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INVENTIONS PATENTED.

No. 11,869. Improvements on Vices. (*Perfectionnements aux étaux.*)

Fortonato C. Zanetti, Bryan, Texas, U.S., 13th October, 1880; for 5 years.

Claim.—1st. The clamping jaws C C', connected with the lower end of the fixed jaw of the vice, having a spherical socket and adjusting screw b, in combination with the ball D on standard c attached to the bench or table, whereby a ball and socket connection is made between the vice and table, for the purpose of allowing the vice to be set in various positions. 2nd. The plug E held in socket d by guard f passed through slot g, and provided with a set screw h passed through the lower end of the jaw, so as to bear against the plug, in combination with the vice and the ball and socket connection or joint of the same, to furnish a support for the vice outside of the joint.

No. 11,870. Improvements on Steam Valves, &c. (*Perfectionnements aux soupapes de vapeur, &c.*)

James Morrison, Toronto, Ont., 13th October, 1880; for 5 years.

Claim.—An elastic rubber cover or jacket adapted to be applied to a metallic handle or knob.

No. 11,871. Adjustable Whiffletree Clip. (*Collet mobile de palonnier.*)

John H. Harford, Indianapolis, Ind., U.S., 13th October, 1880; for 5 years.

Claim.—1st. The clip composed of the broad curved parts B B; provided with spurs L L', the hinge C, the projecting jaws D D' provided with holes K P. 2nd. In combination with the clip composed of the broad curved parts B B; provided with spurs L L', and the projecting jaws D D' with holes K and P, the bolt E, nut F and hook H.

No. 11,872. Improvements on Explosive Compounds. (*Perfectionnements aux composés explosibles.*)

Max Tschirner, San Francisco, Cal. U.S., 13th October, 1880; for 15 years.

Claim.—1st. Pleric acid and chlorate of potash, in about the proportions specified. 2nd. The process of uniting or compounding pleric acid with chlorate of potash, or other oxidizing ingredients, consisting of mixing the same with pulverized resin, and saturating or sprinkling the mass with benzine, or other fluid or liquid which will easily evaporate or pass off and leave the mass adhesive and in a fit condition to be moulded into cartridges.

No. 11,873. Chain Stopper. (*Bosse de chaîne.*)

David N. B. Coffin, jr., Boston, and Benjamin Woodward, Cambridge, Mass., U.S., 13th October, 1880; (Extension of Patent No. 5,473.)

No. 11,874. Improvements on Finger Nail Cutters. (*Perfectionnements aux coupeurs à ongles.*)

Alexander McDonald, Worcester, Mass., U.S., 15th October, 1880; for 5 years.

Claim.—1st. The metallic rod a with its perforation b, bevelled end c and cutting edges d d'. 2nd. The combination, with the metallic rod a, perforation b, end c and cutting edges d d', of the cleaner g and file h. In combination with the hinged cutter bar a b c d d', the cleaner g h and the single spring wire handle e. 4th. A tool handle consisting of two spring parts e e' held rigidly together in one end, and capable of lateral expansion in

the other end. 5th. In combination with the duplex handle e e', the tool i with its projection t and the notch or recess e'. 6th. In combination with the duplex handle e e', the nail cutter and cleaner tool a b c d g h and the tool i.

No. 11,875. Improvement on Fruit and Vegetable Evaporators and Driers. (*Perfectionnements aux évaporateurs et aux séchoirs pour les fruits et les légumes.*)

John S. Rowen, Spencerport, and Elisha J. Potter, Knowlesville, N.Y., U.S., 15th October, 1880; for 5 years.

Claim. 1st. The combination, with the trays D D, of the side boards or valves E E'. 2nd. The combination, with the chamber A, of the two trunks H I, one serving to draw off the damp air from the lower part of the chamber, and the other to admit dry hot air to the upper part of the chamber.

No. 11,876. Improvements on Fanning Mills. (*Perfectionnements aux tarares-cribleurs.*)

William McKenzie, Morrisburg, Ont., 15th October, 1880; for 5 years.

Claim. The cam B having the usual hole a in its face for the end of vibrating rod C, and either an odd number of eccentrics in its periphery or a slot in its face forming more than one eccentric, for the purpose of vibrating rod C oftener than once at every revolution. The guides D or their equivalents, for holding the end of rod C in place when it is in connection with the eccentrics. The combination of cam B, rod C, guide D and shake F, so that by the same cam rod and crank, the sieves of a fanning mill may be shaken either once or oftener at one revolution of the fans, as may be best for the work to be done.

No. 11,877. Improvements on Children's Chairs and Carriages. (*Perfectionnements aux chaises-voitures des enfants.*)

Joseph W. Kenna and Reuben A. Hitchcock, Chicago, Ill., U.S., 15th October, 1880; for 5 years.

Claim.—1st. The supporting frame A, in combination with the chair frame C vertically pivoted thereto by one pair of legs and having, on each leg of the other pair, a spring catch adapted to engage automatically with either of two sets of pins and notches on the supporting frame, and mechanism arranged to operate at will for detaching the catches from either sets of pins and notches, so as to form of the two frames at pleasure a high or low chair. 2nd. A chair provided with a shelf pivoted horizontally to a vertically pivoted hinge, for the purpose of suspending the shelf by the side of the chair when not in use. 3rd. The supporting frame A, in combination with the chair frame C pivoted thereto, the spring catches E, pins f, rods I, ring j and upright rod J. 4th. The supporting frame A provided with the round a, in combination with the chair frame C provided with the pivoted handle L. 5th. The chair frame C provided with the pivoted hinge m, the shaft M pivoted to said hinge, and the slotted spring catch N arranged to engage automatically with the pin m on the free end of the shaft. 6th. In combination with the wheels B B' having their bearings at the frame A provided with the wheels B B' having their bearings at the ends of its front standards A. 7th. The chair frame C, in combination with the supporting frame A provided with the brace a' attached to the inner edges of the bars a, so as not to interfere with the folding of the frame C into the frame A. 8th. The chair frame C, in combination with the supporting frame A provided with the upright standards a having their upper or forward ends projecting beyond the rest of the frame, so as to give a firmer joint to the structure when arranged as a high chair, and a longer base when arranged as a carriage.

No. 11,878. Improvements on Knitting Machines. (*Perfectionnements aux machines à tricoter.*)

George A. White, Halifax, N.S., 15th October, 1880; for 5 years.

Claim.—1st. The needle cylinder B provided with grooved ring f sustained by rods f' at the upper end of cylinder. 2nd. The cone E for sustaining the upper needles, provided with grooved ring e at its base sustained by arms or rods e' combined with needle cylinder B. 3rd. The latch

opener K having its forward end pointed, inclined downwardly and curved tangentially to the circular path of the needles, combined with the cone E carrying the upper needles, and the thread guide *g*. 4th. The double latch opener K¹ carried by thread guide *g*, combined with the needle cylinder B and lower needles. 5th. The fender K formed with eye *a*, and the thread guide *g* combined together in a machine having an upper and lower set of needles for use with two threads, in the manner specified. 6th. The adjustable stitch cam *n* and plate *m* having projection *q* attached within the revolving conical sleeve F, in combination with the cone E carrying the upper set of needles. 7th. The triangular stitch cam *n* attached to the sleeve F by set screw *p* and having its point extending into a slot *n*¹ formed in the rib *l* of the sleeve. 8th. The central cam S, wing cams *u* connected with the centre cam, to form a continuous support for the needles, and adjustable stitch cams *t*, combined together and attached with the revolving cylinder C having rib *r* for operation of the lower needles. 9th. The pivoted gate *v*, formed with projection *v*¹, combined with the cams *t* and *u* and rib *z* of the cam cylinder C.

No. 11,879. Improvements on Wire Fences.

(*Perfectionnements aux clôtures métalliques.*)

John Westgarth, Warrington, Eng., 15th October, 1880; for 5 years.

Claim.—1st. A drawn or rolled wire, figure 1. 2nd. A drawn or rolled wire of section, figure 1, slotted or pierced with holes *a*, figure 2. 3rd. A barbed wire fencing, figures 5 and 6. 4th. A coupled barbed wire fencing, figure 7.

No. 11,880. Improvements on Wheeled Vehicle Brakes.

(*Perfectionnements aux freins des voitures à roues.*)

Watson P. Widdefield, Siloam, Ont., 15th October, 1880; (Extension of Patent No. 5,290.)

No. 11,881. Apparatus for Setting and Distributing Type.

(*Appareil pour composer et distribuer les caractères.*)

Frederick Wicks, Glasgow, Scotland, 19th October, 1880; for 5 years.

Claim.—1st. The combination of the galley A, gauge plate *h*, ejector *b*, race C, doors *d*, operating rods and keys E and receiving grooves *c*. 2nd. In the modification with reference to figure 13, 14 and 16 of the drawings, the combination, with the race C and doors *d* opening from the side, to form combinations, of the main race with the grooves *c* of the wheels L, for delivering the distributed types upon their feet. 3rd. In the modification for delivering the types upon their sides, the combination with the race C, doors *d* opening from the side of grooves *c* inclined downwardly and then continued horizontally as shown. 4th. The combination of the gauge plate *h* and ejector *b*, and mechanism for operating them to eject the types by contact with their sides, or by contact with their foot. 5th. The combination of the galley A and the main race C in the relative positions described. 6th. The guides or doors *d*, in combination with the main race C and branch grooves or guides *c*, the said doors *d* forming, when closed the bottom of the straight race C and, when opened, forming guides for diverging the types from the main race C to the branch grooves *c*. 7th. The combination of the lever, or picker *p*. 8th. The combination of the wheel L (whether formed singly or in a series) having thereon projections solid therewith, also the construction of the said wheels and the parts at the commencement of the type guides through which they pass in plates or disk. 9th. The arrangement or construction of the branch grooves or guides *c* for diverging the types from the main race C to the said grooves or guides, curving the said grooves or guides *c* at their junction with the main race C as shown at *c* in figures 9 and 10. 10th. The arrangement and combination of parts constituting the machine for composing or setting up type consisting in the combination of the type holder R and ejectors S with a race Q and wheel T. 11th. The arrangement of the race Q and the type holders R in relation to each other, the type holders R being at the side or sides of the race Q. 12th. The combination of a straight inclosed race Q down which the types descend to the part of the machine when they are set on end, whether the said race be formed with one, two or more grooves therein. 13th. The relative arrangement of the grooves *q* of the race, whereby the said grooves are led into one outlet. 14th. The combination with the wheel T for placing the types on their heels and moving them forward, a wheel having, formed solid therewith, projections for receiving the said type, whether the said wheels be constructed or formed in one, or whether the said wheels and the end of the type guides through which the said projections pass be formed of plates or disks with filling pieces between. 15th. The combination, with combination keys, consisting of a bar S₁ which is depressed by one stud S₂ and is provided with two or more projections S₃, for causing the simultaneous ejections of two or more types. 16th. The combination, with and use in the groove or grooves of the race Q, of the brakes *w* for preventing the turning of the types in the said groove or grooves. 17th. The type spaces, that is to say: space constructed with openings or cut away parts to allow of the compression of the said spaces. 18th. The combination, with the galley Y, of the lever Z and bar *z* for compressing the spaces.

No. 11,882. Improvements in Electric Lighting.

(*Perfectionnements dans l'éclairage électrique.*)

James E. H. Gordon, London, Eng., 19th October, 1880; for 15 years.

Claim.—1st. In the production of electric light by means of a combined apparatus consisting of a magneto-electric or dynamo-electric machine, an induction coil or coils, and a lamp containing lumps of refractory metal, carried on thin stems, and heated by the discharge in the secondary circuit or circuits. 2nd. The use, in combination, for the production of electric light, of a magneto-electric or dynamo-electric machine, and a lamp containing lumps of refractory metal carried upon thin stems. 3rd. The use, in combination, for the production of electric light, of apparatus yielding an alternating electric current of high intensity and with rapid and sharp reversals, and a lamp containing lumps of refractory metal carried upon thin stems.

No. 11,883. Improvements in Gate Latches.

(*Perfectionnements aux loquets des barrières.*)

Robert Standing, Boston Mills, Ont., 19th October, 1880; for 5 years.

Claim.—1st. In combination with a gate, the latch A hinged by bolt *b* and provided with lips *aa*. 2nd. The catch B formed with inclined edges and notches *j*, and stop E. 3rd. The combination of the hinged latch A, inclined edged catch B, stop E, and plate *d*.

No. 11,884. Improvements in Electric Lighting.

(*Perfectionnements dans l'éclairage électrique.*)

Charles W. Harrison, London, Eng., 19th October, 1880; for 5 years.

Claim.—1st. The manufacture of electrodes or burners. 2nd. The current regulator. 3rd. In lamps for electric lighting in which the electrodes are fed towards one another, the combination of break wheel J and drums K, L. 4th. The combination, in similar lamps, of magnetic needle V, break block W and break wheel J.

No. 11,885. Apparatus and Process for Tempering and Straightening Saws Without Hammering.

(*Appareil et procédé de trempage et dressage des scies sans martelage.*)

Roswell H. Smith, St. Catharines, Ont., (Assignee of George F. Symonds Fitchburg, Mass., U.S.), 19th October, 1880; (Extension of Patent No. 5,288.)

No. 11,886. Improvements on Apparatus for Feeding Nail Machines.

(*Perfectionnements aux appareils à alimenter les machines à clou.*)

William Briggs, Montreal, Que., 19th October, 1880; (Extension of Patent No. 10,741.)

No. 11,887. Improvements on Apparatus for Feeding Nail Machines.

(*Perfectionnements aux appareils à alimenter les machines à clou.*)

William Briggs, Montreal, Que., 20th October, 1880; (Extension of Patent No. 10,741.)

No. 11,888. Improvements in Iron Box Piles for the manufacture of Nail Plate Iron.

(*Perfectionnements aux paquets de fer pour la fabrication des plaques de fer à clou.*)

Thomas Miller, Portland, N.B., 20th October, 1880; for 5 years.

Claim.—Making an iron box pile, to be used in the manufacture of nail plate iron, from one piece of angle iron, and that the same so constructed will manufacture at one heat about 30 per cent. more material than any box pile now in use.

No. 11,889. Improvements on the Production of Light and Heat.

(*Perfectionnements dans la production de la lumière et de la chaleur.*)

Quentin L. Brin, London, Eng., 28th October, 1880; for 5 years.

Claim.—1st. The use or employment of a current or currents of oxygen projected or carried to carbon sticks known as electric candles or sticks, or other bodies of or containing a carbonaceous solid or liquid material or composition, and by igniting the said oxygen when in contact with the carbon material, the production of light and heat by the combination of the oxygen or carbon. 2nd. The apparatus described and illustrated with reference to all the figures of the drawings.

No. 11,890. Improvements on Grinding Mills.

(*Perfectionnements aux Moulins à triturer.*)

John Rae, New York, U.S., 20th October, 1880; for 5 years.

Claim.—1st. In combination with suitable means for supplying and receiving the material, the disks or wheels B C turning towards each other and mounted in skewed positions, so that the upper portion of the adjacent surfaces B¹ C¹ shall be wider apart than the lower portion with provisions for adjusting the distances at will. 2nd. In combination with the disks B C turning toward each other and mounted in skewed positions, the yielding bearing G held to its work by one or more springs I with adjusting means H adapted to allow the separation of the disks in emergencies. 3rd. The combination of the hopper A¹, formed so as to extend down a little between the surfaces B¹ C¹, in combination with the wheels B C mounted on axes which are out of parallel. 4th. The disks B C with slightly hollow conoidal faces and arranged in combination with the hopper A², adjusting means D G H and yielding springs I.

No. 11,891. Improvements on Churns.

(*Perfectionnements aux barattes.*)

Henry Calcutt, Ashburnham, Ont., 28th October, 1880, for 5 years.

Claim.—The principle of constructing churns with corrugated metal sides, and their application, in assisting the dasher to break the butter of globules, and for oxidizing the milk in its flow over the corrugated surface.

No. 11,892. Improvements on Draining Wells.

(*Perfectionnements aux puisards des égouts.*)

Théophile Gervais, Hochelaga, Que., 20th October, 1880; for 5 years.

Resumé.—1°. La combinaison d'une citerne A avec une trappe E, le tout formant un puisard à travers lequel s'opère le passage des eaux des égouts

et lavabos de l'intérieur des bûisses. 2°. La disposition du tuyau de renvoi B et du conduit d'égout C, le premier placé à un niveau plus élevé que le second, de telle sorte que lorsque l'eau, à l'intérieur de la Citerne A, s'élève jusqu'à la hauteur du conduit d'égout C, le côté inférieur de la trappe E se trouve immergé.

No. 11,893. Mould for Casting Chilled Mould Boards. (*Moule pour le coulage des versoirs trempés.*)

George Wiard, Batavia, N. Y., U. S., 20th October, 1880; for 5 years.

Claim.—A metallic chill plate, for casting mould boards and similar articles, made thickest at the point where the molten metal enters the mould and made gradually decreasing in thickness towards the extremities of the mould in all directions.

No. 11,894. Improvements on Steam Vessels. (*Perfectionnements aux vaisseaux à vapeur.*)

Andreas Olsen, Ephraim, Utah, U. S., 20th October, 1880; for 5 years.

Claim.—1st. In the hull of a vessel, the two longitudinal tubular pontoons AA, sustained parallel to each other at a suitable distance apart by the transverse connecting braces B, in connection with posts or struts D extending vertically from each pontoon, longitudinal tubular cylinders B connected to the upper ends of the vertical posts or struts, immediately above and parallel with the pontoons and the transverse braces C connecting the two cylinders, the said cylinders and posts or struts serving to support or sustain the deck and cabins of the vessel. 2nd. The combination with the vessel, of one or more turn tables supported upon or in the deck, so as to permit of their being readily turned, and one or more paddle wheels, having their shafts supported in said turn tables and adapted to turn with said turn tables.

No. 11,895. Improvements on Dental Compounds. (*Perfectionnements aux composés dentaires.*)

Herbert E. Dennett, Boston, Mass., U. S., 20th October, 1880, for 5 years.

Claim.—1st. In a dental preparation for preventing pain in operating on the teeth, the combination of an astringent and an obtundent. 2nd. The combination of a desiccant and an obtundent. 3rd. The combination of an astringent, a desiccant and an obtundent. 4th. The combination of an astringent, an obtundent, and an anodyne. 5th. The combination of an astringent, an obtundent, a desiccant, and an anodyne. 6th. An obtundent and a desiccant embodied in one and the same ingredient, in combination with an astringent. 7th. An obtundent and a desiccant embodied in one and the same ingredient, in combination with an astringent and an anodyne. 8th. The combination of glycerine and tannic acid. 9th. The combination of glycerine, tannic acid, and chloral. 10th. The combination of glycerine, tannic acid, chloral, and camphor.

No. 11,896. Manufacture of Plumber's Traps. (*Fabrication des puisards d'aisance.*)

Charles S. Watson and James Rose (Assignees of John Robertson), Montreal, Que., 20th October, 1880; (Extension of Patent No. 5,727).

No. 11,897. Car-Coupling. (*Attelage des wagons.*)

Gilman H. Ames, Adrian, and Embree B. Lapham, Rockford, Mich., U. S., 20th October, 1880; (Extension of Patent No. 5,367).

No. 11,898. Manufacture of Plumber's Traps. (*Fabrication des puisards d'aisance.*)

Charles S. Watson and James Rose (Assignees of John Robertson), Montreal, Que., 21st October, 1880; (Extension of Patent No. 5,727).

No. 11,899. Car-Coupling. (*Attelage des wagons.*)

Gilman H. Ames, Adrian, and Embree B. Lapham, Rockford, Mich., U. S., 21st October, 1880; (Extension of Patent No. 5,367).

No. 11,900. Churn Dasher. (*Batte-beurre.*)

Asher Holmes, Hamilton, Ont., 22nd October, 1880; (Extension of Patent, No. 5,361).

No. 11,901. Washing Machine. (*Machine à laver.*)

James H. Connor, Brockville, Ont., 22nd October, 1880; (Extension of Patent No. 5,340).

No. 11,902. Improvements on Railway Spikes. (*Perfectionnements aux clous barbelés pour les chemins de fer.*)

James P. Perkins, Minneapolis, Minn., and Charles C. Jones, Fargo, Dakota, U. S., 26th October, 1880; for 5 years.

Claim.—1st. A spike having a squared portion just beneath the head, and a triangular portion below this, with one of the sides of the triangular portion in the same general plane with one side of the square portion, and with the other two sides of the triangular portion replacing or cutting off the angles of the square part. 2nd. A spike A with the head B projecting in front and at the sides, the square upper part C, the triangular lower part D, having concave sides and meeting the square upper part C, with inclined shoulders E, and wedged-shaped point F. 3rd. A spike, having its head projecting to one side, and its body constructed with a square upper part B, and a triangular lower part D, having concave sides meeting the sides of the square part with inclined shoulders E, and having a wedge point with a longer level on the front side. 4th. A spike, having its head projecting to one side, and having a wedge point with a longer bevel on the same side with the head. 5th. A triangular spike having one side straight, and a head which is flush with this side, but projecting over the angle of the triangle, on the other side.

No. 11,903. Improvements on Portable Pens. (*Perfectionnements aux enclos portatifs.*)

Francis Green, Sr., Oakville, Ont., 26th October, 1880; for 5 years.

Claim. 1st. A portable pen composed of the panels A provided with the posts B B', stud C, tapered key D, gibs E and cotters F. 2nd. In combination with a portable pen, a tree guard G provided with locked suspenders H.

No. 11,904. Improvements on Cabinet Bed-Steads. (*Perfectionnements aux armoires-bois de lits.*)

Thomas A. Covey, Halifax, N. S., 26th October, 1880; for 5 years.

Claim. 1st. The combination of the cabinet sections A B having parallel movement side rails D D' pointed at the middle, hinged at the ends to said sections and folding within the same. 2nd. In combination with the hinged side rails D D', the supporting leg G having pivotal connection with one section and a slotted connection with the other, whereby the leg will adjust itself to the different angles of the joint fold with rail and be perpendicular when the rails are in horizontal alignment. 3rd. In combination with an automatic self-adjusting leg G, a spring or springs b. 4th. The combination, with the section B and rails D D', of the knob I, disk J or an equivalent crank movement rod K, levers L, L' and segment levers M.

No. 11,905. Tube Expander. (*Dilatateur de tuyau.*)

Patrick Fitzgibbons, Oswego, N. Y., U. S., 30th October, 1880; (Extension of Patent No. 5,334.)

No. 11,906. Elastic Paint Compound. (*Composé à peinture élastique.*)

Hugh Baines, Oakville, Ont. (Assignee of Jacob B. Slichter, Kalamazoo, Mich., U. S.), 30th October, 1880; (Extension of Patent No. 5,297.)

No. 11,907. Car Brake. (*Frein de wagon.*)

Watson P. Widdifield, Siloam, Ont., 30th October, 1880; (Extension of Patent No. 5,333.)

No. 11,908. Improvements on Lime Kilns. (*Perfectionnements aux fours à chaux.*)

Frederick J. Chubb, (Co-inventor with Benjamin Hunniford), Guelph, Ont., 30th October, 1880; (Extension of Patent No. 5,341.)

No. 11,909. Improvements on Carriage Tops. (*Perfectionnements aux soufflets des voitures.*)

The Guelph Carriage Goods Company, Guelph, Ont., (Assignee of John R. Chapman, Whitewater, Wis., U. S.), 30th October, 1880; (Extension of Patent No. 9,302.)

No. 11,910. Improvements in Lumber Driers. (*Perfectionnements aux sécheries à bois.*)

Philander G. Finn, Erie, Pa., U. S., 30th October, 1880; for 5 years.

Claim.—1st. The combination, with the end walls, bottom and steam pipe chamber, of the upright partitions K placed as described, so as to form air ducts or flues at the ends of the pile chamber. 2nd. The combination, with the end walls, bottom and steam pipe chamber, of upright partitions K and horizontal partitions D E F placed as described, so as to form air spaces or flues M N O P. 3rd. The combination, with air flues M N O P at the ends thereof, formed as described, of a board pile formed of boards lying across the kiln, and strips S lying lengthwise of the kiln at or near the ends of the boards, thus forming interspaces which serve as air ducts from the flues at one end of the kiln, to the flues at the other end of the kiln. 4th. In the vertical passages for hot air at opposite ends thereof, the combination, with said vertical passages, of a pile of boards piled as described, so as to have horizontal passages through the same connecting with the said vertical passages, and obstructions placed in said vertical passages as shown, so as to divert the hot air from a vertical to a horizontal direction, and cause it to flow through the horizontal passages in the board pile from the vertical passage at one end, to the vertical passage at the other end of the kiln.

No. 11,911. Improvements on Earth Excavators. (*Perfectionnements aux terrassiers.*)

Joseph T. Parlour, London, Eng., 30th October, 1880; for 5 years.

Claim.—1st. The novel combination of frames A, rising and lowering gear I, endless chain of buckets H H, quadrants N and the two rotating excavating scoops working in opposite directions. 2nd. The rotating excavating scoop with cutting detachable edges E and inclined backs F. 3rd. The rotating hollow cased dredging scoop with cutting edges on the periphery and opening in the side.

No. 11,912. Improvements on Saw-Guides. (*Perfectionnements aux guide-scies.*)

George W. Rodebaugh, Jackson, Mich., U. S., 30th October, 1880; for 5 years.

Claim.—1st. The adjustable slides C C, provided with oil chambers having contracted orifices through which the oil may be discharged for lubricating purposes. 2nd. The adjustable slides C C, provided with oil chambers having contracted orifices, in combination with a wick, whereby the oil is withdrawn from the chamber by capillary attraction. 3rd. In saw-guides C C, and in combination with a bed-plate A, the slides C C, provided with bearings e r and adjustable by means of thumb-screws b. 4th. In saw-guides C C, the bearing points adapted to perform their legitimate functions as guides, and to deliver upon opposite faces of a saw blade. 5th. The combination, with the slotted bed plate A provided with the holes d, of the frame B adjustable on the bed plate and carrying the adjusting screws b, hollow angular slide C, hollow straight slide C; having oil chambers d o, bearings e r having central orifices and wicks m q.

No. 11,913. Improvements on Ore Separators.*(Perfectionnements aux séparateurs des minerais.)*

William L. Inlay, Camden, N.J., U.S., 30th October, 1880; for 5 years.

Claim.—1st. A vanning pan or tray having independent outlets at the end at which the ore is fed upon the tray, said outlets being on the same horizontal plane and for the discharge of ores of different specific gravities, and having vertical partitions or dividing boards arranged longitudinally of said tray and dividing or separating said outlets. 2nd. The vanning pan or separator tray C having independent discharges d d_1 d_2 d_3 , inclines e e_1 e_2 e_3 and dividing blocks G G₁ G₂ G₃, whereby minerals of different gravities may be discharged separately from the same tray. 3rd. In combination with tray C supported on rollers B B₁ or other supports and having slotted hangers I N, the crank or eccentric shaft H caused to revolve with variable speed, by means of the eccentric gear wheels K L, whereby the tray is moved in one direction of its path at a changing velocity differing in periods from that of its movement in the reverse direction. 4th. In combination with a tray or pan C supported on rollers B B₁ or other described supports, an eccentric or crank shaft H and means for causing said shaft to revolve at a changing velocity, whereby said tray or pan is reciprocated longitudinally at a variable speed. 5th. In combination with tray C, eccentric shaft H and eccentric wheels K L, the eccentric or crank shaft m , and hangers I N, whereby said tray is moved laterally and compound motions are produced for effecting separation of the minerals from the sand and division of the concentration according to sizes or gravities. In combination with tray C supported on rollers B B₁ and provided with hangers I N, crank shaft H, eccentric gears K L, shaft L, M and bevel gears m_2 m_3 .

No. 11,914. Improvements on Dish Washers.*(Perfectionnements aux laveuses de vaisselle.)*

Benjamin J. Howe, Sing Sing, N.Y., U.S., 30th October, 1880; for 5 years.

Claim. 1st. The combination with the covered vessels A B of the radial paddles E E and arched grating F. 2nd. The radial paddles E E decreasing in width from the shaft outwardly, having raised edges a on both sides, and long central ribs b . 3rd. The combination, with the covered vessel A B, of the arched grating F.

No. 11,915. Manufacture of Artificial Manures.*(Préparation des engrais artificiels.)*

Francis J. Bolton and James A. Wanklyn, London, Eng., 30th October, 1880; for 5 years.

Claim. 1st. The solid constituents of urine mixed with a small proportion of soot charcoal, burnt bones, or other suitable charred substance. 2nd. The method of evaporating urine, at or about a temperature of 100° centigrade, in contact with a small proportion of soot, charcoal, burnt bones or other charred absorbent materials, so as to produce a compound containing the solid constituents of urine in a more or less dry condition, suitable for manure or for obtaining ammoniacal products. 3rd. The method of evaporating successively two or more quantities of urine in contact with one and the same body of soot, charcoal, burnt bones or other suitable absorbent materials, so as to produce a compound containing in increased quantity the solid constituents of urine in a more or less dry condition suitable for manure or for obtaining ammoniacal products.

No. 11,916. Improvements on Shaft-Couplings.*(Perfectionnements aux embrayages des arbres de couche.)*

John Walker, Indianapolis, Ind., U.S., 30th October, 1880; for 5 years.

Claim. 1st. A shaft coupling consisting of an outer cylindrical continuous shell to the inner surface of which are attached two independently operating open ring clamps, each one of which has a fixed and a free end and a bolt which passes loosely through the fixed end and into the free end, whereby, in the operation of the said bolt, the said free end of the clamp is drawn around its shaft toward the fixed end thereof. 2nd. A shaft coupling consisting of an outer cylindrical continuous shell to the inner surface of which are attached two independently operating clamps, adapted to be contracted in circumference by means of bolts.

No. 11,917. Improvements on Combination Pumps.*(Perfectionnements aux pompes à combinaison.)*

Frederick Crocker Sr., Olean, N.Y., U.S., 30th October, 1880; for 5 years.

Claim. 1st. The shafts D D₁, cranks F F₁ F₂ F₃ and parallel rods E E₁, together with the connecting rods, as a means of connecting together the piston rods of steam pumps. 2nd. A combination pump formed of four or more single acting vertical steam pumps, the whole connected together by the connecting rods, cranks F F₁ F₂ F₃, shafts D D₁ and parallel rods E E₁, arranged to act in rotation and produce an even and uniform pressure upon the delivery pipe.

No. 11,918. Improvements on Churn Dashers.*(Perfectionnement aux batte-beurre.)*

Hiram W. White, Yankton, Dakota, U.S., 30th October, 1880; for 5 years.

Claim.—The combination of the two sets of stationary oblique blades b b_1 c c_1 constructed and arranged to produce oblique and radial currents, and the inverted cup D constructed with a vertical margin pierced with apertures d producing radial jets of air to mingle with said radial currents of cream and the resulting upward currents.

No. 11,919. Improvements on Machines for Packing Bran.*(Perfectionnements aux machines à emballer le son.)*

William L. Williams, San Diego, Cal., U.S., 30th October, 1880; for 5 years.

Claim.—1st. The bran-packing machine consisting of feed cylinder A provided with clamps for receiving a bag, the sliding stamps i fitted within cylinder A, the sleeve k fitted on stamps i and provided with latches kr , for engagement with the stamp shafts and the revolving shaft carrying arm l ,

all combined for operation. 2nd. In machines for packing bran or similar materials, the loose sleeve k provided with pivoted latches kr and revolving cam l fitted for raising the sleeves k , by contact with the latches kr combined with the ratchet shafts of the sliding stamps. 3rd. The spring arms n provided with lugs n_1 and the sliding collar o having a projection, combined with the reciprocating stamp shafts i and operating shafts c . 4th. The rods m suspended loosely in cylinder A beneath the sleeves k , in combination with the latched blocks ki , stamps i and operating cam l .

No. 11,920. Improvements on Ore Crushers.*(Perfectionnements aux broyeur des minerais.)*

Frank A. Huntington, San Francisco, Cal., U.S., 30th October, 1880; for 5 years.

Claim.—1st. A bifurcated crusher provided at its upper end with devices for oscillating it, in combination with dies a . 2nd. The bifurcated stamp B provided with means for oscillating it, in combination with dies a and the bevelled backing pieces p p . 3rd. The shoes a secured to the feet of the bifurcated stamp and having the rounded outer corners, whereby a grinding action is produced by each shoe, alternately, as the opposite one is lifted. 4th. The inclined or bevelled backing pieces p p set into or against the sides of the mortar, and adapted to receive the thrust of and act as a fulcrum against which the stamps turn, alternately, while the opposite stamp is lifted. 5th. The combination of the batteries with their oscillating stamps, and the V-shaped projection K with the hopper Z having the ore spouts W, and the actuating arms and levers, whereby the crushers are supplied with ore.

No. 11,921. Stovepipe Shelf and Drier.*(Tablette-séchoir à tuyau de poêle.)*

The Hamilton Industrial Works Company, (Assignee of Matthew Wilson, the Assignee of Thomas Wavel, legal representative of John C Schoonmaker.) Hamilton, Ont., 2nd November, 1880; (Extension of Patent No. 5,486.)

No. 11,922. Ozone Machine.*(Machine à Ozone.)*

Frederick W. Bartlett, Buffalo, N. Y., U.S., 2nd November, 1880; (Extension of Patent No. 5,337.)

No. 11,923. Improvements on Structures for Piers, Wharves, &c.*(Perfectionnement dans la construction des piliers, quais, &c.)*

Charles E. Hill, New York, U.S., 2nd November, 1880; (Extension of Patent No. 5,325.)

No. 11,924. Sap Spout.*(Gargouille à séve.)*

Zephaniah S. Laurence, St. Césaire, and Hiram A. Laurence, East Farham, Que., 2nd November, 1880; for 5 years.

Claim. 1st. A sap spout obtaining its entire fastening and supporting hold perpendicularly from the upper and lower surface centres of aperture in the tree. 2nd. In combination with any sap spout, a stem or bucket support passing longitudinally through and in rear of the tube or spout proper. 3rd. In combination with any sap spout, a stem or bucket support projecting in front of the tube or spout proper having formed upon its upper edge a bucket retainer or catch, and upon its lower front end a drop director or point. 4th. The combination of the stem A with the tube H, the bucket catch E, the drop director or point F.

No. 11,925. Improvements in Machinery for Ironing, Airing, Wringing and Mangling.*(Perfectionnements aux machines à repasser, charifier, tordre et calandrier.)*

James Reidy, London, Eng., 2nd November, 1880; for 5 years.

Claim.—1st. The combination, with hollow rotary cylinder B, of the perforated jet pipe H extending through one of its journals, and having its end inserted in a recess in the opposite journal, the nozzle I provided with the cock K for the supply of gas, and a chamber surrounding said gas nozzle, whereby the gas serves to draw air into the jet pipe with it. 2nd. The combination, with a hollow roller or rotary cylinder, of a perforated jet pipe extending into the same, a nozzle provided with a cock for the supply of gas thereto, and a chamber communicating with said jet pipe and surrounding said nozzle provided with openings at the rear portion for the entrance of air, and made internally concave and tapering toward the front end which is in close proximity to the front end of the nozzle, whereby it acts as a deflector to deflect air close to the forward end of said nozzle.

No. 11,926. Improvements on Axle Couplings.*(Perfectionnements aux embrayages des essieux.)*

Conrad Embeck, New Haven, Mo., U.S., 2nd November, 1880; for 5 years.

Claim. 1st. A ball and socket coupling for the forward axles of vehicles, consisting of the ball G secured to the head block A, the socket bars H secured to the forward axle D, the collar L having eye N and the brace P having eye O. 2nd. In a ball and socket coupling for the forward axles of vehicles, the combination with the ball G attached to the head block A, the socket bars H attached to the axle D, and the brace P attached to the reach B and having eyes O Q, of the collar L having eye N, whereby the axle is held in an upright position and kept from rocking.

No. 11,927. Improvements in Oil Injectors for Steam Pipes of Engines.*(Perfectionnements aux injecteurs d'huile dans les tuyaux de vapeur des machines.)*

Joseph V. Renchard and John J. Renchard, Detroit, Mich., U.S., 2nd November, 1880; for 5 years.

Claim.—1st. In displacement lubricators, the trunk C provided with two passages G H. 2nd. The combination of trunk C provided with passages

G H, with tube X Y and diaphragm D. 3rd. The combination of the diaphragm D provided with passages J T, trunk C, tube I K. 4th. The combination of reservoir A, diaphragm D, trunk C and reservoir E. 5th. The combination of tube M, glass cages N O, packing P P and oil reservoir E. 6th. The trap or escape valve consisting in angular passage g communicating from the interior to the exterior of the reservoir, by an upward horizontal and downward course adapted to form a siphon current and discharge the water and sediments from the oil reservoir provided with valve V. 7th. The combination of the peculiar-shaped tube K, diaphragm D and glass tube M, tube K being arranged and adapted to communicate with reservoir A and conduct the heated water therefrom, in a downward and upward course, through the reservoir E and discharge the same into tube M.

No. 11,928 Improvements in Extension Tables (*Perfectionnements aux tables à rallonge.*)

Oliver S. Garretton, Buffalo, N. Y., U. S., 2nd November, 1880; for 5 years.
Claim.—A table slide made in the form of a cross and constructed with ribs *g* on its upper and lower sides in the angles of its wings.

No. 11,929. Method of Decorating Wood. (*Méthode d'ornementation du bois.*)

Seth K. Devereux, Fredericton, N. B., 2nd November, 1880; for 15 years.
Claim.—The method of producing pictures, &c., on wood, which consists in producing the outlines of the pictures' design, letter, or figure desired, by making indentations, which cut the fibres of the wood, by means of sharp cutting edges being upon or a part of tools, rollers, plates, dies or other suitable articles, and the gilding or coloring in these indentations.

No. 11,930. Improvements on Machines for Scouring and Polishing Grain. (*Perfectionnements aux machines à nettoyer et polir les grains.*)

David M. Richardson, Detroit, Mich., U. S., 2nd November, 1880; for 5 years.
Claim.—1st. The ratchet faced segments *a* extending quite, or nearly, to the advancing edge of the blades of the spider A, in combination with the V-shaped and ratchet or serrated faced spurs *e*. 2nd. A spider A provided with blades, the advancing or front edges *b* of which are bevelled in curved lines upon their face sides. 3rd. The spider A provided with blades which are provided with segments *a* extending quite or nearly to the bevelled edge of the face side of the blade and with the V-shaped spurs *c*. 4th. The spider A provided with blades which are provided with devices, whereby a series of enlarged chambers and smaller throats are made.

No. 11,931. Improvements on Boots and Shoes (*Perfectionnements aux chaussures.*)

Alexander Gemmill and Alexander Boyd, Toronto, Ont., 2nd November, 1880; for 5 years.
Claim.—A boot or shoe having holes pierced in its quarters, immediately below the instep and suitably protected to prevent them from closing, the said holes being situated for the purpose of permitting the ingress and egress of the air pumped in and out by the action of the foot.

No. 11,932. Improvements on Car Wheels and Springs. (*Perfectionnements aux roues et aux ressorts des chars.*)

John Findlay, Montreal, Que., 2nd November, 1880; for 5 years.
Claim.—1st. The combination of the axle H having spring G attached therewith, as described, plate K and annulets or wheels A having springs D attached therewith. 2nd. The combination of the axle H, hubs E having recesses F, spring G, plate K and annulets or wheels A having recesses C. 3rd. The combination of the wheel A with the hub E having a perfectly empty annular space I between them and with springs D G.

No. 11,933. Self-Levelling Dining Table for Vessels. (*Table à manger suspendue pour les vaisseaux.*)

John H. Laskey and Isaac F. Dobson, Boston, Mass., U. S., 2nd November, 1880; for 5 years.
Claim.—1st. The combination of the oblique chains *a a*, the spreader or hanger A, the drop rods *b b* and a dining table, all constructed and attached as described, whereby both the lateral, and the fore and aft motion of the vessel is compensated. 2nd. The combination of the table and chairs, the oblique chains *a a*, the spreader A and the drop rods *b b*. 3rd. The combination of the table and chairs, the oblique chains *a a*, the spreader A, drop rods *b b*, the bell crank lever F and slide *f* with its spring.

No. 11,934. Improvements in Clay Pipes, Tiles, &c. (*Perfectionnements aux tuyaux, tuiles, &c., en terre.*)

Nathan W. Walker, Welleville, Ohio, U. S., 2nd November, 1880; for 10 years.
Claim.—A pipe section having inter-locking edges, such as tongues and grooves (either or both) set at an angle with each other to adapt the section to lock against lateral displacement, when the section is joined with its counterpart.

No. 11,935. Improvements in Sleighs. (*Perfectionnements aux traîneaux.*)

Thomas Buckingham, Ste. Cunégonde, Que., 6th November, 1880; for 5 years.
Claim. The combination, in the runners of a sleigh, of the turned-up ends F formed at their extremities into eyes G, with bolts H.

No. 11,936. Improvements on Grain Binders. (*Perfectionnements aux lieuses à grain.*)

Ole O. Storle, Milwaukee, Wis., U. S., 7th November, 1880; for 5 years.
Claim.—1st. The combination of a clamping mechanism adapted to clamp the cord at two points, a looping mechanism adapted to form a loop from that portion of the cord held between the two clamps, the loop being formed around the inner clamp or next to the gavel, and a device adapted to draw the cord through the loop and from the knob before the clamp next the gavel releases the cord. 2nd. A combined clamp and looping mechanism consisting of two concentric cylinders or tubes, with gear mechanism adapted to impart both simultaneous and independent and rotary motion thereto, and a guide or shield, the devices combined in the manner specified. 3rd. A knot tier for grain binders consisting of an outer tube D₁ and an inner tube D, which clamp the cord or twine between them, and a hook to draw the bow through to form the knot. 4th. The combination of the inner tube D and the outer D₁ having both simultaneous and independent rotary motion, and the spindle *d* rotating with the inner tube and movable up and down therein. 5th. The combination of the tubes D D₁, gears *f f*, with delays *e e*, and the reciprocating segment B provided with the rack *h* cut away at its ends and provided with delay surfaces K K₁. 6th. The finger R operated by means of the stud and roller *i* and the segment B, with track *a* and hook *h*, in combination with the tubes D D₁. 7th. The combination of the segment B, bracket J, arm and cord holder K L. 8th. The slide M arranged in the arm L and provided with the cutter *t* holding pin *u* and pin *z*, in combination with the double cam Q. 9th. The combination of the cam O₁, arm O, rocking shaft *y*, arm P with stud and roller *z*, and the segment B having track *a* with raised surface *b*. 10th. The combination of the spindle *d* with collars *n n*, tube *m* with web *p*, guide rod F, stud and roller *r* and the eccentric guide H on the segment B.

No 11,937. Improvements in Hoisting and Conveying Machines. (*Perfectionnements aux machines à monter et transporter.*)

Alexander E. Brown, Cleveland, Ohio, U. S., 7th November, 1880; for 5 years.
Claim.—1st. A carriage frame adapted to be supported and to travel on a cable or railway, and composed of a system of levers, such as described, that the weight of the suspended load exerts a tendency to retain the parts in each of the two conditions they must assume to retain, and to release the suspension of the hoisting block and load. 2nd. A carriage frame for supporting, and adapted to release the suspended load so made and operating that in arriving at the down grade—stop, the momentum will gradually be absorbed, either in the effort of lifting the load which has to be made in order to effect its release from the suspending hooks of the carriage, or partially by such effort and partially by the pull of the hoist rope on the carriage in a reverse direction, by the release of the load. 3rd. In combination with the carriage provided with any suitable means of engagement with the block to be suspended, a hoist block—having the lugs or other devices—designed to be held by such means of engagement located about coincident with the axis of the hoist block sheave. 4th. In combination with the carriage, a down grade stop device, and means on the carriage for engaging therewith, the combination being and operating so that the combined action of the carriage and stop devices effect, first, the operation of the weight suspending mechanism and arrest or partial arrest of the carriage's travel, and second, the retention of the carriage against the pull of the hoist rope. 5th. The combination, with the carriage frame provided with load retaining and releasing devices, and an up grade-stop frame provided with a fixed abutment for the carriage, of a means for operating the releasing mechanism, which does not interfere with either the subsequent operation of said mechanism in re-engaging the load or subsequent return movement of the carriage and all its attachment. 6th. The combination, with a cable way or track, adapted for use in a conveying or hoisting and conveying apparatus, and a stop frame adapted to be applied thereto, of means for effecting a security to, and a release from, said cable of said stop, which may be operated at a distance from the cable. 7th. The combination, with the carriage frame and load carrying receptacle or bucket attached thereto, in a conveying apparatus, of an automatic dumping mechanism composed of devices operating as described.

No. 11,938, Improvements on Blind Hinges. (*Perfectionnements aux pentures des persiennes.*)

Richard Troy, Oshawa, Ont., 7th November, 1880, for 5 years.
Claim.—1st. A window-blind hinge constructed with the chamber E for protecting the wheel H. 2nd. The lock ring N, and knob O. 3rd. The combination with the hinges as constructed with the chamber E, the flexible joint K, lock ring N, and knob O.

No. 11,939. Improvements on Cigar-Holders. (*Perfectionnements aux porte-cigares.*)

Edward S. May, Detroit, Mich., U. S., 7th, Nov. 1880; for 5 years.
Claim.—1st. A metallic shell formed of coils of wire strips or strands, the whole being subsequently cemented into a solid surface by a coating of tin, rubber, or other suitable substance. 2nd. A mouthpiece and holder for a cigar or cigarette, made together of a metallic shell formed of coils of wire, strips or strands, the whole being suitably shaped for the lips, and cemented into a solid surface by a coating of tin, rubber, or other suitable substance. 3rd. A holder for a cigar, said holder provided with ribs or threads upon the interior of its mouth to engage with a cigar. 4th. A cigar mouthpiece and holder, the mouthpiece formed of metallic wire strands or strips, wound, cemented and embellished upon the exterior by plating or otherwise. 5th. A cigar or cigarette holder made in the form of a surface or shell screw threaded upon its interior and exterior. 6th. A cigar holder formed of tubular wire wound and cemented.

No. 11,940. Improvements on Dry Goods Measures. (*Perfectionnements aux mesures de draps.*)

Albert M. Guyton, Orbisonia, Pa., U. S., 7th November, 1880; for 5 years.
Claim.—1st. The reel A on shaft B journalled in housings C C, in com-

bination with the roller E, spring tension bar F, and registering apparatus composed of pinion *h* on pivot *f*, of roller E, and toothed wheel *h* whereby, as the material is rolled on reel A, the tension thereof rotates roller E, and this operates through pinion *h*, the measuring wheel *h*. 2nd. In combination with the reel roller E, spring tension bar F, pinion *h* and measuring wheel *h*, the pointer K adapted to move over dial *l*, and intermediate toothed wheels and pinions, whereby the rotation of the roller E, by the material rolling on reel A, gives motion to said pointer and causes it to record the quantity rolled on the reel. 3rd. The key I, running on rod H, and provided with a rotary cutter m, in combination with roller E and reel A, for the purpose of cutting the cloth or other material, when held between these rollers. 4th. The spring bar F, supported on bow spring G, the roller E, and the rod H, carrying key I and cutter m, in combination with a reel and mechanism.

No. 11,941. Milk Cooler. (*Garde-lait.*)

François X. Blais, St. Rémi, Que., 7th November, 1880; for 5 years.

Résumé. La combinaison des plats A B et C avec le tuyau D.

No. 11,942. Improvements in Compounds for Soups. (*Perfectionnements dans les Conservees pour la soupe.*)

John F. Tyrrel, New York, U. S., 7th November, 1880; for 5 years.

Claim.—A compound for soup composed of dried vegetables, meat, and seasoning, put up in tight vessels or cans.

No. 11,943. Improvements in Oil Cups. (*Perfectionnements aux godets à huile.*)

Henry R. A. Boys, Farrie, Ont., 7th November, 1880; for 5 years.

Claim.—1st. The combination of the metal casing with the porous cement in the gas escape. 2nd. The combination of the metal band or scum breaker with the top of the centre tube. 3rd. The combination of the indicator tube for receiving the glass gauge with the cup, together with its glands and caps. 4th. The combination of the tube, connecting the condensing chamber of the cup with the steam pipe of the engine, and also its branch tube.

No. 11,944. Improvements on Thread Cases. (*Perfectionnements aux boites pour le fil.*)

Eugene L. Fitch, Breda, Iowa, U. S., 7th November, 1880; for 5 years.

Claim.—1st. A case provided with an inclined floor and a series of drawers provided with series of springs at the ends, for holding the rows of spools, and with wire or cord, with a button at the end for depressing said springs, to permit the end spool to drop on to the inclined floor and roll to the rear of the case. 2nd. The combination with the drawer F, of the springs F, the transverse piece H, the projection J and the cord or wire L. 3rd. The floor C with an inclination from front to rear, and extending beyond the rear of the case so as to form the space D, into which spools roll. 4th. The combination, with the case A, of the inclined drawers E, the inclined floor C extended the rear end of the case to form the space D.

No. 11,945. Improvements on Pumps. (*Perfectionnements aux pompes.*)

William M. Wilcox, Port Perry, (Assignee of John S. M. Wilcox, Whitby), Ont., 7th November, 1880; for 5 years.

Claim.—1st. The use of the cones B, on the semi-circular head of the pump handle working in the corresponding sockets in the piston rod. 2nd. The use of the bolts E and nuts F, for retaining the head of the handle close to the piston rod. 3rd. The friction rollers D behind the piston rod.

No. 11,946. Improvements in Spring Vehicles. (*Perfectionnements aux voitures à ressorts.*)

George White, Greenville, Pa., U. S., 8th November, 1880; for 5 years.

Claim.—1st. In a vehicle, the cross springs E connected thereto and made adjustable, so as to adapt the springs to different weights. 2nd. The combination of the seat B connected to the side bars *a*, by elliptic springs C, with the foot board D connected to the said side bars by adjustable cross springs E.

No. 11,947. Improvements on Feed Water Heaters. (*Perfectionnements aux chauffeurs d'eau d'alimentation.*)

James Argall, Mineral Point, Wis., U. S., 8th November, 1880; for 5 years.

Claim.—1st. The combination of the annular feed water heater and the central pipe for conveying the water from the heater to the boiler. 2nd. The combination of the annular feed water heater, the surrounding smoke stack, and the central pipe for conveying the water from the heater to the boiler. 3rd. The combination of the annular feed water heater, the central pipe for conveying the water from the heater to the boiler and the leaky check valve.

No. 11,948. Improvements on Sewer Traps. (*Perfectionnements aux trappes des égouts.*)

Electus B. Ward, Detroit, Mich., U. S., 8th November, 1880; for 5 years.

Claim.—1st. A sewer trap wherein the inlet pipe secures a ring gasket in its annular seat. 2nd. An annular recess in the neck thereof to receive a gasket ring. 3rd. The inclined or curved pipe B provided with the neck D having an annular recess *d*, in combination with the gasket ring E and ball valve F. 4th. The chamber H terminating in a neck D, provided with an annular recess *d*, in combination with a gasket E and with a ball valve F for closing the inlet. 5th. The combination of the curved pipe B, having inlet and outlet necks C D, the former being provided with an annular recess *d*, the chamber H formed by the bulged lower end of said pipe, the guard G, the gasket E and the ball valve F.

No. 11,949. Process for Manufacturing Gas. (*Procédé de fabrication du gaz.*)

James Stoneman and William A. Lloyd, Eldred, Pa., U. S., 8th November, 1880; for 5 years.

Claim.—An air pump A, provided with suitable outlets, in combination with

the oil tank B, pipes D E and outlet pipe G, provided with suitable check valves and cocks.

No. 11,950. Improvements on Grain Binders. (*Perfectionnements aux lieuses à grain.*)

Ole O. Sterle, Milwaukee, Wis., U. S., 8th November, 1880; for 5 years.

Claim.—1st. The combination of the cutting plate having guard or stop arm, with the plate having radial arms. 2nd. The combination of the cutting plate, plate having radial arms, and the elastic holding plate having an arm for clearing the radial arms of the cord ends, as they revolve. 3rd. The combination of the cutting plate C having guard or stop arm c, the plate B having radial hooked arms, and the elastic plate D having cleaning arm.

No. 11,951. Improvements on Spring Tooth Harrows. (*Perfectionnements aux herses à dents à ressort.*)

Horatio Gate, Albion, Mich., U. S., 8th November, 1880; for 15 years.

Claim.—1st. A sulky harrow provided with two or more series of spring teeth I, each of said series being secured to a separate bar H, and adapted to be simultaneously changed in their position by a single motion of the lever M. 2nd. In combination with a sulky harrow having spring teeth I, the plate E carrying the arm F, or axles of the traction wheels arranged and operating to allow of an elevation or depression of the frame A. 3rd. The combination of a frame D vertically adjustable on the wheels G, with a harrow composed of a series of bars H, journaled in the frame D, and carrying spring teeth I, and connected together by a rod O, for adjusting the inclination of the teeth, and the two adjustments being independent of each other, whereby the frame can be raised and lowered, as desired, and the angle of inclination of the teeth be raised.

No. 11,952. Improvements on Hay Rakes. (*Perfectionnements aux râteliers à foins.*)

Charles F. Arderson, London East, Ont., 8th November, 1880, for 5 years.

Claim.—1st. The front bar B and rear bar G for carrying the teeth A, connected by suitable metal or wooden arms F F D, pivoted eccentrically to axle C and oscillating independently thereof. 2nd. In combination with the above, the arrangement of chain I, and eccentric J. 3rd. In combination with oscillating bar B, the holding lever S having a fulcrum at U. 4th. In combination with front bar B oscillating as described, the ratchets H H, dogs I I, rods K K, eccentric J, chains L L, and lever N.

No. 11,953. Improvements in Bridges. (*Perfectionnements dans les ponts.*)

William Mc Lary, London, Ont., 8th November, 1880; for 5 years.

Claim.—1st. The girder plate H, having upper and lower flanges d I, and attached by bolts e e, passing through slots in said plate to sides of timbers B C. 2nd. The construction of parts, as a new device for preventing the strains in wooden bridge cords, &c., at their point of intersection with the other timbers, and removing the strain to the abutment, consisting of the combination of metallic shoe E, eye rods F G, girder plate H, having flanges d I, and bolts and slots e e, abutment plate K, screw bolts J, top plate L, and strut plate M.

No. 11,954. Improvements on Pitman Connections. (*Perfectionnements aux raccords des bielles.*)

William Young and Andrew Young, Almonte, Ont., 8th November, 1880; for 5 years.

Claim.—The combination, with the pitman E and disk F or its equivalent, of the bars or pivoted arms G H, at their conjunction, operating to describe an arc of a circle, for the purpose of giving a double end motion to the pitman.

No. 11,955. Improvements on Grain Separators. (*Perfectionnements aux séparateurs des grains.*)

Neil Smith, Lucknow, Ont., 8th November, 1880; for 5 years.

Claim.—1st. The sieve F, placed below the hopper for distributing the grain falling on the separator sieves H. 2nd. The fan C, air ducts D and sieve F combined in a grain-cleaner, whereby the lighter soil matter is separated from the grain, in falling into the sieves, by the suction of the fan. 3rd. In a sieve having two grades of mesh, two divided bottoms separated by a deflector *d* for carrying off impurities through slots in both sides of the sieves. 4th. The combination of two or more sieves having side discharge slots *f* and deflector *d*, and a shoe having side grooves e h for the downward passage of the separated matter. 5th. The combination, with the sieve, of movable deflectors *d* dividing the grain to both sides of the sieve, said sides having slots *f* for the passage of the grain. 6th. In combination with the shoe, a series of sieves having sides raised above the ends and mesh and bearing one upon the other.

No. 11,956. Improvements on Barrel and Box Castors. (*Perfectionnements aux roulettes des barils et des boites.*)

James R. McCall and Henry E. Duncan, Schoolcraft, Mich., U. S., 8th November, 1880; for 5 years.

Claim.—1st. A saddle A formed with the hook B B, and provided with the tooth a, studs C and wheels D D. 2nd. In combination with a box or barrel, the saddle A, with wheels D D, the hooked strap F, with pink and be hollow post I.

No. 11,957. Oil Stove. (*Poêle à l'huile.*)

Richard F. Carter, Clifton, Charles E. Lacey, Drummondville, Ont., and George H. Kendall, Montreal, Que., (Assignees of Abram G. Allis, and Hugh McCConnell, Cleveland, Ohio, U. S.,) 8th November, 1880, (Extension of Patent No. 5,528).

No. 11,958. Improvements on Sewing Machines. (*Perfectionnements aux machines à coudre.*)

Charles L. Kellogg, Gasport, N. Y., U. S., 10th November, 1880; for 5 years.

Claim.—1st. The combination, with the rack bar C and crank arm E, of the tilting pawl F, having bail c, sleeve G, and spring G'. 2nd. The combination of arm E, spring G', sleeve G, tilting pawl F, and rack bar C, provided with stops J K, whereby an automatic reciprocating movement is imparted to the gathering arm I. 3rd. The combination of plate A, having arm L provided with bars M, and rack bar C provided with arm H, for folding plait and ruffles. 4th. The sleeve G provided with anti-friction roller d. 5th. The arm L having adjustable stop K. 6th. The tripping stop J, adjustably attached to the rack bar C. 7th. The arm H, pivoted to rack bar C and having a rocking motion. 8th. The arm L, having bars M and provided with needle hole g. 9th. The arm N for the purpose set forth.

No. 11,959. Saw Mill Head Block. (*Poupée de scierie.*)

Levi W. Pond, Eau Claire, Wis., U. S., 10th November, 1880; (Extension of Patent No. 5,368).

No. 11,960. Saw Mill Head Block. (*Poupée de scierie.*)

Levi W. Pond, Eau Claire, Wis., U. S., 11th November, 1880; (Extension of Patent No. 5,368).

No. 11,961. Composition for removing Boiler Scale. (*Composé pour enlever les incrustations des chaudières.*)

Avila S. Vinet, Narcisse Bélanger, and Jean B. Vinet (Assignees of Auguste Chavasse and Arsène Rambouillet), Montreal, Que., 11th November, 1880; (Extension of Patent No. 5,382).

No. 11,962. Improvements on Glove Fasteners. (*Perfectionnements aux agrafes des gants.*)

Robert R. Rae, (Co-inventor with James Wilds,) Aetor, Ont., 11th November, 1880; for 5 years.

Claim.—A pair of locking studs, rivetted, or otherwise fastened, to the glove, and so formed that they lock when twisted together.

No. 11,963. Improvements on Blacking Brushes. (*Perfectionnements aux brosses à souliers.*)

Edmund L. Wood, Henry S. Schmick, Charles U. Connelie and Daniel E. Boone, Eastland, Texas, U. S., 11th November 1880; for 5 years.

Claim.—1st. In combination with a blacking brush, a blacking box holder. 2nd. In combination with the box holding cup C having springs E, the set screw F. 3rd. The combination of the bracket G and post H, the disc K carrying the rotary circular brush I. 4th. In combination with the box holding cup E, the bracket G, binged brush carrier K, and posts H N, having springs M O. 5th. In combination with a blacking brush A, a rotary circular brush O.

No. 11,964. Improvements on Dynamo-Electric Machines. (*Perfectionnements aux machines dynamo-électriques.*)

Charles A. Hussey and Amzi S. Dodd, New York, U. S., 11th November, 1880; for 5 years.

Claim.—1st. A magnet for dynamo-electric machine, circular or semi-circular, cylindrical or semi-cylindrical form, having portions extended or exposed inwardly, outwardly or transversely at the sides, the magnet being wound with wire between the said portions. 2nd. A magnet for a dynamo-electric machine, circular or semi-circular, cylindrical or semi-cylindrical in form, having projections extending inwardly, outwardly, or transversely from the sides, and terminating in arc-shaped extensions concentric with the magnet, the magnet being wound with wire between the projections only and preferably, to such an extent that the inner surface of the wire will form a continuation of the arc-shaped extensions. 3rd. An armature for a dynamo-electric machine comprising radial projections and intervening spaces, having an opening through the centre, and openings through the radial projections. 4th. The combination of a magnet of circular, semi-circular, cylindrical or semi-cylindrical form, wound and provided with projections extending inwardly, outwardly, or transversely from the sides, and terminating in arc-shaped extensions, and an armature provided with radial projections and intervening spaces, and having an opening through the centre, and openings through the radial projections.

No. 11,965. Improvements on Broad-cast Sowers. (*Perfectionnements aux semoirs à la volée.*)

William Smith, Montreal, Que., 11th November, 1880; for 5 years.

Claim.—1st. The combination of a horizontal revolving disc a, having projections with chutes R' S'. 2nd. The combination of the hopper H, chute G, inclines R' S', and disk a having projections.

No. 11,966. Improvements on Electric Signalling Instruments. (*Perfectionnements aux appareils à signaux électriques.*)

Thomas T. Eckert, James W. Clendenin, David H. Bates, New York, and Robert Garrett, Baltimore, Md., (Assignees of William Hadden, Brooklyn, N. Y.,) U. S., 11th November, 1880; for 5 years.

Claim.—1st. The non-conducting block A having contact points C D E, connected with the circuit wire E, the pivot G, connected with the circuit wire F, the crank arm H having spring J, the stop K, and the recess L. 2nd. The stop K, attached to the block A having ring groove B, and contact points

C D E, to receive the crank arm H of the circuit closer and stop its movement, whereby the circuit closer is kept from again coming in contact with the contact points during the same movement, and thus confusing the signal. 3rd. The recess L, formed in the bottom of the ring groove B, having contact points to receive the ends of the spring J of the circuit closer, whereby the spring of the circuit closer is taken out of tension, and the circuit closer is kept from being turned backward. 4th. The non-conducting block A, constructed with a ring groove having contact points in its bottom, whereby the contact spring J of the circuit closer is guided and protected.

No. 11,967. Improvements on Rotary Engines. (*Perfectionnements aux machines rotatoires.*)

George Murray, jr., Cambridgeport, Mass., U. S., 11th November, 1880; for 5 years.

Claim.—1st. A rotary engine consisting essentially of a universal joint B, with solid sections E F, snugly fitted and revolving within the globular shell A. 2nd. A globular shell A provided with ports b, covered channels c, flanges d and pipes f, the universal joint B whose sections are solid, standards C, bed plate D, shaft G, pillow block H and pulley I.

No. 11,968. Improvements on Electric Lamps. (*Perfectionnements aux lampes électriques.*)

Thomas A. Edison, Menlo Park, N. J., U. S., 11th November, 1880; for 15 years.

Claim.—1st. An incandescing conductor formed of one or more carbonized natural fibres. 2nd. A carbon clamp for uniting the incandescing and the metallic conductors formed of a carbonized material. 3rd. The method of uniting the incandescing and the metallic conductors which consists in inserting both in clamps made of carbonizable material, and then carbonizing the whole together. 4th. The slip for carbonization having enlarged ends formed in one piece and homogeneous therewith upon one edge, or one side and one edge, the remaining edge and side being straight. 5th. The method of forming a slip or filament for carbonization, consisting in securing a blank in clamps or holders, having the configuration desired for the carbon, and shaving or cutting away the superfluous material. 6th. A slip or filament for forming, by carbonization, the incandescing conductor of an electric light, made of bast or fibre, like cane and bamboo. 7th. A slip or filament for forming, by carbonization, the incandescing conductor of an electric light, made of a material composed of fibres laying parallel through the length of the slip or filament. 8th. A slip or filament, for carbonization, provided with slots or holes in its enlarged ends, for holding it in the carbonizer and for passage of the clamping screws when placed in a lamp. 9th. The combination of the shaving knife, the block c and means for moving it, and the adjustable limiting screw. 10th. The clamps, formed of two portions, one being provided with offset or shoulders forming the bottom of slots acting as straight-edges or gauges to the slip under treatment. 11th. The clamps provided with slotted projections at the ends, for forming the broadened or thickened ends of the slip, and the slot therein. 12th. The method of forming carbons for electric lamps which consist in forming the wood into the shape desired for the carbon, and then carbonizing the same. 13th. The method of forming carbons for electric lamps, which consists in cutting or stamping from a veneer, a piece of wood with thickened or broadened ends, and of the shape desired, and then carbonizing the same. 14th. The horse shoe with thickened or broadened ends for attachment to the clamps formed or cut from one piece of wood. 15th. The method of forming carbons for electric lamps which consists in shaping a block of wood, then cutting, splitting, or shaving into straight pieces adapted for single carbons, then bending such pieces into the desired form, and carbonizing in such form. 16th. The block, for the manufacture of carbons for electric lamps, consisting of the central web, and thickened or broadened ends. 17th. The method of forming carbons for the incandescing conductors of electric lights, consisting in first cutting or turning a block of wood into the shape of an oval having a broadened portion, then carbonising, and then removing a portion of the broadened part. 18th. A carbon horse shoe composed of a filamentary body with broadened ends turned from a piece of wood and then carbonized. 19th. The method of manufacturing carbons for incandescing electric lamps, uniform and regular in shape and carbonization, consisting in carbonizing filaments while one or both ends are secured in a certain definite position relatively to the amount of contraction, so that, when carbonized and contracted, the ends shall be in proper position to each other. 20th. The method of manufacturing carbons for incandescing electric lamps, consisting in maintaining the slips or filaments under constant strain, and with one or both ends fixed, while in process of carbonization. 21st. A method of manufacturing carbons for incandescing electric lamps consisting in carbonizing the slips or filaments while in groves, which maintain the shape and provide for contraction during carbonization. 22nd. The carbonizing plate provided with a groove for shaping the material, and a chamber or chambers permitting contraction during carbonization. 23rd. A carbonizing flask and the plates thereof made of nickel. 24th. The carbonizing flask or box, provided with grooves for the reception of the fibre. 25th. The carbonizing oven consisting of a case, and system of gas and air supply pipes combined. 26th. The combination of a case or cover therefore provided with an inspection aperture and cover, means for supplying gaseous fluid to the interior of the case and means for mingling air under pressure with the fuel. 27th. The combination, with one derived circuit of a multiple arc system, of two or more lamps, each of a fractional resistance and radiating surface of the resistance, and radiating surface of the standard lamps of the system, the fraction being the number used. 28th. The combination, with one socket or holder, and one derived circuit, of one circuit controller and two or more lamps, each of a fractional resistance, and radiating surface of a standard lamp. 29th. The combination, with the incandescing conductor of an electric lamp, of two fluid columns sustained by atmospheric pressure, and forming both a part of the circuit and a hermetical seat to the lamp. 30th. The combination, with the incandescing conductor and the fluid columns, of reservoirs connected to the source of electricity, and into which the columns dip for the maintenance of the columns and the completion of the circuit therethrough. 31st. The combination, with an electric lamp, of the stand or support therefor, consisting of an insulating base and top, connected by adjustable standards. 32nd. The combination, with a globe or chamber, of a much larger chamber or reservoir, connected to air exhausting apparatus which maintains therein a high degree of exhaustion. 33rd. The combination of a proving chamber or globe, a mercury reservoir for sealing the same and exhaust reservoir or chamber, and means for exhausting the same. 34th. The combination of a globe or chamber, a second and much larger

globe chamber or reservoir, a valved tube connecting them, means for maintaining a high degree of exhaustion in the larger reservoir or chamber and connected thereto, and a gauge for determining the degree of exhaustion. 35th. The combination, with the globe or chamber of a proving lamp, of a mercury reservoir connected to the globe or chamber, so that the stopper thereof may at will be covered or not covered by mercury. 36th. The method of testing carbons consisting in subjecting them to the action of a current in a temporarily exhausted globe or receiver, prior to their embodiment in completed lamps. 37th. The combination, in one electric lamp, of two or more incandescing conductors and means for connecting them in the electric circuit, either in series or multiple arcs. 38th. The combination, in one electric lamp, of two or more incandescing conductors and means for making or breaking an electric circuit through either one as may be desired. 39th. The combination, in one electric lamp, of two or more incandescing conductors, and means for completing the circuit through either or through both. 40th. The combination of contact points 1 2 3 4, arçs *x s z* and circuit connections. 41st. In an electric lamp, the combination with the enclosing globe or chamber of a second chamber, through and into which the conducting wires pass and are sealed, both chambers being hermetically sealed together and exhausted. 42nd. The method of sealing the enclosing globe or chamber of an electric lamp by sealing an auxiliary or secondary globe or chamber in the opening of the first or enclosing globe. 43rd. The method of preserving the vacuum in the enclosing globe of an electric lamp, consisting in sealing the conducting wires at two points in a vacuum globe hermetically sealed to the enclosing globe. 44th. The combination with the neck of the enclosing globe and the carbon supporting tube of a cup containing a liquid receiving the end of the neck of the enclosing globe and through which passes the carbon supporting tube, and washers or plugs filling the space between the neck and cup and the neck and tube.

No. 11,969. Improvements in Valves for Water Closets. (*Perfectionnements aux valves des cabinets à l'anglaise.*)

Thomas Hennessy, Oakland, Cal., U. S., 13th November, 1880; for 5 years.

Claim.—1st. The valve A formed of thin metal and filled with compressed cord or similar substance, to prevent battering, and having a rounded or conical top *a*, fitting a correspondingly shaped seat *b*, when arranged to float in a chamber and be lifted to its seat by a pressure of water in the supply pipe. 2nd. The metal float valve A, having its interior filled with cork to render it solid and provided with a rounded or conical top *a*, to fit a correspondingly shaped seat *b*, moving vertically in a valve chamber connected with the water supply pipe, in combination with a rubber-tipped rod J, suitably connected with an operating spindle F, whereby said valve is operated as described. 3rd. The stemless cork-filled float valve A, with its conical or rounded top *a*, fitting in a correspondingly shaped seat *b*, and moving vertically in the chamber B, connected with the water supply pipe C, in combination with hollow flanged piece G, having the perforations *d h*, rubber-tipped rod J, yoke *c*, regulating screw *e*, and spindle F moving vertically in the chamber D, having a discharge pipe E, whereby the valve is operated and flow or wash of water is controlled. 4th. The flange or disk G, with its cup leather or piston moving within the chamber D, and having the openings *d h*, the adjusting screw *e*, the operating stem F, and the valve opening tip or stem J, in combination with a valve A, to control the inlet passage C and the outlet passage E.

No. 11,970. Improvements on Horse Powers. (*Perfectionnements aux manèges.*)

Ibez T. Warren and The Warren Manufacturing Company, Le Roy, N. Y., U. S., 13th November, 1880; for 5 years.

Claim. The combination with a horse power of a sweep O having tubular thills P, rods Q and evener R.

No. 11,971. Hay Rake. (*Râteau à join.*)

George H. Preston, Ottawa, Ont., 13th November, 1880; for 5 years.

Claim. The rake G, draft bars D D and short chains H H, in combination with frame C C and wheel A B.

No. 11,972. Improvements in Hand Drag-Saws. (*Perfectionnements aux scies de travérs.*)

Simeon Annett, Euphemia, Ont., 13th November, 1880; for 5 years.

Claim.—1st. The swing bar F, arm G and weight H. 2nd. The arrangement and combination of all the parts framed as described.

No. 11,973. Improvements in Sewing Machines. (*Perfectionnements aux machines à coudre.*)

Jeremiah Keith, Providence, R. I., U. S., 13th November, 1880; for 5 years.

Claim.—A sewing machine provided with an eye pointed needle and a shuttle or its equivalent to operate therewith, in order to perform lock stitch sewing by the thread of the shuttle being passed through the loops formed by the needle, a "looping hook" and a "cast off," and mechanism for operating them to form with the needle chain stitch sewing. The combination of the looper and the cast off with means of raising and depressing them relatively to the needle and the shuttle, in order for the shuttle, while in operation to play free of the looper and the latter when the shuttle is out of its race, to be adjusted to operate with the needle as explained. The combination of the groove *z*, in the wall *b* of the shuttle race, with the looper and cast off, and the needle to operate therewith.

No. 11,974. Improvements on Reed Organs. (*Perfectionnements aux orgues à tuyaux.*)

James E. Treat, Boston, Mass., U. S., 13th November, 1880; for 5 years.

Claim.—1st. A valve chamber *f* located between the wind reservoir and the pipe or reed, and provided with a valve *g* covering both the pressure or chest hole *h* and pipe channel *i*, and having a relief vent *l* and a relief valve *m*. 2nd. The combination of an air chamber *f* with its valve *g* and channels *h i l*, relief valve *m*, the reciprocal wind channel *h* and reciprocal valve *n*.

No. 11,975. Improvements on Bosom-Boards.

(*Perfectionnements aux planches à repasser les devants des chemises.*)

Frank M. Wright, Palmyra, N. Y., U. S., 13th November, 1880; for 5 years.

Claim.—The combination of the board A provided with the head C having a recess *a* and aperture *x* and the frame B having corresponding recess and the protecting tongue *b*.

No. 11,976. Improvements in Roof Paint.

(*Perfectionnements dans la peinture à toiture.*)

James Butler, Ingersoll, Ont., 13th November, 1880; for 5 years.

Claim.—A composition of coal tar, salt, alum and copperas prepared in the proportions and manner described.

No. 11,977. Improvements in Horse Hitchers.

(*Perfectionnements aux entrées de cheval.*)

Israel F. Alger, Fitchburg, Mass., U. S., 13th November, 1880; for 5 years.

Claim.—The straps A B B C C in combination with straps G H H H, ring I, snaps D D F F, rings E E E and the breeching of a harness.

No. 11,978. Improvements on Steam Thrashing Machines. (*Perfectionnements aux machines à vapeur pour battre les grains.*)

Thomas Armstrong, Rockton, Ont., 13th November, 1880 for 5 years.

Claim.—The combination of rope F, pulley E, shaft G and frame A.

No. 11,979. Improvements on Paper Pails.

(*Perfectionnements aux seaux en papier.*)

James A. Weel, Binghampton, N. Y., U. S., 13th November, 1880; for 5 years.

Claim. 1st. The combination of the following elements: a paper vessel, the bail D, the strip B attached to the bail and secured to the vessel by a fastening device, which passes from the outside to the inside of the vessel and having the portion below the fastening device extending around the outside of the walls and the bottom of the vessel. 2nd. The combination, with the paper vessel, of the metallic strengthening strip B arranged to pass across the bottom, up the sides, through the walls near the top from the outside to the inside of the vessel, and the bail D attached to the strengthening strip on the inside of the vessel. 3rd. The combination, with the paper vessel, of the strengthening strip B arranged to pass across the bottom, up the sides, through the walls near the top, from the outside to the inside of the vessel, and thence over the top downwardly upon the outside of the vessel, and the bail D attached to the strengthening strip on the inside of the vessel.

No. 11,980. Improvements on Wind-Mills.

(*Perfectionnements aux moulins à vent.*)

Jules Roy-Desjardins, Burlington, Vt., U. S., 13th November, 1880; for 5 years.

Claim. 1st. The combination of the standards E and sails F, the standard being secured to the rim D near each edge alternately. 2nd. The sails F having the fenders *e e* in combination with the stops P. 3rd. The combination of the sails F, standards E, braces *a a* and cross braces *a*. 4th. The standards E having stiff cross braces *a* attached to their upper extremities. 5th. The stops P having their lower part slotted in combination with the circles G H, shoulders *p* and set screws *m n*. 6th. The stops P made solid, in combination with the circles G H and set screws *m n*. 7th. The stop P having their upper part slotted, in combination with the notched circle *d* and set screws *m*. 8th. The combination of the stops P, springs O and sails F. 9th. The combination of the stops P, collars I, openings *o* and gauge *g*. 10th. The combination of the rim D, circles G H, stops P, springs *o*, rotary circles H H and sails F. 11th. The combination of the rim D, circled shoulders *p*, set screws *m*, stops P and sail F. 12th. The combination of the pulleys M N, wheels L K, worm J, screw I and rotary circles H H for operating the rods P. 13th. The rods P, collar I set screw M, circles G H, sails F and rim D. 14th. The wheel *c* having the stops P attached to the rim D by set screws, in combination with the notched brace circle *d*. 15th. The combination of the pulley Q, brakes *r r* and right and left screw *q*.

No. 11,981. Improvements on Steam Boilers.

(*Perfectionnements aux chaudières à vapeur.*)

James Livingston and Joseph Wright, Toronto, Ont., 13th November, 1880; (Extension of Patent No. 10,310.)

No. 11,982. Improvements on Steam Boilers.

(*Perfectionnements aux chaudières à vapeur.*)

James Livingston and Joseph Wright, Toronto, Ont., 15th November, 1880; (Extension of Patent No. 10,310.)

No. 11,983. Improvements on Wringers. (*Perfectionnements aux essoreuses.*)

James Lottridge, John Harvey, Richard P. Street, James Simpson, Robert Nixon, Hamilton, Ont., and Joseph W. Calef, North Easton, (Assignees of Augustus Page, the Assignee of Cornelius E. Haynes, Boston,) Mass., U. S., 15th November, 1880; (Extension of Patent No. 5,412.)

No. 11,984. Improvements on Butter Colouring Compounds. (*Perfectionnements aux composés pour colorer le beurre.*)

Frederick Lavaek and Robert L. Cox, Gouverneur, N. Y., U. S., 15th November, 1880; for 5 years.

Claim. A compound composed of salt, mutton tallow, curoums and annotoine.

No. 11,985. Improvements on Cane Shaving Machines. (*Perfectionnements aux machines à doler la canne.*)

George S. Colborn, Garden, Mass., U.S., 15th November, 1880; for 5 years.

Claim.—1st. The cutting disk A, sleeve a, gear a₁, stud a₂ and pin a₃, in combination with the worm shaft c. 2nd. The combination of the cutting disk A, recessed sleeve a, gear a₁, stud a₂ and pin d, in combination with worm shaft c.

No. 11,986. Improvements on Machines for Scraping and Stripping Rattan. (*Perfectionnements aux machines à racler et fendre le rotin.*)

George S. Colborn, Gardner, Mass., U. S., 15th November, 1880; for 5 years.

Claim.—1st. The combination of a feed wheel a₁ provided with the cutters a, with the mouth-piece a₂ provided with a feedway substantially parallel with the main feedway A. 2nd. The combination of the revolving cutters a secured to the under side of the feed wheel a₁ or to the shaft operating it, the horizontal table a₃, the wall a₄ extended around the inner edge of the table, and the mouth-piece a₂ provided with a feedway, all arranged in relation to each other, and in relation to the feedway A of the rattan machine. 3rd. The combination of two guides b₁ supported upon the posts b₂, pivoted as described and provided with the arms b₃, with the spring b₄. 4th. The combination of two guides f supported upon the posts f₁, each of which is provided with the arm f₂ having a projecting bar f₃, which come in contact and are somewhat rounded upon their contacting ends and the springs f₄. 5th. The combination of a centering device consisting of the two guide rolls b₁ adapted to be moved to and from each other, with the scraping knives adapted to be set or opened before the feeding of the cane, and to be closed automatically upon the outward movement of either of the two guides by connecting mechanism. 6th. The scraping knives c arranged in successive pairs in such a manner as to entirely encircle the cane, and adapted to be separated and held apart before the feeding of the cane, and to be automatically closed upon the extreme end of the cane, by suitable spring, which springs are thrown into operation by the mechanism described and which also provide the knives with a yielding adjustment when closed. 7th. As a means for setting or opening the scraping knives preparatory to the feeding of the cane, the combination of the knives c, their supporting block c₁, each provided with the pins d₁, the cam disk D₂ provided with the arm d₂, with the lever d₃ and the latch e. 8th. The combination of the knives c arranged to be opened by the mechanism described and held open against the stress of the springs c₁ by means of the latch e, with the guides b₁ arranged in front of said knives and adapted to move the latch e upon the contact of the front end of the cane therewith, whereby the knives are closed upon the extreme end of the passing cane. 9th. The combination of the disk D₂ provided with the cams or inclines d and the arm d₂, the knife supporting block c₁ and springs c₁, with the latch e and operating lever d₃. 10th. The combination of the adjustable tripping block e₁, its supporting bar e₂ and post e₃, all arranged to be operated by the movement of one of the guides b₁. 11th. The combination of the latch e adapted to automatically engage with and hold the arm d₂ projecting from the disk carrying the cams or inclines operating the knife supporting blocks, with the wedge-shaped block e₂ adapted to engage with said latch and to be operated by the movement of one of the guides. 12th. The combination of a support fastened to the pivoted post carrying one of the guides b₁ and movable therewith, with the bar e₄, tripping block e₁ and latch e. 13th. The combination of the stripping device for removing the exterior of the cane from the pith, the feeding rolls for advancing the pith to the receiving and transferring chamber, and the said receiving and transferring chamber M, adapted to be revolved as described. 14th. The combination of the roll m, provided with the chambers M, arranged at the end of the machine and adapted to receive the pith in the manner indicated, with the described means for intermittently revolving the roll. 15th. The combination of the roll m provided with the chambers M partially inclosed by the box m₁, with the curved arms or cradle m₂, and means for revolving the roll. 16th. The combination of the roll provided with the pith receiving chambers M adapted to be successively brought in line with the feedway of the rattan machine, with the lever d₃, and the connecting mechanism described. 17th. The combination of feeding rolls for advancing the cane to a centering device and scraping knives arranged to be opened and held opened, and to be automatically closed upon the rattan feeding rolls for advancing the cane to a centering device and stripping mechanism, and a roll provided with the chambers for receiving the pith and for delivering it from the machine.

No. 11,987. Improvements on Harness Buckles. (*Perfectionnements aux boucles de harnais.*)

James A. Gavitt and Malcolm S. McQuarrie, Walla Walla, Washington Ty., 15th November, 1880; for 5 years.

Claim.—1st. A harness buckle having a hinged tongue provided with a prong and with a spring catch or device for holding it closed. 2nd. A frame whose front cross bar is provided with a recess i and lateral notches n, and the hinged tongue whose free end is adapted to enter such recess, and having a spring locking device whose free ends enter said notches. 3rd. The recessed buckle tongue of the wire spring catch having lateral bends, and arranged with its free ends projecting beyond the end of said tongue, in combination with the buckle frame whose front cross bar has a recess and notches to receive the ends of the tongue and spring.

No. 11,988. Process for the Manufacture of Iron. (*Procédé pour la fabrication du fer.*)

Thomas J. Deakin, Columbia, Pa., and Willard T. Block, Hannibal, Mo., U. S., 15th November, 1880; for 5 years.

Claim.—The forming of an open pile of steel bars, and heating the same in any suitable furnace to a temperature somewhat short of a proper welding heat, then arresting the heat at this point by the admission of air into the furnace, and covering the pile and more or less of the bed of the furnace with iron turnings, then increasing the heat to a full welding temperature, and rolling the pile upon the bed of iron turnings until the softened surface of

the pile is completely coated with the said turnings, and then removing the coated pile from the furnace, and welding it by hammering or rolling.

No. 11,989. Improvements on Car-Couplers. (*Perfectionnements aux attelages des chars.*)

Archibald Cron, Brantford, Ont., 15th November, 1880; for 5 years.

Claim.—1st. The coupling pin B passing through the slot b, in combination with the plate C, pivoted at or to the drawhead A. 2nd. The pivoted plate C carrying the pin B and provided with a bracket K, supporting the pivoted wing d, in combination with the vertical supporting rod D. 3rd. The vertical rod D, pivoted to the bracket E, and connected to the horizontal bar F, in combination with the link G, eccentric H and spindle I, operated by the crank handle J. 4th. The pivoted plate C for carrying the pin B, in combination with the eccentric H or the spindle I. 5th. The pivoted plate C, supported by the rod D and operated as described, in combination with the pin B and link L. 6th. The slotted plate C, pivoted at a to the drawhead A, and pivoted with a bracket K, for carrying the pivoted wheel wing d, in combination with the rod D pivoted on the bracket E and connected to the link G by the box F, the eccentric H and spindle I provided with a handle J.

No. 11,990. Improvements on Gas Machines. (*Perfectionnements aux machines à gaz.*)

Edward Pincus, (Assignee of Abel Henning,) Philadelphia, Pa., U. S., 15th November, 1880; for 5 years.

Claim.—1st. The generator J, having inlet c, in combination with plunger H, provided with valve f₁, internal cylinder e, having openings f f, and a heating device acting on said generator. 2nd. The generator J in combination with the valve K, and with the cross head T, resting freely on the cap T₁, and having connected to it the arms S₁ U. 3rd. The combination of holder B having stem D₁, with generator J, plunger H, rod G and lever F. 4th. The holder B with air inlet and outlet pipes C, D, the holder L with air inlet and outlet pipes M, the connecting pipes M₁, the chamber E, generator J, plunger A and lever F. 5th. The air holder B and pump connection Y, in combination with the pulley W having a dog W₁, and the dog X, arm X₁, and toggle X₂. 6th. The plunger H and holder B, in combination with the lever F and shaft D₁ having the link connections a. 7th. The holder L in combination with the inlet pipe M and the external spring b₁ on the guiding stem of each holder.

No. 11,991. Improvements on Journal Lubricators. (*Perfectionnements aux graisseurs des tourillons.*)

Frederick Crocker, sr., Olean, N. Y., and Charles D. Robbins, Titusville, Pa., U. S., 15th November, 1880; for 5 years.

Claim.—In a device for lubricating enclosed journals of machinery, the cup F or follower M, the space between the cup or follower and the journal, being filled with raw or unrendered animal fat, the whole being held against or in contact with the journal B by spring H.

No. 11,992. Improvements on Thrashing Machines. (*Perfectionnements aux machines à battre.*)

Thomas Venting, Warwick, Ont., 15th November, 1880; for 5 years.

Claim.—In combination with the shoe B of a thrashing machine, the board A drilled full of holes a, and operated by pitman C and belt D, from any of the shafts b of the machine.

No. 11,993. Improvements on Mowers and Reapers. (*Perfectionnements aux faucheuses-moissonneuses.*)

Ephraim Smith, Pittsburg, Pa., U. S., 15th November, 1880; for 5 years.

Claim.—1st. A frame a made of a single piece of L-angle steel or iron, formed and strengthened at the corners. 2nd. A spring sheave H in combination with the finger bar D, hinge bar E, chain band or cord G, and supporting and adjusting part K. 3rd. A lever M pivoted to the hinge bar E, in combination with the finger bar D and supporting and lifting chain G. 4th. The combination of the finger bar D, hinge bar E, chain band or cord G, spring sheave H supporting and adjusting part K and lever M.

No. 11,994. Improvements on Mowers and Reapers. (*Perfectionnements aux faucheuses-moissonneuses.*)

Frederick J. Hayard and Thomas Fuller, Belleville, Ont., 15th November, 1880; for 5 years.

Claim.—The combination of the shaft G, pitman crank H, and the pitman J, with the rollers E, and corrugated groove d of the driving wheel D.

No. 11,995. Improvements in Marking Pens. (*Perfectionnements aux plumes à marquer.*)

James W. Stokes, Milan, Ohio, U. S., 15th November, 1880; for 5 years.

Claim.—1st. The two broad pointed flexible blades a b of equal length and operating from either side. 2nd. The two broad flexible blades a b, each differently grooved at the inner face of the point, whereby different shadings can be given by turning the pen over.

No. 11,996. Improvements on Feed Water Injectors. (*Perfectionnements aux injecteurs de l'eau d'alimentation.*)

James Jenks, Detroit, Mich., U. S., 15th November, 1880; for 15 years.

Claim.—1st. The combination of the steam chest K with the suction and force nipples a c, such nipples being at right angles to each other and with their axes in direct line with the inflowing and outflowing water. 2nd. The chamber M communicating with the lifting injecting and forcing injecting tubes, in combination with the valve O and a passage to the open air for a discharge of water. 3rd. The suction nipple having direct communica-

tion with the forcing nipple, in combination with the valve R. 4th. The forcing nipple having direct communication through the delivery chamber, and a valve communication through pipe I, in combination with the waste D. 5th. The combination of combining and delivery tubes c d with an annular chamber k between them, said chamber communicating with the chamber M. 6th. The arrangement and combination of the waste valves R O adapted to be held firmly to their seats by the pressure of water. 7th. The screen S, in the steam pipe, between the boiler with which it is connected and the injector.

No. 11,997. Systems of Conductors for the Distribution of Electricity as a Lighting and Motive Power Agent. (*Systèmes de conducteurs pour la distribution de l'électricité comme agent moteur et d'éclairage.*)

Thomas A. Edison, Menlo Park, N. J., U. S., 15th November, 1880; for 15 years.

Claim. 1st. The method of equalizing the pressure or electro-motive force throughout an electric distributive and translation system consisting in using feeding circuits, which connect to and feed into circuits on which are arranged the translating devices. 2nd. The combination, with a circuit containing translating devices, of a feeding circuit leading thereto from the source of energy and containing no translating devices. 3rd. The combination, in one system, of a main circuit connected directly to a source of energy and containing translating devices, and provided with means for lessening its force or pressure to that of the average of the system, a circuit not directly connected to the source of energy containing translating devices and a feeding circuit connecting the latter circuit with the source of energy. 4th. The method of equalizing the pressure or electro-motive force, in the lamp, or translating circuits by connecting the same to the source of energy by feeding circuits, in which occur the greater percentage of fall of force. 5th. The combination of a number of insulated wires of different lengths grouped together and fastened at intervals, forming a gradually tapering conductor. 6th. The combination, with one desired circuit, of two branch circuits, for different classes of translating devices, each containing a meter and feeding circuit. 7th. The combination, with one lamp circuit, of a series of feeding circuits. 8th. The combination, with one side of an entire metallic circuit, of a series of ground connections as auxiliary thereto, whereby a lesser conductor may be used in such half. 9th. The method of laying the conductors in an electrical supply system, consisting in laying them in sets concentrically, each set being connected to the central station at several points. 10th. The method of laying the conductors in an electrical supply system consisting in laying them in sets concentrically, each set being connected to the central station by several sets of branch conductors, and the various sets being connected to each other by several sets of coupler conductors. 11th. An improvement in the art of distributing electricity for use as a lighting and motive agent, the method of laying the conductors consisting in laying around each block the service conductors and uniting the same to the source of electricity by feeding conductors. 12th. In an improvement in the art of distributing electricity for use as a lighting and motive power agent, the system of conductors consisting of service conductors laid around each block, feeding conductors connecting them to the source of electricity and united to them at the points designated, and cross conductors connecting the service conductors of a series of blocks.

No. 11,998. Improvements on Stump Extractors. (*Perfectionnements aux arrache-souches.*)

John Welfield, Toronto, Ont., 15th November, 1880; for 5 years.

Claim. 1st. In combination, the bar M having hooks in both of its opposite sides or edges, the device s, lever G with its perforations Q, pin N, movable block I and pulleys i, link F and its clevis H. 2nd. In combination with the tripod A constructed with wheels on two of its legs and an adjustable shoe on the other leg, the shackle W and rings W¹, socket plate W² and pin p. 3rd. In combination, the take up bar M hooked in each edge with links H, F for holding on to the partially extracted stump by the bar, the lever G, adjustably movable block I, chain J, stump chain C, pulley i, perforations Q and pin N, tripod A, shackle W, rings W¹, socket plate W², pin p, wheels c c and shoe b.

No. 11,999. Improvements on Carriage Tops.

(*Perfectionnements aux soufflets des voitures.*)

George A. Rudd, Smith's Falls, Ont., 15th November, 1880; for 5 years.

Claim. 1st. The combination of the knee brackets B, jaws D and rail E, whereby the brackets have adjustability to suit seat irons of various carriages. 2nd. The clamping jaws D combined with brackets B for holding the rail E endwise adjustable. 3rd. The combination of rail E having lug F perforated with holes d, and bracket C having shoulder e and nut c. 4th. The combination of the lever H with crank arm a, rail E and jointed prop I for raising and lowering the carriage top. 5th. The prop I having joint i halved and pintled, in combination with lever H and arm g.

No. 12,000. Improvements on Neck Yokes.

(*Perfectionnements aux jougs.*)

Francis Jacques, Chatham, Ont., 23rd November, 1880; for 5 years.

Claim. The combination of hook A, eye E, elastic washer C and flange F.

No. 12,001. Improvements in Book Binding.

(*Perfectionnements dans la reliure.*)

Louis Finger, Boston, Mass., U. S., 23rd November, 1880; for 5 years.

Claim. 1st. The insertion of strips of cloth, leather, paper or other material, in slit created in the back of the book, and the cementing of such strips in said slit without sewing. 2nd. The slits for reception of the binding strips, so arranged obliquely with respect to pages or leaves of the book. 3rd. The slits for reception of the binding strips as arranged dovetailing with each upon the leaves or pages of the body.

No. 12,002. Improvements on Sleighs. (*Perfectionnements aux traîneaux.*)

Albert B. Webster, Manchester, N. H., U. S., 23rd November, 1880; for 5 years.

Claim.—1st. The combination, with the side bars C of a sleigh, of springs F bent laterally at their ends, and upwardly at their central portion, and side sills G for supporting the sleigh body, said springs attached to the underside of the side bars. 2nd. In combination with the side bars C of the sleigh, the springs F jointly attached at their ends to the free ends of spring plates E clipped to the side bars. 3rd. In combination with the side bars C, springs F curved laterally at their ends, and arranged longitudinally with the side bars C, and attached thereto on the underside, said springs having a semi-elliptical portion centrally carrying side sills G for attachment of the sleigh body. 4th. In combination with the side bars C, springs F and sills G, the centre cross beam or bar R, arranged below the side bars and having its ends connected to the centre knees by reinforcing strips a₁ or other means. 5th. The braces c c₁ removably attached to the strips a₁ or a₂.

No. 12,003. Improvements on Carriage Springs. (*Perfectionnements aux ressorts des voitures.*)

Albert B. Webster, Manchester, N. H., U. S., 23rd November, 1880; for 5 years.

Claim.—1st. The combination, with the side bars D D of a carriage, of the lateral or longitudinal springs E E jointed to spring bars F, central curved springs G linked to front and rear axle, and cross rod j secured to springs E E G. 2nd. The combination of springs E E, springs G and cross rod j, with the bars D D and front and rear axles for supporting the carriage body. 3rd. The combination, with a pin 2 attached to a clip 1 adapted to be secured to the middle of an axle, of a bent bar or loop 4 having one of its ends removably attached to the projecting end of said bolt or pin, and its other end passing through lugs near the base thereof, and a shackle swivelled upon an extension from the lower end of loop 4, and adapted for attachment of spring G. 4th. The curved bars f forming parts of a circle of which the ring bolt is the centre, attached to bolster and front axle.

No. 12,004. Improvements on Carpet Exhibitors. (*Perfectionnements aux montres à tapis.*)

Adolphus Peterson, Brooklyn, N. Y., U. S., 23rd, November, 1880; for 5 years.

Claim.—1st. The novel combination and arrangement of the rigid rectangular mirror T T₁, with sliding front and side mirrors G and L, arranged so as to be adjusted at any desired position. 2nd. The combination of the rigid rectangular mirror T T₁ with the mirror G hinged to the sliding leaf W. 3rd. In a sample exhibitor, the combination of the rectangular mirror T T₁, and movable front and side mirrors G L, with the rollers A and B. 4th. The combination of the rigid rectangular mirror T T₁ and movable mirrors G L with a table E arranged below them, so as to permit of the adjustment of the movable mirrors without disturbing the sample placed on the table E. 5th. The combination of the mirrors G L and the cross pieces H M, to which they are hinged, with the rod P terminating in a threaded end and provided with a grooved nut O, adapted to rest on the slotted plate Q, for the purpose of accurately adjusting the mirror in a vertical position after which they may be readily tolled down and returned to their upright position. 6th. The use of the mirror G L when hinged to a cross piece a, and adapted to slide on a rail B, in combination with the rigid rectangular mirror T T₁, table E and rollers A B, intermediate gear wheel D, auxiliary roller F G₁ and table E, with the rigid rectangular mirror T T₁ and sliding mirror G L.

No. 12,005. Improvements in Spittoons. (*Perfectionnements dans les crachoirs.*)

Charles E. Pearson, Ibberville, Que., 23rd November, 1880; for 5 years.

Claim.—1st. A spittoon composed of two parts, a body and a cover secured thereto, detachably by lips or flanges formed on both, and engaging with each other. 2nd. The combination of the body A with shoulder or ring A₁, and the cup or lid C with flange C₁.

No. 12,006. Improvements on Horse Hoes.

(*Perfectionnements aux hoes à cheval.*)

James G. Cockshutt, Branford, Ont., 23rd November, 1880; for 5 years.

Claim.—1st. A box clip C, secured to the frame A by the staple D, and provided with a break pin F, in combination with the curved blade standard E. 2nd. A curved blade standard E fitting into a correspondingly shaped groove in the slip C, in combination with the staple D and frame A. 3rd. A break pin F passing through the box clip C and fitting below the frame A. 4th. A leading wheel standard J provided with a hub G having a toothed face, in combination with the clevis casting I with a toothed face hub, and the bolt H passing therethrough.

No. 12,007. Process for Treating Ores and Reguluses. (*Procédé de traitement des minerais et des régules.*)

William Henderson, Irvine, Scotland, 23rd November, 1880; for 5 years.

Claim.—1st. In the process of treating metallic ores, the use of bisulphate of soda or of potash, or analogous bisulphate. 2nd. The manufacture, from the residue resulting from the use of the improved process described, of the new and valuable pigment. 3rd. The recovery of the re-agent used in a more valuable form.

No. 12,008. Improvements on Sewing Machines. (*Perfectionnements aux scieries.*)

Albert H. Shipman, Rochester, N. Y., U. S., 23rd November, 1880; for 5 years.

Claim.—1st. The combination, with the levers D D₁ connected by the

tension rod *b* and provided with the pivots *jj*, of the head *A*, of the frame provided with open notches *z*, the whole so arranged that, by tightening the tension rod, the pivots are drawn into the notches and the latter form the bearings for both levers. 2nd. The combination, with the lever *D*, of the plate *I* attached by a single screw, so that the lever has a lateral adjustment and provided with side pivots *j*. 3rd. The combination, with the lever *D*, of the plate *L* secured to the bed of the machine by a single screw and provided with the standards *ll* embracing the lever, said standards being located obliquely to each other, and rounded or bevelled on the inner sides fitting the levers. 4th. The combination, with the two levers *D* and *D'* constituting the saw frame, of the plates *I* and *L*, connected respectively with said levers, said plates being attached to their supports by single screws, and so arranged as to allow lateral or side adjustment to the levers to centre the saw. 5th. The combination, with the crank wheel *H* provided with the open rim *m* of disk *M*, fitting within the rim provided on its under side with the skeleton ribs *n*, and the dog or dogs *p* resting in the spaces between the ribs engaging with the rim, to give motion to the crank wheel when the disk is turned in one direction, but disengaging therefrom, to allow back action of the disk when it is turned in the other direction.

No. 12,009. Improvements on Stop Watches.

(*Perfectionnements aux montres à repos.*)

Henry A. Lugin and Prosper Nordmann, New York, U. S., 24th November, 1880; for 5 years.

Claim.—The combination of arbor *A*, of the third wheel, said arbor having a fixed disk *a*, and square portion above the disk, and of the transmitting wheel *B* with a conical clutch sleeve *b* having a square hole for the arbor, and with a binding spring arm *bi*. 2nd. The combination of the arbor *A* of the third wheel having a disk *a*, transmitting wheel *B*, conical clutch sleeve *b* and spring arm *bi*, with a lever *D*, having bevelled projecting portion *d*. 3rd. The combination of the transmitting mechanism *A*, *B*, clutch device *C* and friction disk *e*, of the arbor of the turning hand, with a lever *D* that is adapted to apply or release the clutch device from the transmitting wheel simultaneously with binding on or releasing the friction disk of the time hand.

No. 12,010. Improvements in Heating Stoves.

(*Perfectionnements aux poêles de chauffage.*)

Oscar W. Noble and Eddick A. Bartlett, Wakefield, Mass., U. S., 24th November, 1880; for 5 years.

Claim.—In a heating stove, the base *A* provided at its bottom with an opening *b* for the admission of the external air, a chamber *C* and an air flue or flues *a* in communication therewith and with the opening *b*, and having outlet apertures *c* for the escape of the heated air, in combination with a duct *D*, extending entirely around the bottom of the base *A*, through which the heat and products of combustion are caused to pass, for the purpose of heating the upward currents of air, which enter the opening *b* and escape through the outlet apertures *c*.

No. 12,011. Improvements on Hydro-Carbon Furnaces and Burners.

(*Perfectionnements aux fourneaux et aux alimentateurs des fourneaux à hydro-carbure.*)

William D. Dickey, New York, U. S., 24th November, 1880; for 5 years.

Claim.—1st. The combination of the fire space of a steam boiler, of a steam super-heater located in said fire space, a steam pipe *B* leading from the steam space in the boiler to said super-heater, provided with a cock *a*, the nozzle *C*, a steam pipe *B* leading from said super-heater to said nozzle, the nozzle *C* arranged relatively to the nozzle *C*, the fuel holding tank *H* and conductor *G*, leading from the same to the nozzle *C*, provided with a cock *a*, the nozzle *C* and air inlet passage *C* arranged relatively to the nozzle *C*, the said nozzle *C* and *G* being arranged relatively to the fire space to discharge steam, air and fuel directly into said fire space without any intervening conductor. 2nd. The combination, with a fireplace, of the nozzles *C* and *G*, the hood *E* within which the said nozzles are located and by which they are supported, so that liquid fuel issuing from *G* will be atomized and projected by steam issuing from *C* directly into said fireplace, without passing through any intervening conductor. 3rd. The combination, with a fireplace, of the nozzle *C* and nozzle *C*, the former located concentrically within the latter, an air passage to *C* a steam conductor leading into *C*, the nozzle *G* arranged relatively to the nozzle *C* and a fuel supply conductor leading into *G*, whereby liquid fuel issuing from *G*, may be atomized and projected into the fireplace by steam issuing from *C*, and at the same time air drawn into the nozzle *C*, by the action of the steam, will be mingled with the inflowing current of steam and fuel before they reach the combustion chamber in the fireplace. 4th. The combination, with the fireplace *a* of a steam boiler, of a steam super-heater *B*, located in the upper part of said fireplace, the steam nozzle *C* and fuel nozzle *G*, whereby fluid issuing from *G*, may be projected into the fire place by steam issuing from *C* and the backwardly inclined bridge wall *a*, whereby the flame made by the combustion of said fuel will be deflected on to said super-heater towards the upper part of said fireplace. 5th. The combination of the boiler *a*, fireplace *a*, steam super-heater *B*, steam pipe *B*, provided with stop cock *a*, water tank *D*, and pipe *D* leading into pipe *B*, and provided with stop cock *a*. 6th. The combination of a fireplace, a steam super-heater located in said fireplace, a water or steam supply and pipe leading therefrom to said heater, the nozzle *G* and a pipe leading to a liquid fuel supply, the nozzle *C* arranged relatively to the nozzle *G*, the air blower *F*, and air conductor *C* leading from said blower to the nozzle *C*, and provided with a stop cock *a*. 7th. The nozzle *C*, blower *F*, conductor *C* leading from the said blower and provided with stop cock *a*, the pipe *C* leading from *C* to said nozzle *C*, the open end *c* of said conductor, and stop cock *a* between the pipe *C* and said open end. 8th. The nozzle *C*, nozzle *C* located concentrically within *C*, the blower *F*, and conductor leading from said blower to the nozzle *C*, the nozzle *C* being provided with the spindle valves, whereby the said nozzle may be closed when the said blower is in operation, to prevent the air from backing into said nozzle *C*, and may be opened when the blower is stopped and steam let into said nozzle *C*. 9th. The combination, with the fire place *a*, of the hood *E*, provided with the conical condenser *E'*, projecting towards the fireplace, air openings *b* and the nozzle *C* arranged within, and supported by said hood, and the pipe connections of said nozzles.

No. 12,012. Improvements on Corn Brooms.

(*Perfectionnements aux balais de houque.*)

Joseph C. Reed, Brantford, Ont., 24th November, 1880; for 5 years.

Claim.—The combination of the block *B*, having a groove in its lower edge to receive the broom corn *C*, and provided with the handle *A*, to which is fitted the sleeve *H*.

No. 12,013. Improvements on Grain Separators.

(*Perfectionnements aux séparateurs des grains.*)

John A. Krake, Buffalo, N. Y., U. S., 24th November, 1880; for 5 years.

Claim.—1st. The combination, with the fan case made in different sections, and separate fans resting in said sections, of the dividing board *G*, located between the sections of the fan case forming heads to the same, provided with openings to admit air to the sections and serving to produce suction. 2nd. In a grain separator having its fan case made in sections, with separate fans resting in the sections, the dividing board *G* having its inner portion in a single thickness, and its outer portion in two separate thicknesses, with an air passage between, said board forming a complete head to the two sections, and allowing air to be supplied to both sections by entering between the two thicknesses at the rear. 3rd. In combination with the separate sections of the fan case, and the separate fans resting therein, the directing board *H* extending inward from the fan case and beneath the same, and the two wings *K*, on the directing board, converging centrally between the sections, whereby the currents, which are drawn in opposite directions and away from the centre of the machine by the two fans, will be forced toward the centre by the wings. 4th. The combination of the directing boards *H* and the vertical dividing board *G*, the upper directing board *I* being notched into and supported by the board *G*. 5th. The agitator *F*, constructed with the two edged tenons *ff*, and provided with the pivoted button *h*, in combination with the socket *g* on one side, and the groove *g* and cross slot *i* on the other side of the shoe, whereby said agitator is made removable. 6th. The combination, with the upper shoe *L*, of the bracket bearings *M* and hangers *N*, the bearings being made hollow and open on their under sides, and the hangers being made of elbow form and arranged to strike into and be guided by the hollow bearings. 7th. The combination, with the upper shoe *L*, of the hangers *N*, of elbow form and unequal length, arranged above the shoe and sustaining the same, the upper and lower pivots being in a vertical line, the whole so arranged that the shoe maintains a level position at all points of the vibration, and its outer end receives a greater vertical than its inner end. 8th. The combination, with the hangers *N* made of elbow form and of unequal length, of the diagonal brace *O* connecting the hangers, said brace being made of spring metal so as to spring by torsion and compensate for the unequal vibration of the two hangers. 9th. The shoe *L*, mounted at either end upon springs *Q*, arranged to vibrate laterally in the line of an arc, and in a plane parallel to that of the shoe. 10th. The bearing *P* and key *l*, constructed at the front end with the sharp edged bearings *o*, for clamping and holding the spring *Q* and hollow *n* to allow free play of the spring, the rear end of the spring being free to move out and in. 11th. The combination of the key *l* provided with the lateral lugs *m* and the bearing *P*, constructed with corresponding lateral sockets to receive the lugs, the whole so arranged as to leave an opening between the key and the bearing, for the free passage of the end of the spring *Q*. 12th. The combination of the inclined discharge board *R*, standing at a reverse angle to the screen *q* below it, for compressing the blast and the adjustable sliding plate *r* on the outer end of said screen *q*, so arranged that it can be moved toward or from the discharge board to receive the contents therefrom, and produce proper separation of the light and heavy grain under the varying intensities of the blast. 13th. The combination, with the shoe *L*, of the pivoted jolting bar *t* attached thereto, and a pin *a* upon which the jolting bar rests, said pin being made adjustable higher or lower, to change the vertical throw of the shoe without increasing the length of vibration. 14th. The combination of the pivoted jolting bar *t* and bar *v*, said bar *v* being adjustable higher or lower, and provided with a pin *a* upon which the jolting bar rests. 15th. The combination with the jolting bar *t* provided with a slotted lower end, the bar *v* provided with a pin *a* resting in the slot of the jolting bar, a head upon the end of the bar provided with teeth which engage with corresponding teeth of the block *z* and bolts *w*, one forming the pivot, and the other the clamp. 16th. The combination, with the upper slide *S*, of the lever *T*, pivoted at one end to a stationary part of the frame passing through a loop of the slide projecting through the case, and having, at the outer end, a tooth *d*, which engages with a ratchet plate *f* for raising and holding the slide. 17th. The crank arm *W*, constructed with the arm *z*, the pin *h*, and the curved web *g*. 18th. The combination, with the rock shaft *U* and pitman *K*, of the joint piece *X* consisting of the casting *W* fastened to the rock shaft, and the socket end *m* pivoted to the casting, and having at its outer end an eye *n* for receiving the pitman.

No. 12,014. Improvements on Watchmakers' Lathes.

(*Perfectionnements aux tours des horlogers.*)

Joseph Kesselmaer, Gallion, Ohio, U. S., 24th November, 1880; for 5 years.

Claim. 1st. The combination of the hollow spindle *B* and the threaded rod *E* of the head *B*, cap *C*, plates *B* and spring *ba*. 2nd. The combination, with the hollow spindle *B*, threaded rod *B* and cap *C*, of the plate *B*, provided with a threaded hole for the attachment of a chuck, said plate being secured between the cap and head, and adapted to be moved radially and secured in desired position by the threaded rod *E*, and a plate bearing against the side of the plate *B*. 3rd. The combination, with a hollow spindle *B*, threaded rod *E* and spring *ba*, of a recessed head fastened to the end of the hollow spindle, cap *C* and a plate *B* located between said recessed head and cap, and adapted to be moved radially therein, and secured in any desired position by the screw threaded rod *E*, and plate *B* interposed between the end of rod *E* and plate *B*, the latter provided with a threaded hole for the attachment of a chuck. 4th. The combination, with a hollow spindle *B*, threaded rod *E*, and spring *ba*, the latter surrounding the end of rod *E*, of a recessed head secured to the end of the hollow spindle, the cap *C*, and a plate *B* located between said recessed head and cap, and adapted to be moved radially therein, said plate being provided with a threaded hole for the attachment of a chuck, and a plate *B* for distributing the pressure of the screw threaded rod *E* upon plate *B*. 5th. The primary clamping device

H, provided with the circular multiple jaws H¹ and adapted to fit into a clutch G, whereby it may be attached to the plate B.

No. 12,015. Improvements on Joint Couplings. (*Perfectionnements aux embrayages des joints.*)

Joseph Walker, Scranton, Pa., U. S., 24th November, 1880; for 5 years.

Claim.—1st. The combination of two shafts having grooved ball heads on their ends, cup-shaped intermediate sections jointed to said ball heads by means of pins and grooves, outer sections to which the adjustable intermediate sections are also jointed by means of pins and grooves, and a revolving block or connecting part for uniting the two outer sections, so that the motion of one will be communicated to the other. 2nd. The combination of the shafts A, B, having the grooved ball heads *a*, with the intermediate cup-shaped sections F, F' carrying the series of pins *f* and the series of pins *f*¹, the outer grooved sections G and the revolving connecting block or spindle H. 3rd. The combination with the sections F, of the pins *f* and *f*¹, provided with flat sided heads and having cylindrical shanks which fit loosely in perforations in said sections. 4th. The combination, with the two shafts coupled and set at an angle to each other, of the bearings for the shafts, the segmental arms upon which said bearings are mounted, and means for clamping the segmental arms together. 5th. The combination of the shafts, their bearings, the adjustable segmental arms, the stationary arm D and the set screw E. 6th. The connecting block or spindle H mounted in the arm D, and combined with the outer sections G, the shafts A, B and the parts by which the sections G are connected to said shafts.

No. 12,016. Improvements in the Production of Electric Light. (*Perfectionnements dans la production de la lumière électrique.*)

George Swenor, Montreal, Que., 24th November, 1880; for 5 years.

Claim.—1st. The combination of the disk B provided with points of contact D and rest C, with the disk provided with hollow rib L, carrying spindle M provided with box N and contact maker R. 2nd. The combination of the shaft F provided with disk K carrying contact maker R, with the disk H having rib S carrying spindle M and box N provided with contact maker R, and with movable disk B, having point of contact D. 3rd. The generator A in combination with a stationary disk H provided with a swinging con-

tact maker, the revolving disk K also provided with a swinging contact maker, and a movable disk B provided with points of contact D.

No. 12,017. Improvements on Grain Car Doors. (*Perfectionnements aux portes des chars à grain.*)

James Miller and Francis C. L. G. Susemihl, Detroit, Mich., U. S., 24th November, 1880; for 5 years.

Claim.—1st. The combination of the door F, with the lever J, the long arm *b*, which carries the door, and the short arm *b*¹, which is constructed so as to bear against the side of the car, or against a block or plate secured thereto, and thereby prevent lateral displacement of the lever or door. 2nd. The combination of the door F, the lever J having a projecting end *f*, a support for the door, and the catch *m* to which the said projecting end of the lever is adapted when the door is open.

No. 12,018. Improvements in Water Gauges. (*Perfectionnements aux indicateurs d'eau.*)

The Extension Water Gauge Company, (Assignees of John R. Nunn and Frederick M. Clough,) Cheshire, Ct., U. S., 24th November, 1880; for 5 years.

Claim. 1st. A boiler indicator consisting of tubular extensible metallic sections and one or more glass tubes held therein, whereby the fragment or fragments of a water glass may be utilized. 2nd. Mutually-interchangeable metallic sections and a glass section, whereby said glass section may be shifted to an upper or lower position at will. 3rd. Sections *b* *b*¹ *b*² provided with fixed nuts or grasping pieces E, in combination with glass tube C, and nuts and stuffing boxes.

No. 12,019. Improvements on Hay Presses. (*Perfectionnements aux presses à foin.*)

Auguste Monpetit, St. Thomas d'Alfred, Ont., 24th November, 1880; for 5 years.

Claim.—The combination of the press bar A, slide B, spaces C, winch pulley D, friction rollers E, discharge door F, top frame H, compound lever I, chains J, chain rollers K and ratchet wheel L with shipper handle M.

List of Patents issued up to 15th January, 1880, but not yet Officially published in the Patent Office Record.

No. 12,172. Addison Reynolds of Burlington, Mich., and John Richards of Windsor, Ont., "Straw Cutter," Dec. 23rd, 1880.

No. 12,153. Edward N. Henry, of Montreal, Que., "Buggie Top Attachment," Dec. 23rd, 1880.

No. 12,154. Charles Brewster, of Montreal, Que., "Improve Skate," (extension of patent No. 5,680.) Dec. 23rd, 1880.

No. 12,155. Richard Vose, New York, "Railway Springs and Spring Cap," Dec. 23rd, 1880.

No. 12,156. John L. Babu, of Greenland, West Virginia, "Neck Yoks for Horses," 23rd, Dec. 1880.

No. 12,157. Charles C. Jerome, Chicago, Ill., "Piston Rod Packing," Dec. 23rd, 1880.

No. 12,158. Robert Campbell, of Wooster, Ohio, "Washing Machines," Dec. 23rd, 1880.

No. 12,159. John R. McPherson, of Jersey, New Jersey, Assignee of Albert N. Stevendon and Thomas F. McGrath, of Newark, New Jersey, "Stock Cars," (extension of patent No. 5,577.) Dec. 23rd, 1880.

No. 12,160. John R. McPherson, of Jersey, New Jersey, Assignee of Albert N. Stevendon and Thomas F. McGrath, of Newark, New Jersey, "Stock Cars," (extension of patent No. 5,577.) Dec. 24th, 1880.

No. 12,161. John T. Averill, of St. Paul, Minn., and H. M. Carpenter, of same city, "Paper Pulp," (extension of patent No. 6,352.) Dec. 31st, 1880.

No. 12,162. Francis Culham, of Blenheim, Ont., "Vehicle Hubs," Dec. 31st, 1880.

No. 12,163. Robert A. Bacon and Nathan Hart, of New York, "Means of Decorating Celluloid," Dec. 31st, 1880.

No. 12,164. Malcolm McLean, of Guelph, Ont., "Ploughs," Dec. 31st, 1880.

No. 12,165. Rubens H. Plass and Myron H. Chapin, of New York, "Plass' Pile Fabrics Splitting Machine," Dec. 31st, 1880.

No. 12,166. William H. Soune, of Chatham, Ont., "Improved Door Knob," Dec. 31st, 1880.

No. 12,167. Lauren E. Hogue and Wallace E. MacDonald, of Sandy Lake, Penn., "Hogue's Improved Injector," Dec. 31st, 1880.

No. 12,168. James N. Lander and Nathan P. Stevens, of Concord, New Hampshire, "Vacuum Relief Valve," Dec. 31st, 1880.

No. 12,169. John Manning and Charles W. Knowles, Windsor, N. S., "Improved Process in the Manufacture of Paper," Dec. 31st, 1880.

No. 12,170. Jacob Wagner,—the younger,—Louis Wagner, Charles Wagner and Edward Koch, of Chicago, Ill., "The Wagner Wire Sewing Machine," Dec. 31st, 1880.

No. 12,171. William Carter, Toronto, Ont., "Carter's Improved Over-all," Dec. 31st, 1880.

No. 12,172. William C. Cross, of Boston, Mass., "Cross' Paper Bag Machine," Dec. 31st, 1880.

No. 12,173. James W. Fenwick, of Patterson, Ont., "Spring Tooth Harrow," Dec. 31st, 1880.

No. 12,174. Jacob Bloom Yeazley, of Indianapolis, Indiana, "Looks," Dec. 31st, 1880.

No. 12,175. Nelson Smith and Thomas P. Saunders, of Adams, N. Y., "Smith's Improved Weather Strip," Dec. 31st, 1880.

No. 12,176. William C. Cross, of Boston, Mass., Assignee of Edgar B. Stocking, of Washington, "The Stocking Paper Bag Machine," Dec. 31st, 1880.

No. 12,177. Freeman Winslow, of Salem, Mass., "Kettles," Dec. 31st, 1880.

No. 12,178. Francis C. Cook, of Connecticut, "The Improved Fertilizer," Dec. 31st, 1880.

No. 12,179. James M. Van Horn, of Bridgewater, N. S., "Hat and Box Valise," Dec. 31st, 1880.

No. 12,180. James M. Van Horn, of Bridgewater, N. S., "Window Blinds," Dec. 31st, 1880.

No. 12,181. John W. Larabee, of Springfield, Assignee of John W. Larabee, of Wilbraham, Mass., "Atwood's Lock Nuts," Dec. 31st, 1880.

No. 12,182. Thomas B. Douley, of Chelsea, Mass., "Printing Machine," Dec. 31st, 1880.

No. 12,183. Charles J. Levoy, of Palestine, Texas, "Attachment for Grinding the Knives of Wood Planing Machines," Dec. 31st, 1880.

No. 12,184. John S. Averill, of St. Paul, Minn., "Paper Pulp Process," (extension of patent No. 6,352.) Dec. 31st, 1880.

No. 12,185. Frank Bramer, of Little Falls, N. Y., "The Warrior Harrow," (extension of patent No. 5,616.) Jan. 3rd, 1881.

No. 11,186. Frank Bramer, of Little Falls, N. Y., "The Warrior Harrow," (extension of patent No. 5,626.) Jan. 4th, 1881.

No. 12,187. William C. Cross, of Boston, Mass., "Paper Bag Machine," Jan. 2th, 1881.

- No. 12,188. Edward N. Henry, Montreal, Que., "Buggy Top Attachments," Jan. 8th, 1881.
- No. 12,189. James L. Oakley, Greenborough, North Carolina, "Sky-light," Jan. 8th, 1881.
- No. 12,190. Francois A. Loomis, of Onondago, N. Y., "Fisherman's Reels," Jan. 8th, 1881.
- No. 12,191. Daniel Coubov, of Uxbridge, Ont., "Improvements in Carriage Tops," Jan. 8th, 1881.
- No. 12,192. William Wright, of Belleville, Ont., and James H. Sager, of same city, "Folding Combined Desk and Table," Jan. 8th, 1881.
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- No. 12,194. James Spurr, of Picton, Ont., "Hold Backs," Jan. 8th, 1881.
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- No. 12,196. John T. Friederick Schooner, Davenport, Iowa, "Improved Pantographs," Jan. 8th, 1881.
- No. 12,197. William Hull, of Macville, Ont., "Self Setting Mouse and Rat Trap," Jan. 8th, 1881.
- No. 12,198. James W. Cheney, of Detroit, Mich., "Combined Anvil and Vise," Jan. 8th, 1881.
- No. 12,199. Alexander G. Alexander, of Detroit, Mich., "Water Closet," Jan. 8th, 1881.
- No. 12,200. Lyman W. Whipple, of Boston, Mass., "Horse Shoe Nail Machine," Jan. 8th, 1881.
- No. 12,201. Peter Rodirs, of Detroit, Mich., "Clamp Skate," (extension of patent No. 5,571), Jan. 8th, 1881.
- No. 12,202. Thomas Richard Fuller, of Toronto, Ont., Assignee of Eliza J. Duff, Edward A. Kitzmiller, and Robert P. Duff, Assignees of Westley Tood, of Olokee, Ohio, "Washboard," (extension of Patent No. 5,573,) Jan. 8th, 1881.
- No. 12,203. Thomas Morthay, of Hamilton, Ont., "Steam Pump or Boiler Feeder," Jan. 10th, 1881.
- No. 12,204. Harrison W. Hutchins of Livermore Falls, Maine, "Method and Machine for Manufacturing Seale Board Boxes," (extension of patent No. 5,576), Jan. 10th, 1881.
- No. 12,205. John Lak-Whiteing, Boston, Mass., "Apparatus for Making Brushes," (extension of patent No. 5,660,) Jan. 14th, 1881.
- No. 12,206. John L. Whiteing, Boston, Mass., "Brush Handle Machine," (extension of patent No. 5,643,) Jan. 14th, 1881.
- No. 12,207. George S. Tiffany, of London, Ont., "Tile Machine," (extension of patent No. 5,591,) Jan. 14th, 1881.
- No. 12,208. Jeremiah Keith, of Providence, R. I., "Sewing Machines," Extension of Patent No. 5,590, January, 14 h, 1881.
- No. 12,209. Sampson Rea of Urbana, Ill., "Clothes Washer," January 15th, 1881.
- No. 12,210. Frank G. Johnson, of Brooklyn, N. Y., "Automatic Grappling Buckets," January, 15th, 1881.
- No. 12,211. Jesse O. Wisner and Wareham S. Wisner, of Brantford, Ont., "Improved Grain Drill Distributor," January 15th, 1881.
- No. 12,212. David Plews of Toronto, Ont., "Wooden Pumps," January 15th, 1881.
- No. 12,213. John H. Bartlett, and Peter D. D. Macintyre, Ottawa "Mail Bag Clasp," January 15th, 1881.
- No. 12,214. Orazio Luzo of New York, N. Y., "Dynamo Electric Telegraphy," January 15th, 1881.
- No. 12,216. Bartholomew J. O'Neill, of Uxbridge Ont., "Potato Planter and Scuffer" January 15th, 1881.
- No. 12,217. Christopher Hill of Poplar, Middlesex, England, "Grates of Steam Boiler Furnaces," January 15th, 1881.
- No. 12,218. Crowell M. Clancy, of Wallaceburg, "Hoop Machine," Jan'y 15th, 1881.
- No. 12,219. Alonzo Johnson, of Springfield, Mass., and James B. Atwood of Three Rivers and Adams O. Sinclair, of Springfield, "Brakes," Jan'y 15th, 1881.

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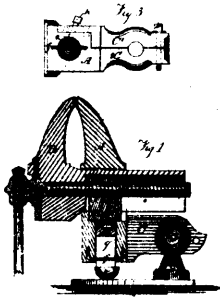
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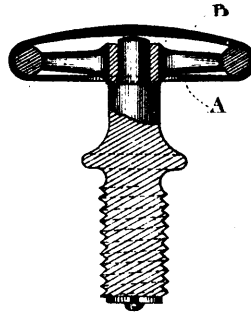
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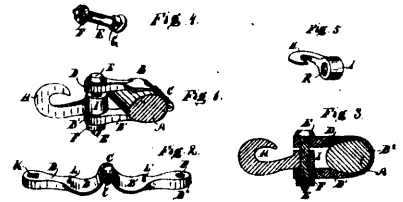
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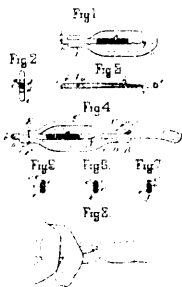
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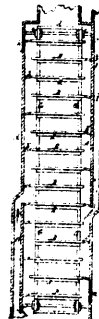
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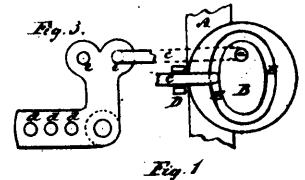
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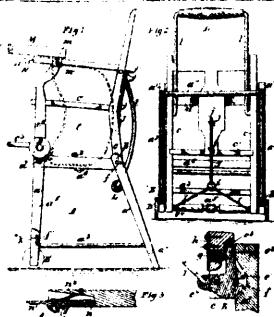
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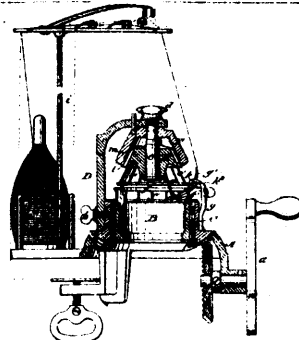
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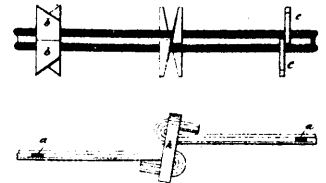
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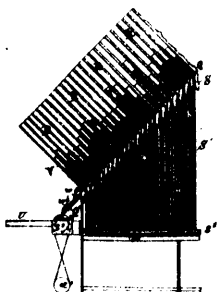
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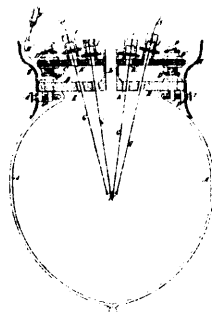
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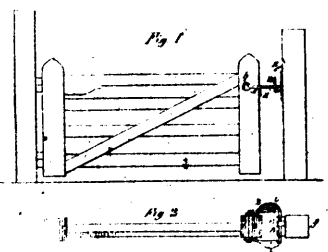
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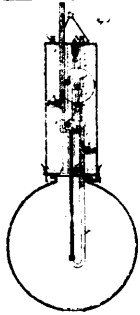
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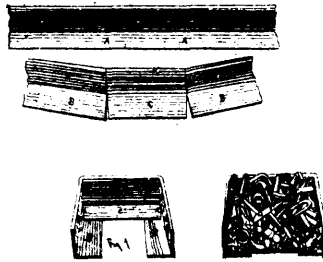
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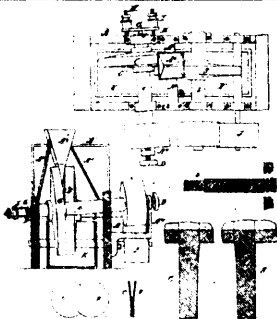
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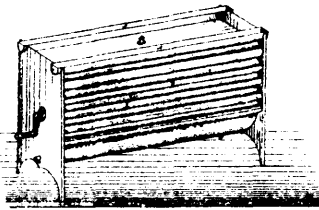
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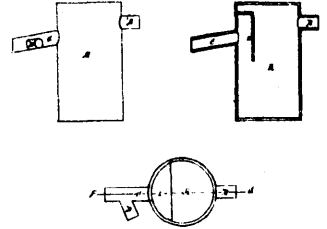
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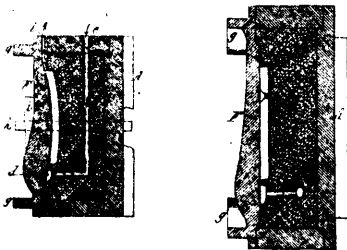
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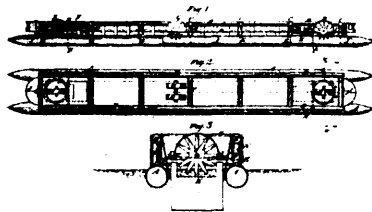
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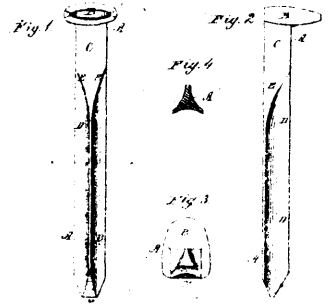
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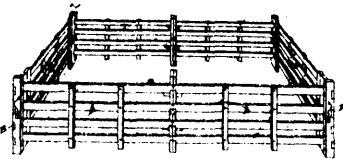
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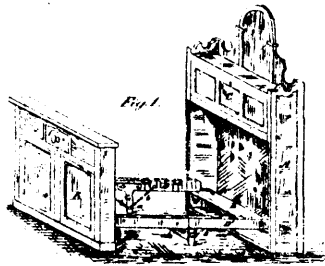
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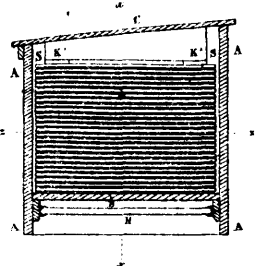
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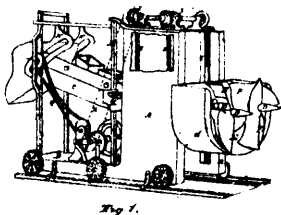
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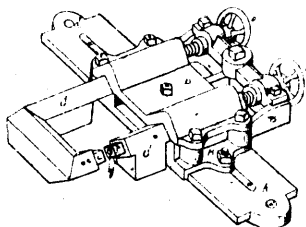
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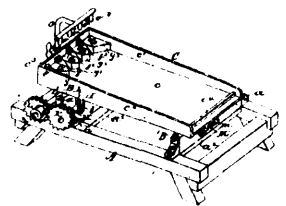
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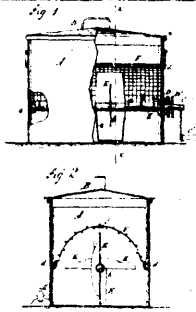
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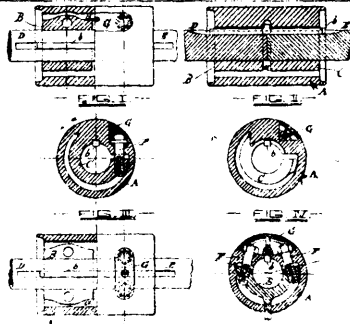
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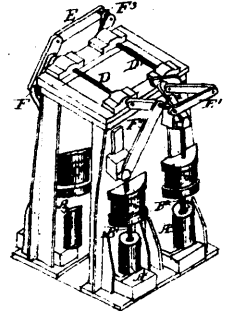
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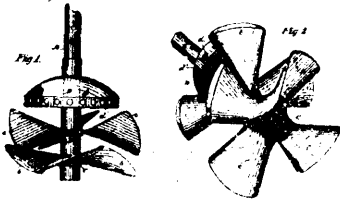
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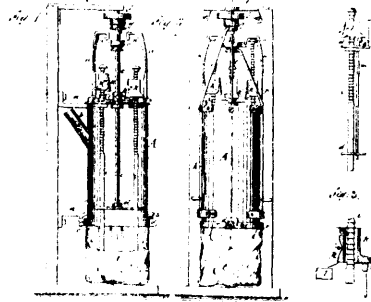
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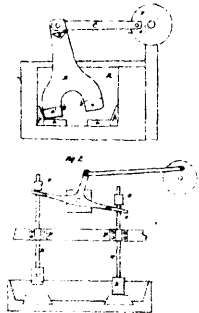
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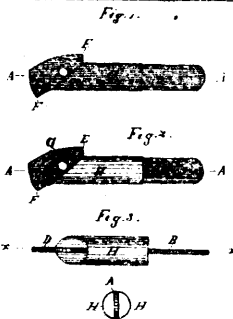
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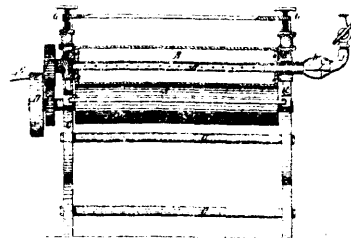
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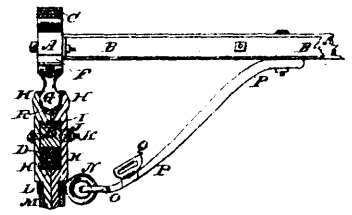
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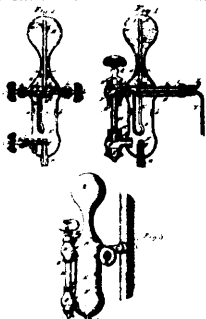
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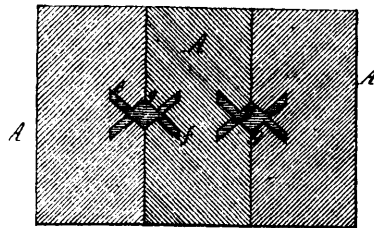
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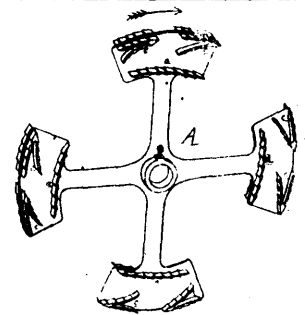
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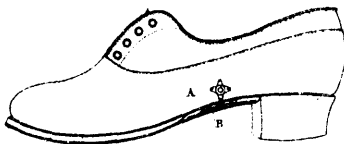
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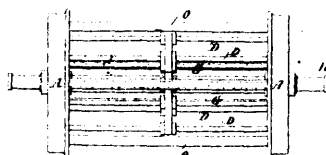
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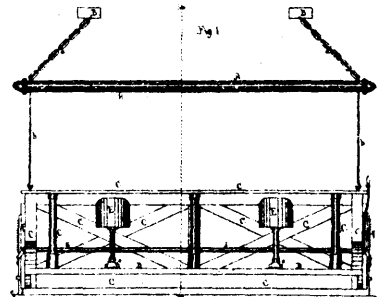
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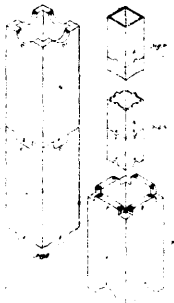
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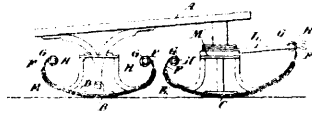
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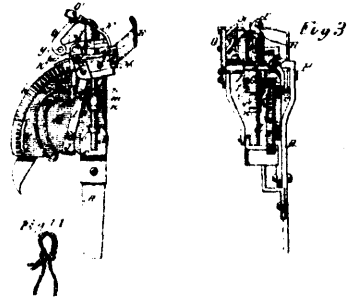
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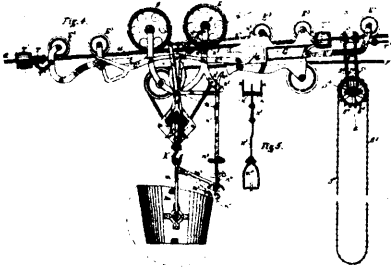
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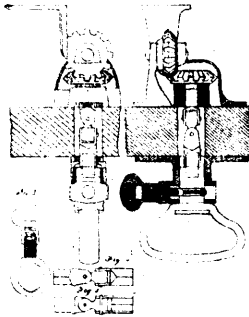
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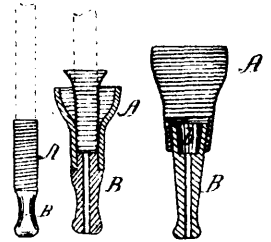
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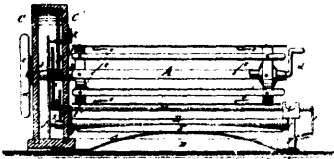
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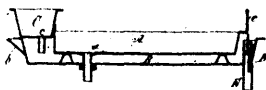
11938 Troy's Improvements on Blind Hinges.



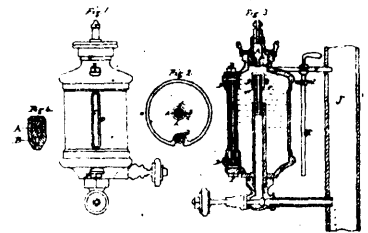
11939 May's Improvements on Cigar-holders.



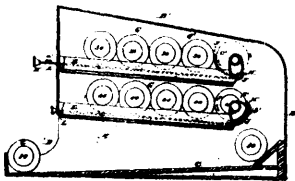
11940 Guyton's Improvements on Dry Goods Measurers.



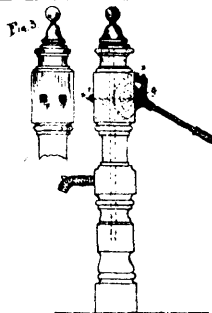
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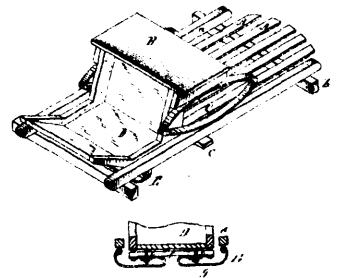
11943 Boys's Improvements in Oil Cups



11944 Fitch's Improvements on Thread Cases.



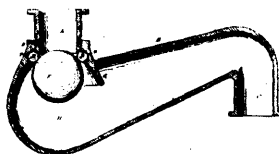
11945 Wilcox's Improvements on Pumps.



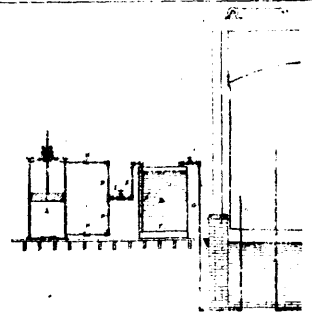
11946 White's Improvements in Spring Vehicles.



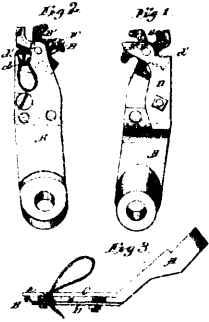
11947 Argall's Improvements on Feed Water Heaters.



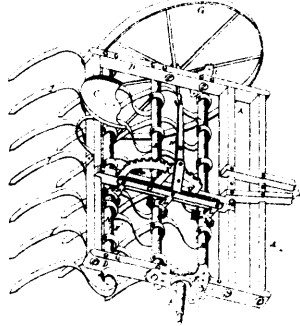
11948 Ward's Improvements on Sewer Traps.



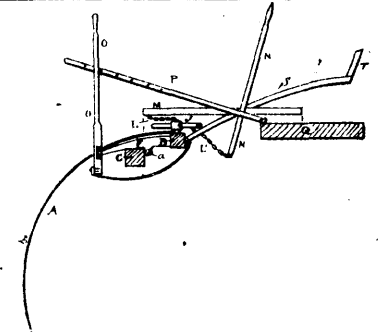
11949 Stouckman's Process for Manufacturing Gas.



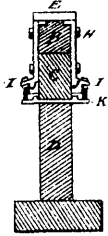
11950 Storle's Improvements on Grain Binders.



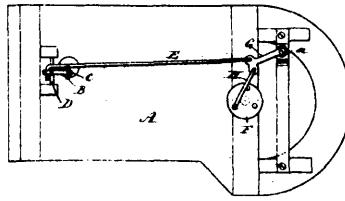
11951 Gale's Improvements on Spring Tooth Harrows.



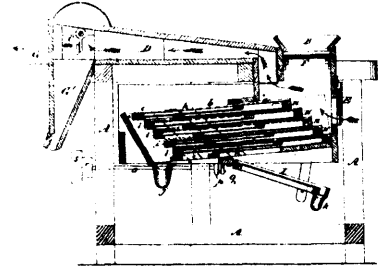
11852 Anderson's Improvements on Hay Rakes.



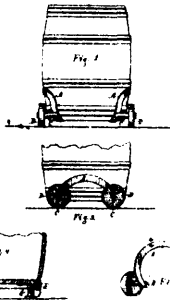
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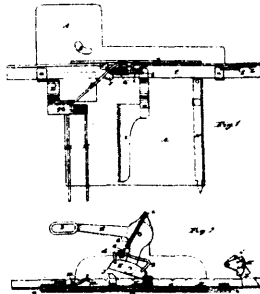
11954 Young's Improvements on Pitman Connections.



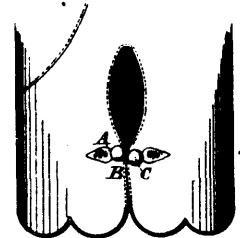
11955 Smith's Improvements on Grain Separators.



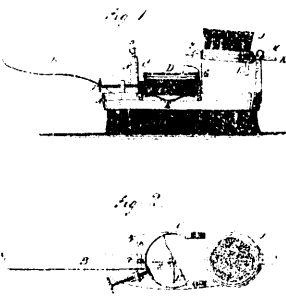
11956 McCali's Improvements on Barrel and Box Casters.



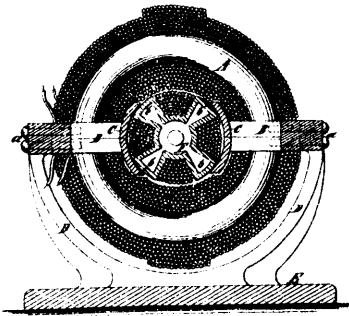
11958 Kellogg's Improvements on Sewing Machines.



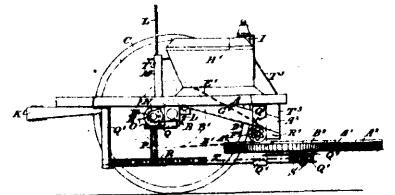
11952 Rae & Wilds's Improvements on Glove Fasteners.



11963 Wood's Improvements on Blacking Brushes.



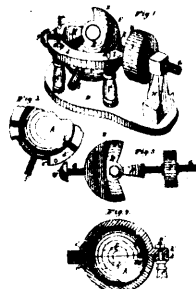
11954 Hussey's Improvements on Dynamo-electric Machines.



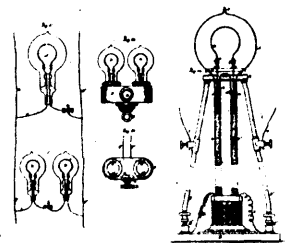
11965 Smith's Improvements on Broad cast Sowers.



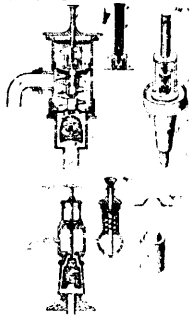
11966 Hadden's Improvements on Electric Signalling Instruments.



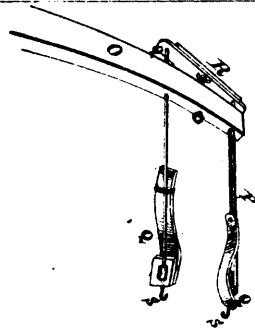
11967 Murray's Improvements on Rotary Engines.



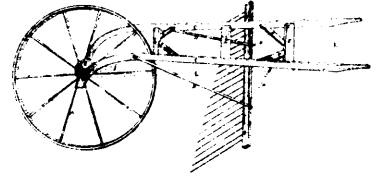
11968 Edison's Improvements on Electric Lamps.



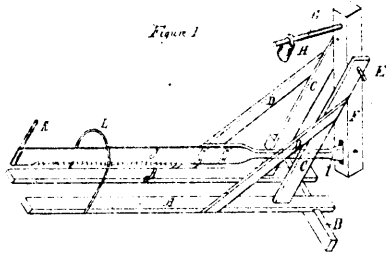
11969 Hennes-y's Improvements in Valves for Water Closets.



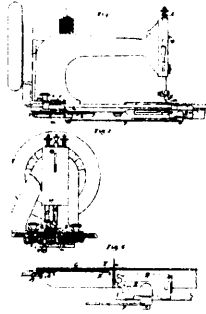
11970 Warren's Improvements on Horse Powers.



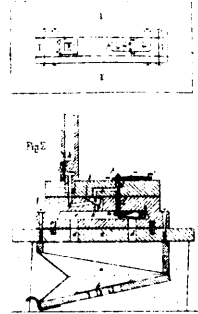
11971 Preston's Hay Rake.



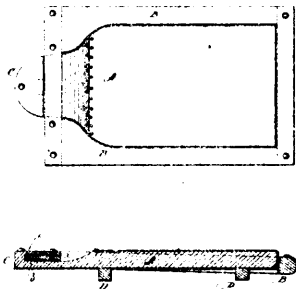
11972 Annett's Improvements in Hand Drag-saws.



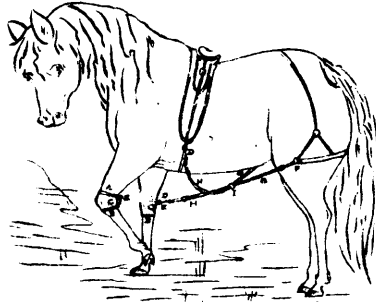
11973 Keith's Improvements in Sewing Machines.



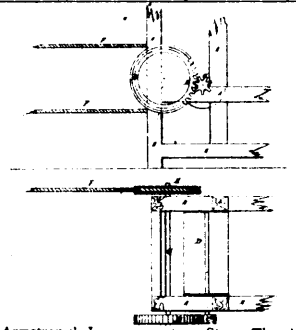
11974 Treat's Improvements on Reed Organs.



11975 Wright's Improvements on Bosom Boards.



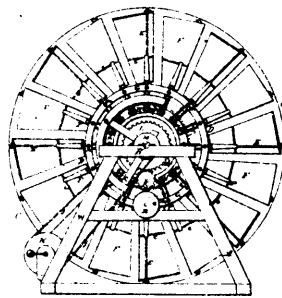
11977 Alger's Improvements in Horse Hitches.



11978 Armstrong's Improvements on Steam Thrashing Machines.



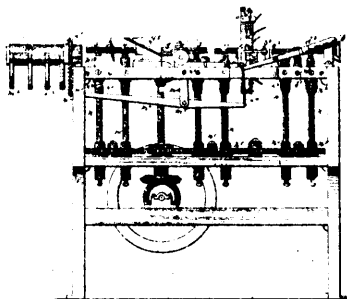
11979 Weed's Improvements on Paper Pails.



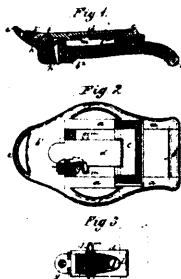
11980 Roy-Desjardins' Improvements on Wind-mills.



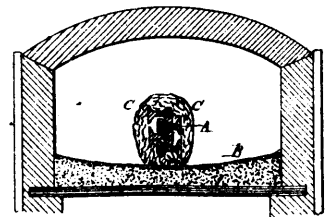
11985 Colborn's Improvements on Cane Shaving Machines.



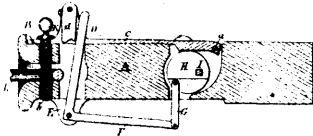
11986 Colborn's Improvements on Machines for Scraping and Stripping Rattan.



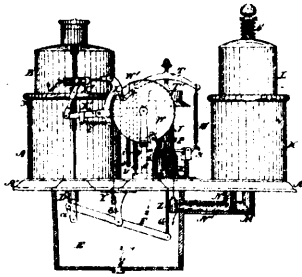
11987 Gavitt's Improvements on Harness Buckles.



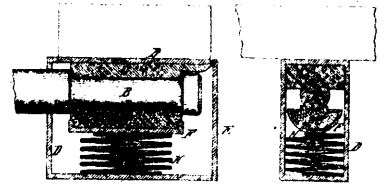
11988 Block's Process for the Manufacture of Iron



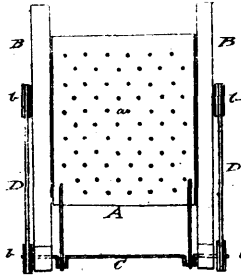
11989 Cron's Improvements on Car-couplers.



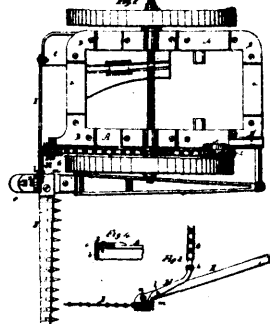
11990 Heening's Improvements on Gas Machines.



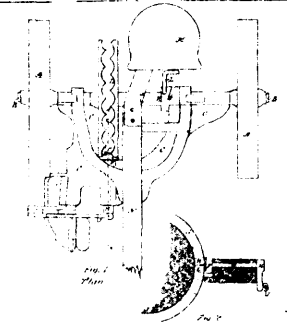
11991 Crocker's Improvements on Journal Lubricators.



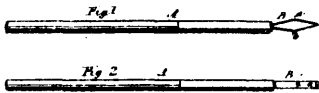
11992 Venning's Improvements on Thrashing Machines.



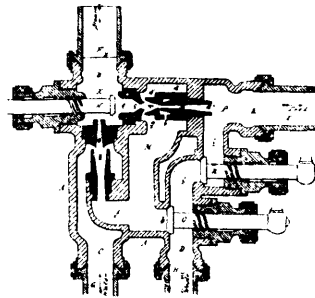
11993 Smith's Improvements on Mowers and Reapers.



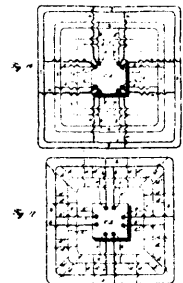
11994 Hayard's Improvements on Mowers and Reapers.



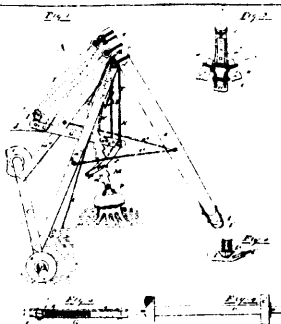
11995 Stoakes's Improvements in Marking Pens.



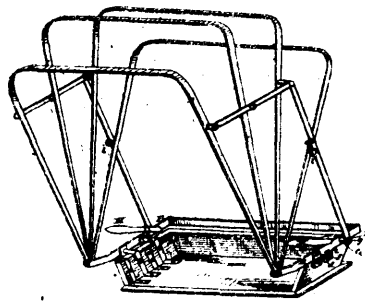
11996 Jenks's Improvements on Feed Water Injectors.



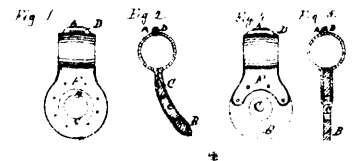
11997 Edison's Systems of Conductors for the Distribution of Electricity as a Lighting and Motive Power Agent.



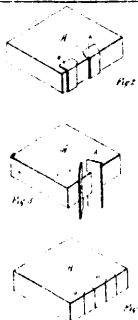
11998 Whitfield's Improvements on Stump Extractors.



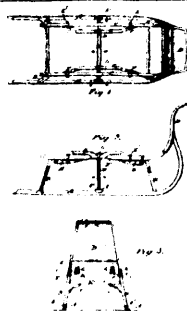
11999 Rudd's Improvements on Carriage Tops.



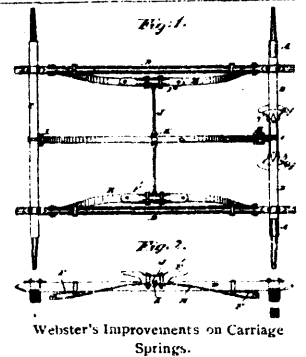
12000 Jacques's Improvements on Neck Yokes.



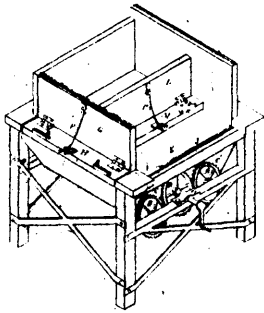
12001 Finger's Improvements in Book Binding.



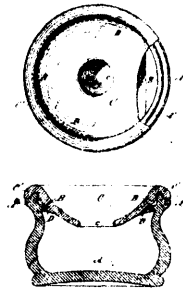
12002 Webster's Improvements on Sleighs.



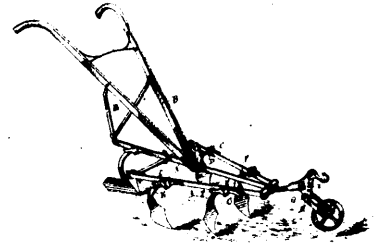
12003 Webster's Improvements on Carriage Springs.



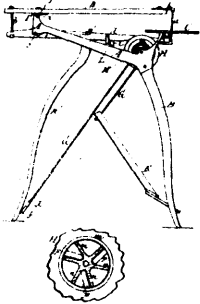
12004 Peterson's Improvements on Carpet Exhibitors.



12005 Pearson's Improvements in Spittoons.



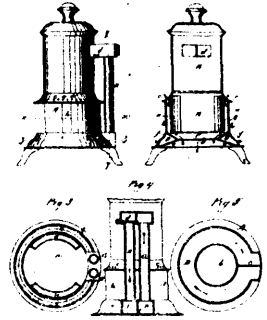
12006 Cockshutt's Improvements on Horse Hoes.



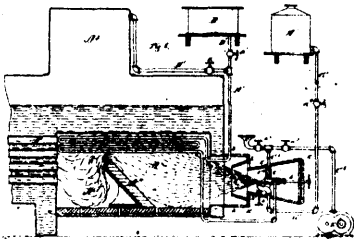
12008 Shipman's Improvements on Sawing Machines.



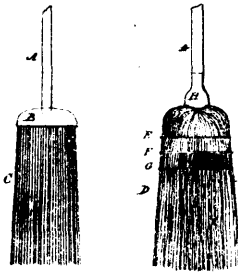
12009 Lugrin's Improvements on Stop Watches.



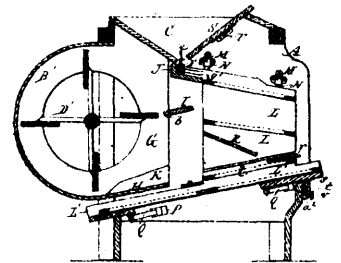
12010 Nold's Improvements on Heating Stoves.



12011 Dickey's Improvements on Hydro-carbon Furnaces and Burners.



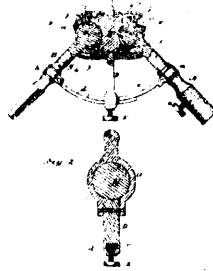
12012 Reed's Improvements on Corn Brooms.



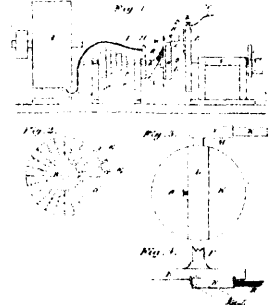
12013 Krake's Improvements on Grain Separators.



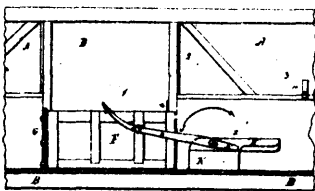
12914 Kesselmeier's Improvements on Watchmakers' Lathes.



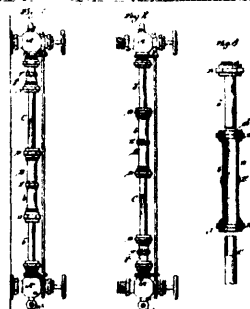
12015 Walker's Improvements on Joint Couplings.



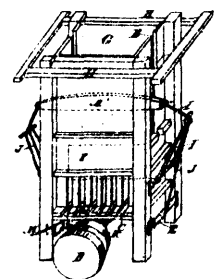
12016 Sveanor's Improvements in the Production of Electric Light.



12017 Miller & Susemihl's Improvements on Grain Car Doors.



12018 Nunn & Clough's Improvements in Water Gauges.



12019 Montpetit's Improvements on Hay Presses.