

[This invention relates to a new and improved axle box which it is believed possesses several advantages over those in common use.]

50,983.—Steam Engine.—George Yellott, Baltimore County, Md.:

I claim, First, The cylinder constructed as above described, in two sections of unequal diameter, each section being one-half the whole length of the cylinder, with the end of the section of larger diameter open, and the end of section of smaller diameter closed, with a piston fitted airtight and steam tight in each section, and the two pistons connected by a piston rod; so that when steam is admitted into the smaller section and acts against the piston in that section, the other piston in the larger section may be driven out against the resistance of the atmosphere and the reactive pressure of the steam on the closed end of the smaller section of said cylinder occasioned by said resistance, may be used as the motive power of the engine in the manner and for the purposes set forth in this specification.

Second, I also claim the cylinder as above described in combination with and placed horizontally on the platform, supported at its outward edge by the wheel resting on the circular rail, and attached to and revolving with the vertical shaft, with the upper and lower extremities of said shaft working steam tight in the two steam tight boxes, and with the hollow spaces in the upper and lower portions of said shaft for the admission of steam from the boiler and the escape of the exhaust steam; said cylinder being placed on said platform, with the closed end of the smaller section perpendicular to the center of motion of said vertical shaft, and firmly attached to said platform, so that it can be made to revolve with it in the manner and for the purpose set forth in this specification.

Third, I also claim said cylinder in combination with the said platform and vertical shaft with all their appendages as above described, but with said cylinder placed horizontally on said platform and firmly attached thereto with the closed end of the smaller section of said cylinder at a right angle with the radius of the circle made by said shaft in its revolution, in the manner and for the purposes set forth in the reference to drawing, E, in the drawings accompanying this specification.

Fourth, I also claim said cylinder, in combination with the two pistons connected by the piston rod, with the hollow tube in the center of said rod extending through the smaller piston, and connected with hollow spaces in the pistons, said hollow spaces in the pistons being open at the bottom and closed at the top in the manner and for the purposes set forth in the reference to drawing, F, in the drawings accompanying and making part of this specification.

50,984.—Meat Cutter.—David Bearly (assignor to James J. Hamilton), Newcastle, Ind.:

I claim, First, The combination of the case, A, and vertical shaft, F, substantially as described and for the purposes specified.

Second, The combination of the portion of the radius of the circle made by said shaft in its revolution, in the manner and for the purposes set forth in the reference to drawing, E, in the drawings accompanying and making part of this specification.

Third, The combination of the propeller-shaped screw, F, the vertical screw-shaped shaft, I, the washers, E, knives, G, projections, M, substantially as described and for the purposes indicated.

50,985.—Drilling Machine.—Jesse Button (assignor to himself and R. F. Hawkins), Springfield, Mass.:

I claim, First, The lighter, consisting of the combination of the springs, A, B, and beam, C, with the drill shaft, E, substantially in the manner and for the purpose described.

Second, The automatic feed motion, when constructed and applied to a drilling machine, in the manner and for the purpose herein set forth.

50,986.—Deep-well Elevator.—Thomas Bryne (assignor to himself and S. S. Smoot), New York City:

I claim, First, The method, substantially as herein described, of accomplishing the two-fold function of elevating the oil and melting the paraffin, by means of air, as set forth.

Second, Constructing the valve seat so that they answer the two-fold purpose of a seat for the valve, and also as a valve, substantially as and for the purpose described.

Third, The connection between the conical valve seats of the various valves and the discharge pipe, substantially as and for the purpose described.

Fourth, An elevator, constructed with one or more valved chambers, and with an outer and inner tube, substantially as described, in combination with a vacuum apparatus and a forcing apparatus, substantially as and for the purposes set forth.

Fifth, The combination of the compressed air chamber and the vacuum chamber, with the elevator, which has one or more working chambers, substantially in the manner herein described and for the purpose set forth.

Sixth, The arrangement of a series of elevators, acting within each other in such a manner that each can act independently of the other, and so that the liquid in each will be acted upon by a vacuum and pressure at the same time, substantially as described.

Seventh, So arranging the several independent elevators within one another that all the stuffing boxes may be above the level of the earth's surface, substantially as described.

Eighth, Applying pressure to the top of the column of oil within the outer or main tube of the elevator, and, at the same time, subjecting it to the lifting action of a vacuum, by means of an apparatus, constructed and operating substantially as described.

50,987.—Apparatus for Carbureting Air.—John Chase (assignor to S. E. Horton), Windsor Locks, Conn.:

I claim, Entirely surrounding the opening ends of the wheel chambers or compartments with a sheet or sheets of wire gauze, or other suitable open and perforated or porous substance, or material, for the purpose specified.

Second, Regulating the amount of gas or other vapor generated or collected by the operation of the chambered wheel, B, as described, by means of any suitable arrangement of devices, connected at one end with the driving shaft of the said wheel, and at the other with the reservoirs or pipe containing such gas or vapor, and operating substantially in the manner specified.

Third, Passing the gas or other vapor, after being generated or collected, and previous to its being burned or otherwise employed, through wire gauze or any other suitable open and porous material, substantially as and for the purpose described.

50,988.—Button Fastening.—Florian Dahis (assignor to himself and Francis Thill, assignor to said Dahis and H. B. Voss), Brooklyn, N. Y.:

I claim a fastening for garments, composed of the parts, a and d, held together by the spring, f, taking a notch in the perforator, b, as set forth.

50,989.—Sewing Machine for Working Button-holes, Etc.—James Emerson, Lowell, Mass., assignor to himself and C. D. McDonald, Ellsworth, Me.:

I claim, First, The arrangement of the screw, N, and half nut, P, on the lever, M, when constructed substantially as described, for the purpose of equalizing the movement of the arm, D, with the loss of thread each stitch.

Second, I claim the looper, G, when constructed substantially as described, for making a loop in the thread, so that by passing the needle through it, as described, the hand button-hole stitch is produced.

Third, I claim the method of feeding the work to the needle, by the irregular gear, Z, made in the form of a button-hole, in combination with suitable device for passing the needle entirely through the cloth, and then through the button-hole, as in hand sewing.

Fourth, I claim the lateral motion of the table, B, in combination with the arrangement of the needle carrier, E and D, and looper, G, when constructed substantially as described.

Fifth, I claim the segment, W, when made with a V-shaped groove, the sides of which are lined with cloth, to prevent the thread from kinking.

50,990.—Loom for Cross-weaving.—Conrad Roder (assignor to M. Landenberger), Philadelphia, Pa.:

First, The within-described combination of a shuttle, the handle frame, O, with its eye-pointed guides, N, which carry a portion of the warp threads, and the frame, X, with its eye-pointed guides, M, which carry the remainder of the warp threads, when both a vertical and lateral motion is imparted to each frame by the devices herein described, or their equivalents for the purpose specified.

Second, The combination of the said treadle frames, the levers, L and M, and shaft, P, with its projection, I, the whole being arranged and operating substantially as and for the purpose herein described.

50,991.—Steam Gage.—Christian C. Schmidt (assignor to Schmidt and Brothers), New York City:

I claim the combination and arrangement of spring, E, with the intervening spring, F, connecting rod, G, and segment rack, K, substantially upon the principle and in the manner as hereinbefore set forth.

50,992.—Buckle.—C. S. Stearns and Thomas Corey (assignors to themselves and Samuel Boyd), Marlboro', Mass.:

We claim our improved buckle, made substantially as described; that is to say, with its body constructed with the recess and holding lip, and with the tongue formed as a bent lever, in manner and applied to the body, and arranged in such recess, and with respect to the holding lip, in manner so as to operate as specified.

50,993.—Jacquard Apparatus for Looms.—L. D. Valetton (assignor to himself and H. W. Hensel), Philadelphia, Pa.:

I claim the adjustable arms, M M, with their projections, n n', combined with the card shaft, G, substantially as and for the purpose specified.

50,994.—Car Coupling.—E. W. Wilson and J. E. Erwin, Springfield, Mass., assignor to E. W. Wilson:

First, We claim a car coupling of one rigid, semi-bell shaped jaw, a, b, provided with a cavity, c, and lip, d, combined with a vertically sliding semi-bell shaped jaw, k, k', having an extended lever-like end, m, the said jaws, when together, forming an inclosed cavity, C, and bell-shaped entrance, C U V, Figs. 1 2 3 4 and 5, substantially as shown and described.

Second, We claim, in combination with the bell-shaped jaws, a, a', a movable detachable bolt, g, g', inserted transversely through the upper jaw, a, as shown in Fig. 4, substantially as and for the purpose set forth.

Third, We claim, in combination with the bell-shaped jaw coupling, a, a', the fork-like hooked lifting device, p, p', and the link, r, having two hooking ends, s, s, substantially as set forth, shown, and described.

50,995.—Sewing Machine.—John Keats and William Stephens Clark, Street, Eng. Patented in England April 14, 1863:

We claim, First, The combination in a sewing machine of the following instrumentalities, viz: a table on which the material rests and is supported; a reciprocating feeding instrument, to move the material along said table, and a hook, rotating guide, and shuttle to produce a lock stitch with two threads, all operating in combination, substantially as set forth.

Second, The combination in a machine for making a lock-stitch of a shuttle and hook, both arranged on the upper side of the table, substantially in the manner described.

Third, The arrangement of the shuttle and shuttle race of the sewing machine above the table or surface on which the material to be sewed rests.

Fourth, The arrangement of the apparatus herein described for operating a hook, a shuttle, and a feeder from eccentrics in one needle box, as above described.

Fifth, The arrangement of the apparatus herein described, for dividing the loop of thread that is drawn up by the hook, and for spreading the loop over the shuttle.

Sixth, The arrangement of the apparatus herein described for shortening or lengthening the stitch, and for feeding the work in different directions, in the manner above described.

50,996.—Furnace Grate.—Eugene Langen, Cologne, Prussia:

I claim a grate, composed of three or more tiers, in combination with a fire-box and trap grate, constructed and operating substantially as and for the purpose set forth.

[The grate which forms the subject matter of this present invention is so constructed that the fuel is introduced from behind or under the incandescent mass, already in the grate, and, consequently, the gases arising from the fresh fuel cannot escape unconsumed, and the air requisite for the purpose of supporting combustion passes through the cold fuel to the incandescent mass, and no portion of the fuel is wasted.]

50,997.—Machinery for Making Fluted Rollers.—William Weild, Manchester, Eng.:

I claim so constructing and arranging the machine as to give the roller which is being fluted both a rotary and a vibratory motion, by the devices herein described and for the purpose described.

#### REISSUES.

2,103.—Condensing Milk.—Gail Borden, America, N. Y. Patented, August 19, 1856. Reissued May 13, 1862. Again reissued Feb. 10, 1863:

I claim, First, The within-described process or method of operation for concentrating and preserving milk, by means of coagulating and rearranging the albuminous particles in combination with the evaporation of the fluid in vacuo.

Second, The preparatory coagulating and rearranging of the albuminous particles, when this is done as a part of the operation of making concentrated or condensed milk.

2,104.—Self-centering Chuck.—George H. and John T. Clark, Meriden, Conn., assignees by mesne assignments of Edgar E. Beach. Dated Sept. 6, 1864:

We claim forming the guides for the longitudinally sliding jaws in that part of the chuck by the turning of which the closing of the jaws is produced, substantially in the manner herein set forth.

Second, The inclined converging guide ways, c, in combination with the jaws, C, head, D, and screw spindle, A, constructed and operating in the manner and for the purposes substantially as herein shown and described.

2,105.—Baling Press.—Charles H. Robinson, Bath, Me. Patented January 10, 1865:

I claim as my invention and improvements in toggle lever presses, fixing the first of the three pivots of the toggle levers or links at, to, or near the platen; the second pivot to the follower, and moving the second pivot toward the first, and vibrating the third pivot so as to bring the toggle links or levers nearly or quite parallel in pressing the bale.

Second, I claim working or operating the follower of the press, at the beginning of the pressing operation, and while the cotton or hay is comparatively but little compressed by the direct action of the rope and pulleys, in combination with the subsequent working or operating of the follower, by the toggle links or levers to complete the pressing of the bale or bundle.

Third, I claim working the toggle links or levers by a rope or chain, arranged to run around pulleys at or in the opposite ends of the levers or links which carry the follower.

2,106.—Flour Sifter.—Howard Tilden, Boston, Mass. Patented, May 16, 1865:

I claim, First, A hemispherical or concave sieve, provided with a case frame or other proper support, for the purpose set forth.

Second, In combination with a concave sieve, I claim a rotating stirrer for agitating the flour and forcing it through the sieve.

Third, In combination with a concave sieve, I claim a rotary stirrer, armed and provided with flexible edges or scrapers adapted to press the flour through the sieve of the sifter.

2,107.—Shingle Machine.—W. P. Valentine, Fond du Lac, Wis. Patented March 22, 1859:

First, I claim the carriages, P and P', connected by the spring, L, and arranged to operate as and for the purpose herein set forth.

Second, I claim giving to the carriages of a shingle machine a variable feed, substantially as and for the purpose set forth.

Third, I claim the dogs, e, e', arranged to operate in connection with the spring, L, and lever, or their equivalent, for the purpose of automatically locking and unlocking the block, as described.

Fourth, I claim the tilting platform, f, in combination with the shaft, r, provided with the projections, m, arranged to operate as shown, for the purpose of presenting the block to the saw in such a manner as to cut the but alternately from opposite ends of the block.

Fifth, I claim the ratchet wheel, N, arranged to operate in connection with the pawl, t, of the carriage, as shown and described, for the purpose of imparting motion to the shaft, r, and thereby tilt the platform or frame, f, as and for the purpose set forth.

Sixth, I claim the double inclined ways, in combination with the carriages, P and P', when the latter are arranged to operate alternately on opposite sides of a single saw, as herein shown and described.

#### DESIGN.

2,220.—Trade Mark.—Martin Leippe, Lancaster, Pa.

## PATENTS

GRANTED

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[See Judge Holt's letter on another page.]

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**Improved Gaiter.**

The ordinary tongue piece inserted in shoes and gaiter boots is more trouble than benefit, for it is generally found curled up in the toe of the shoe, or else is soon pulled out and thrown away by the impatient wearer, who takes this summary method of disposing of a nuisance. The attachment here shown is not, in common phrase, a tongue, but serves the same, and, in fact, a better purpose than the part in question.

It consists of a leather flap, A, sewed to each side of the shoe, as clearly depicted in the engraving. By this plan the shoe is rendered more slightly—more comfortable to the wearer, and excludes dust and wet much more effectually than the common tongue. This lining can be applied either in front, at the side, or in the rear of the shoe, and can be ornamentally stitched or embossed in any manner to suit prevailing fashions. It is a useful improvement and should become popular.

It was patented through the Scientific American Patent Agency on Sept. 19, 1865, by Thomas Powell. For further information concerning the sale of State rights, or entire patent, address him at Richland, Indiana.



**POWELL'S IMPROVED GAITER.**

**AMERICAN TORPEDOES IN ENGLAND.**

Our old friend, G. W. Beardslee, is making a great noise in England with torpedoes for blowing up vessels. It has been well known since the time of Fulton that there is no difficulty in blowing up any vessel by placing a sufficient quantity of gunpowder beneath her keel, and setting fire to it; the only difficulty is in getting the vessel just over the powder, and then setting the powder on fire. The most approved method of firing the powder is by electricity. Two insulated copper wires are lead from a galvanic battery—one from each pole—into the mass of powder, and their ends are connected by a smaller piece of platinum wire. This platinum wire, being a poorer conductor of electricity, refuses to carry all the current, and, as Tyndall would say, a portion of the electricity is converted into heat—at all events, the platinum wire becomes red hot and fires the powder. This was employed a number of years ago by Prof. Maillet in blowing up the rocks in this harbor and Hell Gate. Mr. Beardslee's improvement consists in substituting a fine line of plumbago for the platinum wire, which enables a much feebler current of electricity to be employed. He inserts the ends of the two copper wires into a cork about half an inch apart, and marks the cork between the two with a lead pencil; on establishing the electric current the pencil mark is heated, and the gunpowder fired. Before Mr. Beardslee left for England, he said that he had, by this arrangement, fired a torpedo in Washington with electricity generated by a machine situated in New York.

**A Good Washing Machine.**

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**BRODHEAD'S BORING TOOL.**

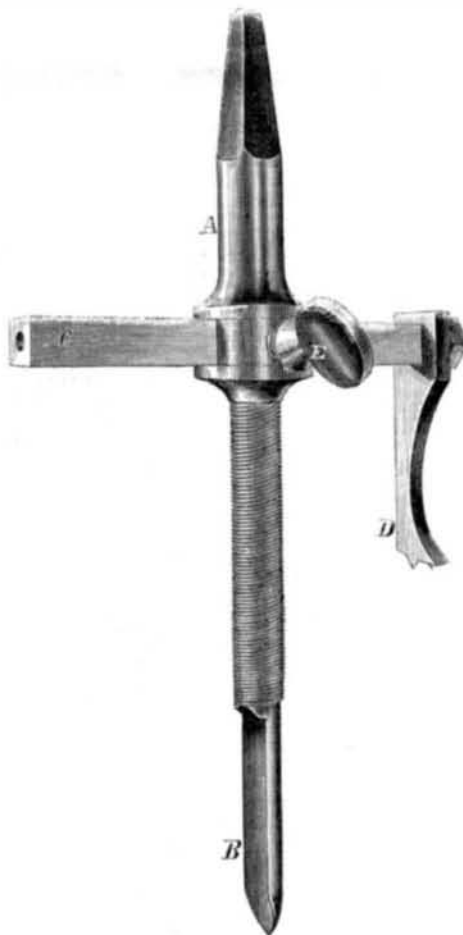
Wood workers and others often find it necessary to make holes of large diameter in their work. To do this a bit is commonly used, a number of small holes being bored around the circumference of the

circle, and the segment left afterward removed by a chisel or saw. This process is not only slow but very rude, for it is impossible to make a true hole by the plan mentioned except at the expense of time.

With the tool here shown, a perfect circle can be easily made, and the hole handsomely finished at one job.

The details are simply a rod, A, furnished with a fine threaded screw, and formed into a boring bit, B, at the end; also a crossbar, C, sliding in a mortise in the rod, A. The crossbar carries the cutting tool,

D, which can be set at any distance from the center within its range and held there by the thumbscrew, E. The operation is too obvious to require explanation. It is used with an ordinary brace, or may be attached to a lathe, and the cut is made continuous by the fine feed screw on the shank of the rod, A.



This desirable and efficient tool was invented and patented on August 8, 1865, by Wessel Brodhead, of Rondout, N. Y., and assigned to C. L. Edmonds, of the same place, all through the Scientific American Patent Agency. For further information address Mr. Edmonds as above.

The receipts of the Government from internal revenue, since June 30th last amount to \$137,365,382.

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