

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- Additional comments:/
Commentaires supplémentaires:

- Coloured pages/
Pages de couleur
 - Pages damaged/
Pages endommagées
 - Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
 - Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
 - Pages detached/
Pages détachées
 - Showthrough/
Transparence
 - Quality of print varies/
Qualité inégale de l'impression
 - Continuous pagination/
Pagination continue
 - Includes index(es)/
Comprend un (des) index
- Title on header taken from: /
Le titre de l'en-tête provient:
- Title page of issue/
Page de titre de la livraison
 - Caption of issue/
Titre de départ de la livraison
 - Masthead/
Générique (périodiques) de la livraison

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

The Canadian Patent Office

RECORD




Vol. XIV.—No. 8.

AUGUST, 1886.

{ Price in Canada \$2.50 per An.
United States - \$2.50 "

CONTENTS.

INVENTIONS PATENTED.....	363
ILLUSTRATIONS	391
INDEX OF INVENTIONS.....	I
INDEX OF PATENTÉES.....	II

INVENTIONS PATENTED.

NOTE—Patents are granted for 15 years The term of years for which the fees have been paid, is given after the date of the patent.

No. 24,403. Treating and Preparing Resins.

(*Traitement et Préparation des Résines.*)

Henry W. Peabody, Salem, Mass., U.S., (assignee of Albert Kissel-Frankfort-on-the-Main, Germany,) 3rd July, 1886, Re-issue of Patent No. 21,625.

Claim.—1st. The conversion of the acids contained in the balsams or resins hereinbefore referred to, or in their products or compounds, or by-products, or in mixtures of such resins with other substances as mentioned, by means of caustic lime or other caustic alkaline earths into the salts of those earths respectively, in order to harden such resins, resinous by-products or resin preparations. 2nd. The act of combining caustic lime or other caustic alkaline earth, with the acid or acids contained in either or any of the resins or resinous products hereinbefore referred to, in order to harden such resin or resinous product or to raise the same to a higher softening point, substantially as described. 3rd. The method of hardening of either or any of the resins or resinous products hereinbefore referred to, by partially or wholly neutralizing the acid or acids contained therein, by the combination of such acid or acids with caustic lime or other caustic alkaline earth, substantially as described. 4th. The herein described resin or resinous product brought to a higher softening point by the partial or entire neutralization of the acid or acids contained therein, by combination of such acid or acids with caustic lime or other caustic alkaline earth, to form a salt or salts of such alkaline earths respectively.

No. 24,404. Road Cart (*Désobligeante*)

Charles W. Noyes, Kalamazoo, Mich., U.S., 3rd July, 1886, 5 years.

Claim.—1st. The T-bars having the central transverse slat or brace secured upon them by the clips fitting the under flange of the bars, the springs, the eye-bolts passed down through the clips and brace, and the hangers connecting the eye of the bolts and the free end of the springs, all combined substantially as set forth. 2nd. The combination of the T bars, the central slat or brace, the clips fitting the vertical flange of the bars bolted to the upper flanges of said bars, and their outer end forming a washer for the nuts, of the eye-bolts which connect with the suspending rods, substantially as set forth.

No. 24,405. Road Cart. (*Désobligeante.*)

Charles W. Noyes, Kalamazoo, Mich., U.S., 3rd July, 1886; 5 years.

Claim.—In a two-wheeled vehicle having a suspended body, which supports the seat and foot-slats, the body having the bowed portions of its sides composed of two bars similarly curved, separated a little one above the other, running substantially parallel with each other, and rigidly held in this relative position by a series of transverse bolts, substantially as set forth.

No. 24,406. Fence Post. (*Pieu de Clôture.*)

Houghton W. Wilson, Kingston, Ont., 3rd July, 1886; 5 years.

Claim.—A fence post consisting of a flat bar upright A, having its lower end bent in the direction of the flat side at a right angle, and the end so bent, curved sideways into a scroll or circle to form a foot A', a flat bar brace B provided with a foot B' similar to the foot A' of the upright, the upper end of the brace movably clipped upon and

riveted or bolted to the upright, and connected by an adjustable angle-bracket C, rigidly securing it at the required angle to the upright, substantially as shown and described and for the purpose set forth.

No. 24,407. Fence Post. (*Pieu de Clôture.*)

Houghton W. Wilson, Kingston, Ont., 3rd July, 1886; 5 years.

Claim.—1st. A fence post consisting of an upright A, foot F composed of two bars having their central portion curved or bulged outward, and their ends substantially parallel and respectively adapted to be connected to the upright A, and a brace B. 2nd. A fence post consisting of an upright A, foot F curved to spread upon the ground, and connected to the upright A by a block or coupling C. 3rd. The combination of the upright A, notches a', foot F, block or coupling C and brace B. 4th. The combination of the upright A, foot F, block or coupling C, all substantially as shown and described and as and for the purpose set forth.

No. 24,408. Fence Post. (*Pieu de Clôture.*)

Houghton W. Wilson, Kingston, Ont., 3rd July, 1886, 5 years.

Claim.—1st. A fence post consisting of a flat bar upright A, a cross bar F morticed or notched in the centre to receive the upright pins or lugs E, F, driven obliquely and in opposite directions through mortices at the ends of the bar F. 2nd. The combination of an upright A, coupling C, cross bar F and oblique pins E, F, all substantially as shown and described and as and for the purposes set forth.

No. 24,409. File for Letters, etc.

(*Serre-Papier.*)

William A. Cooke, jr., and Charles S. Cooke, Brooklyn, N.Y., U.S., 3rd July, 1886; 5 years.

Claim.—1st. In a file for letters, papers, bills, etc., the combination of one or more tubular impaling needles or standards, and one or more corresponding transfer wires placed in a tubular socket or sockets and connected therewith by a bayonet joint, substantially as specified. 2nd. The combination of a tubular impaling needle or standard, a socket or tube provided with slots b, d, and a transfer wire having its upper end curved so as to join with, and enter the tubular impaling needle, and its straight portion or shank entered into the tube or socket, and provided with a pin e, which projects into the slot b and guides the transfer wire when raised and lowered, and when turned or swung out of conjunction with the impaling needle, enters slot d and sustains the transfer wire out of connection with the impaling needle, substantially as specified. 3rd. The combination of the tubular impaling needle, and a transfer wire having the end e squared off, so as to form, with the upper end of the impaling needle, a perforator or punch for the paper, substantially as specified. 4th. The combination of the tube or socket C, provided with slots b, d, the transfer wire having a pin e in the shank, and the end g of its curved portion squared off, and the tubular impaling needle B, substantially as specified.

No. 24,410. Apparatus for Drying Wool, Cotton, Cellulose, Wood Pulp, etc. (*Appareil pour Sécher la Laine, le Cotton, la Cellulose, la Pâte de Bois, etc.*)

Arnold Manzinger, Olten, Switzerland, 3rd July, 1886, 5 years.

Claim.—1st. In a drying apparatus, the combination of a cylindrical casing, provided at its upper end with disks having segmental openings, and perforated sections adjoining the said openings, and a spirally arranged series of perforated stops or shelves arranged below the said disks with the revolving arm or scrapers, substantially as and for the purpose herein set forth. 2nd. In a drying apparatus, the combination of a cylindrical casing, a spirally arranged series of perforated stops or shelves revolving arms or scrapers, an air-entrance at the bottom of said casing, a V-shaped deflector, and an inverted V-shaped perforated shield or guard for the same, substantially as and for the purpose set forth. 3rd. The combination of a cylindrical casing having an open hopper-shaped bottom, a spirally arranged series of steps within the said casing, a revolving shaft

having radial arms or scrapers, a sleeve sliding upon the lower end of the said shaft, and having a screw and a bell-shaped diaphragm mechanism for adjusting the said sleeve and suitable operating mechanism, substantially as and for the purpose set forth.

No. 24,411. Coal Scuttle. (*Seau à Charbon.*)

William Murphy, St. John, N.B., 3rd July, 1886; 5 years.

Claim—1st. The combination of the coal-scuttle and ash-sifter, as herein specifically set forth and described. 2nd. A coal-scuttle having a triangularly perforated bottom, for the purpose substantially as described. 3rd. A coal-scuttle having a triangularly perforated bottom, and a circular grate fitted thereto for the purpose, substantially as described. 4th. A coal hod with a triangularly perforated bottom, a grate fitted thereto and a base-plate with perforations corresponding to those in the bottom of the coal hod, and having a handle attached for the purpose, substantially as described. 5th. In a coal-scuttle or hod having the triangularly perforated bottom, the movable grate, and the perforated base-plate with the handle, moving in a slot for the purpose, substantially as described. 6th. In a coal-scuttle having the triangularly perforated bottom, the movable grate, the perforated base-plate with handle, the square bolt for the purpose, substantially as described.

No. 24,412. Grain Elevator.

(*Élévateur à Grain.*)

William J. Ross, Montreal, Que., 3rd July, 1886; 5 years.

Claim—In an elevator, the combination, with the lower pulley or tightener travelling belt and buckets, of a false bottom fitting closely in the boot and suspended from the slide, as and for the purposes set forth.

No. 24,413. Lubricating Device.

(*Boite à Graisse.*)

Joseph Lauboff, Detroit, Mich., U.S., 3rd July, 1886; 5 years.

Claim—1st. A lubricating device for journals consisting of a journal-box, having an oil-cavity, and a collar *D* encircling the journal, with a spiral spring *D* upon its periphery to dip into and lift the oil, substantially as described. 2nd. In a lubricating device for journals, consisting of a journal-box having an oil-cavity, and a collar *D* encircling the journal made in two parts, and secured together by a spiral spring *D* upon the peripheries thereof, said springs also serving to dip into and lift the oil, substantially as described. 3rd. A journal-box, provided with a cavity *C*, and groove *C* at each side thereof near the ends of the boxing, extending entirely around the interior surface of the boxing, forming a continuous annular channel with a returning-duct *C* located in the lower section of the box below the surface thereof, and connecting the channels *C* and cavity *C*, so that oil passing along the shaft or journal will be carried back to the central cavity through said channels and duct, substantially as described. 4th. The journal-box, provided with an oil-cavity *C*, and grooves *C* at each side thereof near the ends of the boxing, and extending entirely around the interior surface of the boxing, forming a continuous annular channel of an enlarged bore between said channels and the ends of the boxing, substantially as and for the purpose described. 5th. The combination, with the boxing, provided with central cavity *C*, and grooves *C* at each side thereof near the ends of the boxing, extending entirely around the interior surface of the boxing, forming a continuous annular channel, of a longitudinal channel adjacent to the surface of the shaft, substantially as described.

No. 24,414. Machine for Flattening Tobacco Stems. (*Machine pour Ecraser les Tiges de Tabac.*)

Frank Lauhoff, Detroit, Mich., U.S., 3rd July, 1886; 5 years.

Claim—1st. A tobacco stem flattening machine, comprising the frame *A*, the crushing rolls *B*, *B*, one of which is geared to rotate faster than the other, the side brackets *A*, *A* forming a chute, and the moistening roller *E* supported by said brackets or chute, and engaged with the faster crushing roll, substantially as described. 2nd. A tobacco stem flattening machine, comprising the supporting frame *A*, having side brackets *A*, *A* forming a chute, the crushing rolls *B*, *B*, one of which is adjustable and geared to rotate faster than the other, the apron *F* for feeding the material to the chute and crushing rolls, the yielding scrapers *D*, *D* and a moistening roller *E* supported by the chute and engaged with the faster crushing roll, substantially as described.

No. 24,415. Bilge Water Indicator.

(*Indicateur de l'Eau dans les Maillies.*)

John F. Smethells, Chicago, Ill., U.S., 3rd July, 1886; 5 years.

Claim—1st. The combination of the base *G*, having an oil chamber therein, the pipe *E* screwed into its bottom from below, and the pipe *F* screwed into the same from above, with an open passage between the adjacent ends of the two pipes, and the hollow cylinder *H* having air-tight cap *I* on its upper end, and its lower end screwed into the base *G* adapted to conduct the compressed air forced up by the bilge water down upon the oil in the chamber in the base *G*, substantially as described. 2nd. The described base, having an oil chamber therein, provided with two branches, and also with a vertical hole through, its bottom for the pipe *E*, and a hollow projection *O* situated over said hole and provided with an opening therein continuous with said hole, and a socket for the lower end of the pipe *F*, substantially as and for the purpose described. 3rd. The combination of the screw-cap *I*, having the flange *J*, which is provided with suitable openings through it for the upper ends of the graduated plate *L* and glass tube *K*, and the base *G* provided with said plate *L* and tube *K*, and also furnishing bearings for their lower ends, substantially as described.

No. 24,416. Flux for Metallurgical Purposes.

(*Flux pour des Fins Métallurgiques.*)

James Webster, Birmingham, Eng., 3rd July, 1886; 5 years.

Claim—1st. For the purpose of producing a flux for use in metallurgical operations, repeatedly immersing lime in waste liquor containing calcium chloride, letting it remain therein till it cannot absorb any more liquor, drying it at a limited temperature, and finally melting it as hereinbefore described. 2nd. For the purpose of producing a flux to be used in the refinement of iron, or in the production of steel from pig iron, mixing a manganese oxide with the flux produced by the melting of lime repeatedly immersed in calcium chloride waste liquors, the percentage of which manganese oxide is regulated according to the nature and purity of the iron to be refined or converted as hereinbefore described.

No. 24,417. Check Valve. (*Souape de Délicate.*)

John H. Berry, Montreal, Que., 3rd July, 1886; 5 years.

Claim—The combination, in a check valve, of a bent bar with foot set in seat in the bottom of valve body, and the upper end kept in place by cap, said bar being perforated for the sliding spindle which carries the disc, all as herein set forth and for the purposes described.

No. 24,418. Pneumatic Machine.

(*Machine Pneumatique.*)

James S. McCoy, Brooklyn, N.Y., U.S., 3rd July, 1886; 5 years.

Claim—1st. In a pneumatic tool or motor the striker or piston made of less diameter than the cylinder in which it moves to form the space *s*, substantially as and for the purposes set forth. 2nd. In a pneumatic tool or motor, the striker or piston formed with a transverse valve chamber, in combination with a cylinder having ports *h*, *h*, the valve chamber being formed in the striker or piston, a distance from its lower end somewhat less than the distance from the port *h* in the cylinder to the head of the cylinder or spindle, whereby a cushion of air will be maintained at the end of the cylinder, substantially as described. 3rd. The combination, with the pneumatic tool, of the tube *II* leading from the air inlet or exhaust to the point of the cutting implement, substantially as described. 4th. The combination, with the pneumatic tool, of a pipe connected with the exhaust port, substantially as and for the purposes described. 5th. The pneumatic tool, formed with the brace or shoulder piece *K* at the end of the tool, substantially as and for the purposes set forth. 6th. The induction port *a*, made at the breast of the tool, in combination with the pipe *J*, so the latter will tend to hold the tool with the port *a* lowermost, substantially as described. 7th. A striker, in combination with a tool-holding spindle, whose working implement is in contact with the material being wrought upon. 8th. A striker, in combination with a tool-holding spindle acted upon by a spring, the working implement held by the spindle being in contact with the material wrought upon. 9th. A striker, carrying a transverse slide valve, in combination with a tool-holding spindle whose working implement is in contact with the material being wrought upon. 10th. A striker and the cylinder which contains it, formed with an appreciable difference in their diameters, thus having an anti friction air cylinder between them, in combination with a tool-holding spindle whose working implement is in contact with the material wrought upon. 11th. The piston *A*, connected rigidly to the piston rod *N*, and formed with air passages, and carrying the slide valve *L*, in combination with the cylinder having inlet and exhaust ports, the piston rod *N* being connected by a rod and cross-head to the crank shaft, substantially as described. 12th. The piston *A*, formed with air passages, as described, and carrying a transversely arranged slide valve *L*, and made of smaller diameter than the interior of the cylinder to form the space *s* around the piston, in combination with the cylinder having inlet and exhaust ports, formed at or near the centre of the piston stroke, whereby the piston is surrounded and cushioned with compressed air, substantially as and for the purpose set forth. 13th. In an engine, the exhaust *b*, made of the same size as induction port *a*, in combination with said induction port *a*, and the several eduction ports and channels, as described, for the purpose of properly filling space *s* with air, so as to prevent contact between the piston and cylinder. 14th. The combination of the eduction ports; *u*, *f*, *a*, *b*, and eduction channel *d*, *d*, in cylinder of such size and position in relation to induction ports *a*, *b*, *g*, *g* in the cylinder as to detain the exhaust air, so as to counteract the upward pressure of the air on the piston sufficiently to prevent frictional contact of the piston and cylinder at the opposite side from the induction port *E*. 15th. The piston *A* made smaller in diameter than the cylinder bore, to form the surrounding space *s*, and provided with slide valve *L* and formed with ports controlled by the valve *L* to admit air to and its exhaust from both ends of the cylinder, in combination with the cylinder having medial exhaust ports, and the medial bottom air inlet port *e*, whereby the pressure of air entering the port *e* will lift the piston in space *s* and prevent friction, substantially as described.

No. 24,419. Harness. (*Harnais.*)

Franklin L. Henry, Corning, Ohio, U.S., 5th July, 1886; 5 years.

Claim—1st. In a harness, the breeching arranged to pass over the rump of the horse, in combination with the back-strap divided at the hips of the horse, and having its branch straps connected with the breeching, substantially as and for the purpose set forth. 2nd. The back strap *E*, having the breeching *F* connected thereto and formed with the straps *e*, adapted to be attached to the hames, substantially as described. 3rd. The hames *A*, provided with the rings or eyes *a*, in combination with the back strap *E*, formed or provided with the short straps *e*, substantially as and for the purposes set forth. 4th. In a harness, the breeching provided with straps *f*, *f*, joined by a curved plate, in combination with the two-part back-strap, substantially as and for the purpose set forth. 5th. In a harness, the back-strap formed with straps *e*, *e* and *e*, *e*, in combination with the hames having rings or eyes, the hip-strap made in two parts joined together, and to the strap *e*, *e* by the arch-piece *s*, and the breech-

ing having straps joined together and to the straps *e* by the curved or arched plate *f*, substantially as and for the purpose described. 6th. The back-strap *E*, divided to form the straps *e*, *e*, in combination with the hip-strap *f* made in two parts, and attached to the straps *e*, *e*, substantially as and for the purposes set forth. 7th. The back-strap, divided to form the straps *e*, *e*, in combination with the hip-strap made in two parts joined together, and to the straps *e*, *e*, by the arch piece *g*, substantially as described. 8th. The back-strap *E*, divided to form the straps *e*, *e*, in combination with the back pad *C*, provided with the tree *F* having loops *t* to act as guides and supports to the straps *e*, substantially as described.

No. 24,420. Window Screen.

(*Store de Fenetre.*)

George L. Reynolds, Pine Hill, N.Y., and Benjamin F. Van Amringe, Oakland, Cal., U.S., 5th July, 1886; 5 years.

Claim.—1st. In a window-screen, in which the screen cloth is wound upon a spring roller, the bracket *D* in which the roller is mounted, said bracket consisting of a cross-piece *E*, upper end arms *e*, and hinged lower end arms *e*, substantially as and for the purpose herein described. 2nd. In a window-screen, in which the screen cloth is wound upon a spring roller, the bracket *D* in which the roller is mounted, said bracket consisting of a cross-piece *E*, having an angular strengthening flange *e* on one edge, upper end arms *e*, and hinged lower end arms *e*, substantially as and for the purpose herein described. 3rd. A roller for screens or curtains, having a series of slots *W* or perforations, with flexible tongues *X*, whereby the screen or curtain may be secured thereto, substantially as herein described. 4th. The roller *H*, to which the screen-cloth is attached, and upon which it is wound, consisting of a tube *K* and a telescoping extension or bar *L*, by which the roller is adjusted in length, substantially as herein described. 5th. The roller *H* upon which the screen-cloth is wound, said roller consisting of a tube *K* having slots *W*, with flexible tongues *X*, by which the screen is secured, and the sliding extension or bar *L* fitting the end of the cylinder and having a groove *l* and a spring-rod *P* therein, by which the screen is secured, substantially as herein described. 6th. The roller *H*, pivoted at one end to a frame or bracket, and consisting of the tube *K* and telescoping extension bar *L*, and the fixed bearing *Q* in the tube, in combination with the spindle *R* in the tube journaled in the bearing *Q*, its other end having a slotted cap *U* by which it is fixed on a flat lug *I* on the frame or bracket, and the spring *T* around the spindle, one end being fixed to the spindle and the other to the bearing *Q*, substantially as herein described. 7th. The bar *L* at the lower end of the screen, consisting of the angle-bar *z* having a rounding upper edge, and the straight bar *z* having rounding edges, substantially as and for the purpose herein described. 8th. The triangular blocks *N*, fitting the top of a segmental sash and forming a straight top, as described, whereby screen-cloth may be secured, substantially as herein described. 9th. The triangular blocks *N*, fitting the top of a segmental sash and forming a straight top, in combination with a straight bar secured to the lower end of the screen and to the top of the block, substantially as and for the purpose herein described. 10th. The rubber-strip *M* for guarding the aperture between the meeting-rails of two sashes, in combination with the bent or folded metal strip *m* between the folds of which the rubber strip is secured, substantially as and for the purpose herein described.

No. 24,421. Trunk. (*Coffre.*)

Gudfrey S. Eggeman, Toledo, Ohio, U.S., 5th July, 1886; 5 years.

Claim.—1st. The combination, with a trunk body having its back carried up to or nearly to the plane of the top, and the projections *b* of the ends connected by the rail *c* of the brackets *C*, having a portion *d* to embrace the ends of the trunk, a portion *a* to embrace the rear wall and a portion *k* to embrace said rail *c*, and forming a part of the pivotal connection between said body and a swinging top, substantially as described. 2nd. The combination, in a trunk, of the top *B*, the body *A* having end projections, the rail *c* connecting said projections and forming a stop for said top, and the corner iron brackets *C* carrying trunnions *h* which form the pivot point on which said top turns, substantially as described.

No. 24,422. Quilting Attachment for Sewing Machines. (*Métier à Piquer pour Machines à Coudre.*)

David R. Fraley, Lexington, N.C., U.S., 5th July 1886; 5 years.

Claim.—1st. The combination of the long rail *D*, provided with the rib *E*, the short rail *F*, the cross-bars *G*, joining the two rails, and the movable frame consisting of end beams *J*, longitudinal beams *K*, *K* firmly secured thereto, the cloth roll-snares *N*, *R* and *e* journaled in the end beams *J*, the two grooved rollers *M*, journaled in the end beams *J* to engage the rib *E*, and the roller *L* journaled to the beam *K*, *K*, substantially as shown and described. 2nd. The combination of the long rail *D*, provided with the rib *E*, the short rail *F* secured parallel therewith, the movable quilt frame comprising the end pieces *J*, provided with raised arms *S*, the shaft *R* journaled therein above the plane of the frame, the shafts *N* and *e* journaled in opposite ends of the said frame, the roller *L* journaled in the frame to engage the rib *E*, the rollers *M* journaled in the frame to engage the rib *E*, and the presser-bar *K*, directly in line with the rollers *M* above the rib *E*, substantially as shown and described, whereby the upper and lower cloths of the quilt when first brought together upon the working surface are held between parallel bars and the work of laying and guiding the quilt accurately is facilitated. 3rd. The combination of the end beams *J*, provided with the turned up slanting notched ends *j*, the longitudinal beams *K* and *K* fixed to beams *J*, the shafts *N* and *R* journaled in the end beams, as described, and the shaft *e* removably journaled in the slanting ends *j* of the beams *J*, substantially as shown and described. 4th. The combination of the end beams *J*, provided with the turned up notched ends *j*, the longitudinal beams *K*, *K*, the shafts *N*, *R* and *e* journaled in the end beams, the block *g* gained in at one side to fit the raised end *j* and notched in its lower side to fit the shaft *e*, the detent *f* pivoted to the

block *g* and the ratchet wheel *d* on the shaft *e*, substantially as shown and described.

No. 24,423. Dumping Scow.

(*Allège-Tombereau.*)

George E. Robertson, Dickinson's Landing, Ont., 5th July, 1886; 5 years.

Claim.—1st. A dumping scow formed of decks *A* and *A'* and sides, each deck alternately serving to carry the load and as the bottom of the scow. 2nd. A dumping scow, having a side water compartment, divided up horizontally, as and for the purposes set forth. 3rd. In a dumping scow, the combination, with the hold and double water compartment, of bilge troughs and drain pipes, as and for the purposes set forth.

No. 24,424. Production of Aluminium and Aluminium Bronze. (*Production de l'Aluminium et du Bronze d'Aluminium.*)

The Aluminium and Magnesium Fabrik Patent Grätzel Company, (Assignee of Richard Grätzel,) Bremen, Germany, 5th July, 1886; 5 years.

Claim.—1st. The process of producing aluminium from the compound fluoride of aluminium and of an alkali-metal, by melting the same, and by causing magnesium to act thereon for the purpose of decomposing the aluminium fluoride, substantially as herein before described. 2nd. The process of producing aluminium from the compound fluoride of aluminium and of an alkali-metal, by melting the same, and by causing magnesium or one of its described equivalents (calcium, barium, strontium) produced in the melted fluoride by electrolysis of chloride of magnesium, or of one of the said equivalents to act in nascent state on the said fluoride for the purpose of decomposing the aluminium fluoride, substantially as hereinbefore specified. 3rd. In the process of producing aluminium from the compound fluoride of aluminium, and of an alkali-metal, by melting the same, and causing magnesium to act thereon, the introduction of copper into the melted fluoride for the purpose of obtaining aluminium bronze, substantially as described. 4th. In the process of producing aluminium from the compound fluoride of aluminium, and of an alkali-metal by melting the same, and causing magnesium or one of its described equivalents (calcium, barium or strontium) produced in the melted fluoride by electrolysis of chloride of magnesium, or of one of the said equivalents, to act in nascent state on the said fluoride, the introduction of copper into the melted fluoride for the purpose of obtaining aluminium bronze, substantially as hereinbefore set forth.

No. 24,425. Road Cart. (*Désobligeante.*)

Thomas O'Brien, William H. Schmedden and Murdock, D Campbell, Coldwater, Mich., U.S., 5th July, 1886; 5 years.

Claim.—1st. The combination of the shafts having seat bars pivotally supported thereon at a point between their ends, and having the forward ends of such bars terminating directly above the shafts, springs secured to the underside of the shafts and shackles, each composed of two outwardly and oppositely flared plates extending, one on each side of and embracing the poles of the shafts, and connecting the front ends of the seat bars with the springs, whereby the shafts are free to have a lateral play independently of the seat bars, as described. 2nd. The combination of the shafts, seat bars having their front ends directly above the poles of the shafts, pivoted thereto between the front and rear ends, springs secured to the underside of the shafts, shackles comprising two plates each oppositely flared near the middle, and embracing the poles of the shafts, and connecting the front ends of the bars with the springs, and a foot-rest consisting of the curved bars secured at each end to and suspended directly from opposite ends of the seat bars, substantially as shown and described.

No. 24,426. Dial for Time Pieces.

(*Cadrans d'Horlogerie.*)

Martin Van B. Ethridge, Boston, Mass., Henry E. White, Newton, Mass., and John Swann, New York, N.Y., U.S., 5th July, 1886; 5 years.

Claim.—1st. In a time piece, the combination, with a perforated dial-plate, of a series of radial spindles intermittently rotated in a forward direction, each of said spindles carrying a block, plate or disk, on the faces of which are delineated numerals designating the twenty four hours in each day, substantially as described. 2nd. In a time piece, the combination of a perforated dial plate, a radial series of intermittently-rotary spindles, each carrying a numeral block, and provided with a bearing, as *f*, having pins *g*, *g*, and a carrying disk or collar, mounted on the hour hand thimble and having a pin *h* thereon, substantially as described. 3rd. In a time piece, the combination of a dial-plate having slots or openings *b*, *b*, and supporting springs *k*, *k*, a radial series of intermittently-rotary spindles *C* carrying numeral blocks or plates *D* and having bearings *f*, provided with pins *g*, *g*, and a disk or collar, mounted on the hour hand thimble and carrying a pin *h* substantially as described.

No. 24,427. Fence Post. (*Pieu de Clôture.*)

Rowland Bentley, (assignee of John E. Donaldson, Montezuma, Ind., U.S., 5th July, 1886; 5 years.

Claim.—1st. The combination, with a post, of a foundation block detachably secured to said post, and having a plane portion, and downwardly sloping surfaces and projecting tongues *C* arranged at each end thereof, substantially as described. 2nd. The combination, with a fence post, of a foundation or base block composed of vitrified earth and detachably secured to said post, said block having a plane portion *B* for the post, downwardly sloping upper surfaces from said plane portion to the sides and ends thereof, and projecting tongues *C* at each sloping end wall thereof, substantially as described. 3rd. The combination of a fence post having a bore and a transversely

recess, a base block, a bolt fitted in an aperture or hole in said block, and rigidly held in position by a lead filling, and a serrated nut fitted in the transverse recess of the post, and engaging the threaded end of the bolt to lock, said base block and post together, substantially as described.

No. 24,428. Display Frame for Show Windows. (*Montre pour Vitrines.*)

William A. Aiken, (assignee of Edwin A. Tracey.) Norwich, Ct., U.S., 5th July, 1886, 5 years.

Claim.—1st. A support for displaying shoes slippers and boots, consisting of a wire form having suitably located a depression for the reception of the clamping screw, substantially as herein described. 2nd. A shoe rest, of the form referred to, having a depressed central portion, in combination with a clamping screw adapted to enter said depression and engage a suitable support, substantially as specified. 3rd. In combination with a display frame formed of a series of rods adjustably connected to each other, as herein described, a series of collars adjustably located on the horizontal rods of said frame, and a series of shoe rests, each formed with a depression for the reception of a clamping screw adapted to engage said collar, substantially as herein described.

No. 24,429. Snow Plough. (*Charrue à Neige*)

Orango Jull, (assignee of Edward Leslie,) Oranoville, Ont., 5th July, 1886; 5 years.

Claim.—1st. A series of shovels G, connected to and radiating from the revolving driving shaft A, in combination with a series of bent plates T, placed between the shovels G, substantially as and for the purpose specified. 2nd. A series of shovels G, fixed to and radiating from the revolving shaft A, in combination with the bent plates T, pivoted at their centre between the shovels G, substantially as and for the purpose specified. 3rd. A series of shovels G, connected to and radiating from the shaft A, the rings d and e designed to brace the shovels together, as specified, in combination with the bent plates T, hinged to the rings d and e, substantially at the centre of the plates between the shovels G. 4th. The bent plate T, hinged to the rings d and e, in combination with the spring catches F, arranged substantially as and for the purpose specified.

No. 24,430. Telegraphic Relay. (*Relais Télégraphique.*)

Sidney A. Chaso and William R. Mapes, Ewart, Mich., U.S., 5th July, 1886; 5 years.

Claim.—As an improvement in telegraphic relays, the combination of the electro magnets having the usual metallic yoke formed with the U-shaped extension, the two contact screws, one of which is in direct contact with the metallic yoke, while the other passes through an insulated aperture in the yoke, the armature arranged to come in contact with the insulated contact screw when attracted by the magnets, two series of three disks, each having intervening apertures between the disks of each series, and a disk at one end of each series having a wire leading to said insulated contact screw wires, leading from the opposite end disks of the series to the metallic yoke wires, leading from the central disks to two binding posts, one of which posts receives the wire of a local circuit, while the other post receives the wire of a local circuit, while the other post receives the wire of another local circuit wire, leading from the armature to two binding posts, one of which receives the remaining wire of one local circuit, while the other receives the remaining wire of the other local circuit, and the metallic plug adapted to fit and close the circuit between the said disks, as described, all constructed and arranged to operate in the manner and for the purpose herein shown and specified.

No. 24,431. Locking and Driving Gear of Traction Engine, Steam Plough Engine, etc. (*Communication de Mouvement de Machine Locomotive, Machine de Charrue à Vapeur, etc.*)

Alfred Greig, Richard H. Shaw, Leeds, and John Whittingham, Nantwick, Eng., 5th July, 1886; 5 years.

Claim.—The combination, in the locking and driving gear of traction engines, steam plough engines and other engines of a like nature, of gimbal rings interposed between the axle and the body of the engine, and of differential toothed gearing interposed between the wheels upon the axle, and the outer gimbal ring to which the driving power is applied, substantially as described.

No. 24,432. Shirt. (*Chemise.*)

William S. Finch, Toronto, Ont., 6th July, 1886; 5 years.

Claim.—In a shirt or undershirt, the incision or slit c, protected by a curtain e in the front of said shirt, with the slit d at the back thereof, allowing the shirt to lie down over the legs inside the drawers or pants, substantially as shown and for the purpose specified.

No. 24,433. Pulp Machine. (*Machine à Pâte à Papier.*)

Gronville M. Stevens, Portland, Mo., U.S., 6th July, 1886; 5 years.

Claim.—The machine for forming vessels from moistened pulp, consisting of the rotary base f, the perforated vessel h, composed of three parts, and having netting o and check cloth p, the cover e with its flanges i and j, and the jointed rods R, the whole to rotate as herein set forth.

No. 24,434. Brooch or Badge for Clubs, etc. (*Broche ou Insigne pour Cercles, etc.*)

Robert E. Phillips and Ernest R. Shipton, London, Eng., 6th July, 1886; 5 years.

Claim.—1st. A brooch or badge for clubs and other bodies, whose membership is defined by the payment of periodical subscriptions, consisting essentially of two parts, one of which is capable of being removed or detached from the others, so that it may be changed at stated intervals, as and for the purpose hereinbefore described. 2nd. Combining with a brooch or badge, a tickler of membership, the design of which harmonizes with the design of the brooch or badge, so as to produce any given design, substantially as set forth. 3rd. A brooch or badge, an essential portion of which is changeable or renewable, at stated or given intervals, as and for the purpose hereinbefore set forth.

No. 24,435. Fire-Place and Heating Apparatus connected therewith. (*Foyer et Appareil de Chauffage pour Foyer.*)

Hermann Heim, Obordobling, Austria, 6th July, 1886; 5 years.

Claim.—1st. In a fire-place or stove, a filling channel terminating in the lower part of the fire-space above the grate, and having its upper end forming the filling opening, or ranged to project either forwardly over the fire-space or laterally of the same, whilst its lower part is inclined at an angle of about 45 degrees to a horizontal line, and forms a surface upon which the fuel gradually slides down into the grate. 2nd. In a fire-place or stove, the combination of the fire-space and filling-channel, in such a manner that the lower portion of the inclined surface of the said filling-channel, extends into the fire-space beyond the vertical plane of the wall between the upper part of the fire-space and the filling-channel. 3rd. In a fire-place or stove, the pipes *f₁, f₂, f₃, f₄* for the passage of the heated gases of combustion, the said pipes being freely suspended from the fire chamber, so as to permit the longitudinal displacements caused by the differences of temperature. 4th. The arrangement of a coil of pipes or a water casing within the fire-space, the said coil or casing serving as the boiler of a heating apparatus by which various rooms can be heated. 5th. In a fire-place or stove, a protecting bar placed before or above the grate, the said bar being A-shaped or channel-shaped in transverse section, and perforated in the upper part, for the purpose specified. 6th. In a fire-place or stove having a filling-channel, a grate whose part adjacent to the said filling-channel is directed upwardly from the middle of the said grate, so that it joins and forms a continuation of the inclined surface of the filling channel. 7th. In a fire-place or stove having a filling-channel, the combination, with the upper end of said filling-channel, of a funnel-shaped projection rigidly connected to the inside of the filling-opening of the outer casing, and extending into the filling-channel, for the purpose of preventing the fuel from falling between said casing and the fire-place. 8th. In a fire-place or stove, the arrangement at a small height above the grate of supports for a perforated plate or a fork-shaped grate, said plate or fork-shaped grate being introduced into the fire-place when the ordinary grate is to be cleaned, while the fire-place or stove is being used.

No. 24,436. Suspender Buckle. (*Boucle de Harnais.*)

Joseph F. Townsend, Cambridgeport, Mass., U.S., 6th July, 1886; 5 years.

Claim.—The buckle frame, provided with the duplex or concavo-convex tongue c, arranged with and adapted to such frame as described, and with the elastic curved tongue g projecting from the said frame, and extending down nearly to the lower bar thereof, all being substantially as set forth.

No. 24,437. Hame Tug. (*Mancelle.*)

John T. Condon, Kingsley, Iowa, U.S., 6th July, 1886; 5 years.

Claim.—1st. The combination of the hame having eyes c, c, the tug strap and the clip A having its shank or body a increased and held in the tug-strap, and its head d projected out beyond such strap, and the projections or studs A₁ extended from the opposite sides of the head a and into the eyes c, c, substantially as set forth. 2nd. As an improved article of manufacture, the herein-described hame tug consisting of the strap, adapted at one end for connection with a trace, and the clip A having its body or shank a increased within the opposite end of said strap, and its head a projected out of such strap, and having the studs A₁ projected in opposite directions from said head, substantially as set forth. 3rd. The combination, substantially as hereinbefore described, of the hame, the shield D secured at one end to the rear edge of the hame, the eyes c, secured to said hame, the tug strap and the clip, having its body or shank a increased in said strap, and its head a projected out therefrom, and the studs A₁ extended from the opposite sides of the head a and fitted into the eyes c, all arranged and operated substantially as and for the purposes specified.

No. 24,438. Jaw and Clevis for Ploughs. (*Mâchoire et Volée de Charrues.*)

George Wilkinson, Aurora, Ont., 6th July, 1886; 5 years.

Claim.—1st. The combination of the stiff and swing clevis, substantially as and for the purpose hereinbefore set forth. 2nd. The construction of the jaws A, A, with holes e, e and d, d, and notches c, c, substantially as and for the purpose hereinbefore set forth. 3rd. The projections E, F on the inner edge of the clevis, substantially as and for the purpose hereinbefore set forth. 4th. The combination of the jaws A, A, and clevis B, B, substantially as and for the purpose hereinbefore set forth.

No. 24,439. Metal Support for Suspending Drawers in the Bottom of a Table. (Coulisseaux Méalliques pour Tiroirs de Tables.)

Charles Raymond, Guelph, Ont., 6th July, 1886; 5 years.

Claim.—1st. The metal frames B, C, in combination with the metal bars A, notched as specified, and having the lugs a, substantially as and for the purpose specified. 2nd. The bars A having lugs a at one end, and the lugs c at the other, and notched as specified, in combination with the metal frames B and C, notched and connected to the bar A, substantially as and for the purpose specified.

No. 24,440. Furnace Grate.

(Grille de Fourneau.)

John Smoad, Toledo, Ohio, U.S., 6th July, 1886; 5 years.

Claim.—1st. A grate for furnaces, consisting of one or more plates or sections A, provided with a series of ribs or projections on its upper surface, with vertical holes extending through said plates, and the ribs or projections thereon, substantially as shown and described. 2nd. The plate or section A, provided with the ribs d, having holes c formed thereon, and provided with the locking lug g on one edge, substantially as and for the purpose set forth. 3rd. A grate for furnaces, consisting of a plate A, having a series of ribs d on its surface with holes c formed in and extending through said ribs and plate, and having a series of strengthening-ribs formed on the under side of said plate, substantially as shown and described. 4th. A grate consisting of a plate A, having a series of ribs d or equivalent projections formed on its upper surface, with holes c extending vertically through said projections and plate, and having cavities between said ribs or projections on the upper side of said plate for the reception of ashes or other protecting material, as set forth.

No. 24,441. Brick Machine. (Machine à Briques.)

Gustav Haub, Perham, Minn., U.S., 6th July, 1886; 5 years.

Claim.—1st. Combined with movable carriage in a brick machine, a plunger having a cross timber carrying spring-surrounded rods, toothed wheels on the plunger supporting frames and connected to the said rods, and rack-teeth on the said carriage operating said wheels, substantially as specified. 2nd. In a brick-machine, a drive-shaft with a clutch-connection to the transmitting mechanism, a lever for operating said clutch, a reciprocating carriage, a catch on said carriage and a lever pivoted to the frame connected to the clutch-lever and adapted to engage the catch on the carriage, substantially as specified. 3rd. The combination, with the reciprocating carriage D, mounted and actuated substantially as described, of a sliding frame thereon having an elevated floor, and a depression in front of it to receive the mould-boxes, the stationary pressing-box located over said slide, and provided with a plunger connected to a vertically-movable guided cross-head, the rods c vertically movable through this cross-head and bearing sprocket wheels tapped on them and connected by an endless chain and seated on springs, the toothed wheels G connected by pitman to said rods c, and the racks H on the carriage, all constructed and adapted to operate substantially as described. 4th. In a brick-machine, the combination, with the press-box, its plunger and a carriage bearing rack-teeth, of the spring-actuated rods passed freely through the cross-head of the plunger, the toothed wheels actuated by said rack teeth and connected to the said rods by pitman, and the sprocket-wheels tapped on said rods and connected by an endless chain, substantially as described. 5th. In a brick-making machine of the character described, the combination, with a press-box, a rolling carriage and a sliding frame thereon, of the spring-actuated angular pawls K pivoted to said sliding frame, the stops M on the end of the carriage, and stops L on the main frame, substantially as described. 6th. The combination of the carriage D, actuated by cranks on the horizontal shaft G, and provided with a bent spring-actuated rod T, the lever N on the main frame, located as described, the clutching device on the main driving-shaft, the actuating lever for the clutch, and the chain connecting this lever with the lever N, all constructed and adapted to automatically stop the movement of the carriage at the proper times for removing the mould boxes, substantially as described.

No. 24,442. Car Brake. (Frein de Char.)

Earl A. Westcott and Edmond R. Bristol, Minneapolis, Minn., U.S., 6th July, 1886; 5 years.

Claim.—1st. The combination, with the supply pipe, of an atmospheric brake system of a suspended post, and a lever connecting it with a valve of the supply pipe. 2nd. A post suspended from the truck of a railway car or engine truck over the rail, in combination with the supply pipe of an atmospheric brake, a valve leading to the supply pipe, and mechanism connecting the post with said valve, whereby the lifting of the post by contact with the rail or other obstruction will open the valve and apply the brakes, substantially as set forth. 3rd. The combination, with the supply pipe of an atmospheric brake system, of a valve leading therefrom, a link d, lever D and a post suspended from the short arm of lever D over the rail, as and for the purpose set forth. 4th. The combination, with the pipe H, of tubes G and their valves levers D, links d, posts F and guides E, as and for the purpose set forth.

No. 24,443. Bottle. (Bouteille.)

Henry R. Bothwell, Toronto, Ont., 6th July, 1886; 5 years.

Claim.—1st. A bottle A, having a chamber B formed in its neck, and communicating with the interior of the bottle, with an aperture made through its side. 2nd. A bottle A, having a chamber B formed in its neck, and having a recess d made in its bottom, together with an aperture a made through its side to communicate with the interior of the bottle, substantially as and for the purpose specified.

No. 24,444. Tire Upsetter and Welder. (Machine à Refouler et Souder les Bandages des Roues.)

Thomas Stylos, Fenelon Falls, Ont., 6th July, 1886; 5 years.

Claim.—1st. The herein described method of upsetting and welding tires, which consists in subjecting the heated ends of the tire to pressure upon each of the four sides of the meeting ends, substantially as described. 2nd. The herein described method of upsetting and welding tires, which consists in placing the tire upon a bed or anvil, and subjecting the ends so placed to a vertical and lateral pressure, substantially as described. 3rd. In a tire upsetter and welder, the combination, with a curved plate 16, rigidly connected to a stationary frame, of a movable plate 31, a means for advancing the plate 31 toward the plate 16, a horizontally-arranged plate 23, and a mechanism, substantially as described, whereby said plate is moved toward the plate 16, a plate 51 and a mechanism for advancing said plate toward the longitudinal centre of the plate 16, substantially as described. 4th. In a machine for upsetting and welding tires, the combination of the following elements: a plate 16 rigidly connected to the frame of the machine, a plate 31 mounted in ways and carrying a rack 37, eccentric gear engaging with said rack and provided with an operating lever, brackets 59 and 40 carrying eccentrics 41 and 61, tooth faced blocks connected to the eccentric plate 18, carrying a plate 23 and formed with a slot 8, an eccentric arranged in said slot, a toothed wheel 37 connected with the eccentric, and a lever 23 engaging with the tooth of the wheel 37, a plate 51 formed with a central slot and diagonal side slots, as 5, a wedge shaped block 53 engaging with said slots 5 and held against lateral motion, and a means, substantially as described, whereby said wedge-shaped block may be depressed, as and for the purpose stated.

No. 24,445. Machine for Forming Pulp into Vessels. (Machine pour Façonner les Vaisseaux en Pâte à Papier.)

Gronville M. Stevens, Portland, Me., U.S., 6th July, 1886; 5 years.

Claim.—1st. The perforated cylinder G, the rods and the inner and outer sieves of different textures, in combination with the conical bottom I, yoke H, aperture L, and rods J and P and arms I, the same to be operated, as herein set forth. 2nd. In combination with the inner cylinder G and its contained devices, the outer cylinder with scuppers D and the flange B, as herein set forth. 3rd. The combination, with the cylinder G, of the movable part of the yoke H, arms I and rods J and P, to regulate the freight of the vessel to be formed, as herein set forth.

No. 24,446. Seal Steam Washing Machine.

(Machine à Laver à la Vapeur Scellée.)

David Reynolds, Dundas, Ont., 7th July, 1886; 5 years.

Claim.—1st. In a steam washing machine, the combination of the tank A and the sealed water compartment B, the flange a of the cover C fitting thereon to make a sealed joint, substantially as specified. 2nd. In a steam washing machine, the cylinder D, provided with buckets E, a series of inlet openings f at the rear end of buckets, a series of side outlet openings g, and a series of tumblers attached to the interior of the cylinder, all constructed and arranged substantially as and for the purpose specified. 3rd. In combination, with the cover C, of the indicator or valve K, substantially as and for the purpose specified. 4th. The combination of the tank A, drip pan I and trap pipe J, substantially as and for the purpose specified. 5th. The combination of the tank A, sealed water compartment B, cylinder D, buckets E, tumblers G, inlet openings f, outlet openings g, cover C with flange a, bearings b, h, spindles c, e, all arranged and constructed substantially as and for the purpose specified.

No. 24,447. Attachment to Grain Drills.

(Disposition aux Semoirs en Ligne.)

Jeremiah Courson, Prairie View, Ks., U.S., 7th July, 1886; 5 years.

Claim.—1st. The combination of the frame, the transverse rocking bar I thereon having the slotted openings s, the beams F hinged to the frame and carrying the trailing colters, and the discharge nozzles and the rods L attached to the hinged beams and passing up through the openings in the rocking bar, substantially as described. 2nd. The combination of the frame, the transverse rocking bar I thereon having the slotted openings s, the beams F hinged to the frame and carrying the trailing colters and the discharge nozzles, the rods L attached to the hinged beams, the bearing springs on the said rods and the nuts M on the upper ends of the rods L, as set forth.

No. 24,448. Adding Machine.

(Machine pour Additionner.)

Peter T. Lindholm, Lincoln, Mo., U.S., 7th July, 1886; 5 years.

Claim.—1st. In an adding machine, the combination, with the bed plate A, the shaft D and the loosely revolving ratchet wheel B, having index flange F, of the arm H attached to the said shaft, the pawl G pivoted to the said arm, the arms I attached to the said shaft, the bar J connecting the said arms, the spring pressing key levers L having hooks K engaging with the connecting bar, the elbow levers Q connected with the said key levers, the slides T connected with the elbow levers and having graduated projections X, the recessed bars V carrying the said slides, and the spring Z connected with the pawl carrying arm, substantially as herein shown and described whereby the said ratchet wheel will be turned forward through fixed spaces by operating the said key levers, as set forth. 2nd. In an adding machine, the combination, with the shaft D and the loosely revolving ratchet wheel E, of the arm H, pawl G on the end of the said arm, spring Z, the arms I, the bar J connected to said arms I, and the key levers L provided with hooks K engaging said bar J, substantially as herein shown and described. 3rd. In an adding machine, the combination, with the loosely-revolving ratchet wheel E, the key

levers L, and intermediate mechanism for operating the ratchet wheel from the key levers, of slides having graduated projections, and elbow levers engaging the said key levers and slides, substantially as and for the purpose set forth. 4th. In an adding machine, the combination, with the shaft D, the loosely-revolving ratchet wheel E, the spring pressed arm H, the pawl I, the arms L, the bar J and the key levers L provided with hooks K, of the slides T having projections X, the rock shaft R and the elbow levers Q engaging said slides and key levers, substantially as herein shown and described. 5th. In an adding machine, the combination, with the shaft D, the loosely-revolving ratchet wheel E having index flange F, the key levers L, and intermediate mechanism for operating the ratchet wheel from the said key levers, of the pinion G, the gear wheel A, the spring J and the stop pins K, on the said ratchet wheel E and gear wheel A, substantially as herein shown and described.

No. 24,449. Spark Arrester. (Arrête-Flammèche.)

Michael A. Wizlo, Ruthven, Ont., 7th July, 1886; 5 years.

Claim.—Pipe A pivoted circular elbow G, in combination with tank "A" and pipe B, substantially as and for the purpose hereinbefore set forth.

No. 24,450. Seeder. (Semoir.)

Hans Amundson and Martin S. Field, Racine, Wis., U. S., 7th July, 1886; 5 years.

Claim.—1st. In a seeder, in combination with a seed box having a slot in its bottom, and a flange above and opposite the said slot, a rotating feed-wheel mounted between the slotted bottom and the flange of the box, and having a series of slots coinciding in turn with the bottom slot, a disk interposed between the said bottom and the feed-wheel, and having extensions formed in its rim, and means, substantially as described, to connect the feed-wheel and the disk, so that more or less of the surface of the disk-extensions is brought opposite the slots of the feed-wheel and to rotate the same, so connected substantially as and for the purpose set forth. 2nd. In a seeder, in combination with a seed-box, and a feed-wheel revolving in the bottom of the same through suitable driving connections, substantially as described, a pair of feed-rollers mounted in the said seed-box above the feed-wheel, and suitably connected to the driving mechanism, a dish-shaped plate fastened in the periphery of the seed box above the rollers, and having a central opening, the edges of which are adapted to close the space at the rear and ends of the said rollers, and a feed regulating plate adapted to be held in various adjustments above the central opening of the dish-shaped plate, substantially as set forth. 3rd. In a seeder, in combination with a seed-box having a slotted bottom, and a spout depending therefrom, a horizontal fan suitably mounted below the said seed-box, and adapted to be rotated so as to produce an upward draft against the descending seed, substantially as and for the purpose set forth. 4th. In a seeder in combination with a feed-bar, a feed-wheel having a series of slots cut close to its outer rim, and having spirally-arranged lugs and horn-shaped lugs in its upper face adapted to direct the seed toward the slots, substantially as set forth.

No. 24,451. Seed Sower. (Semoir à Grains.)

Hans Amundson and Frederick J. Henriksen, Racine, Wis., U. S., 7th July, 1886; 5 years.

Claim.—1st. In a seed sower, a cup forming the bottom of the hopper, and having an upper plane horizontal surface and outlet for the seed or fertilizer, in combination with a horizontal force wheel having flanged arms, the lower surfaces of which are everywhere above the horizontal upper face of the cup, said force wheel being adapted to revolve in said cup and carry the seed or fertilizer to the exit-opening in determined quantities, substantially as described. 2nd. The combination, with the cup of a force wheel, its flanged arms and a gauge-plate having flanges, one of which projects down between each pair of the arms of the force-wheel, the lower edges of all parts of said force-wheel and gauge being everywhere above the plane horizontal upper face of said cup, as set forth. 3rd. The cup having an exit I 23, in combination with the force-wheel, and a partition dividing the space between each pair of arms into two compartments, as set forth. 4th. In a sower, the combination, with the force-wheel, of a cap M adapted to be revolved with it, as set forth. 5th. The cap M having tangential flange or flanges N, in combination with a gauge plate, force-wheel shaft A and hopper, as set forth. 6th. The combination, in a seed sower, of the cap M, its gate or gates and crank-arm L, with a lever and connections for adjusting the gate or gates. 7th. In a sower, the combination of hopper A and cup B; having seed outlet, with force-wheel C; having central rim E, and radiating arms C₂, and the gauge-plate D having outer rim D₁, and slots conforming in outline to the said arms C₂ of the force-wheel and flanges projecting down from one edge of each slot in advance of it between each of the arms C₂, substantially as set forth. 8th. In a sower, the combination of hopper A and cup B; having seed outlet, with force-wheel C; having central rim E, and radiating arms C₂ connected by vertical partitions G, and the gauge-plate D having slots conforming in outline to the said arms C₂, and flanges D₁ projecting down from one edge of each slot, said flanges having vertical slots or slots for the reception of the partitions G, substantially as set forth. 9th. In a sower, the combination of the shaft A, carrying distributor E, cup B; and hopper A and force-wheel C, the hub of the latter being keyed to said shaft, and the hub of the distributor having bevelled teeth meshing with corresponding bevelled teeth on wheel E; of power-shaft E₂, the spokes of said wheel E₂ being concave, with which concavity moves a bevel pinion F keyed on said power shaft, and which meshes with a horizontal bevel pinion on shaft a, substantially as set forth.

No. 24,452. Tap and Tap Hole Bush. (Robinet et Bonde de Robinet.)

Adolph Fischer, Ravenswood, and William H. Howell, New York, N. Y., U. S., 7th July, 1886; 5 years.

Claim.—1st. A tap-hole bush consisting of the following elements, to wit: the internally screw-threaded shaft b, having the lateral flange h at its outer end, the externally and internally screw-threaded shaft a, provided with the lateral flange c at one end, and having its other end terminating adjacent to the center of the shaft b, to constitute a stationary annular stop K, and a screw-threaded valve stem: fitting the shaft a, and provided at one end with a valve C, and at its other end with an attached laterally-projecting stop to—but the shoulder formed by the end of the shaft a, substantially as and for the purposes described. 2nd. The combination, with the tap hole bush and with the internal screw-thread formed therein, of the valve C having a screw thread formed on its tubular stem to engage with the internal screw thread of the tap-hole bush, and the spiral slot d formed in the valve-stem, substantially as shown and described.

No. 24,453. Lamp Bracket. (Console de Lampe.)

Orris R. Grimmesoy, Hollin A. Cobb and William C. Winfield, Ohio, U. S., 7th July, 1886; 5 years.

Claim.—1st. A lamp-bracket, consisting essentially of a reflector having devices for its attachment to a wall or other support, and a shelf rigidly secured to and supported by said reflector. 2nd. In a lamp-bracket, a reflector provided with suitable means for securing it to the wall, in combination with a shelf connected therewith with an upwardly-projecting rim, creased or otherwise prepared for a match-scratch, and match-boxes on either side arranged to form braces for supporting the shelf, substantially as set forth.

No. 24,454. Fruit Picker. (cueilleuse de Fruits.)

Charles S. Hill, Shillington, Wellington Van Reed and George L. Knopp, Reading, Penn., U. S., 7th July, 1886; 5 years.

Claim.—1st. In a fruit-picker, constructed substantially as shown and described, the combination of the re-enforce tensional spring D, with the movable tube frame B, of the tube H by eyes D₁, links C, E, looped lever-arms H, bar I, pole G and pin F, substantially as and for the purpose specified. 2nd. In a fruit-picker, constructed substantially as shown and described, the combination of the fixed covered frame A, the movable tube-frame or jaw B, stiffening bar I, coil A₁, tangs A₂, springs R, looped lever-arms H, link C, re-spring enforce D, eyes D₁, link E, pin F, pole G and tube H, all arranged and adapted to be operated as and for the purpose set forth.

No. 24,455. Combined Seed Drill and Broadcast Scatterer. (Semoir en Ligne et à la Volée Combines.)

Walter Coulthard, Oshawa, Ont., 7th July, 1886; 5 years.

Claim.—1st. The combination, in a combined seed drill and broadcast scatterer, of a hoe b, with a gab f, slot d, and teeth r, in combination with quadrant a, with hole c, and tooth e, substantially as and for the purpose specified. 2nd. The combination of the hoe b, with the projection h, with gab f, slot d, teeth r, substantially as and for the purpose specified.

No. 24,456. Force Feed Seed Sower.

(Semoir à Alimentation Forcée.)

Hans Amundson and Frederick J. Henriksen, Racine, Wis., U. S., 7th July, 1886; 5 years.

Claim.—1st. In a seed-sower, a hopper projecting below the floor of the machine, said lower part having an exit-opening for the seed or fertilizer, in combination with a vertically-moving gate suspended by a link from the outer end of an arm on a horizontal shaft, mounted within the upper portion of the hopper above the floor, said shaft extending outside of the hopper and having another arm turning on a sealed quadrant on the outside of said hopper, as set forth. 2nd. The hopper having exit-opening, in combination with the distributor having an interior set of flanges, the flanges in the two sets breaking joints, as described. 3rd. The distributor having convex plate flanges, breaking-joints and casting-arms, in combination with the hopper separating the two sets of flanges, as set forth. 4th. In a seed or fertilizer sower, a hopper that projects below the floor of the machine, in combination with a distributor having compartments on its upper side, formed by curved radial flanges, and radial arms having flanges that break joints with the said compartment-flanges for receiving the seed, etc., as it passes from those compartments through an opening in the hopper, as set forth.

No. 24,457. Wheel Harrow. (Herse à Roues.)

Robert Wheeler, Okolona, Miss., U. S., 7th July, 1886; 5 years.

Claim.—The improved harrow described, consisting of a frame formed of tooth-carrying beams hinged together at the ends, combined with the adjustable longitudinal brace, the truck and frame thereon, the lever supporting the rear of the frame, and the pivotally supported tongue adjusting itself by means of a slotted connection to the front pivotal support of the truck-frame, substantially as and for the purpose specified.

No. 24,458. Belt Gearing.

(Engrenage à Courroie.)

The Massey Manufacturing Company, Toronto, Ont., Assignee of William N. Whiteley, Springfield, Ohio, U. S., 7th July, 1886; 5 years.

Claim.—The combination of an open linked chain belt, with wheels B and C, provided with sprockets e concave on their draft-faces, substantially as set forth.

No. 24,450. Burglar Alarm. (Verlisseur de voleur.)

The National Manufacturing Company, Louisville, Ky. (assignee of Frank Cross, Washington, D.C.) U.S., 7th July, 1886; 5 years.

Claim.—1st. The combination, with the driving shafts, a series of slides having racks adapted to rotate said shaft, a shaft carrying an index gear to the driving shafts, and independent bell striking mechanism adapted to be operated simultaneously when the driving shafts are rotated, substantially as described. 2nd. As an improvement in burglar alarms, the combination of an enclosing case, the driving shafts, one of which carries a cam, a series of slides adapted to rotate said shafts, a rod supported on the case, and bell striking mechanisms connected with the rod and adapted to be set for operation either separately or jointly, substantially as described. 3rd. In a burglar alarm, the combination of an enclosing case, provided with a dial, the operating shafts, the slotted slides having rack bars connected thereto and gearing with the driving shafts, a shaft provided with an indicating hand and geared to the driving shafts, and separate bell striking mechanisms connected with the rod and adapted to be set for operation either independently of each other or jointly, substantially as described. 4th. The combination, with an enclosing case having a dial driving shafts journaled in said case, and having a series of pinions, a series of slides having a stop and rack-bar, adapted to mesh with and rotate the pinion of the driving shafts, said rack-bars being secured in said slides by headed pins projecting through a slot therein, a shaft N₁ geared to said driving shafts, an index shaft geared to said stop N₂, two independent trains of gearing D, D', bolts K, K', hammers J, J', one of which has an arm d, and a sliding rod b having a friction roller a at its upper end operated by the cam M, and having an arm b₁ from which the arm d is released when said rod is operated, substantially as described. 5th. In a burglar alarm of the class described, the combination, with the slide, of a plate T secured to the slide, and a spring also secured to the slide, and bearing on the plate to clamp the operating cord or wire between said spring and plate, as set forth.

No. 24,460. Bustle. (Tournure.)

Jacob W. Truxel, (assignee of Daniel Wertz,) Sedalia, Mo., U.S., 7th July, 1886; 5 years.

Claim. 1st. A bustle comprising a single wire, consisting of a bow having a double loop near each end, which ends project forming supports, and supplemental bows secured at each end to the rear loops of the double set of loops, substantially as described. 2nd. In a bustle, the combination of a single wire, consisting of a bow having, and having a double loop near each end, which ends project downward and upward forming U-shaped supports terminating in eyes, bands connecting the ends of the supports with the first of the double loops, a lacing to adjust the set of the bustle, waist straps and supplemental ribs secured at each end to the second or rear loop of the double set of loops, substantially as shown and described. 3rd. The herein shown and described bustle, comprising the following elements, in combination: a single wire consisting of a bow having a double loop near each end, which ends project downward and upward forming U-shaped supports terminating in eyes and folded on itself and having supplemental eyes, bands connecting the folded portions with the first of the double loops, a lacing passing through the eyes to adjust the set of the bustle and permit the self-adjustment of the supports, waist-straps and supplemental ribs secured at each end to the second or rear loop of the double set of loops, as set forth.

No. 24,461. Burial Case. (Cercueil)

J. Carroll House, Lowville, N.Y., U.S., 7th July, 1886; 5 years.

Claim.—1st. A burial case, constructed of asbestos superimposed in layers over a suitable form, said layers being cemented each to the other by a stratum of asphaltum or its equivalent, and one or more of the respective layers saturated with a solution of asphaltum or its equivalent, whereby it is rendered impervious to water, the whole strengthened and supported by transverse strips of metal, soldered or otherwise united at their points of intersection, and retained in place between layers of the constituted case, substantially as shown and for the purpose specified. 2nd. The stiffening of the shell of said case, by the saturation of one or more of the layers of the same, with a solution of silicate of soda, or silicate of potash either separately, or in combination with chloride of calcium. 3rd. The strengthening and supporting rim and flange F, and the groove encircling the same to receive the finishing cord, as set forth. 4th. The use and interposition of the sealing felt, saturated with a compound of petroleum, distillates between the upper and lower sections of the shell, as shown and for the purposes set forth.

No. 24,462. Motor. (Moteur.)

Roswell M. Fairfield, (assignee of Elijah B. Benham,) Holyoke, Mass., U.S., 7th July, 1886; 5 years.

Claim.—1st. In a motor, a series of fixed cylinders radiating from a common center, a standard to which said series of cylinders is fixed, having therein a valve chamber with which said cylinders communicate induction and ejection passages, substantially as described, communicating with said chambers, a rotary valve located in said valve-chamber having thereon a shaft extending rearwardly to receive a driving pulley, and a second shaft in a line with the former extending forward between the converging ends of said cylinders, a series of pistons in the latter, a ring encircling the outer ends of said pistons with which the latter engage, a bar secured to said ring and extending transversely across it, and a crank secured to the latter and to the end of said shaft, which extends between the converging ends of the cylinders, combined and operating substantially as set forth. 2nd. In a motor, the standard A having the head 12 in which is the valve chamber, said standard having the induction passage n₂ therein communicating with said chamber, the cap H secured to said head and having a shaft bearing therethrough, substantially as described, and the chamber B₁ therein having an ejection passage leading therefrom, combined with the valve v having a shaft on each end projecting through opposite sides of the

machine, the series of pistons e, the ring r engaging with the latter, and the bar A having a crank-connection, substantially as described, with one of said valve-shafts, all as set forth. 3rd. In a motor, a standard having a suitable head, substantially as described, forming a support for the operating parts of the machine, and having a valve chamber, and the induction passage n₂ therein communicating with said chamber, the series of cylinders e and pistons e secured to said standard head, the hollow cap K secured to the latter opposite said cylinders, and having an ejection passage therefrom, the ring r engaging with said pistons, the bar A secured to said ring, combined with the hollow valve v provided with a shaft on its opposite ends, one of which passes through the cylinder head and has a crank-connection with said bar, and the other extends through said cap and serves as the driving shaft of the machine, substantially as set forth.

No. 24,463. Bleaching Compound.

(Composition pour Blanchiment.)

Charles Toppon, Salem, Mass., U.S., 8th July, 1886; 5 years.

Claim.—The above described bleaching compound, consisting of expressed oil of mustard seed, paraffine, caustic soda, tallow, soap, sulphate of soda and water, as set forth.

No. 24,464. Physician's Buggy Case.

(Poche de Voiture de Medecin.)

Joseph J. Stephens, Colesburg, Mo., U.S., 8th July, 1886; 5 years.

Claim.—1st. A physician's buggy case, made with two boxes A, A, each provided with an opening at the top and front, and with swinging trays, as at B, substantially as specified, and said boxes A, A secured together back to back, and a cover C fastened at its transverse centre to the top of the case and overlapping the top and front openings of both the boxes, substantially as herein set forth. 2nd. In a physician's buggy case, the combination, with opposite boxes, as at A, A, secured together back to back, and having openings giving access to their interiors, and a flap cover C placed over the openings of both boxes of angle plates, as at D, fastened to the back walls of the boxes and also to the central portion of the cover, substantially as herein set forth. 3rd. In a physician's buggy case, consisting of a case divided into two compartments by a central vertical partition, and provided with an opening at the upper part of the front of each compartment, trays pivoted to swing in and out of said openings, and a cover secured to the central vertical partition and covering the top and front openings of the compartments, substantially as herein shown and described.

No. 24,465. Hot Air Furnace.

(Calorifere a Air.)

Issac D. Smead, Toledo, Ohio, U.S., 8th July, 1886; 5 years.

Claim.—In combination with the fire-box A of a furnace, the brackets D and the lining plates C, provided with the horizontal slots e, said plates having their upper edges arranged to fit closely against the inner walls of the fire box, and their lower edges set some distance from the side walls, substantially as shown and described.

No. 24,466. Roller Mill. (Moulin a Cylindres.)

Frank Lanhoff, Detroit, Mich., U.S., 8th July, 1886; 5 years.

Claim.—1st. In a roller mill, the combination, with grindin rollers, of an intermediate stationary grinding-bed separating said rollers, and having concave faces upon which said rollers grind, rotatable shafts eccentrically connected with said rollers, and worm gears to operate said shafts and adjust said rollers upon their concave grinding-bed, substantially as described. 2nd. In a roller mill, the combination, with grinding rollers, of an intermediate stationary grinding bed having concave faces upon which said rollers grind, said bed separating said rollers, and the grain ground thereby upon its opposite concave faces, rotatable shafts eccentrically connected with said rollers, worm gears to operate said shafts and adjust said rollers upon said grinding bed, and indicators connected with said gears, substantially as described. 3rd. The combination, with the adjustable grinding rollers F, F₁, and the intermediate stationary bed E, separating said rollers and having concave faces, of the hopper B having ridge-shaped way D, throats b, b₁ and auxiliary inner walls b₂, b₃, the feed-rollers C, C₁ and adjustable gates C₂, C₃, substantially as described. 4th. The combination, with the hopper B having throats b, b₁, the feed rollers C, C₁, adjustable grinding rollers F, F₁ and intermediate stationary bed E, of the adjustable gates C₂, C₃, the crank-shafts c, c₁ mounted beneath said gates in engagement therewith, and provided with indicating fingers, and the indicators N attached to the end of the hopper, substantially as described. 5th. The combination, with the casing A, brackets G, G₁, grinding-rollers F, F₁, sliding boxes K and the intermediate stationary bed E, of the studs d having index fingers I₁, the rotatable indicators L, the worm shafts H having hand-wheels H₁ and pinions h, the shafts I₂ having gears I and eccentric J, J, and eccentric-rods k for connecting the eccentric straps and sliding roller boxes, substantially as described.

No. 24,467. Tricycle. (Tricycle)

Frederick Whitte, Westborough, Mass., U. S., 8th July, 1886; 5 years.

Claim.—1st. The driving-wheels and divided shaft, having one portion connected with each wheel, and the pinions a₁, a₂ connected with two portions of the shaft, combined with the intermediate gearing a₃, a₄, a₅, a₆ between the said pinions, the box enclosing the said pinions, and gearing having bearings for the said gears a₁, a₂ and their connected pinions and actuating mechanism for the said box, substantially as described. 2nd. The main shaft and hubs b, carried thereby, each hub provided with an annular groove around its periphery, the said groove being intersected by transverse recesses, and rollers placed in the said recesses combined with rings surrounding the said hubs, and rollers, drive-chains, or bands to engage and operate the said rings, and connected with the actuating levers E, the annular groove of each hub affording space for the circulation of oil

from one to the other of the said recesses as the hub rotates, substantially as described. 3rd. The main shaft and hubs *b* carried thereby, each hub provided with an annular groove around its periphery, the said groove being intersected by transverse recesses, the under faces of which are made eccentric to the axis of the hub and rollers placed in the said recesses, combined with rings surrounding the said hubs and rollers, drive chains or bands to engage and operate the said rings, and connected with the actuating levers *E*, the annular groove of each hub affording space for the circulation of oil from one to the other of the said recesses as the hub rotates, substantially as described. 4th. The levers and drive-chains actuated thereby, and the attaching device and frictional locking device for holding it from movement on the said lever, combined with a shifting device, substantially as described, co-operating with the locking and attaching devices, whereby the latter may be first released from engagement, and then shifted along the lever, and be again locked in any position thereon where it may be left, substantially as described.

5th. The brake or retarding mechanism, consisting of a friction wheel and band, and straining device therefor, combined with the longitudinally movable notched shaft engaging the said straining device, and the locking device for engaging the notches of the said shaft operated by the rotary movement thereof, substantially as described. 6th. The actuating lever and attaching device movable thereon, provided with inclined surfaces, combined with the locking-rollers and spring co-operating therewith, and the shifting device movable with relation to the said attaching device, and provided with projections to engage the said rollers, substantially as and for the purpose described. 7th. The combination, with the framework of a bearing for the axle, comprising two half rings hinged together at one side, provided with lugs at the opposite side, and a bushing screwed into one of the said lugs, and projecting therefrom and bearing against the other lug to prevent contact of the two lugs, and a bolt passing through the said bushing and lug fastening two half-rings together, substantially as described.

No. 24,468. Draw-Bar. (*Barre d'Auclage.*)

William Raper, Windsor, Ont., 9th July, 1886, 5 years.

Claim.—In a car coupling, the draw-heads *B* having open top and inclines *b*, combined with hinged covers *C*, with shoulders *a* and interior lugs *l*, all arranged and aligned a link to be passed into place from the top and have the covers bear tightly between the points *a, b*, to relieve the lugs from strain, as set forth.

No. 24,469. Button Fastener.

(*Queue de Boulon.*)

George W. Prentice, Providence, R.I., U.S., 9th July, 1886; 5 years.

Claim.—1st. A button fastener, consisting of a table having penetrating prongs bent at right angles to the table, one of said prongs being bent to form a loop or eye for the reception of the eye of a button, said prong being swaged or shaved its entire length from the inner portion of said loop or eye, the remaining prong or prongs being swaged or shaved from the underside of the table to their ends, substantially as set forth. 2nd. A button fastener, comprising a table having penetrating prongs at right angles to said table, one of said prongs adapted to engage the eye of a button, and all of the prongs being swaged or shaved their entire length from said table to their ends, substantially as specified. 3rd. The fastener *A*, comprising the table *1* having prongs 2 and 3, bent at right angles to the table, the prongs 3, 3, being swaged or shaved their entire length from the underside of said table to their ends, and the prong 2 being bent to form the loop or eye 4 and swaged or shaved from the inner portion of said loop or eye to its end, substantially as described and for the purpose specified.

No. 24,470. Lantern. (*Lanterne.*)

George H. Lomax, Somerville, Mass., U.S., 9th July, 1886, 5 years.

Claim.—1st. A lantern, provided or combined with a screw arranged within the annular supporting base, and projecting from and hinged to the bottom of such lantern, so as to be capable of being moved from a position at right angles to such bottom upward into another position parallel or about so with the bottom, such screw when in its lowest position projecting beyond the lower edge of the base, as set forth. 2nd. A lantern provided with a screw hinged to the bottom of such lantern so as to be capable of being turned from a position at right angles with the said bottom into one parallel or about so therewith. 3rd. A lantern provided with an annular base extending from the bottom of the oil reservoir, and provided with a screw pivoted or hinged to the said bottom, and also with a catch to hold the screw in its raised position, as set forth, the screw when turned down projecting beyond the said base, as and for the purpose substantially as represented.

No. 24,471. Nut Lock. (*Arrête-Ecrou.*)

Hiram F. Gaines, Rouses Point, N.Y., U.S., 9th July, 1886, 5 years.

Claim.—1st. The combination of the nut *D* having a groove *E*, wholly or partly transversely of the threads, and bolt *B* having a portion of the thread *C* disturbed abruptly by any suitable tool, whereby part of the metal is pressed into the groove of the nut to interfere with the threads to prevent it turning without the application of a wrench, as set forth. 2nd. A nut and bolt fastening, having a portion of the bolt projected by a tool into a groove or cavity in the nut, as set forth. 3rd. The combination of the screw bolt *B*, and nut *D* having a groove *E*, for the purpose described.

No. 24,472. Mould for Forming Boot and Shoe Heels. (*Moule pour Façonner les Talons des Chaussures.*)

Edward J. LaGay, Boston, Mass., U.S., 9th July, 1886; 5 years.

Claim.—1st. A heel-mould formed with part *A*, having a recess *a* corresponding to the rear and side walls of the heel, part *B* having

portion *c* of a size and form corresponding to the cavity in the heel-shall when it is inserted in cavity *a*, and follower *C* formed with part *A* corresponding to the front of part *B*, substantially as specified. 2nd. The combination, with parts *A, C*, of a heel-mould, formed as specified, of cap *D* having portion *7* adapted to fit and form the concave upper face of the heel-filling when moulding the filling-block and cement therein, substantially as specified. 3rd. The combination, with a mould formed with parts *A, B, C* having form and adaptation to mould and set to form the shell or wall of boot and shoe heels, and with parts *A* and *C* having oblique outer ends, as specified, of hand or clamp *E* having corresponding internally-oblique ends, and adapted to force together the respective parts of the mould and compress the heel-shell therein, substantially as specified. 4th. The combination of parts *A, C* of the mould, respectively provided with the legs *7*, and grooves *a*, adapted and arranged to interlock and secure said parts in proper relative position, substantially as specified. 5th. The combination, with parts *A, B, C*, of the heel-mould clamp *E* and plunger *F*, with its cap *g*, of sliding stem *h*, its foot *l*, and extending spring *11*, all substantially as specified.

No. 24,473. Steam Boiler Furnace.

(*Foyer de Chaudière à Vapeur.*)

Frederick Leadbeater, Detroit Mich., U.S., 9th July, 1886, 5 years.

Claim.—1st. In a steam boiler furnace, the combination of the fire-chamber and ash-pit, with the chamber *E* opening through a series of pipes into the ash-pit, and receiving air, substantially as described, and a steam conveying pipe for supplying steam to the chamber, arranged to drive jets of steam mixed with air into the ash-pit, all substantially in the manner and for the purpose specified. 2nd. The combination of the boiler, the fire chamber and ash-pit separated by a finely-perforated grate capable of holding charges of coal dust, and both fire-chamber and ash-pit capable of being closed hermetically, the chamber *E* opening through pipes into the side of the ash-pit, receiving air from the escape flue, and capable of being hermetically closed, and the pipe from the steam dome of the boiler running into the chamber *E* and arranged to drive jets of steam into the ash-pit, whereby the air is drawn from the escape flue mixed with smoke-particles, substantially as specified. 3rd. The combination, with a steam generator of an air chamber opening into the furnace beneath the grate, through a series of short horizontal pipes *K*, and receiving heated air through a pipe *G* from the escape flue of a furnace, and a jet-director *J* composed of a main pipe *J* and a series of horizontal pipes *J*, and provided with perforations or jet apertures directly opposite the ends of the pipes *F*, and a steam pipe *H* provided with a valve conveying steam from the boiler to the director *J*, substantially as and for the purposes described. 4th. The combination, with a steam boiler furnace, provided with a perforated grate and hermetically closing doors, and an air-chamber also provided with a hermetically-closing door, and opening into the furnace beneath the grate through a series of pipes *F* secured in the wall or partition in the wall of the furnace of a pipe *G*, conveying heated air and products to the air-chamber, a steam pipe *H* provided with a valve conveying steam from a boiler to a jet-director *J* in the air-chamber, and a pipe *I* provided with a gauge, all constructed and adapted to operate, substantially as and for the purpose specified.

No. 24,474. Journal Bearing.

(*Coussinet de Tourillon.*)

Charles F. Brigham, Boston, Mass., U.S., 9th July, 1886; 5 years.

Claim.—1st. The metallic skeleton or frame having a metallic bearing portion, combined with a filling of fibrous or pulp material, moulded into the said frame and around the said bearing portion, substantially as described. 2nd. The metallic skeleton or frame having a metallic bearing portion, combined with a filling of fibrous or pulp material, moulded into the said frame and around the said bearing portion, and a metallic cover fastened to the said frame, substantially as described. 3rd. The metallic frame consisting of end and side portions, and a bearing portion extending between the ends and separated from the side portions of ribs, thus leaving spaces between the bearing and side portions of the frame, substantially as described.

No. 24,475. Harvester. (*Moissonneuse.*)

The Massey Manufacturing Company, Toronto, Ont., (assignee of William N. Whiteley and William Bayley, Springfield, Ohio, U.S., 9th July, 1886; 5 years.

Claim.—1st. In a rear-cut harvesting machine, the sickle-actuating mechanism, consisting of a main wheel, and a main frame surrounding and mounted thereon, a pinion *a*, bevel gear *b*, crank-wheel *b*, pitman *c*, rocking crank-shaft *f*, provided with cranks *e*, *f* and pitman *g*, all located on the frame at the inner side of the wheel, as and for the purpose set forth. 2nd. The combination, with a main frame surrounding and supported by a main wheel, of a pinion shaft *a*, supported by said main frame, actuated by said main wheel, and provided with a bevel-wheel *b* at its outer end, a counter-shaft *c* actuated by said bevel-wheel, and provided with the crank-wheel *b* at the front end of said frame, the rock-shaft *f* having the cranks *e*, *f* at each end respectively, the connecting-rod *c* and pitman *g*, whereby motion may be transmitted forward from the driving-wheel and then backward at the same side of said driving-wheel, for the purpose set forth.

No. 24,476. Nut Wrench. (*Clé à Ecrou.*)

John McLim, Brantford, and Lewis Sharp, Burford, Ont., 9th July, 1886; 5 years.

Claim.—1st. In a shifting wrench, the ratchet *F* and pawl *E*, in combination with bar *A* and movable head *C*, substantially as and for the purposes hereinbefore set forth. 2nd. In a shifting wrench, pawl *E*, with limb *G*, in combination with spiral spring *H* and movable head *C*, and ratchet *F*, substantially as and for the purposes hereinbefore set forth.

No. 24,477. Steam Injector.*(Injecteur de Vapeur.)*

The Penberthy Injector Company, Detroit, Mich., (assignee of William Penberthy, Leadville, Col.) U.S., 9th July, 1886; 5 years.

Claim.—1st. In an injector, the combination, with the tubular casing or casting having the receiving water chamber, and the waste water chamber, of the tubular stem having the jet pipe, the tubular stem having the combining tube and the overflow or waste water valve, substantially as and for the purpose set forth. 2nd. In an injector, the combination, with the casing or casting having the inlet and outlet arms or pipes, the receiving water chamber and the waste water chamber, of the overflow or spring-actuated valve, the stem having the steam inlet or jet pipe, and the tapering combining tube comprising the apertured lifting tube and the delivery tube, substantially as and for the purpose set forth. 3rd. In an injector, the combination, with the casing having the steam jet pipe, and the water supply pipe connection or arm of the removable combining tube, and the apertured lifting tube with its tapered end or nozzle, substantially as and for the purpose set forth. 4th. In an injector, the combination of the overflow or waste water pipe with its spring-pressed valve, with the casing or casting having the jet pipe, the combining and delivery tubes, and the removable lifting tube, together with the receiving water chamber and overflow or waste water chamber, said lifting tube having its lantern shaped portion provided with a screw-thread for securing the same to the said combining tube, substantially as and for the purpose set forth. 5th. In an injector, the combination of the combining tube having the tapered passage, the delivery tube integral with said combining tube, the apertured lantern-shaped lifting tube, and the pipe connection and nut for securing the lifting-tube against the wall in the casing or casing, substantially as shown and described. 6th. In an injector, the lifting, combining and delivery tubes herein described, comprising the tapered combining tube having an outer screw-threaded surface, the lifting tube having the apertured lantern-shaped portion, and correspondingly threaded on its inner surface at one end and its tapered end or nozzle, the delivery-tube integral with said combining-tube, and the lateral outlets or passages formed between said combining and delivery tubes, substantially as shown and described. 7th. In a steam injector, the combination, with the tapered combining-tube, and the delivery tube integral therewith, of the apertured lantern-shaped lifting-tube having its one end screwed upon the tapered end of said combining-tube, substantially as shown and described.

No. 24,478. Cutter Head for Matching Machines.
(Porte-Lame pour Machines à Boweter.)

James B. Mahaffey and Henry A. Gable, Baltimore, Md., U.S., 9th July, 1886; 5 years.

Claim.—A rotatable cutter-head, provided with an eye for attachment to a mandrel or shaft, and having a tongue cutter with a straight peripheral face *c*, and a dividing-flange *d* extending along the face and a depression *e* parallel with the peripheral face, as set forth.

No. 24,479. Saw Sash for Reciprocating Saw Mills.
(Porte-Scies pour Scieries à Scies Verticales.)

William M. Wilkin, Erie, Penn., U.S., 9th July, 1886; 5 years.

Claim.—1st. A gang-sawmill saw-sash consisting of vertical stiles, and upper and lower girts, with proper means for attaching the saws to said girts, formed of one piece of metal, substantially as and for the purposes set forth. 2nd. A gang-sawmill saw-sash having the slot *b* vertically through its upper girts, the groove *d* forming a catch along the top of its lower girt, guide ribs *h*, *i* on its sides and the needle-pin *l*, as shown, formed of one piece of metal.

No. 24,480. Float. *(Flotteur.)*

Allen J. Wright, Cleveland, Ohio, U.S., 9th July, 1886; 5 years.

Claim.—1st. A float consisting essentially of a shell made in two parts, and joined together by means of an internal band, arranged to overlap the joint, the two parts of the shell being preferably forced and shrunk upon the band, substantially as set forth. 2nd. In a float, the combination, with a shell made in two parts, of an internal band arranged to span the external joint, said band having one or more inside ribs or flanges, substantially as set forth. 3rd. In a float, the combination, with a shell made in two parts, of an internal band for uniting the two parts of the shell, said shell having offsets or shoulders for engaging the edges of the internal band, substantially as set forth. 4th. In a float, the combination, with a shell made in two parts that are joined by an internal band, of a lock-joint formed by spinning or compressing the edge of one part of the shell over a shoulder flange or projection of the other part of the shell, substantially as set forth.

No. 24,481. Tub and Box Cover Fastener.*(Ligature de Couverture de Tinette et de Boite.)*

Almer B. Thomas, West Randolph, Vt., U.S., 9th July, 1886; 5 years.

Claim.—1st. A fastener for boxes consisting of two arms bent at right angles to each other, and each having fastening barbs, one of said arms being formed with its lower portion on a curve, whereby the lower barb will be kept out of the way while the upper barb is driven into place, substantially as and for the purpose set forth. 2nd. A fastener for boxes consisting of two arms having fastening barbs upon their ends, the said arms being bent at right angles to each other for a part of their length, the lower half of one arm being formed upon a curve, so that the point of the lower barb is in the same plane with the vertical portion of said arm, the said barb being also formed on a curve, substantially as described.

No. 24,482. Mill for Reducing worn out Iron or Steel Rails into Bars.*(Moulin pour Réduire les Ferrailles ou Rails de Fer ou d'Acier en Barres.)*

Edwin D. Wassell, Pittsburgh, Penn., U.S., 9th July, 1886; 5 years.

Claim.—1st. In a mill for reducing old iron or steel rails to flat bars, the curving or shaping of the head or tread of the rail, and the bonding over of one part of the flange of the rail, while the other part of the flange is being reduced, substantially as herein described. 2nd. In a mill for the reduction of old and worn out rails to a flat bar, the grooves A, B and E of the contour shown, in combination with the projections F and G, and corresponding grooves H, I, substantially as herein set forth. 3rd. In a mill for reducing a billet of metal to a flat bar of increased width, providing one or more grooves with projections F, G, and corresponding grooves H, I, substantially as herein described.

No. 24,483. Reciprocating Sawmill.*(Scierie à Scies Verticales.)*

William M. Wilkin, Erie, Penn., U.S., 9th July, 1886; 5 years.

Claim.—1st. In a reciprocating sawmill, the combination, with a vertically guided saw frame, of a vertically-guided counterbalance and a crank shaft, and connections for reciprocating said frame and counterbalance simultaneously in opposite directions. 2nd. In a gang-sawmill, the combination, substantially as shown, of a reciprocating saw-sash, a crank shaft and connecting-rod for reciprocating said sash, and a counterbalance guided between the crank-shaft and connected to a crank in said crank-shaft, which stands opposite the crank which moves the saw-sash. 3rd. In a reciprocating sawmill, the combination of a framework, a saw-frame or sash mounted so as to be reciprocated in said framework, a counter-weight mounted so as to be reciprocated in said framework, a crank shaft having opposite cranks mounted in said framework between the said saw-frame and the said counter-weight, and connecting rods connecting said oppositely placed cranks with the saw frame and the counter-weight, in a manner substantially as shown, whereby the said saw-frame and counter-weight will be simultaneously reciprocated by said crank-shaft.

No. 24,484. Box Fastening and Lowering Device.*(Appareil pour Assujétir et Descendre les Boîtes.)*

William S. Thayer, Oswego, N.Y., U.S., 9th July, 1886; 5 years.

Claim.—1st. A fastening for the covers or lids of boxes, consisting of a pivotal clamp adapted to rest over and upon said cover or lid, and stops to limit its horizontal motion in either direction, substantially as and for the purpose set forth. 2nd. A box for enclosing coffins, provided at its sides with loops or handles projecting above the box, in combination with straps passing through the loops or handles and extending across the top of the box, as a means for lowering the box in the grave, substantially as and for the purpose described.

No. 24,485. Car-Coupler. *(Attelage de Chars.)*

Martin Fennell, Skaneateles, N.Y., U.S., 9th July, 1886; 5 years.

Claim.—1st. The combination of the draw-head C, provided with the horn E, having the convex and concave surfaces *E*₁, *E*₂, of the bail H having the enlargement H₁, whereby said link, when at a certain angle to an opposite coupler, may disconnect itself by riding upon the said convex surfaces, substantially as specified. 2nd. The combination of the draw-head C, projecting curved horn E, having the convex surface *E*₁, and the concave surface *E*₂, the bail H having the lateral enlargement H₁ and lip H₂, with devices for raising said link, substantially as specified. 3rd. The combination of the draw-head C, projecting curved horn E having the convex surface *E*₁, and the concave surface *E*₂, with the bail H mounted upon a rock-shaft having a bearing in rear of said horn, and within the draw-head, said shaft being bent at each end to form crank-handles, substantially as shown and described.

No. 24,486. Fish Weir. *(Parc de Mer.)*

James McLean and Peter McMahn, Letete, N. B., 9th July, 1886; 5 years.

Claim.—1st. A fish-weir having posts A and braces F, secured to stones E by link or shackle B, bolt C split at one end and straddling a wedge D, as set forth. 2nd. The method of securing the bolts C to the stones E by sinking a hole in the stone, splitting the bolt lengthwise from one end, inserting a wedge D therein, and driving the bolt into the hole, as set forth. 3rd. The link or shackle B, eye-bolt C having a split end and wedge D, as set forth for the purpose described.

No. 24,487. Cartridge Belt.*(Banderolle de Cartouchier.)*

James Nosworthy, Belleville, Ont., 9th July, 1886; 5 years.

Claim.—1st. The combination, with a cartridge belt, of an adjustable or sliding thimble, to receive the strap constituting the belt, the said thimble formed with an offset in its face to also receive a narrower strap, and having an opening in the said face, so that the narrower strap may be drawn through to form a loop to receive the cartridge, as and for the purpose specified. 2nd. The combination, with the cartridge belt, of two or more adjustable or sliding thimbles, to receive the strap constituting the belt, the said thimbles formed with an offset in their faces to also receive a narrower strap, that a loop may be formed by the said strap between two of the said thimbles to receive a cartridge, as and for the purpose specified.

No. 24,488. Earth Closet.*(Latrine à la Terre Stèche.)*

John H. Watson and Joseph B. Taylor, Toronto Ont., 9th July, 1886; 5 years.

Claim.—1st. The combination, with the hopper and seat of an earth closet or commode, of a device designed to hold the hopper in such a position when the seat is held down that the upward movement of the seat shall cause the sudden removal of the device from the hopper, and permit the said hopper to slip forward so as to throw the deodorizing material into the excrement. 2nd. A pivoted hopper A, provided with a weight B, in combination with the pivoted bar C, connected to the spring D, and operated by the seat E, substantially as and for the purpose specified.

No. 24,489. Planing and Matching Machine.*(Machine à Raboter et à Rainurer.)*

James B. Mahaffey and Henry A. Gable, Baltimore, Md., U.S., 9th July, 1886; 5 years.

Claim.—1st. In a machine for dividing a board into two or three pieces, and forming tongues on, and surface-planing each piece, the herein-described construction consisting of a suitable frame A, a surface-planer C mounted on the frame, the first feed rollers B also mounted on the frame in front of the surface-planer, and upper and lower shafts I, each carrying a head having a tongue-cutter G provided with a dividing flange d, said shafts and cutters having position between the surface-planer and said first feed-rollers, whereby the rough board first is divided into pieces having tongues and then the pieces are surface-planed, as set forth. 2nd. The combination of the frame A, a vertically adjustable horizontal slide K on each of two opposite sides of the frame, shafts I, each turning in bearings fitting in said slides, a tongue-cutter and divider-head mounted on the inner end of each of said shafts, and a surface-planer C mounted on a separate shaft, as and for the purpose set forth. 3rd. In a machine for tonguing and dividing boards, the combination of a horizontal slide K which is vertically adjustable, a plate having bearings J and fitted in the horizontal slide, a shaft I turning in said bearings carrying a tongue-cutter and having a screw-thread, a movable half-nut h to take over the screw-thread of the shaft and a vertical adjusting screw connected with the horizontal slide, as set forth.

No. 24,490. Feed Water Heater.*(Réchauffeur de l'Eau d'Alimentation.)*

John Kirkaldy, London, Eng., 10th July, 1886; 5 years.

Claim.—1st. The combination of the outer casing A, provided with an inlet A¹ and outlet A², with the trunk tube or tubes B and C passing across it at two of its opposite sides (one trunk tube or tubes B or C serving as the inlet and the other as the outlet for the fluid to be cooled or heated), and the series of helically coiled tubes F passing from both sides of the trunk tubes B and C, at one side or end of the casing A, to both sides of the trunk tubes B and C, at the other side or end of the casing A, substantially as described. 2nd. The construction of heaters and coolers and condensers, substantially as hereinbefore described.

No. 24,491. Insole for Boots and Shoes.*(Basane pour Chaussures.)*

Charles Grant, jr., (assignee of David E. Giddwhait.) Boston, Mass., U.S., 10th July, 1886; 5 years.

Claim.—An insole consisting of an upper layer or ply of teased woven hair, and one or more layers of card or other board, cork, leather, cloth, etc., united by adhesive material, or stitching, or both, as described.

No. 24,492. Valve Gear for Engines.*(Distribution par Tiroirs.)*

John Grimo and John A. Matthews, Minneapolis, Minn., U.S., 10th July, 1886; 5 years.

Claim.—1st. The combination, in a valve-gear, with an eccentric and rock-shaft, of a guide having a slide-channel widened interiorly and a slide block adapted to slide in said channel. 2nd. The combination, in a valve gear with an eccentric and a rock-shaft, of a guide having a recessed slide channel extending to the ends of said guide, removable caps for the ends of said channel, a slide-block in said channel, and a sliding plate on said guide carried by said slide-block, substantially as set forth. 3rd. In a valve-gear for locomotive engines, a rocker having arms set at an angle to each other, an eccentric rod connected to one of said arms for operating said rocker, and a rod connected to the other of said arms for operating the valves, substantially as set forth. 4th. In a valve gear, the combination, with the driver-axle of a locomotive, of an eccentric on said axle, a standard boxed on said axle, a rocker-shaft mounted in said standard and carrying a guide, a slide-block operated in said guide by said eccentric, and guides for said standard supported independently of said axle for permitting up and down movement corresponding with said axle, and preventing lateral movement of said standard, substantially as and for the purpose set forth. 5th. In a locomotive valve-gear, the combination, with the driver axle, of a standard boxed thereon, guides for preventing lateral displacement of said standard, a rock-shaft supported by said standard, a guide and slide-block carried by said rock-shaft, an eccentric on said driver axle and connected to said slide-block, a rocker having arms set at an angle to each other a rod connecting said eccentric with one of said arms, and a rod connecting the other of said arms with the valves, substantially as described. 6th. In combination, in a valve-gear, a rock-shaft, a guide and slide-block carried thereby, a shaft, an eccentric thereon connected to said slide-block, a standard boxed on said shaft, and provided with a sliding bearing for said rock-shaft, a curved way provided in said standard, a roller-wheel in said way and bearings therefor in said guide and a

casting connected thereto, substantially as and for the purpose set forth. 7th. The combination, with a valve-gear, of substantially the construction described, of a governor, an eccentric operated by said governor, and an eccentric rod connecting said eccentric with the rock-shaft lever, substantially as and for the purpose set forth.

No. 24,493. Bolt Clipper.*(Cisailles à Boulons.)*

Joseph R. Smith, Brockville, and Wilham G. Matthews, Gannanoque, Ont., 14th July, 1886; 5 years.

Claim.—1st. In a bolt clipper, having the cutting jaws A and levers B B, pivotally connected, as set forth, the eccentric bushings D, D, adjustable rotatively, for the purpose described. 2nd. The combination of the jaws A A, having eccentric bushings D, D, and provided with set screws E E, as set forth. 3rd. The combination, with the jaws A A, and levers B B, pivotally connected, as set forth, of the fulcrum plate G having stem G¹ and fulcrum pin C, having an eye C¹ adapted to receive said stem slidingly and pivotally connecting the levers B B, as set forth for the purpose described. 4th. The combination of the jaws A A, fulcrum plate F having fulcrum pins F¹, F¹, fulcrum plate G having stem G¹, fulcrum pin C having eye C¹, and levers B B, pivoted together and to levers A A, as set forth. 5th. The combination of the jaws A A, having eccentric bushings D, D, and set screws E E, fulcrum plate F having fulcrum pins F¹, fulcrum plate G having stem G¹, fulcrum pin C having eye C¹, and levers B B, pivoted together and to jaws A A, as set forth.

No. 24,494. Lamp. (Lampe.)

Charles S. Upton, New York (assignee of Frank Rhind, Brooklyn, N.Y., U.S., 15th July, 1886; 5 years.

Claim.—1st. The combination, with the central air-tube, of a reservoir composed of an open-bottomed glass vessel, and a metallic septum connected to the air-tube and forming the bottom, and having metallic rims at each side of the lower edge of the glass vessel, and cement that is proof against the action of kerosene filling the groove between the rims and securing the glass, substantially as set forth. 2nd. The combination, with a glass reservoir, of a metal base having a rim, within which the glass reservoir is secured, by cement, that is proof against the action of kerosene septum within the base, an air-tube passing through the septum and soldered to the same, and stays extending from the lower end of the air-tube to the inner part of the base, substantially as set forth.

No. 24,495. Process and Apparatus for the Manufacture of Gas. (Procédé et Appareil de Production du Gaz.)

John Hanlon and Heyward G. Leavitt, New York, N.Y., U.S., 15th July, 1886; 5 years.

Claim.—1st. The process of uniformly combining and fixing the mixed gas and vapour produced during an ordinary run in a gas generating furnace, which consists in heating a comparatively large body, or several bodies, of refractory material in a fixing chamber or chambers to the proper temperature, then passing the mixed gas and vapour produced during the first period (five to ten minutes) of the run through a portion of such heated refractory material to the main, then passing the succeeding volumes of mixed gas and vapour produced during the succeeding period (five to ten minutes) of the run through another portion of heated refractory material and to the main, and thus on to the end of the run, whereby destructive decomposition of the hydrocarbons is prevented and a uniform quality of gas as to candle power is produced. 2nd. In the manufacture of illuminating gas, the process of uniformly combining and fixing the mixed gas and vapour produced in an ordinary run in a gas generating furnace, which consists in heating two or more bodies of refractory material to successively higher temperatures from the first upward, then passing mixed gas and vapour produced during the first period (five to ten minutes) of the run through the refractory material at the lowest temperature or least highly heated refractory material to the main, then passing the succeeding volume of mixed gas and vapour produced during the succeeding period (five to ten minutes) of the run through the next higher heated body of refractory material to the main and thus on to the end of the run, for the purpose described. 3rd. The process of manufacturing gas which consists in highly superheating steam in contact with heated brick work, passing such steam down through heated metallic scrap producing hydrogen, together with any undecomposed steam through one or more bodies of heated carbonaceous material, for fully converting all watery vapour into fixed gas. 4th. The process of manufacturing gas, which consists in highly superheating steam, and then passing it down through heated iron scrap, thereby producing hydrogen, then passing such hydrogen together with any undecomposed steam through a body of heated carbonaceous material for completing the decomposition of the steam, then carburetting the resulting gas with hydrocarbon vapours from liquid or solid material in a heated chamber. 5th. The process of manufacturing gas, which consists in superheating steam, decomposing it in contact with heated iron scrap, passing the resulting hydrogen gas, together with any remaining undecomposed steam through one or more bodies of heated carbonaceous material, for completing decomposition of the steam into fixed gas, then carburetting the gas and fixing it by passing volumes of it made in successive periods through successive bodies of heated refractory material to the end of the run whereby destructive decomposition of hydrocarbons is prevented and a uniform quality of gas is produced. 6th. The process of generating hydrogen gas, which consists in first highly superheating steam then passing it through one or more beds of heated iron, scrap or other similar metal, thereby oxidizing said scrap and partially decomposing the steam, then further superheating and decomposing any remaining portion of the steam by passing it through heated refractory material, and one or more beds of heated metallic scrap, and thus passing the steam in company with the hydrogen formed through alternate bodies of heated refractory material, and heated metallic scrap until a com-

plete decomposition of the steam is obtained. 7th. The process of manufacturing gas, which consists in first highly superheating steam, then decomposing said steam by passing it through heated iron scrap or similar metal, and then through one or more bodies of incandescent fuel, substantially as described. 8th. The process of manufacturing gas, which consists in first highly superheating steam then decomposing said steam by passing it through heated iron scrap or similar metal, thereby oxidizing said scrap, and then through one or more bodies of incandescent fuel and of alternatively reducing the oxidized scrap to a metallic condition by subjecting it to the action of nascent carbonic oxide, thereby enabling the continued use of said scrap without removal from the apparatus, substantially as described. 9th. The process of manufacturing gas, which consists in first highly superheating steam, then decomposing said steam by passing it through heated iron scrap or similar metal, then through heated refractory material, and then through one or more bodies of incandescent fuel, substantially as described. 10th. The process of manufacturing illuminating gas, which consists in first highly superheating steam, then decomposing said steam by passing it through heated iron scrap or similar metal, then through one or more bodies of incandescent or highly heated fuel, and of then enriching said gas by mingling with it the vapour of a hydrocarbon, and of finally fixing the gas by passing it in conjunction with said hydrocarbon vapour through a heated fixing chamber, substantially as described. 11th. The process of manufacturing illuminating gas, which consists in first highly superheating steam, then decomposing said steam by passing it through heated iron scrap or similar metal, then through one or more bodies of incandescent or highly heated fuel, then through one or more bodies of incandescent or highly heated fuel, and of then enriching said gas by mingling with it the vapour of a hydrocarbon, and of finally fixing the gas by passing it in conjunction with said hydrocarbon vapour through a heated fixing chamber, substantially as described. 12th. The three fuel chambers connected by a common base and consisting of two side decomposing chambers, each having an inlet for steam or other gaseous fluid near its top, and the central distilling chamber having a gas outlet near the top, for the purpose described. 13th. In combination with a fuel chamber of a gas apparatus, a steam superheating and decomposing chamber having one or more bodies of iron scrap, on its lower support S, and having a body of refractory brick work above the iron scrap, as and for the purpose described. 14th. In a gas generating apparatus, a steam superheating and decomposing chamber having two or more perforated arches with iron scrap on the lower arch, and loosely laid brick work on the upper arch and having a steam inlet pipe at the top and an outlet pipe below the lower arch, for the purpose described. 15th. In a gas generating apparatus, a steam superheating and decomposing chamber having perforated supporting arches, a tube passing through such arches, means for closing the tube, a steam inlet pipe and an outlet pipe, connected as described. 16th. In combination, with a gas generator, two or more fixing chambers united to a common base as shown and each chamber having a valved outlet pipe for the purpose described. 17th. In combination with the fuel chamber of a gas apparatus, a fuel charger having a charge chamber, and a storage chamber and a double tilting gate *b* having shafts or arbors provided with intermeshing pinion wheels and an operating lever, for the purpose described. 18th. In a gas apparatus, the gas eduction pipe having an enlarged head containing a valve recess, a pivoted or hinged valve therein having a ground face and sitting upon a ground seat, for the purpose described. 19th. The combination of the vertical stand pipe having a lip or rim *n* forming valve-seat valve a hinged or pivoted in the pipe and means for operating the valve, for the purpose described. 20th. In combination with the distilling chamber, the gas chamber H, and the contained coils of steam superheating pipes connecting with the steam superheating and decomposing chambers, for the purpose described.

No. 24,496. Process and Apparatus for the Manufacture of Gas. (*Procédé et Appareil de Production du Gaz.*)

John Hanlon and Herward G. Leavitt, New York, N.Y., U.S., 15th July, 1886; 5 years.

Claim.—1st. The process of generating illuminating gas, which consists in continuously heating the generating retorts, and by means of the waste or partially burned gaseous products alternately heating internally two fixing chambers, first one and then the other, generating gas continuously in the retorts, and fixing it continuously in the fixing chambers alternately the heating up of one chamber with fixing gas to the other chamber, as described. 2nd. The process of continuously generating gas, which consists in heating the retorts externally, and continuously supplying steam and oil to them, as described, and fixing the resulting gas by passing it through one or the other of two fixing chambers which are alternately heated. 3rd. The process of generating gas, which consists in superheating steam, passing it down through a body of charcoal where it is decomposed, passing the resulting gas up through the vaporizing chamber where oil is admitted, thereby intimately mingling gas and oil vapor, and carrying the latter from the retort and then forming a fixed gas by passing the mixture of gas and vapor through the heated chamber. 4th. The combination of the producer A, and connected retort chamber built in one structure, and the contained vertical retort. 5th. The combination of the heating gas producer, the connected retort chamber and retorts, and the gas fixing chamber connected internally with the retort chamber and one or more of the retorts, whereby it may be heated by waste gaseous products from the retort chamber and then serve for fixing gas, as described. 6th. The combination of the retort chamber and contained retorts, means for heating them, a fixing chamber connected both with the retort chamber and the retorts, and a valve on each connecting pipe, whereby hot gaseous products may be passed from the retort chamber to the fixing chamber for heating the latter, and when such products are shut off illuminating gas may be passed into such chamber to be fixed, as described. 7th. The combination of the retort chamber and one or more contained retorts, with two fixing chambers, connecting pipes from the retort chamber and from the retorts to both fixing chambers, and reciprocating valves on all the pipes,

whereby heating gas may be conducted to one chamber, while illuminating gas to be fixed may be conducted to the other chamber and the flow of each kind of gas changed from one chamber to the other, as described. 8th. In combination with a continuous gas generator, two fixing chambers having connected reciprocating valves connecting the generator with such chambers, and means for admitting heating gas to each chamber. 9th. In combination with two fixing chambers, two inlet pipes for heating gas having a pair of connected reciprocating valves, two inlet pipes for illuminating gas also having a pair of connected reciprocating valves, and a pair of connected stopper valves in the stacks, for the purpose described. 10th. The vertical retort having an opening at top and bottom, and having a vertical partition provided with an opening at its lower end. 11th. The vertical retort having an opening and lid at each end, a vertical partition having an opening, a steam inlet pipe connecting with one chamber, an oil inlet pipe connecting with the other chamber, and a gas outlet pipe leading from the oil vaporizing chamber.

No. 24,497. Fire-Proof Structure.

(*Construction Réfractaire.*)

William H. Lovett de la Penotiere, Victoria, B. C., 15th July, 1886; 5 years.

Claim.—1st. The lumber A, with one broad edge *c* and one narrow edge *f* for building purposes, substantially as and for the purposes described. 2nd. The combination of pieces of lumber A, laid one on another horizontally or side by side perpendicularly, with the broad edges *c* projecting beyond the narrow edges *f*, so as to form dovetail grooves for the purpose of holding mortar on the walls, partitions and other parts of buildings, substantially as and for the purposes hereinbefore set forth.

No. 24,498. Hand Embroidery Machine.

(*Machine à Main pour la Broderie.*)

Silas A. Spoonfield, Morenci, Mich., U.S., 16th July, 1886. 5 years.

Claim.—1st. In an embroidering machine, substantially as set forth, the bar C having the curved needle, the eye *h* and shoulders *n*, a formed integral. 2nd. In an embroidering machine, the combination of the bar C, its curved needle having longitudinal slot *z* and shoulders *n*, a formed integral, the thread and guide holder mounted on said bar, the handle B having the longitudinal slot and plates *a*, *a'*, the bar C, its tuck holder and plates E, E with springs formed integral, as and for the purposes set forth. 3rd. In an embroidering machine, the combination of the bars C, C', the handles A, B, the channel H, the plates E, E having springs formed integral, as and for the purposes specified. 4th. In an embroidering machine, the combination of the handle B carrying the bar C having curved needle and shoulders *n*, *n'*, formed integral, the handle A carrying the bar C, its curved loop-holder, the set-screw *e*, its end adapted to meet the face of the bar C, and the spring plates E, E joining the bars C, C', together with the springs *r*, *r'* working in a channel formed in the handle B, substantially as specified.

No. 24,499. Medicinal Compound for Whooping Cough, etc. (*Composition Médicinale pour la Coqueluche, etc.*)

John B. Leduc, Hull, Que., 16th July, 1886; 5 years.

Claim.—The herein-described medicinal compound to be used for the cure of whooping cough, croup, Bronchitis, Asthma, Diphtheria, Pneumonia, Inflammation of the Lungs, and Pulmonary Consumption, Consisting of Waters, Gold Thread, Catnip, (Nepeta Cataria), Golden Rod, Granulated Sugar, Cochineal, Red Spruce, Gum, and High Wines, in the proportions specified.

No. 24,500. Stringholder for Musical Instruments. (*Cheville d'Instruments de Musique.*)

John D. Loppentia, Pittsburg, Penn., U.S., 16th July, 1886, 5 years.

Claim.—A string-holder for musical instruments composed of a plate, part of which is lengthwise, divided into arms to which the strings are to be attached, and the remaining undivided part pierced for a knob on the instrument to pass through, as described.

No. 24,501. Chromosphere or Optical Toy.

(*Chromosphère ou Jouet Optique.*)

Homer A. Plimpton, Chicago, Ill., U.S., 16th July, 1886, 5 years.

Claim.—1st. A spherical body having divisions, each of which has a prime colour, and the divisions arranged on the surface of the ball, substantially as described, so that the colour of one or more divisions will disappear, or blend with the colour of another division or divisions when the ball is revolved, thus producing colour shades and tints different from those of the prime colours, as set forth. 2nd. A spherical body having a number of divisions of different sizes and forms, each division having a colour distinct from the others and arranged substantially as described, so that when the sphere is revolved, a series of bands or stripes of different shades relative to each other will appear, said bands having no existence when said sphere is at rest, as set forth. 3rd. As a new article of manufacture, an optical toy consisting of a sphere or ball having divisions, each of which has a prime colour, and the divisions arranged on the surface of the ball, substantially as described, and central apertures passing through said ball and a spinning cord upon which said ball is mounted, as set forth.

No. 24,502. Wire Fencing. (*Clôture Métallique.*)

Edward C. Jones, Hamilton, Ont., 16th July, 1886, 5 years.

Claim.—1st. In a wire fence, the double portable post A formed

of channel iron, as shown, and the lower or ground portion bent or twisted at right angles to the upper parts, substantially as and for the purpose specified. 2nd. In a wire fence, the stretcher E for straining the wires to the double post A, consisting of the shaft f, the flange p, holes h and wire opening j, all constructed to wind the wire thereon and secure it by the pin i, substantially as specified. 3rd. In a wire fence, the combination of the portable or stationary post A, and the wire stretcher E, with its stop pin i, substantially as specified. 4th. In a wire fence, the combination of the double post A, brace B, auxiliary brace D, substantially as specified. 5th. In a wire fence, the combination of the double post A, brace B, auxiliary brace D and pin or bolt c, substantially as and for the purpose specified. 6th. In a wire fence, the combination of the double anchor post A, brace B, auxiliary brace D, pin c, stretchers E and wires k, all arranged and constructed, substantially as specified. 7th. In a wire fence, the adjustable gate hinges F, F₁, the front half F₁ formed to embrace and slide on the double post A, and provided with the ring m, shank l and bolt n, and the rear half F₁ formed also to embrace and slide on the post, and the bolt n to pass through the same, and secure the entire hinge to the post by the nut G, substantially as and for the purpose specified. 8th. In a wire fence, in combination with the double anchor post, of a movable catch for sliding vertically on the post to correspond with the movable gate, and movable and adjustable hinges.

No. 24,503. Stencil for Embroidery.

(*Patron pour la Broderie*)

Max Bondick, Brooklyn, N.Y., U.S., 16th July, 1886; 5 years.

Claim.—A stencil for stamping a design for embroidery, having arbitrary symbols perforated therein within the outlines of its design, to be invariably coloured with said design upon the fabric, and thereby indicate the colouring and shading to be followed in the embroidery, substantially in the manner and for the purpose herein set forth.

No. 24,504. Combined Cushion and Guard for Pen-Holders and Brush Handles.

(*Bourrelet et Garde-Main Combinés pour Porte-plumes et Munches de Pinceaux*)

Stephen S. Hurman, New York, N.Y., U.S., 16th July, 1886; 5 years.

Claim.—The combined cushion and guard herein described for a pen-holder or brush handle, consisting of an expansible tubular sleeve of soft india rubber, provided at the outer end with an outwardly projecting flange integral with the sleeve and also of soft and flexible india-rubber, whereby said flange will yield readily to the pressure of the fingers, substantially as herein described.

No. 24,505. Composition of Matter for Casting Medallions, Tiles, Picture Frames, Mouldings, etc.

(*Composition des Matières pour Couler de Médailles, Tuiles, Cadres d'Images, Moulures*, etc.)

Wesley W. Barnes, New York, and John D. Eunack, Baldwin, N. Y., U.S., 16th July, 1886; 5 years.

Claim.—A composition of matter formed by combining soluble glass, ground flint, ground iron and roll sulphur in about the proportions set forth, in the manner described.

No. 24,506. Finishing Block for Hats.

(*Forme de Chapelier pour le Finissage*)

Charles E. Keator, Brooklyn, N.Y., U.S., 16th July, 1886; 5 years.

Claim.—1st. The combination, with the block A, of the bag B secured in the block and adapted to be inflated, substantially as shown and described. 2nd. The combination, with the block A and the shank thereof, of the bar B secured to the block and adapted to be inflated, substantially as shown and described. 3rd. The combination, with the sectional block A, of the bag B, secured at its mouth between the sections and the orifice in the block which communicates with the interior of the bag, substantially as shown and described. 4th. The combination, with the sectional block A, of the elastic bag B, secured to the sectional block and adapted to be inflated, and the shank on the lower section, substantially as shown and described.

No. 24,507. Boiler Cleaner.

(*Nettoyeur de Chaudière*)

Robert S. Smith, Council Bluffs, Iowa, U.S., and John Meiklejohn, St. Thomas, Ont., 16th July, 1886; 5 years.

Claim.—The combination of the plates B, B, with the cutters E, E, and rods G, G to operate the cleaner from the smoke-box end of the boiler, substantially as specified and shown in the drawings and for the purpose hereinbefore set forth.

No. 24,508. Circular Cloak.

(*Manteau Circulaire*)

Joseph M. Jacobs, Baltimore, Md., U.S., 16th July, 1886; 5 years.

Claim.—1st. A circular cloak or other similar garment, having an elastic stay secured in the arm-seye thereof, said stay extending across the seye near one of its ends, and being adapted to assist in preventing the body of the garment from being torn at the end of the seye, substantially as set forth. 2nd. In a circular cloak or other similar garment, the elastic stay C disposed in the arm-seye B near the end thereof, and secured to said body, substantially as described. 3rd. In a circular cloak or other similar garment, the body A having the arm-seye B, and provided with the stays C, constructed and ar-

ranged to operate, substantially as set forth. 4th. A circular cloak or other similar garment, having a stay forth disposed in the arm seye near the end thereof, the ends of the stay being respectively secured to the body of the garment at the opposite sides of the seye, substantially as shown and described.

No. 24,509 Apparatus for Printing Consecutive Numbers.

(*Appareil pour Imprimer les Numéros Consecutifs*.)

Walter W. Colley, Camberwell, Eng., 16th July, 1886; 15 years.

Claim.—1st. A revolving apparatus for printing consecutive numbers, consisting of the combination of the frame A, B, spindle C with boss D, fixed projecting tooth E, stationary depressible tappets E₁, E₂, E₃ connected by bars d, e and slots f, springs F, tappets E₁, E₂, E₃ being provided with point G and upper shoulder or step H, sets of spider gear wheels 1, 2, 3, 4, 5, said wheels being provided with boss J, with notch K, springs L and outer sets of printing wheels N to Ng, substantially as and for the purposes hereinbefore set forth. 2nd. In a revolving apparatus for printing consecutive numbers, the combination of the stationary depressible tappets E₁, E₂, E₃, boss D, springs F, said tappets having bearing point G and shoulder H, the side of such upper shoulder engaging at certain times a tooth of a wheel during revolution of machine or apparatus to move such wheel one tooth, substantially as and for the purposes hereinbefore set forth. 3rd. In a revolving apparatus for printing consecutive numbers, the five sets of spiders wheels 1, 2, 3, 4, 5 searing with and actuating ten sets of printing wheels N to Ng, each set of spider wheels actuating two sets of printing wheels, spider wheels being held by springs L and actuated by stationary projecting tappets against which the teeth strike during revolution of apparatus, substantially as and for the purposes hereinbefore set forth. 4th. In a revolving apparatus for printing consecutive numbers, the combination of the frame A, B, spindle C with boss D, wheels I, J, E₁, E₂, E₃, provided with boss having notch K, depressible tappets E₁, E₂, E₃, formed with point G, and upper shoulder H and springs F, substantially as and for the purposes hereinbefore set forth. 5th. In a revolving apparatus for printing consecutive numbers, the combination of the frame A, B, spindle C with boss D, depressible tappets E₁, E₂, E₃, springs F, arms d, e and slots f, substantially as and for the purposes hereinbefore set forth.

No. 24,510. Ventilation of Bulk Windows, Stores, Offices, or Dwelling Houses.

(*Ventilation des Fenêtres en Saillie, Magazins, Bureaux ou Habitations*.)

T Theodor Cohen, Philadelphia, Penn., U.S., 16th July, 1886; 5 years.

Claim.—1st. The holders D, D, each composed of a wing h, provided with angular flanges i, j, and a pivot b, in combination with an angularly-flanged portion E, forming a groove d for receiving the ventilator-plate C, substantially as described. 2nd. The combination, with a window having a ventilating space above its plate B, of a vibrating ventilator, pivoted and mounted as described, a packing a, an arm h on one of the holders, an actuating-rod connected to said arm and provided with a thumb-screw, and a fixed plate h, screw-tapped and secured to the window-frame, all substantially as herein described. 3rd. The combination, with a window-frame, and a window-glass having a ventilating-space above it, of the ventilating plate and the pivoted holders therefor, constructed substantially as specified.

No. 24,511. Means for Preventing Incrustation in Steam Boilers, etc.

(*Moyens pour Empêcher les Incrustations dans les Chaudières à Vapeur*, etc.)

Thomas J. Reynolds and Francis Nolan, Brooklyn, N. Y., U.S., 17th July, 1886; 5 years.

Claim.—1st. The combination, with an evaporating-vessel, of a liquid-heater consisting of a shell or casing arranged within the vessel, and preferably below the liquid-level, a feed-pipe connected with such heater shell or casing, and a pipe extending from such heater shell or casing into the vessel for delivering therein from the heater shell or casing, substantially as and for the purpose herein described. 2nd. The combination, with an evaporating-vessel, of a tube or flue extending lengthwise and closed at the ends, a feed-pipe communicating with one end of the tube or flue, and a pipe extending from the other end of the tube or flue into the evaporating-vessel, substantially as and for the purpose herein described. 3rd. The combination, with an evaporating-vessel, of the tube or flue B extending lengthwise within the said vessel and closed at the ends, the feed-pipe D connected with one end of the tube or flue at the top thereof, and the pipe E leading from the other end of the tube or flue at the top thereof into the evaporating vessel, substantially as and for the purpose herein described. 4th. The combination, with the evaporating-vessel A of the tube or flue B and feed and discharge-pipes D, E, communicating at opposite ends with the top of said tube or flue, and the blow-off pipes F, G leading from the opposite ends of the tube or flue at the bottom thereof, substantially as herein described.

No. 24,512. Machine for Reducing Tan Bark.

(*Machine à Concasser l'Écorce à Tan*.)

Byron Holbrook and Jacob Cryderman, Milwaukee, Wis., U.S., 17th July, 1886; 5 years.

Claim.—1st. In a machine for reducing bark, the combination of the frame A, inclined feed-table B extending within and to the base of the machine, and having side board D and shear-plate e, with the disk B having tangential slots d, f and knives a, a, substantially as shown and described. 2nd. In a machine for reducing bark, the

combination of the frame A, inclined feed-board extending within the machine, disk B carrying tangentially-arranged cutting-knives projecting beyond the face of the disk, and above similarly arranged tangential slots, feed-rolls F, F, driving shaft C, sprocket-wheels, shafts and drive-chains, substantially as shown and described. 3rd. In a machine for reducing bark, the combination of frame A, disk B having tangentially-arranged slots and knives, triangular mottled feed-table D provided with side board H, and shear-plate L, shafts C, H, and D, feed-rollers F, F, shafts F, F, sprocket-wheels and drive-chains H, H, G and G, substantially as shown and described.

No. 24,513. Metallic Roofing Tile.
(*Feuille Metallique à Toiture.*)

Jacob S. Thorn, Philadelphia, Penn., (Co-inventor with Charles Lefler, Brooklyn, N. Y.,) U.S., 17th July, 1886. 5 years.

Claim.—1st. The combination, with a tile having diamond-shaped point, of the flange projected inward from the edges of such point, the flange being of greatest depth at the point *a* of the tile and tapered to nothing at the upper edge *b* of the exposed surface, and the ribs *d* formed upon the head of the tile parallel with its opposed *b* or *c* edges and extending to the same, and the space *d* between the upper ends of the ribs, the parts being constructed and arranged, substantially as and for the purpose set forth. 2nd. The combination, with a tile having diamond-shaped point, of the flange projected inward from the edges of such point, the flange being of greatest depth at the point *a* of the tile, and tapered towards its sides, the rib *c* extended downward from each side of the tile along the same inclined edges as the flanges *a*, *b* and rib *d*, continuous with the rib *c* at its lower end, and inclined upward toward the center of the tile, parallel with the opposite exposed edge of the same, the flange at the inclined sides of the point *a* being adapted to embrace and cover the ribs *c* and *d*, as and for the purpose set forth. 3rd. The combination, with a tile having diamond-shaped head and point, of the flange projected inward from the edges of such point, the flange being of greatest depth at the point *a* of the tile and tapered towards its sides, the outer surface of the tile being flat where it is secured to the roof and of concave form where it is exposed, the ribs *c* and *d* continuous with one another and forming a V upon the flat part of the tile, as described, and having the nailing-surface *f* between the ribs *c* and the inclined edges at the head of the tile, the said parts being constructed and arranged substantially as and for the purpose set forth. 4th. The combination, with a tile having diamond-shaped point, of the flange projected inward from the edges of such point, the flange being of greatest depth at the point *a* of the tile and tapered towards its sides, and the outer surface of the tile being of concave form and provided with the ribs *c* and *d*, connected together and arranged as described, and with the central curved rib *e*, as and for the purpose set forth.

No. 24,514. Metallic Roofing Tile.
(*Feuille Metallique à Toiture.*)

Jacob S. Thorn, Philadelphia, Penn., (Co-inventor with Charles Lefler, Brooklyn, N. Y.,) U.S., 17th July, 1886. 5 years.

Claim.—1st. The combination, in a tile of parallel edges at opposite sides of the tile, a point having sloping sides, a tapering bent flange upon both the sloping sides *i*, *h* of the point, and upon one of the parallel edges, at *m*, and a tapering rib *c* near the opposite parallel edge of the tile and adapted to fit beneath the tapering flange at *m*, substantially as shown and described. 2nd. A title-plate having at its head a flat portion adapted to rest upon the roof and a portion extending therefrom to the point in an outwardly-concave curve, the point being thus elevated from the roof, and the point and side of such curved portion being provided with an inwardly-bent flange having its greatest depth at the point of the tile, and tapered upwardly along the sides of the curved portion, and a longitudinal rib of the same curvature as the concave plate being formed longitudinally along the ribs *i* of the same to stiffen the middle part of such curved portion, and to hold the point of the tile close to the roof when laid, substantially as herein set forth. 3rd. The combination, in a tile having parallel edges and point with sloping sides, of the ribs *g*, *g*, formed in the head of the tile, of contour similar to the opposed edges of the point, the rib *c* tapered upward and formed near the side of the tile parallel with its edge, the flange projected inward from the point *k* and tapered upward upon one side of the tile along its edge, at *m*, to the end of the rib *g*, and in the opposite direction along the sloping side *l* to the lower end of the rib *c*, and the tile being provided with a nailing flange *e* outside the rib *c*, and the nailing-flange *f* above the ribs *g*, *g*, and the parts, being constructed and arranged substantially as shown and described.

No. 24,515. Weighing Machine.
(*Balance à Bascule.*)

Percival Everett, London, Eng., 17th July, 1886. 5 years.

Claim.—1st. A weighing machine having an aperture for receiving a coin, a weighted lever, a dial and index hand, and intermediate mechanism connected with the same, and whereby the coin when deposited in the receiver shall operate the lever and cause the hand to indicate the weight of the person or body being weighed. 2nd. In combination with a weighing machine, substantially as described, the quadrant *r*, shaft *t*, pinion *s*, bar *u*, receptacle *v*, and its movable bottom, weighted arm *e*, quadrant *x*, shaft *z*, pinion *y*, stop *tt*, dial *w*, and index *o*, substantially as shown and described.

No. 24,516. Horse Detacher.
(*Dételage Instantané.*)

Charles H. Keenan and John P. Gardner, Port Mallock, Nov., U.S., 19th July, 1886. 5 years.

Claim.—1st. The combination of the clip A, the bolt *a*, pivoted therein, the pin *h* received in eye *c* formed on the clip and adapted to retain the free end of the swinging bolt, and a thill iron received on the swinging bolt and adapted to be released by the swinging of the bolt, substantially as herein shown and described. 2nd. The com-

ination, with a clip A, provided with the horizontally swinging bolt *a*, and retaining pin *h* of the thill iron received on the swinging bolt, the rod F and chain *g* connecting the rod F and pin *h*, substantially as herein shown and described. 3rd. The combination, with the clip A, provided with the horizontally swinging bolt *a* and retaining pin *h*, of the forked eye *d*, and the loop D received on the bolt *a*, and provided with the rubber roller *j*, substantially as herein shown and described. 4th. The combination, with the clip A, provided with the swinging bolt *a*, of the cross-bar *k*, bent upward at right angles and arranged to retain the fork of the clip, as herein shown and described. 5th. The combination of the clips A, provided with the striking bolts *a* and retaining pins *h*, the loops D, thill irons C connected with the loops D, the rod F, chains *g*, and the support E for the rod F, substantially as herein shown and described.

No. 24,517. Apparatus for Watering Stock.
(*Appareil pour Abreuer les Bestiaux.*)

John M. Spencer, Lawrence, Ks., U.S., 19th July, 1886. 5 years.

Claim.—1st. In combination, the reservoir provided with a vertical escape pipe having a valve-seat on its upper end, and a gravity valve fitted to said seat provided with a depending stem, a drinking-trough having the escape pipe of the reservoir, and the valve-stem depending therein, and a valve lever interceding in the drinking-trough with its heavier and inner end terminating in a step to take the foot of the valve-stem, and the end of the outer arm formed with a nose-piece, substantially as described and for the purpose stated. 2nd. In combination, a reservoir having a vertical escape-pipe, provided with a gravity valve having a depending valve-stem, a drinking-trough having communication with the reservoir-valve, and a valve-lever interceding in the drinking-trough with its heavier end to lift the valve, and its outer end formed with a nose-piece through which the animal has access to the water and whereby the valve is opened, substantially as described.

No. 24,518. Harrow. (Horse.)

George Keeley, Yankleek Hill, Ont., 10th July, 1886. 5 years.

Claim.—1st. The hook-teeth F, provided with the shank *a*, in which is formed the groove *c*, extending in a downward and rearwardly-inclined direction from said shank to a desirable distance, and thence curving forward to its point, substantially as described, and shown. 2nd. The taper-tooth G, provided with the shank *a*, in which is formed the groove *c*, substantially as herein shown and described. 3rd. The four-sided and chamfered clip H, having the projection *g* arranged to surround and bind together the harrow teeth and the bales and cross-ties of the harrow, frame, and formed substantially as shown and described. 4th. The intermediate cross-tie B, formed of one piece, with the longitudinal braces E, substantially as and for the purpose set forth. 5th. The combination of the clip H, with the hook or eye *g*, by which the sections of the harrow are hinged together. 6th. The combination of the cross-ties B, C, D, having their end portions bent so as to lie upon and in line with the bales A, with the clips H, substantially as herein shown and described.

No. 24,519. Coffee Steamer or Urn.
(*Percolateur ou Urne à Café.*)

James S. Sanborn, Boston, Mass., U.S., 19th July, 1886. 5 years.

Claim.—1st. In a coffee steamer or urn, the combination, with the boiler A, and its inclosed coffee receptacle B, of the coffee steeping vessel G placed over the same, and provided with a series of steam pipes H communicating with the boiler A, and extending up to or nearly to the top of the steeping vessel and down within the same to or nearly to the bottom thereof, whereby the steam from the boiler is always discharged below the level of the extracting liquid in said steeping vessel, for the purpose of constantly maintaining the same at a high temperature, substantially as set forth. 2nd. In a coffee steamer or urn, the combination, with the boiler A and its inclosed coffee receptacle B, of the coffee steeping vessel G placed over the same and having the cover *m*, strainer *r* and base *h*, the latter fitting within a sealing trough *t* at the upper edge of the boiler, and provided with a series of steam pipes H, communicating with the boiler A at S, and extending up on the outside to or nearly to the top of the steeping vessel, and then down within the same to or nearly to the bottom thereof, to discharge the steam below the level of the extracting liquid, all constructed to operate substantially in the manner and for the purpose described.

No. 24,520. Drying Apparatus. (Stove.)

Abner Coleman, Newark, N.J., U.S., 19th July, 1886. 5 years.

Claim.—1st. In a drying apparatus, the combination of two sections, one of which forms the drying chamber, and the other the furnace room or oven, which is provided with double-sliding plates having transverse slots and openings in one of its sides, and a smoke pipe extending from the stove into and along the drying chamber, and thence upward through an opening, and an elbow to create a suction draft, said sections being provided with removable deflecting plates, substantially as and for the purposes set forth. 2nd. A furnace room or oven, constructed with one open side, whereby it is adapted for attachment to a drying chamber, said room or oven having a series of double sliding plates in the open side, provided with a series of transverse slots and openings to control the escape of the heated air into the chamber, as and for the purposes specified. 3rd. A furnace room or oven adapted for attachment to a drying chamber, and provided with a smoke and hot air pipe, communicating with the stove and with the interior of the room at or near its top to carry off the fumes in cooking, and a plate surrounding the stove to form an air space, and one or more openings provided with valves for supplying air to the air space, substantially as and for the purposes set forth. 4th. In a drying apparatus, the combination of two sections having their inner ends provided with removable doors, and removably connected together to form respectively a drying chamber

and a furnace room, said room having means for attaching suitable pipe for converting it into a furnace for baking and cooking purposes, and the drying chamber having a series of cleats arranged in vertical rows for receiving drawers and ice box and racks to form shelves, when the section is in use as a safe, substantially as and for the purposes set forth.

No. 24,521. Wood Ornamentation.

(*Décoration du Bois.*)

William A. Compton, Liberty Corner, N. J., U. S., 19th July, 1886; 5 years.

Claim.—1st. The combined cutting and pressing tool, having an embossing surface formed thereon, one or more recesses formed in said embossing surface, and a projecting cutting edge affixed at the margin of such recess between the edge of the recess and the adjacent embossing surface, as and for the purpose set forth. 2nd. The embossing tool having a recess formed in its surface, and provided around the entire margin of such recess with a projecting cutting edge, affixed to the tool at the margin of such recess. 3rd. An embossing roller having a recess formed in its surface, a projecting cutting edge affixed at the margin of such recess, and one or more cutting edges projected from the bottom of such recess within the margin. 4th. An embossing roller having a convex embossing surface in longitudinal section, a recess formed in said surface, and provided with a projecting cutting edge or edges affixed at the margin of such recess.

No. 24,522. Machine for Nailing Packing Cases. (*Machine à Clouer les Caisses d'Emballage.*)

William H. Hutchinson, Toronto, Ont., 19th July, 1886; 5 years.

Claim.—1st. In a box nailing machine, the adjustable jaw G, hand nut i, fixed head a, in combination with the adjustable jaw Y, hand nut e, spiral springs h, h, and spring heads f, z, substantially as and for the purpose hereinbefore set forth. 2nd. In a box nailing machine, the driving punches h, b, cross-head D, in combination with the double connecting rods l, l, cranks r, r, shafts g, g, driving gear wheels P, P, pinion wheel S, friction driving pulley n, o. 3rd. In a box-nailing machine, the adjustable extension F, hand nuts n, n, slots e, e, in combination with the face plate B, substantially as and for the purpose hereinbefore set forth. 4th. In a box nailing machine, the dies c, c, spring catches T, T, in combination with the die bar L, slots e, e, substantially as and for the purpose hereinbefore set forth.

No. 24,523. Ventilator for Stoves.

(*Ventilateur pour Poêles.*)

Warren M. Brinkerhoff, Auburn, N. Y., U. S., 19th July, 1886; 5 years.

Claim.—1st. The combination, with a stove and its smoke pipe, of an elbow interposed between the two, and an air pipe or duct rising from a point near the floor and passing directly through the wall of the elbow, forming a close joint therewith, and communicating with the air at its lower end, and opening at its other within the elbow or smoke pipe above the point of junction of the air pipe and elbow, substantially as described. 2nd. The combination, with a stove and its smoke pipe, of an elbow interposed between the two, and an air pipe or duct of less size than the elbow or smoke pipe rising from a point near the floor and opening within the elbow or smoke pipe above its junction therewith, the elbow being provided at the point of junction with an extension or sleeve of about the same size as the air pipe, and the said air pipe engaging said extension or sleeve, substantially as described.

No. 24,524. Metallic Packing for Stuffing Boxes, etc. (*Garniture Métallique pour Boîtes à Etoupe, etc.*)

John B. Deeds, Terre Haute, Ind. U. S., 19th July, 1886; 5 years.

Claim.—The combination, in a stuffing box, of an annular packing made in longitudinal sections having inclined meeting edges, each section having a corresponding recess midway its end, to form an annular chamber around the rod, and each end bevelled to form a double conical ended annulus, elastic rings at each end of the packing and bearing on its conical ends, and a follower to compress said rings, as and for the purpose set forth.

No. 24,525. Stone Breaker and Ore Crusher.

(*Concasseur pour la Pierre et le Minerai.*)

Philetus W. Gates, Chicago, Ill., U. S., 19th July, 1886; 5 years.

Claim.—1st. The combination of a gyratory shaft, provided with main and auxiliary crushing surfaces, and a hopper provided with reversely-tapered crushing surfaces, the respective sets of opposing crushing surfaces being together adapted for breaking stone or other substances into fine pieces, while the lower of said sets is adapted to be moved entirely out of operative relation, and the upper set to be used alone for breaking the stone or other substances into coarser pieces, substantially as and for the purpose described. 2nd. The combination, with the vertically adjustable gyratory crusher shaft and heads, of a hopper having main and auxiliary crushing surfaces, the latter of which is made separate from the former, substantially as described. 3rd. The vertically adjustable gyratory shaft, provided with main and auxiliary crushing surfaces of different degrees of taper, the latter of which is constructed separately from the former, in combination with a hopper provided with reversely-tapered crushing surfaces, and an adjustable step block, substantially as and for the purpose described. 4th. The combination of the gyratory crushing shaft crusher head, formed of main and auxiliary crushing surfaces having different degrees of taper, the hopper or concave having reversely-tapered crushing surfaces and an adjustable step block, substantially as and for the purpose described. 5th. In a stone breaker or crusher, the combination of the lower, sub-

stantially parallel breaking or crushing surfaces, adjustable gyratory shaft and the upper greater and reversely divergent crushing surfaces, substantially as described.

No. 24,526. Window Cleaner.

(*Laveuse de Fenêtre*)

Martin Bourke, Youngstown, Ohio, U. S., 19th July, 1886; 5 years.

Claim.—1st. In a window cleaner, the combination, with a suitable head, of a cleaning strip folded upon itself, and removably and adjustably connected thereto, substantially as and for the purpose set forth. 2nd. The combination, with the tubular head or holder, of a cleaning strip adjustably connected thereto, substantially as and for the purpose specified. 3rd. The combination, with the tubular head or holder having a bearing flange, of a cleaning strip seated and held within the head or holder, substantially as and for the purpose described. 4th. The combination, with a tubular head or holder, and a folded cleaning strip inserted therein, of a key extending through the head or holder, substantially as and for the purpose set forth.

No. 24,527. Horse Hay and Grain Fork.

(*Fourche à Cheval pour le Foin et le Grain.*)

Joseph Sullivan, Westmeath, Ont., 19th July, 1886; 5 years.

Claim.—1st. In the hay and grain fork, the shanks G, G, having piece P rigidly attached to one shank, clevis C attached to said piece P, pulley h attached to the other shank, lines w, w, prongs I, I, rigidly attached together and to shanks G, G, substantially as shown, in combination with the two pieces f, block o and hay or grain car, as described and shown. 2nd. In the hay or grain car, having jaws d, d, springs m and n, as described, in combination with block o, and hay or grain fork, substantially as and for the purpose hereinbefore set forth.

No. 24,528. Curtain Fixture.

(*Bâton de Rideau.*)

Henry W. Simms, Bay City, Mich., U. S., 19th July, 1886; 5 years.

Claim.—1st. In a curtain fixture, the combination, with the roller a, provided with a pivot J, the bracket g provided with a slot P carrying the pivot o and a lifting spring beneath the pivot, of a wheel S secured to the end of the roller, and provided with the curved projections t on its side face, the portion U extending above the wheel and having the curved portion v reaching over the wheel and forming the loop m, substantially as and for the purpose set forth. 2nd. In a curtain fixture, the combination, with the roller a having an enclosed actuating spring and an end pivot o, the bracket g provided with a slot P carrying the pivot o and a lifting spring q beneath the pivot, the upward extending portion U and the curved portion v forming a loop v, of the wheel S secured to the roller, and provided with the curved projections t on its side face, and passing within the said loop v to lock the roller, substantially as and for the purpose set forth. 3rd. In a curtain fixture, the combination, with the roller having a longitudinal central opening in one end for a portion of its length, with an extension piece passed into the said opening, and provided with one or more longitudinal ribs projecting from its sides, and supplemental pieces of the roller having a central opening, and passed upon the said extension piece and against the outer end of the principal roller, substantially as and for the purpose set forth. 4th. In a curtain fixture, the combination, with a certain roller a having a longitudinal central opening at, of an extension piece b₁ passed into the said opening and provided with the ribs c₁, and the supplemental roller sections d₁ provided with a central opening and passed upon the piece b₁, substantially as and for the purpose set forth. 5th. In a curtain fixture, the combination, with a shade roller having an enclosed actuating spring, a rod e passing into the end of the roller and connected with the spring and provided with a flattened portion d and pivot h extending from the roller, a bracket j provided with a slot supporting the pivot, of a wheel K resting on the part d and provided with the opening m and a lug n extending from the bracket and engaging with the opening m, substantially as herein set forth and shown. 6th. In a curtain fixture, the combination, with a shade roller having an enclosed actuating spring, and a rod e passing into the end of the roller and secured to the spring and provided with a flattened portion d and a pivot h extending from the roller of a wheel K having a central opening l resting upon the portion d and provided with the opening f and a lug e extending from the end of the roller and engaging with the opening f, substantially as and for the purpose set forth. 7th. In a curtain fixture, the combination, with the bracket having the projecting portions t, provided with the side projections n₁ of the vertical piece e₁ provided with the openings h₁ having the reduced portion j, substantially as and for the purpose set forth. 8th. In a curtain fixture, the combination, with the supporting bracket, of the projecting parts l₁ provided with the side projections n₁, the vertical piece e₁ provided with a series of openings h₁ having the reduced part j₁, and the inclined portions j₁ on the sides of the part s₁ and the rib m₁, substantially as and for the purpose herein set forth.

No. 24,529. Heating Apparatus. (*Calorifère*)

Alexander Walker, Montreal, Que., 19th July, 1886; 5 years.

Claim.—1st. The combination, with a hot water circulation coil, of a reservoir or supplementary coil, connected to same by feed and return pipes and acted upon by a heater, and an expansion tank through which products of combustion are taken, the whole being mounted on a movable stand, all as herein set forth and for the purposes described. 2nd. The combination, with the heating chamber E, of pipe K, tank H and cover H₁, all as and for the purposes set forth.

No. 24,530. Device for Sharpening Mowing Machine Knives. (*Appareil pour Ré-mouler les Couteaux des Faucheuses.*)

Charles O. Poulson, Linwood, Penn., U. S., 19th July, 1886; 5 years.

Claim.—1st. The herein described grindstone for grinding mowing machine knives, consisting of a circular disk having its edges bevelled off, and a groove or slot on its face, all substantially as and for the purposes set forth. 2nd. The combination, in a grindstone, of the circular disks A, A, having their edges bevelled off, as shown, and the plate B of smaller diameter than said stones, said plate separating said stones and forming a space F between them, substantially as and for the purposes set forth. 3rd. The combination, in a grindstone, of the stones A, A, having bevelled edges, plate B of smaller diameter, and separating said stones and plate U, partly filling the space F between the stones, all substantially as and for the purposes set forth.

No. 24,531. Mechanism for Transmitting Power. (*Mécanisme de Transmission de la Force.*)

Wallace H. Dodgo, Mishawaka, Ind., U.S., 19th July, 1886; 5 years.

Claim.—1st. The pulleys A, B, each provided with one or more peripheral grooves C, the endless belt or rope D, and the wheel E, combined with a wheeled carriage F for said wheel, and a rectilinear track or guide way G for the same, said carriage being impelled away from said pulleys by a constantly acting force, substantially as set forth. 2nd. The pulleys A, B, the rope D placed thereon, and the idler E, combined with the carriage F, adjustable to vary the angular position of the wheel E, to adapt it to the number of grooves employed on the pulleys A, B, and a yielding device to impel said carriage away from said pulleys and keep said rope always taut. 3rd. The combination of the pulleys A, B, the rope D placed thereon, the idler E mounted on the carriage F, adapted to move in a right line only, a track or guide way G for said carriage, and an impelling weight attached to said carriage. 4th. The pulleys A, B, rope D placed thereon, the inclined idler E mounted upon a carriage F impelled by gravity, and a rectilinear track or guide way G for said carriage, combined with one or more guide pulleys I, whereby the angular position of the carriage F and track G as to the pulleys A, B may be changed as desired. 5th. In an endless rope for transmitting power, the herein described mode of splicing the ends, that is to say, first, by securing the ends of the strands by whipping or short splicing, second, by covering the spliced portion with a sleeve of suitable hide or leather, third, by fastening the ends of said sleeve to the strands individually, substantially as set forth. 6th. A rope, having its end strands secured by whipping or short splicing, combined with a covering shield of suitable material, such as hide, having its ends slit to constitute thongs, and said thongs wrapped around the strands individually, whereby the splicing sleeve is joined to the rope by wrapping the strands separately at a distance from their ends.

No. 24,532. Churn Power. (*Moteur de Baratte.*)

William Bloedow, Killaloe, Ont., 19th July, 1886; 5 years.

Claim.—The combination, with the base A and lever H, provided with adjustable weight K, of post B having a boxed head B', bolt F and coiled spring U, as set forth.

No. 24,533. Bevel. (*Sauterelle.*)

Charles M. Fress, John M. Todd and Edgar W. Wilson, Minneapolis, Minn., U.S., 20th July, 1886; 5 years.

Claim.—The combination, with the stock of a bevel-square, of a spur-wheel adapted to be turned by the bevel-blade, a pinion in mesh with such spur-wheel and of one-fourth its diameter, an indicator operated by the pinion pivot and a graduated scale for indicating the angle of the blade and stock, substantially as set forth.

No. 24,534. Manufacture of Starch.

(*Fabrication de l'Amidon*)

William T. Jebb, Buffalo (Assignee of John C. Schuman, Akron), N.Y., U.S., 20th July, 1886; 5 years.

Claim.—1st. The herein described method of extracting starch from grain, which consists in first detaching and separating the starch meal from the coarse offal, then steeping the separated starch meal, then grinding the steeped starch meal, and then separating the remaining impurities from the starch, substantially as set forth. 2nd. The herein described method of extracting starch from grain, which consists in first steeping the grain, then reducing the grain, then separating the starch meal from the coarse offal, then steeping the separated starch meal, then grinding the steeped starch meal, and then separating the remaining impurities from the starch, substantially as set forth. 3rd. The herein described method of extracting starch from grain, which consists in first detaching the hulls and germs from the starchy portions by whipping or beating, then separating the starch meal from the hulls and germs, then steeping the separated starch meal, then grinding the steeped starch meal and then separating the remaining impurities from the starch, substantially as set forth. 4th. The herein described method of extracting starch from grain, which consists in first steeping the grain, then detaching the hulls and germs from the starchy portions by whipping or beating, then separating the starch meal from the hulls and germs, then steeping the separated starch meal, then grinding the steeped starch meal, and then separating the remaining impurities from the starch, substantially as set forth.

No. 24,535. Method of and Apparatus for Lighting Railway Trains and Tram Cars by Gas. (*Mode d'Eclairage au Gaz des Chars de Chemins de Fer et de Tramway et Appareil pour cet objet.*)

William B. Rickman, London, Eng., 20th July, 1886; 5 years.

Claim.—1st. The method herein described of lighting railway carriages or tram cars by gas, including the preparation and compression of rich oil gas, its supply in a compressed condition to separate

reservoirs on the carriage of a train, and the regulation of its pressure in passing from those reservoirs to the carriages of a train, and the regulations of its pressure in passing from those reservoirs to the lamps of the carriage. 2nd. The apparatus, substantially as herein described, for preparing, storing and compressing gas for the supply of railway trains or tram-cars, including retorts, in combination with coolers, purifiers, gasometer pump and high pressure reservoir. 3rd. The apparatus, substantially as herein described, for supplying gas to railway trains or tram-cars, including the high pressure mains with their branches, valves and couplings to the reservoirs on the separate carriages. 4th. The apparatus, substantially as herein described, for regulated combustion of gas in a railway carriage, including the regulator on each carriage in combination with the gas brackets and branch pipes therefrom and the lamps. 5th. In combination with the gas pipe from the regulator on each carriage, the pneumatic diaphragm valve and an air pressure pipe coupled from carriage to carriage, arranged and operating substantially as herein described.

No. 24,536. Method of and Apparatus for Lighting by Gas Floating and Detached Lights, such as Buoys, Lightships, Pile Lights, etc (*Mode d'Eclairage au Gaz des Phares Flottants et Détachés, tel que Bouées, Bâtimens-Balises, Pharillons, etc.*)

William B. Rickman, London, Eng., 20th July, 1886; 5 years.

Claim.—1st. In an apparatus for producing and compressing oil gas for floating and detached lights, the combination of the retort furnace B, oil supply pump C, cooler or condenser E, washer or purifier E, gasometer H, compressing pump I, and high pressure reservoir M, arranged and operating substantially as herein described. 2nd. In apparatus for supplying illuminating gas to floating and detached lights, and for regulating the combustion thereof, the combination of the receptacle R, for compressed gas, the supply pipes n, n', regulator N, supply pipe p, and burner T, arranged and operating substantially as herein described.

No. 24,537. Tanning Process.

(*Procédé de Tannage.*)

John W. Fries, Salem, N.C., U.S., 20th July, 1886; 5 years.

Claim.—1st. The method of tanning leather, which consists in subjecting the hide to the action of a bath containing carbonate of iron. 2nd. The process of tanning or finishing hides for the production of leather, which consists, first, in liming and unhairing the hides, then subjecting them to a bath or solution containing carbonate of iron, next subjecting them to a solution of copperas and common salt dissolved in water, and finally treating them with cotton seed oil, or other oil or fatty substance, capable of readily entering the pores of the leather. 3rd. In a tanning and finishing process, the steps which consists in first liming and unhairing the hides, in any usual or convenient manner, second, subjecting the hides to a bath of water containing carbonate of iron in solution, and, third, removing the hides from the carbonate solution and subjecting them to the action of a bath of copperas and common salt dissolved in water, substantially as set forth. 4th. The herein described process of tanning and finishing hides, consisting in first liming and unhairing the hides in any usual or convenient manner, second, subjecting the hides to a bath of water containing carbonate of iron in solution, third, removing them from the carbonate solution and subjecting them to the action of a bath of copperas and common salt dissolved in water, fourth, bringing them under the action of the atmosphere, whereby the ferrous oxide contained in the pores of the hide is changed to a ferric oxide, and, fifth, treating the leather thus formed with cotton seed oil or other fatty substance, substantially as and for the purpose set forth. 5th. The step in the treatment of hides, which have been previously treated in solutions, containing respectively carbonate of iron and copperas, and common salt dissolved in water, which consists in applying to them a mixture of castor oil and alcohol. 6th. The method of treating leather after treatment in solutions containing respectively carbonate of iron and copperas and salt, which consists in applying to said hides while they are wet with the last solution a mixture of castor oil and alcohol.

No. 24,538. Vehicle Spring. (*Ressort de Voiture.*)

Emil C. Tecktonus, and the Mitchell & Lewis Company, Racine, Wis., U.S., 30th July, 1886; 5 years.

Claim.—1st. The combination, with a vehicle body of crossed elliptical springs, one end of each spring being secured to the under side of the body near its edge, the two springs crossing each other under the centre of the body and being there clipped to the pivoted leaves of a depending bracket, substantially as described. 2nd. The combination, with a vehicle body, of the crossed elliptical springs B, B, and the depending bracket C, of the crossed elliptical springs B, B, pivoted on bolt H passing through said lugs, and the said leaves b, b, extending in opposite directions, and each clipped to one of the springs B on opposite sides of the centre of the bracket, as shown and described.

No. 24,539. Sash Fastener. (*Arrête-Croisée.*)

George F. Shaw, Francis L. Babcock and Philander S. Young, Dedham, Mass., U.S., 20th July, 1886; 5 years

Claim.—1st. In a sash fastener, the combination, with an upright standard F, adapted to be fastened rigidly on one of two meeting rails, of a stand D adapted to be secured rigidly on the other rail, and composed of two parts a and b joined by the cross-piece c, one or both of said standard and cross-piece being bevelled or inclined, as specified, and said standard and stand being so constructed with reference to each other that when they co-act the standard is between said parts a and b, and inclosed by them and the cross-piece c, sub-

stantially as and for the purpose hereinbefore set forth. 2nd. In a sash fastener, the combination, with a plate E adapted to be rigidly secured on one of two meeting rails, and upright lever G pivoted to said plate, provided with a projection g and bearing at the upper end, a thumb-piece e, of a stand D adapted to be fastened on the other rail, substantially as and for the purpose hereinbefore set forth. 3rd. In a sash fastener, the combination, with a stand D adapted to be fastened on one of two meeting-rails, of a plate E adapted to be fastened on the other rail, a spring f, and the upright lever G pivoted to said plate provided with a projection g bearing at the upper end and a thumb-piece e, and having a stop i, substantially as and for the purpose hereinbefore set forth. 4th. In a sash fastener, the combination of a stand D, adapted to be fastened on one of the two meeting-rails, and consisting of the two parts a and b, joined by the cross-piece c, with a plate E provided with a vertical standard V, a lever G pivoted to said plate provided with a thumb-piece e, a projection g and a stop i, and a spring f, said devices being so constructed with reference to each other that when they co-act the standard F is enclosed by said parts a and b and cross-piece c and the projection g engages with said cross-piece c, substantially as and for the purpose hereinbefore set forth.

No. 24,540. Knitting Machine.

(Machine à Tricoter.)

Walter Aiken, Franklin Falls, N.H., U.S., 21st July, 1886; 5 years.

Claim.—1st. A knitting machine, containing a grooved circular needle bed, a needle-actuating circular cam-plate, provided with a groove to receive the butts of the needles, and having at times a rotating and at times a reciprocating movement, according to whether the leg and foot, or the heel and toe of a stocking is being knitted, a series of needles, part of which have tail pieces beyond their butts, a series of needle shifters embracing the tails of the needles, which are to be used when knitting the heel and toe of a stocking, the said needle shifters being moved intermittently, to remove the butts of the needles from the cam-groove in the cam-plate as narrowing is being done, at which time one needle after another is to remain at rest, with its butt out of the groove in the cam-plate, and to thereafter replace the butts of the said needles in the said cam-groove as widening is being done, the cam-plate being reciprocated as narrowing and widening is being done, substantially as and for the purposes set forth. 2nd. In a knitting machine, a cam-groove plate, and means to both rotate and reciprocate it at intervals, a circular bed grooved radially for the reciprocation of the needles, and provided at the outer end of the grooves with grooves for the reception of the needle shifters, and a series of needles, some of which have tail pieces entered into the needle shifters, the latter co-operating with auxiliary cam slides to first lower from the cam-groove the butts of several needles at each side, the series of needles which are to be reciprocated for heel and toe work, and with intermittently moveable segmental main cam-slides, which in one direction of their movement actuate singly the needle shifters controlling the butts of the needles, which are to be thrown out of action, one after the other, for narrowing the said main cam-slides when moved in the opposite direction actuating the needle shifters to successfully replace the butts of the needles in their actuating cam-groove for widening the combination, being and operating substantially as described. 3rd. In a knitting machine, the circular needle-bed grooved radially for the reception of the needles, and grooved vertically for the reception of the needle shifters, and provided with a shoulder 14, the grooved circular cam-plate, a series of needles, some of which have tail pieces extended beyond their butts and shoulders at their under sides near their butts, combined with a series of intermittently moved needle shifters to remove the butts of some of the needles from the cam-groove when narrowing the fabric, and to replace the butts of the needles in the said cam-groove for widening the fabric, the needle-shifters entering the tails of the needles, and the shoulder 14 preventing the needles from being moved forward in their grooves while the needles are at rest and holding their loops, substantially as described. 4th. In a knitting machine, the needle-bed, the needle-shifters therein provided with pins, and the segmental main cam slides having grooves to receive the pins of the needle-shifters, combined with means, substantially as described, under the control of a pattern wheel to reciprocate the said main segmental cam-slides intermittently, to effect the throwing in and out of action of the needles employed in knitting the narrowest and widest parts of the fabric for heel and toe work, and with means to reciprocate and to thereafter rotate the cam-plate, substantially as described. 5th. In the knitting machine, a circular horizontally-placed radially-grooved needle-bed, a series of needles placed in the said bed, and a cam-plate to reciprocate them, combined with a sinker carrying bed arranged at the interior of the needle bed, a series of vertically reciprocating sinkers arranged therein and provided with hooks or projections G, and with a sinker actuating cam-ring and with means to reciprocate both to operate, all substantially as described. 6th. In a knitting machine, the combination of the cam-ring D, the sinker-carrying bed, the sinkers, the needle-bed, the needles, the cam-plate, the shaft a, means to reciprocate it, the gear C fast on the said shaft to move the cam-plate, the gear D loose on the said shaft to drive the cam-ring, and a projection carried by the shaft a and adapted to enter a notch or slot in the hub of the gear D to permit lost motion between the said gear and shaft, as the direction of reciprocation of the cam-plate is changed, substantially as described. 7th. In a knitting machine, the needle-bed, its needles, the cam-plate, the shaft a, the attached bevel gear C, toothed hub at, spined thereon, and the loose pinions B, b, provided with clutching teeth and loose on the said shaft, combined with the toothed wheel B, its crank, the link and rack bar, and with means to rotate the gear B, the shaft a having a rotary or reciprocating motion, according to which of the pinions B or b is engaged by the clutch a, substantially as described. 8th. In a knitting machine, the horizontal radially grooved needle bed, needles therein, and the grooved plate C, combined with a knitting cam composed of three parts, an adjustable block to move the knitting cam to gradually shorten the length of the loops as the leg of the stocking is being formed and with a toothed segmental lever, a stitch regulating lever, a finger and a pattern mechanism to move the finger and cause it to actuate the stitch regulating lever, as the stitch is to be shortened to

decrease the diameter of the circular web, substantially as described. 9th. In a knitting machine, the use of a circular plate, provided at its periphery with a series of radially projecting points to hold the loops of a rib top, the said plate and points having co-operating with it, a knocking-off device or presser, the action of which against the loops of the rib top held by the points causes the transfer of the loops of the rib top upon the hooked ends of a series of horizontally placed needles, arranged each in a radial groove of a needle bed, the hooked ends of all the needles being directed toward the same centre.

No. 24,541. Paper Box Machine.

(Machine à Boîtes de Papier.)

Isaac T. Brown, Columbus, Ind., U.S., 21st July, 1886; 5 years.

Claim.—1st. The general arrangement and construction of paper box making machine, hereinbefore described and shown on the sheets of drawings hereunto annexed. 2nd. In a machine for making boxes from a continuous sheet of material, a supporting frame, a pair of feed rolls, a cylinder scoring wheels opposed to said cylinder and arranged to score said sheet of box material longitudinally while passing over said cylinder, means substantially as shown and described, whereby the cylinder and feed rolls are intermittently rotated at regular intervals, and the transverse scoring knives mounted between said cylinder and feed rolls, all combined and arranged to co-operate as specified. 3rd. In a machine for making boxes from a continuous sheet of material, a main frame, a main shaft, a series of kerling knives, a shear knife and a folding device of the class shown and described, all mounted in successive order on the main frame, a pair of shafts mounted longitudinally one on each side of the main frame, arms secured to said shafts opposite to and connected by rods with the bars upon which said kerling knives, shear knife and folding device are mounted, and intermediate mechanism connecting said main shaft and said longitudinal shafts, whereby the longitudinal shafts are rocked at each revolution of the main shaft, and the kerling knives, shear knife and folding mechanism are operated simultaneously, all combined and adapted to co-operate substantially as specified. 4th. The folding mechanism, consisting of the shafts z, the swinging arms y, p, the spur gears 2, 2, the rack bars 3, 3, the bar Q and the plate S, all combined and arranged to co-operate substantially as specified. 5th. The combination of the shaft T, segmental wheel 4 and pressure roll 5, for the purpose specified.

No. 24,542. Instrument for Removing Internal Bottle Stoppers. (Outil pour Tirer les Bouchons Intérieurs des Bouteilles.)

Edwin W. Ely, Toronto, Ont., 21st July, 1886; 5 years.

Claim.—1st. An instrument, consisting of a spindle, having a series of fingers, in combination with a trigger having a hooked end, arranged substantially as and for the purpose specified. 2nd. An instrument, consisting of a hollow spindle E, having a series of spring fingers I, in combination with a trigger J, pivoted on the piston-plug F, fitted within the spindle E, being actuated by the spring I, substantially as and for the purpose specified. 3rd. An instrument, consisting of a spindle E, having a series of spring fingers D and attached to the handle H, in combination with a trigger G having a hooked end g and pivoted on the piston plug F, and a spring f operating the trigger J, substantially as and for the purpose specified. 4th. A spindle E, having a series of spring fingers D and attached to the handle H, in combination with a trigger J having a hooked end g, a spring f to actuate the said trigger, and a spiral spring i extending between the shoulders e and plug F, to which the trigger J is pivoted,

No. 24,543. Manufacture of Sheet Iron.

(Fabrication du Fer en Feuille.)

Isaac E. Craig, Camden, Ohio, U.S., 21st July, 1886; 5 years.

Claim.—An improvement in the manufacture of sheet iron, consisting of the following process:—cleansing the iron of its coating of oxide by any means known to the art, then coating the surface before the final heat, and working with a composition of matter consisting of graphite and an oxide or salt of either, or both tin and lead in the proportions specified, then heating and exposing to the air while still hot, and finally polishing by rolling or hammering in packages in the usual manner, substantially as specified.

No. 24,544. Dredge. (Dragueur.)

Abel C. Whittie, Boston, Mass., U.S., 21st July, 1886; 5 years.

Claim.—1st. The combination and arrangement, substantially as shown and described, of the vacuum-chamber B and the packed sleeve C rigidly attached to the side thereof and opening directly thereto, with the draft-pipe C, the right-angled extension D secured to said draft-pipe and rotatable within said sleeve, and the journal 7 projecting from said extension and borne in boxes 8 of the supporting-frame, whereby the dredged material has an unobstructed free and direct inlet into said chamber, and an additional support for the chamber, provided as set forth. 2nd. The vacuum-chamber and draft pipe, combined with a pressure-pipe, a sprinkler within the chamber, and a U-shaped nozzle opening inside and outside the draft pipe, a T-fitting N provided with cooks, and a water supply to control the supply to the sprinkler and nozzle, substantially as shown and described. 3rd. The draft-pipe, provided with the pressure-pipe c, terminating in a U-shaped nozzle having one leg outside, the draft pipe with downward openings, and the other leg passed through an opening into said draft pipe and having upward openings, substantially as shown and described. 4th. The vacuum-chamber and the door-frame having long and short ears, and the door having long and short ears and the pintle combined with adjustable boxes for the pintle, substantially as described.

No. 24,545. Window Sash Supporter.

(Arrêt-Croisée.)

Frank P. Catlin, Clayton, Wis., U.S., 21st July, 1886; 5 years.

Claim.—1st. In a sash-holder, the combination of a notched sash, a

pivoted catch, a counter-balance upon the catch, a stop for catch or counter-balance and rest for the counter-balance, substantially as specified. 2nd. In a sash-holder, the combination of a pivoted catch, a counter-balance loose upon the catch, a stop for catch or counter-balance and a rest for the counter-balance, substantially as described.

No. 24,546 Spray Lamp. (*Pulvérisateur-Lampe.*)

James Lyle, Paisley, Scotland, 2 st July, 1886; 5 years.

Claim.—1st. The combination of parts forming an improved spray lamp, and consisting of a combustion cone having within it an outer nozzle for compressed air, enclosing an inner concentric nozzle for oil, and having surrounding it a disk to contain oil, the bottom of the cone being open to admit oil to the interior where it may be vaporised and maintain a constant auxiliary flame for re-igniting the main flame when required, substantially as hereinbefore described. 2nd. The combination, with the pipe or passage leading the oil to the burner, of a branch pipe and valve for supplying the disk and for maintaining a constant auxiliary flame, substantially as hereinbefore described. 3rd. The combination, with the main parts of a spray lamp, of a dish for oil surrounding the burner nozzles, and combustion cone arranged for maintaining a constant auxiliary flame, and a spring valve arranged for momentarily stopping the flow of oil to the main flame for the purpose of making flash signals, substantially as hereinbefore described. 4th. The improved oil tank or vessel fitted with one tube admitting compressed air, and with a second tube for the ascension of the oil, both tubes having perforations near the bottom, and being fixed by screw caps on their bottom ends projecting through holes in the bottom of the vessel, and by screw coupling rings on their upper ends projecting through holes in the top of the vessel, and with outer strut tubes between the top and bottom of the vessel, substantially as hereinbefore described. 5th. The application of the pass valve 53, communicating with the compressed air tube 39 near the top of the oil vessel 31, to allow air to pass into the pipe when the pressure in the vessel is greater than in the tube, substantially as hereinbefore described.

No. 24,547 Cooking Oven. (*Fourneau de Cuisine.*)

Charles F. Hubbard, Toronto, Ont., 21st July, 1886; 5 years.

Claim.—An oven, having an outer case A, shelves D, inner case C opening a, in combination with a stove or heater, substantially as and for the purpose hereinbefore set forth.

No. 24,548. Match Machine.

(*Machine à Allumettes.*)

Peter Beer, Detroit, Mich., U.S., 21st July, 1886; 5 years.

Claim.—1st. In a machine for cutting match-splint card, a reciprocating carriage provided with one or more compartments, and a table having a higher and lower plane, in combination with a series of rotary saws operating against the underside of the block or blocks, a series of rotary saws operating against one end of the block or blocks and a stationary knife or knives to cut off the cards, all substantially as described. 2nd. In a machine for cutting match-splint card, a reciprocating carriage having one or more compartments, and a table having a higher and lower plane, in combination with a series of rotary saws operating against one end of the block, and a stationary knife between the higher and lower planes of the table for shaving off the cards and a block-feeder, all substantially as described. 3rd. In a machine for cutting match-splint card, a reciprocating carriage having one or more compartments, and a table having a higher and lower plane, in combination with a series of rotary saws operating against one end of the block, a stationary knife secured to the table for shaving off the cards, a spring for holding the block in its compartment, and a block-feeder, all substantially as described. 4th. In a machine for cutting match-splint card, the combination of the reciprocating carriage E having one or more compartments c, c, the table A arranged beneath said carriage and having a higher and lower plane, the rotary saws K carried by the shaft J and operating against the underside of the block, the rotary saws I carried by the shaft H and operating against the rear side of the block, the knife M arranged between the higher and lower planes of the table, the feed-paw S supported in brackets, ratchet r and spur-gear P carried by a suitable shaft feed-rock I, and guide track T secured to the table A, all substantially as described. 5th. In a machine for cutting match-splint card, the combination of the reciprocating carriage E having two compartments c, c, the table A arranged beneath said carriage and having a higher and lower plane, the rotary saws K and I carried by the arbors J, J, journaled to said table, the stationary knives M obliquely and inversely secured between the higher and lower planes of the table, the springs p holding the blocks in their compartments, the feed-racks O operating on said blocks, gear-wheels P, ratchet-wheels R operating on said racks, feed-paw S operating on said ratchet-wheels, and guide-tracks T secured to said table and having raised portions m, all substantially as described.

No. 24,549. Tanning. (*Tannage.*)

Caesar Kaestner, Magdeburg, Germany, 21st July, 1886; 5 years.

Claim.—The process of tanning leather by first soaking the hide for a day or two in water, then for two or three days in a solution of lime sodium sulphate and water, then removing the hairs, then for a time soaking it in a solution of wheat, bran and water, and next for from one to four days in a solution of about four parts of alum and one part of salt, then thoroughly drying the hide and after this drying again submitting it for from one to six days to a solution, this time formed of about twenty parts of tannic acid and eighty parts of absolute alcohol, and finally colouring the hide with a solution of pine tar and water, and then drying it, substantially as described.

No. 24,550. Target for Rifle Shooting. (*Cible.*)

James A. Morrison, Toronto, Ont., 21st July, 1886; 5 years.

Claim.—1st. The combination of the frame G, G, with the two cross

frames, each supporting a target, and so arranged that when one is raised the other is lowered, substantially as set forth and for the purposes specified. 2nd. The combination, with a post J and a rod L of the block K, together with the wheel N and spring O, substantially as described and for the purposes specified.

No. 24,551. Construction of Ships.

(*Construction des Navires.*)

Edward Swindell, Apalachicola, Fla., U. S., 21st July, 1886; 5 years.

Claim.—1st. The combination of a hull having longitudinal laterally extending bulk heads, having their bottoms on a level with the bottom of the hull, with a keel composed with a series of sections tapering at both ends, as and for the purpose shown and set forth. 2nd. As an improvement in the construction of ships, the combination of the hull having longitudinal laterally extending bulk heads, the bottoms of which are on a level with the bottom of the hull, the keel composed with a series of sections tapering at their front and rear ends, the propeller shaft or shafts journaled longitudinally in the said sections, and the propellers mounted upon said shafts between or at the rear ends of the keel sections, substantially as and for the purpose herein set forth.

No. 24,552. Construction of Ships.

(*Construction des Navires.*)

Edward Swindell, Apalachicola, Fla., U. S., 21st July, 1886; 5 years.

Claim. 1st. The combination of the hull of a vessel, provided at its ends and at its middle with cabins or saloon structures, having their tops formed into seats with a life raft consisting of a central longitudinal body and laterally extending wings, the seats in the roofs of the saloon structures corresponding in shape to the parts of the life raft resting upon the same, as and for the purpose shown and set forth. 2nd. The combination, with the life raft having the central body I and wings J, of the vessel having the saloon structures E, E, E at the ends and middles of the decks, formed with seats G in their top for the reception of the life raft, the said saloon structures and life raft having registering openings provided with suitable water-tight doors or hatchways for effecting communication between the saloons and the raft, as and for the purpose shown and set forth.

No. 24,553. Feathering Paddle or Stern Wheel. (*Roue de Poupe ou à Aubes Mobiles.*)

James E. McLennaghan and Isaac S. Heinrichs, Ottawa, Ont., 21st July, 1886; 5 years.

Claim.—1st. In a feathering paddle or stern wheel, a revolving eccentric controlling frame e, e, e, having a large eye f, f, f, substantially as and for the purpose hereinbefore set forth. 2nd. In a feathering paddle or stern wheel, a revolving eccentric controlling frame e, e, e, having a large eye f, f, f, in its centre, inside of which revolves the wheel-shaft b, and anti-friction roller (or set rollers) g, substantially as and for the purpose hereinbefore set forth. 3rd. In a feathering paddle or stern wheel, a revolving eccentric controlling frame e, e, e, in the eye of which revolves an anti-friction roller (or set of rollers) g, revolvingly fastened to the vessel, substantially as and for the purpose hereinbefore set forth. 4th. In a feathering paddle or stern wheel, the combination of a revolving eccentric controlling frame e, e, e, with crank levers c, c, c, substantially as and for the purpose hereinbefore set forth. 5th. In a feathering paddle or stern wheel, the combination of anti-friction roller (or set of rollers) g, with the revolving eccentric controlling frame or wheel e, e, e, and paddle floats d, d, d, having crank levers c, c, c, substantially as and for the purpose hereinbefore set forth.

No. 24,554. Machine for Waxing Paper.

(*Machine à Encirer le Papier.*)

Alfred Watts and Robert Henry, Brantford, Ont., 21st July, 1886; 5 years.

Claim.—1st. In a paper-waxing machine, the combination of melting pot K, tube L and trough C, with steam pipe F, substantially as and for the purposes hereinbefore set forth. 2nd. In a paper-waxing machine, the combination of the upper steam roller E, spirally covered with cotton flannel, with levers and weights M, substantially as and for the purposes hereinbefore set forth. 3rd. In a paper-waxing machine, the combination of lower steam roller U, having grooves S in combination with wires I, substantially as and for the purposes set forth. 4th. In a paper-waxing machine, wires F fastened at bars U and V, in combination with carrier N, substantially as and for the purposes set forth. 5th. In a paper-waxing machine, the combination of carrier N, with table W and R, substantially as and for the purposes set forth.

No. 24,555. Art of Making Seamless Dress Shields. (*Art de Fabriquer les Matelas de Vêtements sans Coutures.*)

Alva J. Hiscott, Bridgeport, Ct., U.S., 21st July, 1886; 5 years.

Claim.—As a new article of manufacture, a pair of dies for manufacturing seamless dress shields, the male die having a crescent-shaped shaper and the female die a corresponding depression, whereby the concavity is given to the upper edge of the shield, both dies being heated and having corresponding male and female corrugations and depressions which radiate from a common vertical centre, whereby the cockles or wrinkles incident to the operation of the crescent shaper are taken up, and creasing thereby prevented, substantially as set forth.

No. 24,556. Adjustable Bale Tie. (*Cercle de Ballot Mobile.*)

Griffin S. Ackley, Towanda, Penn., U.S., 21st July, 1886, 5 years.

Claim.—1st. An adjustable bale tie, consisting of an elastic cushion, provided with a central hole, in combination with a wire band passed around said elastic cushion and twisted upon itself, whereby when the free end of the band is passed around the bale and through said central hole for the purpose of securing the same, the said band is prevented from breaking from any strain by the yielding action of the cushion, substantially as described. 2nd. In an adjustable bale tie, a ring provided with a hole at or near its centre and the bale wire, in combination with a small wire passed through said hole in the ring, with its ends doubled and bent back and twisted within the twist of the loop of the bale tie, whereby the said ring is securely held in place within the loop, substantially as described.

No. 24,557. Gas and Vapour Burner. (*Brûleur à Gaz et Vapeur.*)

Henri E. Casgrain, Quebec, Que., 21st July, 1886, 5 years.

Reclame.—1er. La combinaison, avec le brûleur atmosphérique B, de la spirale tubulaire A ou autre réservoir, dans le but de surchauffer de la vapeur d'eau ou autre liquide dans la flamme du brûleur. 2ième. La combinaison de la spirale tubulaire D ou autre réservoir, avec le brûleur atmosphérique B, et la spirale tubulaire A dans le but de réchauffer, le gaz à l'intérieur du brûleur atmosphérique B.

No. 24,558. Parlor Door Hanger. (*Peinture de Porte de Salon*)

Charles W. Bullard, Chicago, Ill., U.S., 24th July, 1886, 5 years.

Claim.—1st. In a door hanger, the combination, with the door and carrying wheels, of a ring, or segment of a ring pivotally attached to the door, and suspended upon the axle of the carrying wheels, substantially as and for the purposes specified. 2nd. In a door hanger, the combination, with the door and carrying wheels, of a ring or segment of a ring resting upon the axle of the said wheels and mounted to rotate on a suitable support in a yoke adjustably connected to the door, substantially as and for the purposes specified. 3rd. The combination, with the wheels C, of the ring D supported on their axle, and having one or more radial arms of carrying the hub of mounted on an axis in the yoke E connected with the door, substantially as and for the purposes specified.

No. 24,559 Gas Burner. (*Bec à Gaz.*)

Donald Henderson, Winnipeg, Man., 24th July, 1886, 5 years.

Claim.—1st. In the above-described gas burner, the combination of an outer shell A and covering cap C, with a pair of perforated diaphragms E, F, shaped substantially as shown and described. 2nd. In a gas burner, a pair of perforated diaphragms placed one above the other, and separated by, or by, or studs L formed on the lower one, so as to leave an intervening space between the two diaphragms through which a stream of gas passes before flowing to the point of ignition, substantially as and for the purposes shown and described. 3rd. In a gas burner, the diaphragms E, F, perforated at different points, so as to divert and retard the flow of the gas through them, substantially as shown and specified. 4th. In a gas burner, the covering cap C, in combination with shell A and the diaphragms E, F, substantially as shown and specified. 5th. In a gas burner, shaped as shown and specified, the solid-faced diaphragm G having space e surrounding it, and intervening between the edges and inner sides of burner, so as to allow of the passage of gas to metal tip after passing through lower perforated diaphragm E, substantially as shown and specified.

No. 24,560. Spool Holder. (*Porte-Bobine*)

Benjamin F. Baker, Fairville, N.B., 26th July, 1886, 5 years.

Claim.—1st. The combination, with a casing, of holders, each formed of a spring wire having its ends at right angles to each other and connected by a coil, and having one end attached to one side of the casing, substantially as herein shown and described. 2nd. As an improved article of manufacture, a spool-holder, consisting of the wedge-shaped casing B, provided with the eye F, and the spring wire holders C having their ends c, c, at right angles to each other, and connected by the coil b, the ends a of the said holders being secured to one side of the casing, as set forth.

No. 24,561. Latch Operating Device. (*Loquet de Porte.*)

Orvellas H. Gilbert, Newark, N.J., U.S., 26th July, 1886, 5 years.

Claim.—1st. The combination, with a handle set eccentrically upon a shank and cast integrally therewith, of a recessed plate, said shank bearing and working pivotally in said plate, an arm secured to the shank and extending down within the recess or chamber in said recessed plate, parallel with and in the same direction as the handle, and provided with a bent end adapted to engage with and actuate a latch, substantially as set forth. 2nd. The combination, with a door having latching mechanism arranged therein and a recess or recesses u, of a recessed plate, a shank bearing and working pivotally in said recessed plate, and provided with a handle set eccentrically thereon and cast integrally therewith, and a lever or arm extending downward within the recess u in the same direction as and parallel with the eccentric handle and secured to said shank within the recess in said plate, provided with a bent arm or finger piece adapted to enter the said recess in the door and engage with and actuate the latch, substantially as and for the purposes herein set forth.

No. 24,562. Animal Trap. (*Ratière.*)

Sylvester Snell, Watertown, N.Y., U.S., 27th July, 1886, 5 years.

Claim.—1st. In an animal trap, the combination, with a box of

suitable construction, of a hinged bottom, the front edge of which is heavier than the rear end, and is provided with an upwardly extending pin, and of a swinging door attached to the front end of the box and operated by the pin in the hinged bottom, substantially as shown and described. 2nd. In an animal trap, the combination, with a box of suitable construction to the front upper end of which is pivoted a door of a hinged bottom, the front end of which is heavier than the rear end, and is provided with an upwardly extending pin in its centre line and of a stop-pin at the inner edge of said bottom, substantially as herein shown and described. 3rd. In an animal trap, the box A, consisting of the side pieces B and B', the cross-pieces C and D and the cover H, in combination with the pivoted bottom E provided with the pins F and G, and the pivoted door I, having an outwardly extending handle I', substantially as herein shown and described. 4th. In an animal trap, the box A having the cover H and the bait-box K, in combination with the pivoted bottom E, the upright pin G and the hinged door I having a handle I', substantially as herein shown and described. 5th. In an animal trap, the combination, with a box and a swinging door hinged to the front end of the box, and provided with an outwardly-extending handle, of a pivoted bottom, the front end of which is heavier than the rear end, and provided with an upwardly-extending pin which operates the swinging door, substantially as shown and described.

No. 24,563. Scissors Sharpener. (*Démouleur de Ciseaux.*)

James W. Hilton, Brooklyn, N.Y., U.S., 27th July, 1886, 5 years.

Claim.—As an improved article of manufacture, a scissors sharpener, consisting of the longitudinally-grooved block A having beveled ends, and provided with the angular grooves C and the triangular file D, having one wide and two narrow sides and fitting in the grooves of the said block, as set forth.

No. 24,564. Apparatus for Protecting Electrical Instruments and Appliances from the Effects of Abnormally Strong Currents. (*Appareil pour Protéger les Machines Electriques Contre les effets des Courants Anormaux.*)

Theodore N. Vail, Boston, Mass., U.S., 27th July, 1886, 5 years.

Claim.—1st. A protector for electrical circuits, comprising a fusible safety strip of metal foil or wire, a non-conducting case enclosing said strip and supporting it for its entire length, the whole or a portion of said case being transparent, and metal end pieces or caps for the said case mechanically attached thereto and in electrical contact with the fusible conductor, whereby the said fusible conductor may be connected with an electric circuit, substantially as specified. 2nd. The combination, in a circuit protector, substantially as of the character specified, of an easily fusible conductor, such as a thin strip of metal foil or fine wires, and case therefor of hard rubber or like material, inclosing and supporting said conductor, a plate or strip of glass or mica constituting one side of said case, and metal end pieces or caps adapted to secure the said conductor and the transparent medium to the case, and also constituting the terminals of said conductor. 3rd. The combination, in a circuit protector, of a rod of hard rubber or like non-conducting material, longitudinally grooved or channeled on one side thereof, the said groove being shouldered, as specified, a strip of tin foil resting in the said groove, a strip or plate of mica or glass placed over the said tin-foil on the shoulder of the said groove, and forming with the sides of the grooves an inclosing chamber for the said tin-foil, and terminal pieces or caps adapted to screw on the ends of the hard rubber rod, whereby the said plate of glass or mica is fastened thereto for the purpose of constituting an electric connection for the tin foil strip, substantially as described. 4th. In a circuit protector, the combination of a rod of hard rubber or similar non-conductor, longitudinally grooved, as specified, so as to form a shoulder cavity throughout its length, a fusible strip of metal foil of equal length resting in the said cavity, a metal plate at each end provided with a lug or nipple, the said lug being adapted to overlap the end of the tin foil strip in electrical contact therewith a strip or transparent non-conducting material, such as glass or mica, adapted to rest upon the shoulder of the longitudinal cavity and constituting one of the sides of the said cavity and terminal pieces or caps internally-threaded and adapted to be screwed up on the ends of the non-conducting rod and to form an electrical connection by means of the metal plate with the fusible conductor, and also to hold in place the several elements of the protector, as specified. 5th. The combination, in a circuit protector, substantially as hereinbefore described, of a fusible safety strip of metal foil or wire, an inclosing case of hard rubber or similar non-conducting material, a plate or strip of glass or mica, constituting one side of said case, and metal end pieces or caps adapted to be screwed to the end of the inclosing case, thereby connecting with the fusible conductor and securing the same together with its transparent cover, the said caps also having been provided externally with binding screw terminals for attachment to the main line, for the purposes specified. 6th. The combination, with a circuit protector, constructed as described, of a grooved non-conducting rod, a fusible metal strip or wire placed in said groove and conducting terminal caps for the said rod connecting with the fusible strip and having binding screws attached thereto, of an electric circuit and standards carrying projecting wires or rods mounted on a suitable base and permanently connected with the said circuit, the said projecting wires being adapted for connection with the protector binding screws, whereby the said protector is included in the circuit, substantially as and for the purposes set forth.

No. 24,565. Steam and Hot Water Radiator. (*Calorifère à Vapeur et à Eau.*)

Samuel D. Tompkins, Jersey, N.J., and John N. Matlock, Brooklyn, N.Y., U.S., 27th July, 1886, 5 years.

Claim.—1st. In a radiator, the combination of a hollow base, provided with a vertical partition cut away to form an outlet, horizontal

partition conforming to the cut away portion of the outlet partition forming one of the walls of said outlet, and pipes C with an upper chamber connected to said pipes, substantially as described. 2nd. In a radiator, the combination of a hollow base and pipes having threaded apertures c, with the hollow casting having threaded apertures d, d', the threaded thumbscrew into the holes d, c and expanded, and the threaded plugs E operating in the holes d, whereby the upper chamber is made steam or water tight, as and for the purpose set forth.

No. 24,566. Sheaf Carrier Attachment for Harvesters or Twine Binders.
(*Porte-Gerbe pour Moissonneuses-Lieuses.*)

Elias Lowry, Souris, Man., 27th July, 1886; 5 years.

Claim.—1st. The combination of the carrier, having the rail E, the eye-bolt F, the stay rods G and H, the slats I, J, the bottom board J, the spacers K, the sides L, the blocks M and N, the eye-bolts O, O', the rods P and S, the movable eye T, the cranks Q and R, the rod U, the lever V, the pin W and the pedal X, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the carrier, as before specified, with the eye-bolt F secured to the cross rail B of any binder, the blocks M and N secured to the rear rail, the lever V hinged, or hung to the seat support by the pin W, the stay rod G secured to the cross rail B, and the stay rod H hooked on to the needle bar D, substantially as and for the purpose hereinbefore set forth.

No. 24,567. Baking Oven.

(*Four de Boulangerie.*)

Samuel L. Hall, Chicago, Ill., U.S., 27th July, 1886; 5 years.

Claim.—1st. A bake-oven, provided with a front wall formed with a furnace at one corner, an uptake at the opposite corner, partition U in the uptake forming vertical continuation F and direct flue R, indirect flue T extending from the rear of the oven chamber to the continuation, an air-flue V alongside the sifting-box, a dust-flue extending upwardly from the air flue horizontally over the oven door and upwardly into the uptake over the direct flue and dampers for controlling the flues and continuation, substantially as set forth. 2nd. A bake-oven, provided with a front wall, formed with a furnace at one corner, an uptake at the opposite corner, dust flue, air flue, direct flue, continuation, openings, doors and dampers, all located therein, and a side wall having a single indirect flue extending from the rear of the oven-chamber to the continuation, substantially as set forth. 3rd. A bake oven, provided with a front wall, formed with a furnace at one corner, an uptake at the other corner, a dust flue W extending across the wall from the furnace to the uptake, and having an opening X into the oven chamber and dampers to control the flue, substantially as set forth. 4th. A bake oven, provided with a front wall formed with a furnace at one corner, an uptake at the other corner, an air flue alongside the sifting box, a dust flue W extending upwardly from the air flue, horizontally over the oven door and upwardly to the uptake and dampers to control the dust flue and air flue, substantially as set forth.

No. 24,568. Bit Stock. (*Vilbrequin.*)

George H. Packwood, Tampa, Fla., U.S., 27th July, 1886; 5 years.

Claim.—1st. In a bit stock, the combination of a centre piece provided with a longitudinal recess K, and a segmental threaded rack H communicating therewith, as described, sleeve B carrying on its inner surface one or more teeth, projecting inwardly to engage with the threaded rack, and adjustably or rigidly connected with said sleeve, and clamping jaws C, C, operated through the longitudinal and partially rotating movement of the sleeve, substantially as set forth and described. 2nd. In a bit stock the combination of clamping jaws C, C, having spring Z, 2, centre piece A to which said jaws are pivoted at their base, said centre piece having thereon a longitudinal recess K, and segmental threaded rack H communicating therewith, as shown and described. Sleeve B fitting over said centre piece and bearing with the inner edge of its upper opening against the sloping backs of the clamping jaws, engaging teeth G, projecting inwardly into recess K through slots 5 in said sleeve, whereby the clamping jaws are opened and closed by the longitudinal movement of the sleeve and locked by a partial turn thereof, substantially as set forth and described.

No. 24,569. Compound Metal Working Machine.
(*Machine à Travailler le Métal Mixte.*)

Elam A. Oliver, Belleville, Wis., U.S., 23th July, 1886; 15 years.

Claim.—1st. The combination of the standard, the arm C pivoted thereto and provided with a cutting blade, and a gauge-plate 13 supported by the standard, and adjustable substantially as set forth. 2nd. The combination of the standard, the bar C pivoted thereto, the bar 12 arranged on the outer side of bar C and supported on the standard, the die carried by the bar 12, the bar 14 and the punch supported thereon, substantially as set forth. 3rd. The combination, with the standard and the bar C, both provided on their inner edges near their upper ends with shoulders 7, of the attachment bearing sockets 17 adapted to fit on the standard and bar C, and rest on shoulders 7, with their inner faces flush with the inner faces of the standard and the bar C, substantially as set forth.

No. 24,570. Weighing Machine.

(*Balance Bascule*)

Percival Everitt, London, Eng., 23th July, 1886; 5 years.

Claim.—1st. In a weighing machine, the combination of a slide or drawer, a movable ticket or card box, a rotating printing wheel and a carbon paper or the like, the combination being such that the pulling out of the slide or drawer will cause the weight of the person or body being weighed to be imprinted or impressed upon a card or tic-

ket, and will deliver it outside of the apparatus. 2nd. In combination with a weighing machine, a weighted arm for equivalent counterpoise quadrant r, pincion s, arbor t, type-printing wheel or disc i, card box for holding a set of gravitating cards or tickets, and a carbon or similar paper, whereby the weight of the person or body being weighed may be printed or impressed, substantially as set forth.

No. 24,571. Telephone Exchange.

(*Echange Téléphonique.*)

Oscar A. Enholm, New York, N.Y., U.S., 23th July, 1886; 5 years.

Claim.—1st. In a central office apparatus, the combination, with a switch board, of subscribers' lines and instruments and the operator's lines and instruments, the generating power for operating the same being arranged in connection with the operators' instruments, substantially as described. 2nd. In a central office apparatus, the combination, with one or more switch boards, of subscribers' lines and instruments connected to said switch boards, and the operators' lines and instruments, and connecting devices and batteries for operating all the instruments connected to the operators' lines and connecting devices, substantially as described. 3rd. The combination, in a central office system, of the subscribers' lines connected thereto, key levers arranged to connect said lines to the operators' instruments, a battery connected with said operators' instruments and connecting plugs connected to a battery, substantially as described. 4th. The combination, with a switch board and subscribers' lines connected therewith, of spring jacks and magnets connected to the line and arranged to hold the connecting plugs in said spring jacks, substantially as described. 5th. In a switch board, the combination, with the electro-magnets connected to the subscribers' lines, circuit controlling levers arranged in connection with the magnets, and connecting plugs adapted to operate the levers and to be held in place by the magnets, substantially as described. 6th. The combination, with the subscribers' lines and instruments, including an automatic circuit breaking lever, of the spring jacks having electro magnets connected in the subscribers' lines, and connecting plugs adapted to be held in said spring jacks by the magnets, and to be automatically released when the subscribers' circuit is broken, substantially as described. 7th. The combination, with a switch board, of a series of levers connected to the subscribers' lines, and contact pieces arranged in juxtaposition to said lines and circuits connected to said contacts, including the operator's signalling device and telephone instruments, substantially as described. 8th. The combination, with the switch board and subscribers' lines connected therewith, of spring jacks and plugs and connecting cords for connecting two subscribers' lines, and a battery arranged in the circuit of said cords, substantially as described. 9th. The combination, with a series of switch boards or stations, of trunk lines connecting said boards or stations, a portion of said lines connecting any two boards or stations, being connected with a battery at each board or station, substantially as described. 10th. In a spring jack, the combination of the perforated angle piece and the electro-magnet, the poles of which extend into said perforations, substantially as described. 11th. In a spring jack, the combination of two perforated supporting piece, the electro-magnet, the poles of which extend into the perforations, and a circuit-controlling lever arranged above said magnet, substantially as described. 12th. The combination, with the spring jack, of the magnet A, connected with the jack and line of the drop C, also connected to line, and the projection d connected to earth, whereby the subscribers' annunciator may be restored to his line, whether the jack plug is removed or not, substantially as described.

No. 24,572. Odorless Excavating Apparatus.

(*Appareil de Creusage Inodore.*)

Plinney F. Dowey, Minneapolis, Minn., U.S., 23th July, 1886; 5 years.

Claim.—The combination, with the air-tight tank A, mounted on a carriage having the wheel K, provided with a sprocket wheel G, of the air pump D, sprocket wheel I, drive chain H, valve E pipe B, valve C and hose L, all substantially as described and for the purpose set forth.

No. 24,573. Pulley Block. (*Chapre de Pouche.*)

Huntington Beard, Fayetteville, N.Y., U.S., 23th July, 1886; 5 years.

Claim.—A pulley-block, constructed with a bi-partite frame a, b, having corrugations h and corresponding indentations a in the meeting edges, a swivel seat c and swivel ring D, and wheel B having chilled bearings e, all held together by a single bolt, substantially as shown and described.

No. 24,574. Gate Latch. (*Loquet de Barrrière.*)

Jacob Duls, Charlotte, N.C., U.S., 23th July, 1886; 15 years.

Claim.—1st. A latch for a gate formed through its body, with a series of short angularly placed adjustment openings connected at the bottom with a longitudinal slot, substantially as described for the purposes specified, whereby the latch may be adjusted without removing its pivot pin. 2nd. In a gate latch, the keeper D formed with adjustment slots c, c, whereby it may be vertically adjusted without removing it from its post, mouth D', with enlarged opening f, inclined or curved front edges d, a, d, e, depression h and front projection i, substantially as described, and combined with a latch secured to the gate. 3rd. In a gate latch, the latch C formed of a handle end C', weighted end C'' and adjustment openings o connected by a slot s pivoted to the front upright of the gate, and combined with a keeper secured upon the post, for the purposes specified. 4th. The combination, in a gate latch, of a keeper formed with slots therein, and a latch formed with adjustment openings for its pivot, whereby both the latch and its keeper may be adjusted without removal of the fastening screws or pin, and sagging of either or both the gate and post compensated for, as shown and described. 5th. As a new article of manufacture, the gate latch herein described, composed of the keeper D, having vertical slots c, c, therein, for adjustment of said keeper, narrow mouth D', opening f, inclined curved front edges d

and a projection *i* and seat *A* secured to the post and adapted to be adjusted thereon without removing the screws thereof, pivoted latch *C, C, C* having a weighted outer end, and central pivot adjustment openings *e, e*, and connecting slot *a* and slotted plate *S, T* with pivot pin *P* secured, to and passing through the front upright of the gate, all constructed, arranged and adapted to operate substantially as set forth and shown.

No. 24,575. Field or Farm Hoe. (*Houe.*)

Edward K. Boothby, Portland, Mo., U.S., 23th July, 1886; 5 years.

Claim.—1st. A hoe provided with the serrated edge *B, B, B, B, etc.*, in the manner and for the purposes described. 2nd. The combination, in a hoe, of the tooth *B, B, B, etc.*, and plate *C*, in the manner and for the purposes set forth.

No. 24,576. Dress Chart. (*Mesure de Vêtement.*)

Sophonra T. Lewis, Watertown, N.Y., U.S., 23th July, 1886; 5 years.

Claim.—A pattern chart, having the curved slot *V* cut through the same, one wall of the slot having on one face the graduated scale *T, S, S, etc.*, and the corresponding face on the opposite side of the chart having points *X, Y, U*, and the wall opposite thereto having the inclined line *D, F*, as set forth.

No. 24,577. Separable Building Section.

(*Section Divisible de Bâtisse.*)

Hugh Mulhollon, Eastoria, Penn., U.L., 23th July, 1886; 5 years.

Claim.—1st. The separable building sections made of metal, and provided with the longitudinal parallel bars or slats, substantially as described. 2nd. The separable building sections made of metal, and provided with the longitudinal parallel bars or slats having their upper and lower sides inclined, substantially as described. 3rd. The metallic separable building sections having the parallel slats, the ends of the said sections being rabbeted and provided with openings, for the purpose set forth, substantially as described. 4th. The separable building sections made of metal, and having the parallel bars and the central dividing bars for the purpose of strengthening the sections, substantially as described. 5th. The separable building sections having the parallel bars, and provided with the collars for the reception of the stove-pipe, substantially as described. 6th. The separable building sections having the inclined slats, and having the meeting edges of one section abutting against the adjacent sections, and their meeting ends bolted or otherwise secured together, as set forth.

No. 24,578. Stenciling Machine.

(*Machine à Peindre au Patron.*)

Charles L. Travis, Minneapolis, Minn., U.S., 23th July, 1886; 5 years.

Claim.—1st. In a stenciling machine, the combination of a supporting and feeding roll *B*, an elastic painting roll *F*, having a smooth and unbroken surface, and means, substantially as described, for supplying the latter with paint, whereby the machine is adapted to deliver paint through a stencil plate to the surface thereunder. 2nd. In a stenciling machine, the combination of a supporting and feeding roll, a smooth elastic painting roll located directly thereover and held constantly out of contact therewith, and connecting gears, substantially as described, for driving said rolls at equal surface speeds, whereby the painting roll is caused to serve the additional purpose of advancing the board thereunder. 3rd. In a stenciling machine, the combination of a supporting and feeding mechanism, an elastic painting roll, a holder or carrier for the board to be painted, and a stencil plate overlying said holder, whereby the stencil and the board may be advanced in contact with the surface of the painting roll. 4th. In a stenciling machine, a guide or shoulder *X* to receive the board to be painted, and a stencil plate *Y* secured at one end thereto, substantially as described. 5th. The blank holder for a stenciling machine, consisting of the board *X* having the side guide or ledge, and the tapered end, in combination with the stencil sheet attached thereto. 6th. In a stenciling machine, the combination of a smooth elastic painting roll *F*, a distributor roll *G* acting thereon, and a paint fountain *H* divided transversely into distinct compartments, whereby paint of different colors may be laid in distinct annular bands upon the painting roll. 7th. In a machine for producing signs by the stenciling process, the combination of a support for the blank to be painted, a stencil to overlie said board, an elastic painting roll, a mechanism, substantially as described, for delivering paints of different colors to the painting roll at various points in its length, whereby a sign may be painted in two or more colors at one operation. 8th. In a stenciling machine, the elastic painting roll and the paint fountain divided transversely into two or more compartments, the intermediate distributor roll having a surface of felt, whereby it is enabled to apply different colors to the painting roll, without causing them to blend.

No. 24,579. Machine for Cutting Sheet Staves. (*Machine à Tailler les Douves.*)

Jasper A. Waterman and Jay W. Chapman, Reading, Mich., U.S., 23th July, 1886; 5 years.

Claim.—1st. In a machine for cutting a continuous stave with a bias from the circumference of a rotating log, a cross-head and suitable supports therefor, combined with a curved knife formed of two equal parts hinged together at their adjoining ends, while their outer ends are pivotally connected to the sides of said cross-head, substantially as and for the purposes described. 2nd. In a machine for the purposes described and in combination with a curved cutter made in two parts hinged together, the means, substantially as hereinafore described, for gradually lessening the curvatures of said knife in the same ratio as the circumference of the log which is being acted upon by said knife is diminished, for the purpose specified. 3rd. In a machine, for the purposes described, and

in combination with a curved cutter made in two parts hinged together, a pair of concave-faced pressure rolls adjustable to and from the face of the cutters, and means, substantially as described, for compelling said rolls to adapt themselves to the varying curvature of the cutter, substantially as set forth. 4th. In a machine for stave cutting purposes, a cross-head and a cutter carried thereby having formed integral therewith, and chine cutters, substantially as specified. 5th. In a machine, for the purposes described and in combination with the pressure rolls and cutters *I*, thereof, rotating cutters journaled upon the outer ends of such rolls, substantially as and for the purpose set forth. 6th. In a machine, for the purposes described, the combination of the following elements: a cross-head carrying a curved cutter made in two parts, and mechanism for varying the curvatures of such knife, two pressure rolls with concave surfaces, and carrying upon their outer ends rotating cutters, and the mechanism described for compelling the rolls to conform to the varying curvature of the knife, the parts being constructed, arranged and operating substantially as and for the purposes specified.

No. 24,580. Process of Manufacturing Brick. (*Procédé pour Faire la Brique.*)

Edward C. Haack, Conestogo, Ont., 23th July, 1886; 5 years.

Claim.—As an improvement in the process of manufacturing brick, the dusting of the brick moulds with finely powdered or ground brick-dust, made from burnt brick of the same clay as that out of which the new bricks are about to be formed, substantially as and for the purpose specified.

No. 24,581. Cable Railway.

(*Chemin à Fer à Câble.*)

Abraham A. Shobo, Jerseyville, Ill., U.S., 23th July, 1886; 5 years.

Claim.—1st. In a cable railway, the combination, with supports central to the railway track, of a cable tube or tunnel consisting of two parts separated longitudinally and adapted for lateral adjustment, substantially as set forth. 2nd. In a cable railway, the combination, with the cable-tube, of cross-ties secured to the underside thereof, and turned up near their ends so as to form, in one piece with the tie, vertical supports adapted to sustain the rail-chairs, as set forth. 3rd. In a cable railway, the combination, with a cable-tube divided longitudinally, each part being adapted for lateral adjustment of a center rail interposed between said parts and sustained by the central supports, substantially as set forth. 4th. In a cable railway, the combination, with a cable-tube divided longitudinally, each part being adjustable laterally, of hangers secured thereto, and arranged in pairs adapted to sustain spindles upon which are journaled cable-carriers, each of said spindles being immovable in the eye of one hanger and free to slide longitudinally in the eye of the other, as set forth.

No. 24,582. Hot Air Furnace.

(*Calorifère à Air.*)

Simon D. Barlingame, Fred L. Reeves and William S. Mulford, Berrien Springs, Mich., U.S., 23th July, 1886; 10 years.

Claim.—In an air-heating furnace composed of a fire-box, radiating-chambers and radiating pipes, the combination of the fire-box, the upper and lower radiating chambers, the elbowed pipes, which connect the fire-box with the lower chamber alternating around the fire-box, with the pipes which connect the chambers, the elbowed pipes being in a concave plane nearer the fire-box than the plane of the chamber-connecting pipes, the elbow of the elbowed pipes being directly over each alternating air passage through the lower chamber to deflect the rising air-currents, and central vertical partitions in the lower portions of said elbowed pipes to divide the passing fire and heat, all substantially as set forth.

No. 24,583. Nail Plate Feeding Machine.

(*Machine d'Alimentation des Barres à Clou.*)

Charles E. McKim, (assignee of George W. McKim.) Martin's Ferry, Ohio, U.S., 23th July, 1886; 5 years.

Claim.—1st. The combination, in a nail-plate cutting mechanism, of a drive-shaft having an eccentric, an oscillating arm carrying the plate-holding barrel, a connecting-rod articulated to the eccentric and to the oscillating arm, a pinion secured upon the drive-shaft, a cog-wheel meshing with the pinion being of twice the diameter of the pinion and having a crank and pin, a rocking lever, a pitman connecting the crank and the lever, a rock-shaft imparting rotary reciprocating motion to the plate-holding barrel *E*, having spiral cogs or flanges *F* engaging with pinion *G* which is provided with spiral cogs *H*, and having a crank at its end, and a connecting-rod articulated to the crank and to the other end of the rocking lever, the pivotal point of the pitman rod lever being concentric with the fulcrum of the oscillating-barrel carrying arm when the lever is in its horizontal position, as and for the purpose shown and set forth. 2nd. In a nail-plate feeding mechanism, the combination, with an oscillating arm carrying the plate-holding barrel for rotary reciprocating motion, of the said barrel *E*, having spiral cogs or flanges *F* engaging with pinion *G*, which is provided with spiral cogs *H*, of a rocking lever having means for turning the plate-holding barrel, and rocking up and down once for every two oscillations of the arm, and having its end concentric with the fulcrum of the oscillating arm when the lever is in its horizontal position, as and for the purpose shown and set forth. 3rd. In a nail-plate feeding machine, the combination of an oscillating arm carrying the rotary reciprocating plate-holding barrel, and provided with a rearwardly extending bracket having a yielding cylindrical bearing, a cylindrical rack-bar provided with the plate-clamping nippers, and sliding and turning in the cylindrical bearing, a shaft journaled transversely in the side of the bearing and having a pinion at its upper end meshing with the cylindrical rack bar, and means for revolving the said shaft, a portion of a revolution at each stroke of the oscillating arm, as and for the purpose

shown and set forth. 4th In a nail-plate feeding machine the combination of an oscillating arm carrying the plate holding barrel, a plate feeding rack-bar sliding in bearings upon the said arm, a shaft having a pinion meshing with the rack-bar and provided with a ratchet-wheel at its lower end, a base sliding in bearings upon the arm, and engaging the ratchet-wheel with one end, and an upright post secured upon the base of the machine having its end projecting into the latter portion of the forward stroke of the sliding-rod with the arm, as and for the purpose shown and set forth. 5th In a nail-plate feeding machine, the combination of a revolving barrel, a plate-feeding cylinder-cul rack-bar, a bearing for the said rack-bar, a shaft having a pinion engaging the said rack-bar and having a ratchet-wheel, a sliding rod engaging the ratchet-wheel with one end, and having a spring throwing it back from the wheel, and means, substantially as described, for pushing the said sliding rod against the teeth of the ratchet-wheel, as and for the purpose shown and set forth. 6th The combination of the ratchet-wheel, the sliding rod having the spring forcing it forward, the bearing having a perforation wider than the rod, and having a spring forcing the end of the rod against the ratchet-wheel, and means for forcing the rod rearward at each stroke of the plate carrying arm, as and for the purpose shown and set forth. 7th The combination of the shaft having the feeding-pinion and the detachable ratchet-wheel, the sliding rod having the pawl-shaped end, the bearing having the aperture wider than the rod, and having the spring forcing the end of the rod against the ratchet-wheel, the bearing having the recess in one end, the adjustable collars secured upon the rod at both ends of the bearings, the spiral spring sitting around the rod in the recess in the bearing, bearing against the rear-most of the collars and the adjustable post, as and for the purpose shown and set forth. 8th The combination, in a nail-plate feeding machine, of a drive-shaft having an eccentric, an oscillating arm carrying the plate-holding barrel, a connecting rod connecting the eccentric and the arm, a rocking lever, means for rocking said lever once for every two revolutions of the drive-shaft, a rock-shaft having a crank at one end for rotary reciprocating the plate-holding barrel E, having spiral coqs or flanges F engaging with pinion G, which is provided with spiral cog H, and a pinion pivoted to the crank and to the end of the rocking lever, as and for the purpose shown and set forth.

No. 24,584. Manufacture of Alloys and Metal Castings. (*Fabrication des Allages et des Fontes Metalliques*)

The Deoxidized Metal Company, (assignee of William W. Keys.) Bridgeport, Ct., U.S., 23th July, 1886; 5 years.

Claim.—The process herein described of hardening, toughening, purifying and rendering homogeneous metal alloys or castings, the same consisting in melting together pieces of horn and metal in a crucible, and confining the gases therein, whereby the metal is de-oxidized, substantially as set forth.

No. 24,585. Telephonic Apparatus. (*Appareil Telephonique.*)

Léonaco de Combattes, Paris, France, 23th July, 1886; 5 years.

Claim.—1st The application to telephone relays or stations, of the property which magnetic bodies possess of increasing in volume in proportion to the energy of the electric current used to magnetize them by causing the iron core of a coil to be elongated, such coil being of a certain length and small diameter, substantially as hereinbefore described. 2nd The application to an electric apparatus serving to print a telephonic message, of the property possessed by magnetic bodies of increasing in volume in proportion to the energy of the electric current used to magnetize them by causing the iron core of a coil to be elongated, this coil being of a certain length and small diameter, substantially as hereinbefore described. 3rd The use, in apparatuses such as those claimed in claims 1 and 2, of arrangement of coils combined in such a manner that the elongation of each coil shall be added to that of the others by means of interposed levers, so as to produce at the free end of one of the said coils the sum total of the elongations of the others, substantially as hereinbefore described.

No. 24,586. Cloth-Measuring Machine. (*Machine à Aumer les Draps.*)

Charles Sandford, Francis Sandford and Hugh McDougall, Fenelon Falls, Ont., 23th July, 1886; 5 years.

Claim.—1st The letting-off receptacle C11, C12, etc. etc., secured and adjustable upon the arm C and rods C1, D1, the tension rollers E, E1, E2, E3, E4, E5, the measuring and counting mechanism F, F1, F2, F3, G, G1, H, H1, standard I and J, the latter sliding and adjustable in cross-to D, journalled jaw J, J1, swivelled adjustable jaw J, J2, J3, substantially as shown and described. 2nd The combination of the fast segment C11, movable segment C12, concave bottoms etc, etc, arms C, rod C1, arms D, rod D1, screws etc, and collar C11, substantially as shown and described. 3rd The combination of the tension rollers E1, E2, measuring roller F, pressure roller F1, journalled upon twisted arm F11, controlled by the spring F12, indexed crown-wheel G, finger G1 and indexed wheel H and finger H1, substantially as shown and described. 4th The combination of the clootted E1, standard I, movable thereon, clamps I1, stationary standard J, journalled jaw J, J1 and adjustable swivel jaw J, J2, J3, substantially as shown and described. 5th The combination of the letting-off receptacle C11, etc, etc, tension rollers E, E1, E2, measuring roller F, pressure roller F1, tension rollers E3, E4, E5, and lapping board L held between adjustable jaws J, adapted to be rotated, substantially as shown and described.

No. 24,587. Ash and Garbage Receptacle. (*Receptacle à Cendres et Rebut.*)

James B. Baynes, (assignee of William Baynes and Adison R. Clark.) Buffalo, N. Y., U.S., 23th July, 1886; 5 years.

Claim.—1st. The combination, with the sunk casing A, of a vertically movable support D arranged in said casing, a removable receptacle B resting on said support, a vertical lifting bar c connected at its lower end with the support D, and projecting upwardly through and above the sunk casing, and a column H enclosing the upper portion of the lifting bar, and arranged above the ground, and secured with its lower end to the top of the sunk casing, substantially as set forth. 2nd. The combination, with the sunk casing A, of a vertically movable support D arranged in said casing, a removable receptacle B resting on said support, a vertical rack bar c connected at its lower end with the support D, and projecting upwardly through and above the sunk casing, a column H enclosing the upper portion of the rack-bar, and arranged above the ground, and secured with its lower end to the top of the sunk casing, a gear pinion g, and ratchet and pawl m, mounted in the column H, substantially as set forth. 3rd. The combination, with the sunk casing A, of the removable receptacle B, movable platform D, the lifting mechanism connected therewith, and an elastic cushion I arranged between the bottom of the casing, and the movable platform to receive the impact of the latter, substantially as set forth. 4th. The combination, with the sunk casing A, having a recess E on one side of the removable receptacle B, of the movable support D, and mechanism, substantially as described, for raising and lowering said support, and arranged in the recess E and extending upwardly above the sunk casing, substantially as set forth. 5th. The combination, with a sunk casing A having a recess E, provided on its inner side with vertical grooves n, of the movable receptacle B, movable support D, column H, provided with ribs m entering the grooves n, and mechanism, substantially as described, whereby the support D is raised and lowered, substantially as set forth.

No. 24,588. Lining of Electric Furnace for Metallurgical Operations. (*Parois de Fourneau Electrique pour Operations Metallurgiques*)

Eugene H. Cowles and Alfred H. Cowles, Cleveland, Ohio, U.S., 30th July, 1886; 5 years.

Claim.—1st. In an electric furnace in which the current passes through the charge, a lining for the walls of the furnace consisting of a homogeneous mixture of charcoal and a refractory material, which is a poor conductor of electricity, both being in a finely divided condition, substantially as and for the purpose set forth. 2nd. A lining for the walls of an electric furnace, consisting of finely divided charcoal, previously prepared by soaking it in water impregnated with lime, substantially as and for the purpose set forth. 3rd. A lining for the walls of an electric furnace consisting of a homogeneous mixture of charcoal and lime, both of which are in a finely divided condition, substantially as and for the purpose set forth.

No. 24,589. Apple Parer, Corer and Slicer. (*Machine à Peler, Vider et Trancher les Pommes.*)

William A. C. Oaks, Antrim, N.H., U.S., 30th July, 1886; 5 years.

Claim.—1st. In an apple-paring machine, an improved device for successively bringing the apples in front of the knives, and holding them there long enough to complete the operations of paring, coring and slicing, consisting of a revolving fork-bearing reel, in combination with a toothed arm driven intermediately from the crank-axle, a latch for preventing the reel moving too far forward, and a pawl pressing against the notched edge of a wheel secured to the shaft to which the reel is also secured, all substantially as shown and described. 2nd. The combination, with the paring-knife carriage provided with a rack O, and mounted to reciprocate in suitable guides of the frame, of the worm-shaft L1 connected with the driving gear and having worm L2, worm-wheel N gearing with rack O, and having a portion of its teeth cut away, as described, bent lever S pivoted to the machine, frame link S2 pivoted to said lever and to the knife-carriage, and crank S4 carried by the shaft of the worm-wheel N, substantially as described. 3rd. The combination, with the reel provided with a series of fork-shafts, each having a central doffer-pin, and mechanism for intermittently rotating the reel, of the curved cam-lever K, bevel-pinion I1 to which said lever is attached, and a gear for operating said pinion, substantially as described. 4th. An improved coring and slicing knife for an apple-paring machine, having a portion of the main blade of the knife projecting below the coring-prong, for the purpose of forming an even bearing against the apple, as set forth and described. 5th. In an apple-paring machine, the combination of a paring-knife and its supporting-arm, with a heel-piece in which the supporting-arm can turn freely through a small arc having its own axis for a centre, the said motion being limited by a pin in the arm under the heel-piece abutting against stops or the sides of a recess, and a spiral spring attached to the projecting points of both knife-arm and turn-table operating to keep the arm in the central position of its possible motion, all constructed substantially as shown and described. 6th. In an apple-paring machine, the combination of the paring knife arm and heel r, with the turn-table R, and a wedge shaped piece of metal W secured to the turn-table, so that it may be pushed more or less under the heel of the knife-arm for adjustment, all substantially as and for the purpose specified. 7th. The combination of the intermittently revolving fork-bearing reel T, with the reciprocating knife carriage P driven during the cutting stroke by a rack O and pinion N, and during its return stroke by a combination of links S, S', operated by a crank S1 upon the axis of the wheel N, all substantially as shown and described. 8th. In an apple paring machine, the combination of the driving pulley D, intermediate gears D1 and G, revolving fork-wheel F intermittently rotated by a toothed arc p, and held in place by the pawl H2 and automatic latch V, the paring knife R1 rotating with the turn table R and reciprocating on the guide P2 by means of the pinion L, shaft L1, endless screw L2, spur-wheel N and rack O, the improved quick-return mechanism consisting of the lever S, link S2, and the crank S1, coring and slicing knife Q and push-off device K, all substantially as shown and described.

No. 24,590. Lifting Jack. (Cric.)

Francis H. Steeper Coaticook, Que., 30th July, 1886, 5 years.

Claim.—1st. The combination of the shell and base A, A', the sliding piece a and the geared screw a', substantially as and for the purpose hereinbefore set forth. 2nd. The combination, with the shell and base A, A' and the screw a', of the gears a₂, b, b₁, c and c₁, substantially as and for the purpose hereinbefore set forth. 3rd. The combination, with the shell and base A, A', and geared screw a', of the ratchet lever b₂, substantially as and for the purpose hereinbefore set forth.

No. 24,591. Railroad Switch.*(Aiguille de Chemin de Fer.)*

John A. Duggan, Quincy, Mass., U.S., 30th July, 1886, 5 years.

Claim.—1st. The slotted bars h attached to the vertically-movable rails a and b respectively, in combination with the fixed rails a, b₁, and the crank-shaft c having crank c₂, which turn respectively in the slots of said bars h, as set forth. 2nd. The fixed wedge-shaped blocks k having inclined upper faces, and arranged in proximity to the outer sides, of movable rails a₁, b₁, in combination with said rails, devices for raising and lowering the latter, and the fixed rails a, b₁, substantially as set forth. 3rd. The bolts having flat-faced heads i, in combination with the fixed rails to which they are attached, the movable rails which the said heads guide in a vertical path, and devices for raising and lowering said vertically-movable rails, substantially as set forth. 4th. The arms e on opposite sides of the track having bearings d formed therein, in combination with the elastic cushions f on which they are supported, and the crank-shaft c which turns in said bearings, for the purpose of raising and lowering the movable rails for switching, substantially as set forth.

No. 24,592. Running Gear for Waggon, etc.*(Train de Wagon, etc.)*

George Dolker, Henderson, Ky., U.S., 30th July, 1886, 5 years.

Claim.—In combination with a reach extending over the front axle, and having a slot near the front end thereof, enlarged or elongated transversely as described, a tongue coupled to said reach, and a king-bolt passing through said transverse slot and engaging said axle, whereby the front end of the reach is allowed free lateral movement independently of the king bolt, substantially as set forth.

No. 24,593. Harness Hook.*(Crochet de Harnais.)*

Alfred B. Robinson, Lebanon, Mo., U.S., 30th July, 1886, 5 years.

Claim.—1st. In a harness hook, the combination, with the pivoted ring thereof, of an elastic cushion inserted in the shank of the hook, to form a seat for the ring when in a closed position, substantially as and for the purpose set forth. 2nd. A harness hook provided with a pivoted ring, an elastic cushion inserted in the shank of the hook for the ring to rest upon, and a shoulder to act as a stop therefor, substantially as and for the purpose specified.

No. 24,594. Wagon Gear.*(Train de Wagon.)*

Andy B. Johnson, Decatur, Mich., U.S., 30th July 1886, 5 years.

Claim.—1st. In a wagon gear, having side springs B and cross-springs C, a mortise and tenon connection between the ends of said springs, substantially as described. 2nd. The raised piece D on side spring B, working in connection with the slotted end of cross-spring C, which is bent around side spring B, all for the purpose described. 3rd. In a wagon gear having side-springs B and cross-springs C, a mortise and tenon connection between the ends of said springs, combined with a hitching device E formed integrally with the side springs, substantially as described.

No. 24,595. Metallic Railway Tie and Device for Attaching Rails thereto.*(Traverse Métaïlique de Chemin de Fer et Moyens d'y Assujétir des rails.)*

Leander E. Whipple, Hartford, Conn., U.S., 30th July, 1886, 5 years.

Claim.—1st. In a railroad tie, the combination of a base-plate, a top-plate and two intervening plates of curved or angular form in cross-section, arranged to bear against each other. 2nd. In a railroad tie consisting of a flanged top-plate, the flanged base-plate, and the substantially semicircular plates e, c₁ seated against each other, and within the flanges of the top and bottom plates, substantially as described and shown. 3rd. In a railroad tie, a top-plate and two supporting plates therefor seated against each other midway of their height, and separated at their upper and lower edges. 4th. In a railroad tie, the combination of a base-plate, a top-plate and two curved supporting plates united midway of their height by bolts or rivets, substantially as described and shown. 5th. In a railroad tie, the base-plate and the top-plate, in combination with the curved supporting plates, and the rivets or bolts connecting the supporting plates with each other and with the top and bottom plates respectively. 6th. The rail fastening device having lips on the upper side to embrace the base of the rail, and ductile lips on the under side to engage the edges of the tie. 7th. The fastening consisting of the plate A, having the extended ends and the lip a formed thereon, and the separate plate b adapted for attachment thereto.

No. 24,596. Car-Coupler. (Attelage de Chars.)

George F. Carruthers, Winnipeg, Man., 30th July, 1886, 5 years.

Claim.—1st. The combination, with the shaft B, of a slotted hook C having a wide body or boss a, the arm b received in the slot of the hook and carried by the shaft B, and the link d received on the arm

b, substantially as herein described. 2nd. In a car-coupler, the combination of the shaft B, the slotted hook C having a wide body or boss a, the arm b received in the slot of the hook and carried by the shaft B, and the laterally swinging handle f, substantially as herein shown and described.

No. 24,597. Bed Bottom. (Sommier de Lit.)

John Shepherd, Memphis, Mich., U.S., 30th July, 1886, 5 years.

Claim.—The combination, with the frame A, recessed at a, and the slotted plate E, of the headed bolts D, the head-section C supported by said rods, bail G pivotally secured to said rods, links F connecting said frame and head-section, and the rack-bars H secured to the central rails A and adapted to engage said bail, substantially as and for the purposes specified.

No. 24,598. Clothes Washer. (Laveuse à Linge.)

Daniel A. Cass, Toronto, Ont., 30th July, 1886, 5 years.

Claim.—1st. A pipe or passageway C located at the bottom of the boiler A, and connected therewith through an opening in the bottom of said boiler, in combination with a pipe or passageway B connected at its bottom end with a pipe C, and leading to an opening near the top of the boiler A, substantially as and for the purpose specified. 2nd. A pipe or passageway B, leading from the top of the boiler A to its bottom, in combination with a pipe or passageway C, connected to the pipe B and extending along the bottom of the boiler A, with the interior of which it communicates, and is provided with a cap a.

No. 24,599. Vehicle. (Voiture.)

James D. Green, Ypsilanti, Mich., U.S., 30th July, 1886, 5 years.

Claim.—1st. In a one-wheeled vehicle, a rigid bow joining the forward ends of the thills, and provided with a belly-band or surcingle arranged to secure the bow over the horse's back, substantially as described. 2nd. In a one-wheeled vehicle, the combination of a frame, a single wheel revolving in said frame, an enclosing case over the wheel, and one or more single seats in line with the wheel, substantially as described. 3rd. In a one-wheeled vehicle, the combination of a frame, a single wheel revolving within said frame, an enclosing case over the wheel, a pair of thills rigidly secured to the said frame, a rigid bow connecting the thills and having a belly-band, and one or more seats secured in line with the wheel, all arranged substantially as set forth.

No. 24,600. Hame Tug. (Mancelle.)

Willis S. Sherman, Marinette, Wis., U.S., 30th July, 1886, 5 years.

Claim.—1st. The combination, with a hame section, a bar pivoted to the section, a tug loop pivoted to said bar, so as to move vertically, a bar located between the outer ends of the tug loop, and a sleeve on said bar, substantially as described. 2nd. The combination with the hame section of a bar or strap connected to the section, a tug-loop pivoted to said bar and consisting of the bar F, having the outwardly projecting arms G and the bolt connecting the arms, substantially as described.

No. 24,601. Kettle. (Bouilloire.)

John Foulkes, Montreal, Que., 30th July, 1886, 5 years.

Claim.—The guard-bar D, in combination with the cover C, and the bale B, all substantially as and for the purpose set forth and specified.

No. 24,602. Animal Trap. (Piège.)

Christian Bruckart, Salunga, Penn., U.S., 30th July, 1886, 5 years.

Claim.—1st. In an animal-trap, the combination of the jaws J, J and spring A, the trigger E connected with a bait-plate, and having a slot with an opening in one side, and a catch adapted to engage the slot in the trigger, for the purpose specified. 2nd. In an animal-trap, the combination of the jaws J, J and spring A, the trigger E connected with a bait-plate, and having a slot with an opening in the middle of one side, and a catch adapted to engage the slot in the trigger, substantially as and for the purpose specified.

No. 24,603. Electric Furnace and Method of Operating the Same. (Fourneau Electrique et Mode de le Faire Fonctionner.)

Alfred H. Cowles, Cleveland, Ohio, U.S., 30th July, 1886, 5 years.

Claim.—1st. The method of smelting ores and other substances by the incandescence of an electrical resistance material contained in said substance, or mixed therewith, which consists in, first, bringing a limited quantity of the material to be treated between a pair of electrodes, and then gradually increasing the quantity of such material by causing the electrodes to recede from each other, substantially as herein set forth. 2nd. In the art of smelting ores and other substances by the direct heating action of the electric current, the method of obtaining a uniform action of said electric current upon the mass or charge to be treated, herein described, which consists in introducing into the charge electrodes which are normally in proximity to each other, and then gradually causing said electrodes to recede from each other, the contact with the charge still being preserved until the mass of the charge is contained between the said electrodes, substantially as set forth. 3rd. In an incandescent electrical smelting apparatus, the combination of a furnace chamber having electrodes fitted into its opposite sides, with suitable mechanism for bringing said electrodes normally in proximity to each other within the furnace chamber, and gradually separating the same during the smelting process to the full extent of said furnace chamber, substantially as herein set forth. 4th. In an incandescent electrical smelting apparatus, the combination of a furnace chamber having electrodes fitted into its opposite sides, mechanism for normally bringing said electrodes in proximity to each other, and grad-

auxiliary lever being adjustable vertically. 31st. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, the fulcrum of said auxiliary lever being adjustable vertically and laterally. 32nd. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said link being laterally adjustable at its point of connection with said main lever. 33rd. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said link being laterally adjustable at its point of connection with said main lever. 34th. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said link being laterally adjustable at its point of connection with said main lever. 35th. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said link being laterally adjustable at its point of connection with said auxiliary lever. 36th. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said link being vertically adjustable at its point of connection with said auxiliary lever. 37th. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said link being laterally and vertically adjustable at its point of connection with said auxiliary lever. 38th. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said link being laterally adjustable at its point of connection with each lever. 39th. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said link being vertically adjustable at its point of connection with each lever. 40th. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said link being laterally and vertically adjustable at its point of connection with each lever. 41st. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said levers being laterally adjustable in their fulcrums. 42nd. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said levers being vertically adjustable in their fulcrums. 43rd. In a gas regulator, an annular liquid valve seat, an inverted cup valve adapted to be seated therein, a liquid-seated gas holder and a rod connected thereto, in combination with a main lever of the first class connected to said cup valve, an auxiliary lever of the second class connected to said rod, and a link connecting said levers, said levers being vertically and laterally adjustable in their fulcrums.

No. 24,607. Strainer for Milk, etc.
(Coutoir pour le Lait, etc.)

Joshua L. Abell and William Zimmerman, Chicago, Ill., U. S., 30th July, 1886; 5 years.

Claim.—1st. A device for straining liquids, consisting of the bowl or cylinder *b* and strainer *c*, said cylinder covered by the strainer *c* projecting into the bowl, to form the pool *h* upon the outside of said cylinder, substantially as specified. 2nd. The bowl *a*, cylinder *b* projecting into said bowl, so as to form a pool *h* around the outside of said cylinder, said cylinder being covered by a strainer *c*, in combination with the funnel *e*, substantially as specified. 3rd. The bowl *a*, cylinder *b* projecting into said bowl, so as to form a pool *h* around the outside of said cylinder, said cylinder being covered by a strainer *c*, in combination with the funnel *e* provided with pipe *f*, substantially as specified. 4th. The bowl *a*, cylinder *b* projecting into said bowl, so as to form a pool *h* around the outside of said cylinder, said cylinder being covered by a conical and upward-pointing strainer *c* having depression *g* at its base, in combination with a funnel *e* having discharge pipe *f*, substantially as specified.

No. 24,608. Clothes Drier. (Séchoir à Linge.)

William A. Waldron and Willard E. Waldron, Bay City, Mich., U. S., 30th July, 1886; 5 years.

Claim.—1st. In a clothes drier, the stationary post *a* provided with a groove *b*, a rack *c* placed within the said groove and provided with a stop *t*, a pinion *d* engaging with the said rack, the shaft *e*, the crank *f*, the ratchet *g*, the part *h*, in combination with the post *a* resting on the said step *t*, the bolt *k* passing through the step and into the end of the said post *a*, substantially as and for the purpose set forth. 2nd. In a clothes drier, the stationary post *a* and the movable post *c* placed vertically below *a*, and extended above the said post *a*, and provided with the extended arms *f* and line *ic*, and with the groove *r*, in combination with the sleeve *o*, having the inward projecting parts *q* adapted to slide within the said groove *r*, and the outward projecting flanges *p* and the strap *n* passed around the said sleeve, and having its ends secured to the post *a*, substantially as and for the purpose set forth. 3rd. In a clothes drier, the post *a* provided with a groove *b*, and a rack *c* within the groove, in combination with the plate *x* placed across the post, and with its ends secured thereto, and adapted to hold the said rack and sleeve in position, substantially as set forth. 4th. In a clothes drier, the post *a* having a groove *b* and a rack *c* within the groove, and a pinion *d* intermeshing with the said rack, a shaft secured to the pinion *d* and passing through the post and provided with a crank *f*, in combination with a ratchet wheel *g* upon the shaft, and a pawl *h* pivoted to the post and engaging with the ratchet, substantially as set forth.

No. 24,609. Means for Adjusting Saws.

(Moyens de Monter les Scies.)

Royal W. Clarke, Richland Centre, Wis., U. S., 31st July, 1886; 5 years.

Claim.—1st. The combination, with a saw and frame, of the loops *C* and *D*, and a notched lever fulcrumed in said loops, and having its free end secured by a clamp which engages one of the loops, substantially as described. 2nd. The combination, with a saw and frame, of a lever adapted to engage suitable loops, and a clamp, whereby one end of the lever is secured to one of the loops, substantially as hereinafter described. 3rd. In combination with the frame, the slide and a lever, the loops or bands *C* and *D* having one end secured to the frame, and the other extending inwardly and overlapping each other, to form an opening for the lever, substantially as and for the purpose herein set forth. 4th. The combination, with a saw frame and the loops *C* and *D*, constructed and arranged substantially as set forth, of a lever provided with a series of notches on one side, and one or more notches on the opposite side, and a clamp pivotally secured to said lever, for the purpose set forth.

No. 24,610. Press for Setting Shoe Lacing Hooks. (Presse pour Poser les Agrafes des Chaussures à Lacet.)

Edgar H. Train, Union City, Conn., U. S., 31st July, 1886; 5 years.

Claim.—1st. The combination of the fixed post *C*, its top corresponding to the face of the hook, and constructed to form a shoulder *a* as a stop for the nose of the hook, the sleeve *D* surrounding said post and having an opening in its top, constructed with sides corresponding to, and constituting supports for the several prongs of the hook, a spring arranged to support said sleeve with its said sides above the end of the post, and a vertically movable follower in line with the said post, and having cavities in its face corresponding to the respective prongs of the hook, substantially as and for the purpose described. 2nd. The combination of the fixed post *C*, having its upper face corresponding to the face of the hook to be set, and constructed with a shoulder against which the nose of the hook will rest, a sleeve surrounding said post having an opening in its upper end, constructed with sides corresponding to, and constituting supports for the several prongs of the hook, and a spring arranged to support said sleeve with the said opening above the end of the post, and a vertically movable follower in line with said post, its under face constructed with cavities corresponding in number to the prongs of the hook, each cavity inclined from the face of the follower inward and upward the inner end of the cavity, curved downward to the face of the follower, substantially as and for the purpose described.

No. 24,611. Horse Hay Rake.

(Râteau à Cheval.)

Horatio Gale, Albion, Mich., U. S., 31st July, 1886; 5 years.

Claim.—1st. In a sulky hay-rake, a rake-head *A* provided with a tension rod *C* secured to the underside of said head, an overhanging plate *B*, a thimble *E* and nut *e*, and the wheel turning on said thimble, the parts being constructed, combined and operating substantially as and for the purposes described. 2nd. In a sulky hay-rake, the combination, with the rake-head *A*, of the overhanging plates *B* secured to said head, and having each a downwardly-extended lug *d*, and the rod *C* supported by said lugs, the thimble *E* sleeved on said rod, the wheels *D* turning on said thimbles, the hubs of said wheels being shorter than said thimbles, and the nuts *e* on the outer ends of said rod, substantially as described. 3rd. In a sulky hay-rake, the combination, with the rake-head *A*, of the angular plate *B*, one part of which rests upon the top of said head and is secured thereto, and the other part bearing against the end of said head, and provided with rib *c* and projection *d*, and the rod *C* supported by said lugs and secured to said head, substantially as and for the purposes specified.

No. 24,612. Shingle-Shaving Machine.*(Machine à Planer le Bardeau.)*

George E. Cooke, Clarksville Tenn., U.S., 31st July, 1886; 5 years.

Claim.—1st. In shingle-shaving machines, the combination of the pivoted shingle bed D, a tappet D¹ fixed to a shaft D₂, a disk wheel D₃ fast on shaft D₂ and provided with pairs of pins d₁, d₂, a bar B₂ having notches or hooks b₃, b₄ adapted to engage the pins d₁, d₂, and operating levers, substantially as described, connecting the bar B₂ to the sliding sash B, substantially as herein set forth. 2nd. In shingle-shaving machines, the combination of the pivoted shingle bed D, a tappet D¹ fixed to shaft D₂, a disk wheel D₃ on shaft D₂, and provided with pairs of pins d₁, d₂ and stop shoulders as at d₁, d₂, a bar B₂ having hooks b₃, b₄ adapted to engage the pins d₁, d₂, a bar E having a shoulder e₁ adapted to stop shoulders d₁, d₂, and operating levers, substantially as described, connecting the bars B₂, E to the sliding sash B, substantially as herein set forth. 3rd. In shingle-shaving machines, the combination of the pivoted shingle bed D, a tappet D¹ fixed to shaft D₂, a disk wheel D₃ on shaft D₂ and provided with pairs of pins d₁, d₂, a bar B₂ having hooks b₃, b₄ adapted to engage the pins d₁, d₂, a spring-pressed pin e₃ on the frame A, with which pin the studs d₅ are adapted to lock, substantially as herein set forth. 4th. In shingle-shaving machines, the combination of the pivoted shingle bed D, a tappet D¹ fixed to shaft D₂, a disk wheel D₃ on shaft D₂, and provided with pairs of pins d₁, d₂ and stop shoulders, as at d₁, d₂, a bar B₂ having hooks b₃, b₄ adapted to engage the pins d₁, d₂, studs d₅ on wheel D₃, and a spring-pressed pin e₃ on the frame A, with which pin the studs d₅ are adapted to lock, a bar E¹ having a shoulder e₁ adapted to the stop shoulders d₁, d₂, and operating levers connecting the bars B₂, E¹ to the sliding sash B, substantially as described, whereby the shingle bed D will be lowered and raised, and the wheel D₃ will be locked against rotation in either direction to hold the bed D in raised position, substantially as herein set forth. 5th. In shingle-shaving machines, the combination, with the knife-carrying sash and a shingle-holding bed, of a thrust-block, as at G, and a guard rising from the front edge of the thrust-block to prevent forward slip of warped shingles under the pressure of the knife, substantially as set forth. 6th. In shingle-shaving machines, the combination, with the knife-carrying sash, and a shingle-holding bed, of a thrust-block, as at G, and a guard, as at H, standing normally in line with the front edge of the thrust-block, and said guard being adapted to yield backward, substantially as and for the purposes herein set forth. 7th. In shingle-shaving machines, the combination, with the sash B, its knife C, a presser roller F mounted on the sash in advance of the knife, and a shingle bed, as at D, of a guard, as at H, held above the thrust-block G, and so as to yield to the advance of the presser roller, substantially as herein set forth. 8th. In shingle-shaving machines, the combination, with the sash B, its knife C, a presser roller F on the sash in advance of the knife, and a shingle bed, as at D, of the guard H fitted to the machine frame so as to yield to the advance of the presser roller, a device locking the guard in normal position in line with the thrust-block G on the frame, substantially as described, and a device, substantially as specified, fitted to the sash B, so as to trip the locking devices of the guard to allow the guard to yield to the roller F, substantially as herein set forth. 9th. In shingle-shaving machines, the combination, with the sash B, its knife C, a presser roller F mounted on the sash in advance of the knife, and a shingle bed, as at D, of the guard H fitted to slide on the machine frame, a spring pressing the guard normally into line with the thrust-block G on the frame levers I, I¹, pivoted to the frame and normally locking behind guard H, and trip-blocks I² on the sash acting to release the guard, substantially as herein set forth. 10th. In shingle machines, the combination, with the frame A, the pivoted shingle bed D and the sliding sash B, of a shaft K having fingers k and an arm k¹, a spring-pressed trip-pin L fitted in frame A, and on which the arm k¹ is adapted to be set, and a spring N acting to thrust the fingers k forward when pin L is withdrawn by devices operated by or from the sash B after the shingle bed falls, substantially as herein set forth. 11th. In shingle machines, the combination, with the frame A, the pivoted shingle bed D and the sliding sash B, of a shaft K having fingers k and an arm k¹, a spring-pressed trip-pin L fitted in frame A, and on which the arm k¹ is adapted to be set, a spring N acting to thrust the fingers k forward when pin L is withdrawn, a lever T pivoted on frame A, a pin U on sash B adapted to operate lever T, a rod S connected to lever T and provided with a pin s, a ratchet wheel R loose on trip pin L and provided with teeth r, r¹, a pin I held to a plate L² carried by trip pin L and adapted to the teeth r of wheel R, and said pin s adapted to the teeth r of said wheel, studs e₃ on wheel U, and springs V, V¹, substantially as herein set forth. 12th. In shingle machines, the combination, with the frame A, the sliding sash B, the shaft K carrying fingers k and arms k¹, k², and the trip pin L, of a push arm operated by or from the sash B, and acting on the arm k¹ of shaft K to set the fingers k back, substantially as herein set forth. 13th. In shingle machines, the combination, with the frame A, the sliding sash B, the shaft K carrying fingers k and arms k¹, k², and the trip pin L, of a rod M adapted to push on arm k², a lever P connected to rod M, and a pin J on sash B, adapted to operate the lever P and rod M to set the arm k¹ on the trip pin L, to set the fingers k back, substantially as herein set forth. 14th. In shingle machines, the combination, with the frame A, sliding sash B, the lever P pivoted to the frame and adapted to be rocked by or from the sash, and a push-rod M guided on the frame and connected to the lever P, a device adapted to be operated thereby, for setting back the shingle-discharging fingers k of a spring, as at Q, acting to draw back the rod M after it sets the fingers k, substantially as herein set forth.

No. 24,613. Nut Lock. (Serre-Ecrou.)

Justin H. Burdick, Utica, Wis., U.S., 31st July, 1886; 5 years.

Claim.—1st. The combination, with a main screw-bolt nut having a series of semi-spheroidal sockets in its outer face, of a locking-nut provided on its inner face with a semi-spheroidal lug, adapted to lodge in either one of the sockets of the main nut at the end of its course, whereby the bolt is tightly grasped and the nuts locked in position around the same, substantially as set forth. 2nd. The combination, with a threaded bolt, of a main nut having a series of sockets arranged at regular intervals in its outer face, the spaces between each two consecutive sockets being rounded down to make a continuous curved surface all around the said nut, and a locking-nut provided on its inner face with a lug of shape corresponding to the sockets in the other nut, substantially as set forth.

No. 24,614. Compound Locomotive, etc.*(Locomotive, etc., Mixtes.)*

Thomas W. Worsdell, Gateshead-on-Tyne, Eng., 31st July, 1886; 5 years.

Claim.—1st. In a compound steam engine, the combination, with a high pressure cylinder, a low pressure cylinder and a pipe or passage connecting them, of an intercepting valve and a starting device comprising a valve that controls the admission of high pressure steam to said low pressure cylinder, said valve being connected to the before-mentioned intercepting valve, and the arrangement being such that when high pressure steam is admitted to the low pressure cylinder, the intercepting valve will close communication between the high and low pressure cylinders, substantially as described for the purpose specified. 2nd. In a compound steam engine, the combination of a high pressure cylinder, a low pressure cylinder, connecting pipe B, and automatic starting and intercepting arrangement comprising inlet and outlet pipes, casing K, valves L and N, springs K and Q, and valve S connected to intercepting valve B, all substantially as described for the purpose specified. 3rd. In a compound steam engine, the combination, with a high pressure cylinder, a low pressure cylinder and a connecting pipe or passage of a combined starting valve S and intercepting valve G, contained within a casing K, provided with passages or ports X, Y, and a pipe T to a boiler, substantially as described for the purpose specified. 4th. In a compound steam engine, the combination, with a high pressure cylinder, a low pressure cylinder, a connecting pipe or passage, a starting valve and an intercepting valve, of a regulator comprising a hollow plug, the interior of which receives high pressure steam from a boiler, said plug being formed with ports b and c, and the wall of its containing chamber being provided with a passage, in communication with the high pressure cylinder, and a passage in communication by a branch pipe E with the chamber that contains the starting valve, substantially as described for the purpose specified.

No. 24,615. Stove Damper.*(Régistre de Poêle.)*

Henry H. Vincent, Minneapolis, Minn., U.S., 31st July, 1886; 5 years.

Claim.—1st. The combination, with the damper rod C having polygonal portion C₁ and the threaded end C₂, of the handle D having an opening adapted to fit the portion C₁ of the rod C, to permit the handle to slide thereon, and having the opening D₁ and nut E, all substantially as described. 2nd. The combination, with the damper A having the opening a and offset a₁, of the rod C provided with a semi-circular projection c adapted to pass through the said opening, and bear upon the opposite side of said damper plate, in the manner and for the purpose substantially as set forth.

No. 24,616. Flooring Clamp.*(Serre-Joint pour Parquetterie.)*

Loren G. Welch, Groton, Vt., U.S., 31st July, 1886; 5 years.

Claim.—1st. In a flooring clamp, the combination, with a bearing-head, of a sleeve supported and adapted to rock or oscillate on said head, and provided with a longitudinal groove, substantially as and for the purposes specified. 2nd. A flooring-clamp having an arm F, provided at its bearing end with lateral extensions forming a head f, and provided with a sleeve G fitted on said head, and having a longitudinal groove g, and a longitudinal slot p₁, said slot being enlarged at p₂, substantially as set forth. 3rd. A flooring-clamp, comprising a base-bar A having serrations B at one end, and having said end formed with a protuberance C on its upper side, and a lever pivoted to the opposite end of the base, and having an arm F provided at its bearing end with lateral projections rounded transversely and forming a head, substantially as set forth.

No. 24,617. Fence. (Clôture.)

Samuel Cronc, West Nisour, Ont., 31st July, 1886; 5 years.

Claim.—1st. A collar C for clamping and rigidly binding together the braces B, B and post A, substantially as described. 2nd. The combination of the braces B, B, post A, collar C and pin L, substantially as and for the purpose hereinbefore set forth. 3rd. In combination, with a brace or braces B secured at one end to a fence post A, the bed-piece o and rings G₁, substantially as and for the purpose hereinbefore set forth. 4th. In combination with a brace or braces B secured at one end to a fence post A, the bed-piece o, bed-plates P and rings G₁, substantially as and for the purpose hereinbefore set forth. 5th. In combination with the post A formed with an eye K, or its equivalent, the bed-piece o, substantially as and for the purpose hereinbefore set forth. 6th. A collar I formed with a socket arm I₁, for securing the brace E to the post D, substantially as described. 7th. A collar I formed with a perforated web N₁, for securing the braces D, D to the post H, substantially as described. 8th. The combination of the bed-piece o, bed-plates P, braces B, rings G₁, post A, collar C and pin L, substantially as and for the

purpose hereinbefore set forth. 9th. The combination of the collar I, post H, braces D, D, and bed-piece o, substantially as and for the purpose hereinbefore set forth. 10th. The combination of the collar I, post H, braces E, F, rings G, G, and pin K, substantially as and for the purpose hereinbefore set forth. 11th. The combination of the bed-piece o, braces D, D, post H, collar I, braces E, F, rings G and pin K, substantially as and for the purpose hereinbefore set forth. 12th. The combination of a post H, wires J and post A, substantially as described.

No. 24,618. Vehicle Wheel. (*Roue de Voiture.*)

William Gibby, Rahway, N.J., U.S., 31st July, 1886; 5 years.

Claim.—1st. In a vehicle wheel, the hub-box A, made substantially as herein shown and described, with exterior screw-thread and tapered longitudinal grooves, whereby the said hub box is adapted to receive the spoke-holding sections and their nuts, as set forth. 2nd. In a vehicle wheel, the combination, with the hub-box A having exterior screw-thread and tapered longitudinal grooves, of the adjustable hub-sections D having radial slots in their outer parts, the washers I and the adjusting nuts J, substantially as herein shown and described, whereby the inner ends of the spokes will be firmly supported and can be readily adjusted, as set forth.

No. 24,619. Saw Swaging Machine.

(*Machine à Etamer les Scies.*)

Sarah A. Parke, Bay City, Mich., U.S., 31st July, 1886; 5 years.

Claim.—1st. In a saw swage, a rotary die having a die-face formed by cutting away a portion of the cylindrical die, forming a flattened portion n with the side depressions o and oi, and the central depression p in one edge of the said portion n, forming the raised parts r between the said depressions, substantially as and for the purpose set forth. 2nd. In a saw swage, the combination, with the swage block a having the longitudinal slot b, of a shaft l having a die face formed between the screw-threaded anvil m above the die-face, and the clamping bolts c and d passed through opposite sides of the blocks, and extending into the said slot, substantially as and for the purpose set forth. 3rd. In a saw swage, the swage block a provided with a longitudinal slot in its lower portion, a shaft l passed into the block and provided with a die-face opposite the slot, and a clamping device adapted to hold the saw within the said slot, in combination with a screw-threaded bolt passed into the swage block above the die-face, and with its inner end forming an anvil against which one end of the saw tooth rests, while the die acts upon its opposite edge, substantially as and for the purpose set forth. 4th. In a saw swage, the combination of the block a, a shaft l passed into the block and provided with a die-face, and a lever k on the cutter end of the shaft with the stopping devices z and x, substantially as and for the purpose herein described. 5th. In a saw swage, the swage block a, the shaft l having a die-face, the anvil m secured above the die-face, and the clamping bolts c and d, in combination with the piece e secured to the swage block, and provided with an extended part having an opening f passed over the head of the clamping bolt c, substantially as and for the purpose set forth. 6th. In a saw swage, the swage-block a, the shaft l having a die-face formed thereon, the anvil m passed through the block above the die face, and the clamping bolts c and d, in combination with the guide e secured to the block by the bolt z, and provided with the slot u and the outward extending arm x, substantially as and for the purpose set forth. 7th. In a saw swage, the swage block a, the shaft l provided with a die-face having a groove i, in combination with a piece e secured to the block, and with an extended portion j within the said groove, and adapted to hold the shaft l in position, substantially as herein set forth.

No. 24,620. Railway Tie.

(*Traverse de Chemin de Fer.*)

Donald G. Ross, East Saginaw, Mich., U.S., 31st July, 1886; 5 years.

Claim.—As a new article of manufacture, a railway tie, the body of which is made of a softer wood, as cedar, with a facing of harder wood, as oak or hard maple, dovetailed into a recess in the upper face of such body, substantially as described.

No. 24,621. Tile Making Machine.

(*Machine à Faire les Tuiles.*)

William Shoppard, Toronto, Ont., 31st July, 1886; 5 years.

Claim.—1st. A tile machine, in which the master wheel F is fixed to the bottom end of the shaft G, the combination of the pinion E, spindle D, spur-wheel C and bevelled pinion B fixed to the shaft A, substantially as and for the purpose specified. 2nd. In a tile machine, a plunger J, in combination with the cam J, substantially as and for the purpose specified. 3rd. In a tile machine, a plunger I divided into two parts and having the friction rollers K journaled in it, as specified, in combination with the cam J fixed to the shaft G, operating substantially as and for the purpose specified. 4th. In a tile machine, the plunger I, constructed as described, in combination with the packing-plates L, actuated by the set-screws M, substantially as and for the purpose specified.

No. 24,622. Machine for Lifting Waggons, etc. (*Machine à soulever les Waggons, etc.*)

Albert H. Taft, Winchester, N.H., U.S., 31st July, 1886; 5 years.

Claim.—The combination of bars B, B, arms C, C and D, D, and

rails A, A, all pivotally attached to each other, and with braces E, E, or other suitable mechanism adapted for locking the jack in a hoisted position, said locking mechanism being an independent device from the hoisting machine, substantially as and for the purpose hereinbefore set forth. 2nd. A wagon jack, consisting of bars A, arms C and D, and bars B, all pivotally connected together by rods H, locking braces E and hinge joint F, with handles I attached to arms D, so as to make lever purchase with fulcrum at the joint in arms D, all substantially as and for the purpose hereinbefore set forth, together with the wheel or trucks, as and for the purposes herein set forth.

No. 24,623. Machine for Thrashing and Separating Grain, etc. (*Machine à Batre et Séparer les Grains, etc.*)

Alfred Swingle, San Francisco, Cal., U.S., 31st July, 1886; 5 years.

Claim.—1st. In a machine for thrashing and separating peas or grains from the outer husk or envelope, the combination of a cylinder, the surface of which has an elastic covering with protuberances, a corresponding concave surface in close proximity below with similar protuberances, and a mechanism comprising a serpentine cam on the main shaft, by which the concave is caused to reciprocate in a line parallel with the axis while the cylinder is rotated, substantially as herein described. 2nd. In a machine for thrashing and separating seeds from the outer envelope or husk, the combination of a rotating cylinder, a concave surface below and through which the substances pass, said cylinder and concave having their surfaces provided with projections or protuberances and covered with sheets of elastic material, and a serpentine cam on one end of the main shaft, whereby the concave is reciprocated, substantially as herein described. 3rd. In a machine for thrashing and separating seeds from the outer envelope or husk, the combination of a concave surface into which the materials are fed, a cylinder rotating above the concave and in close proximity thereto, a serpentine cam on the main shaft for reciprocating said concave, the surfaces of both concave and cylinder being provided with elastic protuberances having rigid internal pins b, substantially as herein described. 4th. In a machine for thrashing and separating seeds from the outer pod or envelope, the combination of a reciprocating concave into which the substances are fed, with elastic protuberances upon the surface, and holes between them, a cylinder with similar protuberances rotating in close proximity to the concave, a serpentine cam secured on one end of the main shaft, and an inclined upwardly-travelling belt below the concave, substantially as herein described. 5th. The rotating cylinder, the main shaft having a serpentine cam at one end, and the reciprocating concave situated below having surfaces provided with elastic protuberances, which move in close proximity, in combination with the supply chute, the transverse rotating shaft Q and radial arms R, substantially as herein described. 6th. The shaft B, the rotating cylinder having a serpentine cam secured to one end of said shaft, and a reciprocating concave having anti-friction rollers engaging the opposite sides of the cam flange, in combination with the gear wheel G on said shaft, a supplemental shaft journaled in the frame of the machine, and a pinion G meshing with said gear and the fast and loose pulleys, whereby motion is imparted to the cylinder, substantially as herein described. 7th. The rotating shaft B, the cylinder B mounted thereon, and a serpentine cam secured to one end of said shaft, and having a pulley, cast or otherwise, rigidly secured thereto, in combination with the concave engaging the cam and reciprocated thereby, and means for imparting motion to the shaft Q, and belt M, substantially as herein described. 8th. The rotating shaft B and the cylinder mounted thereon, in combination with a serpentine cam on said shaft, the concave having an arm D projecting therefrom, a shaft D' swivelled in said arm, a cross bar having short pintles, and the anti-friction rollers mounted on said pintles, so as to automatically adjust themselves to position and curvature of the cam, substantially as herein described.

No. 24,624. Car Axle Box. (*Boîte à Graisse.*)

James Timms, Columbus, Ohio, U.S., 31st July, 1886; 5 years.

Claim.—1st. The T-shaped plate or end bearing engaging with the box and with a saddle cap, substantially as set forth. 2nd. The T-shaped end bearing provided with a rib and recess, and with side flanges, substantially as set forth. 3rd. The combination of the T-shaped end bearing the saddle with the rib engaging with a recess in the plate, and a rib engaging with a recess in the top of the box, substantially as set forth. 4th. A dust-guard or packing, with cut-away or inclined inner surfaces forming a central projection or angle made of a single plate, substantially as set forth.

No. 24,625. Wind Engine. (*Moulin à Vent.*)

William S. Moote, Smithville, Ont., 31st July, 1886; 5 years.

Claim.—1st. In a wind power engine, turn-table B, having in its upper end hinge P, through which moves hollow pump rod C, in combination with rudder bar E, arm F and stays R, substantially as and for the purpose hereinbefore described. 2nd. In a wind power engine, the hollow pump rod C, in combination with stationary tube D and fork N, substantially as and for the purpose hereinbefore set forth. 3rd. In a wind power engine, the plate S immovably fixed to frame, in combination with turn-table B and B' and vertical sector K, substantially as and for the purpose hereinbefore set forth. 4th. In a wind power engine, vertical standard O, with sector K, hinge P, in combination with rudder I and stays R, the whole substantially as and for the purpose hereinbefore set forth.

**CERTIFICATES OF THE PAYMENT OF FEES FOR FURTHER TERMS HAVE BEEN ATTACHED TO
THE FOLLOWING PATENTS.**

- | | |
|--|---|
| <p>649. E. S. KINGSTON and G. A. REYNOLDS, 2nd and 3rd 5 years of No. 22,231, from the 22nd day of August, 1880. Improvements on Metallic Lasts for Boots and Shoes, 2nd July, 1886.</p> | <p>658. THE JOHNSTON HARVESTER CO. (assignee), 3rd 5 years of No. 6,323, from the 20th day of July, 1886. Improved Gear Trip for Harvesters, 20th July, 1886.</p> |
| <p>650. W. STRINGER, 2nd 5 years of No. 13,077, from the 9th day of July, 1886. Machine for Registering the Measurement of Grain from Thrashing Machines, 5th July, 1886.</p> | <p>659. THE JOHNSTON HARVESTER CO. (assignee), 3rd 5 years of No. 6,330, from the 20th day of July, 1886. Improved Adjustable Pitman Connection for Reapers, Mowers, Harvesters and other Machinery, 20th July, 1886.</p> |
| <p>651. J. B. ROBERTSON, 2nd 5 years of No. 13,110, from the 16th day of July, 1886. Improvements on Tinners' Fire Pots for Heating Soldering Irons, 5th July, 1886.</p> | <p>660. THE JOHNSTON HARVESTER CO. (assignee), 3rd 5 years of No. 6,331, from the 20th day of July, 1886. Improvements in a Combined Lightener, Stripper and Guide for Bolts and Endless Chains, 20th July, 1886.</p> |
| <p>652. J. LARMONTH, (assignee), 3rd 5 years of No. 6,238, from the 10th day of July, 1886. Improvements on the Manufacture of Horse Power Links, 9th July, 1886.</p> | <p>661. THE JOHNSTON HARVESTER CO. (assignee), 3rd 5 years of No. 6,332, from the 20th day of July, 1886. Improvements in Bearings or Boxes for Harvesting Machines, 20th July, 1886.</p> |
| <p>653. G. W. and A. C. BRONSON, (assignees), 3rd 5 years of No. 6,321, from the 11th day of July, 1886. Improvements in Broom Corn Sizing Machines, 10th July, 1886.</p> | <p>662. THE JOHNSTON HARVESTER CO. (assignee), 3rd 5 years of No. 6,333, from the 20th day of July, 1886. Improvement in a Cased Rake Elbow for Reaper and Harvesters, 20th July, 1886.</p> |
| <p>654. T. GALLOWAY, 2nd 5 years of No. 13,126, from the 18th day of July, 1886. Improvements in Self-Dumping Horse Rakes, 10th July, 1886.</p> | <p>663. THE JOHNSTON HARVESTER CO. (assignee), 3rd 5 years of No. 6,334, from the 20th day of July, 1886. Improvement in a Hinged Double Shoe for Reaping and Harvesting Machines, 20th July, 1886.</p> |
| <p>655. J. W. PATERSON, 2nd 5 years of No. 13,101, from the 16th day of July, 1886. Improvements in Implements for Saturating Felt Roofing, 15th July, 1886.</p> | <p>664. J. H. PRATT, 2nd 5 years of No. 13,192, from the 29th day of July, 1886. Improvement on Paper Presses and Type-Writing Machines, 22nd July, 1886.</p> |
| <p>656. E. S. PIPER, 2nd 5 years of No. 13,128, from the 19th day of July, 1886. Improvements on Lamps, 15th July, 1886.</p> | <p>665. W. MCKENZIE, 2nd 5 years of No. 13,432, from the 29th day of September, 1886. Improvements in Fanning Mills, 29th July, 1886.</p> |
| <p>657. A. R. MOORE, 2nd 5 years of No. 14,704, from the 29th day of April, 1887. Improvements on Field Rollers, 19th July, 1886.</p> | <p>666. J. ADAMS, 2nd 5 years of No. 13,220, from the 8th day of August, 1886. Improvements on Waggon Axles, 30th July, 1886.</p> |

THE

CANADIAN PATENT OFFICE RECORD.

ILLUSTRATIONS.

Vol. XIV.

AUGUST, 1886.

No. 8.

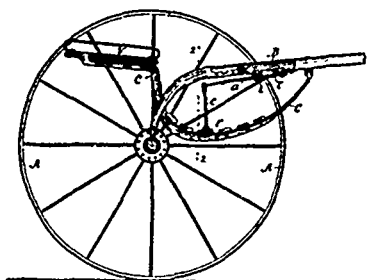


Fig. 1

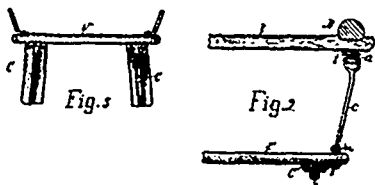


Fig. 1

Fig. 2

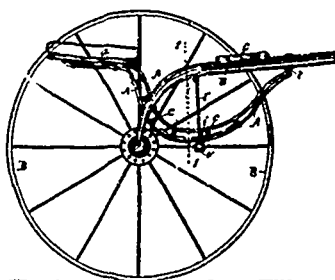


Fig. 1

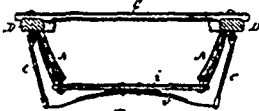
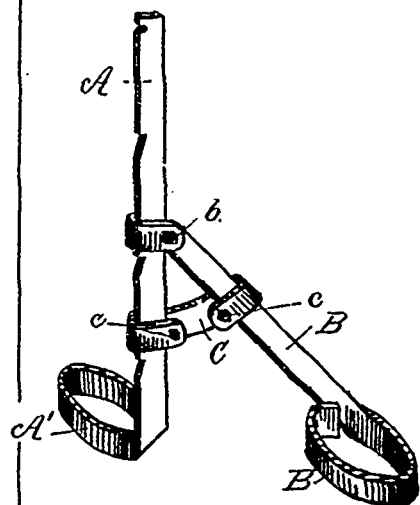


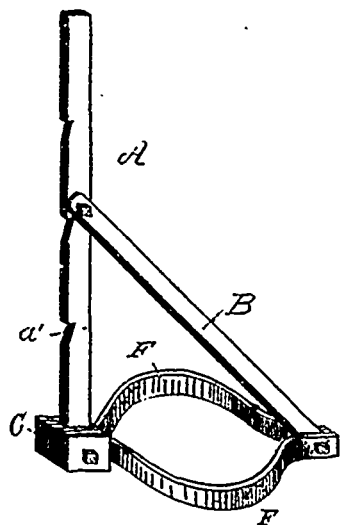
Fig. 2



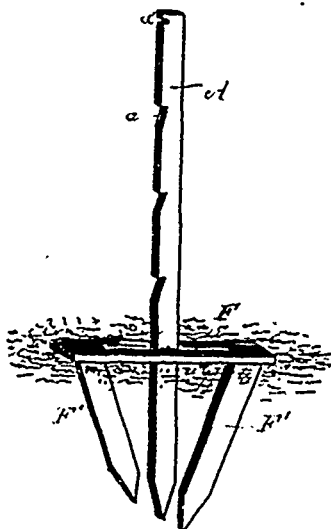
24404 Noyes' Road Cart.

24405 Noyes' Road Cart.

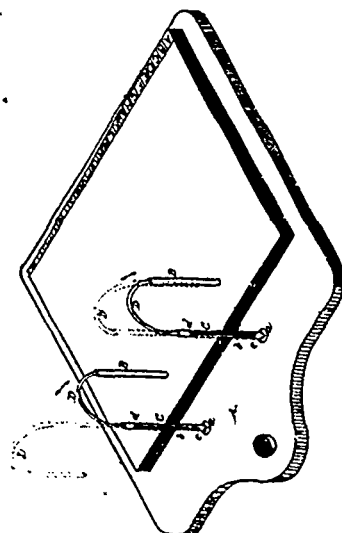
24406 Wilson's Fence Post.



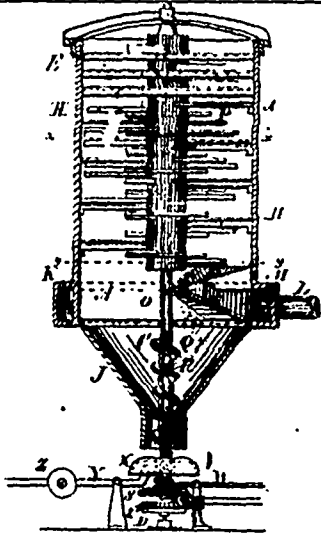
24407 Wilson's Fence Post.



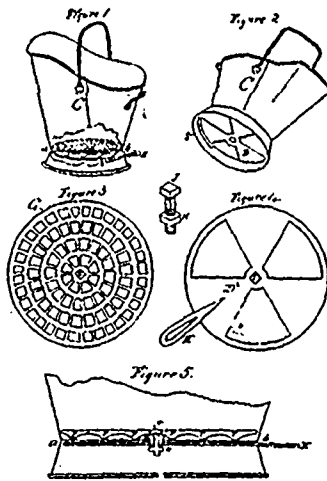
24408 Wilson's Fence Post.



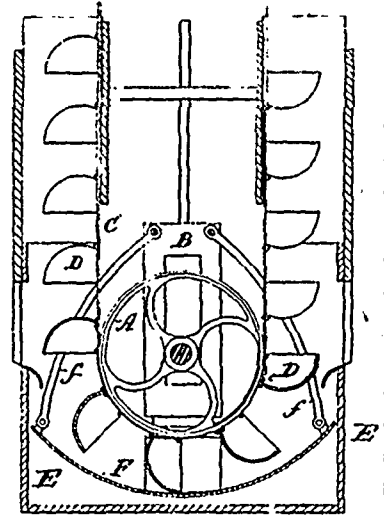
24409 Cooke's Aid for Letters, etc.



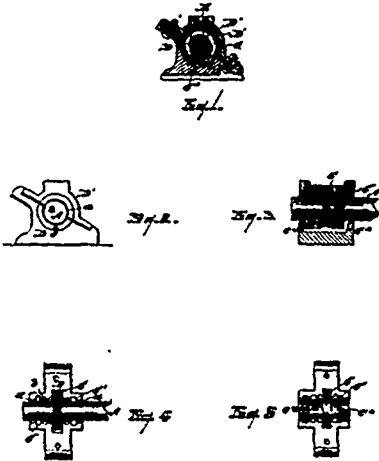
24410 Munzinger's Apparatus for Drying Wool, etc.



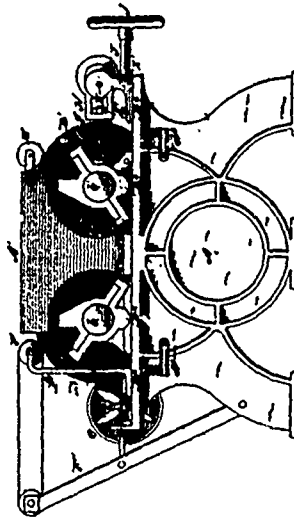
24411 Murphy's Coal Scuttle.



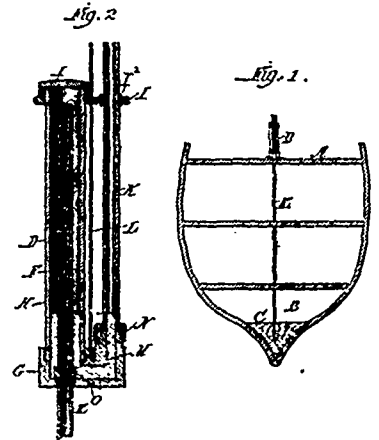
24412 Ross' Grain Elevator.



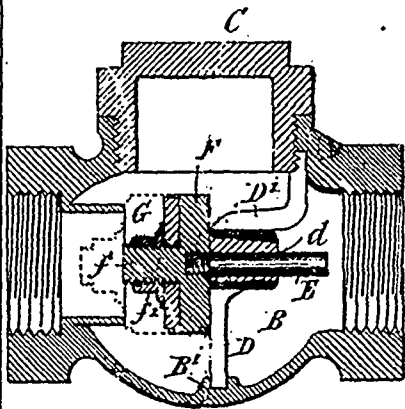
24413 Lauhoff's Lubricating Device.



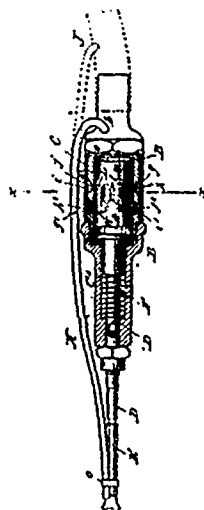
24414 Lauhoff's Machine for flattening Tobacco.



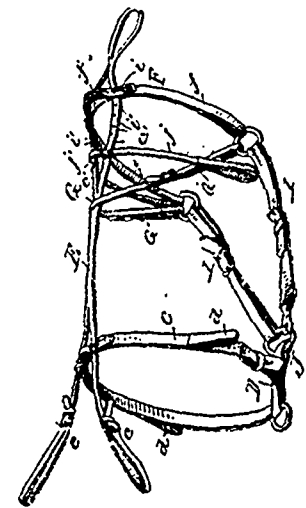
24415 Smothella's Bilgo Water Indicators.



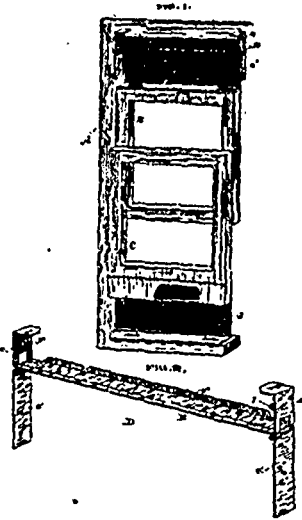
24417 Berry's Check Valve.



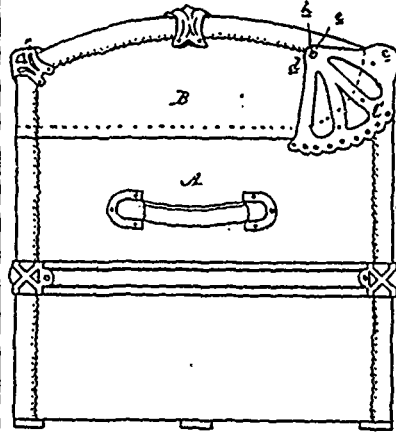
24418 McCoy's Pneumatic Machine.



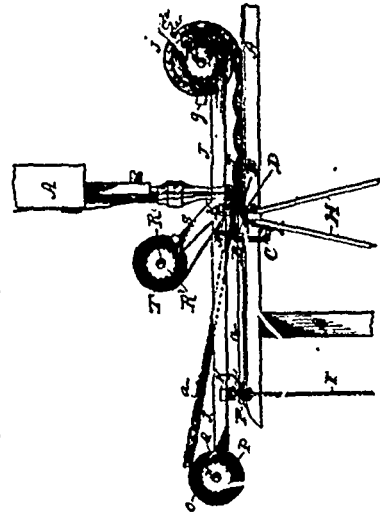
24419 Henry's Harness.



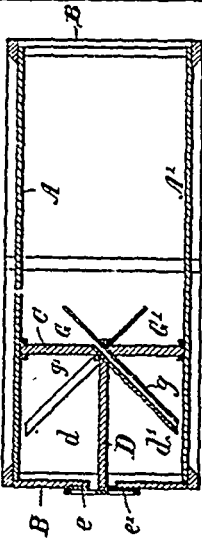
24420 Reynolds & Van Amringe's Window Screen.



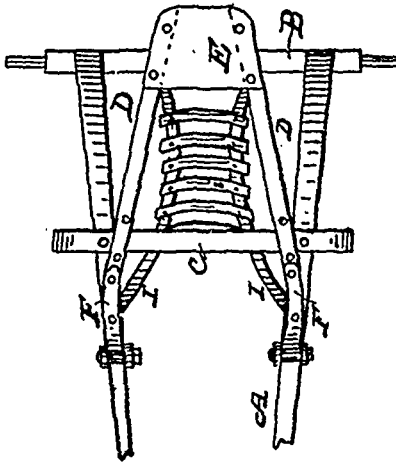
24421 Eggoman's Trunk.



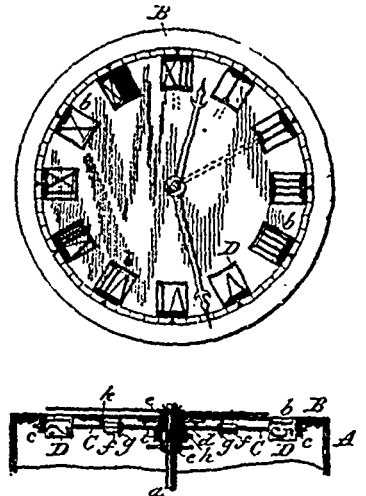
24422 Fraley's Quilting Attachment for Sewing Machines.



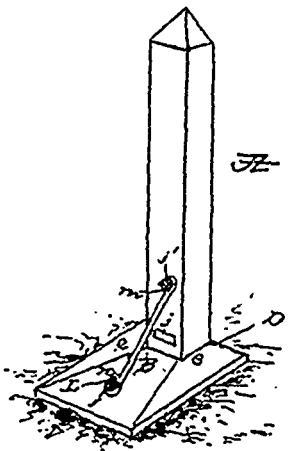
24423 Robertson's Dumping Scow.



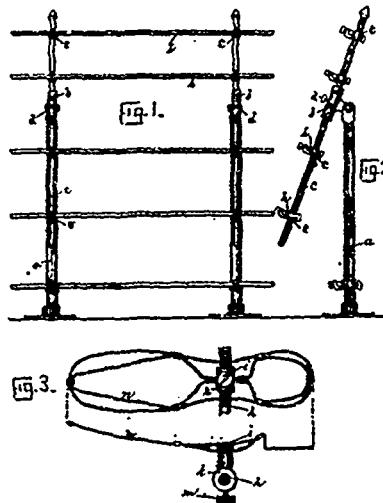
24425 O'Brien & Schmedlen's Road Cart.



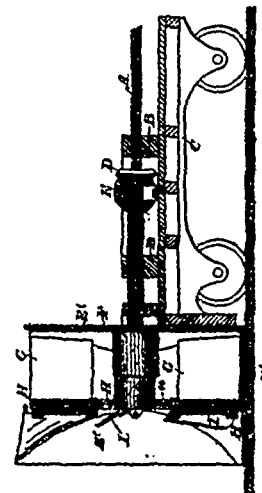
24426 Ethridge's Dial for Time Pieces.



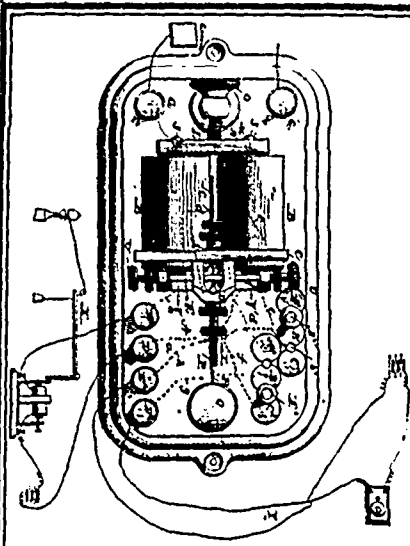
24427 Donaldson's Fence Post.



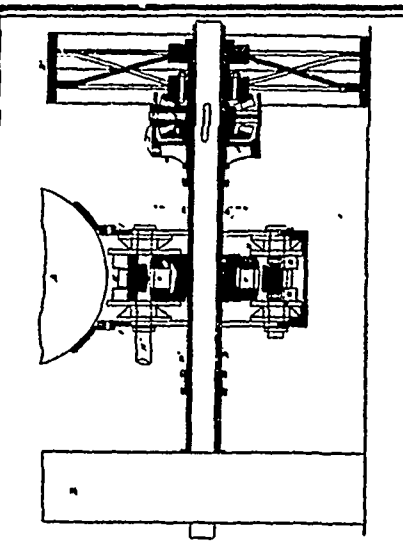
24428 Tracy's Display Frame.



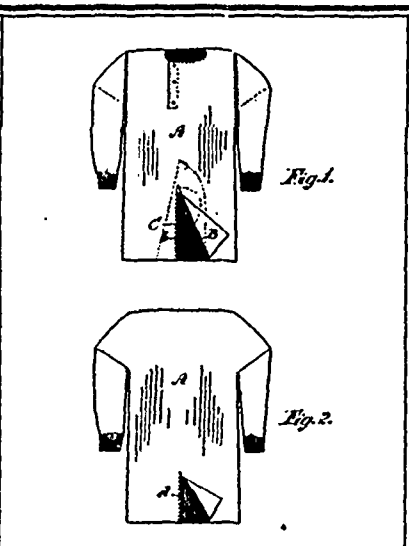
24429 Leslie's Snow Plough.



24430 Chaso's Telegraphic Relay.



24431 Greig, Shaw & Whittingham's Locking and Driving Gear.



24432 Finch's Shirt.

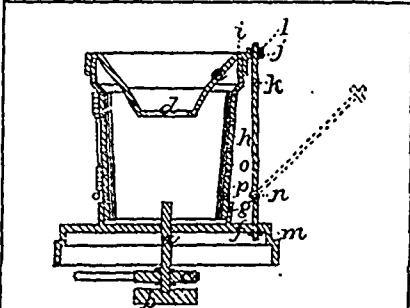


FIG. 1.

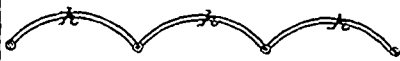
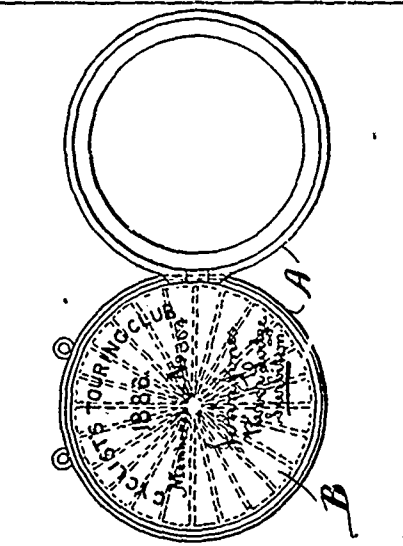
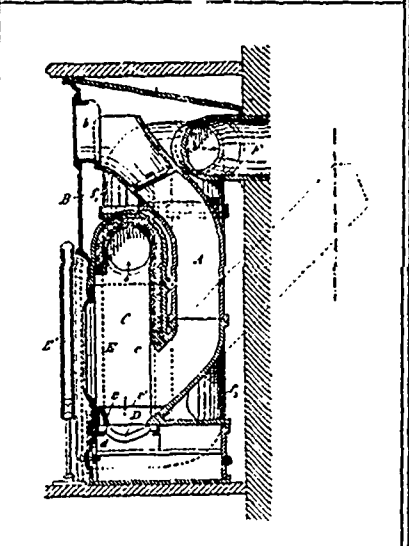


FIG. 2.

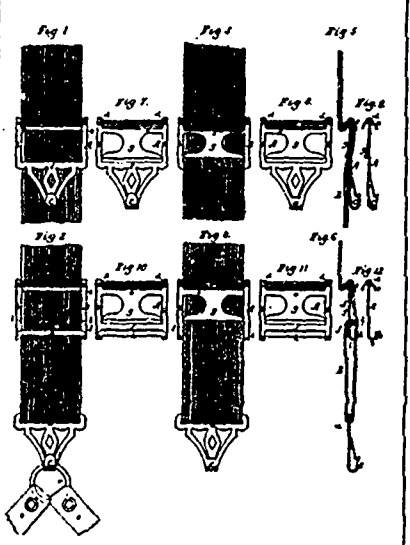
24433 Stevens' Pulp Machine.



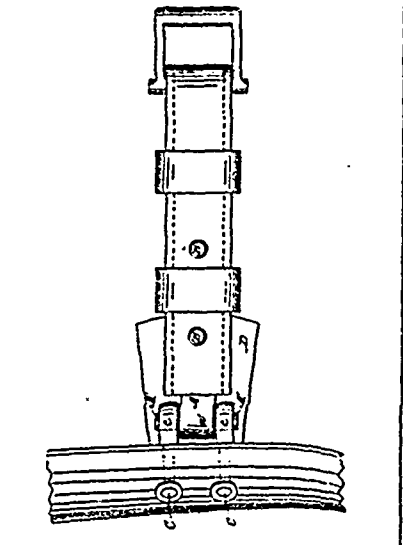
24434 Phillips & Sibleton's Badge for Clubs, etc.



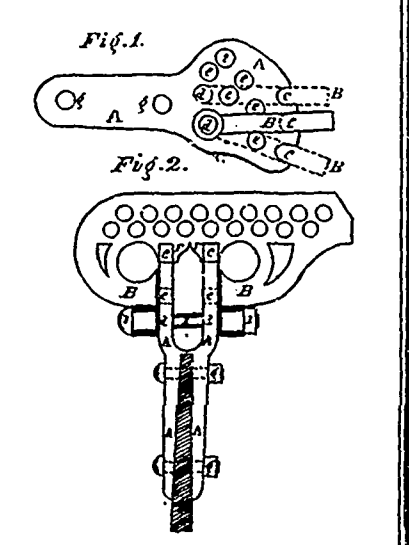
24435 Helm's Fire Place and Heating Apparatus.



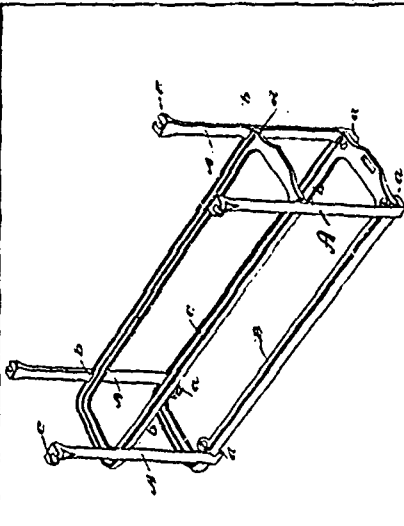
24436 Townsend's Suspender Buckle.



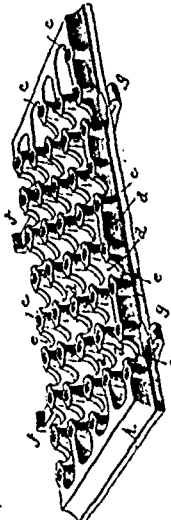
24437 Condon's Hame Tug.



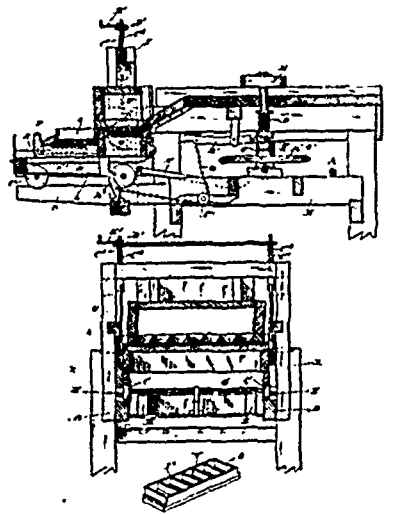
24438 Wilkinson's Jaw and Clevis for Ploughs.



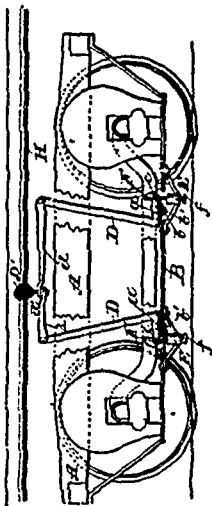
24439 Raymond's Metal Supports for table Drawers.



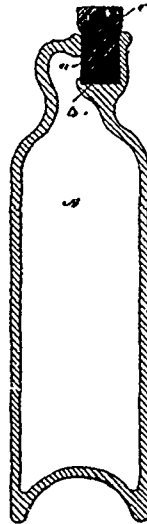
24426 Sinead's Furnace Grate



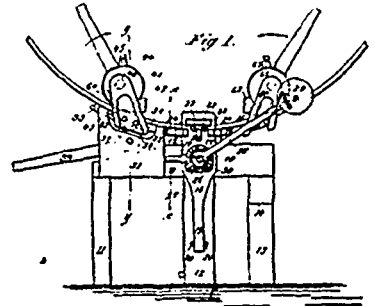
24441 Hunt's Brick Machine.



24452 Wescott & Bristol's Car Brake.



24443 Bothwell's Bottle.



24444 Styles' Tire Upsetter and Welder.

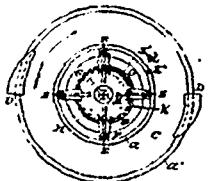


Fig. 1.

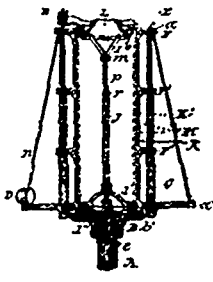
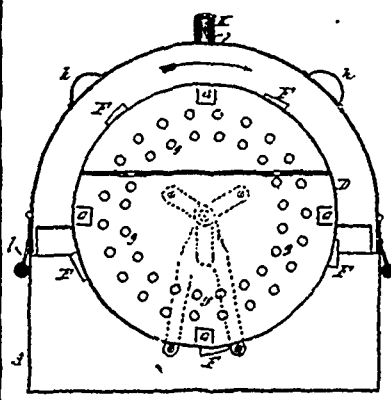
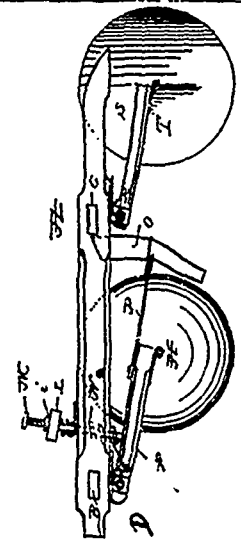


Fig. 2.

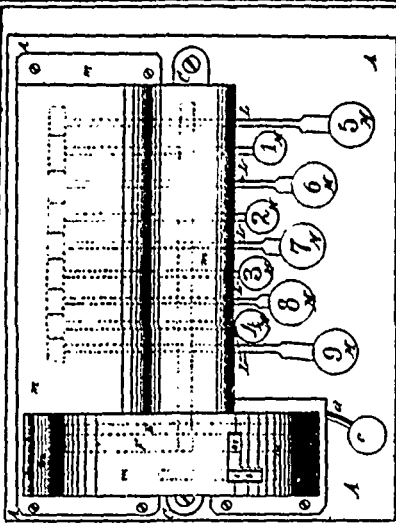
24445 Stevens' Machine for Moulding Pulp.



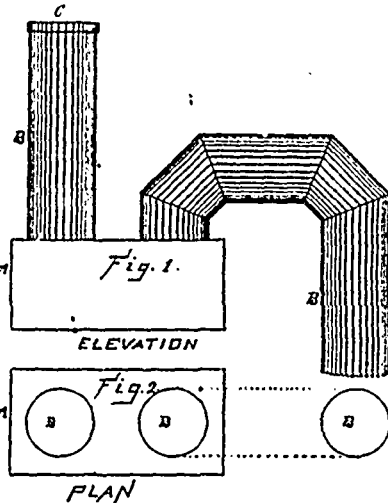
24446 Reynolds' Washing Machine.



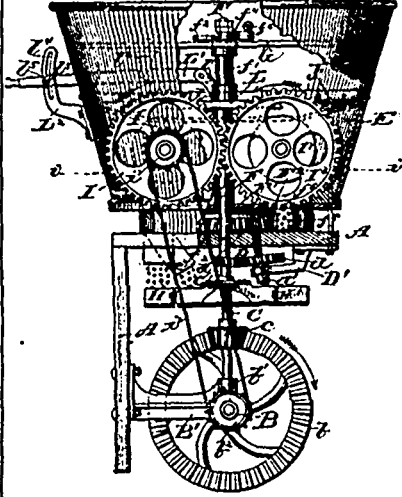
24447 Courson's Attachment for Grain Drills.



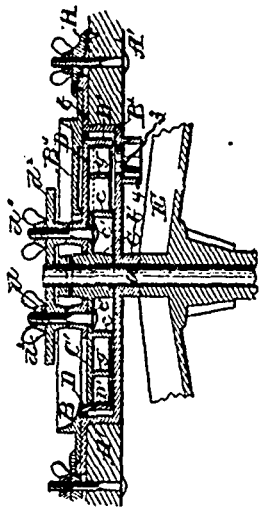
24448 Liadholm's Adding Machine.



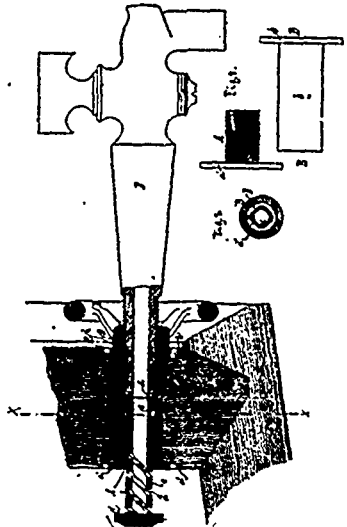
24449 Whites' Spark Arrestor.



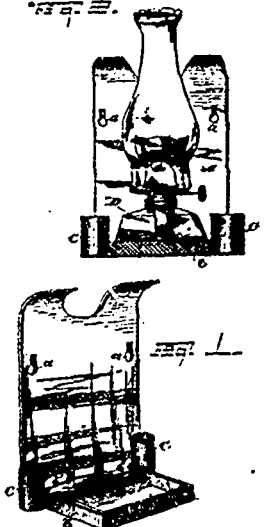
24450 Amundson & Field's Seeder.



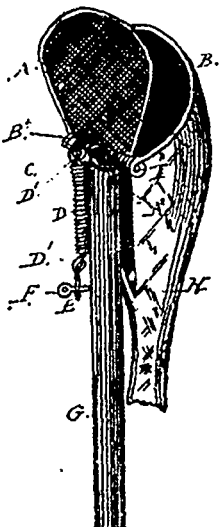
24451 Amundson & Henrichsen's Seed Sower.



24452 Fischer's Tap and Tap-Hole Bush.



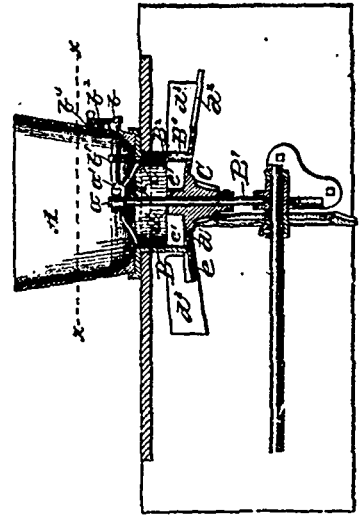
24453 Orhmesey's Lamp Bracket.



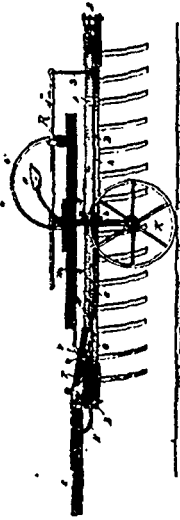
24454 Hill's Fruit Picker.



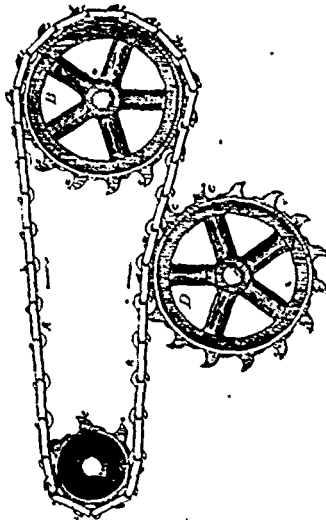
24455 Coulthard's Seed Drill and Broadcast Scatterer.



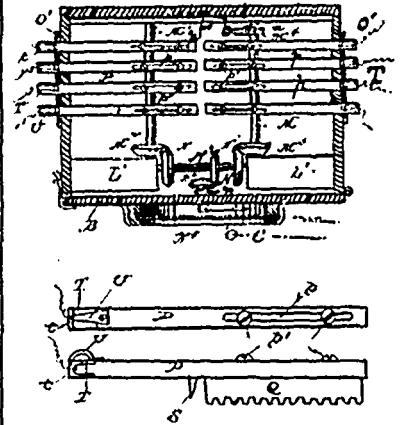
24456 Amundsen & Henrichsen's Force Feed Seed Sower



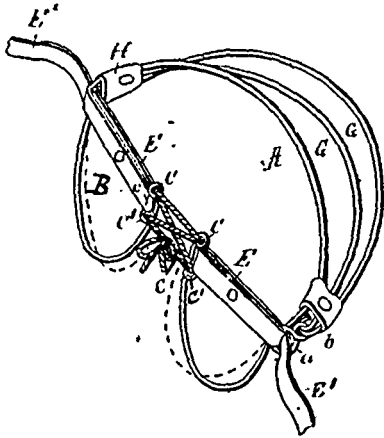
24457 Wheeler's Wheel Harrow.



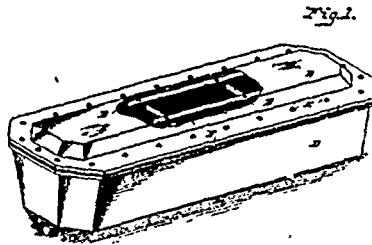
24458 Whiteley's Belt Gearing.



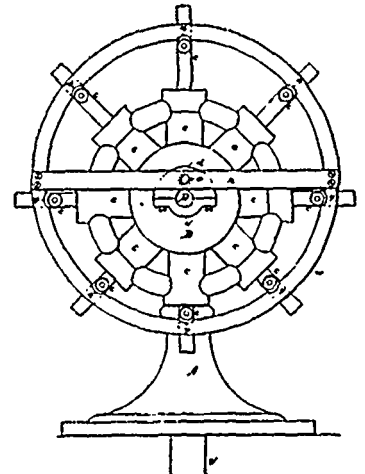
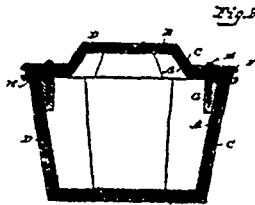
24459 Cross' Burglar Alarm.



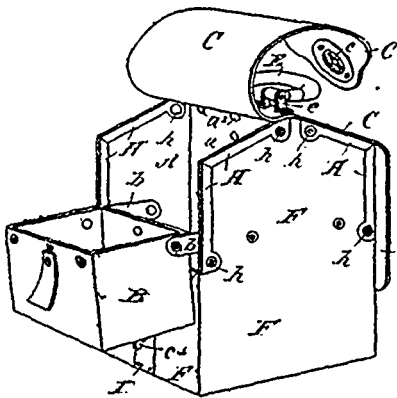
24460 Wartz's Bustle.



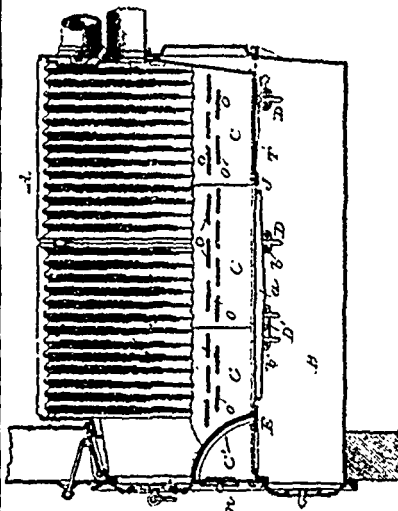
24481 Honso's Burial Case.



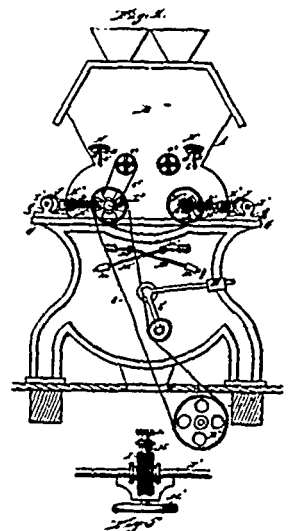
24462 Heuham's Motor.



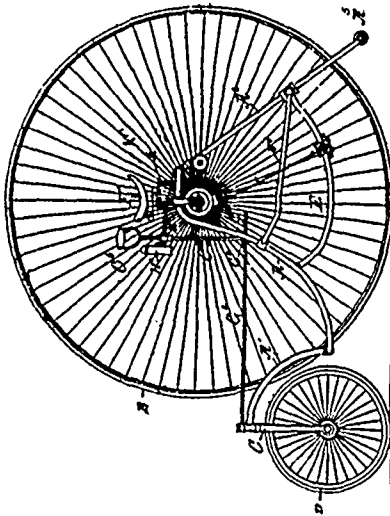
24464 Stephens' Physician's Buggy Case.



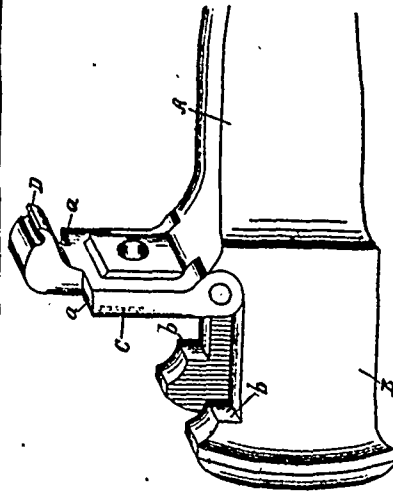
24465 Smead's Hot Air Furnace.



24466 Lathoff's Roller Mill.



24467 White's Tricycle.



24468 Rapor's Draw-Bar.

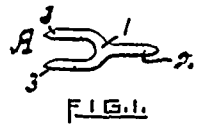


FIG. 1.

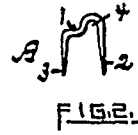


FIG. 2.

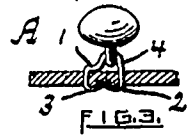
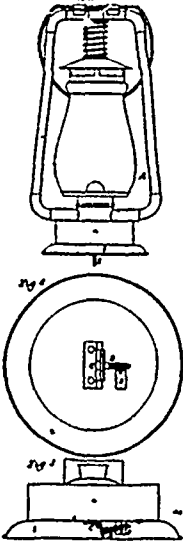


FIG. 3.

24469 Prentico's Button Fastenor.



24470 Lomax's Lantern.

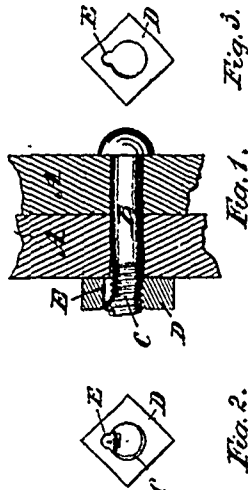
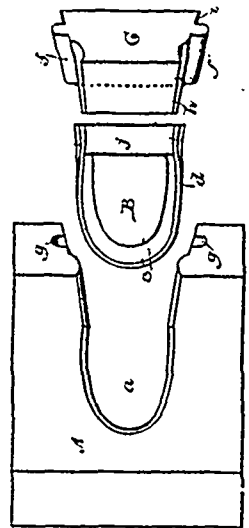


Fig. 3.

Fig. 1.

Fig. 2.

24471 Gaines' Nut Lock.



24472 Lo Gay's Mould for Forming Heels.

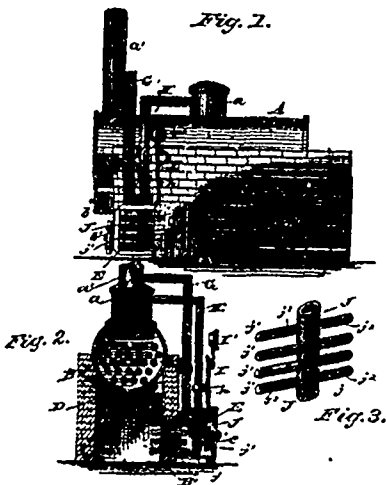
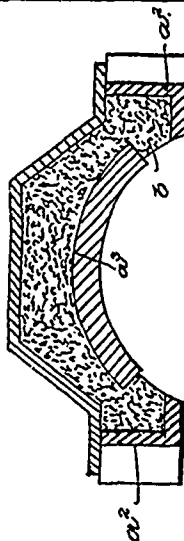


Fig. 1.

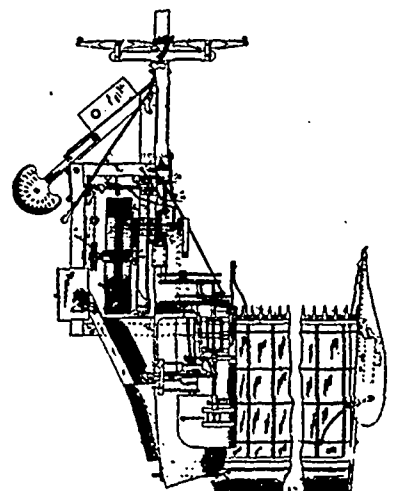
Fig. 2.

Fig. 3.

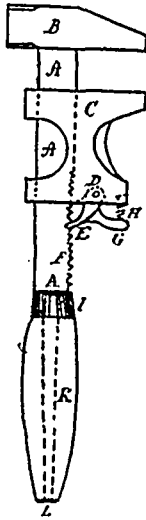
24473 Leadbeater's Steam Boiler Furnace.



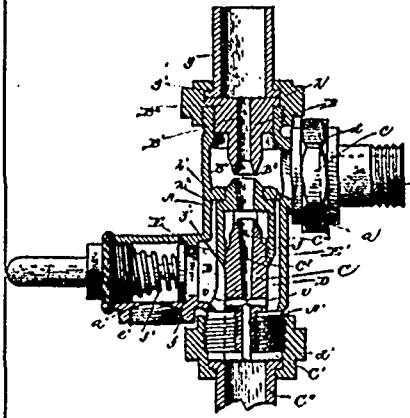
24474 Brigham's Journal Bearing.



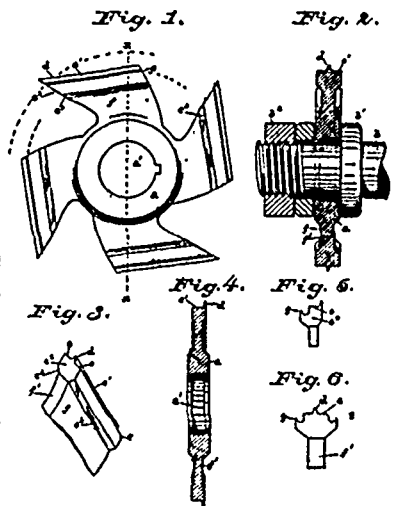
24475 Whitoley & Bayloy's Harvester.



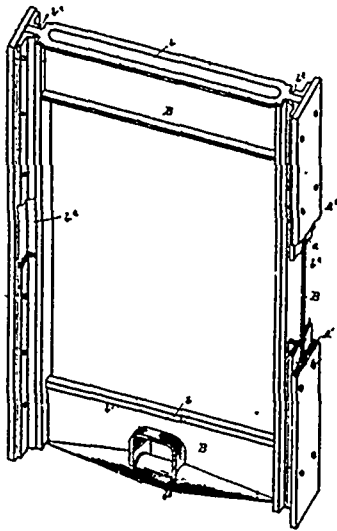
24476 McLim's Nut Wrench.



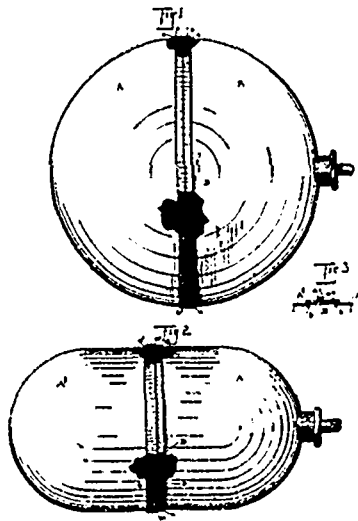
24477 Penberthy's Steam Injector.



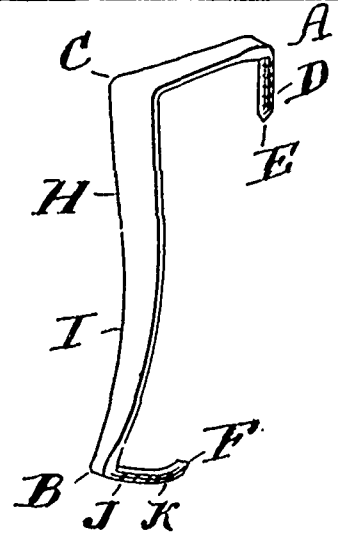
24478 Mahaffey's Cutter Head for Matching Machines.



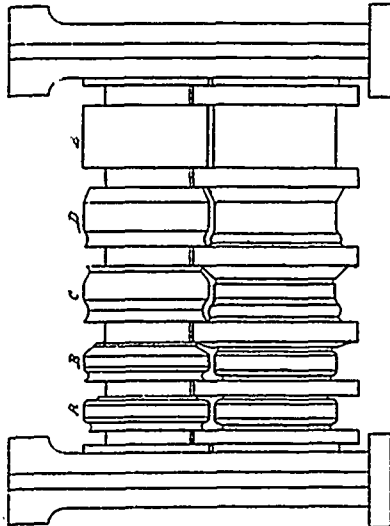
24479 Wilkin's Saw Sash for Sawmills.



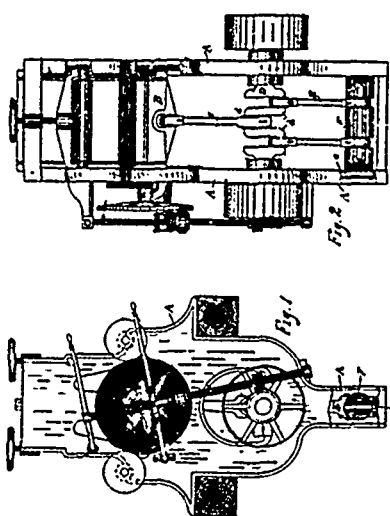
24480 Wright's Float.



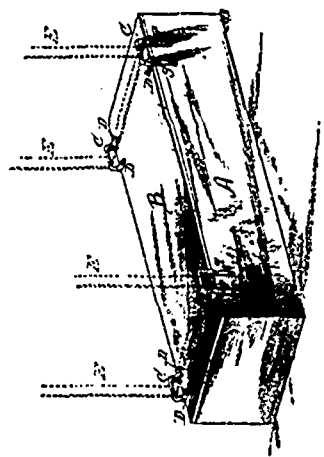
24481 Thomas' Tub and Box Cover Fastener.



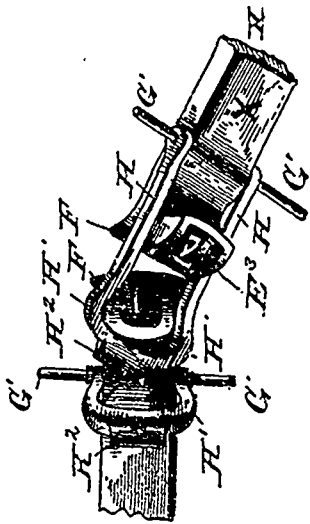
24482 Wassell's Mill for Reducing Iron.



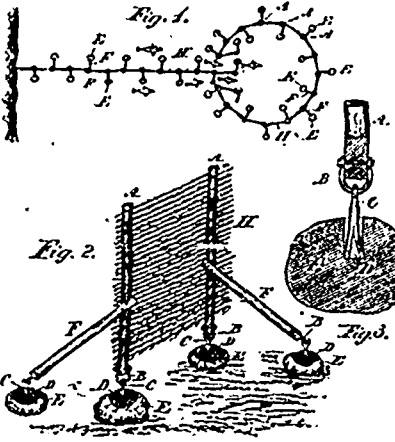
24483 Wilkin's Reciprocating Saw Mill.



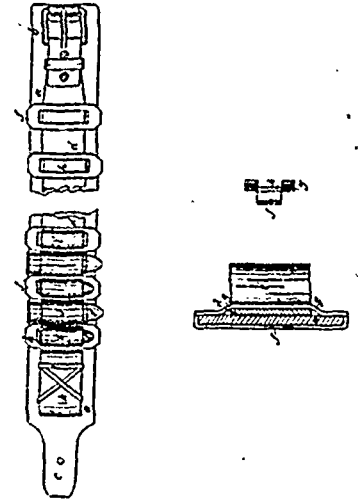
24484 Thayer's Box Fastening and Lowering Device.



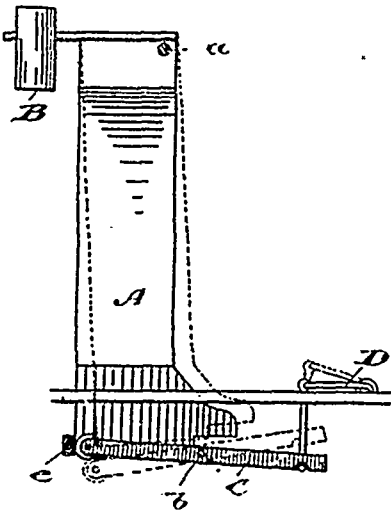
24485 Pennell's Car Coupler.



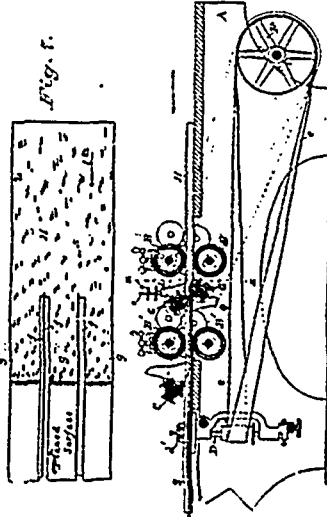
24486 McLean & McMahn's Fish-Weir.



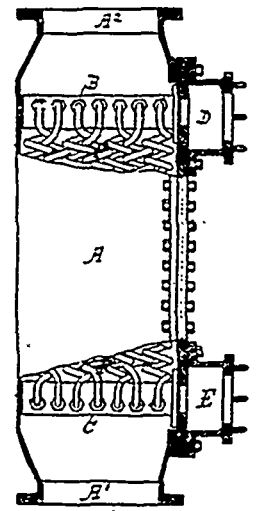
24487 Nosworthy's Cartridge Belt.



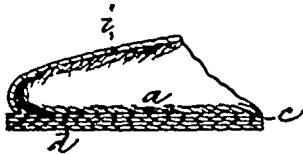
24488 Watson's Earth Closet.



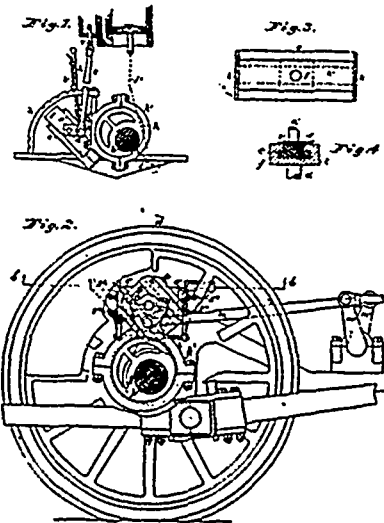
24489 Mahaffey's Planing and Matching Machine.



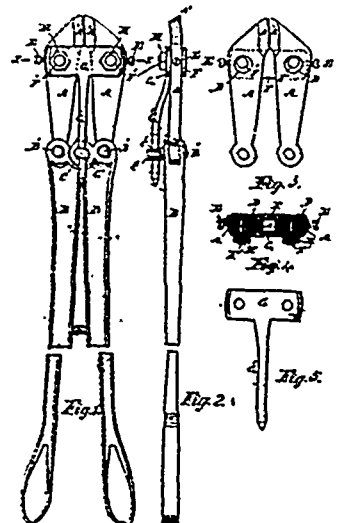
24490 Kirkaldy's Food Water Heater.



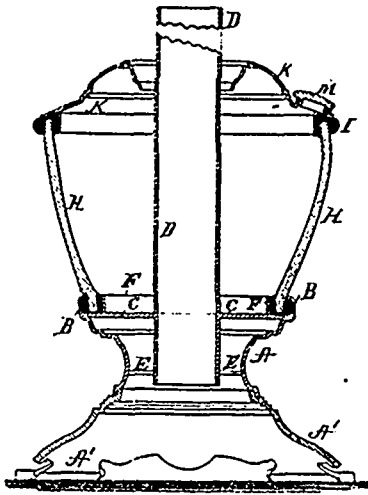
24491 Goldthwait's Insole for Boots and Shoes.



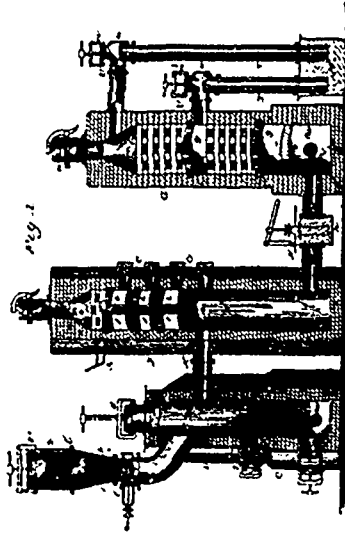
24492 Grimo's Valve Gear for Engines.



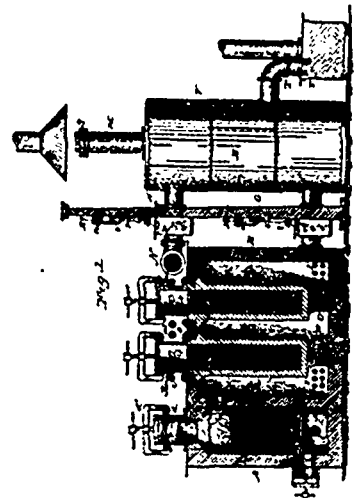
24493 Smith's Bolt Clipper.



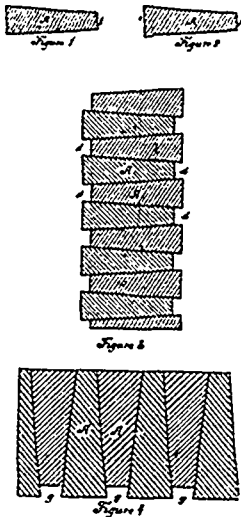
24494 Rhind's Lamp.



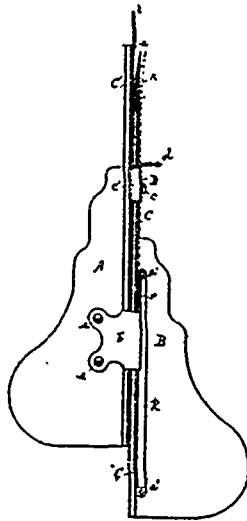
24495 Hanlon's Apparatus for the Manufacture of Gas.



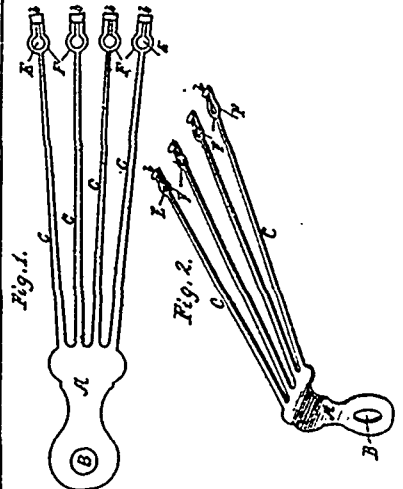
24496 Hanlon's Apparatus for the Manufacture of Gas.



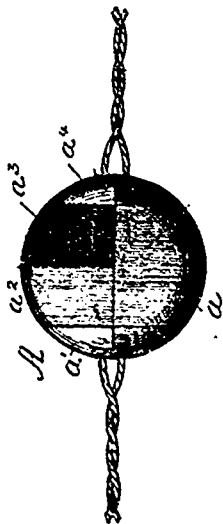
24497 Loret de la Penotière's Fireproof Structure.



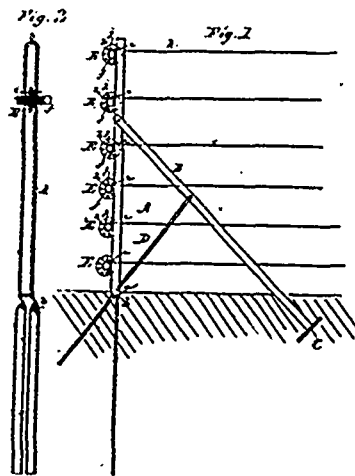
24498 Scofield's Hand Embroidery Machine.



24500 Loppentien's String-holder for Musical Instruments.



24501 Filimon's Optical Toy



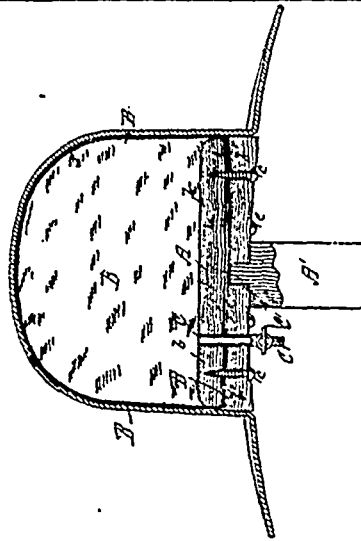
24502 Jones' Wire Fencing.



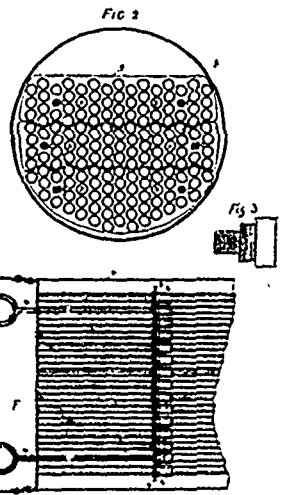
24503 Bendick's Stencil for Embroidery.



24504 Harman's Cushion and Guard for Pen-Holders, etc.



24506 Keator's Block for Hats.



24507 Smith & Melckjohn's Roller Cleaner.

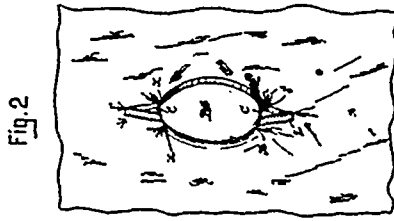


Fig. 2

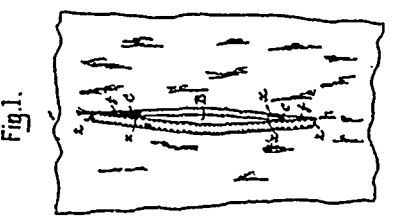
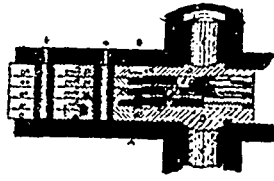
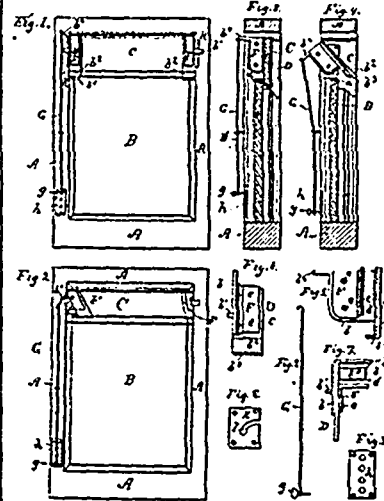
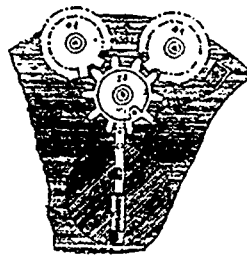


Fig. 1

24508 Jacobs' Circular Cloak.



24509 Colley's Apparatus for Printing Consecutive Numbers.



24510 Cohen's Ventilator.

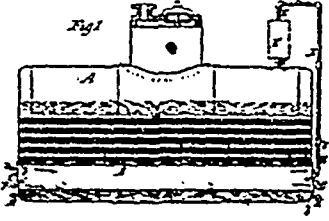


Fig. 1

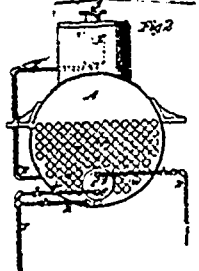
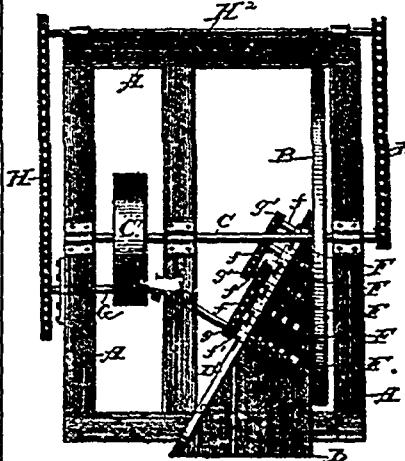
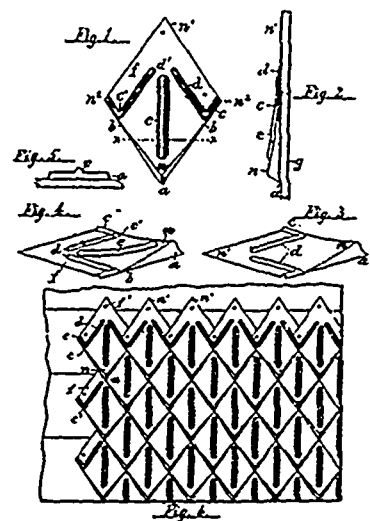


Fig. 2

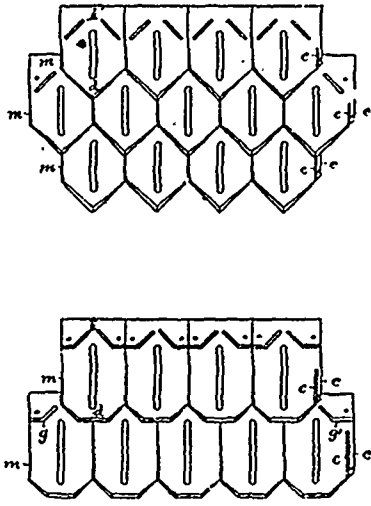
24511 Reynold's Means for Preventing Incrustation in Steam Boilers, etc.



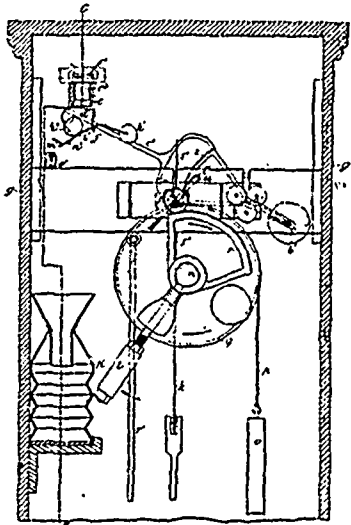
24512 Holbrook's Machine for Reducing Tan Bark



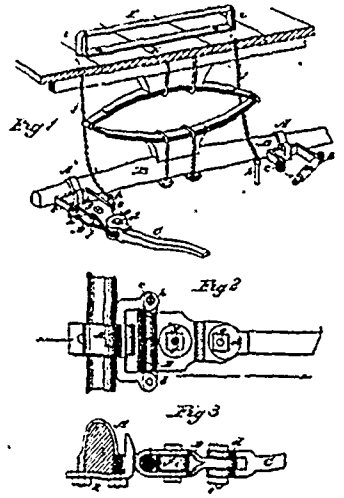
24513 Lester's Metalic Roofing Tile.



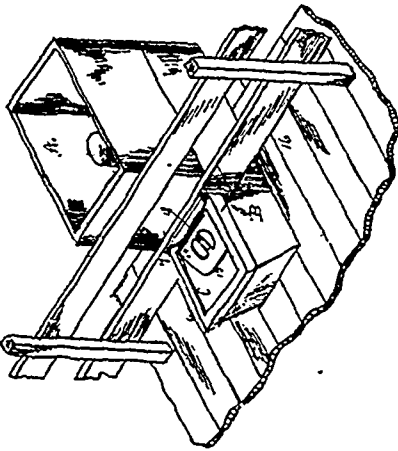
24514 Lefler's Metallic Roofing Tile.



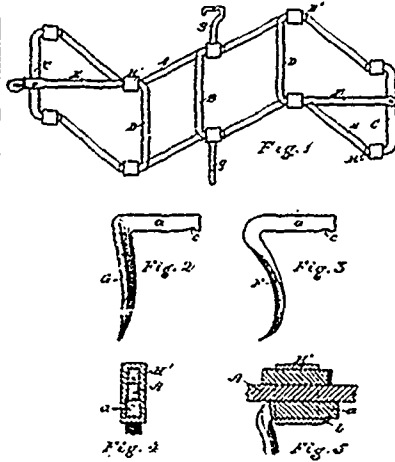
24515 Everitt's Weighing Machine.



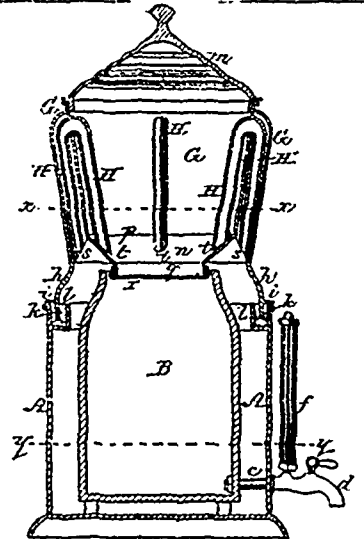
24516 Keenan & Gardner's Horse Detacher.



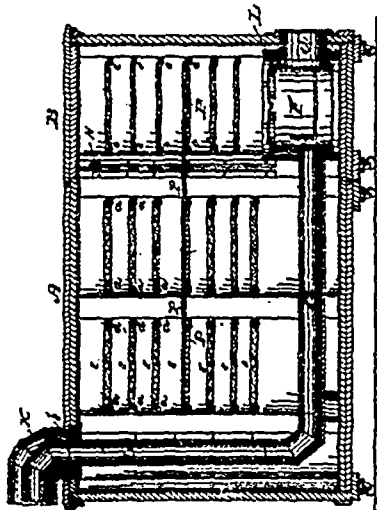
24517 Spencer's Apparatus for Watering Stock.



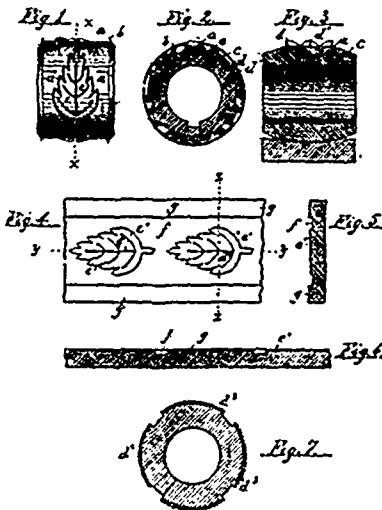
24518 Reeloy's Harrow.



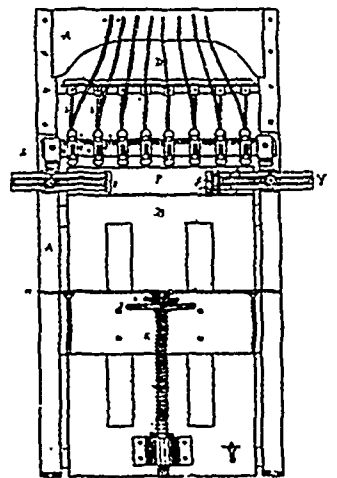
24519 Sauborn's Coffee Steamer.



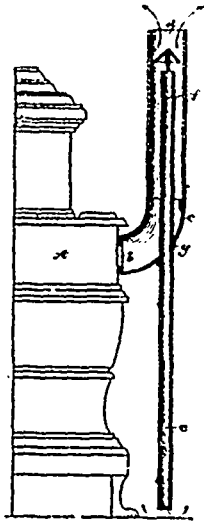
24520 Coleman's Drying Apparatus.



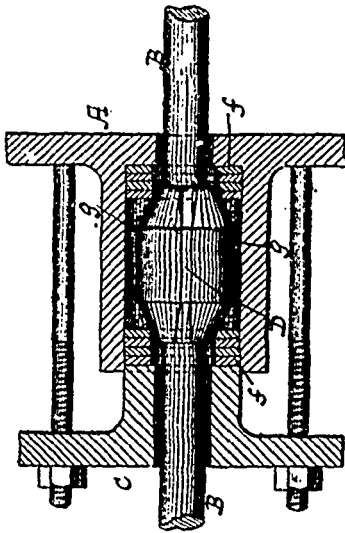
24521 Compton's Wood Ornamentation.



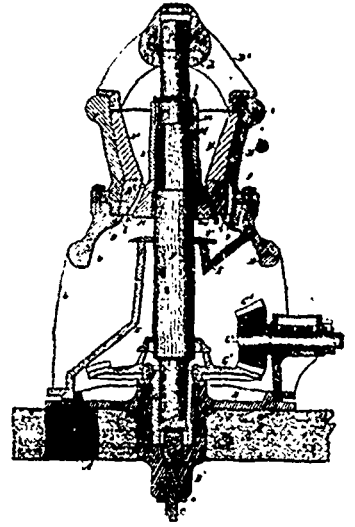
24522 Hutchinson's Machine for Nailing Cases.



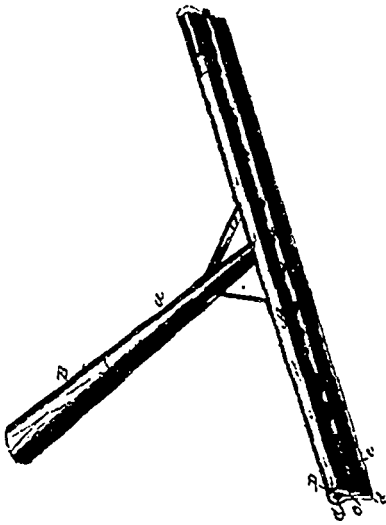
24523 Blinkerhoff's Stove Ventilator.



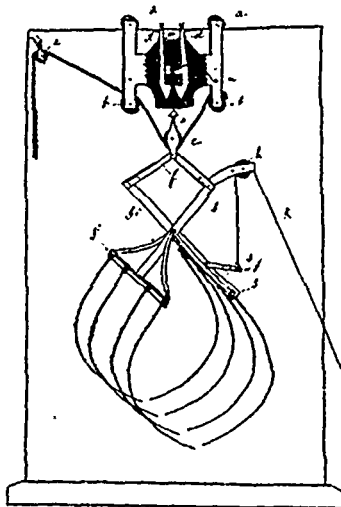
24524 Deed's Metallic Packing.



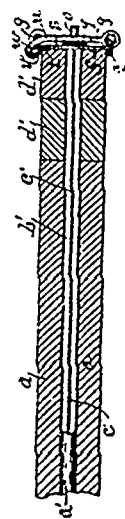
24525 Gate's Stone Breaker and Ore Crusher.



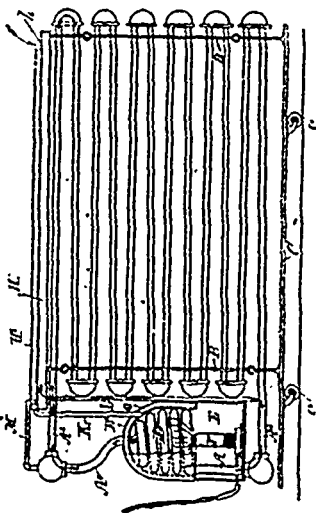
24526 Bourke's Window Cleaner.



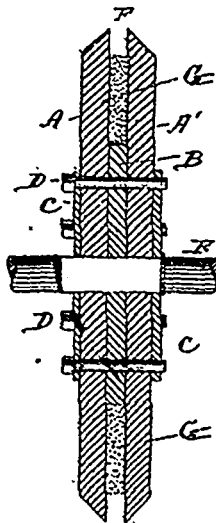
24527 Sullivan's Horse Hay and Grain Forks.



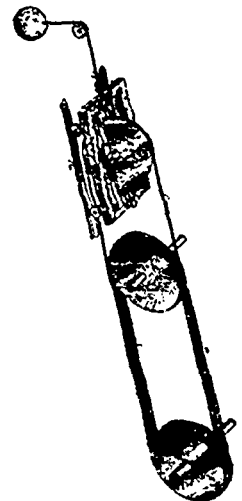
24528 Sims' Curtain Fixture.



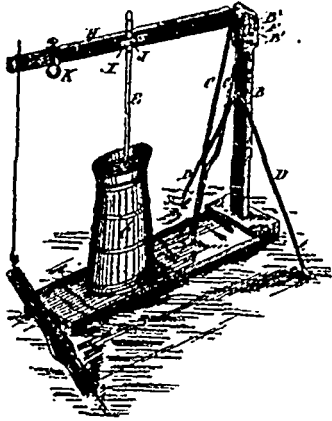
24529 Walker's Heating Apparatus.



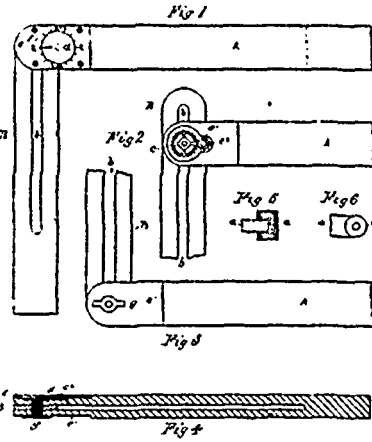
24530 Poulson's Device for Sharpening Mowing Machine Knives.



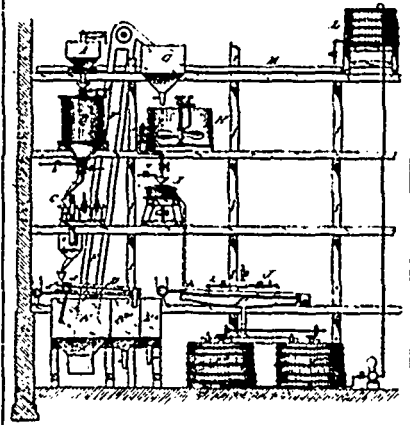
24531 Dodge's Mechanism for Transmitting Power.



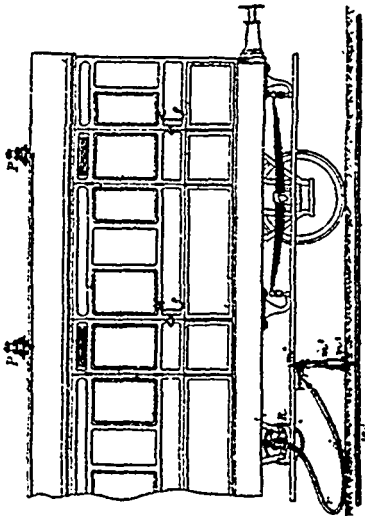
24532 Bloodow's Churn Power.



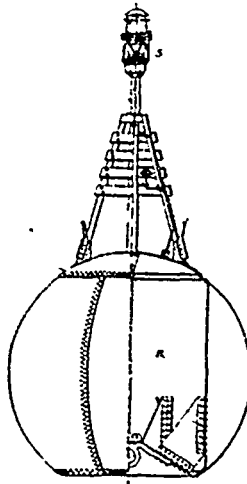
24533 Frless & Todd's Bevel.



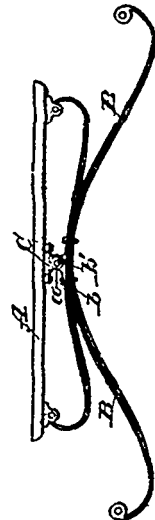
24534 Schuman's Manufacture of Starch.



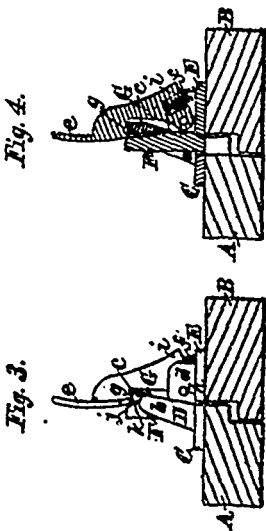
24535 Rickman's Apparatus for Lighting Railway Trains or Tramscars by Gas.



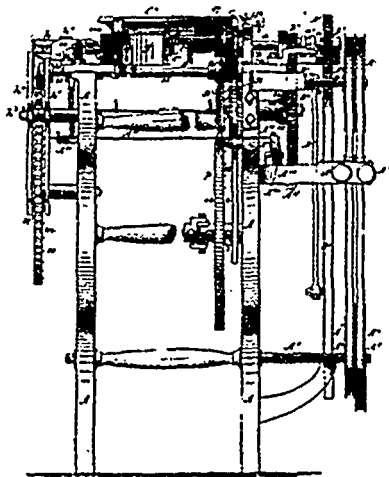
24536 Rickman's Apparatus for Lifting Buoys, etc., by Gas.



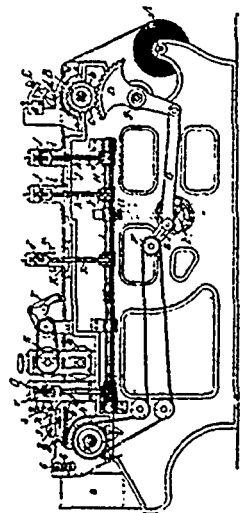
24538 Tecktonius' Vehicle Spring.



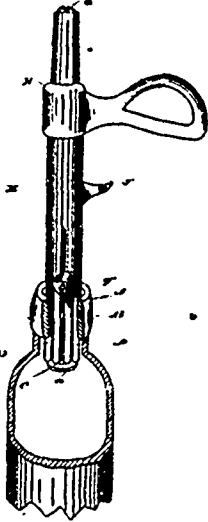
24539 Shaw's Sash Fastener.



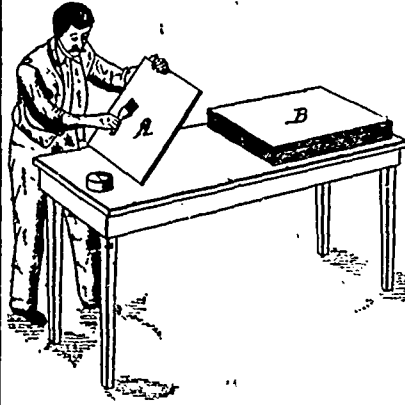
24540 Alken's Knitting Machine.



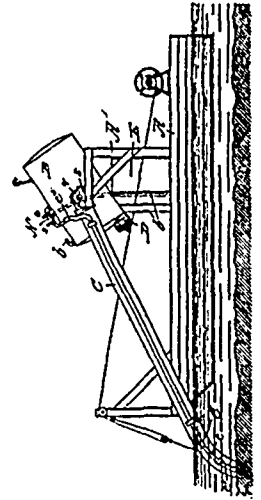
24541 Brown's Paper Box Machine.



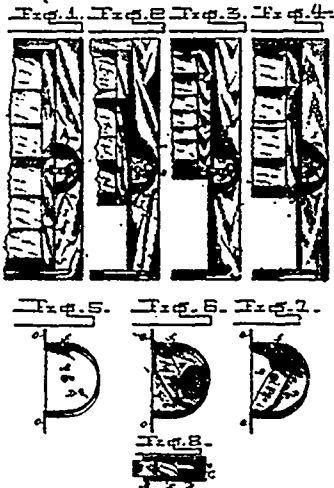
24542 Ely's Instrument for Removing Bottle Stoppers.



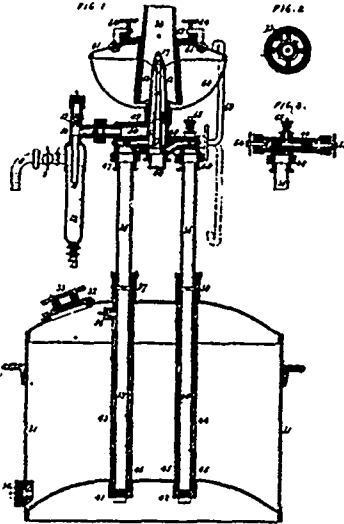
24543 Craig's Sheet Iron.



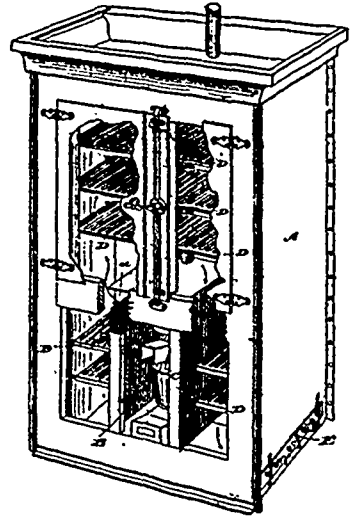
24544 Whittler's Dredge.



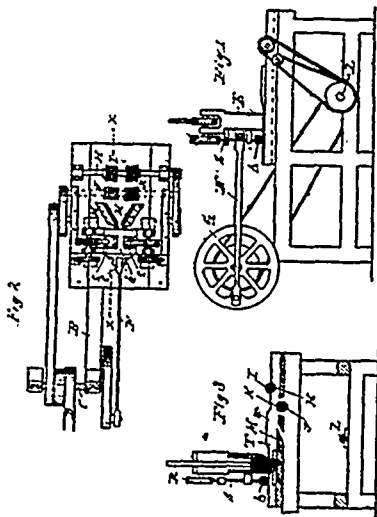
24545 Catlin's Window Sash Supporter.



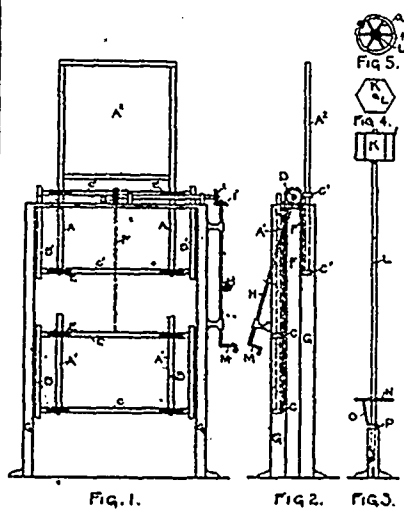
24546 Lyle's Spray Lamp.



24547 Hubbard's Cooking Oven.



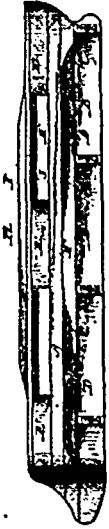
24548 Beer's Match Machine.



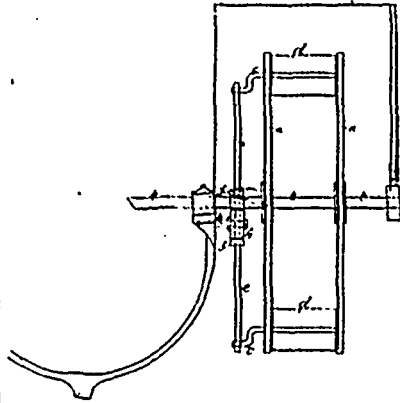
24550 Morrison's Target.



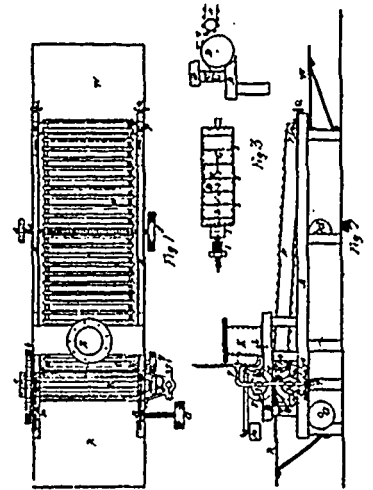
24551 Swindell's Construction of Ships.



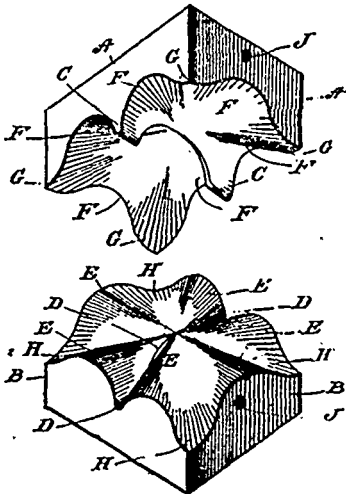
24552 Swindoll's Construction of Ships.



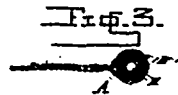
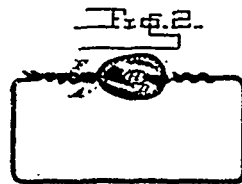
24553 McClenaghan & Helrich's Stern Wheel.



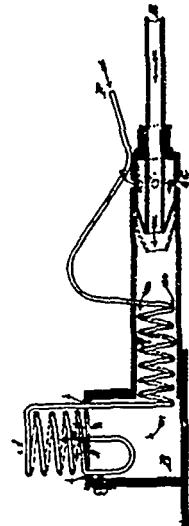
24554 Watt & Henry's Machine for Waxing Paper.



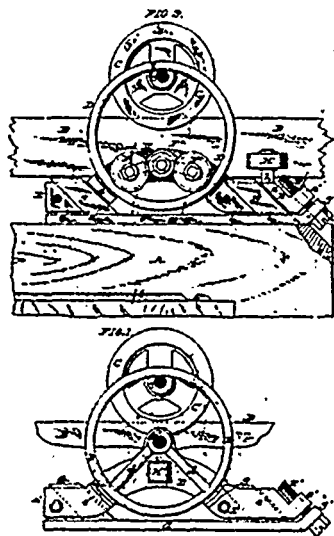
24555 Hiscott's Art of Making Seamless Dress Shields.



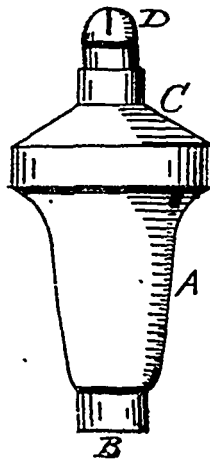
24556 Ackloy's Adjustable Bale Tie.



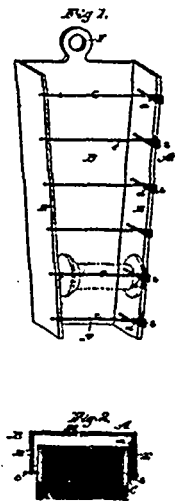
24557 Caspiatu's Gas and Steam Furnace.



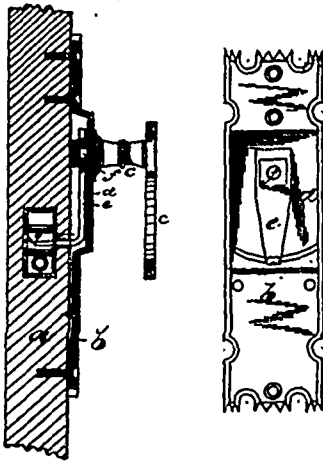
24558 Bullard's Parlor Door Hanger.



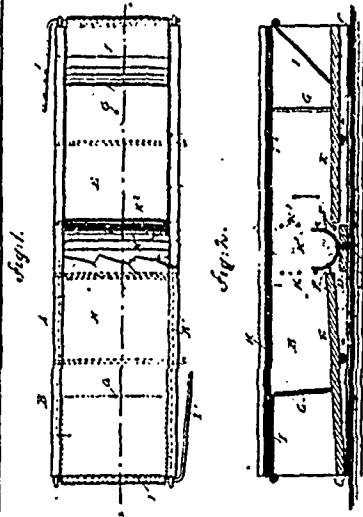
24559 Henderson's Gas Burner.



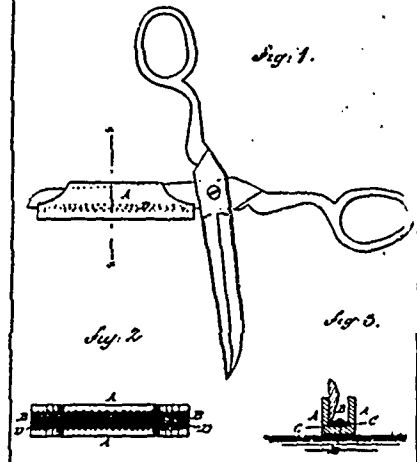
24560 Baker's Spool-Holder.



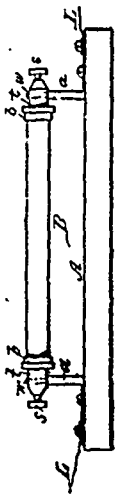
24561 Gilbert's Latch Operating Device.



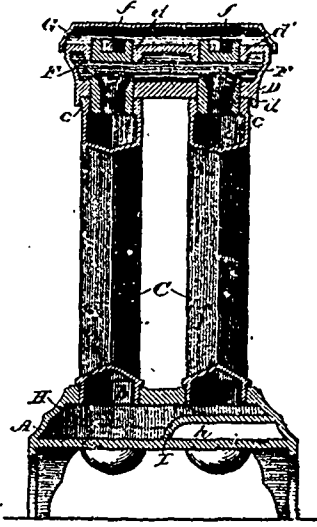
24562 Snell's Animal Trap.



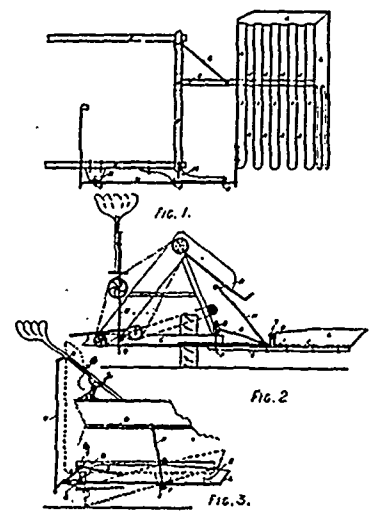
24563 Hilton's Scissors-Sharpener.



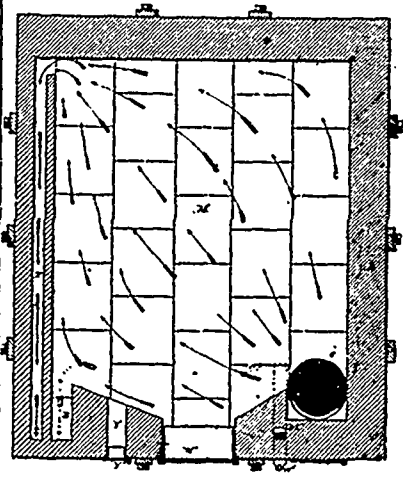
24564 Vall's Apparatus for Protecting Electrical Instruments.



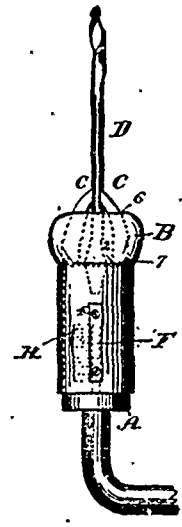
24565 Thompkins & Matlock's Steam and Hot Water Radiator.



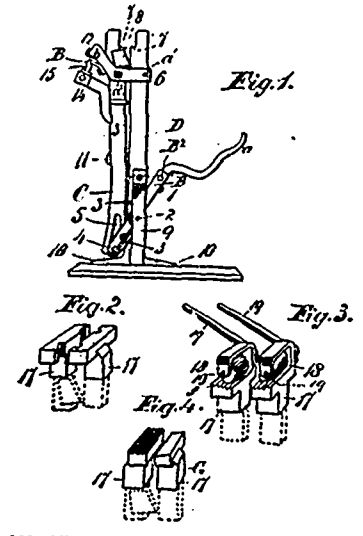
24566 Lowry's Sheaf Carrier for Harvesters.



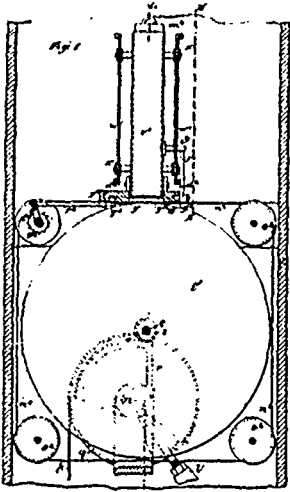
24587 Hall's Baking Oven.



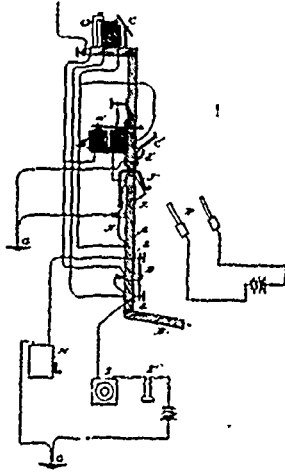
24568 Packwood's Bit Stock.



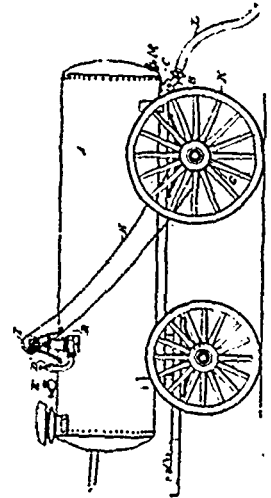
24569 Oliver's Compound Metal Working Machine.



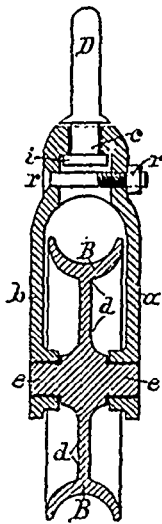
24570 Everitt's Weighing Machine.



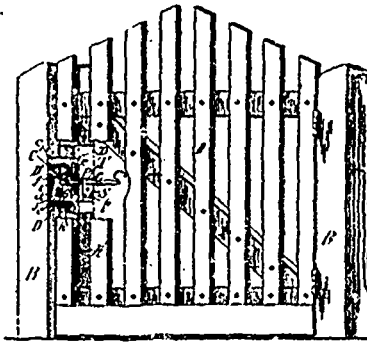
24571 Enholm's Telephone Exchange.



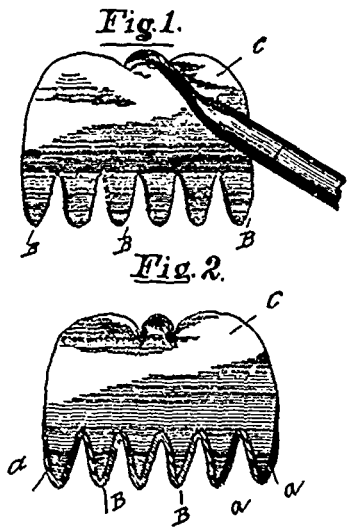
21572 Dowsy's Odorless Excavating Apparatus.



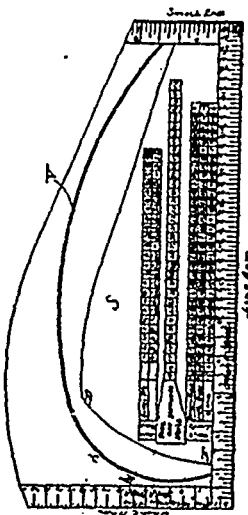
24573 Beard's Pulley Block.



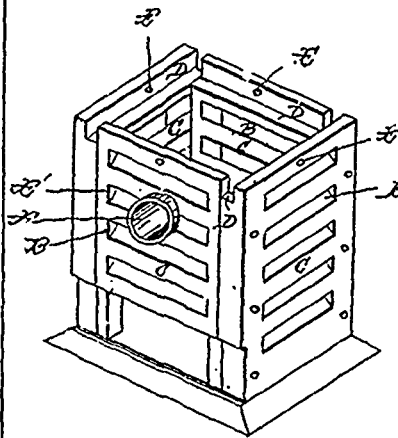
24574 Duls' Gate Latch.



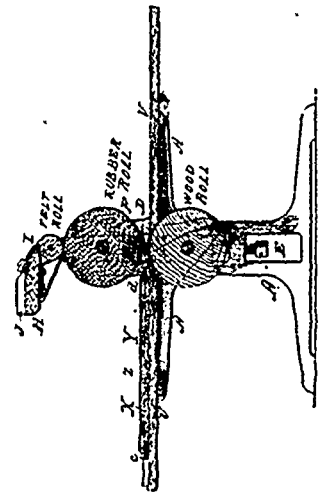
24575 Boothby's Hoe.



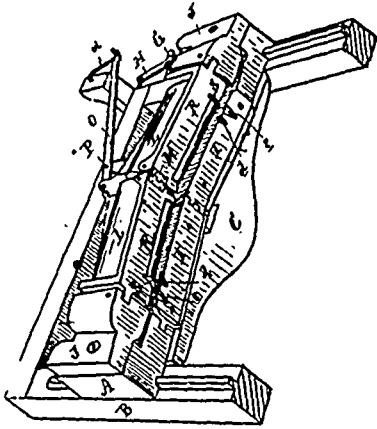
24576 Lewis' Dress Chart.



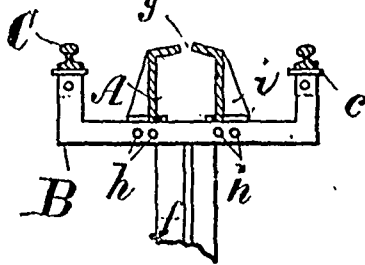
24577 Mulhollen's Separating Building Section.



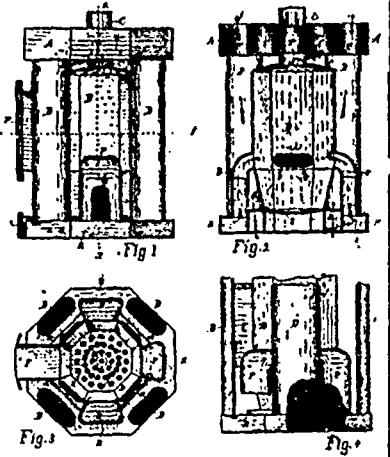
24578 Travis' Stenciling Machine.



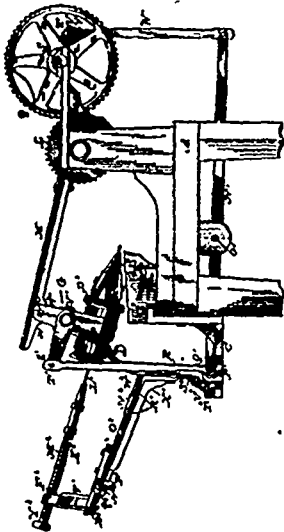
24579 Waterman & Chapman's Machine for Cutting Sheet Staves.



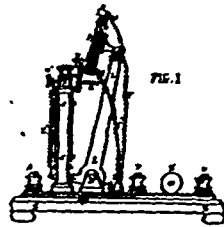
24581 Shobo's Cable Railway.



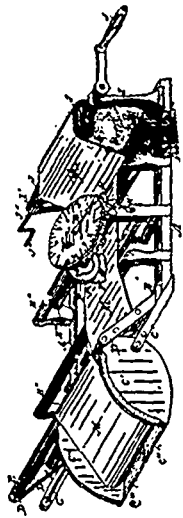
24582 Burligano's Hot Air Furnace.



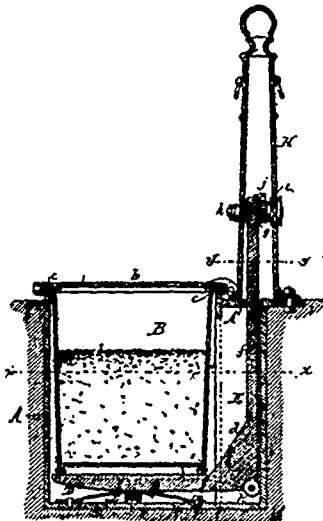
24583 McKim's Nail Plate Feeding Machine.



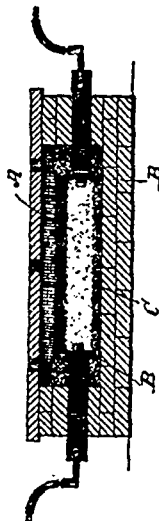
24585 DeCombettes' Telephonic Apparatus.



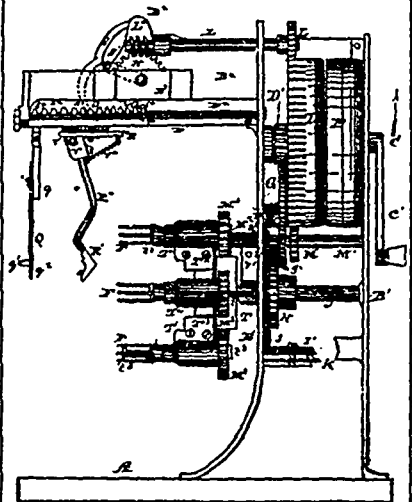
24586 Sandford's Cloth Measuring Machine.



24587 Haynes & Clark's Garbage Receptacle.



24588 Cowles' Electric Furnace.



24589 Oaks' Apple Parer, Corer and Slicer.

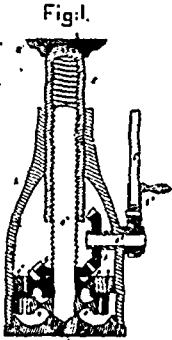
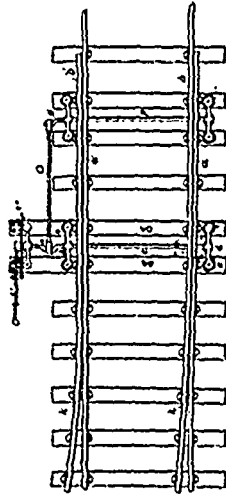


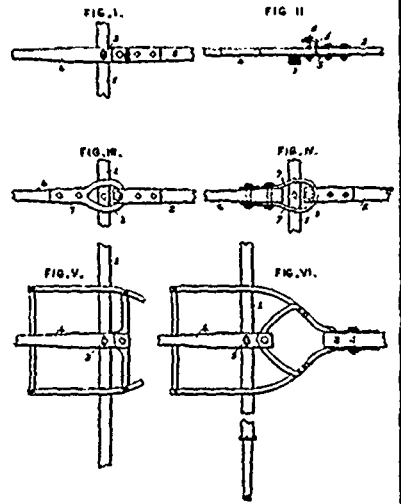
Fig:2.



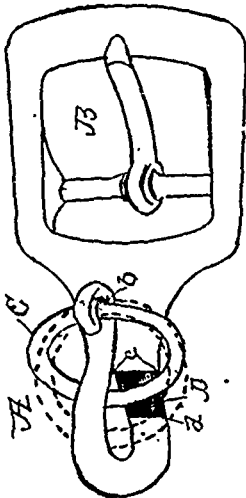
24590 Sleeper's Lifting Jack.



24591 Duggan's Railway Switch.



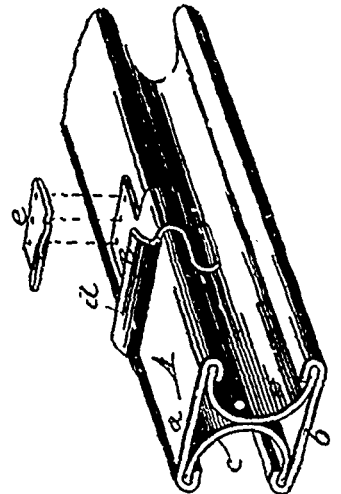
24592 Delker's Running Gear for Waggon.



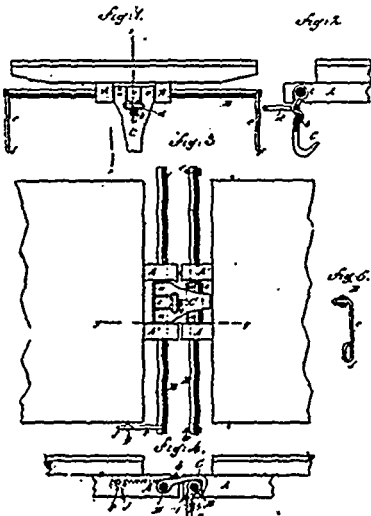
24593 Roblison's Harness Hook.



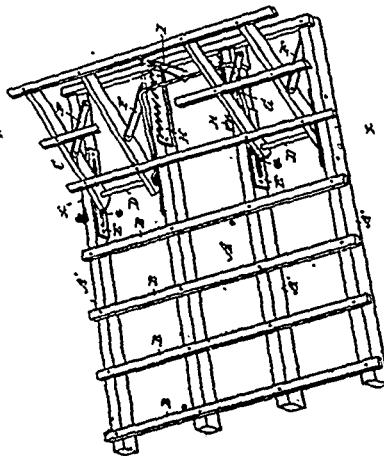
24594 Johnson's Waggon Gear.



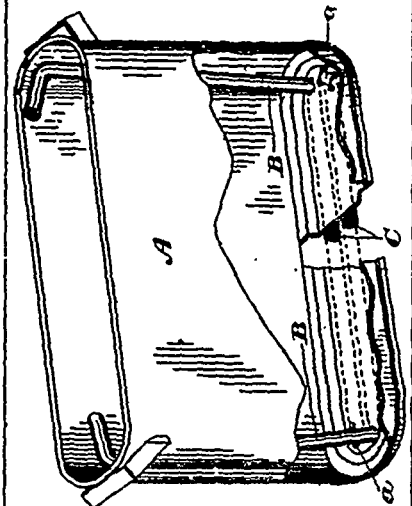
24595 Whipple's Metallic Railway Tie, etc.



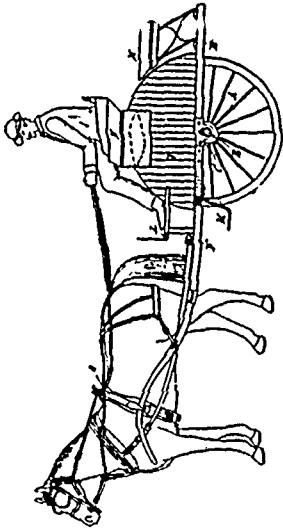
24596 Carruthers' Car Coupler.



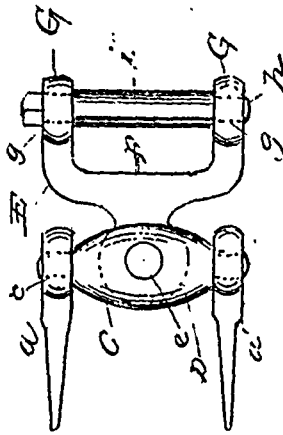
24597 Shepherd's Rod Bottom.



24598 Cass' Clothes Washer.



24599 Greeno's Vehicle.



24603 Sherman's Flame Trap.

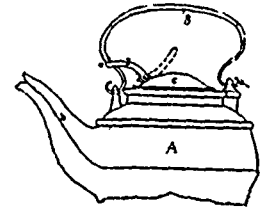


Fig. 1.

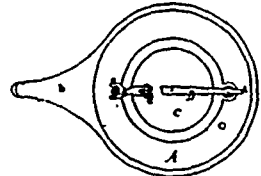
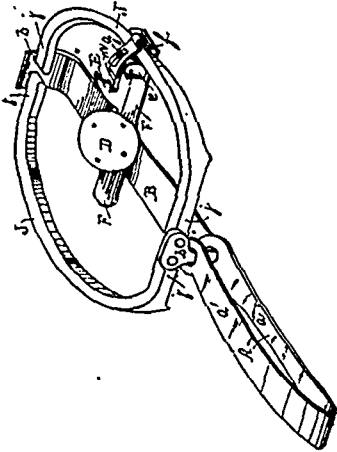


Fig. 2.

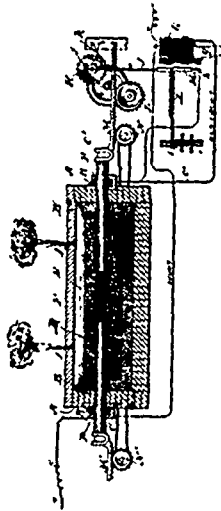


Fig. 3.

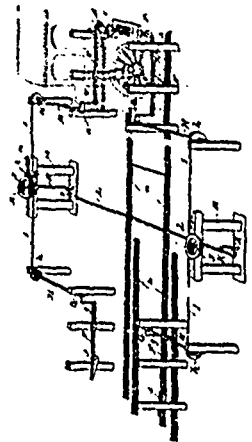
24601 Foulkes' Kettle.



24602 Bruckart's Animal Trap.



24603 Cowley's Electric Furnace.



24604 Doll's Device for Operating Train Switches.



Fig. 1.



Fig. 2.

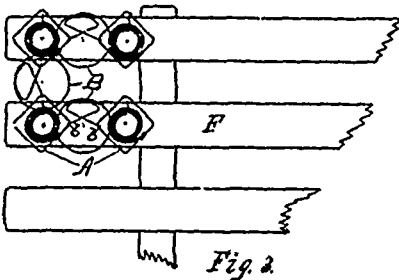
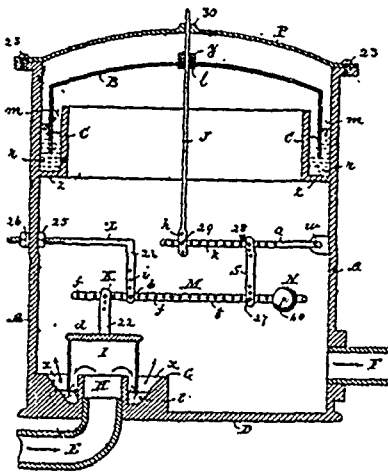


Fig. 2

24605 Johnson's Bed Spring and Spring Bed.



24606 Rossney's Gas Regulator.

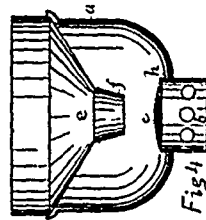


Fig. 1.

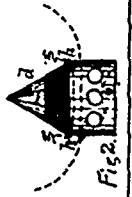


Fig. 2.

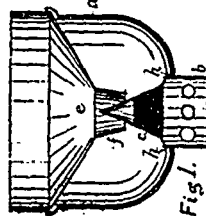
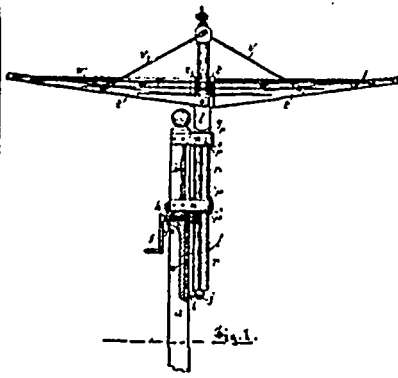


Fig. 1.

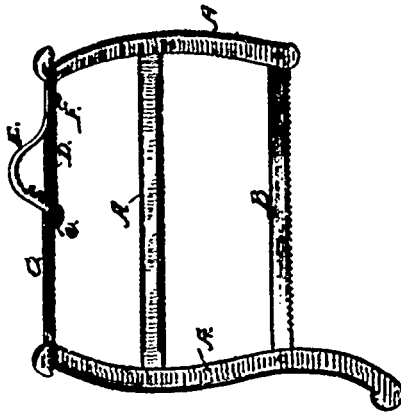


Fig. 3.

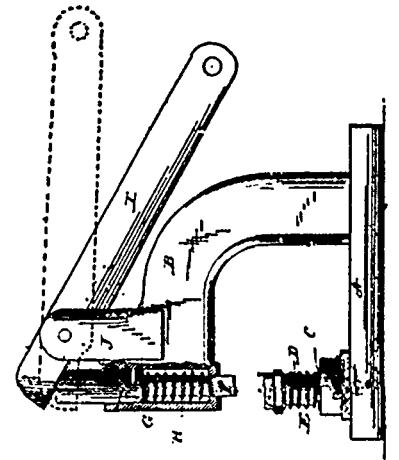
24607 Abell's Liquid Strainer.



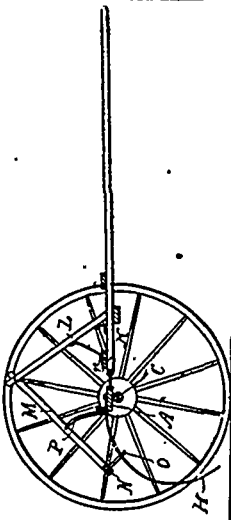
24603 Waldron's Clothes Drier.



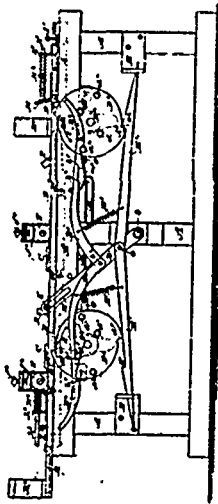
24609 Clark's Saw Adjuster.



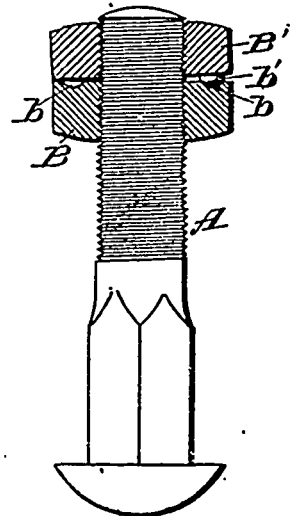
24610 Train's Press for Setting Shoe Lacing Hooks.



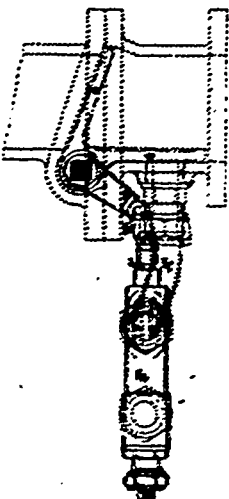
24611 Gale's Horse Hay Rake.



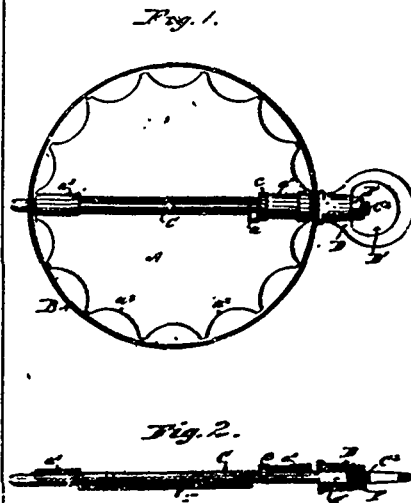
24612 Cook's Shingle Shaving Machine.



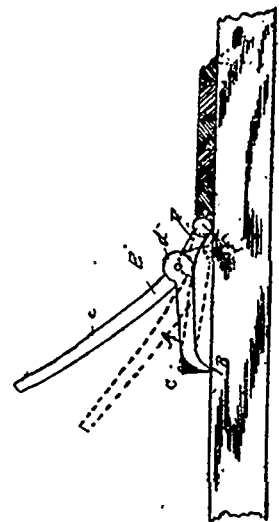
24613 Burdick's Nut Lock.



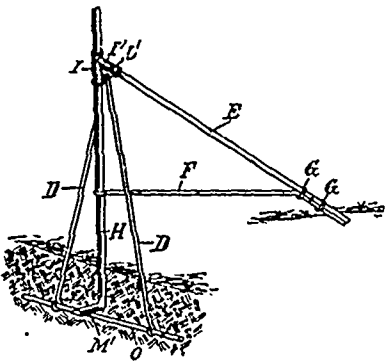
24614 Worsdell's Compound Steam Engine.



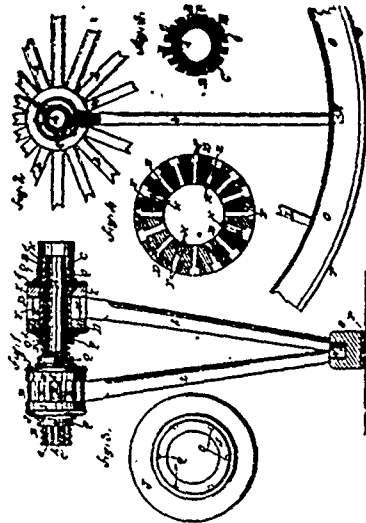
24615 Vincent's Stove Damper.



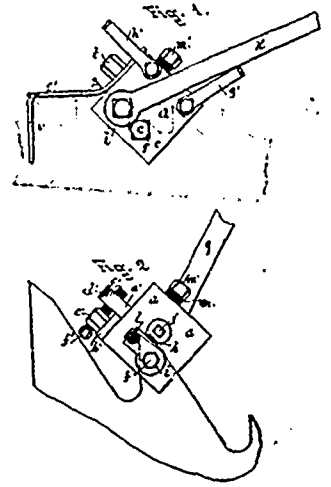
24616 Welch's Flooring Clamp.



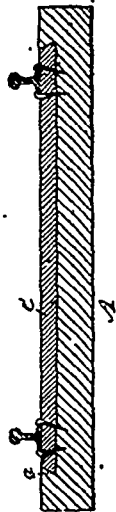
24617 Croso's Fence.



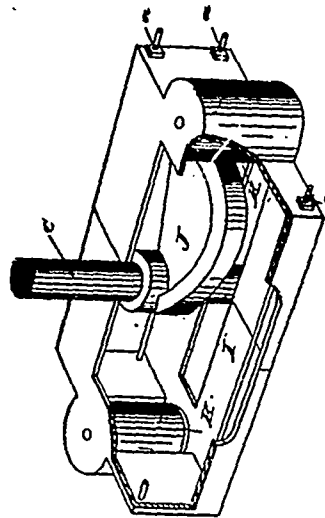
24618 Gibby's Vehicle Wheel.



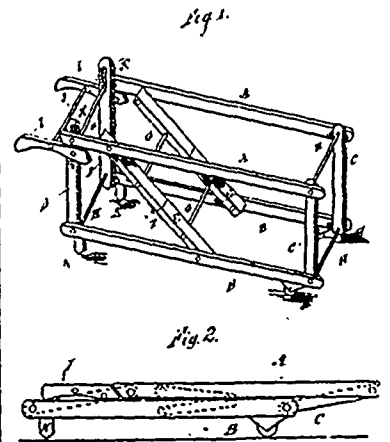
24619 Park's Saw Swaging Machine.



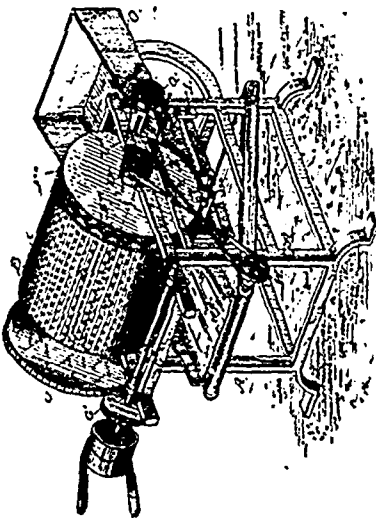
24620 Ross' Railway Tie.



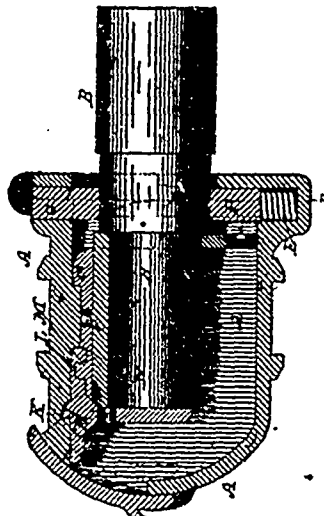
24621 Sheppard's Tile Making Machine.



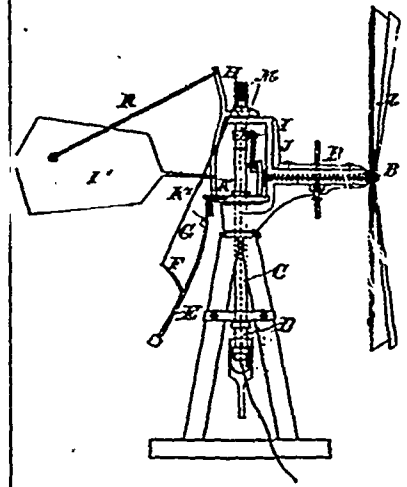
24622 Taft's Machine for Lifting Waggons, etc.



24623 Swingle's Thrasher and Separator.



24624 Timms' Car Axle Box.



24625 Moot's Wind Engine.