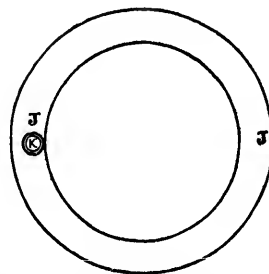
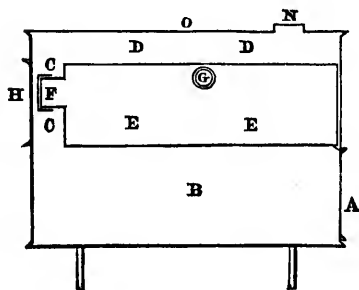
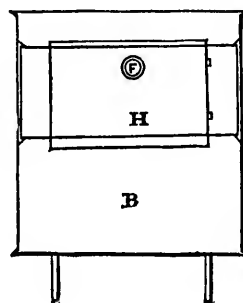
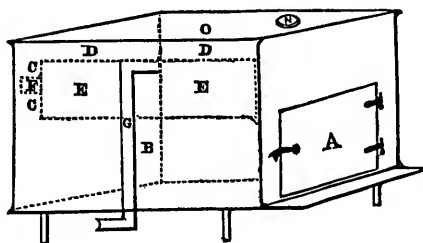
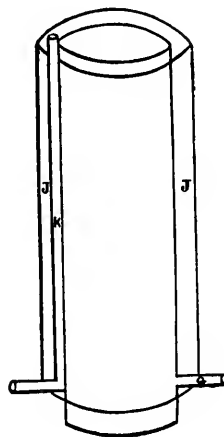
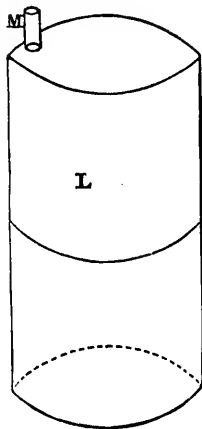


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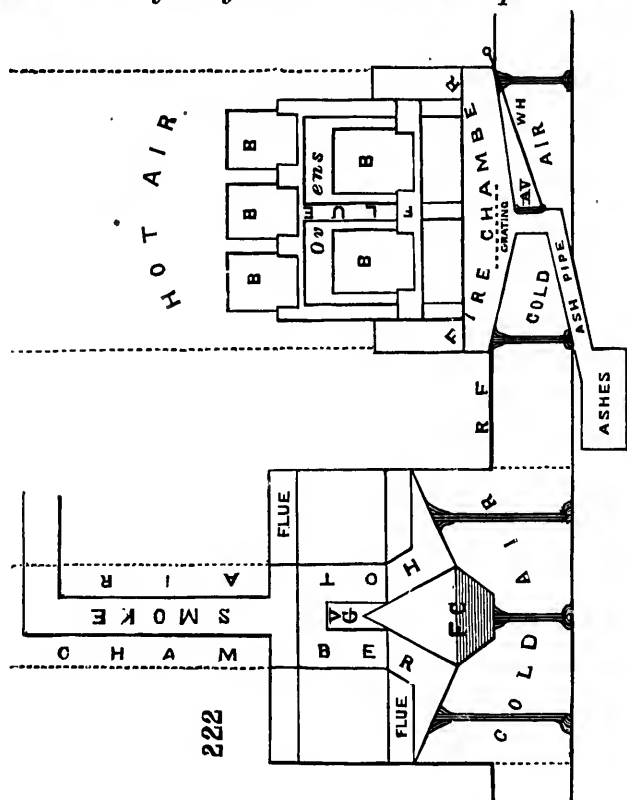


Colby's Gas Generator.

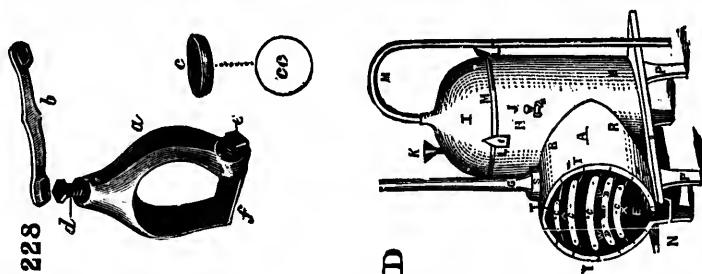
221



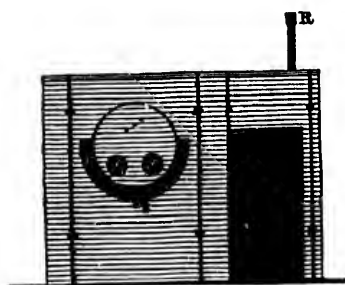
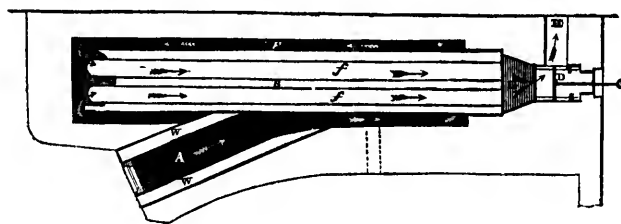
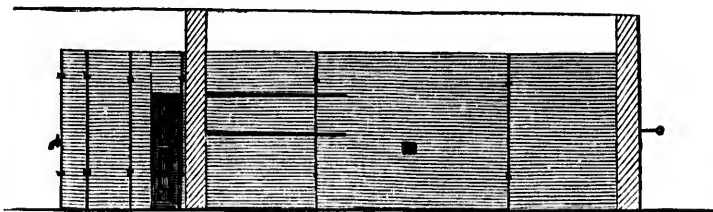
Ruttan's Cooking Range and Hot Air and Vapor Generator.



Davison's Revertable Flue Steam Generator and Boiler.



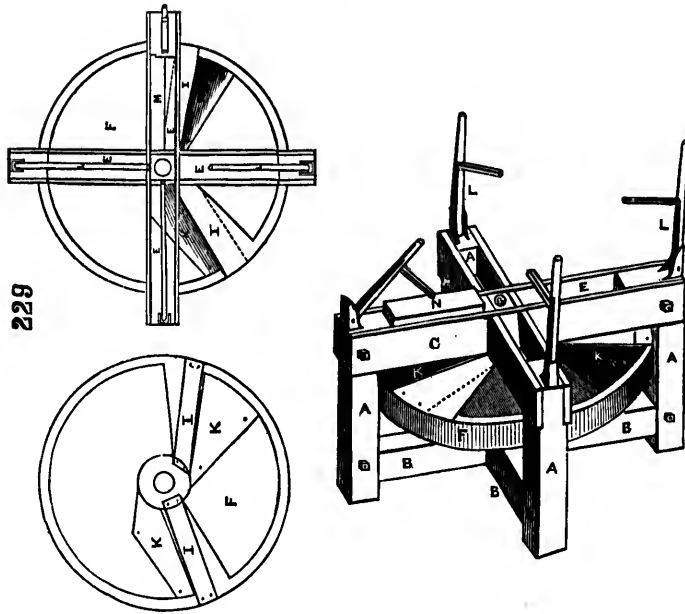
224.—*Cleal's new mode of setting Boilers.*



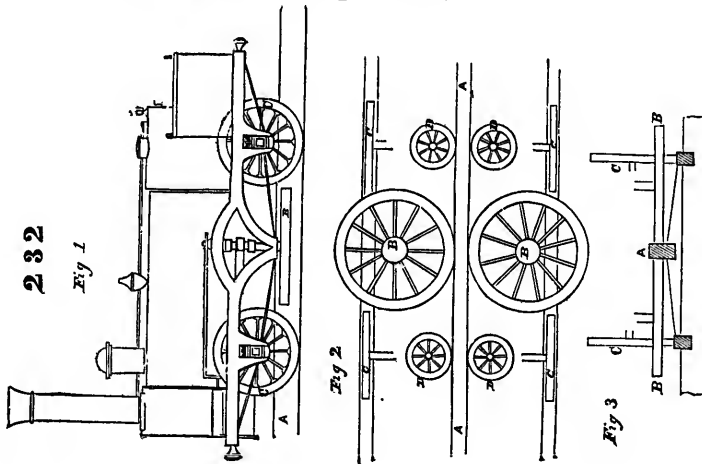




Gillett's Shingle Cutter.

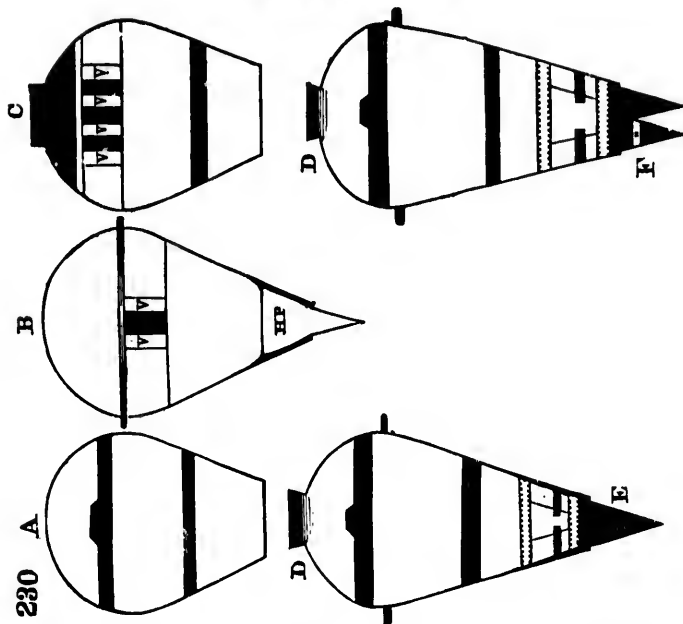


Fleming's method of propelling Locomotives.

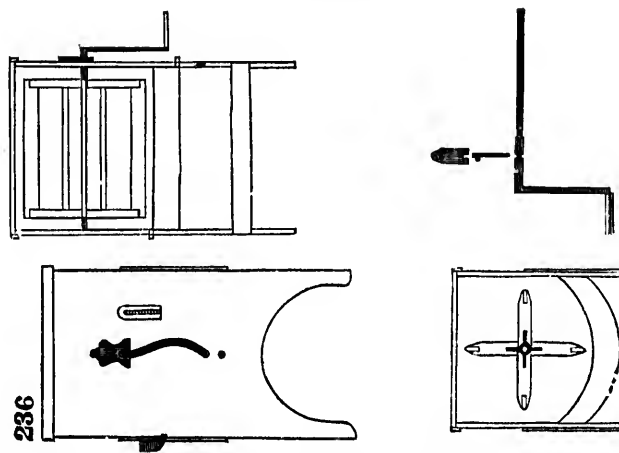




Westman's Bellows.

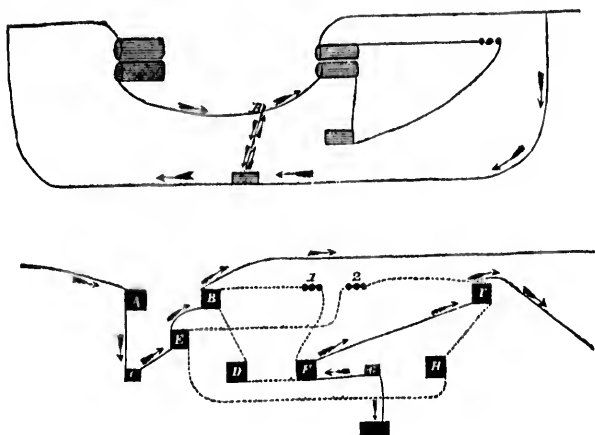
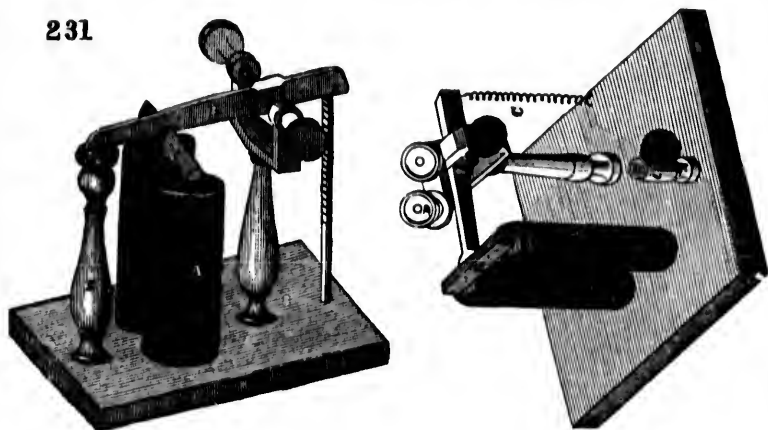


Thomas' Churn.



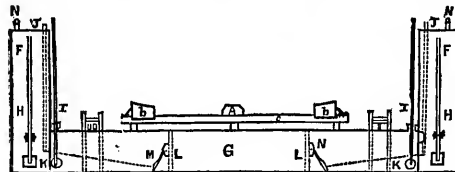
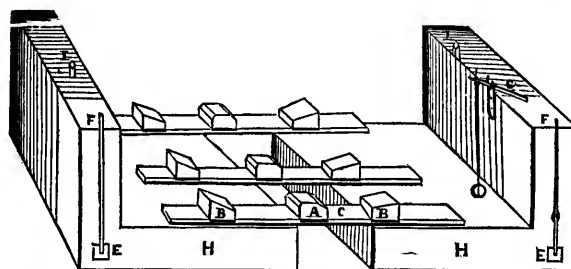
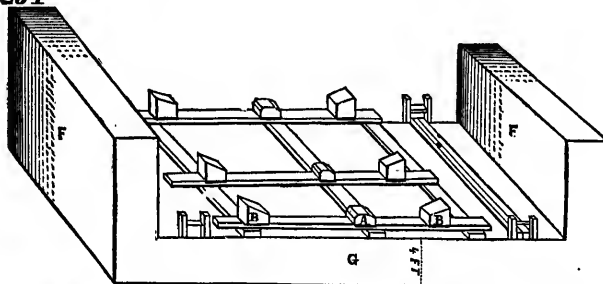
McMicken's Notifier and Connector, or Transfer Magnet.

231



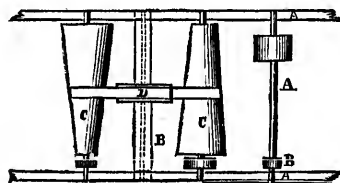
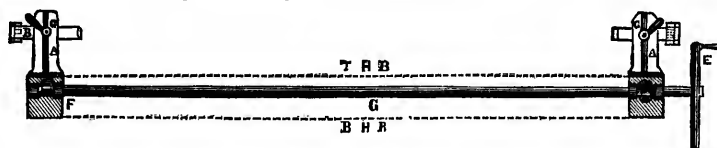
Beaupre's Lifting and Floating Marine Dock.

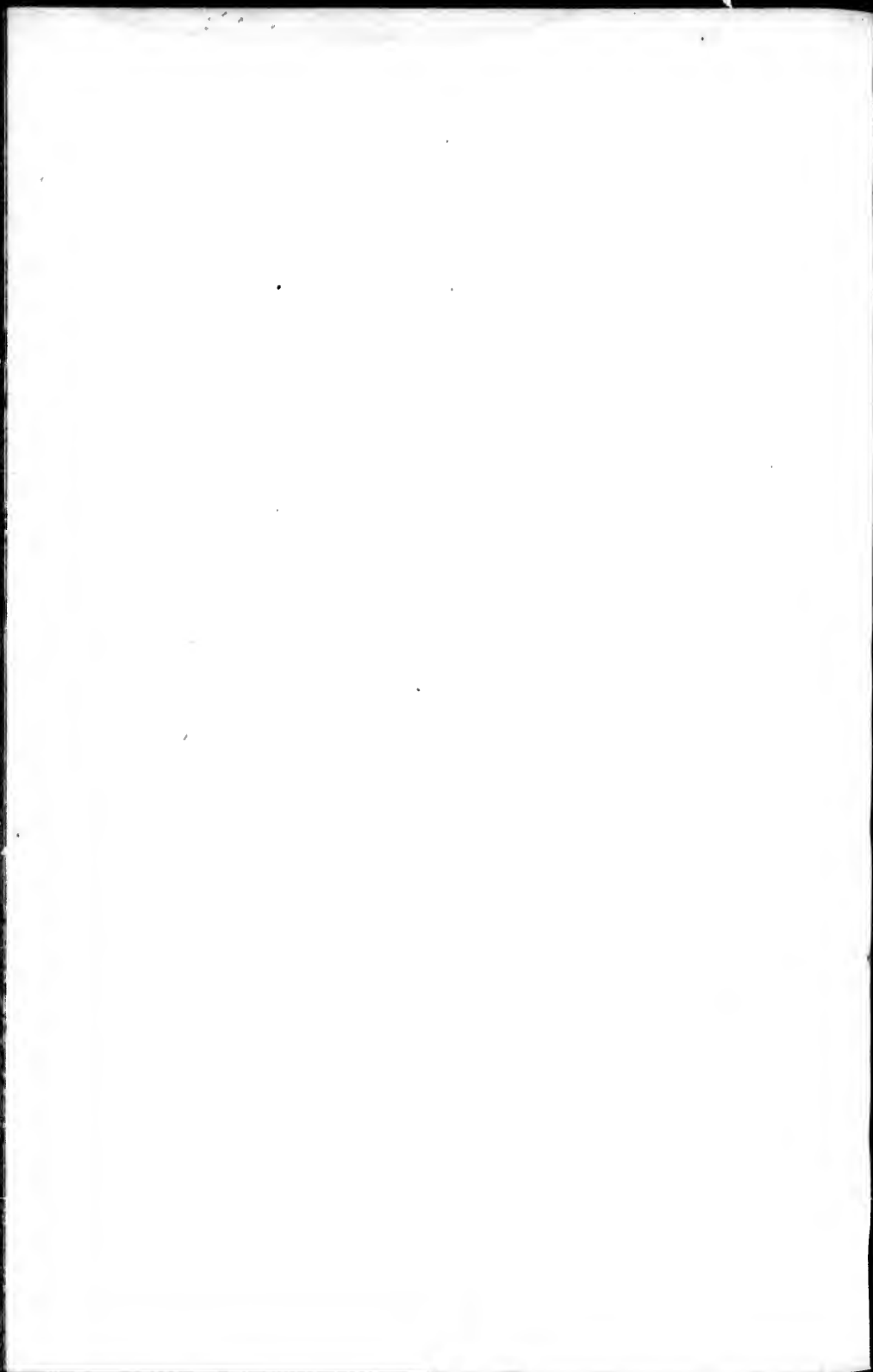
234



Helm's manufacture of Lumber with Circular Saws.

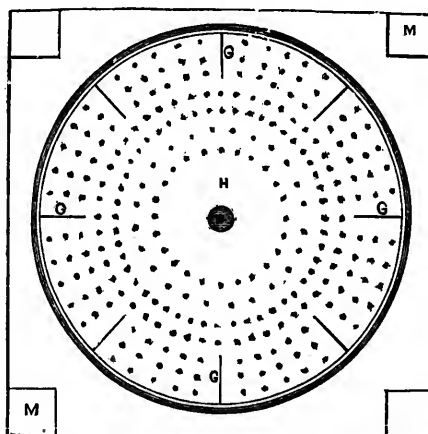
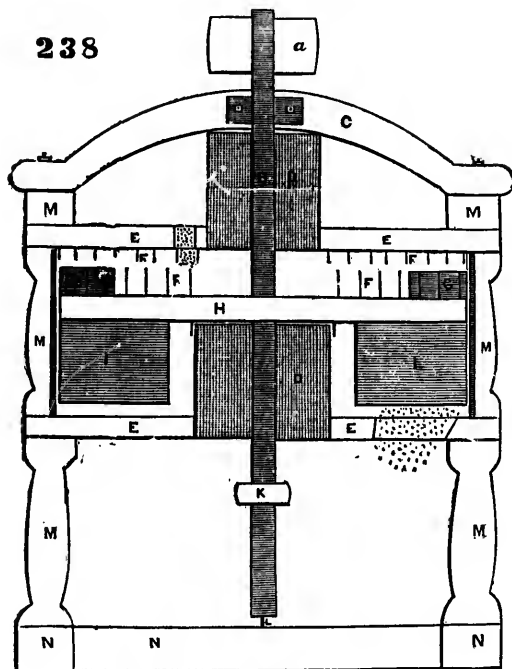
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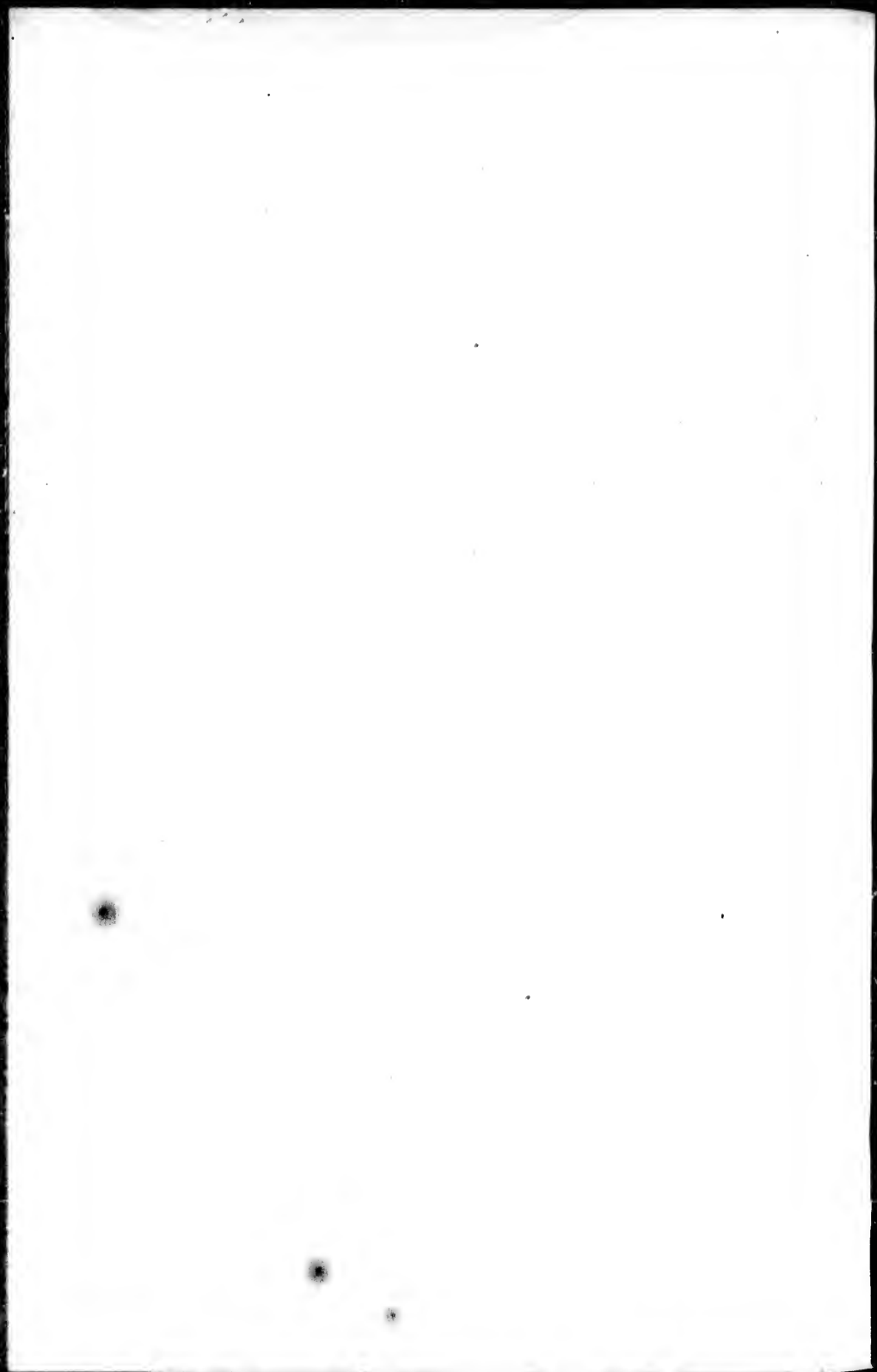




Brown's Smut Mill.

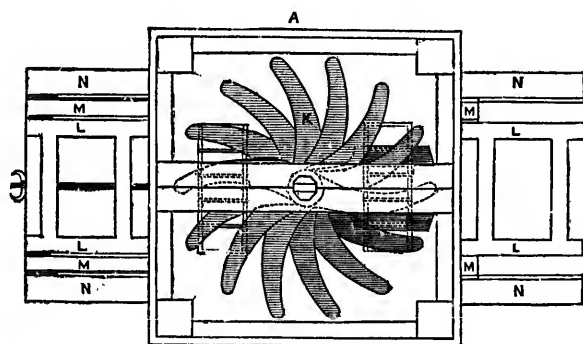
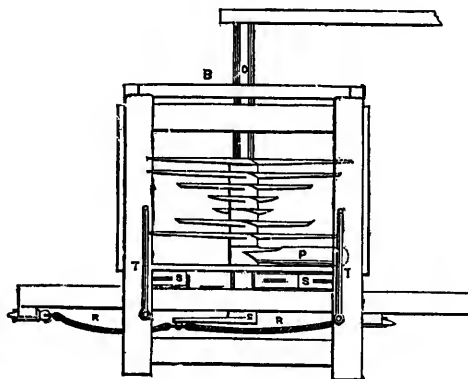
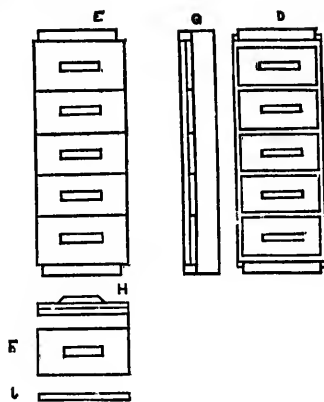
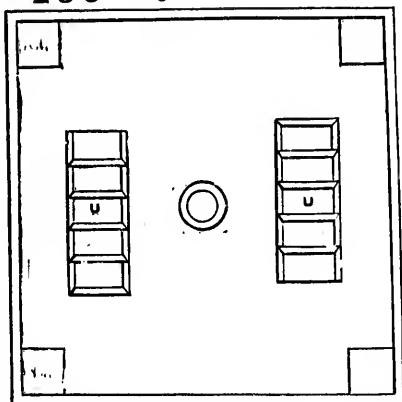
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Butters' Brick Machine.

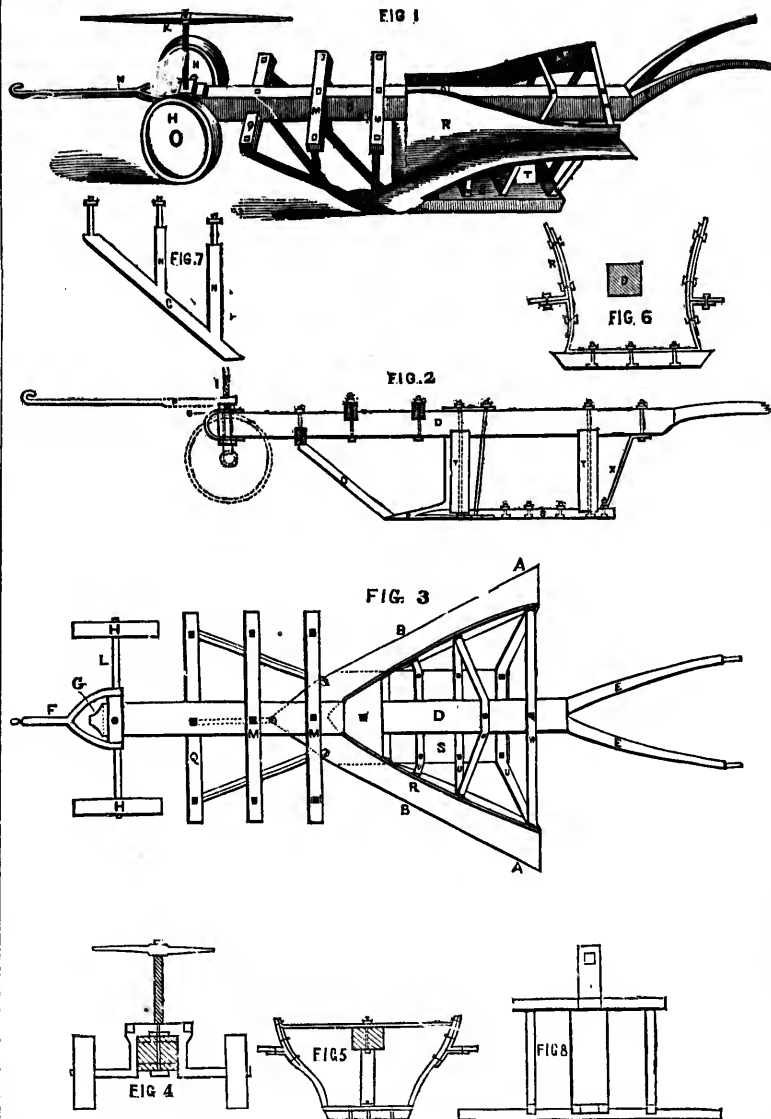
239 C

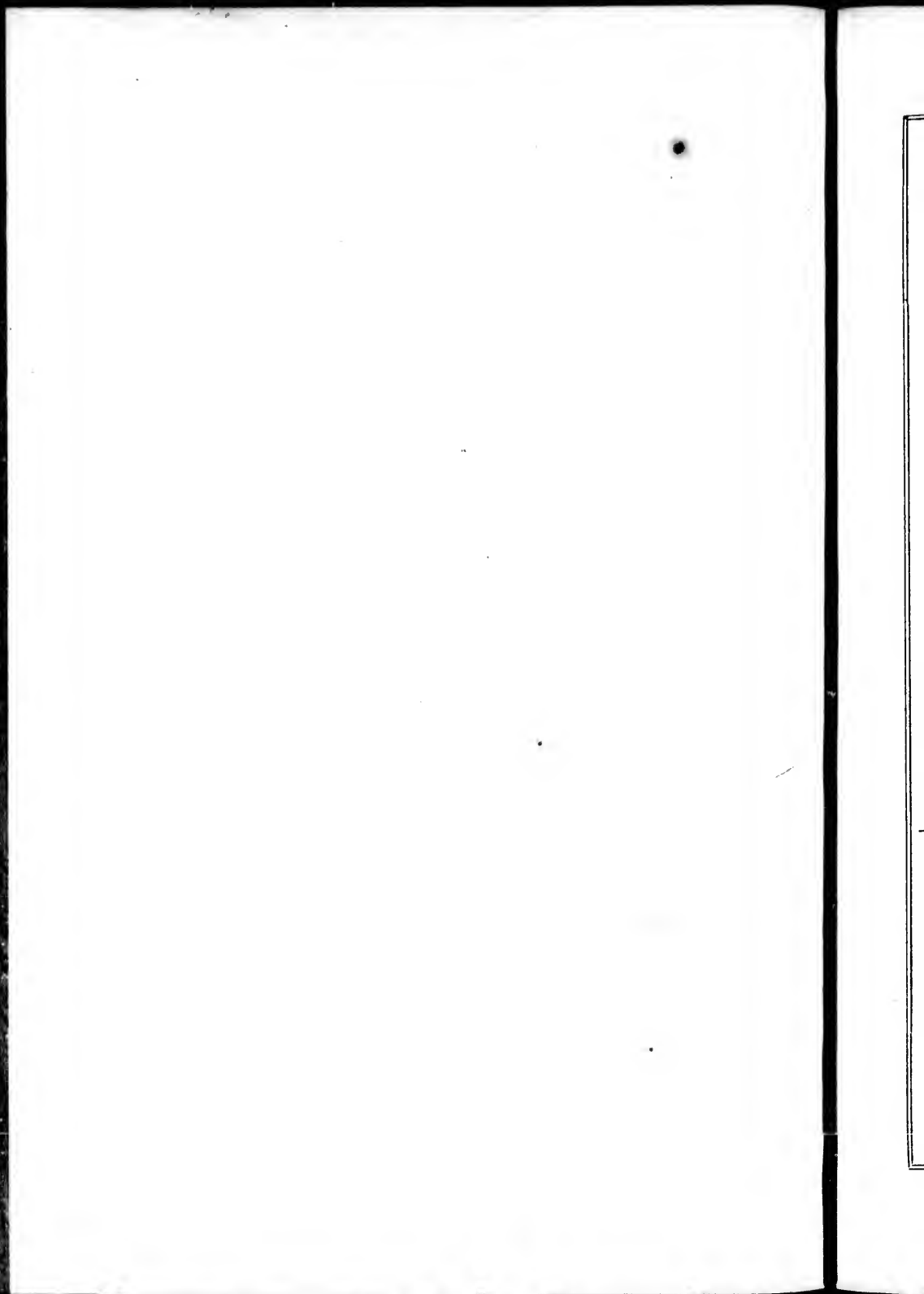




Partridge's Ditching Machine.

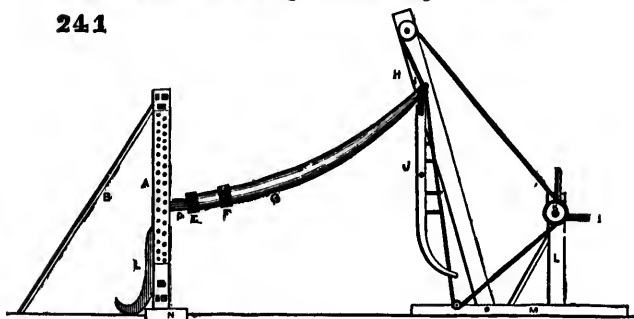
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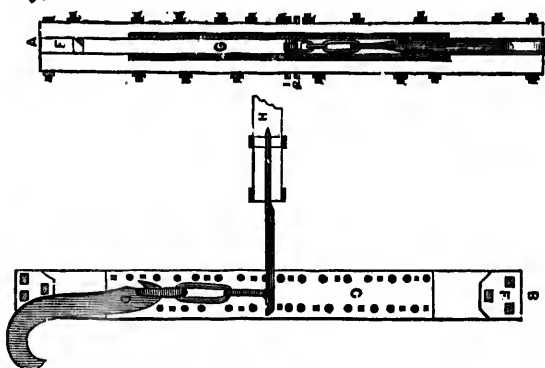


McMichael's Stump Extracting Machine.

241

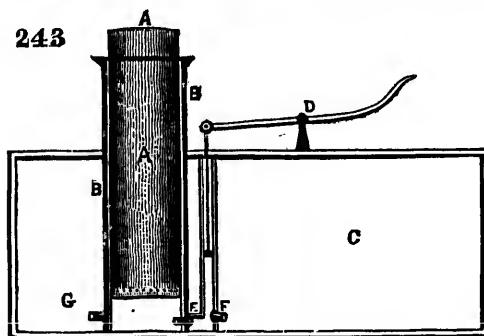


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McQueen's Hydraulic Force Pump Machine.

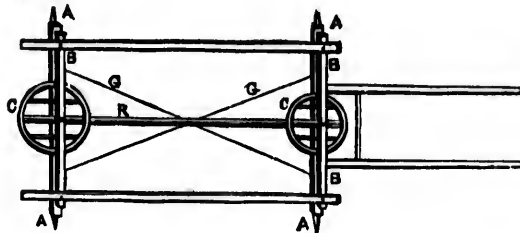
243





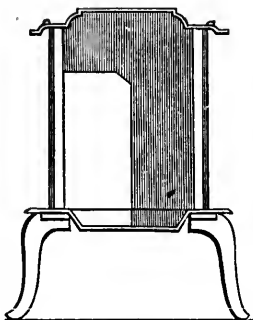
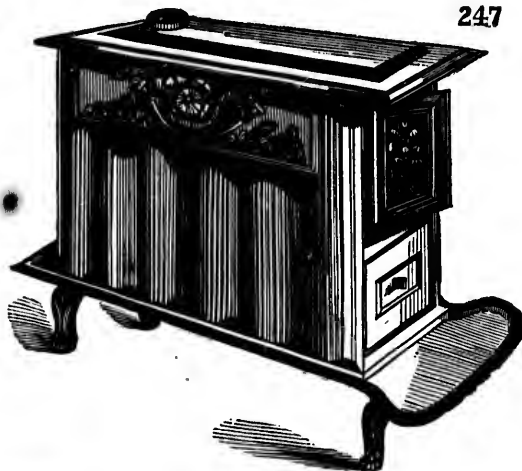
Jones' Invention for Turning Four-wheeled Carriages.

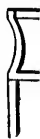
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Colton's Improved Air-tight Box Stove.

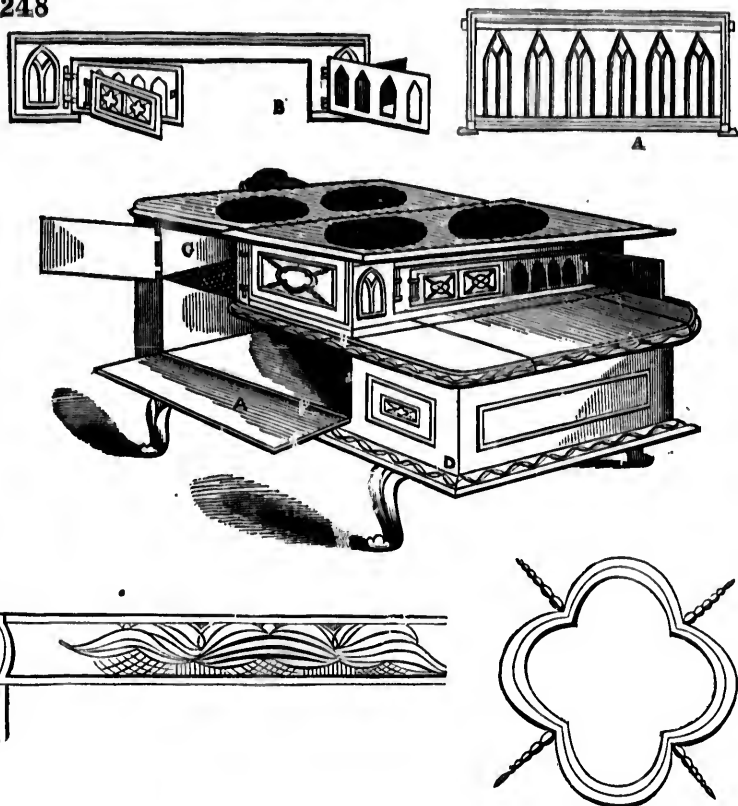
247





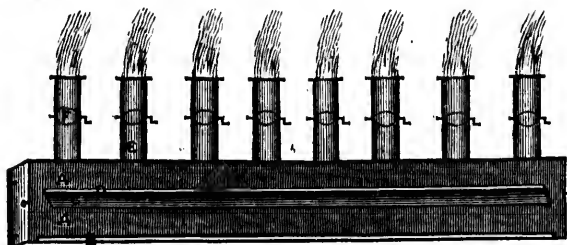
Colton's Improved Cooking Stove.

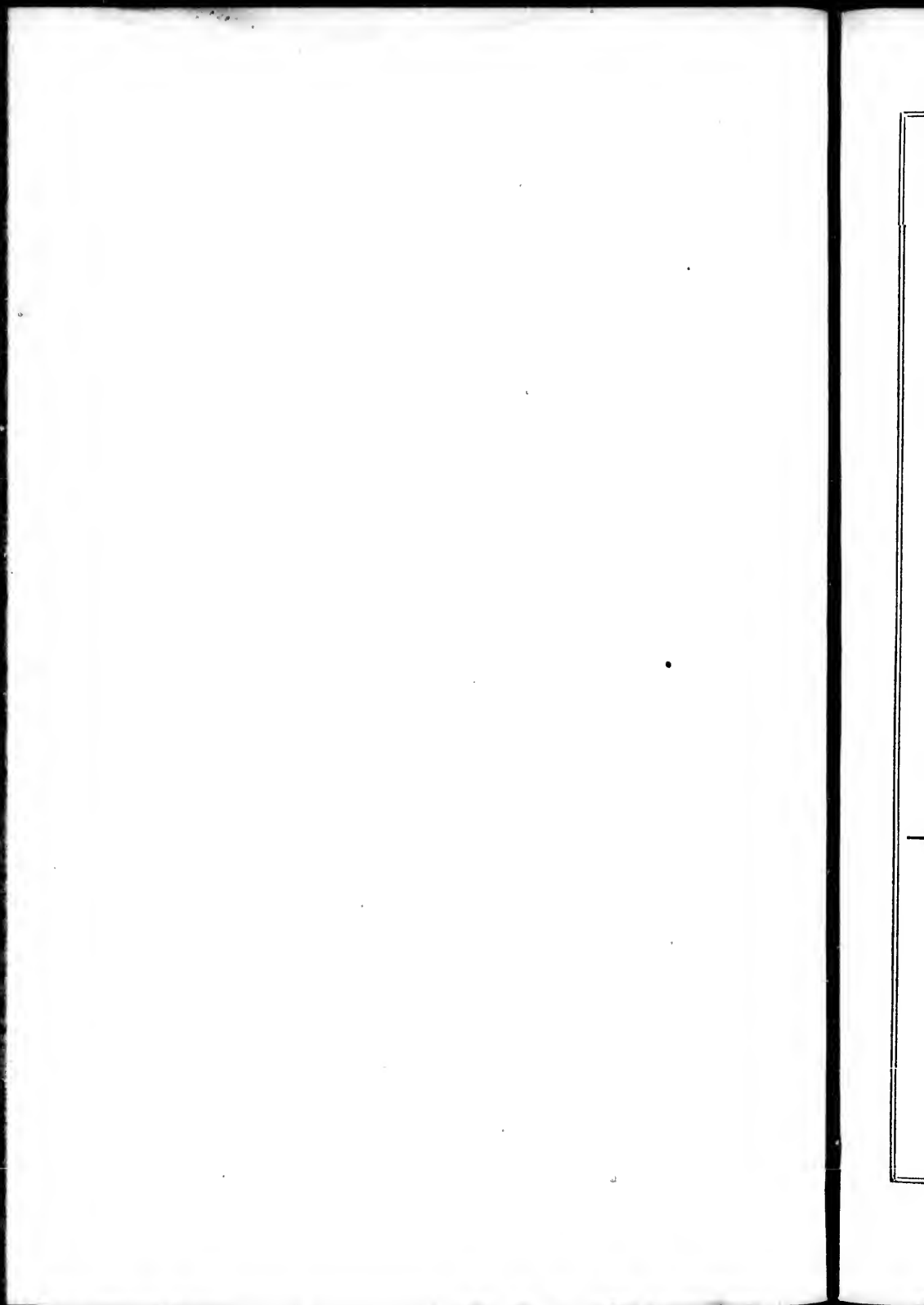
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Wharton's Process for Tempering Saws.

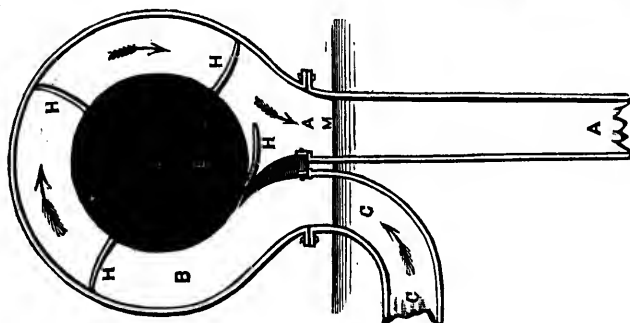
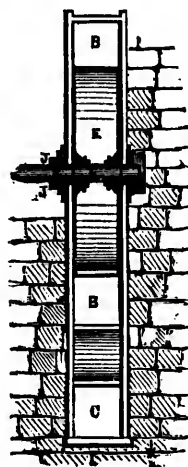
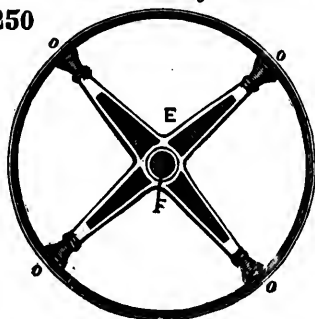
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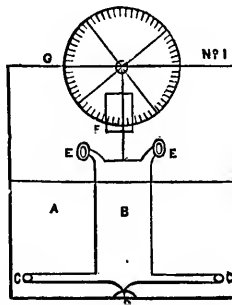
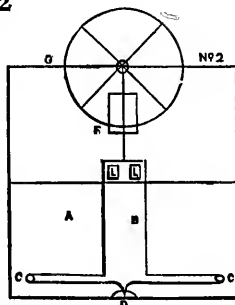
Newman's Hydran Pneumatic Water Wheel.

250



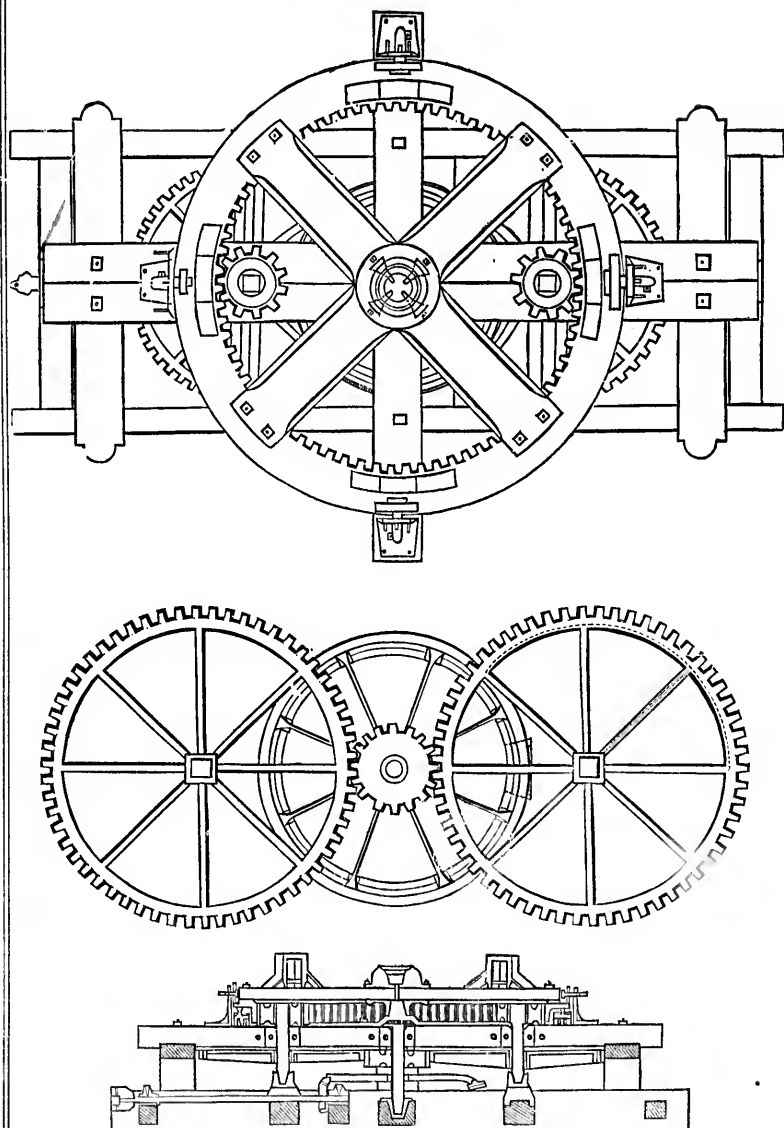
Well's Atmospheric Churn.

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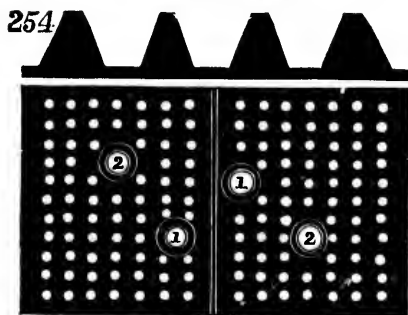
251.—*Stewart's Threshing Machine.*



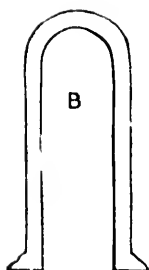
Midgley's Paddle Wheel.



Smith's Grate.

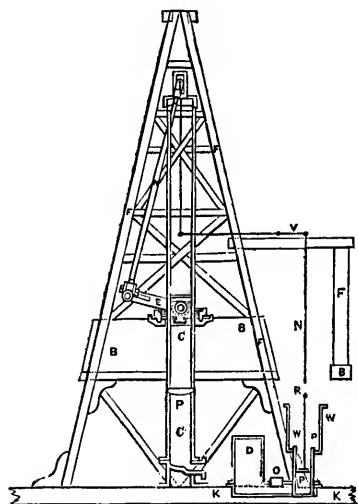
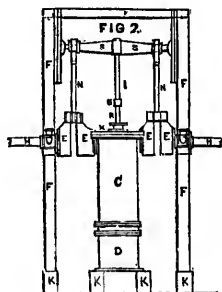
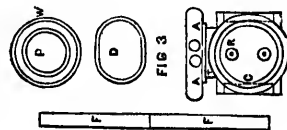
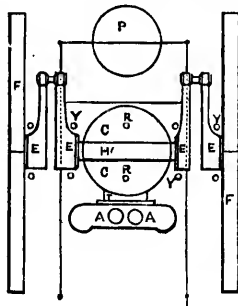
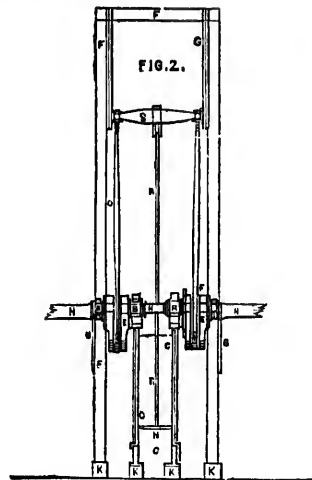
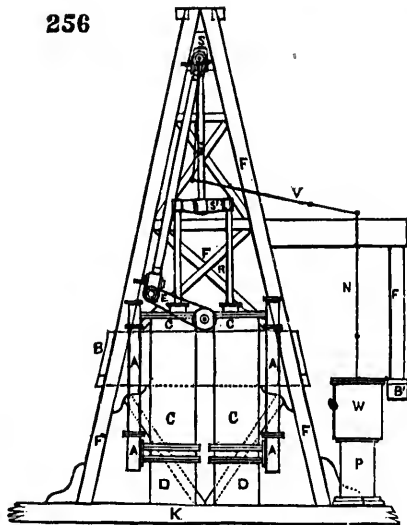


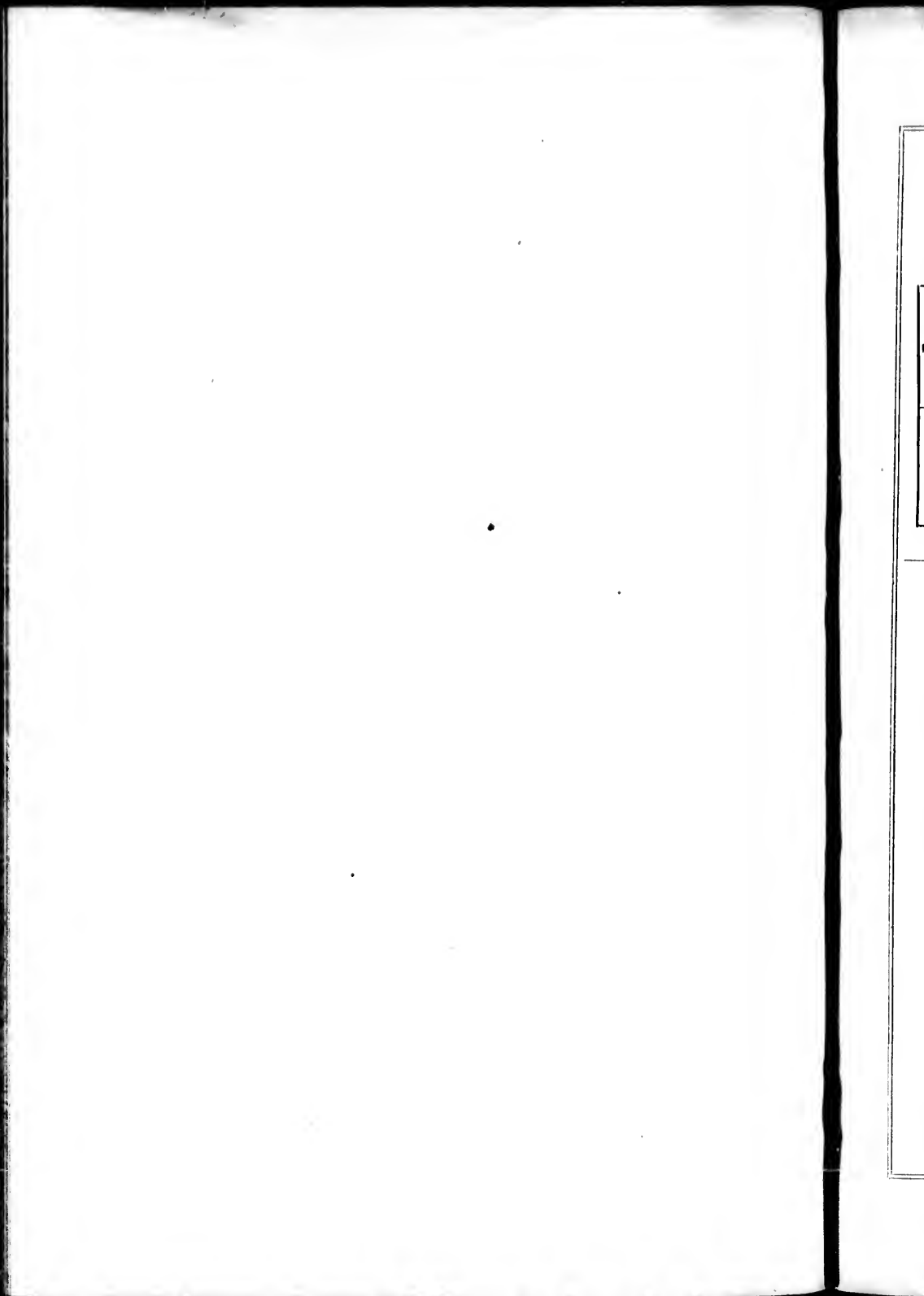
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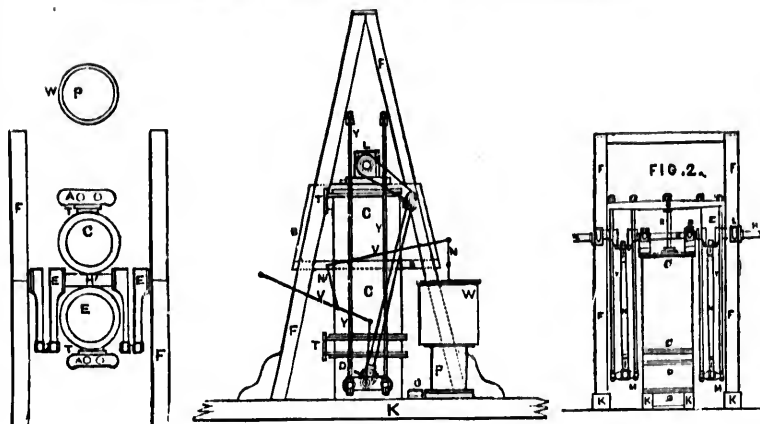
Baird's Steam Engine.

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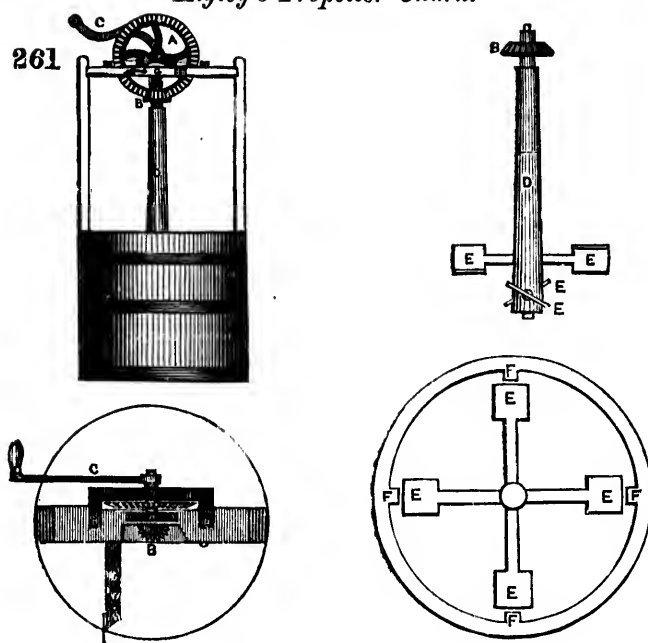


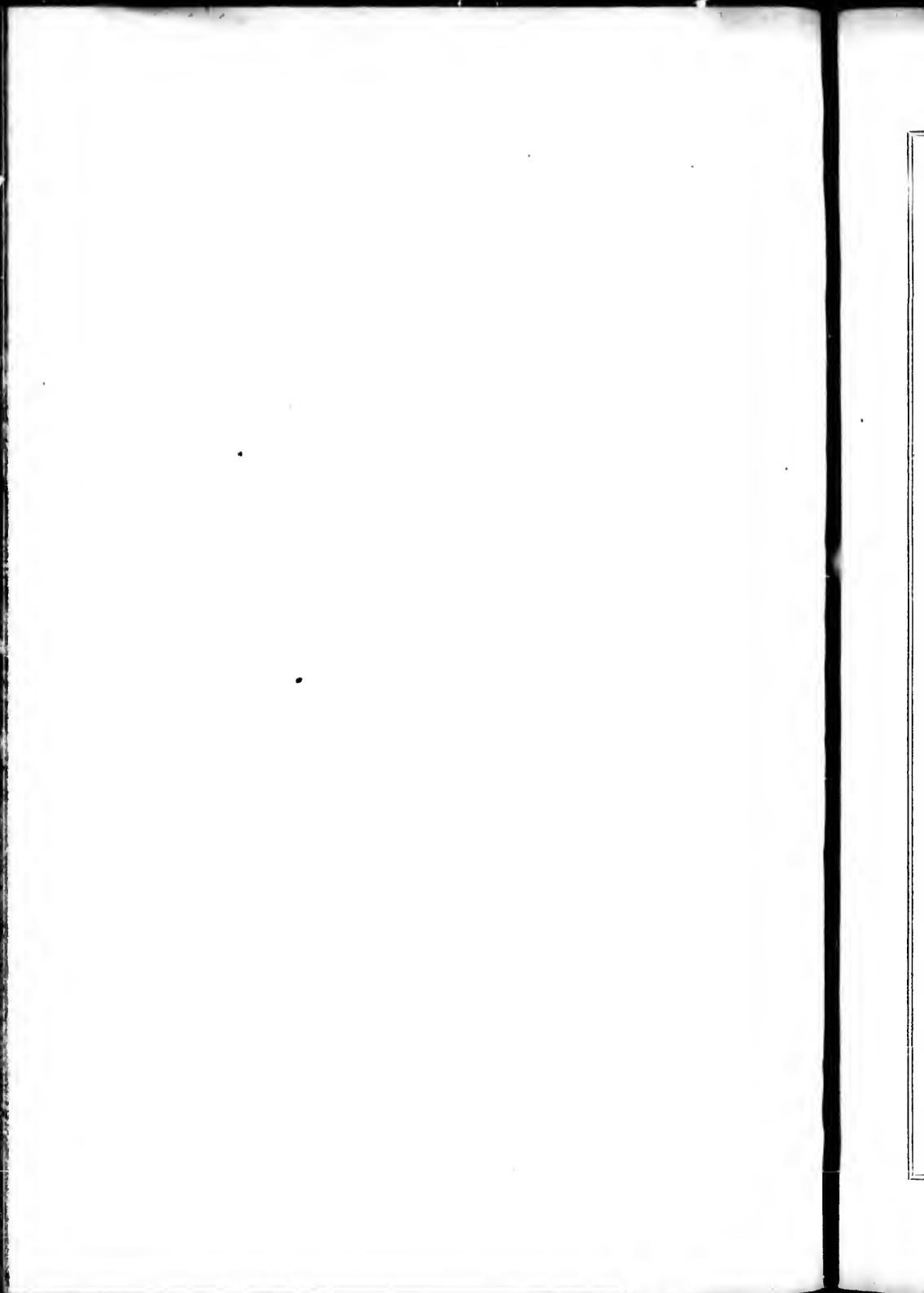
256.—*Baird's Steam Engine.*—(Continued.)



Higley's Propeller Churn.

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Severance's Threshing and Winnowing Machine.

