

other agent which has good qualities but it is rather dangerous to use indiscriminately. Quicksilver possesses the quality of imparting a smooth, greasy gloss to the roughest bearings. We have seen badly cut shafts very much improved by the use of quicksilver; so that although the ruts still remained they were silvered over, and the bearing was as good as new. On brass boxes, however, this substance should be used with great circumspection, for it forms an amalgam, or combines, so that the brass is rendered softer at the surface, and is quickly worn away. Steamers that race sometimes use mercury freely in their bearings, though the bad effects that follow are not apparent until some time after.

A shaft that is too slack in its box will heat; this may occur from the violent and sudden contact of the two parts which causes the metals to come in contact without the intervention of oil. It very often happens that all adjustment is in vain; that all the doctoring and cold water that can be applied are useless. In such cases it is advisable to change the composition of the brass box, by substituting a harder or softer one as the case may be.

The heating of a brass or bearing is a sure sign that there is some defect which ought to be remedied. Unequal expansion of the engine framing causes it, as well as being keyed too tightly. Experiments made by a French engineer proved that up to 6000 pounds on the square inch no heating took place provided the bearing was well oiled and in line. The number of square inches in a large bearing give a very great sum total in pounds on the whole surface and when heating occurs it detracts seriously from the power of the engine.

INVENTION PERPETUAL.

There is a moral grandeur in the progress of invention which strikes a reflecting person forcibly. The spectacle of the weekly departure of models from this office, to be forwarded to Washington, is one of great interest. It is not merely the presence of a hundred or more inanimate machines, mere ingenious combinations, which causes these sensations; but the fact that through them the material interests of society are very greatly enhanced.

It would be puerile to represent every inventor solely as a public benefactor, with no thought beyond the welfare of mankind in general. Invention with most persons is a calling through which they get food and raiment; but those who originate and carry out useful improvements are accessories after the fact, in legal phrase, and as much entitled to public respect and remembrance as the greatest philanthropist.

It is related that a clown once stood beside a rapid stream, patiently waiting until the water had run out, so that he might pass over dry shod. If this traditional personage should visit this office in the flesh he might stand agape with wonder and wait in vain until the shelves were bare of inventions; he might linger tediously while the expressmen bore in their parcels, in the hope that they would come no more; he might shuffle from one foot to the other, in the vain expectation that ere long these inventors would cease bothering his sight with the long train of their ideas in tangible forms. So long as the river runs will the inventions come forth. So long as man is man his mind will be busy, and there will be no stop or check in the improvements he devises.

In the summer time, or in harvest, with the falling of the leaf or the budding of it, all is the same, and instead of growing less there is an appreciable increase in the number of applications for patents. It is well that this is the fact, for by the exertions of the class in question hundreds have been added to our army, to our navy, to the field, the factory and the store.

DRY PRINTING.

We mentioned last week, in our editorial correspondence from Washington, that some eighty hydrostatic presses are employed in printing the fractional currency. On the 19th inst. there was a discussion on the subject in the House of Representatives, when Mr. Garfield made the following remarks:

"In regard to the dry-plate printing, to which the gentleman has referred, the committee did report that the machinery was very heavy and expensive, that

the experiment had not yet been completed, and that they could not recommend the system on the score of economy. It seemed to us to be an expensive experiment and one of doubtful success. But since that time the experiment has proved highly successful. I think there can scarcely be found an instance of so marked a success in any branch of mechanical ingenuity as this experiment in dry-plate printing. If the gentleman will visit the Treasury Department he will find that printing is there executed far faster by this method than by the old method; and not only faster, but far better. The printing is executed in such a way as to afford almost an absolute security against counterfeiting. Within the past few months one of the most accomplished engineers of England has visited the printing establishment of the Treasury Department, and he declares the printing machinery now in use there to be a master-piece of skill in mechanics. And I am informed to-day by a gentleman on this floor that Professor Agassiz, who has witnessed the operation of that machinery within the past week, pronounces it one of the wonders of the age—one of the marvels of mechanical science."

In ordinary copper or steel plate printing the paper is moistened in order to soften it before it is laid on the plate. This renders necessary a drying and pressing process after the printing. The object of printing the paper dry is to save all subsequent manipulation, but to print it dry, very powerful pressure is required, and this is furnished by the hydraulic press.



ISSUED FROM THE UNITED STATES PATENT-OFFICE
FOR THE WEEK ENDING JANUARY 24, 1865.
Reported Officially for the Scientific American.

Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying size of model required and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

45,962.—Hoisting Machines.—Charles Abel, New York City:

I claim the construction and use of the worm wheel, D, with its connected wheel, E, and the worm screw, C, in combination with the pulley, A, substantially as and for the purposes described.

45,963.—Shutter Bolts.—Edward Andrews, Palo Alto, Pa.:

I claim the combination and arrangement of the bolt, B, the latch, D, lever, F, and spring, E and J, when used for the purpose herein fully described.

45,964.—Tapping Water Pipe.—Phineas Ball, Worcester, Mass.:

I claim, first, The combination of the clamping irons, H H', with the pipe, A, tap holder, D, and tap, C, substantially as and for the purpose described.

Second, The combination of the clamping iron, H, with tap holder, D, and tap, C, substantially as and for the purposes described.

Third, The combination of the packing, I, with pipe, A, tap holder, D, and tap, C, substantially as and for the purposes described.

45,965.—Horse-power Elevator and Excavator.—Stephen T. Bishop and Andrew Stevely, Fond du Lac, Wis.:

We claim, first, The combination of a tread horse-power, with an endless chain excavator and elevator, substantially as set forth.

Second, We claim the adjustable frame, E, or its equivalent, in combination with the tread horse-power frame, substantially as specified.

Third, We also claim the machine, constructed and arranged substantially as described.

45,966.—Horse-power Elevators and Excavators.—Stephen T. Bishop and Andrew Stevely, Fond du Lac, Wis.:

We claim, first, So constructing and arranging a horse-power elevator and excavator as to render the machine movable with the horse upon the same, substantially in the manner and for the purposes set forth.

Second, We also claim the above-described arrangement of the wheels, U and V, in combination with the two sets of wheels, R and S, substantially as specified.

45,967.—Horse-power Elevator and Excavator.—Stephen T. Bishop and Andrew Stevely, Fond du Lac, Wis.:

We claim, first, The combination of a hook, L, with the bars, I, and the endless chain, substantially as set forth.

Second, We claim the use of the bar, I, for attaching the hooks or buckets, or both, to the endless chain, substantially as described.

Third, We claim the arrangement of hooks upon one part of the bar, I, and at the same time putting a bucket or buckets upon the other part or end of the bar, substantially as described.

Fourth, We also claim the arrangement of the hooks and buckets alternately, upon successive bars, I, substantially in the manner and for the purpose set forth.

45,968.—Horse-power Elevator and Excavator.—Stephen T. Bishop and Andrew Stevely, Fond du Lac, Wis.:

We claim the adjustable frame, C, in combination with the horse power, substantially as set forth.

Second, We claim the arrangement of the ratchet wheels as

shown in Figs. 1 and 3, in combination with the crank, N, and frame E, substantially in the manner and for the purposes set forth.

Third, We claim the combination of the ratchet wheels and crank, N, with the ratchet bar, Fig. 3, substantially in the manner and for the purposes described.

45,969.—Looms.—Wm. Breitenstein, New York City:

First, I claim the arrangement and construction of the sliding bars, C C', provided with suitable arms at their ends forming the shuttle holders, and operated in the manner and for the purpose substantially as set forth and described.

Second, I claim the construction of the shuttle holders, and the arrangement of the arms, m, operated by a spring, o, and acted upon by the lever, G or G', in the manner and for the purpose described.

Third, I claim the arrangement and combination with a shuttle holder of the shield plate, F, in the manner and for the purpose set forth.

Fourth, I claim the sliding bar, H, in combination with the levers, G G' G', constructed and operated in the manner and for the purpose specified.

Fifth, I claim the arrangement of the hook levers, N N', with their springs, r r', attached to sliding bar, H, in combination with springs, s s', attached to the breast beam, B, and acted upon by the arms, pp', of the sliding bar, C C', for the purpose of operating said sliding bar, H, in the manner substantially as set forth and described.

45,970.—Stone Gatherer.—P. S. Brewster and C. M. Hines, Lime Hill, Pa.:

We claim the pivoted bar, C, provided with gathering fingers, c, and operated by means of the bail, H, levers, F, and rods, E G, substantially in the manner herein described.

Second, We claim the platform, E, in combination with the lock bar, A' a', spring, a2, and plate, B', when the whole are employed in conjunction with the gatherers, C c, in the manner and for the purposes explained.

Third, In combination with the gatherer, C c, we claim the rollers, B B', extending across the machine to raise the fingers over stones too large to be lifted by them, substantially as set forth.

45,971.—Corn Planter.—George Bunch, Grand River Township, Mo., and James A. Price, Breckenridge, Mo.:

I claim the sliding handle, I, and sliding bar, H, connected together and applied to the frame, A, and shaft, D, substantially as and for the purpose herein set forth.

[This invention relates to a new and improved corn planter, of that class in which the seed-dropping mechanism is operated manually by the driver while walking behind the machine and guiding the same.]

45,972.—Sewing Machines.—Caleb Cadwell, Waukegan, Ill.:

First, I claim the slide, E', having a groove, e', to actuate the pin, f, on the thread catcher, F f', which guides the thread around the shuttle, substantially as described.

Second, I claim the pivoted bar, P, for taking up the slack thread, when operating in combination with the flipper, P', and projection, k', in the manner herein set forth.

Third, I claim the tension device, Q2 Q4 Q5, and the pin, Q2, for the spool, all mounted upon the spindle, Q3, on the arm, D, so that they may be removed and replaced at will.

Fourth, I claim the adjustable block, h3, and circular block, H2, in combination with the notched aperture for imparting a variable movement to the feed surface, H, the whole being operated by means substantially as herein described.

Fifth, I claim the combination of the circular blocks, H7 H8, the former, H7, being moved vertically by turning on the latter, H8, so as to raise and lower the feed surface, in the manner and for the purpose set forth.

Sixth, I claim the thread-winding apparatus, R R1 R2 R3 r, operating in connection with a spring, S, whereby it is held down to work in connection with the driving wheel, B, or retained out of contact therewith, as stated.

45,973.—Means of Working Ship's Pumps.—Ansel Cain, Holyoke, Mass.:

I claim operating the pumping apparatus of a ship or vessel by means of an oscillating weight, in combination with the mechanism described, the whole arranged substantially as set forth.

45,974.—Duster for Brick Machines.—Cyrus Chambers, Jr., Philadelphia, Pa.:

First, I claim applying sand or dust to the surface of undried bricks, in a chamber in which those materials, or either of them, are kept in suspension by mechanical means.

Second, Passing bricks as they come from a brick machine through a box or chamber in which sand or dust are kept in suspension by mechanical means, substantially in the manner and for the purpose described.

Third, The use in a dusting apparatus of the cones, P, constructed and operating substantially as described for giving direction to currents of sand or dust, for the purpose specified.

45,975.—Railroad Car Brakes.—J. H. Champlin, Essex, Conn.:

I claim a friction block for railroad car brakes formed from stone or its portion on the shells of the fresh-water molluscan animals of the screws, a, a, in the case, D, and arranged to operate substantially in the manner and for the purpose specified.

45,976.—Combined Seed and Potato Planter.—Otis N. Chase, Boston, Mass. Ante-dated January 8, 1865:

First, I claim the combination and arrangement of the toggle lever, d, and the frames, A and C, with one or more plows, substantially as described.

Second, I claim the projections represented by the knives or hooks, ff, etc., in combination with the stripping slot, i, or its equivalent, substantially as described, for the purpose set forth.

Third, I claim the combination and arrangement of the springs, j, j', inclined plane, g, and seed box, H, with the projections, as represented by the knives or hooks, ff, etc., substantially as described, for the purpose set forth.

45,977.—Material for the Manufacture of Buttons, Handles for Knives, and other purposes.—Lucius E. Chittenden, Washington, D. C.:

I claim the manufacture of the articles above named, and the use in whole or in part for such manufacture, of the interior or nacreous portion of the shells of the fresh-water molluscan animals of the United States and North and South America, substantially in the manner above described, or in any other, substantially the same, which will produce the internal result or effect.

45,978.—Leather-channeling Tool.—Elliott H. Crane, Jonesville, Mich.:

I claim the combination of the adjustable gage, G, with the shank, A, substantially in the manner herein shown and described.

I also claim the combination of the block, C, and cutter, B, with the shank, A, substantially as herein shown and described.

I also claim the combination of the cutter, F, with the cutter, B, block, C, and shank, A, substantially as herein shown and described.

I also claim the combination of the gage, G, with the block, C, cutters, B F, and shank, A, substantially in the manner herein shown and described.

[The object of this invention is to facilitate the cutting of V-shaped channels upon the edges of harness straps, boot and shoe soles, and upon all kinds of leather articles where channeling is required. The inventor calls it the "Improved Universal Channeler," because it can be readily adjusted so as to cut channels on different lines. It is a good improvement.]

45,979.—Hooks and Eyes.—John P. Culver, New York City:

I claim a hook and eye, combining the widening, c, of the bill of the hook with the narrower opening, b, of the eye, substantially as and for the purpose herein specified.

45,980.—Method of Attaching Handles to Cross-cut Saws.—Charles Disston, Philadelphia, Pa.:

First, The handle, A, its ferul, c, and strips, b, the key, F, and self-adjusting plate, D, the whole being constructed and arranged for attachment to the end of the saw, substantially as described.

Second, The self-adjusting plate, D, hung to the strips, b, and having projections, e, e, adapted to notches in the edge of the saw, all as set forth.

45,981.—Scroll Saws.—Wm. H. Doane, Cincinnati, Ohio:

First, I claim the combination of the devices A B C a b, the saw

being adapted for and constituting a portion of a scroll sawing machine or saw mill, substantially as herein set forth.

Second, The combination of the tubular sleeve, C, key, c, screw, d, recessed or tubular shank, e, and guide stock, D, substantially as and for the purpose set forth.

Third, A tubular foot stock, D, with a guide holder, D', on its lower end, the said holder being constructed and having guides fitted upon it, substantially as and for the purpose set forth.

Fourth, The combination of the tubular sleeve, C, the stock, D, feather, c, and set screw, d, substantially in the manner and for the purpose described.

Fifth, The employment of a door, E, or its equivalent, in combination with a foot stock, D, D', substantially as and for the purpose described.

45,982.—Joining and Fitting Corners of Soap-stone Stoves.—Porter Dodge, Perkinsville, Vt.:

I claim, in combination with the grooved soap-stone slabs, A, the iron or metal corner or angular plate, B, substantially as and for the purposes described.

I also claim, in combination with the grooved soap-stone slabs, A, and angular plate, B, the cap, C, substantially as and for the purpose specified.

45,983.—Revolving Fire-arms.—Wm. C. Dodge, Washington, D. C.:

I claim, first, The sliding lock bolt, q, arranged in bridge piece, p, as shown and described, whereby the parts can be locked automatically, and can be unlocked and swung over by a single application of the thumb, and the whole operation performed by the use of one hand only.

Second, Hanging the cylinder on the tubular bolt, g, or hollow journal, h, when connected by the frame at one end only, whether at the front or rear.

Third, supporting the detached end of the cylinder by the projection, i, and groove, l, substantially as specified.

Fourth, Locking the projection, i, in place by the latch, k, or its equivalent, as shown and described.

Fifth, So arranging bolt, l, and latch, k, that both can be operated simultaneously, and by a single movement.

Sixth, I claim constructing and arranging bolt, l, and latch, k, in such a manner as to permit the front and rear portions of the frame to be locked automatically, as they are swung into position for firing, whereby the use of one hand only is required in the operation.

45,984.—Elastic Studs for Doors.—A. Eliaers, Boston, Mass.:

I claim, first, My improvement in the construction of doors, French windows, etc., which consists in the use of two or more elastic studs or buttons, working or rubbing against each other respectively, in the ends or edges of the swinging, sliding, or otherwise movable part, and the stationary rabbit or jamb, as described.

Second, The combination of the elastic studs or buttons, operating together, as described, and one or more elastic studs or buttons placed in the rear of the first set of studs or buttons, the whole serving to prevent noise and to hold in position, as set forth.

45,985.—Explosive Shells.—Edwin Estabrook, Jersey City, N. J.:

I claim the place, or nearly plane faces, B1 B2, etc., on the interior of an explosive shell, arranged relatively to each other, in the manner and so as to produce the effect herein set forth.

45,986.—Fuse for Shells.—Edwin Estabrook Jersey City, N. J.:

I claim the employment in explosive shells of a fuse plug, adapted to collapse and crush by the action of the exploding charge, and to stop the escape of gas through the fuse plug, substantially as herein set forth.

45,987.—Cultivator.—J. W. Fawkes, Decatur, Ill.:

I claim the frame, E, applied to the draught pole, C, as shown, in connection with the foot levers, H G, arranged with the frame, to admit of the latter being operated as and for the purpose specified.

I also claim the pivoted plow standards, J, connected to segments, M, by bars, L, and links, J, in connection with the wooden pins, I, in the segments, all arranged substantially as and for the purpose set forth.

I further claim providing the segments, M, with handles, N, in connection with straps, O, on the frame, E, as and for the purpose set forth.

[This invention relates to a new and improved cultivator for plowing those crops which are grown in hills or drills, such as corn, potatoes, etc.]

45,988.—Gang Plows.—Wm. H. Freeman, Bloomfield, Iowa:

I claim, in combination with the stationary frame, A, the hinged plow beam or beams, F, and levers, G I and H, for the purpose of adjusting the heights as well as the inclination of the plows, substantially in the manner and for the purposes described.

45,989.—Piston Packing for Pumps.—Dwight B. Fuller, Buffalo, N. Y.:

I claim the combination of the follower, E, elastic disk, G, and leather bonnet, H, for the purpose and substantially as described.

45,990.—Washing Machine.—Squire Gambell, Otisco, N. Y.:

I claim the oscillating suds box, A, provided with the horizontal slats, g, and wash board, F, in combination with the fixed or stationary dash board, E, all arranged substantially as and for the purpose set forth.

I further claim the pivoted bar, G, with upright lip, K, attached, in connection with the projections, l, one or more, on the exterior of the suds box, for the purpose specified.

[This invention relates to a new and improved clothes-washing machine, and it consists in the employment or use of a suspended oscillating suds box, of semi-cylindrical form, in connection with a fixed or stationary dash board within the suds box, and a dash board attached to the suds box, and with or without a wash board, being arranged in such a manner as to operate very efficiently and without injuring the clothes.]

45,991.—Apparatus for Desulphurizing and Amalgamating Ore.—Eli P. Gardner, New York City:

I claim, first, The form and construction of the receiving and operating vessel, F, by which it is to be adapted to the uses and purposes required and designed, as above described.

Second, I claim the vertical shaft and its attachments of pins and revolving perforated diaphragm plate, combined, arranged and operating within the vessel, F, in the manner and for the purposes described.

Third, I claim the combination and arrangement of the operating vessel, F, the feed pipe and endless screw, I K, and the eduction or discharge pipe, P, and the rotation of the shaft and attachments, operating as described, so as to effect a continuous and uninterrupted operation of the process without stopping to change or discharge the matter under treatment.

Fourth, I claim the combining and arranging the vessel, F, and the apparatus connected with it, and its contents with the washing tub or condenser and separator by means of eduction pipe, P, and water pipe, Y, operating together as described.

Fifth, I claim desulphurizing the dust, and dissolving the sulphur therein contained by subjecting the same to treatment with heated mercury, in a vessel in which the atmosphere or external air is admitted with the pulp, and uniting the fumes of the mercury with the fumes of the sulphur as they pass off within a vessel arranged, constructed and operating as described.

Sixth, I claim the construction of the watertrough in the head of the operating trough, provided with a supply and discharge pipe for keeping cool the head and stuffing box, constructed and arranged and operating as described.

45,992.—Hay Spreaders.—W. C. Gifford, Jamestown, N. Y.:

I claim, first, The draught pole or thills, D, provided with a series of holes, for the employment in combination with the pins, d, loops, b, b', and cross bars, c, c', of the frame, A, in such a manner that the same can be readily taken out and changed, or lengthened or shortened, as may be desirable.

Second, The combination of the tilting frame, F, with the reel, E, and chain, h, substantially as and for the purposes shown and described.

Third, The hand lever, G, in combination with the belt, i, and tilting frame, F, applied as herein set forth, so that by touching the hand lever the belt and lever combined will raise or lower the frame.

Fourth, The serrated bar, m, and catch, m', in combination with the lever, G, and belt, i, as and for the purposes specified.

Fifth, The rakes, H, provided with teeth, p p', and applied to the

reel, E, in combination with the chains, p', spring stops, q, and cam, q', or their equivalents, constructed and operating substantially as and for the purpose shown and described.

[This invention relates to certain improvements in machines for turning and spreading hay, which act on the hay by means of a revolving reel, the rails of which are provided with suitable teeth to take up, turn and spread the hay as the machine is drawn over the field.]

45,993.—Grain Separator.—Horace N. Goodrich, Aurora, Ill.:

I claim, first, Providing the hopper with the feed-regulating boards, B, substantially as and for the purpose specified.

Second, The stationary strip or feed-regulator, E, when constructed and operating as and for the purposes set forth.

Third, The gang of series, F, with two or more of the sleeves in the gang adjustable, and provided with the feed-regulator, E, substantially as and for the purpose herein described.

Fourth, Providing the shoes, G, with the grooves, I, so running into each other that a sieve or screen can be changed to different angles of inclination without being removed from the shoes, substantially as and for the purpose set forth.

45,994.—Cask for Preserving Beer, Etc.—Jacob Haeger, Shiloh, Ill.:

I claim the combination of the piston, G, and its screw, c, with the plates, x x', and packing, F, substantially in the manner herein shown and described, so that by revolving the said piston rod the periphery of the piston will be expanded or contracted, all as specified.

The employment of the ratcheted nut, I, in combination with the screw piston rod, G, and piston, E, substantially as herein shown and described.

The construction of the plate, x, with cavities to receive the screws, substantially as and for the purpose herein shown and described.

[The object of this invention is to preserve beer, wine, and all kinds of juices and liquids in a fresh state, by preventing the contact of air with the said substances. This is accomplished by means of an exhaustible plunger, which fits the beer barrel or receptacle, the plunger being arranged to rest upon the surface of the beer, and to fall as fast as the beer is drawn.]

45,995.—Plows.—John Hanes, Polkville, Ky.:

I claim forming the plow stock; that is the curved front bar, b, ground bar, a, and brace, c, in one piece, in combination with the manner herein described and shown of adjusting the same to the beam, B, and handles, R, through the intermediary of the brace, P, and crop bar, W, substantially as set forth.

45,996.—Sap Spile.—Mark Hays, Worcester, Mass.:

I claim a tubular sap spile, provided or formed with a screw to screw into the tree, a circumferential groove extending wholly or partially around the spile to receive the handle of the nail which receives the sap, and a square, b, to receive a wrench to screw the spile into the tree, substantially as herein shown and described.

[This invention relates to a new and improved tube for conducting the sap from sugar maple trees into a pail or vessel prepared to receive it.]

45,997.—Straw Cutter.—Clark R. Hewett, Waupun, Wis.:

I claim, first, The combination of the rotary knives, L L, hub, K, braces, I I, stationary knife, E, and feed roller, c, e', all constructed, arranged and operating substantially as and for the purposes specified.

I also claim the adjusting of the knife, E, by means of the sliding wedge, F, arranged substantially as and for the purpose specified.

I further claim the spring, g, when applied to the knife, E and used in combination with the rotary knives, L L, substantially as and for the purpose set forth.

[This invention relates to a machine for cutting straw, hay, etc., for fodder, and it consists in the use of two feed rollers and an adjustable stationary knife, in connection with rotating knives, all constructed and arranged to operate so that fodder may be cut with rapidity and with but a moderate expenditure of power.]

45,998.—Turn-down Enamelled Paper Collar.—James H. Hoffman, New York City:

I claim the new article of manufacture herein described constituting a turn-down or folded collar, made and finished substantially in the manner and for the purpose set forth.

45,999.—Machine for Folding Paper Bags.—Ellis A. Hollingsworth, South Braintree, Mass.:

I claim the combination of the stretchers, K K, or their mechanical equivalents with the leaves or flaps, g, g, the whole being so as to operate together substantially in manner, and for the purpose or objects described.

And in combination with the two leaves, g, g, and their elevating mechanism as described, I claim the opening bars, h h, applied to the leaves and the posts substantially as and so as to operate as set forth.

46,000.—Rear Sight Base for Fire Arms.—F. W. Howe, Providence, R. I.:

I claim the employment of a band made of two parts and fitted to a recess or groove in the outer surface of the barrel and stock, and secured as described in combination with the barrel, stock and rear sight as described, and for the purpose set forth.

And I also claim the combination of the said band made in two parts, and fitted to a recess or groove in the barrel and stock, and secured as described, in combination with the back strap swivel, as described and for the purpose set forth.

46,001.—Horse Rake.—Edward Huber, Kelso, Ind.:

I claim the spring or elastic plates, G, attached to the handles, F F, and provided with the projections, d, e, in connection with the plates, H, on the teeth of the revolving rake head, D, the handles being connected by pivot bolts to pendants, B, on thills, A, and all arranged to operate in the manner substantially as and for the purpose set forth.

[This invention relates to a new horse rake of that class which are provided with straight teeth, and arranged so as to revolve in order that they may discharge their load.]

46,002.—Vegetable Cutter.—F. Hullhorst, Freeport, Ill.:

I claim the combination of the changeable feed boxes, H d I and J f f, with the cutting wheel, D G, and casing, A, all arranged to operate as specified.

[This invention relates to a new and improved machine for cutting vegetables of various kinds both for family use and for fodder for stock.]

46,003.—Bread Cutter.—F. Hullhorst, Freeport, Ill.:

I claim the curved slot, G, in the plate, H, attached to box, A, in connection with the knife, D, arranged in connection with a slide, lever, pawl and rack, or their equivalents to operate the sliding bottom, B, substantially as and for the purpose specified.

I also claim the adjustable plate, G, when applied to the device to operate in connection with the bar, N, on the bolt, F, of the knife, D, substantially as and for the purpose set forth.

I also claim the guide plates, C C, in combination with the knife, D, and slotted plate, H, for the purpose specified.

I further claim the adjustable bar, N, on the bolt, F, of the knife, D, in connection with the crop head, M, at the end of the slide, I, substantially as and for the purpose set forth.

[This invention relates to a new device for cutting or slicing bread, and consists in a novel arrangement of a knife, knife-guide and a feeding device, all arranged in such a manner that the bread, as the knife is operated, will be fed to the latter and cut into slices of the required thickness, the knife at the same time operating with a drawing cut.]

46,004.—Screw Propeller.—Fritz Jacob, New York City:

I claim the screw propeller constructed with hollow bow-ended blades, B, of the form herein shown and specified and for the object set forth.

[This invention consists in a screw propeller with hollow wings arranged in such a manner, that each wing forms a channel through

which the water is forced in a direction parallel to the shaft on which the screw revolves, while at the same time the faces of the wings act like the blades of screw propellers of the ordinary construction, and by these means the effective surface of the screw, and, consequently, its propelling power are considerably increased.

46,005.—Apparatus for Separating Metallic Filings.—Julius Johnson, Baltimore, Md.:

First, I claim the combination of temporary magnets fixed upon a shaft which is made to traverse back and forth as described, with a traveling apron for carrying the filings to be cleaned substantially as above set forth.

Second, I also claim breaking and re-establishing the circuit between an electrical battery and a series of temporary magnets automatically by means of the cams, m, the vertical rack and the lever, i, under a mode of operation substantially such as and for the purpose above described.

Third, In combination with the aforesaid lever, c, rack l and temporary magnets, p, I further claim the separate reservoir, U, and inclined partition, V, for the reception of the iron and steel filings as explained.

Fourth, I also claim the sliding sock shaft, s, the connecting rods, e, cranks, f, and shaft, g, in combination with the gear wheel, 7, substantially as described.

Fifth, I also claim the combination of the segment gear wheel, 5, pinion 4, and shaft 13, for imparting intermittent rotation to the apron, c, as explained.

Sixth, I also claim operating the rack by means of the lever, l, and the pin, h, on the wheel, 7, substantially as described.

46,006.—Method of Oiling Wool.—B. H. Lightfoot, Philadelphia, Pa.:

I claim, first, The application of prepared petroleum or other oily hydrocarbon to the surface of the wool.

Second, The application to the oiling of wool of oily hydrocarbons, in combination with olein or lard oil, or other equivalent material.

46,007.—Stove-pipe Damper.—Edward Mackevitz and Wm. Franklurth, Milwaukee, Wis.:

I claim, first, The arrangement within a drum or a section of a stove pipe of the fixed and moveable partitions, C, D, and the fixed and moveable partitions, C', D', in two series, one above another, substantially as above described.

Second, We also claim weighting the moveable partitions, D, D', substantially in the manner described.

[This invention consists in a novel construction and arrangement of fixed and rotating partitions within a section of stove pipe whereby the products of combustion and heated gases from the fire are caused to take a circuitous path in escaping to the chimney so as to impart their heat to the sides of the pipe.]

46,008.—Photographic Card Mount.—T. Mayhew, Poughkeepsie, N. Y.:

I claim a photographic card mount, the surface of which is partially or wholly covered with gum or other suitable cement, substantially as and for the purpose set forth.

[This invention relates to a photographic card mount which is wholly or partially covered with gum arabic or other suitable cement or mucilage in such a manner that when the picture is wet and placed on said card, it will readily adhere thereto and the time and labor necessary in pasting the picture on the cards, and the danger of soiling them during this operation, is materially reduced.]

46,009.—Horse Rake.—E. C. Martin, West Liberty, Iowa:

I claim the combination with a revolving rake, A B B', of the flexible metallic supports, D D', attached at one end and so arranged as to move in contact with the ground behind the rake head, substantially as and for the purpose explained.

46,010.—Lantern.—Geo. C. Merrill, Chicago, Ill. Antedated Jan. 14, 1865:

First, I claim operating the wick ratchet in a lantern or lamp by a rotary motion of the oil cup or lantern.

Second, Operating the wick ratchet by the rotary motion of a rack or disk.

Third, The circular rack or disk, a, when used for the purpose of operating a lantern wick ratchet.

Fourth, The rack or disk, a, in combination with the pinion, c, and wick ratchet, d.

Fifth, The combination of the rack or disk, a, the pinion, c, and ratchet, d, with the oil cup, C, and base, B, all being constructed and operating substantially as set forth and specified.

46,011.—Pocket Lantern.—John A. Minor, Middletown, Conn.:

I claim a portable or pocket lantern constructed with folding sides and a folding top and bottom substantially as herein shown and described.

I further claim having thereat side, b, of the lantern constructed in the form of a narrow or shallow box provided with receptacles for candles and matches, and having its bottom provided with a pivoted plate to which the candle socket is attached and arranged so that the candle may be adjusted within the lantern or the box, substantially as herein described.

[The object of this invention is to obtain a lantern of simple construction which may, when not in use, be compactly folded and carried in the pocket, and still be capable of being readily unfolded and adjusted for use and possess ample room to contain candles and matches, so that the device may be always ready for use.]

46,012.—Ballot Box.—James A. McPherson, Troy, N. Y.:

First, I claim the combination in a ballot box of the body or receptacle, A3, and the top, A', separated by a valve, constructed and applied to each other, substantially as shown.

Second, I claim the top, A', of the ballot box, composed of an open cylinder with transparent sides, a cover, S, with its valve and bell and hammer and a ballot-retaining mouth piece substantially as above set forth.

Third, I also claim, in a ballot box, retaining the ballot in a receiving mouth set within transparent walls, so that it cannot be withdrawn upwards, but remains suspended for inspection until pushed through the mouth by a succeeding ballot substantially as described.

Fourth, I also claim the removable mouthpiece, 4, constructed so as to retain a ballot suspended in it, and prevent its withdrawal, substantially as above described.

[This invention has for its object the protection of the contents of the ballot box. The body thereof is made of glass, and its mouth is closed by a valve above which is a channel in which the ballot is suspended until the next ballot is inserted, when the former is pushed down into the box.]

46,013.—Wood-saw Frame.—Wm. Morehouse, Buffalo, N. Y.:

I claim straining a saw blade, B, by means of an arched or thrust brace, E, or its equivalent, constructed and operated substantially as described.

46,014.—Sofa.—J. W. Moyer, Cherry Valley, N. Y.:

I claim, first, A sofa or lounge constructed substantially as described; that is to say, with adjustable end pieces, D, D, provided with sector shaped supports, F, F, and a locking arrangement consisting of a pawl, G, and ratchet, H, so that the supporting sector shall at all times form a brace for the back and hinges, and shall form a continuous back and finish when the ends D D, are vibrated from their most erect position.

Second, Making the end finish on the outside of the front of the seat frame so as to cover the joint of vibration of the end pieces, a portion of the front of the latter vibrating immediately within side of the end finish.

[This invention consists in having the ends of the sofa attached to the bottom, a seat by means of hinges or joints, and leaving said ends constructed and arranged in such a manner that they may be adjusted and secured in an upright or nearly upright position like the permanent ends of an ordinary sofa, or be capable of being adjusted and secured in a horizontal or a more or less inclined position so that the sofa may be converted into either a right or left lounge, with an end more or less inclined as desired.]

46,015.—Sawing Machine.—J. W. Moyer, Cherry Valley, N. Y.:

I claim, first, The combination of the slides, M M, moving vertically in guides, F, and rollers, respectively, with the screw tension rods, L, L, passing through the bearings, b, b', Figure 1, by which the saw is preserved from lateral deflection, rendered capable of relative vertical adjustment and means afforded for the attachment of varying lengths of saws.

Second, The herein described rolling cylindrical bearings, b b', retained by metal straps or boxes, c, c, e, e', applied above and below the levers, F, F', respectively and threaded for the passage of the screw tension rods, K, L, L.

Third, The method of hanging the saw from the upper and lower bearings of the straining rods at, b and b', figures 1 and 3, so that when the levers are horizontal, one of the bearings, b', shall be in a line with the saw, which has a determinate motion by means of its guides, while the other bearing, b, shall be removed an additional distance from its centre of vibration equal to the versed sine of half the arc described by L in its vibrating motion.

[This invention relates to an improved sawing machine of that class which are commonly termed mule sawing machines, and which are generally used for sawing scroll work or wood in curved form. The object of this invention is to obtain a machine of the class specified which will admit of the saw being kept at a proper state of tension at all points of its movement, and allowing the same to operate rapidly without creating jars or concussions, and at the same time avoiding the use of any parts which would serve as an obstruction to the feeding of the "stuff" to the saw, and the proper manipulation of the former while being sawed.]

46,016.—Coats with Inner Sleeves.—J. W. Moyer, Cherry Valley, N. Y.:

I claim, as an article of manufacture, a coat with an auxiliary sleeve or cuff, B, within and secured to the outer sleeve, A, as described and represented.

46,017.—Hay Rack.—Andrew Naramor, Berlin Heights, Ohio:

I claim the construction and arrangement of the bolster, C, and pieces, F, in combination with the rack as and for the purpose set forth.

46,018.—Hay Elevating Fork.—W. S. Newton, Norwich, Conn.:

I claim the combination and arrangement of the bar, c, tang or shank, A, with tines and handle attached, semicircular bar, D, and catch lever, E, with the spring, G, and rope, H, connected with it, substantially as and for the purpose herein set forth.

[The object of this invention is to obtain a horse hay fork which may be economically constructed, be strong and durable, and yet light and capable of being manipulated with the greatest facility by the operator.]

46,019.—Coal Screen.—A. M. Olds, Chicago, Ill.:

I claim the end coal screen above described, constructed substantially as set forth and consisting of the closed box, A, A', the part A, being removable and a screen, B, revolving eccentrically within the part, A', said screen having a door at one end or side and being so journaled on the part, A', of the box as to be removable at pleasure.

[This invention consists of a novel arrangement of a revolving screen within a closed box for screening coal and for similar purposes, the screen being suspended eccentrically and the cover of the box being removable.]

46,020.—Cut-off for Steam Engines.—J. H. Paine, Hartford, Conn.:

I claim, first, The spiral cam, J, applied in combination with the governor and with the main valve, G, and cut-off valve, D, substantially as and for the purpose set forth.

Second, The sliding pin, g, and latched, e, in combination with the valves, C, D, and cam, J, constructed and operating substantially as and for the purpose described.

46,021.—Composition for Rendering Barrels Impervious to Oil, etc.—George R. Percy, New York City:

I claim my invention for coating barrels and other vessels to contain oils and fats is a composition composed of water, borax and shellac in about the proportions specified, with the addition of a small quantity of glycerine, molasses, honey or glue.

And I also claim the process of the previous saturation of the wood with soluble silicate, in combination with the coating of the barrel or vessel with the above-described composition.

46,022.—Compound of Condensed Milk and Uncrystallized Sugar.—George R. Percy, New York City:

I claim the commingling of a quantity of uncrystallizable grape sugar with condensed milk, in the manner substantially as above described.

36,023.—Revolving Fire-arm.—Reuben H. Plass, New York City:

First, I claim the trunnion ring, C, adapted to embrace the revolving part and to allow it to be turned about on the trunnions, substantially in the manner and for the purpose herein set forth.

Second, I claim the hinged cap or rear piece, G, G', arranged and operated substantially as herein represented and described.

Third, I claim, in combination with means for revolving the chambered part, B, on an axis transverse to the line of the barrel, making the face or front end of the chambered part, B, portion of a sphere having its center at the point where said transverse axis crosses the longitudinal axis and giving a corresponding concave form to the adjacent fixed parts, all substantially as and for the purpose within set forth.

Fourth, I claim the convex projection, G2, on the rear face of the cap, G, and the corresponding form of the recesses in the stationary part, A, to serve in combination with the rotating part, B, and perform the double function of a stop and an abutment for the recoil, all substantially as herein set forth.

46,024.—Composition for Varnish, etc.—Peter Prescott, Booneville, N. Y.:

I claim a composition for varnishing, painting, etc., made of the ingredients herein specified and mixed together, substantially in the manner and about in the proportion set forth.

[This invention consists in a composition for varnish, paint, etc., in which shellac forms the base or principal ingredient, and in which the use of alcohol is dispensed with, and a much cheaper, and, in most respects, better solvent is substituted therefor.]

46,025.—Combined Cultivator and Harrow.—Edmund D. Reynolds and O. Bradford Reynolds, North Bridgewater, Mass.:

We claim the combination of the cultivator shares, h, and rotary harrow teeth, m, when so arranged with respect to a carriage, a, that they are self-adjusting in their action upon the soil being cultivated substantially as set forth.

46,026.—Machine for Drying Paper.—George S. Rogers, Theford Center, Vt.:

I claim the said improved paper-drying machine constructed with one or more drying cylinders, A, B, two endless aprons, R, S, and suidry guide rollers and planes, arranged in manner and so as to operate substantially as described.

46,027.—Hay Elevator.—Seymour Rogers, Pittsburgh, Pa.:

I claim an improvement in hay elevators the rod, D, provided with the jointed arms, F, F, in connection with the pointed case, A, all arranged to operate in the manner substantially as and for the purpose set forth.

I further claim the notches, e, f, in the rod, D, in connection with the spring, G, and the hole, a, in the cap, c, and the eccentric, H, all arranged substantially as and for the purpose specified.

[This invention relates to a new and improved device for elevating hay and depositing it in mows in barns, and also for the forming of stacks, the implement, with its load, being raised by a horse.]

6,028.—Button-hole Cutter.—Francis G. Sanborn, Boston, Mass.:

I claim, first, A cutting bed for cutters and punches to be applied-

to the shanks of scissors secured and held adjustably on the shank by means of spring pressure, substantially as described.

Second, I also claim the use of the dove-tailed or grooved frame of the cutting bed, B, for holding movable blocks of horn, vulcanized or hard rubber or gutta-percha, wood, or other substance for a cutting surface, as above set forth, when the same is applied to the shanks of scissors, substantially as above described.

[This invention consists in certain improvements in the cutting block of a button-hole cutter, to be used and fastened upon one of the shanks of an ordinary pair of scissors, in the way pointed out in Letters Patent granted to the inventor, for a button-hole cutter, on the 4th of Oct., 1864.]

46,029.—Bedstead Fastening.—John C. Santee, Hughesville, Pa.:

First, I claim the logs, C and E, constructed and applied substantially as herein shown and described, to secure the parts of the bedstead together without mortices.

Second, In combination with the above, I further claim the ribs, R, P, for affording an additional support to the rails.

Third, I claim the combination of the plugs, K, and flanges, e', for securing the rails, within the posts substantially as and for the purposes herein set forth.

46,030.—Paper Washer for Paper Stock.—Geo. Escol, Sellers Landing, Ill.:

I claim washing pulp or fiber for paper stock by submitting it to the action of a centrifugal drainer so arranged as to permit the stuff to pass by the revolving surface of a gradually thinning sheet, and to be washed by a continuous stream of water passing through it, substantially in the manner and for the purpose specified.

46,031.—Cane Stripper.—Geo. Escol Sellers, Sellers Landing, Ill.:

I claim, first, The stripping or breaking of the branches from the stems of cane or reeds, or stripping off the leaves only by blows from a revolving drum, slats or blades, the cane or reeds being so fed as to insure contact with the part to be struck off, substantially as specified.

Second, Receiving the stripped cane upon an inclined table arranged with a stop to facilitate banding, substantially as specified.

46,032.—Eraser.—A. G. Shaver, New Haven, Conn.:

I claim an eraser constructed with a file-cut surface in combination with a sharp-cutting or scraping edge or edges, substantially as shown.

Second, An eraser constructed with a file-cut surface in combination with a sharp-cutting or scraping edge or edges and a convex burnishing surface, substantially as shown and described.

46,033.—Apparatus for Extracting Oils, etc.—Lyman Smith, Erie, Pa.:

I claim the tank, A, with perforated bottom, B, and tank, C, in combination with the tube E, and receiving tank, F, constructed and operating substantially as and for the purpose set forth.

46,034.—Metallic Cartridges.—H. C. Spaulding, Brooklyn, N. Y.:

I claim a metallic cartridge coated on its interior with a non-conducting coating, substantially as set forth.

46,035.—Mill-stone Pick.—D. C. Stone, Kingston, N. Y.:

I claim the head, B, provided with an opening, a, extending entirely through it, longitudinally, and having a rack, c, at one side in combination with the key, E, and the lip, d, on the inner end of the pick blade, substantially as and for the purpose set forth.

46,036.—Steam Pump.—Levi W. Turrell, Newburgh, N. Y.:

First, I claim the combination of the valves, D1 D2 S1 S2, seated upon a common plate, M, and guided by sockets, d' s', projecting downward from the cap plates, all as herein described to facilitate the inspection and removal, and replacement of the valves.

Second, In combination with the above, I claim disposing the several chambers of the valve chest, in such a way that the movement of the piston of the pump cylinder, will alternately open two of the valves and close two, in the manner and for the purpose explained.

46,037.—Vessel-of-War.—J. S. Underhill, New York City:

I claim the combination of the horizontal plates, a, a, vertical bolt, b, b', vertical plates, d, d, and screws, e, e, all constructed, applied and secured in the manner and for the purposes herein specified.

46,038.—Method of Inking Stamps, etc.—Charles M. Wetherill, Lafayette, Ind.:

I claim the use of an elastic buffer composed of glue and molasses or glycerine, or their equivalents, with or without admixture of insoluble powders, upon which coloring matters are spread with an elastic or firm roller or by other known means, and from which the aforesaid coloring matters may be taken by the pressure of a stamp thereupon, and transferred to the object to be stamped.

46,039.—Fanning Mill.—B. C. White, Richmond, Ind.:

I claim, in combination with the feeding hopper, the hinged adjustable and radially slatted or ribbed feed-board, k, operating as and for the purpose substantially as set forth.

I also claim the combination of the rock shaft, d, and its crank arms and the crank wheel, f, with their several connections, to the first moving power and to the shoe, for the purpose of giving the shoe an end and side, or a longitudinal and lateral motion, substantially as and for the purpose described.

I also claim, in combination with the shoe, the loose screen, H, having a shake or jarring motion at its rear lower end, independent of, but in addition to, the motion it has with the shoe, substantially as described.

I also claim, in combination with the shoe, the adjustable wind-board frame, g, and the adjustable wind boards therein, as and for the purpose described.

I also claim the lancing of the shoe by means of the wire links, and turning hooks, by which it may be raised or lowered to adapt it to the blast or the character of the grain being cleaned, substantially as herein described.

46,040.—Shuttle for Looms.—Warren Wilder, Wilkinsville, Mass.:

I claim the combination and arrangement of the springs, d, g, when attached to the cross bar, h, with cross pins, m, for operating the same, substantially as herein described.

46,041.—Process for making Cast Steel.—S. W. Wood, Cornwall, N. Y.:

I claim making cast steel by melting decarbonized iron, prepared substantially as herein described, in connection, or contact with charcoal, or other form of carbon, either with or without the use of black oxide, manganese or flux, substantially as specified.

46,042.—Extension Ladder.—T. C. Wood, Augusta, Mich.:

I claim the folding ladder, composed of the two parts, A, B, connected together as shown, in combination with the removable and adjustable platform, D, all arranged substantially as and for the purpose herein set forth.

[This invention consists in constructing a ladder of two parts, connected by a hinge, and arranged in such a manner that the ladder may be compactly folded for transportation or when not required for use, or be adjusted so as to serve as a short ladder similar to an ordinary step-ladder, and also be capable of being adjusted as a long ladder, the two parts being in line with each other.]

46,043.—Street Steam Railway Car.—J. P. Woodbury, Boston, Mass.:

I claim, first, The combination of the boiler and engine of a locomotive, with a car truck provided with a circular truck frame and anti-friction rollers, so adjusted as to be received within one end of a car so that the truck can turn independently of the car, in the manner and for the purpose herein set forth.

Second, The combination of one end of a railway car with an independent circular locomotive car truck, when constructed in the manner and for the purpose herein described.

Third, Constructing the truck, I, with a circular track, i, provided with anti-friction rollers, h, to support the forward portion of the car, and allow the truck to turn with freedom under it, substantially as described.

Fourth, The independent circular carriage of radial anti-friction rollers to operate in combination with the top of the truck and the bottom of a railway car, substantially as described.

Fifth, Connecting the car to the center pin of the truck frame at

the bottom, by means of the connect n bar, V, substantially as described.

Sixth, The employment of a center pin and connecting bar to connect the top of the car with the top of the engine and boiler truck, substantially as shown in figure 9.

Seventh, Forming the front of the passenger car concave and the engine and boiler room convex and circular, so that the one may turn in the other, substantially as represented in figures 7, 8, 9 and 10.

Eighth, Making the rear truck to turn on a center pin in the rear end of the car body, in combination with the circular tracks and carriage of radial anti-friction rollers which support the car body on the truck, substantially as described.

Ninth, The anti-friction wheels, m, to operate in combination with the revolving engine room and passenger car, substantially as described.

Tenth, So constructing and arranging the smoke and exhaust pipe as to pass through the top of the car, directly over the center pin, U, wherever the boiler is placed, so that when the truck frame turns on a curve, said pipe may also turn with freedom through the car top, substantially as described.

46,044.—Grain Separator.—Elijah Young, Tuscarora, N. Y.:

I claim, first, So constructing and arranging the sieve, F, that it may be elevated at its rear end sufficiently to prevent any grain from passing over that end, substantially as and for the purpose set forth.

Second, Connecting the sieve, E, to the shoot board by means of hinges, as set forth and described.

Third, In combination with the vertically adjustable sieve, E, as described, the longitudinally adjustable discharging screen, C, as and for the purpose set forth.

46,045.—Coal-oil Lamp and Gas Stove.—Joshua E. Ambrose, Middletown, N. Y., assignor to Sarah T. Ambrose, Passaic, N. J.:

First, I claim the use or employment of the mica in the sides, bottom and top of the ovens, for the purpose specified.

Second, In combination with the stove, constructed as described, I claim the reservoir, J, and tubing, K, for the purpose specified.

Third, I claim the flue, B, constructed as shown for the purpose specified.

Fourth, I claim the use or employment of the dampers, E, in combination with the flue, B, for the purposes set forth.

Fifth, I claim combining with a stove, provided with the side ovens, C, the flue, B, for the purpose specified.

46,046.—Wringing Machine.—George N. Bolles (assignor to S. W. Walker & Co.), Kalamazoo, Mich.:

I claim, first, The two frames, A, A', provided with rollers, C, C, and connected together by the joints, B, B, as shown, in connection with the elastic bar, E, spring, F, and set screw, G, all arranged substantially as and for the purpose specified.

Second, I claim the gearing, c, c, d, in combination with the two frames, A, A', and rollers, C, C, substantially as and for the purpose set forth.

[This invention relates to a new and improved device for wringing clothes, such as are provided with pressure rollers, and it consists in a novel construction of the frame fastening for securing the wringer to the tub and gearing, whereby a very simple and efficient wringer is obtained, and one which may be manufactured at a very moderate expense.]

46,047.—Horse Hay-fork.—D. B. Clements (assignor to himself and D. H. Nash), Brooklyn, N. Y.:

First, I claim the arrangement of the link, c, connecting the hay-elevating fork with the hoisting mechanism and provided with the latch, 2, in combination with the metallic stock or handle, as specified.

Second, I claim the tooth, l, fitted to swing over the tines for holding the hay in its place in said tines, as specified.]

46,048.—Machine for Pulverizing the Soil.—Lemuel S. Fithian, Absecon, N. J., assignor to himself and John Young, Joliet, Ill.:

I claim, first, Constructing the rotary pulverizer in sections, the cutters, M, of which coincide with frustums of a cone or cones, substantially as and for the purpose specified.

Second, Giving the cutters, M, a raking position, and also an oblique position on the heads, L', substantially as and for the purpose set forth.

46,049.—Mode of Protecting the Surfaces of Wooden Piles.—Levy J. Henry (assignor to Joseph Beurme), San Francisco, Cal.:

I claim the use of alternate layers of asphaltum and sand or earth applied to piles and other articles exposed to the action of marine insects or worms, for the purposes specified.

I also claim coating or protecting piles and other articles from the action of salt water by means of asphaltum applied upon sheets of felt or other material attached to said articles, in the manner and for the purposes specified.

46,050.—Window Shade Adjuster.—Eros T. Higham (assignor to himself and D. Higham), Philadelphia, Pa.:

I claim the grooved screw, A and h, bar, e, and the knob, f, or its equivalent, the whole being arranged and operating as and for the purpose herein set forth.

46,051.—Press.—P. C. Ingersoll (assignor to himself and Horace F. Dougherty), Greenpoint, N. Y.:

I claim, first, Elevating and depressing the follower by means of a screw shaft having its lower end fitted loosely to the follower, combined with suspension rods, g, g, substantially as described.

Second, The combination of the loosely fitting yoke, K, screw shaft, F, and suspension rods, g, g, with a follower, substantially as described.

Third, Providing for opening the upper end of the press box by the employment of a laterally sliding follower, applied and operating substantially as described.

Fourth, The laterally sliding screw support or bridge beam, E, A', in combination with the follower, G, G', and supporting bars, e, e', substantially as described.

Fifth, The friction rollers, b, b, and brid e beams, E, E', in combination with the holding-down beams, a, a, substantially as described.

Sixth, The stops, i, i, or their equivalents, in combination with the laterally adjustable bridge beams, E, E', substantially as described.

46,052.—Field Fence.—Peter W. Knisken (assignor to himself and Jared G. Scott), Monaca, Ill.:

I claim a portable fence with the adjoining ends of the boards recessed and notched in a particular manner herein shown and described, so that they will fit and lock together in either position, to produce at will a straight or a worm fence, as specified.

[The object of this invention is a portable field fence which can be readily put up or taken down whenever it may be desirable, and which can be used as a straight or as a worm fence without changing any of its parts.]

46,053.—Lamp.—Ellakim Mars (assignor to himself and Augustus Marsh), Newark, N. J.:

I claim attaching together the deflectors, b, and the button, f, in the manner hereinabove specified.

46,054.—Method of Converting Muzzle into Breech-loading Fire-arms.—Chas. E. Snider (assignor to himself and Thomas Poulney), Baltimore, Md.:

First, I claim attaching the barrel by screws, c, c, and provided with projections, D, D' for the pivoting of the bar, E, and lever, L, to the barrel, in the manner and for the purposes set forth.

Second, I claim the pivoted bar, E, constructed and employed as described, for the attachment of the breech, C, of a double or single-barrelled gun, for converting the same to a breech-loader, the said bar being provided with a projection, E', at its rear end, and an abutment, E', fitting the inclined back of the projection, I, on the lug bar, C, so as to constitute, in combination with the said lug bar, a rigid connection between the breech and barrel, while in position for firing, as explained.

46,055.—Brick Machine.—James Ward (assignor to himself and Garret A. Lans), Boston, Mass.:

I claim the combination and arrangement of the two adjustable scrapers, K, L, with the preparing rollers, G, H, the case, E, and the mold carriage, A.

I also claim the combination of the auxiliary roller, I, its chamber, N, and its adjustable scraper, M, with the mold carriage, A, the rollers, G H, the case, E, and the scrapers, K L, arranged together and within the case, E, substantially as specified.

I also claim the arrangement of the mold wheel, A, the case, E, the shaft, H, the roller, I, the chamber, N, and the mechanism for operating the rollers, G H, and the mold carriage, A.

I also claim the combination and arrangement of the annular rail, d, and the series of friction rollers, e, with the mold carriage and the series of plungers thereof.

I also claim the combination and arrangement of the series of lifters, c, and their cams, B C D, with the rotary mold carriage, A, the rail, d, and the series of friction wheels, e.

46,056.—Machine for Punching Metal.—E. R. Hollands, Northampton Square, England :

I claim the combination of the tool holder with the movable wedge, the mechanism for moving it, the rollers and the inclines, or their equivalents, operating substantially as hereinbefore set forth.

46,057.—Machine for Making Cords, Ropes, etc.—Jules O. Methieu, of Paris, France. Patented in France, Feb. 12, 1863 :

I claim the arrangement of the flyer and bobbins or spools with their described intermediary connecting and operating parts, when constructed, arranged and operating as and for the purpose herein described and represented.

46,058.—Apparatus for Measuring and Testing Spirits and other Distillates.—Edward Payne, London, England :

I claim, in connection with a still or distillery, the combined use in one instrument, of a measuring and of a sampling apparatus, substantially as herein described, whereby small quantities of the spirit that passes over or through the apparatus, is retained for an after test of its proof, and beyond the reach of the operator, whilst the measured bulk or quantity passes through to any common receiver.

46,059.—Lamp.—Guiseppe Antonia Tremeschini, Vicenza, Austria :

I claim, first, The arrangement of the copper cone, A, and deflector, T, in relation to each other and to the disk, Q, and its air openings, T, for the purpose of admitting air from below the disk, deflecting it against the copper cone to be highly heated, and thence carried to supply combustion at the slot, at its upper end, as described.

I also claim the arranging of the wicks, b, f, g, within a tube E, that is, movable, within an outer stationary tube, B, and an intervening air space between them, as and for the purpose described.

I also claim securing the heads of the lamp to the bowl by means of a conical shank on the former, and a conical socket on the latter, the two making a tight metallic ground joint, substantially as described.

I also claim filling the lamp through an opening in the side of the neck thereof, by means of an instrument substantially such as described, that will flow off the excess of burning fluid beyond a given height, as described and represented.

46,060.—Composition for Lining Barrels for holding Petroleum.—Henry Lowenberg, New York City, assignor to himself and Emile Granter, Paris, France. Ante-dated Dec. 10, 1864 :

I claim a substitute for india-rubber or composition made of the ingredients herein specified, and mixed together in about the proportion and substantially in the manner set forth.

RE-ISSUES.

1,854.—Curry Comb.—Cyrus W. Saladee, Putnam, Ohio. Patented Dec. 27, 1864 :

I claim, first, The two metallic handles, A' A', or their equivalent, secured to the sides or ends of the curry comb, in the manner and for the purpose substantially as shown and described.

Second, I claim the frame or plate, A, rivets, B B B, studs, D D D, figure 1, projections, figure 3, in combination with the adjustable handles, A' A', in the manner and further purpose, substantially as shown and described.

1,855.—Folding Table.—Joseph W. Wayne and Joseph R. Miller, Cincinnati, Ohio. Patented Jan. 12, 1864 :

I claim the folding table, having one pair of legs, B B', hinged to the top, A', and another pair of legs, D D', pivoted to and intersecting with the first pair, the upper ends of the legs, D D', being, in the standing condition of the table secured to the top by sockets, a, a', and catches, E E', or their equivalents, and being wholly disconnected from the top for folding, as herein explained.

DESIGNS.

2,025 to 2,026.—Carpet Patterns.—Elemir J. Ney (Assignor to the Lowell Manufacturing Company), Lowell, Mass. Two Cases.

Office was transacted through your agency; and that I have ever found you faithful and devoted to the interests of your clients, as well as eminently qualified to perform the duties of Patent Attorneys with skill and accuracy. Very respectfully, your obedient servant, Wm. D. Bishop.

THE EXAMINATION OF INVENTIONS.

Persons having conceived an idea which they think may be patentable, are advised to make a sketch or model of their invention, and submit it to us, with a full description, for advice. The points of novelty are carefully examined, and a written reply, corresponding with the facts, is promptly sent, free of charge. Address MUNN & CO., No. 37 Park Row, New York.

As an evidence of the confidence reposed in their Agency by inventors throughout the country, Messrs. MUNN & CO. would state that they have acted as agents for more than TWENTY THOUSAND inventors! In fact, the publishers of this paper have become identified with the whole brotherhood of inventors and patentees, at home and abroad. Thousands of inventors for whom they have taken out patents have addressed to them most flattering testimonials for the services rendered them; and the wealth which has inured to the individuals whose patents were secured through this office, and afterwards illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! Messrs. MUNN & CO. would state that they never had a more efficient corps of Draughtsmen and Specification Writers than those employed at present in their extensive offices, and that they are prepared to attend to patent business of all kinds in the quickest time and on the most liberal terms.

PRELIMINARY EXAMINATIONS AT THE PATENT OFFICE.

This service which Messrs. MUNN & CO. render gratuitously upon examining an invention does not extend to a search at the Patent Office, to see if a like invention has been presented there; but is an opinion based upon what knowledge they may acquire of a similar invention from the records in their Home Office. But for a fee of \$5, accompanied with a model, or drawing and description, they have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a patent, &c., made up and mailed to the inventor, with a pamphlet, giving instructions for further proceedings. These preliminary examinations are made through the Branch Office of Messrs. MUNN & CO., corner of F and Seventh streets, Washington, by experienced and competent persons. Many thousands of such examinations have been made through this office, and it is a very wise course for every inventor to pursue. Address MUNN & CO., No. 37 Park Row, New York.

HOW TO MAKE AN APPLICATION FOR A PATENT.

Every applicant for a patent must furnish a model of his invention if susceptible of one; or, if the invention is a chemical production, he must furnish samples of the ingredients of which his composition consists, for the Patent Office. These should be securely packed, the inventor's name marked on them, and sent, with the Government fees, by express. The express charge should be pre-paid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by a draft on New York, payable to the order of Messrs. MUNN & CO. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents; but, if not convenient to do so, there is but little risk in sending bank bills by mail, having the letter registered by the postmaster. Address MUNN & CO., No. 37 Park Row, New York.

Patents are now granted for SEVENTEEN years, and the Government fee required on filing an application for a patent is \$15. Other changes in the fees are also made as follows:—

| | |
|---|------|
| On filing each Caveat..... | \$10 |
| On filing each application for a Patent, except for a design..... | \$15 |
| On issuing each original Patent..... | \$20 |
| On appeal to Commissioner of Patents..... | \$30 |
| On application for Re-issue..... | \$30 |
| On application for Extension of Patent..... | \$50 |
| On granting the Extension..... | \$50 |
| On filing a Disclaimer..... | \$10 |
| On filing application for Design (three and a half years)..... | \$10 |
| On filing application for Design (seven years)..... | \$15 |
| On filing application for Design (fourteen years)..... | \$30 |

The Patent Laws, enacted by Congress on the 2d of March, 1861 are now in full force, and prove to be of great benefit to all parties who are concerned in new inventions.

The law abolishes discrimination in fees required of foreigners, excepting natives of such countries as discriminate against citizens of the United States thus allowing Austrian, French, Belgian, English, Russian, Spanish and all other foreigners, except the Canadians, to enjoy all the privileges of our patent system (except in cases of designs) on the above terms. Foreigners cannot secure their inventions by filing a caveat; to citizens only is this privilege accorded.

CAVEATS.

Persons desiring to file a caveat can have the papers prepared in the shortest time by sending a sketch and description of the invention. The Government fee for a caveat is \$10. A pamphlet of advice regarding applications for patents and caveats is furnished gratis, on application by mail. Address MUNN & CO., No. 37 Park Row, New York.

REJECTED APPLICATIONS.

Messrs. MUNN & CO. are prepared to undertake the investigation and prosecution of rejected cases, on reasonable terms. The close proximity of their Washington Agency to the Patent Office affords them rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Their success in the prosecution of rejected cases has been very great. The principal portion of their charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have prosecuted, are invited to correspond with MUNN & CO., on the subject, giving a brief history of the case, inclosing the official letters, &c.

FOREIGN PATENTS.

Messrs. MUNN & CO., are very extensively engaged in the preparation and securing of patents in the various European countries. For the transaction of this business they have offices at Nos. 66 Chancery lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. They thing they can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through their agency.

Inventors will do well to bear in mind that the English law does not limit the issue of patents to inventors. Any one can take out a patent there.

Circulars of information concerning the proper course to be pursued in obtaining patents in foreign countries through MUNN & CO'S Agency, the requirements of different Government Patent Offices, &c. may be had, gratis, upon application at the principal office, No. 37 Park Row, New York, or any of the branch offices.

SEARCHES OF THE RECORDS.

Having access to all the official records at Washington, pertaining to the sale and transfer of patents, MESSRS. MUNN & CO., are at all times ready to make examinations as to titles, ownership, or assignment of patents. Fees moderate.

INVITATION TO INVENTORS.

Inventors who come to New York should not fail to pay a visit to the extensive offices of MUNN & CO. They will find a large collection of models (several hundred) of various inventions, which will afford them much interest. The whole establishment is one of great interest to inventors, and is undoubtedly the most spacious and best arranged in the world.

MUNN & CO. wish it to be distinctly understood that they do not speculate or traffic in patents, under any circumstances; but that they devote their whole time and energies to the interests of their clients.

COPIES OF PATENT CLAIMS.

MESSRS. MUNN & CO., having access to all the patents granted since the rebuilding of the Patent Office, after the fire of 1836, can furnish the claims of any patent granted since that date, for \$1.

THE VALIDITY OF PATENTS.

Persons who are about purchasing patent property, or patentees who are about erecting extensive works for manufacturing under their patents, should have their claims examined carefully by competent attorneys, to see if they are not likely to infringe some existing patent, before making large investments. Written opinions on the validity of patents, after careful examination into the facts, can be had for a reasonable remuneration. The price for such services is always settled upon in advance, after knowing the nature of the invention and being informed of the points on which an opinion is solicited. For further particulars address MUNN & CO., No. 37 Park Row, New York.

EXTENSION OF PATENTS.

Many valuable patents are annually expiring which might readily be extended, and if extended, might prove the source of wealth to their fortunate possessors. Messrs. MUNN & CO. are persuaded that very many patents are suffered to expire without any effort at extension, owing to want of proper information on the part of the patentees, their relatives or assigns, as to the law and the mode of procedure in order to obtain a renewed grant. Some of the most valuable grants now existing are *extended patents*. Patentees, or, if deceased, their heirs, may apply for the extension of patents, but should give ninety days' notice of their intention.

Patents may be extended and preliminary advice obtained, by consulting, or writing to, MUNN & CO., No. 37 Park Row, New York.

ASSIGNMENTS OF PATENTS.

The assignment of patents, and agreements between patentees and manufacturers, carefully prepared and placed upon the records at the Patent Office. Address MUNN & CO., at the Scientific American Patent Agency, No. 37 Park Row, New York.

UNCLAIMED MODELS.

Parties sending models to this office on which they decide not to apply for Letters Patent and which they wish preserved, will please to order them returned as early as possible. We cannot engage to retain models more than one year after their receipt, owing to their vast accumulation, and our lack of storage room. Parties, therefore, who wish to preserve their models should order them returned within one year after sending them to us, to insure their obtaining them. In case an application has been made for a patent the model is in deposit at the Patent office, and cannot be withdrawn.

It would require many columns to detail all the ways in which the Inventor or Patentee may be served at our offices. We cordially invite all who have anything to do with patent property or inventions to call at our extensive offices, No. 37 Park Row, New York, where any questions regarding the rights of Patentees, will be cheerfully answered.

Communications and remittances by mail, and models by express (prepaid) should be addressed to MUNN & CO. No. 37 Park Row, New York.

PATENTS
GRANTED
FOR SEVENTEEN YEARS.
MUNN & COMPANY,

In connection with the publication of the SCIENTIFIC AMERICAN, have acted as Solicitors and Attorneys for procuring "Letters Patent" for new inventions in the United States and in all foreign countries during the past seventeen years. Statistics show that nearly ONE-THIRD of all the applications made for patents in the United States are solicited through this office; while nearly THREE-FOURTHS of all the patents taken in foreign countries are procured through the same source. It is almost needless to add that, after seventeen years' experience in preparing specifications and drawings for the United States Patent Office, the proprietors of the SCIENTIFIC AMERICAN are perfectly conversant with the preparation of applications in the best manner, and the transaction of all business before the Patent Office; but they take pleasure in presenting the annexed testimonials from the three last ex-Commissioners of Patents.

MESSRS. MUNN & CO.—I take pleasure in stating that, while I held the office of Commissioner of Patents, MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE CAME THROUGH YOUR HANDS. I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the office, a marked degree of promptness, skill, and fidelity to the interests of your employers. Yours very truly,
CHAS. MASON.

Judge Mason was succeeded by that eminent patriot and statesman, Hon. Joseph Holt, whose administration of the Patent Office was so distinguished that, upon the death of Gov. Brown, he was appointed to the office of Postmaster-General of the United States. Soon after entering upon his new duties, in March, 1859, he addressed to us the following very gratifying letter.

MESSRS. MUNN & CO.—It affords me much pleasure to bear testimony to the able and efficient manner in which you discharged your duties as Solicitors of Patents, while I had the honor of holding the office of Commissioner. Your business was very large, and you sustained (and I doubt not justly deserved) the reputation of energy, marked ability, and uncompromising fidelity in performing your professional engagements.

Very respectfully, your obedient servant,
J. HOLT.

Hon. Wm. D. Bishop, late Member of Congress from Connecticut, succeeded Mr. Holt as Commissioner of Patents. Upon resigning the office he wrote to us as follows:

MESSRS. MUNN & CO.—It gives me much pleasure to say that, during the time of my holding the office of Commissioner of Patents, a large proportion of the business of inventors before the Patent



J. G. C., of Iowa.—1,000,000 parts of cast iron at 62° Fah., become, at 212°, 1,000,833. The expansion of wrought iron with the same increase of heat is from 1,000,000 to 1,000,984.

C. B., of Mich., asks how a man is to obtain redress against an infringer of his patent. Answer—Bring a suit. An infringer is liable to imprisonment if he does not, when ordered by the Court, desist from making a patented machine. All persons who use a machine without the consent of the inventor are liable for damages.

F. W. L., of Vt.—You will find it a dangerous experiment to attempt filling cartridges with fulminating mercury unless you know something of its properties and how to handle it.

T. F. of Wis.—A liquid glue is made in the following manner: white glue, 16 ounces; white lead, dry, 4 ounces; soft water, 2 pints; alcohol, 4 ounces. Stir the ingredients together and bottle while hot.

L. H. W., of Mass.—The owner of a patent is not, by law, compelled to put the patented article on sale.

J. P., of N. J.—One bulk of sulphuric acid to ten of water is said to be the usual pickle for removing sand from iron castings.

W. F. R., of Pa.—A good alloy for journal boxes is 24 copper, 24 tin and 8 antimony. Melt the copper first, then the tin, then add the antimony. It should be run into ingots and cast in boxes afterward.

R. H. M., of Pa.—Messrs. J. R. Brown & Sharpe, or Providence, R. I., will furnish you with a machine for cutting scales or indices on circles, squares, polygons, or figures of any known form.

J. M. A., of Canton.—We have received no former communication from you. When you write again inform us in what State you reside.