

RECENT AMERICAN PATENT.

Improvement in Combs.—This invention consists in the application to combs of a metallic rack, graduated as a ruler, and so applying it to the comb or comb teeth that the same may be removed on being broken or damaged, and a new comb or set of teeth easily and quickly inserted in place thereof. We have seen a neat little pocket or moustache comb made according to this invention. The comb part shuts into a case, and when it is opened the back of the case and of the comb constitute the ruler, which is graduated as minutely as could be desired; it occupies no more room than an ordinary comb for the same purpose, and, the advantage of always having a ruler in one's pocket is apparent. Its application to long combs is also apparent, for one usually knows where to find his comb and brush, and this invention enables him to find in the same place a rule intended for both ruling and measuring, thus avoiding oftentimes considerable search. The comb or teeth being removable enables the back or ruler part to be used over and over again, and it is contended that combs of this character will be sold as cheaply as ordinary bone combs. This invention is due to Dr. G. F. J. Colburn, of Newark, N. J.

One Horse Mowers Wanted.

A correspondent of an agricultural paper discourses upon the disadvantages which farmers labor under in not having mowing machines which run with small power. He says:—

"Will you or some of your mowing machine correspondents, tell me why there are no real one-horse mowers made and in the market? I am aware that there are machines called one-horse mowers, and I have known several being bought and tried with one horse, but invariably condemned because requiring more than the power of one horse to operate it. What is the difficulty? Simply this—so far as I have examined the machines, they are in all respects, including size, weight and shape, two-horse machines, except the use of thills instead of a pole, and a cutter-bar about three instead of four feet long. Being a one-horse farmer myself, so far as I am farmer at all, I want a mower that one horse will manage as easily as two horses usually do the two-horse machines, which is surely hard work enough for any horse. There are very many one-horse farmers in New England who rake and draw their hay with their one horse, and would be very glad to mow it with the same horse; very many also, like myself, have not physical health and strength to swing a scythe, but would be able to drive a mower, as they do the rake and hay cart. We use a one-horse team wagon half the weight and capacity of a two-horse wagon; a one-horse sled, plow, harrow, cultivator, roller, &c., each half the weight, strength, size, capacity, &c., of the ordinary two-horse implements, and in our "one-horse" circumstances we think we do so to advantage. Being somewhat of a mechanic myself, I have no doubt that it is practicable to build a mowing machine, properly proportioned throughout, that may be operated as easily with one horse as the other machines are now worked with two similarly sized horses, and do one-half the amount of work per hour—provided a boy of one-half the weight of a man rides upon it. I come to this conclusion after hearing the objections of several manufacturers, nearly all of which seem to resolve themselves into this, that "new patterns throughout would need to be made," which is of course true; but I think the demand for the machines would "make it pay."

Preserving Flowers by Glycerine.

Mr. C. R. Tichborne states, in the London *Artizan*, that, being desirous of preserving a vegetable *lusus nature* for some time, he submerged it in some weak glycerine, considering that that fluid would be less likely to destroy the tender organism, and also remembering that it had been found most efficient in the preservation of animal tissues. The glycerine answered its purpose most admirably, preserving the delicate parts of the plant and preventing decomposition. He immediately saw that the property of glycerine might be made available for certain pharmaceutical purposes, where it was desired to preserve or extract the aromata of vegetable products, such as elder, orange, or rose flowers, and also might be substituted for the oils and fats used in the

purest process termed enfleurage. The glycerine need not be especially pure, but should be devoid of odor. The elder-flowers should be gathered when the corolla is fully expanded, but not too far gone; they should then be plucked from the stem, and packed firmly in wide mouthed bottles or jars, without crushing them; and the whole should then be covered with glycerine. Mr. Tichborne states that he has thus preserved flowers for two years, and, on distilling them, procured a water the perfume of which has equalled the most recent product. For the preservation of the aroma of the flowers he considers the employment of glycerine far superior to the system termed enfleurage, in which heat it used.

Our thanks are due to H. Kilbourne, Esq., the efficient Chief Clerk of the Department of the Interior, also to Hon. D. Morris, Hon. James Brooks, Hon. Geo. H. Yeaman, Hon. E. C. Ingersoll, and to Senator Morgan, for public documents.



ISSUED FROM THE UNITED STATES PATENT-OFFICE FOR THE WEEK ENDING JANUARY 17, 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.

45,902.—Method of Preventing Oil Barrels from Leaking.—David Ahl, M.D., Newville, Pa.:

I claim the composition, as herein specified, for the purposes herein substantially set forth.

45,903.—Harrow and Seeder.—D. L. and John M. Barlow, Cohoctah, Mich.:

We claim, first, The harrow, n, constructed and operated substantially as herein described. Second, The harrow, n, in combination with the seeder, B, the whole constructed and operated substantially as and for the purpose herein set forth.

45,904.—Oyster Dredge.—Wm. Belbin, Baltimore, Md.:

I claim the combination, in an oyster dredger, of the rake bar, A, front rods, C, and rear rods, D, with the head, E, and swiveling link, F, when the rods, C, are curved, constructed and arranged as and for the purposes described.

45,905.—Harvester.—Jacob W. Bope, St. Louis, Mo.:

I claim the adjustable sliding platform or dropper hinged at or near its rear edge, as described, so that by the raising of the front edge, it performs the two-fold function of the dropping gavel, and at the same time operating as a perfect cut-off to arrest the falling grain.

45,906.—Harvester.—Jacob W. Bope, St. Louis, Mo.:

I claim, first, Hinging the grain platform, which is arranged directly behind the cutting apparatus, at or near its center, substantially as described, so that it will vibrate upon a fixed point, and by the elevation of its front edge, perform the double function of discharging the completed gavel, and simultaneously therewith arresting, upon its front edge, the fall of the accumulating grain, as described.

Second, I claim operating the tilting platform, A, by means of the lever, D, with the chain or cord, C, in the manner as and for the purposes herein described.

Third, I claim the adjustable shield or guard, E, arranged and operating in connection with the grain platform, as herein described, for the purposes set forth.

45,907.—Whitewash Brush.—W. B. Burnett, New York City, and James P. McIntosh, Brooklyn, N. Y.:

First, We claim a brush block in combination with a slotted way, E, substantially as described.

Second, We claim a slotted way, E, in combination with a ferrule, C, substantially as described.

Third, We claim a brush with its handle applied thereto when the several parts are constructed and operated substantially as described.

45,908.—Gas or other Retorts.—John Chilcott, Brooklyn, N. Y.:

I claim, first, Surrounding the bottom, sides and top of a gas or other retort, with a jacket or casing, C, between which and the retort a continuous system of flues, E, E, is formed by means of longitudinal partitions, having openings at opposite ends alternately, whereby the flame is caused to circulate back and forth several times along, and once all around the retort, substantially as and for the purpose herein specified.

Second, The jacket or casing, C, divided longitudinally into two parts and having the flue partitions attached to its interior so as to be detachable from the retort, substantially as and for the purpose herein specified.

45,909.—Comb.—G. F. J. Colburn, Newark, N. J.:

I claim a comb having graduations or a rule arranged therewith, substantially as described.

45,910.—Oscillating Valve.—Guy Davis, Syracuse, N. Y.:

I claim the conical suspended valve, I, with its openings, J, J, communicating with the steam chest and the induction openings, K, K, and eduction opening, T, communicating with the cylinder, substantially as described.

45,911.—Portable Forge.—John H. Dickerson, Cincinnati, Ohio:

I claim, first, The combination of the pan, A, hinged plate, Y, bolts, W, W, and catch, X, constructed and employed as herein specified, to constitute a forge bed and screen while in use, and a close and secure tool box in traveling. Second, The hinged frame, G, and brace rods, L, L, employed to support the bellows, while in use, and adapted to be compactly folded for transportation.

Third, I claim the combination of the pan, A, screen, Y, bellows, E, C, stand, U, lever, J, and braces, L, all constructed and arranged substantially as and for the purposes set forth.

45,912.—Cartridge Retractor for Many-chambered Firearms.—W. C. Dodge, Washington, D. C.:

I claim, first, the ejection, simultaneously, of two or more cartridge cases from a many-chambered fire arm, in the manner and by the means, substantially as herein set forth, whether the chamber be stationary or revolving, and whether loaded at the front or rear.

Second, I claim the retractor, a, provided with the stem, b, and spring, c, or their equivalents, in combination with the cylinder or barrels of a many-chambered fire-arm.

Third, I claim providing the retractor, a, with a stem which is made to extend through the cylinder or barrels, and project at either the front or rear end thereof, for the purpose of being operated, as shown and described.

45,913.—Revolving Flood Gate.—John Du Bois, of Williamsport, Pa.:

I claim, first, A centrally balanced revolving flood gate, constructed and operating substantially as herein described.

Second, Supporting the gate, C, in its bearings in such manner that it shall be allowed to rise bodily in the act of opening to allow the water to escape, and using the arms, e, e, or equivalent means for holding the gate down and preventing it from turning, substantially as described.

Third, The abutment, b, on the floor of the chute, when used in conjunction with a revolving flood gate, operating substantially as described.

Fourth, A revolving flood gate, which is so arranged and constructed that it will be opened by the water in the basin rising above a certain determined level, substantially as described.

45,914.—Method of Removing Incrustation from Boilers.—Davis Embree, Dayton, Ohio:

I claim the use of still slope to prevent or remove incrustation by lime in steam boilers, and the use of quicklime, in the manner herein substantially set forth, to prevent such incrustation.

45,915.—Manufacture of Illuminating Gas.—William Elmer, New York City. Patented in France Dec. 5, 1864:

I claim the process of manufacturing gas by distilling the gas stock in one retort and converting the volatile product of the distillation and illuminating gas in another retort, in the presence of a material which, when at a high temperature, will absorb and fix the oxygen contained in the volatile product of the distillation, the process being conducted substantially as set forth.

I also claim the process of manufacturing illuminating gas by distilling the gas stock in one retort and converting the volatile product of the distillation into illuminating gas in another retort in the presence of an additional quantity of steam to that obtained from the gas stock, and of a material which will absorb and fix the oxygen contained in the volatile product of the distillation and in the additional steam, the process being conducted substantially as set forth.

45,916.—Smoking Pipe.—Frederick Fickey, Jr., Baltimore, Md.:

I claim the use of the metallic cup, B, in combination with the absorbent bowl of a tobacco pipe, substantially in the manner and for the purpose set forth.

45,917.—Coal-mining Machine.—John S. Fisk, of Meadville, Pa., and James Westerman, of Sharon, Pa.:

We claim the combination in a coal-mining engine of one or more circular saws on a single mandrel, with an adjustable feeding mechanism, arranged on a moving truck, substantially in the manner described and for the purpose set forth.

45,918.—Mode of Ventilating Mines.—John S. Fisk, of Meadville, Pa., and James Westerman, of Sharon, Pa.:

First, We claim the combination with a forcing pump or engine, located at or near the mouth of the mine, of one or more reservoirs for compressed air located within the mine, at a distance from the engine and near the working point, substantially in the manner herein described, for the purpose of ventilating the mine, and of exerting a uniform pressure as a motor, as set forth.

Second, The combination of one or more reservoirs, arranged substantially as herein described, with a large induction and small eduction pipe and stop valves, as and for the purpose set forth.

45,919.—Magazine or Self-loading Fire-arms.—Walter Fitzgerald, of Boston, Mass.:

I claim the breech block, D, and guard lever, E, so connected by the pins, c, d, and slots, b, u, that the vibration of the lever, E, will give the breech block the required motions in its passage within the breech, C, substantially in the manner and for the purposes specified.

Second, I claim, in combination with the breech block, D, the cartridge guide, F, and cartridge discharger, H, when constructed and arranged to operate together with a magazine, substantially as herein described and represented.

Third, I claim the percussion rod, G, constructed and operated substantially in the manner and for the purpose set forth.

Fourth, I claim locking the magazine, substantially in the manner set forth.

45,920.—Horse Rakes.—David D. Gitt, of Arendtsville, Pa.:

I claim the employment, in combination with any part of the rake, which for the purpose of discharging the rake, is movable, of a weight, under the arrangement herein described, so that while the center of gravity of the lifting apparatus is back of the fulcrum, it shall, on the rake being operated for discharge, be displaced and thrown forward in the manner herein described.

Second, Combining with the teeth made of wire or other material, hinged or hung upon a fulcrum bar, a spring staple, under the arrangement herein described, so as to bear with yielding pressure on the teeth.

45,921.—Horse Powers.—Samuel B. Haines, of Lancaster, Pa.:

First, I claim the vibrating yokes, H, in combination with the levers, D, about the pivotal pivot, I, substantially as set forth.

Second, I also claim a hollow conical pivot, L, when cast in one piece with the head plate, K, extending so as to fix the gearing at the circumference of the main wheel, A, substantially as specified.

45,922.—Artificial Fuel.—William Halsted, of Trenton, N. J.:

I claim the combination and mixture of the ingredients, in the manner and proportions above described.

45,923.—Seed Sower.—J. M. Harshbarger, of Brandonville, West Va.:

I claim a seed slide, in two or more sections, adapted to be connected and disconnected by the employment of a link, c, or its equivalent, substantially as and for the purpose herein described.

45,924.—Corn Sheller.—Daniel Hutchinson, of Fort Ancient, Ohio:

I claim the disks, C and D, and the breast, H, when combined and arranged relatively to each other, in the manner and for the purpose specified.

45,925.—Straw Cutter.—John C. Kenedy, of Logansport, Ind.:

I claim, first, The described arrangement of the diamond or angular-shaped sliding gash or frame, D D D, horizontal knives, b b, when constructed and arranged, substantially as described and for the purposes set forth.

Second, I claim the inclined knives, a, when constructed and operated by the rod, F, and lever, E, substantially as and for the purposes set forth in the specification.

45,926.—Sod Cutter.—Wm. A. L. Kirk, of Hamilton, Ohio:

I claim, first, The arrangement of frame, A, rollers, B and C, and rod-cutting blade, E e e', substantially as set forth.

Second, The parts, A B C D D' E e e' F G K and L, as herein arranged and combined.

45,927.—Bumper Spring.—Robert Levington, of Monroe, Mich.:

I claim the protector, K, and the yoke, J, in combination therewith, as is clearly set forth and described.

45,928.—Forging Apparatus.—Edward F. McFarland, of Worcester, Mass.:

I claim, first, Constructing the stem, D', of a hammer, D, of a spring, which is attached at its upper end to a crank shaft, a, substantially as described.

Second, The combination of a hammer, D, spring stem, D', crank shaft, A, and lever, E, operating substantially as described.
Third, The use of shelves, G, adapted to support the hammer, D, when not in use, substantially as described.
Fourth, The application of a counter weight, H, which is suspended by a spring, K, to a hammer, or its equivalent, which is also suspended by a spring stem, substantially as described.

45,929.—Side-hill Plow.—Elijah McKesson, of Phillips Mills, Pa.:

I claim, first, The double mold board, having a triangular front, corners to lock in the groove of the land side, and a pointed projecting termination, constructed, arranged and operating substantially as and for the purposes set forth.

Second, The combination of the shoes, 1 and 2, with the mold board and land side, as herein constructed, arranged and operating, substantially as described.

45,930.—Detachable Flat Top and Elevated Cooking Stove.—John McKnight, of Philadelphia, Pa.:

I claim, first, So constructing a cooking stove in two sections that it can be converted from a flat top stove to an elevated oven stove, or vice versa, substantially in the manner and for the purpose herein set forth.

Second, The hollow projection, A', at the rear of the ash pit and below the fire grate, the said projection communicating with the flue, G, as and for the purpose specified.

Third, The detachable hollow casing, H, forming a communication between the ash pit, B, and flue, G, as and for the purpose set forth.

45,931.—Wrenches.—George Meader, of Ottawa, Ill.:

I claim as a new article of manufacture the adjustable wrench, constructed and operated as herein described.

45,932.—Carpenter's Gages.—George Miller, of Washington, D. C.:

I claim a gage, constructed substantially as described and for the purpose specified.

45,933.—Fire Chamber Clearer.—Geo. Rodney Moore, of Lyons, Iowa:

I claim the attachment of the plate or clamp, C, or its equivalent, to the grate, E, substantially in the manner and for the purpose set forth.

45,934.—Cultivators.—Elias C. Patterson, of Chicago, Ill.:

I claim, first, The curved levers, A B C D, constructed and operating substantially as described.

Second, The combination of the curved and straight levers, constructed and operating substantially as described.

Third, The combination of the curved and straight levers with the plows, constructed and operating substantially as described.

Fourth, The peculiar form and arrangement of the middle-rear plows, in connection and combination with the two outside rear plows, all constructed and operating substantially as described.

45,935.—Artificial Fuel.—F. C. Payne, New York City:

I claim, first, A fuel composed of a conglomerate of coal screenings, or small particles of coal, and hydraulic lime, substantially as herein described.

Second, The use of plaster of Paris with hydraulic lime, substantially as herein described, in cementing together coal screenings, or small particles of coal, to render the latter serviceable as fuel.

45,936.—Laths for Buildings.—Dewey Phillips, Shaftsbury, Vt.:

I claim lathing and grooved laths, formed with grooves in their surfaces, receiving the mortar, substantially as specified.

45,937.—Floor Covering.—Anson H. Pratt, Yellow Springs, Ohio:

I claim the application and use of figured or ornamented paper, printed with water colors, to floors, as a substitute for oil cloth, and carpets, as herein described, whether stationary or movable.

45,938.—Mangle.—William Price, Cincinnati, Ohio:

I claim encasing the working parts of a mangle, the case being so constructed and hinged as to let down and form the support for guiding the articles in a line between the pressing rollers and fold up, and close together so as to protect the working parts when not in use, substantially as herein specified.

45,939.—Car Coupling.—Martin Rinehart, Monroe, Mich.:

I claim the combination of the sliding block, A, apron, B, with the hook, C, and link, D, substantially as described and for the purpose set forth.

45,940.—Washing Machine.—George W. Sayre, Pisgah, Ohio:

I claim the combination of the adjustable oscillating frame, K, provided with cranks, pitmen, pendants, and beaters; with the adjustable weight, L, and scroll bottom, B, arranged and operating in the manner and for the purpose substantially as described.

45,941.—Condenser.—John M. Spiegle, Philadelphia, Pa.:

I claim the use, in connection with the air pump, of a condensing steam engine, of the perforated tubes, D and E, or their equivalents for introducing jets or streams of air into the water as it passes from the air pump to the hot well, as set forth.

45,942.—Horse Rake.—A. B. Sprout, Hughesville, Pa.:

I claim, first, Making a curved rake tooth, of a triangular sectional shape, (or its equivalent, semi-elliptical or semi-circular) and so applied that the flat side shall be on the inner side of the curve to endure the tensional strain, while the rear salient edge shall act as a stiffener to the tooth.

Second, I claim the combination of a tooth of a triangular sectional shape (or its equivalent, semi-elliptical or semi-circular) and with a flat side on the inside of the curve of the tooth, with a coiled spring by which it is attached to the head, and by means of which its elasticity is increased.

Third, I claim the plates, C, adapted to be secured in position by the screw, D, substantially as for the purpose specified.

Fourth, I claim the spool, C₂, C₃, constructed and arranged substantially as described, and adapted for the attachment of the spring, A, in the manner set forth.

45,943.—Piano Fortes.—Maurice Vergnes, New York City. Ante-dated Jan. 2, 1865:

I claim, first, The application to a clavichord instrument of a mechanism to operate a hammer upon a drum in the manner substantially as above described.

Second, The use of the slide, H, and the curb straps to hold the hammer in the condition to produce the roll of the drum, in the manner substantially as above described.

45,944.—Apparatus for Amalgamating Metals.—Owen G. Warren, New York City:

I claim, first, Pouring quicksilver down through a sieve or strainer into a mass of comminuted ores and water, which has been subjected to a cooking process to gather the ores contained, in the manner substantially as above described.

Second, Obtaining the metals in their successive degrees of fineness by successive leaching with quicksilver poured down through a strainer into the ores and water, and successive gatherings of the amalgam formed, in the manner substantially as above described.

45,945.—Oil Lamp.—Edward Weissborn, Hudson City, N. J.:

I claim the sponge, C, the follower, D, screw, E, and movable winged nut, F, applied in combination with each other, and with the oil cup, and operating substantially as herein specified.

45,946.—Screw Nicking Machine.—Jason A. Bidwell (assignor to himself, H. J. Litchfield, Daniel M. Robertson, and Asaph Churchill), Boston, Mass.:

I claim, first, The jaws, E, E', sliding blocks, A, A', and controlling spring, K, when combined with each other, and with acicular saw, I', substantially in the manner and for the purpose herein set forth.

Second, The arrangement and combination of the sliding blocks, A, A', with the upright, B, slotted side levers, O, O', and operating lever, M, or their equivalents, substantially in the manner and for the purpose herein set forth.

45,947.—Casting Molten Metal.—Joseph De Rosthorn Vienna, Austria, assignor to Clemens Herschel, Davenport, Iowa:

I claim the improved method of operating to increase the density and strength of metallic castings, substantially as set forth.

45,948.—Grate.—Loomis G. Marshall, Mokena, Ill. assignor to himself and F. W. Hughes, Pottsville, Pa.:

I claim a conical or angular shaped grate, formed of bars sloping from the inside to outside, as herein described and for the purposes set forth.

45,949.—Faucet.—Robert Murray, Boston, Mass., assignor to himself and James W. Tufts, Medford, Mass.:

I claim the improved faucet having its valve shaft arranged in the prolongation of the axis of its induction tube and pivoted in or at the inner end thereof, and made with its inner journal so channelled as to enable a fluid to pass into and through it while passing from the induction tube into the valve case, the faucet being in other respects as specified.

45,950.—Material for Making Boxes, etc.—Wm. Painter, Baltimore, Md., assignor to himself and Charles Painter, Owings' Mills, Md.:

I claim as a new article of manufacture the asphaltic board, made substantially as described, for the manufacture of boxes, packages, and other articles.

45,951.—Packing for Rifled Projectiles.—Frederika Schenk, Boston, Mass., administratrix of John P. Schenk, deceased, assignor to self and Edward A. Dana, Brookline, Mass.:

I claim the combination of a paper mache sabot, with a metallic ring at top, and a ring and disc of metal at the base to protect it, substantially in the manner described.

45,952.—Self-loading Fire Arms.—Christopher M. Spencer (assignor to Spencer Repeating Rifle Company) Boston, Mass.:

I claim, first, The compound magazine inserted in the stock of the piece, and consisting of two metal tubes, constructed and operating substantially in the manner described.

Second, In a double tube magazine chambering the inner side of the forward end of the inner tube, F, in the manner and for the purpose described.

Third, The arrangement of the groove, c, and catch, h, for joint operation, as specified.

Fourth, The combination and arrangement of the cap, G, arm, H, recess, d, and pin, d', substantially in the manner described.

Fifth, The combination of the receiver, B, tube, D, nut, E, and stock, A, in the manner and for the purpose set forth.

45,953.—Apparatus for Winding Thread from the Skein.—James Crutchett, Stroud, Eng. Patented in England Aug. 23, 1864:

I claim, first, The combination of the sliding arms, a a a a a, figures 1, and 3, with the curved finger, d, for adjusting the apparatus to the size of the skein and the folding joint, G, for folding the same into a convenient portable form as above described.

Second, I also claim the application of the thumb screw, figure 6, with the slots, f f f f, and the projectors, g g g g, for the purpose, and in the combination above described.

Third, I claim the foregoing arrangement of the reel as illustrated in figures 1, 3, 4, 5, 6, and 8, in combination with the winding apparatus represented in figures 7, and 11, all for the purposes above described.

45,954.—Astronomical Instruments.—Charles Emmanuel, Paris, France:

I claim the astronomical instrument herein described, in which a theodolite, an equatorial and an ecliptic instrument are combined, affording the means of ascertaining immediately the position of the heavenly bodies in relation to the horizon, equator and the ecliptic substantially in the manner herein set forth.

45,955.—Steam Boiler.—Louis Emile Constant Martin, London, Eng. Patented in England April 28, 1864:

I claim the arrangement of one or more fires substantially in the combination described, to generate the usual products of combustion, with one or more auxiliary incandescent fires, arranged on one or more refractory hearths, substantially as described, through which these usual products are carried, and which after being transformed into combustible gases pass through one or more flues into one or more chambers of combustion where these ultimate gases are ignited, and thus effect a large economy in fuel.

45,956.—Fire Bank.—Halsey H. Baker, New Market, N. J.:

I claim, first, A fire bank composed of a plate or combination of plates fitted to the fire-pot or fire-box of a stove, range or furnace to lie upon the fire substantially as herein described.

Second, Providing such a fire bank with one or more openings and valves or shutters substantially as and for the purpose herein described.

Third, The construction of such a fire bank of two or more plates hinged together in such a manner as to fold substantially as herein described for the purpose of enabling it to pass through the door of a stove or furnace.

Fourth, Providing such a fire bank with a hook or loop, I, so applied in combination that it will hinge or swing that it will fold by gravitation when suspended by said hook or loop substantially as and for the purpose herein set forth.

45,957.—Coal Oil Stove.—William B. Billings, New York City:

I claim, first, The use and adaptation of the body or sides of the stove or range, D, to serve as and perform the office of a flue or chimney over the lamp or oil holder, A, substantially as described and for the purposes set forth.

Second, The attaching of one or more air guides, cones or deflectors, or in the diaphragm, C, and the adjustment of the same in the stove or range, F, substantially as described and for the purposes set forth.

Third, The arrangement of the diaphragms, C, and, G, thus forming an air chamber between the oil holder and stove or range, substantially as described and for the purposes set forth.

Fourth, The insulation of the lamp or oil holder by non-contact with the heater, stove or range, substantially as described and set forth.

45,958.—Safety Brakes for Horse Powers.—Joseph C. Bird, Rising Sun, Md.:

I claim in combination with the trigger or lever, D, the stop or catch which prevents it from rising beyond a given point, which would otherwise apply the brake without the parting or flying off of the belt, substantially as herein described.

45,959.—Rudder.—Thomas G. Crosby, Buffalo, N. Y., assignor to Bushnell Strong and Marjorie H. Crosby:

I claim constructing a rudder for vessels with concave sides as herein substantially set forth.

45,960.—Apparatus for Rendering Lard, &c.—Thomas Hopkins, Cincinnati, Ohio:

I claim, first, The collander C, formed and adapted to operate as set forth.

Second, The dipper D, D', d', d', formed and adapted to operate as set forth.

Third, In the described combination, I claim the devices F G G', G, H, K, and L', or their equivalents, for enabling a crane to be shifted from place to place.

Fourth, The grapple T U V, v, v', w, W X Y Z Z', formed and operating substantially as set forth.

45,961.—Manufacturing Fertilizing Phosphates.—G. A. Liebig and E. K. Cooper, Baltimore, Md.:

I claim the process substantially as described above, for producing a fertilizing phosphate containing soluble phosphates.

RE-ISSUES.

1852.—Mortising Machine.—Stephen S. Bartlett, Providence, R. I., and Thomas H. Dodge, Worcester, Mass., assignees of said S. S. Bartlett. Patented Sept. 24, 1861:

We claim, first, Giving the bed or table in a mortising machine two independent supports so that the upper support may be loosened to permit the bed or table being adjusted or placed in a horizontal or inclined position, while the bottom support prevents the table or bed from sliding or dropping down a bodily during the operation whereby mortises can be cut perpendicular through the timber, or beveled to any angle required.

Second, So combining the bed or table in a mortising machine,

with its supporting mechanism, as that said table or bed can be freely rocked back and forth by the operator upon a center or axis of motion above the support upon which it rests and turns, whereby mortises with perpendicular or inclined ends can be cut at the will of the operator substantially as and for the purposes described.

Third, The combination of the head piece, G, sliding head stock, L, and its level adjusting fulcrum or collar, K, with lever, F, and arbor, E, substantially as and for the purposes set forth.

Fourth, The combination of the platform, B, and stand, D, with the main frame and supporting piece, I, substantially as and for the purposes set forth.

Fifth, So arranging, in a mortising machine the sliding or movable wrist or collar by which the change of motion of the arbor and chisel is obtained, as that it shall be above or higher than the platform upon which the material to be mortised rests, whereby it is comparatively free and safe from flying chips or dirt and other clogging matter.

1853.—Attachment for Tackle Blocks.—George Focht, Reading, Pa. Patented Sept. 28, 1858:

I claim so attaching a tackle block or pulley, that it may turn freely in all directions, and be retained in the proper relative positions with the rope when the strain on the rope ceases, substantially as described.

The combination of the stud piece of the pulley, with the spindle having a spiral spring around its other end, substantially as, and for the purpose described.

The combination of the stud piece of the pulley with a spindle, with plate, F, having a bell mouthed or flaring socket, as and for the purpose described.

Extending the sides or edges of the frame of the pulley over and beyond the edge of the wheel, and curling or rounding outward the edges of this frame, so as to present a smooth, rounded surface for the rope to strike against, thereby lessening the wear upon the rope, substantially as described.

DESIGNS.

2,018.—Statuette.—Edward I. Kuntze, New York City.

2,019 to 2,023.—Carpet Patterns.—Elemir J. Ney (Assignor to the Lowell Manufacturing Company), Lowell, Mass. Six Cases.

2,024.—Group of Statuary.—John Rogers, New York City.

TO OUR READERS.

PATENT CLAIMS.—Persons desiring the claim of any invention which has been patented within thirty years, can obtain a copy by addressing a note to this office, stating the name of the patentee and date of patent, when known, and enclosing \$1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1853, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

MODELS are required to accompany applications for Patents under the new law, the same as formerly, except on design patents, when two good drawings are all that are required to accompany the petition, specification and oath, except the Government fee.

RECEIPTS.—When money is paid at the office for subscriptions, a receipt for it will always be given; but when subscribers remit their money by mail, they may consider the arrival of the first paper a *bona-fide* acknowledgement of our reception of their funds.

BINDING.—Those of our subscribers who wish to preserve their numbers of the SCIENTIFIC AMERICAN for future reference, can have them substantially bound in heavy board sides, covered with malleable paper, and leather backs and tips, for \$1.00 per volume.

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was pre-paid has expired.

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 ratifying 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 this 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 very large proportion of the business of inventors before the Patent 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