on a boom projecting from the bow of his own vessel he can place it under the bottom of any hostile craft, provided his own vessel is swift enough, and is not destroyed before he can get in proper position.

The apparatus for handling the torpedo by which the *Albemarle* was destroyed was designed by Chief Engineer, Wm. W. Wood, of the navy. It was rigged on the bow of a small steam launch, and seems to have been so arranged that the torpedo could be lowered into the water when the hostile craft was approached.

The *Albemarle* was an enormous iron-clad ram, said to be far more powerful than the *Merrimac* or the *Tennessee*. She was lying in the Roanoke river, at Plymouth, surrounded by a crib of logs arranged to protect her from rams and torpedos.

The desperate enterprise of attempting the destruction of this great ship of war with a launch and 13 men was undertaken by Lieut. W. B. Cushing, of the navy. Selecting a dark, stormy night he proceeded silently up the river between the enemy's pickets, and driving the bow of his vessel among the logs that surrounded the *Albemarle*, he lowered the boom and by a vigorous effort pushed the torpedo under the overhang of the ram and exploded it. At the same instant a shot from the enemy on shore crushed through his little boat and demolished her. Calling to his men to save themselves, he jumped overboard and swam ashore. After hiding in the swamp through the day, he fortunately suceeeded in finding a skiff, and reached our fleet at 11 o'clock the following night.

Never before in the history of warfare has there been a naval battle at such odds as this. The *Albemarle* is the second great rebel ram that has been disabled by a single shot.

ISSUED FROM THE UNITED STATES PATENT-OFFICE

FOR THE WEEK ENDING NOVEMBER 8, 1864.

Reported Officially for the Scientific American.

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

44,924.—Gang Plow.—S. H. Adams, Coulterville, Ill.:

I claim, first, Pivoting the forward ends of the plow beams, E E, to a slotted lever, D, and supporting the rear portions of said beams upon a slotted lever, D′, both levers, D and D′, being capable of receiving a lateral or endwise adjustment, substantially as and for the purposes described.

Second, The combination of the intermediate beam, G, lever, D, and hinged plow beams, E E, with the adjusting lever, J, substantially as described.

Third, The laterally and vertically adjustable levers, D D′, pivoted to the supporting frame, A B, and adapted to form a forward pivot connection and a rear support for the plow beams, substantially as described.

Fourth, The vertical guides, e e, applied to the laterally adjustable lever, D′, in combination with the pivoted plow beams, E E, and lever, D, substantially as described.

44,925.—Spring.—Henry A. Alden, Matteawan, N. Y.:

I claim, first, The employment of concavo-convex plates fitted in pairs upon a spindle or axle, in such manner as that the convex and concave surfaces shall be opposite, in combination with perforated vulcanized india-rubber disks mounted upon said spindle, when interposed between the said plates and enclosed within their concavities, substantially as set forth.

Second, In combination with concavo-convex plates fitted upon a spindle, as described, I claim indenting the plates along their circumference in such manner as to increase their elasticity to compression from the center towards the circumference, substantially as set forth.

Third, In combination with concavo-convex plates fitted upon a spindle and indented along their circumferences as described, I claim the use of vulcanized india-rubber disks interposed between said plates, in the manner and for the purpose set forth.

Fourth, In combination with concavo-convex plates indented along their circumferences and fitted upon a central spindle, I claim the mode herein described, or its substantial equivalent, of locking the plates constituting a pair, in the manner and for the purpose set forth.

44,926.—Instrument for making Cigarettos.—Louis L. Arnold and Francis X. Hazman, New York City:

We claim, first, The machine for making cigarettes, substantially as herein described, the same consisting of a suitable hinged frame containing rollers, in combination with an endless band when the same is coated with vulcanized india-rubber so as to impart rolling friction with yielding pressure, substantially in the manner and for the purposes set forth.

Second, In combination with an endless band and two rollers hung in a hinged frame, as described, we claim making the said frame of a skeleton form, substantially in the manner and for the purposes set forth.

Third, We claim the combination of rollers, vulcanized india-rubber band, and skeleton frame, the whole being constructed and arranged for operation substantially in the manner herein set forth.

44,927.—Buckle.—Isaac Bannister, Newark, N. J.:

I claim the holding-bar, a, or its equivalent, when placed in the position, and for the purpose specified.

44,928.—Mode of uniting Metallic Surfaces.—Wm. B. Barnard, Waterbury, Conn.:

When a metallic rivet, screw, or screw socket is covered or partially covered by an envelope or coating of india-rubber, paint, or other suitable insulating material, I claim combining such insulated rivet, screw, or screw socket, with a metallic plate, by inserting it in a simple cavity in said plate, and then securing it therein by means of the punch, A, formed and employed as herein set forth.

44,929.—Machine for nailing Boxes.—C. Baur and W. C. Munder, Newark, N. J.:

We claim, first, The employment or use of a rotating nail-carrier in combination with a reciprocating nail-driver and suitable table supporting the boards or boxes to be nailed, substantially in the manner and for the purpose specified.

Second, Making the nail-driver, with a shoulder, k, substantially as and for the purpose set forth.

Third, Depressing the belt, E, by the automatic action of the machine, substantially as and for the purpose described.

Fourth, The automatic feed mechanism in combination with the nail-carrier and nail-driver, constructed and operating in the manner and for the purpose substantially as herein specified.

44,930.—Apparatus for compressing Air Gas, etc.—Salmon Bidwell, Philadelphia, Pa.:

I claim a series of barrels of different diameters provided with pistons and valves, and arranged and operating in union with each other, substantially as herein described, so that the elastic fluid compressed in the larger barrels shall pass directly into the smaller barrels, to be there further compressed, as set forth for the purpose specified.

44,931.—Hydraulic Indicator.—Robert D. Bradley, Preston, Md.:

I claim, first, The float, B, slide, B′, arm, C, and lever, D, employed in connection with the indicator, E, substantially as and for the purpose set forth.

Second, The employment of a spring, F′, and wheel, F, operating in connection with the float, B′, to turn the cam, G′, and operate an alarm apparatus, in the manner explained.

Third, The cross heads, M, and wires, I I′, employed in combination with a float and indicator, as and for the purpose set forth.

[This invention is of great value to persons interested as to the light of water in streams, etc. It consists essentially in the employment of the alarm mechanism of a clock in connection with a float.]

44,932.—Take-up of Circular Knitting Machines.—Henry Brockway, Cohoes, N. Y.:

I claim, first, The combination with the stationary cam, B, and take-up roll, D, of the levers, E and j, pawl, k, ratchet wheel, l, gears, g f, shaft, d, endless screw, c, and worm wheel, b, the whole applied and operating, substantially as herein specified, to produce the movement of the said roll, substantially as herein specified.

Second, The shaft, y, with its arm, y2, and crank, 5, the link, 6, or its equivalent, and the lever, x, applied in combination with each other and with the frame, H, ratchet wheel, l, pawl lever, j, and cam lever, F, substantially as and for the purpose herein set forth.

44,933.—Faucet.—John Broughton, New York City:

I claim, first, The arrangement of the rotating disk valve, F, working in the interior of the supply chamber in combination with the elastic seat, n, spindle, H, and handle, substantially as described.

Second, The employment of the spring, O, to keep the valve in contact with its elastic seat, independent of the pressure of the fluid when arranged in conjunction with the spindle, H, the discharge chamber, B, and the handle, J, substantially as described.

44,934.—Fire Escape.—Richard Chandler, New York City:

I claim the arrangement and combination of the devices, A C E F and H, when arranged, combined, and operated as herein described, and for the purposes set forth.

44,935.—Mowing Machine.—Alzirus Brown, L. G. Kniffen, and Thomas H. Dodge. Worcester, Mass.:

We claim in combination with the ratchet quadrant sheave, T, the self-acting pawl, l, when applied, constructed, and operated substantially as and for the purposes described.

44,936.—Trunk.—E. S. Clapp, Montague, Mass.:

I claim, first, The combination of a trunk, or its equivalent, with wheels for transporting it, so arranged as to be concealed within its outside walls when at rest, substantially as described.

Second, I also claim constructing trunks for transporting baggage and other goods, with cavities to conceal wheels and their necessary connections, which can be projected from and returned within their cavities by means of one of the handles of the trunk, substantially as above described.

[This invention consists in so constructing an ordinary trunk as to make it capable of being transported upon self-contained wheels, which are concealed when the trunk is at rest, and projected from its sides when it is about to be moved, so that it may be wheeled after the manner of a cart to the desired point, thereby saving the labor of lifting it and the expense of porterage.]

44,937.—Unloading Grain from Cars.—Eliphalet M. Clark, Detroit, Mich.:

I claim, first, A shovel or scraper, N, attached by a cord or its equivalent to a drum, B, rotated by any suitable power and adapted to be automatically thrown out of gear as the shovel approaches the end of its stroke, substantially as herein described.

Second, I claim the hinged or swinging frame, L, employed in combination with the shovel, N, and drum, B, substantially as and for the purposes set forth.

Third, I claim the automatic clutch movement, C D F G H, operating in combination with the aforesaid shovel, N, drum, B, and cord, T, substantially as specified.

44,938.—Composition for Pavements, Roofing, etc.—Joseph Clarke, Syracuse, N. Y.:

I claim the manner herein described of making and laying composition pavements, roofs, and floors.

44,939.—Spring-brim Hat.—Smith Collins, New Haven, Conn.:

I claim a hat constructed of flexible material, its rim extended and form retained by means of one or more concavo-convex or corrugated steel hoops, substantially as and for the purpose herein set forth.

44,940.—Artificial Lump Coal.—Richard Covert, Brooklyn, N. Y.:

I claim, as a new article of manufacture, the artificial lump coal consisting of coal dust, asphaltum, and petroleum, mingled by heat and stirring and aggregated by pressure, as herein before described.

44,941.—Cork Hat.—A. C. Crondal, New York City:

I claim a cork hat made of prepared cork, as herein shown and described.

44,942.—Grinding Mill.—Henry P. Crouse, Hartland, Mich.:

I claim a shoe for the hoppers of mill stones, provided with a screen, B, having a partition or barrier, g, attached to it with openings or notches, h h, in its lower edge, in connection with the opening, a, in the bottom of the shoe, and the opening, i, in the front end d the same, ad either with or without the oblong spout, b′, substantially as described.

44,943.—Bee-hive.—Jacob and Henry A. Earhart, Campbellstown, Pa.:

We claim the construction of a hive with the two doors, A B, shelf, F, drawers, E, glass slide, K, cross piece, G, and slats, 1 2 3 4, when these several parts are arranged relatively to each other, and to the hive, specifically in the manner shown and described.

44,944.—Composition for flocking Cloth, Paper, etc.—Amelie Erhard, New York City:

I claim the mixing of the several powders, substantially as above described, with the flocks and the application of the same to the varnished tissue, thus producing the beautiful appearance which the cloth velvet presents, and which combination has never before been known or used.

44,945.—Machine for raising Sheet Metal Pans.—Henry Facks, New York City:

I claim the tilting platform, E, applied in combination with the dies, C, in the manner and for the purpose substantially as herein shown and described.

44,946.—Polishing the Soles of Boots and Shoes.—Othniel Gilmore, Raynham, Mass.:

I claim combining with the polishing or leveling roll or tool a rocking jack for turning the shoe under the action of the roll, substantially as set forth.

And I claim so arranging the jack carriage and the mechanism which impels the polisher, that the polisher has a reciprocating movement but partially over the surface to be polished, while the carriage is fed forough this plane of movement, substantially as described, to bring the entire length of surface to the action of the polisher.

44,947.—Pendulum Sight for Ordnance.—Wm. F. Goodwin, New York City,

I claim, first, A pendulum sight consisting of graduate standards, F F, supported upon a point, D, resting in a cavity, b, in a bracket, B, projecting from the rear of the gun, as herein set forth.

Second, I claim the combination of the arms, H H, with the standards, F F, weight, G, and bracket, B, all constructed, arranged, and operating substantially as and for the purposes specified.

Third, In combination with the graduated standards, F F, and notched slides, S, I further claim the additional graduated extension bar, I, provided with a sighting notch or aperture, l, at its upper end, as described.

Fourth, I claim the pressure rod, g, adapted to operate substantially as and for the purposes described.

Fifth, In combination with a gravitating or pendulum sight and spirit level, M, I claim the tube, N, and outer casing, O, arranged and applied as described.

44,948.—Making Paper Collars.—Allen F. Gray, Boston, Mass.:

I claim a paper collar in which the finished form is given by treatment of the neck band, substantially as set forth.

44,949.—Bee-hive.—Henry A. Hannum, Cazenovia, N. Y.:

I claim the combination and arrangement of the removable angular side, b′ b″, slide, D, and rigid slide, b, of the hive, in such a manner that the interior of the bottom of the hive may be opened, and a lighting board formed for the bees, and a space formed to retain the slide by the angular position of said sides and without the danger of clogging by filth, substantially as herein set forth.

44,950.—Grinding Mill.—C. A. Harper, Canterbury, N. H.:

I claim the arrangement of the bolting chest, Z, reel, X, temper screw, O, main shaft, y, and feed regulator, C, when constructed and operating substantially as described.

44,951.—Machinery for oiling Wool.—George Shaw, Harwood, Newton, Mass.:

I claim, first, The method herein described of oiling wool whilst being fed to a carding or other wool-preparing machine by means of an apparatus attached to and working in unison with said machinery and operating as set forth, by showering or dripping the oil or lubricating compound upon the wool, either directly or through the intermediary of a pressure roller.

Second, The method herein described of oiling wool whilst being fed to a carding or other wool-preparing machinery by means of an apparatus attached to and working in unison with said machinery, and operating as set forth, by first agitating and then showering or dripping the oil or lubricating compound upon the wool, either directly or through the intermediary of a pressure roller.

Third, The method herein described of oiling wool whilst being fed to a carding or other wool-preparatory machinery by means of an apparatus attached to and working in unison with said machinery, and operating by applying the oil or lubricating compound upon the wool in parallel and equidistant lines, substantially in the manner and for the purpose set forth.

Fourth, In combination with carding or other wool-preparing machinery I claim an apparatus for oiling the wool whilst being fed to said machinery, the same consisting of a revolving perforated cylinder arranged for action, substantially as set forth.

Fifth, I claim the combination of a revolving perforated cylinder with internally projecting arms or other means for agitating the oil or lubricating matter before being dripped from the cylinder, substantially as set forth.

Sixth, I claim the revolving oiling cylinder when provided with holes arranged in rectilinear series, in the manner and for the purposes set forth.

44,952.—Machine for preparing Moldings.—Gustave Henze, New York City:

I claim, first, The box, E, provided with a jacket, F, for steam or hot water, and applied in combination with the guide ways, C, and scraper, G, in the manner and for the purpose substantially as herein shown and described.

Second, The endless carrying belt, C′, in combination with the box, E, and scraper, G, constructed and operating substantially as and for the purpose set forth.

Third, Giving to the scraper a beveled edge with flanges projecting over the sides of the molding, substantially as and for the purpose specified.

44,953.—Revolving Fire-arm.—Freeman W. Hood, Worcester, Mass.:

I claim, as my invention, the application of the waste cartridge or shell discharger, E, to the spindle, D, of the magazine, substantially in manner and so as to operate therewith as described.

And in combination with the spindle, D, the discharger, E, and the series of detachable cartridge tubes or carriers, a a a a, etc., combined together and with the barrel and the rotary magazine as set forth, I claim the latching mechanism, so arranged as to serve the double purpose of retaining the cartridge cases and locking the spindle, substantially as explained and represented.

44,954.—Machine for cutting Threads in Nuts.—Wm. W. Hubbard, Philadelphia, Pa.:

I claim, first, A series of taps arranged in a circle, and caused to revolve round the center of the same and round their own axis.

Second, The plate, J, with its chucks, 7, and the dove-tailed recesses in the same, in combination with the said revolving taps.

Third, The combination of the spindles and their taps with the adjustable reservoir, G.

Fourth, The plate, q, arranged beneath the plate, J, substantially as and for the purpose set forth.

Fifth, The plate, H′, with its inclined teeth, tubular projections, r, and spindles, w, in combination with the worm, U.

Sixth, The pinion, T, on the shaft, P, the bevel wheel, N, and cog wheel, M, and sleeves, K, with their pinions, t, the whole being arranged and operating substantially as set forth.

Seventh, The shaft, C, with its wheels, f and h, adapted to each other, as set forth, in combination with the spring treadle, E.

44,955.—Corn Planter.—William G. Kenedy, Greenfield, Ind.:

I claim a seed-dropping or seed-distributing device composed of a slide, O, elastic cut-off, Q, a valve, H, and a spring, L, all arranged and applied so as to be actuated by the driver at the rear of the machine, substantially as set forth.

I further claim the guards, G, when arranged and applied to the machine in relation with the shares, D F F, to operate as and for the purpose specified.

44,956.—Harvester.—M. C. Kilgore, Washington, Iowa:

I claim, first, The box or chamber with its lever and arm and hooks or arms of the shaft, u, for receiving and dropping the grain or sheaf, arranged and operating as set forth.

Second, The horizontal and inclined aprons in combination with the box or chamber having a movable bottom, and with the hooks or arms of the shaft, u, arranged and operated substantially as described.

44,957.—Tool for Watch-repairers.—E. M. Kimball, Toledo, Ohio:

I claim, first, The screw holder consisting of a plate having a system of holes arranged substantially as herein described, for the reception of the screws of a watch, for the purpose herein set forth.

Second, Constructing the said screw-holder with a central foot or pedestal, with a central hole or socket, 14, substantially as and for the purpose specified.

44,958.—Detachable Metal Button.—Thomas Kirk, Waterbury, Conn.:

I claim a button with a detachable eye, which is held to the button by pressure from within the button, substantially as above described.

[This invention consists in constructing a button so that the eye can be detached therefrom and again applied thereto at pleasure, being held in place in the button by spring pressure.]

44,959.—Ventilator.—S. H. Laman, Willoughby, Ohio:

I claim the special arrangement of the adjustable sections, A and B, and annular chamber, C, and when used in combination with the ventilator, h', and register, H', as and for the purpose set forth.

44,960.—Spring Mattress.—Samuel P. Kittle, of Brooklyn, N. Y.:

I claim, first, The hinging or pivoting the box which contains the springs at two points on each side, at the discance apart of twice the thickness of the stuffing, so that the parts of the box which are folded together may be parallel to each other, the stuffing being inclosed between them, substantially as and for the purpose set forth.

Second, The hinging or pivoting the box which contains the springs at the central point of each side, so that the parts of the box which are folded together may be parallel to each other, the thin covering or stuffing being between them, in combination with the braces or strengthening pieces, P or Q, substantially as and for the purpose set forth.

Third, Combining the central portion of the double hinge, C, or its equivalent, with the ticking of the mattress, in the manner described; that is to say, the said ticking being gathered at each of the joints of said hinge, and secured to and along the middle section thereof, substantially as set forth.

Fourth, The combination and arrangement of the catch, N, with the adjacent slats, F and F, of the box, A, substantially as and for the purpose set forth.

44,961.—Device to Prevent Slipping on Ice.—William R. Landfear, of Hartford, Conn.:

I claim the employment of the elastic band, having connected with it the gritty or frictional substance, to be worn upon the boot or shoe, for the purpose of preventing slipping upon icy or other surfaces, as herein described and set forth.

44,962.—Spring Bed Bottom.—Henry Lathrop, of Utica, N. Y.:

I claim the tracks or ways made in or through, or secured to the frame or box, and the mode of connecting the outermost springs in a bed bottom, seat or other article to the ways or tracks so provided by means of slides, loops or rings, or in any other way, substantially the same which will freely pass or move along the tracks as the action of the springs may require, the whole being arranged as and for the purpose set forth.

44,963.—Pumps.—Edwin Lawrence, of Antrim, N. H.:

I claim the combination of the cylinder with the wings, or piston with flanges, with openings through the shaft, and the double partitions with openings through, and valves upon them, as hereinbefore substantially set forth.

44,964.—Clothes Dryer.—Lorenzo Ling, of Pulaski, N. Y.:

I claim the slides, C, on the arms, B, provided with the recesses, f, in combination with the points or spurs, e, the ends of the flanges, a, of the head, A, and the shoulders, g, on the upper edges of said flanges, all arranged substantially as and for the purpose herein set forth.

[This invention relates to an improvement in that class of clothes-dryers which are composed of adjustable revolving arms, having a line or lines attached. The invention consists in an improvement in the metal head to which the arms are attached, and in using in connection with the head a slide on each arm, all being constructed and arranged in such a manner that the arms will be locked automatically when adjusted, in both an unfolded or working position, and in a folded position, and each arm allowed to work or fold and unfold independently of the others.]

44,965.—Apparatus for Descending Gradients.—Sylvester Marsh, of Chicago, Ill.:

I claim coupling one or more wheels of railway carriages, locomotives or other wheeled vehicle or apparatus with a movable piston or diaphragm of a cylinder filled with air or other more or less elastic fluid, in combination with valves or other equivalent means for regulating the egress from and ingress to, or the displacement in the said cylinder of the contents thereof, substantially as and for the purpose herein set forth.

44,966.—Hot-Air Engines.—Thomas McDonough, of Middletown, Conn.:

I claim the combination of the heaters and coolers with the plunger, by means of which the increased power is utilized, substantially as described.

44,967.—Portable Fence.—Ashley H. Palmer, of Skaneateles, N. Y.:

I claim the use of the stake, B, in combination with the post, A, substantially as and for the purpose described.

I claim the stake, B, in combination with the loop, C, and post, A, when arranged and constructed as herein described.

Also the chamfering the ends of the boards or which enter the posts, substantially as and for the purpose described.

44,968.—Coupling Whiffletrees.—Milton J. Palmer, of Homer, N. Y.:

I claim the arrangement of the flanges, F and G, in combination with the pivot, E, the nut, I, the standards, A B C, the screws, S S, in the manner and for the purposes set forth.

44,969.—Plowing Machine.—Jabish Pierce, of Wyanet, Ill.:

I claim, first, The combination of the plow, F F', clevises, G G', and axle, D, with the frame, A, axle, D', seal, M, and wheels, B, substantially as and for the purposes set forth.

Second, The combination of the lever, H, link, J, clevis, J', and pin, K, the whole being employed in the manner and for the purposes herein specified.

[This invention relates to a method of employing a common plow, in combination with a wagon frame having a seat for the attendant, the object being to provide means whereby weak or infirm persons may be enabled to cultivate the soil in an effectual manner, without being subjected to the fatigue which results from the management of the ordinary plow.]

44,970.—Thermo-Circulating Ventilator.—Isaac Pitman, of Providence, R. I.:

I claim the circuitous circulation of the air of an apartment, from the floor of the same through a heated air chamber, by entering at the bottom of said chamber and passing through in a continuous current, without contact with any falling or counter current, back into said apartment again, for the ultimate purpose of ventilation at a low point of altitude, close to the floor, by the uniform temperature acquired in consequence of the complete circulation of the air, in the manner and by the means herein described.

The ventilation of an apartment at a low point of altitude by a ventilating aperture at or near the floor, in combination with the circuitous circulation of the air by the means and in the manner described herein.

44,971.—Gang Plow.—George Quinn and Lorenz Berkel, of Smithson, Ill.:

We claim, first, The combination of the vertically-adjustable bar E pivoted bar, F, and laterally-adjustable pivoted connections, G e, with the plow beams, H H, all arranged and operating substantially as described.

Second, The combination of the sector-plate supports, G G, with plow beams, H, which are capable of being expanded or contracted laterally, substantially as described.

Third, Securing the axle of the rear-supporting wheel, J, to a lever, h, which is connected to a sector, j, by means of a rod, k, the whole operating substantially as described.

44,972.—Apparatus for Supporting the Pneumatic Springs of Railroad Cars.—S. G. Randall, of New York City:

I claim the combination of an air pump, F, with the platform, A, of a locomotive tender or car and with the boiler, G, and air springs, E, constructed and operating substantially as herein specified, so that the air springs can be supplied with air by the action of steam derived from the boiler, whether the engine or car be in motion or not.

[The object of this invention is for the purpose of keeping the air springs of locomotives and Railroad cars supplied with air, in such a manner that it can be operated by the direct action of the steam from the boiler of the locomotive, whether the train be in motion or not, in contradistinction to an apparatus for the same purpose, the operation of which depends upon the motion of the train, and which will not operate when the train stands still.]

44,973.—Artificial Millstone.—Christopher Rands, of Englewood, N. J.:

I claim an artificial millstone, produced as herein described, as a new article of manufacture.

[This invention consists of a millstone made of hard or insoluble glass, mixed with emery or other similar material, and cast or pressed in a suitable mold, or formed in any other desirable manner, so that by the action of the emery the grinding surface of the stone is prevented from working smooth, and a millstone is obtained which will work for any length of time without being recut or dressed.]

44,974.—Snuff Sifter.—S. G. Rice, of Albany, N. Y.:

I claim, first, The combination of a free breaker with a screen or sieve, substantially as and for the purpose set forth.

Second, The constructing of the free breaker of longitudinal and transverse bars, in such manner that in its vibration over the screening surface the whole of such surface shall be traversed, substantially as described.

Third, Constructing the free breaker of segment form on its under side in a transverse direction, substantially as and for the purpose set forth.

Fourth, So constructing a free breaker and using it in a vibratable sieve or screen that it will traverse the screen longitudinally and laterally, and also rock or roll transversely, substantially as set forth.

44,975.—Machine for Dressing Tobacco.—Saml. G. Rice, of Albany, N. Y.:

I claim, first, A machine for dressing fine-cut or cut tobacco, when adapted for giving a tossing motion to the tobacco, substantially as herein described.

Second, The employment of shelves, D D, in a box, A, arranged and adapted for dressing tobacco, in combination with a sliding frame or frames, C C, substantially as described.

Third, The employment of a covering or bag, c, or its equivalent, in combination with alternately rising and falling shelves, D D, substantially as described.

Fourth, The employment of flexible strips, g g, or their equivalent, in combination with movable shelves, D D, substantially as and for the purposes described.

44,976.—Latches.—Saml. M. Richardson, of New York City:

I claim so constructing the ordinary lockplate with an opening receiving the movable section, l, in combination with the reversable latch, constructed substantially as specified, whereby access is allowed to the latch without uncovering the other parts of the lock, as set forth.

44,977.—Knob Latches.—Saml. M. Richardson, of New York City:

I claim the plate, l, to hold the parts of the lock in position, in combination with the reversible latch and the cap plate, n, as set forth.

44,978.—Pumps.—Philip C. Rowe, of Boston, Mass.:

I claim the employment or use of the two chambers, C C, elastic diaphragm, D, in connection with the induction and eduction passages, e e', communicating with the induction and eduction tubes, H I, provided with valves, g i, and all arranged to operate substantially as and for the purpose herein set forth.

44,979.—Water Coolers.—James C. Sloan, of Camden, N. J.:

I claim the combination of the cock, E and F, and levers, G H and J, with a water cooler, substantially as described.

44,980.—Adjustable Atmospheric Fountain Feeder for Ruling Machines.—Addison Smith, of Perrysburg, Ohio:

I claim a series of adjustable reservoirs, of any shape or material, with atmospheric fountain feeders, each containing a colored ruling fluid (to be attached to ruling machines) for the purpose of ruling colored lines

44,981.—Dampers for Stovepipes.—Gilbert E. Smith, of Racine, Wis.:

I claim the combination of the two circular plates, B C, provided with the openings, c c, and the central opening in B, with the slide, D, or its equivalent, and the rod, d, arranged and operating as shown and described.

44,982.—Sewing Machines.—Earle H. Smith, of Hudson, N. J., and Daniel C. Chapman, of New York City:

We claim the described combination and arrangement of mechanism, or the equivalent thereof, as set forth, wherein the movements of the needle and shuttle are caused to take place with respect to each other, so as to manipulate the threads, in the manner and for the purpose specified

44,983.—Dumping Carts.—R. A. Smith, of Philadelphia, Pa. Ante-dated Oct. 25, 1864:

I claim the body, A, formed, hung to the wheels, and connected to the shaft, all substantially as and for the purposes herein set forth.

44,984.—Cotton Seed Planter.—Basil Spencer, of Lewisburg, Pa.:

I claim the arrangement, construction and combination of the devices, G I J K S and U, as herein described and for the purposes set forth.

44,985.—Vegetable Steamer.—Elias Stangeland, of Rochester, Minn.:

I claim a steamer for agricultural purposes, constructed substantially as above described, containing a perforated pipe, extending from its top to its bottom, a perforated false bottom, D, and perforated bottom, a, and gate, d, closed by a slide, f, or their several equivalents.

[The object of this invention is to produce an apparatus for cooking food for cattle by steam, which can be used for many different substances, and can be made at a small cost.]

44,986.—Method of Decomposing and Desulphurizing Ores.—Robert Spencer, of New York City:

I claim, first, The within-described process of treating ores, consisting in heating, quenching, grinding and amalgamating, substantially as described.

Second, Precipitating the heated ore directly from the kiln into a bath of acidulated liquid previously to the grinding operation, substantially as described.

44,987.—Spring-back Chair.—Robt. H. Staples, of Lowell, Mass.:

I claim the backs of chairs mounted on pivots, in combination with the springs, substantially as described and for the purposes set forth.

44,988.—Self-oiling Spindle Bolster for Spinning Frames.—Erastus N. Steere, of Providence, R. I.:

I claim, first, The annular chamber, formed by cupping out the rail, in combination with the bearing of a spindle bolster, substantially as described.

Second, I claim, in combination with an annular chamber surrounding the bearing of a spindle bolster, as described, a suitable flange or cap, i, as a cover for the same, substantially as described, for the purpose set forth.

Third, I claim the channel or reservoir, H, in combination with a spindle bearing, substantially as described, for the purpose specified.

44,989.—Ore Crushers.—James D. Whelpley, of Boston, Mass.:

I claim the employment of a whirling table, H, provided with radial blades or cutters, J, and forming a bottom to the cylinder in which it revolves, in combination with the flange, h, the inclination, t, and the curvature, s, all constructed and arranged substantially as set forth.

44,990.—Grinding Mills.—James D. Whelpley and Jacob J. Storer, of Boston, Mass.:

We claim, first, The employment of an adjustable valve, f, in a return pipe, V, for regulating the quantity and quality of the yield, substantially as described.

Second, The employment of the trap door, i, the grooved cylinder, H, the spring plate, b, the slide or cover, e, and the beaters, M, in combination with a grinding mill, all constructed and arranged substantially as set forth.

Third, In troducing steam into the collecting chamber, fan-blower, or any part of the mill, for the purpose described.

44,991.—Breech-loading Firearm.—Eli Whitney, of New Haven, Conn.:

I claim, first, So constructing a breech-loading firearm that the breech of the barrel shall be exposed for receiving the charge, and again tightly closed by giving a horizontal (or nearly so) lateral-swinging movement to a pivoted breech check, which has no endwise play, substantially as described.

Second, So applying a laterally-swinging breech check to a breech-loading gun, that when closed it constitutes the upper portion of the neck of the stock, substantially as described.

Third, In a breech-loading arm having a horizontal, laterally-swinging breech check, I claim applying the hammer, hammer spring and check, or their equivalents, to said check, and operating these portions of the lock by means of a trigger applied to the frame, B, substantially as described.

Fourth, In a breech-loading arm, having a horizontal laterally-swinging breech check, I claim the use of a cartridge-case retractor, arranged and operating substantially as described.

Fifth, In a breech-loading arm, having a horizontal laterally-swinging breech check, I claim the slot, s, in said piece, in combination with the slide, b', and retractor, b, substantially as described.

Sixth, In a breech-loading arm, having a horizontal laterally-swinging breech check, C, I claim the employment of a spring latch, e f, or its equivalent, for locking said check in place, substantially as described.

Seventh, Half-cocking the piece, both in the act of opening and closing the breech piece, C, by means of the double-beveled surface, p, substantially as described.

44,992.—Draft Regulators for Steam Boilers.—H. N. Winans, of New York City:

I claim an improved diaphragm, as at a', constructed and arranged substantially as within-described, and for the purposes set forth.

44,993.—Knapsacks.—Oliver Evans Woods, of Philadelphia, Pa.:

I claim, first, A framed knapsack so constructed that the webbing or any articles placed therein will project beyond and around the edges of the frame, to protect the back of the soldier from injury, as explained.

Second, I claim the corner pieces, a a, for permitting the articles contained within the blanket side of the knapsack to be shifted vertically, in the manner and for the purpose explained.

Third, I claim the partition, C C, constructed in any suitable manner, and employed to adapt the articles to be more readily packed and retained in the compartment, A, as described.

Fourth, I claim the adjustable bolts, e' e', whereby the knapsack straps may be shifted to any position, laterally, so as to make them fit the shoulders of the wearer, as stated,

Fifth, I claim the balance loops, H, arranged and employed in the manner and for the object specified.

Sixth, I claim suspending the haversack, D, from the knapsack by means of the hooked straps, d d, or their equivalent, substantially as and for the purposes herein set forth.

Seventh, I claim the straps, E, so constructed that either may be detached and applied adjustably to the haversack, when the latter is to be carried alone, as described.

44,994.—Artificial Fuel.—John H. Cornell (administrator of Jonn Cornell, deceased, assignor to Charles Noble), of Brooklyn, N. Y.:

I claim producing fuel by incorporating the dust or waste of anthracite, bituminous and other coals with a solution of dextrine or starch, and pressing or otherwise forming the composition into lumps or blocks, which are subsequently dried, all as herein set forth.

44,995.—Breech-loading Firearm.—Joshua Gray, of Medford, Mass., assignor to himself, E. H. Eldridge, of Boston, Mass., S. S. Bucklin, of Providence, R. I., and W. G. Langden, of Malden, Mass.:

I claim, first, the combination and arrangement of the breech pin, C, and sliding carrier, B, with the swinging arm, M, the trigger guard lever, H, and its link, I, substantially as shown and described.

Second, A stop or projection, U, at the end of the magazine, or entering the same, for the purpose of retaining cartridges in the magazine, when it is required to use the rifle as a breech-loader, or to extract a charge.

44,996.—Harvesting Machine.—Isaac Hawley, Pekin, Ill., and Daniel S. Stafford, Decatur, Ill., assignors to themselves and S. E. Barber & S. F. Hawley, Pekin, Ill.:

I claim the box, D, provided with a door, d, and applied to the apron frame, C, in connection with a cord or chain, E, all arranged to operate in the manner substantially as and for the purpose herein set forth.

[This invention relates to a new and improved gavel-discharging device to be applied to those harvesters which are provided with end less aprons for discharging the cut grain. The object of the invention is to obtain a simple and economical device which will receive the cut grain from the endless apron and admit of having the grain discharged from it at suitable intervals and in proper sized gavels for binding.]

44,997.—Constructing and Operating Locomotives for Railroads.—Richard P. Morgan (assignor to himself and Richard P. Morgan, Jr.), Chicago, Ill.:

I claim, first, So constructing a locomotive with reference to a railroad constructed as herein described so that none of the supporting wheels need be used as driving wheels, substantially as above shown.

Second, I claim the guide frames, f f, with their pins, g g', in combination with the sliding frames, h h', and slots, w w', by means of which the bearing wheels, b b, may always be drawn from a point in advance thereof, whether the locomotive be moving backward or forward.

Third, I claim the cams, S S, the springs, t t, the rod, u, and the screw, v, for the purpose of producing the requisite pressure of the driving wheels upon the central rail, substantially in the manner and for the purpose described.

Fourth, I claim the use of independent bearing wheels with short axles, in combination with horizontal guide wheels and a central rail, constructed and arranged as above described.

44,998.—Machine for Cutting Files.—Elisha O. Potter (assignor to himself and Charles A. Warland), Pawtucket, R. I.:

I claim my improved file tooth cutting machine as made with the stationary bed, A, the movable cutter carriage, C, the rotary or vibratory cutter stock supporter, F, and the sliding cutter or the stock thereof, arranged and combined substantially in manner and with operative mechanism so as to operate as specified.

I also claim in combination with the machinery for making the cuts or indentations in the file blank a mechanism, substantially as described for automatically varying the inclination of the cutter relatively to the bed, so as to maintain such cutter at the same or approximately the same angle with the varying surface of the file blank during the process of making the teeth thereon, however such surface may differ from a plain surface.

I also claim the arrangement of the lever, g, the pitman, l, and the bar, m, with the frame, B, the spring, G, the cutter carriage, C, or its rotary or vibratory supporter, F, such lever, pitman, and bar, being mechanism for varying the pressure or active power of the spring by which the blow of the cutter is obtained.

I also claim the mechanism or combination for varying the feed of the cutter as occasion may require, such combination consisting of the shaper, f', the plates, b' c', bar, d', and the stud, e' e', the whole being applied together and to the movable rack, M, and the cutter carriage, substantially as and so as to operate as described.

I claim the combination composed of the following mechanical elements, viz:—1. A stationary bed; 2. A mechanism for moving the cutter longitudinally over the file blank; 3. A mechanism substantially as described or its equivalent, for varying the feed of the cutter as occasion may require.

I also claim the mechanism or combination for so varying the inclination of the cutter relatively to the bed, so as to maintain such cutter at the same or approximately the same angle with the varying surface of the file blank, during the process of making the teeth thereof, such combination consisting of the slotted plate, H, the toggles I K, and the rotary or vibratory supporter, F, or their mechanical equivalents, they being combined together and with the frame, B, and the cutter carriage, substantially in manner and so as to operate as specified.

44,999.—Combined Cartridge and Percussion Cap Box.—J. T. Warren, Stafford, N. Y., and Robert A. Chesebrough, New York City, assignors to said Robert A. Chesebrough:

We claim the construction and combination of the case, G, and revolving box, L, constructed, combined, and operating as herein described and for the purposes set forth.

45,000.—Hand-printing Press.—Cullen Whipple, Providence, R. I., assignor to John W. Fielder, Boston, Mass.:

I claim the ink-pad beneath the sliding bed, the sliding bed, the secondary lever, and their connections, in combination with the printing lever, all made and operating substantially as set forth or their mechanical equivalents.

45,001.—Process for the Manufacture of Good Flavored Spirits and Neutral Alcohol.—Francois Haeck, Brussels, Belgium. Patented in Belgium July 17, 1862:

I claim, first, The process of separating injurious constituents from phlegms or other alcoholic liquid prior to distillation by diluting it, permitting it to rest, and decantation, substantially as set forth

Second, I also claim the process of separating injurious constituents from phlegms, or other alcoholic liquid, prior to distillation, by treating it with gypsum or its equivalent, substantially as set forth.

Third, I also claim the process of separating from phlegm, or other alcoholic liquid, injurious constituents which volatilize at a lower heat than alcohol by subjecting the phlegm to continued heating at a lower temperature than is required for the distillation of alcohol, prior to the distillation, substantially as set forth.

Fourth, I also claim the process of separating the injurious constituents from phlegm, or other alcoholic liquid prior to distillation, by the combination of the three secondary sub-processes of dilution and decantation, treatment with gypsum or its equivalent, and heating at a temperature lower than is required for the distillation of alcohol, substantially as set forth.

Fifth, I also claim the process of distilling phlegm, or other alcoholic liquid, by two consecutive simultaneous and continuous distillations (the first at the lowest practicable temperature required to disengage the alcohol in vapor, and the second at a temperature sufficient to expel the remaining alcohol), and of condensing the products of each distillation in a separate vessel, so that they do not mingle, substantially as set forth.

Sixth, I also claim the process of distilling phlegm, or other alcoholic liquid, substantially as specified in the last preceding claim, in combination with the process of separating the injurious constituents prior to distillation, substantially as specified in the fourth claim.

Seventh, I also claim the process of distilling phlegm, or other alcoholic liquid, substantially as specified in the fifth claim, in combination with each of the preliminary separating processes specified in the first, second, and third claims.

45,002.—Apparatus for Concentrating and Analyzing Alcoholic Liquids.—Francois Haeck, Brussels, Belgium. Patented in Belgium July 17, 1862:

I claim the concentrating analyzing apparatus herein described, consisting substantially of a series of chambers, analyzing channels, and return pipes, arranged within a vessel having double sides between which the cooling fluid is contained, substantially as set forth.

I also claim the construction of the vessels and pans and partitions forming analyzing channels, as herein set forth in such a manner that they may be withdrawn from the vessel that contains them for the purpose of being cleansed.

45,003.—Refrigerating Condenser for Distillers.—Francois Haeck, Brussels, Belgium. Patented in Belgium Aug. 16, 1859:

I claim the refrigerating condenser hereinbefore described, constructed of parts enclosing a thin chamber for the reception of the vapor to be condensed and exposing broad condensing surfaces, in such manner that the parts may be separated to permit the condensing surfaces to be readily cleansed; the said condenser being provided with pipes for the supply and removal of the refrigerating fluid, and for the supply and removal of the fluid to be condensed, all operating substantially as set forth.

I also claim the combination of the aforesaid condenser with pipes for the escape of air, substantially as set forth.

45,004.—Apparatus for Cooling and Aerating Liquids.—Francois Haeck, Brussels, Belgium. Patented in Belgium Aug. 16, 1859:

I claim the cooler hereinbefore described containing a thin chamber for the liquid to be cooled, thin chambers for the cooling liquid, a perforated gutter or its equivalent to distribute the liquid to be cooled, a pipe for its escape, and suitable means for the supply and escape of the cooling liquid, all the parts being constructed substantially as set forth.

I also claim the oxygenator hereinbefore described, composed substantially of two chambers and perforated tubes through which tubes air is drawn by the flow of the liquid, all constructed substantially as set forth.

I also claim the combination of the cooler and oxygenator as described, so that the liquid may be cooled and oxygenated at one continuous operation.

45,005.—Bottle Stopper.—Peter R. Higley, Oshawa, C. W.:

I claim, first, A valve stopper composed of a frame, B b, packing, C, and cylinder, G, the latter having an aperture, g2, and adapted to slide within said frame so as to open communication with the bottle and pressed upward by a spiral spring, H, to close the same, substantially as set forth.

Second, I claim the metallic frame, B b, constructed as herein specified and adapted for the application of an elastic packing, C.

Third, In combination with a stopper constructed as herein described, I claim the double link or hinge, F F, and the yoke, D, both being attached to the collar, E, and employed in the manner and for the purposes specified.

45,006.—Composition for Protecting Ship's Bottoms.—Marius Vian, Marseilles, France:

I claim as new the herein described compound called feno-manganic mixture to be applied to the bottom of iron or iron-plated ships or vessels, in the manner and for the purpose of protecting the parts thus coated against oxidation and incrustation, substantially as set forth.

DESIGNS.

1,995.—Paint Can.—Charles F. Brand (assignor to Harrison, Brothers & Co.), Philadelphia, Pa.:

1,996.—Trunk Cover.—Henry Braunhold, New York City:

1,997.—Ink Bottle.—George G. Percival, M.D., Brooklyn, N. Y.:

RE-ISSUES.

1,806.—Lock.—Wm. H. Akins, Dryden, N. Y. Patented May 13, 1856:

I claim so arranging a series of revolving disks, c c, upon a fixed stud or bearing, D, that each in turn shall be made the means of adjusting the position of the next, the whole being operated by a turning shaft, F, substantially as herein specified.

In combination with a series of disks, c c, arranged and operating as above described, I also claim the stationary washers, e e, for keeping the disks apart, substantially as herein set forth.

I also claim altering the respective numbers of two or all the disks, c, by the simple change of an adjustable projection or pin from one hole to another, substantially as herein described.

I also claim the method herein described of discovering the proper numbers to open the lock, substantially as specified.

1,807.—Wringing or Squeezing Machine.—Shelden A. Bailey, Simeon S. Cook and Benedict M. Cook, Smithfield, R. I., assignees by mesne assignments of John Alender, New London, Conn. Patented Jan. 11, 1859:

I claim, first, A roller so constructed as to yield more at its center than at or near its ends in combination with a covering of vulcanized rubber of tubular form, as and for the purpose set forth.

Second, Cog wheels in combination with vulcanized rubber rollers or any other elastic substance or compounds impervious to water.

1,808.—Operating Guns and Gun Towers.—James B. Eads, St. Louis, Mo. Patented March 31, 1863. Reissued Sept. 15, 1863:

I claim depressing and elevating the aim of the gun whilst the muzzle is kept at or near the center of the port-hole, by raising and lowering the carriage of said gun, substantially in the manner and for the purposes herein described.

And I also claim controlling the muzzle of the gun by means of the tripping pan, and the guide bar on the turret whereby the muzzle of the gun may be guided fairly into the port and the size of the port be greatly reduced, substantially as described.

1,809.—Operating Guns and Gun Towers.—James B. Eads, St. Louis, Mo. Patented March 31, 1863. Reissued Sept. 15, 1863:

I claim the use of a central steam joint in connection with a revolving gun tower in which the cylinders and appliances for working the gun or guns rotate with the tower; the steam joint being for the purpose of connecting the rotating pipes and cylinders within the tower with the stationary pipes outside of the tower, substantially and in the manner described.

1,810.—Operating Guns and Gun Towers.—James B. Eads, St. Louis, Mo. Patented March 31, 1863. Reissued Sept. 15, 1863:

I claim so combining a revolving tower with a gun or guns, and with one or more steam cylinders and pistons and their necessary appliances, as that the gun or guns may be raised or lowered by steam, with or independent of the tower, and so that the tower, gun or guns, and cylinder, may be turned by steam horizontally, or the main cylinder remain fixed whilst the tower is revolved around it, as may be preferred and substantially as described.

1,811.—Operating Guns and Gun Towers.—James B. Eads, St. Louis, Mo. Patented March 31, 1863. Reissued Sept. 15, 1863:

I claim, first, Causing the recoil of the gun to open the exhaust part of the cylinder that runs it out and in, after the recoil has been checked by the steam, substantially as described.

Second, Causing the least movement of the gun in either direction out or in, after the recoil, to open the proper steam part and thus check its further motion until the operator is ready to move it as he may desire, substantially as described.

Third, Connecting the gun frame in such manner with the valve of the steam cylinder supporting the gun frame, as to make the valve self-acting by causing the last descent of the gun frame to open the inlet port and admit more steam, and to close the port when sufficient steam is admitted and to open the exhaust port if the cylinder have an excess of steam and the frame should begin to rise above the point at which it was fixed; thus allowing the frame to be fixed at any particular point whilst the valve gear is at the same time entirely under the control of the operator, substantially as described.

Fourth, The construction of the valve gear of the large cylinder in such manner that the inlet port shall be opened in case of the accidental descent of the gun frame, and thus check it without further injury, substantially as described.

1,812.—Operating Guns and Gun Towers.—James B. Eads, St. Louis, Mo. Patented March 31, 1863. Reissued Sept. 15, 1863:

I claim making a gun tower in sections so that the top section may be lowered into the hold of the vessel, for the purpose and in the manner substantially as herein described.

1,813.—Stove.—Dennis G. Littlefield, Albany, N. Y. Patented Jan. 24, 1854. Re-issued Nov. 19, 1861. Again Aug. 26, 1862. Again March 3, 1863:

I claim the combination of a fuel-supplying cylinder with a fire-pot, when the said supplying cylinder has its cover opening inclosed within a chamber or space communicating not only with the outlet from the fire-pot, but also with the exit flue, substantially as herein described, when the case forming said inclosing chamber becomes a part of the stove itself, and is so constructed, united, and combined with other parts of the stove, as to form a complete manufactured article or a structure having vitality as a complete individual thing for the combustion of anthracite and other concentrated fuel, substantially in the manner and for the purpose herein specified.

1,814.—Stove.—Dennis G. Littlefield, Albany, N. Y. Patented Jan. 24, 1854. Re-issued Nov. 19, 1861. Again Aug. 26, 1862. Again March 3, 1863:

I claim the arrangement, adaptation, and combination with a fuel-supplying cylinder stove, of an illuminating case to the chamber which receives light, and the gaseous products of combination from the burning fuel; when said case is illuminated by windows or glazed apertures arranged continuously upon every side, or in so much of its surface as may be fully exposed to view, substantially in the manner and for the purpose herein set forth.

1,815.—Stove.—Dennis G. Littlefield, Albany, N. Y. Patented Jan. 24, 1854. Re-issued Nov. 19, 1861. Again Aug. 26, 1862. Again May 19, 1863:

I claim, first, A fire-pot constructed substantially as described, in combination with a fuel-supplying cylinder, having its cover opening surrounded by a chamber which communicates with the outlet from the fire-pot, and also with the flue leading to the chimney, when the openings in the fire-pot, or outlets therefrom, are broadest at the bottom, as and for the purpose specified.

Second, The combination of a fire-pot constructed substantially as described, with a fuel-supplying cylinder, which has its cover opening surrounded by a chamber which communicates with the outlet from the fire-pot, and also with the flue leading to the chimney, when the aggregate amount of outlet space from the fire-pot exceeds the amount of inlet, as and for the purpose specified.

1,816.—Bed Canopy.—Isaac E. Palmer, Middletown, Conn.:

I claim, first, The combination of the grasping base, A A′ a a′, with the standard, substantially as herein described irrespective of the construction of the standard.

Second, The extending frame of the canopy consisting of ribs, F F, pivoted at their center, and a hoop or band, C, connected to said ribs by metal clasps, all combined substantially as herein specified.

1,817.—Machine for Making Paper Twine, etc.—John B. Wortendyke, Godwinville, N. J. Patented May 24, 1864:

I claim performing the twisting operation while the paper is in a moistened state, substantially as and for the purpose herein set forth.

1,818.—Machine for Making Paper Twine, etc.—John B. Wortendyke, Godwinville, N. J. Patented May 24, 1864:

I claim, first, The moistening of the paper of which the twine is to be formed, while on its way over or between the rolls by which it is delivered to the spindle or throstle by which the twisting is performed, substantially as herein described.

Second, The employment in a machine for making twine or cord from paper, of a paper guide, E, or other equivalent device, for gathering up the paper edgewise, or laterally, in the form of roping, substantially as herein described, on its way to a spindle, throstle, or other twisting device.

Third, The grooving of the roller, B, substantially as and for the purpose herein specified.

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