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51,126.—Saw-mill.—Emanuel Andrews, Williamsport, Pa.

I claim the construction and use of the plates, E E', adapted to be readily connected and disconnected with the saw, substantially in the manner and for the purposes herein set forth.

Second, I claim the dovetailed ends, a' a2, on the saw, adapted for use in combination with detachable plates, E, or their equivalents, and the buttons, D, or equivalent stops, arranged substantially in the manner and for the purposes herein set forth.

Third, I claim the projecting ends, F F', projecting beyond the cleats at the top or bottom of saws, or their attachments, so arranged as to allow any suitable gage rods to be applied on the ends, substantially as herein described and for the purposes set forth.

51,127.—Broom.—Jerome and Gilbert Bacon, Medina, Wis.

I claim the broom, constructed as described, as a new article of manufacture; that is to say, with the splints or broom corn secured in the conical sheath or cap by glue around their butts, among which the pointed end of the handle is driven, securing by the aid of the glue and the tamping, a, all the portions in their relative positions.

51,128.—Apparatus for Carbureting Air.—Dana Bickford, Boston, Mass.

I claim my improved air-forcing apparatus, as composed not only of the close vessel, A, provided with a cover, G, and a stuffing-box, d, but of the bell-shaped vessel or cup, c, its tube, D, and valves, E and F, arranged in manner and so as to operate as specified.

51,129.—Hydraulic Elevator.—Dana Bickford, Boston, Mass.

I claim the cylinders, A, the frame, b, the rods, a, the platform, F, the valve chest, E, and guides, c, or their equivalents, all arranged and operated as and for the purposes described, and set forth in the foregoing descriptions.

51,130.—Apparatus for Cooling Soda Water, Etc.—Edmund Bigelow, Springfield, Mass.

I claim the vertical cooling vessels, A A', so connected by pipes, C C, near their upper ends, and by air pipes, D D, at top, in the described combination with the supply-cock, B, escape-cock, G, and the draught tube, E, extending nearly to the bottom of one of the cooling vessels, the whole being arranged substantially as herein described, so as to operate in the manner set forth.

51,131.—Venetian Blind for Windows.—Charles D. Blinn, Port Huron, Wis.

I claim, First, Connecting the slats to each other by means of cords, L, rove through them, and fastened below each slat by means of knotting said cords, substantially as above shown and described. Second, I also claim, in combination, the cords, L, rove through the blinds and connected to them as shown, and the cords, D D', J, applied substantially as shown.

[This invention in venetian blinds consists in the manner of roving the cord that supports and connects the several slats to each other; and, also, in the manner of operating the blind both in raising it and in opening and closing the slats.]

51,132.—Chair Bottom and Back.—William Bramhill, New York City.

I claim the employment of perforated, elastic, vulcanized india-rubber or india-rubber cloth, substantially as herein described, in the bottoms and backs of chairs and other articles of furniture for sitting and recumbent purposes.

51,133.—Tool for Squaring the Ends of Shafting.—Levi Bronson, Buffalo, N. Y.

I claim, in combination with the tool stock described, the dog, c, cutter, F, and drill, B, all for the purposes substantially as herein set forth.

51,134.—Friction Clutch.—Wm. H. Brown, Worcester, Mass.

I claim, First, The combination of the detached, elastic segments with the wedge blocks, substantially as and for the purpose described. Second, I claim making the wedges which force the segments against the rim of the pulley the medium of coupling it with the shaft.

Third, I claim the combination of the sleeve, E, the links and toggle joints with their terminal wedges, and the expanding segments or ring, substantially as described. Fourth, I claim the combination of the links, F I, with the toggles, J J, substantially as and for the purpose described.

51,135.—Locomotive Head Lamp.—Peter Budenback, New York City.

I claim, First, The described arrangement of the double, conical, foraminous cage or guard, f, surrounding the mouth of the supply tube, e, in the described relation to the reservoir and burner, for the purposes specified. Second, The plurality of supporting rings, k k, attached by arms to the bottom rod, j, and disconnected from the draught tube when combined and arranged in relation to the various parts of the lamp burner, in the manner and for the purposes set forth.

51,136.—Tube and Pump for Wells.—James H. Bump, Unadilla, N. Y.

I claim, First, In wells which are made by driving the ends of tubes into the ground, inclosing a cylinder or pump barrel having a conical, perforated end, within an outer tube driven or placed in the ground, and connecting them by a water-tight joint, by means of a contraction in the outer pipe, substantially as shown. Second, I also claim making a flange or its equivalent on the inside of the pump barrel or cylinder so that the cylinder can be removed by the jar of the piston against it, substantially as described.

51,137.—Suspensers.—Edwin Burgess, Racine, Wis.

I claim suspensers having a yoke, and vertical and inclined parts united by a single buckle, all substantially as described.

51,138.—Drill and Reamer for Oil or other Wells.—James Burnes, Titusville, Pa.

I claim, First, In drills for boring oil and other wells, placing one cutting edge across the drill, but on one side of its diameter, and another cutting edge on a radial line at a right angle or other angle to the other cutter, substantially as shown, the last-mentioned cutter being equal in length to the radius of the bore.

Second, I also claim in combination with cutting surfaces arranged as stated in the first clause of the claim, the reamer, D, constructed and arranged on the drill, substantially as described.

[The object of this invention is to produce a drill which shall bore a round hole as well by reason of the position of its cutting edges in relation to each other as by reason of the reamer which constitutes a part of the tool.]

51,139.—Coal Scuttle.—Marcus L. Byrn, New York City.

I claim as a new article of manufacture the scuttle for coal, etc., formed in the manner specified.

51,140.—Cotton Bale Raft.—Thomas Byrne, New York City.

I claim the mode substantially as herein described of rafting cotton bales and other baled or bundled merchandise, of a buoyant character upon rivers, the said mode comprising a frame or platform for a series of bales or bundles, and a water-proof covering applied under the bottom, around the sides and ends and partly wholly over the top of the raft of bales or bundles, as described and represented.

51,141.—Bottle.—Charles W. Cahoon, Portland, Maine.

I claim a bottle consisting of a hollow block of wood, and fitted with a stopper rendered impermeable to liquids with either of the substances specified or their equivalents.

51,142.—Bottle.—Charles W. Cahoon, Portland, Maine.

I claim an impermeable wooden bottle, having a plug, substantially as described.

I also claim the said bottle, having a channel substantially as described. I also claim an impermeable wooden bottle, having covers, substantially as described.

51,143.—Coal Stove.—Luther W. Campbell, Aurora, Ill.

I claim the fire box for a stove containing the flues, u, cap, W parts, M, as set forth.

51,144.—Connector for Carbon Batteries.—Charles T. F. Chester, Hackensack Township, N. J.

First, I claim attaching the platina on the plate, button or connecting surface by spinning the platina on and over the edge of the plate or button as set forth.

Second, I claim the application of a centering hole on the opposite side of the plate or button, that the binding screw may always find the center and bring the platina surface firmly in contact with the carbon plate, or its equivalent.

51,145.—Pump Filter.—John Christman, Syracuse, N. Y.

I claim a pump filter composed of the parts, A B and C, substantially as and for the purposes described.

51,146.—Suspender Pocket.—John F. Clark, Baltimore, Md.

I claim the addition to the common suspenders of a guard or cover for the front straps thereof, in the manner and for the purposes substantially as set forth.

I also claim attaching a guard to suspenders having a pocket for a watch or money, substantially as set forth.

51,147.—Neck Yoke.—Ambrose B. Coleman, Lyndonville, N. Y.

I claim the whole of the draught neck yoke, as herein described in this specification and description, in the manner substantially as and for the purposes set forth.

51,148.—Deep-well Pump.—John J. G. Collins, Philadelphia, Pa.

I claim, in combination with a hollow pump rod, for operating valves or plungers for raising oil as herein represented, the opening from the exterior of the pump tube to said hollow pump rod and through it to the exterior of the pump for the purpose of also, by the same operation, pumping out the gas from the well, substantially as described.

51,149.—Clothes Rack.—Cyrus B. Crosby, Cortlandville, N. Y.

I claim the arrangement of the shaft, a, the sockets and balls, b, with projections, c, the arms, d, and bars, f, operating substantially as and for the purpose specified.

51,150.—Machine for Making Needles.—C. O. Crosby, New Haven, Conn.

First, I claim the combination of the feeding device, D, with the carrier, H, constructed to receive the wires, substantially as described, and having an intermittent progressive movement, as and for the purpose specified.

Second, The carrier, H, having an intermittent progressive movement, in combination with flattening dies, A, substantially as and for the purpose specified.

Third, The carrier, H, having an intermittent progressive movement, in combination with grooving dies, A2, substantially as and for the purpose specified.

Fourth, The carrier, H, having an intermittent progressive movement, in combination with counter-sinking dies, A3, substantially as and for the purpose specified.

Fifth, The carrier, H, having an intermittent progressive movement, in combination with eye-punching dies, A4, substantially as and for the purpose specified.

Sixth, The carrier, H, having an intermittent progressive movement, in combination with the trimming dies, A5, substantially as and for the purpose specified.

Seventh, The carrier, H, having an intermittent progressive movement, in combination with the flattening and grooving dies, A1 and A2, substantially as and for the purpose specified.

Eighth, The carrier, H, having an intermittent progressive movement, in combination with flattening, grooving, and counter-sinking dies, A1 A2 A3, substantially as and for the purpose specified.

Ninth, The carrier, H, having an intermittent progressive movement, in combination with flattening, grooving, counter-sinking, and eye-punching dies, A1 A2 A3 A4, substantially as and for the purpose specified.

Tenth, The carrier, H, having an intermittent progressive movement, in combination in flattening, grooving, counter-sinking, eye-punching, and trimming dies, A1 A2 A3 A4 A5, substantially as and for the purpose specified.

Eleventh, The carrier, H, having an intermittent progressive movement, in combination with grooving, counter-sinking, eye-punching, and trimming dies, A2 A3 A4 A5, substantially as and for the purpose specified.

Twelfth, The carrier, H, having an intermittent progressive movement, in combination with counter-sinking, eye-punching, and trimming dies, A3 A4 A5, substantially as and for the purpose specified.

Thirteenth, The carrier, H, having an intermittent progressive movement, in combination with eye-punching and trimming dies, A4 A5, substantially as and for the purpose specified.

Fourteenth, The carrier, H, having an intermittent progressive movement, in combination with one or more finishing mills, m m n, buffs or burnishing mills or their equivalents, as and for the purpose specified.

Fifteenth, The carrier, H, having an intermittent progressive movement, in combination with a carrier, H', provided with revolving spindles, p', and having an intermittent progressive movement, substantially as and for the purpose specified.

Sixteenth, The combination of the cone, P3, or its equivalents with the spindles, P1, substantially as and for the purpose specified.

Seventeenth, The combination of the cone, P3, with the carrier, H, provided with revolving spindles, and having an intermittent progressive movement, substantially as and for the purpose specified.

Eighteenth, The direct combination of revolving spindles, P, with one or more intermittent hammers, P5, and one or more grinding, filing, polishing, or burnishing wheels, arranged substantially as and for the purpose specified.

Nineteenth, The improved organized automatic or self-acting machine, constructed substantially as herein described, so as to feed and present the wire to the several instruments for their action, and discharge the needles completely formed.

51,151.—Bridle Bit.—Edmund Day, West Springfield, Mass.

I claim as a new article of manufacture a bridle bit composed of metal covered with hard vulcanized gum, substantially as herein described.

Third, Having the outer part of the pins, P, diminished or reduced in diameter and eccentric with the main portions, substantially as and for the purpose set forth.

51,153.—Splint Plane.—James Dempsey, Richmond, Ind.

First, I claim constructing bit, C, of a splint plane, with the slot and spring, substantially as described.

Second, The arrangement of the spring, D, clamps, E, W, G, M, stock, A, B, with the bit, C, all of them constructed and arranged substantially as and for the purpose described.

51,154.—Ointment.—William Dony, Honesdale, Pa.

I claim the within-described composition for ointment, made of the ingredients above specified, and mixed in about the proportion and substantially in the manner set forth.

51,155.—Skate.—Francis E. Drake, Chicopee, Mass.

I claim inserting a web in a groove in the runner of a skate, and fastening them firmly together, substantially in the manner and for the purpose described.

51,156.—Process for Distilling Petroleum.—Aristide Dubreni, Baltimore, Md.

I claim the use of heavy petroleum, tar of petroleum, mineral oil, vegetable oils, grease, metals easily fusible, or an other substance within the boiler, inside the retort or still, to vaporize the material known as petroleum or rock oil, substantially in the manner and for the purposes herein-before shown and described.

51,157.—Sewing Machine.—Henry Dunham, Jr., Abington, Mass.

I claim the combination of the awl, needle, feeder, and a presser, having its foot so constructed and applied as to be capable of operating with forward and backward motions, in the direction of the movement of the leather or material while in the act of being sewed, the whole being substantially as described and represented.

51,158.—Air Brake for Cars.—Lucius H. Dwellley, Dorchester, Mass.

I claim saving the power employed in stopping or checking the motion of a car or other vehicle, and employing the same in starting it.

I also claim forcing air into a receiver by a suitable pump or air engine, operated by the wheels or axle of a car or other vehicle, the compressed air acting through suitable mechanism as a brake on the wheels.

I also claim compressing air in a suitable receiver during the operation of stopping or checking the motion of a car or other vehicle, and utilizing the expansive power of the air for the purpose of starting or driving it.

I also claim as an improvement in atmospheric brakes for railway cars and other vehicles, an air engine or pump operated by the wheels or axle of a car or other vehicle, in combination with an air receiver, substantially as set forth.

51,159.—Manufacture of Vinegar.—Huldah Eckert, Lodi, Wis.

I claim converting water in which potatoes have been boiled into vinegar, substantially as described.

51,160.—Ice-cream Freezer.—Albert W. Edwards, Mendota, Ill.

I claim the combination of a cream boiler rotating in one direction with two sets of beaters rotating therein in the opposite direction, when the beaters are so disposed that one set creates a central upward current, and the other outer downward currents, substantially as set forth.

I also claim, in combination with a rotating cream holder, a rotating scraper having a movement in the same direction with the cream holder, but at a different speed.

51,161.—Mode of Making Binding for India-rubber Fabrics.—Charles A. Ensign, Nantucket, Conn.

I claim the employment of the groove plate, b, substantially as described and for the purpose set forth.

I also claim the employment of the roller, f, or its equivalent, in combination with the plate, b, substantially as and for the purpose described.

51,162.—Method of Delivering Mails and Packages from Railroad Cars while in Motion.—Chas. D. Everett, Cleveland, Ohio.

First, I claim delivering mail bags, packages, etc., from railroad cars, in motion, automatically, substantially as set forth.

Second, I claim the adjustable lever hook, D, D', hanger, C, and arm, A, or their equivalents, when arranged and operating substantially as and for the purpose specified.

51,163.—Harvester.—G. C. Fanckboner, Schoolcraft, Mich.

I claim the herein-described combination and arrangement of the bar, C, arms, D D', bar, F, and standard, G, for joint operation, as and for the purpose herein described.

51,164.—Apparatus for Cooking, Washing, Etc.—Samuel S. Fitch, New York City.

I claim the combination with the steam-tight boiler, B, of the can or cans, C, therein, for containing the food or other matter under treatment, substantially as and for the purpose described.

51,165.—Rotary Steam Engine.—Matthew Fletcher, Louisville, Ky.

First, I claim the double cylinders described.

Second, The internal cylinder so arranged with reference to the flyers or pistons as to have a rotary motion, nearly corresponding with the rotation of the outer cylinder, substantially as shown and described.

Third, The hollow rings or chambers placed within the cylinder heads, for the purpose of equalizing the pressure on the ends of the pistons, substantially as shown and described.

Fourth, The devices for keeping the flyers or pistons against the sides of cylinder, although the distance of the outside of flyers one from the other differ in their revolution as described, and the whole arranged substantially in the manner and for the purpose set forth.

51,166.—Revolving-cylinder Engine.—Joseph S. Foster, Virginia, Nevada.

I claim the fly wheel, A, with two rigidly attached cylinders, C D, placed opposite each other in a radial direction, having a common piston rod, P, attached at the center to a crank pin, e, in such a manner that every revolution of the fly wheel causes by the action of steam in the cylinders two revolutions of the crank, substantially in the manner as herein set forth.

I also claim the stationary disk valve, I, with ports, d d', and grooves, f f', in combination with the revolving fly wheel, A, carrying the cylinders, C D, and pipes or channels, c c', in the manner and for the purposes substantially as herein described.

[An engraving and full description of this invention will be found on page 35, Vol. XIII, SCIENTIFIC AMERICAN.]

51,167.—Packing Deep Wells.—A. H. Fowler and E. J. Morgan, Ithaca, N. Y.

We claim packing the tube of a well by means of a compressible packing, D, applied between the wall and the tube, said packing being compressible by the adjustment of the nut and washer, or their equivalents, on the threaded tube, substantially as described.

51,168.—Mode of Sharpening Saws.—Chas. P. Frazer, Allowaystown, N. J.

I claim, First, The combination of the concentric clamps, B and C, with the bed plate, A, for holding a saw in position to be filed, substantially as herein described.

Second, The combination of the sliding bar, D, with the file, E, the reversible swivel, G, and fingers, H and H', the whole being constructed and arranged in relation to each other, and to the bed plate, A, and clamps, B and C, substantially as and for the purpose set forth.

51,169.—Malt Kiln.—Joseph Gecmen, Chicago, Ill.

First, I claim the combination and arrangement of the inner perforated cylinder, a, the adjustable diaphragm, m, and the perforated cylinder, b, arranged substantially as specified and shown.

as described, I claim the employment of the hot-air tubes, f, b, provided with valves, l, j, arranged as shown and specified and for the purposes described.

51,170.—Gas Burner for Cooking Purposes.—Adolph Geiss, Buffalo, N. Y.:

I claim the draught and mixing chamber, A, in combination and arrangement with the perforated dome, D, perforated shell, E, metallic base, A2, including gas pipe, F, for the purposes as described.

51,171.—Machine for Winding Yarn for Weaving Tape.—J. Gibbs, Warren, Mass.:

I claim, first, Rewinding the sized yarn from beam, C, upon a series of narrow and independent yarn beams, I, by a series of friction wheels, F, as and for the purposes stated.

Second, The combination of the self-adjusting arms, d, d, and friction wheels or drums, F, with the beams, I, substantially as and for the purposes set forth.

51,172.—Hat.—D. W. Gitchell, New York City:

I claim applying a metallic or other spring, formed in the shape of a ring around the body of a hat along its joint, substantially as and for the purpose described.

51,173.—Bit Stock.—D. W. Goodell, Northampton, Mass.:

I claim the combination of one or more pieces, A, B, etc., with one or more pieces, E, F, etc., spring, L, cap, K, and stop, P, when arranged substantially in the manner and for the purpose herein set forth.

51,174.—Capstan.—William Dakin Grimshaw, New York City:

I claim the socket, k, and spring pawls, l, in combination with the gear wheels, g and h, and capstan, c, substantially as specified, whereby a separate pawl bed add pawls are dispensed with, as set forth.

51,175.—Pneumatic Pump.—Wm. H. Guild, Williamsburgh, N. Y.:

First, I claim the arrangement of the main air-induction chamber, d, induction-valve chamber, b, induction valves, e, and ports, c and l, substantially as herein described, whereby provision is made for covering the said valves with water as the piston approaches or rises at their respective end of the cylinder.

Second, The arrangement of the air-education chambers, r, passages, s, and openings, t and u, in relation to the induction valves in the cylinder heads, substantially as and for the purpose herein specified.

Third, The water pipes, f, and check valves, h, applied in combination with the induction-valve chambers of a vacuum pump, to induce water from a suitable reservoir at each stroke of the pump piston, substantially as herein specified.

51,176.—Sky Rocket.—John W. Hadfield, Newtown, N. Y.:

First, I claim making the wings of a rocket reversible, substantially as and for the purposes described.

Second, The sleeve, C, in combination with the rocket, A, and reversible wings, B, constructed and operating substantially as and for the purpose set forth.

Third, The sleeve, C, in combination with the guide pin, d, constructed and operating substantially as and for the purpose described.

[This invention consists, first, in the application to a rocket of reversible wings, arranged so that the same can be turned in when the rocket is to be packed, and turned out when the rocket is to be fired; second, in the arrangement of a sleeve provided with notches and with a loop or eye, in combination with the reversible wings, in such a manner that, by the action of the notches in the sleeve, the wings, when turned out, are firmly held in position, and, at the same time, by the loop an opportunity is afforded to attach the rocket to the rod; third, in the use of a short piece of wire for the guide rod, in place of the ordinary stick, said piece of wire being fastened to a piece of wood, which, when the rocket is to be fired, is nailed fast to a fence or post, and which, together with the wire, does not exceed in length the rocket, and can be readily packed with the same in a box not larger than the rockets.]

51,177.—Steam Cock.—Albert Hallowell and H. R. Barker, Lowell, Mass.:

We claim the arrangement of the ground joint, e, f, at the lower parts of the cap, F, and the key, E, applied to such cap, F, as described.

We also claim the arrangement of the hand wheel, I, or the same and the tube, H, the screw, h, nut, i, the key, shank, E, the ground joint, e, f, and the cap screw, F, applied to the base, G, and shank, Z, of the valve, A, substantially as hereinbefore specified.

We also claim the arrangement of the annular groove, K, with the ground joint, e, f, the key, E, and cap, F, connected with the valve and its case, substantially as explained.

51,178.—Seeding Machine.—W. H. Hartman, Fostoria, Ohio:

First, I claim the hinged valve, E, arranged and operated as and for the purpose described.

Second, I claim the valve, H, constructed, arranged, and operated as specified.

Third, I claim the combination of the valve, G, seed hopper, D, valves, E and H, arranged and operated as set forth.

Fourth, I claim the distributing apron, I, in combination with the valves, E and H, when arranged as specified.

51,179.—Machine for Threading Screws.—H. A. Harvey, New York City:

I claim the combination of a cam, a wedge, and a mold or former, constructed and operating to control a chaser or threading tool in its motion, perpendicular to the axis of the blank, G, or nearly so, substantially in the manner hereinbefore described.

51,180.—Burnishing Machine.—Charles H. Helmes, Poughkeepsie, N. Y.:

First, I claim combining two rotary burnishers, with a frame operating substantially in the manner and for the purposes hereinbefore set forth.

Second, I also claim, in combination with two rotating burnishers, an adjustable planisher, for the purpose hereinbefore set forth.

Third, I also claim, in combination with two rotating burnishers, jets of gas flame for heating the same, substantially as hereinbefore set forth.

51,181.—Manufacture of Albumen and Prussiate of Potash from Blood.—Adolf Henry Hirsh, Chicago, Ill.:

First, I claim the distillation of the blood with water, in the manner and for the purpose set forth.

Second, The use of the carbon, in the manner and for the purpose set forth.

Third, The use of the iron, in the manner and for the purpose set forth.

Fourth, The mode of drying the albumen, as set forth.

Fifth, The use of the different chemicals, in the manner set forth.

Sixth, The process of manufacturing albumen and prussiate of potash from blood, as developed and set forth in the different degrees of the process.

Seventh, The use of blood for the purposes mentioned, in the manner set forth.

51,182.—Clamp for Covering Rollers with Cloth or Canvas.—H. W. Holly, Norwich, Conn. Antedated Nov. 18, 1865:

I claim the covering of rollers with cloth, canvas, or other material, by doubling the latter over the former in a clamp, in the manner substantially as set forth.

51,183.—Pump.—J. G. Hovey, Waverley, Iowa:

First, I claim the central discharging penstock, A, furnished with a valve, a, and working in a chamber, B, which is adapted for receiving its water at the upper end when the penstock is elevated, substantially as described.

Second, The combination of the movable chambered portion, B, movable penstock, A, with the connecting rods, F, G, lever, E, and vertical guide, D, substantially as described.

51,184.—Marine Clock.—Laporte Hubbell, Bristol, Conn.:

First, I claim constructing the upper part or bridge of the rear plate, B, in dependent of the lower part, B, substantially in the manner and for the purpose set forth.

Second, The lever, N, provided with the slot, a, and concave ends, d and f, when constructed and arranged to operate in the manner and for the purpose substantially as herein set forth.

51,185.—Washing Machine.—F. A. Hunt, New York City:

I claim the perforated trough, D, D, in combination with the fluted rollers, C, C, as and for the purpose specified.

51,186.—Latch for Blinds or Shutters.—B. S. Huntington, New York City:

First, I claim the lever, B, provided with catches, a, a, and operating substantially as shown and described.

Second, In combination with the above, I further claim the dog, e, employed to lock the lever, B, as specified.

Third, I claim the hook, g, and eye, F, or equivalents thereof, in combination with the lever, B, substantially as and for the purpose herein specified.

51,187.—Horse Rake.—David G. Hussey, Nantucket, Mass.:

I claim the toothed segment, F, provided with the concentric flanges, d, d, and having the treadles, H, attached by straps, G, G, in connection with the rack bar, D, and toothed segment, C, on the rake head, A, all arranged substantially as and for the purpose herein set forth.

51,188.—Children's Sled.—David G. Hussey, Nantucket, Mass.:

First, I claim the combination of runners, H, H, and pivoted frame, b, with the rods, i, i, bell levers, j, j, constructed and operating substantially as herein described.

Second, The jointed levers, I, I, constructed and applied in combination with the sled and steering apparatus, and operating in the manner and for the purpose set forth.

Third, The combination of sliding foot-piece, L, lever, K*, shaft, K*, levers, K, K, spurs or pipes, J*, J*, and spring, K*, the whole constructed, arranged and operating as described and for the purposes set forth.

Fourth, The latch or lock, I, for holding the sled when extended to any desired length, operated by the wedge, n, applied and operating substantially as herein described.

51,189.—Drilling Machine.—A. P. Jackson and Leander Thompson, Memphis, Ind.:

We claim the cam, B, and lever, C, in combination with the windlass, all being arranged in connection with the ropes, I, L, and drill, K, to operate in the manner substantially as and for the purpose set forth.

We also claim connecting and disconnecting the windlass with the shaft of the cam, by means of a clutch, so as to admit of the windlass being turned to raise the drill through the medium of the cam shaft.

[This invention relates to a new and improved drilling machine designed for general use, but more especially for boring deep wells. The invention consists in a new and improved means employed for operating the drill, and for raising the same out of the well when required.]

51,190.—Hay Elevator.—John H. Junkins, Upper Sandusky, Ohio:

First, I claim so constructing a machine adapted for elevating hay or other material that it will automatically convey its load to the point of delivery, at the pleasure of the attendant, substantially as described.

Second, A swinging crane or jib of an elevating machine, in combination with a sled tripod frame, tie rods, E, E, and cap, D, all arranged substantially as described.

51,191.—Chronometer Escapement.—Jacob Karr, Washington, D. C.:

First, I claim providing the detent, b, in both its lever and cylinder form with the additional pallet, y, for the purposes substantially as above described.

Second, I claim in combination with the lever, with its lance, c, spring, e, and detent, b, the pallet, s, and pallet, m, small of the balance, and the back spring, g, operating in the manner as above described.

51,192.—Railroad Turn-table.—J. I. Kinsey, South Easton, Pa.:

I claim, first, A turn-table for rail roads, provided with a ball and socket pivot, substantially as set forth.

Second, The combination of the plate, D, standard, B, and cross-piece, G, with the ball, C, substantially as and for the purpose specified.

Third, The cap, E, when used in connection with and applied to the ball and socket pivot of a turn table, substantially as and for the purpose specified.

51,193.—Magnetic Telegraph.—Charles Kirchof, Newark, N. J.:

I claim, first, An independent mechanical operator having a to and fro motion, in contradistinction to a continuous motion in one direction, when said operator is so arranged as to close and break the circuit while passing in one direction only, and thus I claim whether the sign line be stationary, and the contact maker movable, or the reverse, or both a made movable, substantially as described.

Second, I claim so arranging the design line or a series of them, in combination with a contact maker, that by their combined actions herein described, additions, combinations or variations of the single signals may be produced at pleasure, by the use of a mechanical operator, as set forth.

Third, I claim limiting the to and fro movement of the operating parts, by means of the slides, stops, and pointers, whereby I am enabled to regulate the number of signals sent as may be desired.

Fourth, In combination with the mechanical operator, I claim the use of the adjustable contact breaker, e, for the purpose of creating an interval or space between the various series of signals sent, whereby one series may be distinguished from another.

Fifth, I claim two or more independent mechanical operators, when arranged to operate successively, substantially as described.

Sixth, I claim so arranging two or more mechanical operators, that as one ceases to operate it shall release or set in operation another, whereby a compound telegram may be produced, substantially as described and illustrated in Fig. 6.

51,194.—Method of Applying Colors to Wood.—E. Knabeschuch, New York City:

I claim applying colors to wood, substantially in the manner described and for the purposes specified.

51,195.—Boot and Shoe.—Oliver LaFreniere, New York City:

First, I claim the combination of a wooden sole, a wooden heel and a shank, flexible from sole to heel, as an improvement in the manufacture of boots or shoes.

Second, In combination with the above, I further claim the metallic band, C, encircling and protecting the wooden sole, B, and securing the upper to the edge thereof, in the manner specified.

[This invention relates to the manner in which the sole is fastened to the upper. The sole consists of a piece of wood or other suitable material cut out to the proper shape and size, and the upper is drawn over its edges and held in place by a band of sheet metal, which is secured to the sole by nails driven in the edge of the same. No inner sole is used, and the sole itself is not perforated with holes, so that it is perfectly water tight. The instep is protected by a piece of leather or other flexible material, the rear end of which is secured under the heel, and its front end is held between the metallic band and the edge of the sole in the same manner as the upper.]

51,196.—Carriage, Wagon, Etc.—Edward Lane, Philadelphia, Pa.:

I claim a body, A, its four springs, the levers, D, D, connected directly to the cross piece, E, and levers, D', D', connected to the rear axle through the medium of links, F, F, when the whole is arranged and operated as set forth, and is applied to a carriage in which the said cross piece, E, is connected by a perch, G, to the rear axle, as specified.

51,197.—Washing Machine.—G. W. Large, Yellow Springs, Ohio:

I claim the combination of the swinging and removable open slotted segmental rack or rocker, D, with the open slotted roller, A, journaled in the hinged and gravitating open frame, H.

51,198.—Coffee Pot.—James H. Lee, Charlestown, Mass.:

I claim the combination as well as the arrangement of the boiler, A, the plug, a, and its seat, b, the pipe, B, the coffee holder, F, and the pot, D.

I also claim the combination as well as the arrangement of the tube, H, with the pot, D, the tube, B, the vessel, F, the plug, a, the neck or seat, b, and the boiler, A.

I also claim the combination as well as the arrangement of the cap or cover, C, the coffee holder, F, the pot, D, the pipe, H, the tube, B, and the boiler, A.

I also claim the combination as well as the arrangement of the cap, E, the tube, H, the pot, D, the vessel, F, and the boiler, A.

51,199.—Washing Machine.—Dominicus R. and James T. Leighton, Cambridge, Mass.:

We claim a washing machine, the several parts of which are combined, arranged and operated substantially in the manner and for the purpose above set forth.

51,200.—Stump Extractor.—Lorenzo D. Livermore, Beaver Dam, Wis.:

First, I claim the use of the sway line or chain, D, operating in the manner substantially as described to produce an increasing ratio of motion.

Second, The described combination of the wheel and axle, E, B, sway line or chain, D, and draught chain, C, all arranged and operating in the manner and for the purpose set forth.

51,201.—Machine for Removing Seeds from Raisins.—Harvey Locke, South Boston, Mass.:

I claim the combination as well as the arrangement of the grate, C, the compressing jaw, E, and the said expeller, F, the same being provided with mechanism to operate them, substantially as specified.

I also claim the combination as well as the arrangement of the retainer or board, G, and its operative mechanism with the grate, C, the compressing jaw, E, and the expeller, F.

I also claim the combination as well as the arrangement of each of the clearers, H, I, with the grate, C, the compressing jaw, E, and the seed expeller, F, the whole being provided with mechanism to operate them, substantially as specified.

I also claim the combination of the spring blade, L, or its equivalent, with the seed clearer, H, the grate, C, the compressing jaw, E, and the seed expeller, F.

51,202.—Automatic Fan for Sewing Machines.—T. R. Lovett, Mount Airy, Pa.:

I claim the combination of the standard, C, fan, D, rock shaft, d, spring, F, hook, j, and cord or wire, h, e, all arranged to operate in the manner and for the purpose set forth.

[This invention consists in the arrangement on the table of a sewing machine of a fan, in such relation to the treadle of the machine that the necessary motion will be imparted to it directly from the treadle, as the machine is operated for sewing purposes.]

51,203.—Harvester.—Abraham J. Manny, Freeport, Ill.:

I claim in folding, a hinged-cutting apparatus, so arranged as to have rotation on a longitudinal axis to vary the angle of presentation of the fingers to the ground, hanging the finger bar to the frame by a rod, which at one point forms the axis of rotation of the cutter bar, in a plane parallel to the line of motion of the knives, and at another point forms the handle or axis of vibration for the vertical vibration of the outer end of the cutter bar.

In combination with the above, I claim making the said rod by an enlargement or hook, which it retains on the curved slot to form the pivoting point of attachment and support for the handle, by which the finger bar is hinged to the frame of the machine.

51,204.—Car Brake.—Samuel McCambridge, Philadelphia, Pa.:

I claim, first, The combination and arrangement of the counter shaft, E, and lever, J, with the shaft, C, by means of the belt, D', and levers, D, D', substantially in the manner described and for the purpose specified.

Second, The combination and arrangement of the lever, J, shaft, G, belt, D', shaft, C, and cams, F, F, with the counter shaft, E, substantially as described, and for the purpose set forth.

51,205.—Fru Ladder.—David McMaster, Bath, N. Y.:

I claim a ladder consisting of the shaft, A, the rungs, B, legs, C, and projecting spike, D, combined and constructed substantially as and for the purpose set forth.

51,206.—Evaporator.—Jacob E. Moeller, Terre Haute, Ind.:

I claim the hinged and perforated tray, so attached to the cool side of the pan and hinged within it, as to collect the steam matters which by the rotation of the tray are drained and subsequently discharged, substantially as described and represented.

51,207.—Apparatus for Molding Rubber.—J. Moffitt, Chelsea, Mass.:

I claim in a molding press the combination of a rotary series of molds, a rotary cylinder and a pressing mechanism, arranged and operating together for the purpose substantially as set forth.

I also claim the method of effecting the pressure in the molds by the rotary platens, operated upon by the friction rolls, substantially as set forth.

I also claim the method of adjusting the degree of pressure upon the platens by hinging the two parts of the press together and regulating the distance between the same by the screw rods and nuts, substantially as described.

I also claim the mechanism for lifting the platens and plungers, operating substantially as set forth.

I also claim the eccentric construction of the surface of the press where the platens enter the same, by which each platen is gradually closed upon its molds substantially as described.

51,208.—Steam Cooking Apparatus.—A. F. W. Neynaber, Philadelphia, Pa.:

I claim the combination and arrangement in a steam cooking apparatus of the feeder, G, D, and alarm device, a, F, as and for the purposes set forth.

[The object of this invention is to produce a steam cooking apparatus of simple construction, but with great results in economy of time and labor and completeness of operation. It consists in general terms of an outer and inner boiler, the supply of water to the outer boiler being maintained automatically, and its exhaustion below a certain level being indicated by an alarm apparatus.]

51,209.—Car Coupling.—Albert G. Page, Augusta, Me.:

I claim the combination and arrangement of the spring, D, the carriage, C, the pins, g, h, cams, e, f, i, adjustment, m, and lever, E, and stop catch, d, as applied to the hooked jaw levers and the draw bar as and to operate as specified.

51,210.—Buckle.—Jefferson Peabody, Dixmont Center, Maine:

I claim the above specified buckle as made with one or more inclined planes, a, arranged in its frame and with a wedge, B, to rest and move on such plane or planes and with respect to the upper part of the buckle substantially as described, the said wedge being provided with one or more spurs or ridges to project from its upper surface as explained.

51,211.—Harvester.—Josiah W. Prentiss, Putney, N. Y.:

I claim the stationary cutters, E, when made and used as specified in connection with claspbar, D, that holds them applied as set forth.

51,212.—Crushing and Baling Machine.—Jacob Price, Jr. Petaluma, Cal.:

I claim, first, Giving the baling chamber, a, reciprocating motion for the purpose of holding and pressing the sheets of material, it being crushed by the rollers as it comes from the same by means of the racks and pinions connected therewith and operated by the bevel wheels, y and v, levers, L, male and female clutches, d, h, and h', in combination with the catch, E, and rubber band, X, substantially as shown.

Second, I claim the loose rollers, B, B, etc., working as described, for folding and compressing the material after it has passed into the baling chamber, together with grooves, a, etc., in the peripheries of said rollers through which the strings, wires, bands or hoops may be placed in binding or confining the bale, substantially as described.

Third, I claim combining the crushing rollers and compressing rollers with a baling chamber having a reciprocating motion obtained as shown.

Fourth, I claim the means for discharging the bale by placing the braces against it and withdrawing the chamber in the manner specified.

51,213.—Breech-loading Fire-arm.—Franklin B. Prindle, New Haven, Conn.:

I claim the combination of the vibrating breech piece, D, with the jointed levers, F and G, when operated by the guard lever, H, or any other suitable lever acting on the knuckle joint, so as to communicate both a vibratory and a longitudinal motion to the breech piece, and the whole is constructed, arranged and fitted to produce the result, substantially as herein described.

51,214.—Hoop Lock for Baling Cotton.—Frank Quant, Painesville, Ohio:

I claim a hoop lock, constructed with a longitudinal narrow aperture, A, and an enlarged transverse aperture, B, substantially as herein shown, in combination with the pin or nail, D, operating as explained for the purpose set forth.

51,215.—Nursery Chair.—Samuel Rainey, New Orleans, La.:

I claim a folding nursery chair, made and operated substantially as above described.

[The object of this invention is to provide a nursery chair which shall be portable. It consists of a chair in whose seat is fixed a chamber of convenience, and whose back folds down upon the seat, so as to cover it when not in use. The center, or panel of the back, revolves within the frame of the back so as to be capable of presenting an upholstered side to the occupant of the chair when the back is raised.]

51,216.—Deodorizing Composition.—Andrew Rankin, New York City:

I claim the compound consisting of the ingredients herein specified, and either with or without the use of chlorides of soda, and mixed in about the proportions named, substantially as and for the purpose described.

[This invention relates to a new and useful compound or composition, to be used as a deodorizer to relieve the obnoxious and disagreeable effluvia and odors arising from urinals, water-closets and other places, the compound being of such nature that while no smell or odor of any consequence is emitted by it, and if any so slight as hardly to be perceptible, it will entirely neutralize all the obnoxious effluvia, and not as in all compounds, substances or materials heretofore used for such purpose, simply overcome one odor with another of a stronger but somewhat pleasanter nature, yet nevertheless not agreeable or desirable.]

51,217.—Drill Jar.—Charles A. Read, Lockport, N. Y.:

I claim a drill jar for artesian well boring, consisting of the full cylinder, E, including the slots, H, piston, G, including the guide pins, H, piston rod, G, screw plug and socket F, and screw head, I, substantially as set forth.

51,218.—Securing Pulleys.—J. Wyatt Reid, New York City:

I claim the combination of a key with a set screw or screws, applied substantially as herein described, as a means for securing pulleys, gear wheels, arms and similar articles of shafts.

51,219.—Machine for Dressing Tiles.—John Reilly, Baltimore, Md.:

I claim, first, the holding swinging and adjustable clamp, A, constructed and operating substantially as described for the purpose set forth.

Second, the combination of arm, D, with the face plate of A.

Third, the combination of adjustable strip, e, with the face plate of A.

Fourth, the combination of removable angular strip, d, with the same plate.

51,220.—Bag Holder.—E. Reynolds, Corunna, Mich.:

I claim a bag holder constructed substantially as herein shown and described.

[An engraving and description of this invention appears in this number of the SCIENTIFIC AMERICAN.]

51,221.—Steam or Water Valve.—Charles E. Ricker, Lowell, Mass.:

I claim the combination and arrangement of the stand, B, with the valve, E, spindle, D, packing nut, C, and wheel, F, whereby the steam or water may be shut off from the spindle, and its packing renewed, without interrupting the passage of steam or water through the pipe, substantially upon the principle and in the manner herein set forth.

51,222.—Sash Lock.—Archibald Ridell, Chicago, Ill.:

I claim the combination of the weighted lever with the sector, D, and wheel, F, constructed and arranged substantially as described.

51,223.—Railway Car Coupling.—Albert Roll, South Amboy, N. J.:

I claim first, Providing each one of the coupling boxes of a car coupling with a permanently attached coupling link in combination with the fixed self-acting catches, c, c, substantially as described.

Second, Attaching the links, a, a, to their coupling boxes by means of vertical rods, b, b, in combination with the catches, c, c, and fixed studs, e, e, substantially as described.

Third, The struts, g, g, in combination with the coupling links, a, a, substantially as described.

Fourth, Loading the rear ends of the permanently attached coupling links, in such a manner that when these links are moved in a position to form a connection, they will remain in said position until the connection is made, substantially as described.

51,224.—Cook Stove.—J. J. Savage, Troy, N. Y.:

I claim a divided fire chamber for stoves and heaters, substantially the same as herein described, and for the purposes as set forth.

I also claim the partition plate, B, or its equivalent device, constructed and arranged, in the fire chamber, with its bottom side in proper position to the grate thereof, in the manner substantially as herein fully described and the purposes as set forth.

I also claim, in combination with the partition plate, B, the air-heating chamber, C, constructed and arranged substantially in the manner as herein shown and set forth, and for the purposes as specified.

I also claim arranging the air-heating chamber, D, the combustion chamber, Y, and air heating chamber, C, with reference to each other in such a manner that the products of combustion shall pass between said chambers in the manner substantially as herein shown, and for the purposes as set forth.

I also claim the method of constructing the under or fire side of stove center pieces or division plate and boiler heater covers, in the manner substantially as herein shown and described, and for the purposes as set forth.

51,225.—Breech-loading Fire-arm.—Francis Schopp, New York City:

I claim a pin, S, acted upon by a spring and operating the breech piece, G, in the manner and for the purpose substantially as set forth and specified.

51,226.—Balances.—Reuben Shaler, Madison, Conn.:

I claim the combination of the supports, E and F, the parallel bars, G, G, and a spring, S, or its equivalent, arranged substantially in the manner and for the purpose specified.

51,227.—Grinding Mill.—Nicholas Shoemaker, Montrose, Pa.:

I claim the horizontal bar, A, applied to the spindle of mill stones, in connection with the driver, B, provided with a recess to receive the bar, A, substantially in the manner as and for the purpose set forth.

51,228.—Fan.—Benjamin M. Smith, New York City:

I claim, as a new article of manufacture, a fan constructed of veneer, strengthened with a rim of metal or other suitable material, substantially as herein described.

51,229.—Steam Gun for Driving Stock from Railroad Tracks.—Franklin G. Smith, Columbia, Tenn.:

I claim the self-loading railroad steam gun, with its arrangements of stop cock for the explosive jet, spring catch for holding the ball

in the chamber of the piece so that it cannot roll out, and tubes for containing the clay balls, substantially as shown and described.

51,230.—Rock Drill.—George W. Smith, Covington, Ky., and Charles F. Henis, Cincinnati, Ohio:

We claim the method herein described of freeing rock drills by a jet or jets of water under pressure which shall also remove by overflow the boring metal and debris produced by the drill and jet or jets of water, substantially as set forth in the foregoing specifications.

51,231.—Treating Peat.—John H. Smith, New York City:

I claim, first, Treating peat with wet steam, substantially as and for the purpose described.

Second, The application to peat of wet and superheated steam combined, substantially as and for the purpose set forth.

51,232.—Self-acting Brake.—C. A. Smyth, Charleston, Ill.:

I claim the shaft, K, provided with the cranks, e, f, and shoes, L, L, placed on the bar, J, in relation with the wheels, C, as shown in connection with the slotted reach, D, and the front bolster, H, connected by a pivot bolt, a, to the wagon bed or body near one end, fitted on the king bolt, G, as a fulcrum, and connected to the shaft, K, by the rod, g, all arranged to operate in the manner substantially as and for the purpose set forth.

I further claim the slotted shoes, L, L, placed on the cranks, f, f, of the shaft, K, for the purpose of admitting the shoes to rise under the reverse motion of the wheels, C, in backing, substantially as set forth.

51,233.—Paper Collar Machine.—George K. Snow, Watertown, Mass.:

I claim the above described arrangement and combination of end and button-hole dies irrespective of the middle button-hole dies.

I also claim the above described arrangement and combination of end and button-hole dies, inclusive of the middle button-hole dies.

And, in combination with the end dies, and the middle button-hole dies arranged as specified, I claim a mechanism for adjusting the distance of the said middle button-hole dies from the end-forming dies.

And, in combination with the end-cutting dies and the middle button-hole dies arranged as described, I claim the gage, Z, Z, whether stationary on the carriage, B, or adjustable thereon as specified.

I also claim the end-forming dies, substantially as described, for shaping the contiguous ends of two collars at one operation.

I also claim the formation of collars from a continuous strip in the manner, or with their ends to envelop one another, as hereinbefore described and represented in Fig. 9.

I also claim the formation of collars in a continuous strip of paper, as described, by means of end-forming dies arranged as specified, and by alternately changing the strip from one side to the other of the middle line of the dies, as specified.

51,234.—Paper Collar Machine.—George K. Snow, Watertown, Mass.:

I claim an automatic combination consisting not only of mechanism for feeding a sheet along with an intermittent motion, and of machinery for stamping shirt collars or articles from such sheet, but of machinery for embossing such collars or articles on both of the opposite sides thereof.

And I also claim a combination consisting not only of such mechanical elements, but a mechanism for folding each collar.

I also claim an automatic combination, consisting not only of mechanism for manufacturing such collars from a sheet, and embossing them on two opposite sides, and folding them in manner as specified, but of machinery for discharging each collar from the forming element or machinery, after the folding of such collar thereby.

I also claim a combination consisting not only of mechanism for manufacturing or stamping shirt collars from a sheet, and feeding them as described, but mechanism for curving or bending each of such collars, in manner and for the purpose specified.

I also claim a combination consisting not only of mechanism for manufacturing or stamping shirt collars from a sheet, and mechanism for embossing them as described, but mechanism for folding them, and mechanism for curving them in the manner and for the purpose as specified.

I also claim the arrangement of the folding tablet inclined relatively to the stamping mechanism in order that each collar, on being discharged from the latter, may be caused by the action of gravity to slide down the tablet and against its guides, and abut against its stop or stops, and be carried underneath the folding blade, substantially as specified.

I also claim the combination of the edge guides, d', d', or the same with the stop surface guides, e', e', and stop, b', or such stop, b', and the end stops, e', e', with the inclined slotted tablet and its folding blade, and

I also claim the combination of the same, and mechanism substantially as described, for making collars from a sheet, or making and embossing collars.

I also claim the combination and arrangement of the stops, f', f', with the mechanism for stamping the collars from a sheet of paper or other material.

I also claim the improved collar discharging and curving mechanism, consisting of the driving roll, e, c, and the endless belt, K, and supporting rollers, or their equivalents, arranged together in manner, and so as to operate substantially as described.

I also claim the combination of the adjustable male and female dies for forming the ends of the collar.

I also claim the arrangement of the severing dies with the male and female dies for cutting the ends of the collar.

I also claim the arrangement of the embossing dies, with the end cutting and severing dies as specified.

I also claim the above described combination of separate adjustable male and female dies for forming the ends with the separate adjustable dies for forming the sides of the collar as herein described, the said adjustable male and female dies enabling collars of different sizes to be made as herein described.

I also claim the dies or cutters as herein described for forming the lower edge of one and the upper edge of another collar at the same time.

I also claim a combination consisting of the mechanism as described for forming collars, and the mechanism as described for folding them.

I also claim the combination of the end guides, d', d', with the top guides, e', e', for guiding the collar to the proper position to be folded.

I also claim the combination of dies for embossing both sides of the collar with dies for forming the collar substantially as described.

I also claim the combination of male and female dies for forming the ends of the collar and the end button-holes at the same time as herein described.

51,235.—Die for Cutting Paper Collars.—Geo. K. Snow, Watertown, Mass. Antedated Nov. 15, 1865:

I claim the combination of the adjustable end cutters, C, C, with either one or two side cutters, as described.

Also, the combination of adjustable button-hole cutters and end cutters with either one or two side cutters.

Also, the combination of the adjustable end and button-hole cutter, one or two side cutters, and a middle button-hole cutter stationary relatively to the side cutter to which it may be connected, the whole being substantially as and for the purpose hereinbefore specified.

51,236.—Apparatus for Heating, Cooling, and Ventilating.—D. E. Somes, Washington, D. C.:

I claim, first, The construction and arrangement of a system of tubes or pipes in a cooling tank or cistern so as to obtain a large cooling surface, substantially as set forth and described.

Second, The combination of a system of warming and cooling apparatus with devices for receiving, cooling, or warming, and distributing air in buildings or apartments as described.

Third, The liquid cooler or coolers in combination with the air-cooling apparatus, substantially as described.

Fourth, The combination of the refrigerating chambers with an air-cooling apparatus, substantially as described.

Fifth, The devices for admitting and regulating the air, as described.

Sixth, The refrigerating chambers, D, constructed and cooled substantially as described.

Seventh, The air cooler, in combination with tubes or channels for conducting air to different apartments, as described.

Eighth, The combination of devices so as to form apparatus to be used for either heating or cooling air or water, or air and water, substantially as described.

Ninth, The combination of the propeller wheels with air flues, or ducts, so as to operate substantially as described.

51,238.—Artificial Arm.—Edward Spellerberg, Philadelphia, Pa.:

I claim making the hand adjustable in the wrist socket in any manner equivalent to that herein described, when the parts transmitting motion to the finger mechanism are constructed relative to the hand adjustment, substantially as and for the purpose specified.

I also claim, so actuating the finger mechanism of a detachable hand by the described devices or their equivalents, that the hand can be removed from the wrist socket without separately disconnecting its mechanism from that of the arm.

I also claim, third, providing the described grasping instrument or its equivalent, with a swiveling socket, as and for the purpose set forth.

51,239.—Embroidering Attachment for Sewing Machines.—Martin W. Stevens, Stoughton, Mass.:

I claim the combination or mechanism for operating the embroidery yarn-carriers or arms, E, E, the same consisting of the studs, f, f, the actuator, F, and the vibrator, G, with its arms, p, g, and spring, r, and stop pins, S, S, the whole being substantially as specified.

I also claim the combination of the screw, t, and spring, m, and the holder, n, with the actuator, F, applied to the presser, and the arms, E, E, substantially as specified.

I also claim the combination of the socket piece, d, or its equivalent with the presser foot and the arms, E, E, applied thereto as described.

51,240.—Stove-pipe Elbow.—O. W. Stow, Plantsville, Conn.:

I claim making the two parts of the elbow to turn or swivel on points or pivots, D, E, in combination with the bolt, C, as and for the purposes set forth.

51,241.—Heel Calk.—Thomas Symonds, Portland, Me.:

I claim the combination of the plate, A, having the slot, c, the grooves, b, b, and the turned-up points, d, d, with the button, f, as and for the purpose described.

51,242.—Toe Calk.—Thomas Symonds, Portland, Me.:

I claim the combination of the plate, A, the band, B, the rings, G, the bars, g, the points, d, and the shoulders, f, as and for the purpose described.

51,243.—Breech-loading Fire-arm.—Wm. Tibbals, South Coventry, Conn.:

I claim securing a loose anvil in the cartridge shell, when placed in the gun barrel, by means of pressure applied thereto, substantially as described.

51,244.—Saw-mill.—James Tracy, Brewer, Me.:

I claim the improved gage, as not only having its movable legs, D, made with gains, as represented, for receiving and holding the saws, but as furnished with the stationary collar, E, and the nuts, C, B, B, and their separate screws, arranged as specified.

51,245.—Plow.—James Wallace, Berks County, Pa. Antedated May 23, 1865:

I claim the land side, C, and share, L, when constructed as described, in combination with the cutter, F, as herein specified.

51,246.—Churn.—D. T. Ward, Cardington, Ohio:

I claim the arrangement of the dasher shaft with the wing, d, the rods, b, b, and the washers, a, a, as and for the purpose specified.

51,247.—Guide for Sewing Machine.—Albin Warth, Sta-pleton, N. Y.:

I claim, first, A cloth guide for a sewing machine, composed of a fork with three or more prongs, disconnected at their outer ends, substantially as and for the purposes set forth.

Second, Giving to the prongs of the forked guide an oblique position, substantially as and for the purposes described.

Third, The adjustable gage, C, applied to the forked guide, A, substantially as and for the purposes set forth.

Fourth, The angular guide bar, D, in combination with the forked guide or guides, and with the main gage, B, constructed and operating substantially as and for the purposes described.

51,248.—Drill Gage.—Wm. C. Wells, Newark, N. J.:

First, I claim the construction of an adjustable gage in such a manner as to bear on the sides, point, and both the cutting lips of a drill simultaneously.

Second, I claim the manner of placing a stationary blade, B, above a V-shaped guide, A, so that said blade shall stand vertically and obliquely, and shall describe two given angles, for the purpose as herein specified.

Third, I claim the transverse blade, C, which is provided with a tongue, E, and which is attached to the stationary blade in such manner and for such purpose as is herein set forth.

Fourth, I claim providing the traverse, C, with a shoulder, S, so as to underlap the lower edge of the stationary blade, B, for the purpose as herein specified.

51,249.—Flue Cleaner.—Norman W. Wheeler, Brooklyn, N. Y.:

I claim the combination of the pipe, a, nozzle, B, handle, f, and flexible or jointed pipe, E, constructed substantially as described and for the purposes set forth.

51,250.—Piston Packing.—Jerome Wheelock, Worcester, Mass.:

I claim, first, Arranging the T-shaped or grooved ring, D, in two or more sections, as and for the purpose described.

Second, The curved recesses, c, and the tongues, d, at the ends of the sections of the packing rings, as and for the purpose shown and described.

Third, The mortices or recesses, f, in combination with the sectional packing rings, constructed and operating substantially as and for the purpose set forth.

[This invention relates to certain improvements in that class of pistons in which sectional rings are used, in combination with a T-shaped or grooved ring placed between the piston head and the fol-

I also claim the combination and arrangement of the carriage, h and its adjustments with the knife, C, the same being affixed to such carriage in manner and for the purpose substantially as described.

I also claim the combination and arrangement of the rocker tube, E, with the slider, D, its supporting standards, b, the knife, C, and the shoe holder, as described.

51,255.—Tobacco Cartridge.—A. C. Breckenridge, Meriden, Conn., assignor to H. J. Hale, New York City: I claim a tobacco cartridge, constructed substantially as above described.

51,256.—Harness Hames.—John E. Brown (as igno to himself, Charles A. Mott, and A. A. Peebles), Lansingburgh, N. Y.: I claim adjustable harness hames, formed by combining the movable part, C, D, G, and spring, H, J, with the hames, substantially as described and for the purpose set forth.

51,257.—Screw-cutting Machine.—Joseph K. Brown, Providence, R. I., assignor to Joseph K. Brown and Sharpe: I claim, First, The combination of a set of gripping jaws, l, and a set of wedges on a sliding rod or tube, m, or its equivalent, with a hollow screw, F, the same being constructed and arranged to operate within a revolving spindle, substantially as described, for the purpose specified.

Second, I claim the combination of the threading tool holder and the reversible clutch, constructed and arranged to operate with a revolving spindle, substantially as described, for the purpose specified.

51,258.—Breech-loading Fire-arm.—Jarvis Davis (assignor to Patrick Smith), Buffalo, N. Y.: I claim, First, The spirally grooved sleeve, E, provided with a thumb-piece, H, arranged and used for the purpose of imparting the requisite movements to the cartridge holder, substantially as set forth.

Second, The combination of the sleeve, E, spring bar, F, and sliding abutment, D, when arranged and operating in the manner and for the purposes set forth.

51,259.—Meat Compound.—B. M. Fowler, Hackensack, N. J., assignor to himself and Wm. Hanigan, Brooklyn, N. Y.: I claim a meat compound, prepared as above specified.

[The object of this invention is to prepare a compound of meat with the requisite quantity of salt and other spices, in such a manner that the same can be kept for any length of time during all seasons of the year, and that it will form an exquisite relish for family consumption or for travelers. For these reasons the compound may be properly termed "People's Excelsior Relish."]

51,260.—Barrel Head.—George W. Gilbert, Radnor, Pa., assignor to himself, G. Righter, Jr., and J. B. Maxwell, Spread Eagle, Pa.: I claim the within-described barrel head, consisting of the pieces, B, B' and D, and the set screw, E, the whole being constructed and adapted to a barrel, substantially as and for the purpose herein set forth.

51,261.—Magnetic Telegraph.—Chas. Kirchoff, Newark, N. J., assignor to himself and Leonard J. Stiastry: I claim, First, The indicating and recording instrument, actuated by electricity, arranged to automatically shift the actuating mechanism, and thereby move the dial or index in one or the other direction, in accordance with the transmitter, or as may be desired by the attendant, substantially as described.

Second, Securing a harmonious action between the transmitter and a series of receiving instruments, by so arranging or constructing the latter that their dials or indices shall all cease to move or operate at certain fixed place or character common to them all.

Third, Transferring the motion of the receiving instrument at pleasure, to an instrument to be operated independent of the indicator, by the same helix or helices.

Fourth, The combination of the recording cylinder, or its equivalent, with the indicating instrument, arranged and operating substantially as set forth.

Fifth, Transmitting the communications, automatically, by a mechanism defining the number of electric impulses, their direction and intervals, by a simple manipulation of the attendant, substantially as described.

Sixth, The reversing gear, when arranged to be operated by electricity, for the purpose of automatically changing the motion of telegraphic mechanism.

51,262.—Pegging Jack.—William R. Landfear, Hartford, Conn., assignor to David Whittemore, North Bridgewater, Mass.: I claim the application of the last holder, supporting plate, B, to the standard, C, by means of three sustaining pins or screws, d, e, f, and their slots, g, h, l, arranged substantially as described, the slot, i, of the lower screw, f, being formed with curves whose radii proceed from the axes of the screws, d, e, as explained.

51,263.—Preserving Eggs.—Charles A. La Mont, New York City, assignor to C. A. La Mont and David A. Burr, Washington, D. C.: I claim as a new article of manufacture eggs desiccated and hardened into small, bright, thin flakes or particles, readily soluble in cold water, and retaining their qualities and flavor, all substantially as hereinbefore set forth.

51,264.—Preserve Can.—Peter H. Niles, Boston, Mass., assignor to himself and Augustus Russ, Cambridge, Mass.: I claim as an improvement in preserve cans, the elastic packing ring, b, in combination with the cover, B, provided with wedges or inclines, d, and the hooks, e, or their equivalents, operating substantially as and for the purpose set forth.

51,165.—Spike.—Daniel R. Pratt (assignor to J. Marcus Rice), Worcester, Mass.: I claim the above-described corrugated spike, as an article of manufacture.

51,266.—Melting and Smelting Furnace.—Wm. Quann and Wm. T. Smith, Philadelphia, Pa., assignors to themselves, A. R. Wetmore, New York, and Chas. C. Lathrop, Delanco, N. J.: We claim, First, The basin, H, of the furnace, made of the concave form represented, for the purpose specified.

Second, The combination and arrangement of the said concave basin with the slag hole, L, and tapering hole, H.

Third, The arrangement of the inclined bed of the furnace and the blast openings and pipes, n, n.

Fourth, The chimney, E, with its cover, d, and two compartments, F and G.

Fifth, The combination of the said chimney and its compartments with the pipe, L, and vessel, K, or their equivalent.

Sixth, The combination and arrangement, substantially as described, of the basin and bed of the furnace, the chimney, and the opening, f.

51,267.—Forging Apparatus.—Edward A. Raymond, Brooklyn, N. Y., assignor to himself and Charles Merrill & Sons, New York City: I claim, First, A cup leather packing for the piston rod of atmospheric hammers, applied as and for the purposes specified.

Second, I claim securing the cup leather within the basin in the cylinder head by the movable ring, as and for the purposes specified.

Third, I claim the annular packing expanders applied at one or both ends of the cylinder, for pressing the cup leathers of the piston to shape, as set forth.

51,268.—Window Blind.—John C. Reed (assignor to himself and Joshua Y. Billard), Stamford, Conn.: I claim, First, The combination of the crank, L, and bar or rod, K, with the bevel gear, N, R, and the slats of the window blind, substantially as and for the purpose set forth.

Second, The combination of the self-adjusting clutch, T, with the bevel gears, R, N, and the casing or frame of the window, substantially as described and for the purpose set forth.

Third, The combination of the coiled spring, W, with the clutch, T, and window casing or frame, substantially as described and for the purpose set forth.

[This invention consists in connecting a self-adjusting clutch with the slats of a window blind, by means of a crank and a pair of gear wheels, in such a way that the slats may be opened or closed or set at any desired angle, without opening the window—the improvement in no way interfering with opening and closing the blinds.]

51,269.—Revolving Fire-arm.—Joseph Rider, Newark, Ohio, assignor to himself and E. Remington & Sons, Ilion, N. Y.: I claim, First, The groove and flange at the rear of the revolving cylinder, with the openings, 1, 2, 3, etc., cut through said flange, for the jaw of the extractor to work through, substantially as and for the purpose described.

I also claim, in combination with a pawl for turning a cylinder, a pawl guide, constructed and operating substantially in the manner and for the purpose described.

51,270.—Children's Bed-clothes Retainer.—M. L. Thompson (assignor to himself and E. L. Childs), Brooklyn, N. Y.: I claim a ring or collar, adapted to be placed around the neck of the child, and to retain the bed clothes in place, substantially as described.

[Much annoyance and trouble is given to mothers and nurses by children constantly getting uncovered, at night, owing to their restlessness. The feet or hands of the children are almost constantly in motion, and it is impossible to keep them covered unless they are continually watched, and if they be neglected and become uncovered serious colds are often the result, which, many times, especially in the spring and winter season, develop into some ailment fatal to the child. The object of this invention is to produce a simple means for retaining the bed clothes in place over the child, no matter what position it may assume, and for this purpose a ring or collar of suitable construction is employed, which is to be placed around the child's neck, and to which the bed clothes are attached.]

51,271.—Stone-cutting Machinery.—George J. Wardwell, Rutland, Vt., assignor to the Steam Stone-cutter Company, New York City: I claim, First, So constructing the yoke, F, and applying it to the standard, F', that it will admit of the cutters being removed from the machine, or again replaced at pleasure, substantially as described.

Second, The combination of an open yoke, F, with a hinged standard guide, F'', substantially in the manner and for the purpose described.

Third, Providing for adjusting the cutters together with their guides, and setting them at any desired angle, for the purpose and in the manner substantially as described.

Fourth, The pivoted standard boxes, G, G, arranged on the sides of the frame, A, and adapted for receiving the standards, F, F', and operating substantially as described.

Fifth, Arranging two gangs of reciprocating cutters upon a frame, A, so as to work outside of the track upon which the machine is moved, substantially as described.

Sixth, The application of the windlass, J, to a stove-cutting machine, for the purpose of lifting and supporting the cutters, substantially in the manner described.

Seventh, The combination of the feed wheels, C, D, shifting pinion, B, and movable arm or lever, B, with the vibrating beam, E, substantially as described.

51,272.—Machinery for Cutting Stone.—George J. Wardwell, Rutland, Vt., assignor to the Steam Stone-cutter Company, New York: I claim the combination of a feed mechanism, a stone cutting machine and a steam engine, substantially as and for the purpose described.

51,273.—Cutter for Stone-Channeling Machinery.—George J. Wardwell, Rutland, Vt., assignor to the Steam Stone-cutter Company, New York: I claim, First, The combination of one or more diagonal cutting edges, with transverse cutting edges, formed on the ends of bars which are secured together, substantially as described.

Second, The stepped arrangement of the cutters on both sides of a central cutter, substantially as and for the purposes described.

Third, The combination of a pyramidal cutter with transverse and diagonal chisels, substantially as described.

51,274.—Gage Cock.—Charles T. Woodman (assignor to himself and Chas. E. Woodman), Boston, Mass.: I claim the improved cock or faucet, constructed substantially as described viz: with a roller valve made and applied to a shaft, as explained, and arranged so as to operate with the curved inner surface of the case, and with inlet and outlet passages leading therefrom, in the manner substantially as hereinbefore set forth.

51,275.—Liq. Id. Cooler.—Charles P. Zimmerman, Newark, N. J., assignor to himself and Isaac P. Brown, Plainfield, N. J.: I claim the arrangement of a series of chutes, A, A, and aprons, B, in combination with the cooling chambers, C, connected with each other by pipes, D, and arranged in relation to each other and the chutes, A, A, substantially in the manner and for the purpose described.

51,276.—Lubricating Apparatus.—Jean Francois Auguste Aerts, Antwerp, Belgium. Patented in Belgium, Sept. 5, 1864: I claim, First, A reversed gutter applied and constructed substantially as described and operating to prevent water from being projected violently against the upper part of the box, substantially as set forth.

Second, A horseshoe shaped piece or half dome of metal, in combination with a groove on the axis, the two being located with reference to the upper brass and to each other and acting in combination, substantially as hereinbefore specified.

And last, in combination with a rotating disk elevating fluid above an axle, a packing applied beneath the axle, constructed and operating substantially as described.

51,277.—Mode of Attaching Stakes to Railroad Cars.—Joaquin Fortun, Cienfuegos, Cuba: I claim the application to railroad platform cars of side stakes, so constructed as to turn along side of the car in one operation; as herein described, thus saving much time.

51,278.—Filtering Press.—L. P. R. De Massy, Paris, France: I claim, First, The combination of the inner and outer conical perforated casings, F and G, constructed and operating substantially as described, for the purpose specified.

Second, The combination of the said inner and outer perforated casings, with lining or covering of wire, cloth, or textile fabric.

Third, The combination of the said inner and outer perforated casings, with the hydraulic press and rails, D, D, the whole being arranged and operating substantially as and for the purpose herein set forth.

51,279.—Apparatus for Taking Photographic Panoramic Views.—John Robert Johnson and John Ashworth Harrison, London, England. Patented in England, Sept. 5, 1862: We claim, First, The improved construction and arrangement of the lens and sensitive plate, so that their motions are smooth and equal, and free from vibration, and so that the whole apparatus is rendered more compact and portable than those previously suggested.

Second, The new mode or modes of obtaining the relative motions of the lens and sensitive plate, such motion being obtained directly by mechanical means, or by appliances constructed mechanically, instead of by guide curves or grooves formed by trial, as has heretofore been proposed to be done.

Third, The improvement in the gearing when working both forms of camera.

Fourth, The application of a spring or weight to give motion to such cameras, and of means for regulating such motion to such camera, and of means for regulating such motion, both at variable and invariable rates.

Fifth, The application of an expanding diaphragm to regulate the exposure in cameras moving at an invariable rate.

Sixth, The expanding diaphragm placed between the lens and the sensitive plate by means of which the sky and cloud effects may be obtained, and by which the amount of exposure may be regulated.

Seventh, The general mechanical arrangements by which these improvements are carried into effect in the different forms of cameras described.

51,280.—Method of Preserving Animal and Vegetable Substances.—Richard Jones, London, England: I claim the herein-described apparatus and method of preserving animal substances, by displacing air from the vessel containing the substance to be preserved, by the introduction therein of an inert fluid such as water or oil, and then the displacement of such fluid by the introduction of nitrogen gas or gases, having an affinity for oxygen, substantially as explained.

51,281.—Process of Making Gun Barrels, Etc., from Bessemer Steel.—James Thompson, Bilston, England: I claim the making of seamless gun barrels, ordnance, or other like tubular bodies, of Bessemer's homogenous metal or steel, in the manner herein described.

REISSUES.

2,113.—Mouth-piece for Cigars.—Jonathan Ball, Elmira, N. Y. Patented March 28, 1865: I claim the mouth-piece for a cigar, composed of a wooden tube and paper socket, substantially as herein described.

2,114.—Method of Treating Offal.—John P. Baugh, Edwin P. Baugh, and Daniel Baugh, Philadelphia, Pa., assignees of William Adamson. Patented Feb. 14, 1865: We claim, First, Utilizing offal by draining from it the greater portion of its fluid matter preparatory to the drying of the mass, for the purpose described.

Second, Simultaneously drying and disinfecting offal, by subjecting it to the direct action of the products of combustion, substantially in the manner set forth.

2,115.—Method of Making Shoes and Dies for Quartz Stampers.—P. W. Gates, Chicago, Ill. Patented July 31, 1860: I claim, First, Producing shoes and dies for quartz crushing machinery by casting in a metal mold an outer case or shell of metal about a central chilled metal core, substantially as described.

Second, In the operation of casting shoes and dies for crushing machinery, I claim using a central core of metal and an external flask or mold, for the purpose of producing a shoe, or a die, which is composed of more than one piece of metal and which has its outer surface finished in a direction from its center toward its circumference, as well as from its circumference toward its center, substantially as described.

Third, A chilled cast metal shoe, constructed with a soft unchilled attaching stem, upon the lower chilled portion of which the shoe is cast, substantially in the manner and for the purpose described.

Fourth, Making the projecting portion of the stem of a stamp head-shoe, or of a perforator and of unchilled metal, while the body of the shoe is chilled, the shoe being cast upon the lower chilled portion of the stem, substantially as and for the purpose described.

Fifth, In the operation of casting a chilled shoe for stamping machinery, I claim producing a chill upon the body of a shoe and an inclosed portion of the stem, and leaving unchilled the projecting portion of the stem thereof, substantially as described and for the purposes set forth.

Sixth, A stamp head-shoe or die, which is chilled, substantially in the manner described, from center toward the circumference and vice versa, and formed of more than one piece of metal, or of two pieces of metal cast one upon the other, and which are united or held together by means of the varying diameter of the central piece, substantially as set forth.

2,116.—Machine for Cleaning Sheet Metal.—Edmund A. Harvey, Wilmington, Del. Patented April 4, 1865: I claim, First, Cleaning sheets of metal, by scrubbing and washing them, and preventing their being oxidized in consequence of moisture by afterwards subjecting such sheets to heat, and thus causing the moisture to be evaporated from their surfaces, substantially as described.

Second, The combination of the squeezing rollers, E, E, and a heater for quickly drying the sheets, substantially as described.

Third, In connection with the rotary or reciprocating brushes, G, G, and feed rollers, B, B, when arranged as to clamp the sheets between them for the purpose described.

Fourth, The reciprocating brushes, D, D, in combination with the feed rollers, B, B, when so arranged as to clamp the sheets between them for the purpose described.

Fifth, In machines for cleaning sheet iron as described, I claim, in combination with the rotary or reciprocating brushes, the guides, G, G, which form a throat for directing the sheet metal to the brushes.

2,117.—Sawing Machine.—F. W. Robinson, Richmond, Ind. Patented Sept. 5, 1865: I claim a drag saw in which the saw is rigidly attached to the saw bar, when said saw bar is provided with a slot at its rear end working upon or in guidessituated at or near the driving shaft.

2,118.—Refining Iron.—Christian Shunk, Youngstown, Ohio. Patented Feb. 12, 1866. Reissued May 31, 1864: I claim the refining of molten crude iron from the ore or the remelted pig metal, by the employment and the application of compressed air forced in combining with the carbon of the crude metal, and thereby decarbonizing or partially decarbonizing the same, and rendering it fit to mold into rods, or into a mass of malleable refined iron to make blooms for forging or rolling purposes and the use of common salt as a flux.

These claims I make jointly and separately.

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HENRIKSEN'S CHIMNEY TOP.—THOSE WHO have felt the annoyance of a smoky chimney, or the evils of imperfect draft, know what a vexation they are. My improved Chimney Top, illustrated in No. 22, present volume, of the SCIENTIFIC AMERICAN, will prove a complete cure for these troubles. It is now in use by some of the first hotels in San Francisco; also, in all of which it has given complete satisfaction. It is not an experiment, but an established article of manufacture. All orders for Rights to sell or manufacture in States should be addressed to B. A. HENRIKSEN, San Francisco, Cal. 22 4*

Improved Sheep-feeding Rack.

The object of this invention is to obtain a trough by which a number of sheep may be fed equally, so that each will have its proper share. Sheep eat very rapidly, and unless some plan is adopted to regulate the supply the strongest and foremost sheep will get more than their share. The trough here shown is believed to remedy this difficulty. It consists in having a hopper placed over and above troughs—one or two of the latter being used; also, in having the hopper constructed in such a manner that the grain or feed may be discharged therefrom, more or less rapidly, into the feeding trough or troughs, and equally distributed in them throughout their entire length. The details are as follows:—A represents a feeding trough, one on each side, supported at a suitable height by end pieces or any proper framing. These

within the scope of their movement by means of a pawl connected to them by a pivot, and having their lower ends engaging with a segment rack, as shown in Fig. 1. The device may be constructed with only one trough, A, and hopper, C, constructed with only one side, *b*, but the double form would be preferable. Thus by this simple device the feed troughs may be supplied with grain or feed gradually and evenly throughout, and the sheep equally fed. Patented July 11, 1865, through the Scientific American Patent Agency, by Milton Barnard, of Unionville, Chester Co., Pa. For further particulars address him at that place.

A Large Organ.

Messrs. E. and G. G. Hook, of Boston, Mass., have, in process of completion, a huge organ for the

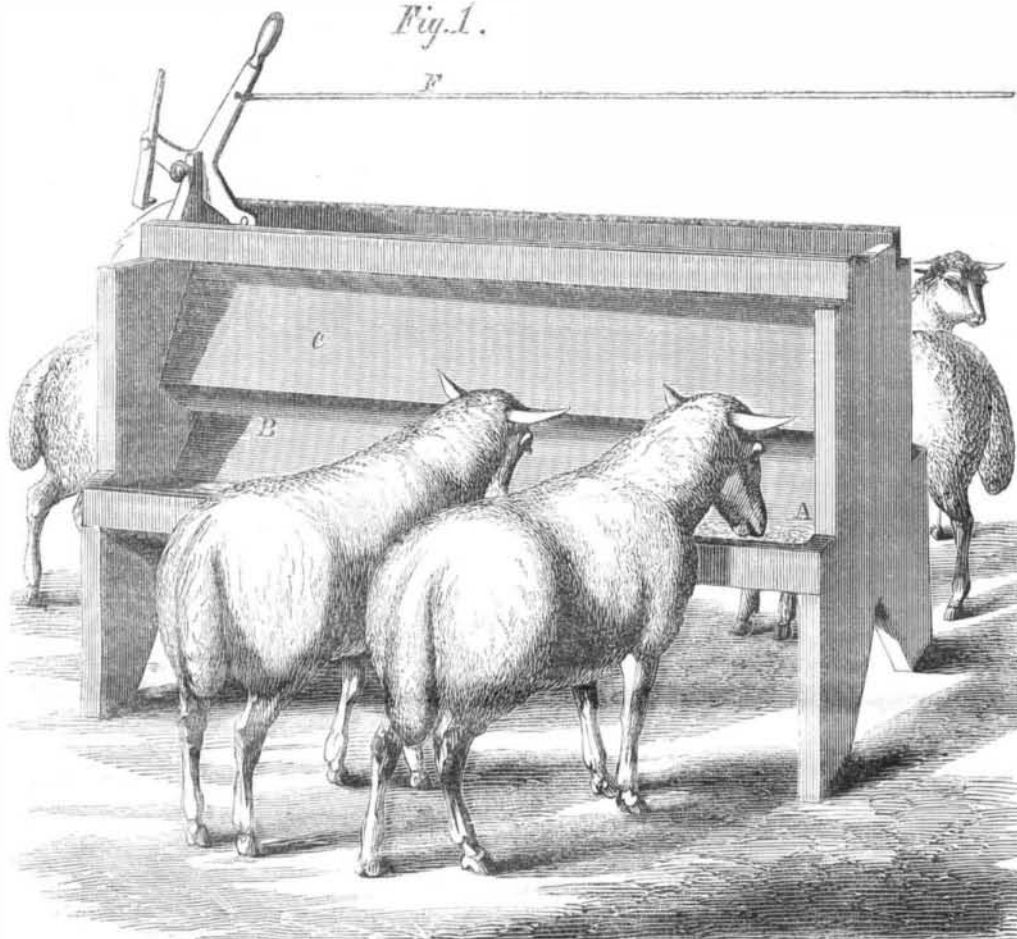
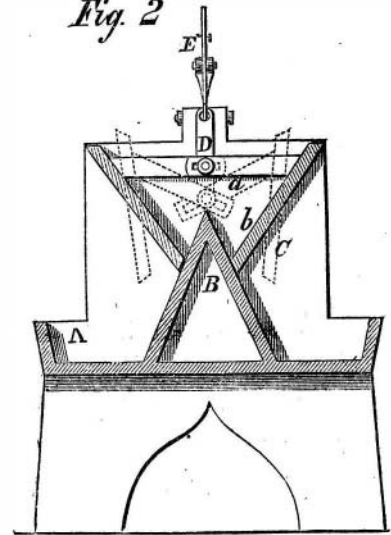
A figure holding a harp will crown the instrument, and from above each of the side faces will project in a ray shape the trumpets of the 'tuba mirabilis,' before referred to, bending forward so as to throw the sound over the audience.

"The organ is to have five bellows of different powers, so arranged as to regulate the supply of wind by the demand. The number of stops, counting the registers that work by pedals, is seventy-six; and here another improvement comes in for working the stops, that of the pneumatic levels, one to each stop. The pulling of the stop-key opens a valve, which lets the wind into the particular little bellows-lever attached to that stop, and that does the work of 'stopping' with quickness and certainty, with only a mere touch on the part of the operator. Still another improvement is a series of pneumatic levers for working the whole organ, so that here again the wind of the main bellows does the work in answer to the slightest touch of the artist on the keyboard. When it is understood that, on some great organs, a pressure of the finger equal to five or six or more pounds is required in some instances on a single key, when all the manuals and their connections are coupled, the value of this improvement will at once be seen."

Oxygen Gas.

The *British Journal of Photography*, describes a new method of producing oxygen gas, by J. F. Parker and Joseph Tanner, of Birmingham, England.

Fig. 2

**BARNARD'S SHEEP-FEEDING RACK.**

feeding troughs are divided by a partition, B, formed by two boards or planks, which are inclined and meet at their upper edges, as shown in Fig. 2. This partition extends a considerable distance above the troughs, A, and projects within the hopper, C, which is composed of two pivoted boards—one at each end of partition, B. The pivots of the sides, *b b*, are fitted in the pieces, which extend up above the troughs, and form the ends of the hopper as well as the ends of the trough. The sides, in consequence of being hung, or suspended on the pivots, may be adjusted so that their lower ends will be in contact with the partition, B, as shown in Fig. 2; or said ends moved out from B, as shown in dotted line in the same figure. In the former adjustment of the sides, *b b*, the hopper, C, is closed; in the latter adjustment it is open. The sides of the hopper are set by means of two arms, D, the outer ends of which are pivoted in the sides, the inner ends of the arms lapping over each other, each being slotted longitudinally, having a pin passing through the slots and through the lower end of an upright arm, D, which is fitted to a bent lever, E. It will be seen that by moving this lever, E, the sides, *b*, may be adjusted so as to open and close the hopper and let down the grain or feed into the trough in greater or less quantities, as may be desired, the same falling down the inclined sides of the partition, B, into the troughs. In case several of these devices are used, their levers, E, may be connected to a rod, F, so that the sides of all the hoppers may be adjusted simultaneously, and the levers, E, may be retained at any desired point

Plymouth Church, Brooklyn, of which the Rev. Henry Ward Beecher is the pastor. This organ is to cost \$25,000, and is thus briefly described by the *Boston Traveller*:—

"Several new features are to be introduced into the organ which have never before been brought into use in this country, the chief of which is the 'tuba mirabilis,' a reed stop of large scale, voiced on a very high pressure of wind. A gentleman who heard this range of pipes tried on an organ in England, says the effect was tremendous, and that in the grand chorus at an oratorio it overleaped and overpowered the combined efforts of the full organ and several hundred singers and instruments. It was beyond his power to describe. The Messrs. Hook have the exclusive control of the patent for this improvement for America.

"The organ is to stand behind the pulpit, and to occupy the whole space from the cellar floor to the ceiling of the church. In the cellar will be the hydraulic engines which are to work the organ; on the floor of the church, and rising to the height of, and behind, the pulpit, will be the bellows chamber; and from the pulpit level, forty feet upward, will rise the magnificent front of the instrument itself, the massive pipes of silver hue and the wood work polished black walnut. The breadth will be twenty-seven feet, and the depth twenty-one feet.

"The front is to be in the Palladian style of architecture, a name derived from that of Palladio, an Italian architect. It will be simple, elegant, and dignified, with nothing of the grotesque about it.

They heat quick lime to redness, with access of air and constant stirring, in order to expel any carbonic acid or moisture that it may contain. Of this prepared lime two parts are mixed with one part of nitrate of soda, by weight. Expose to a bright red heat in a retort. A large quantity of oxygen will be evolved, which must be passed through water before introduction into the gas holder, in order to absorb any nitrous acid which may be formed. By adding one part of nitrate of soda to the residuum, and exposing to heat as before in the retort, a fresh quantity of oxygen can be obtained.

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