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37,891.—Projectile for Rifled Ordnance.—J. B. Atwater, Chicago, Ill. :

I claim, first, The corrugated wire web, or cloth, or its specified equivalent, for the purpose herein described.

Second, I claim, in combination with the wire cloth and head band, the tongued wedges and flanged plungers, arranged in the manner substantially as described.

37,892.—Horse-power.—George E. Burt, Harvard, Mass. : I claim, first, The projecting boss, r, in combination with the link, a.

Second, I claim the combination of the cog-wheel, f, and the end-leaf platform, arranged in the manner and for the purposes set forth.

Third, I claim the connecting of the links, h, h, by the bar, j, for the purpose described.

Fourth, I claim the combination of the link, h, with the supporting rolls and end track, constructed and operating substantially in the manner specified and for the purposes set forth.

37,893.—Knapsack Sling.—D. W. C. Baxter, Philadelphia, Pa. : I claim, first, The independent knapsack sling or supporter, constructed, arranged and operating in the manner described.

Second, The straps, A, A, arranged and operating substantially in the manner described.

37,894.—Stump Extractor.—Thomas Bell, Bellport, and Louis Kulen, New York City : I claim the bars or teeth, D, in combination with the screw rods, E, the above parts being attached to the frame, C, and the latter placed on a wagon or mounted on wheels in any suitable way, and all arranged to operate as and for the purpose herein set forth.

[This invention is designed for extracting small stumps from the earth, such, for instance, as those of scrub oaks, which, in some sections of the country, are spread over large tracts of land, and which are at present eradicated by hand at considerable expense, so much so as to exceed materially the first cost of the land.]

37,895.—Thrashing Machine.—Edgar M. Birdsall, Penn Yan, N. Y. : I claim, first, The support, G, when made and used as and for the purpose specified.

Second, I claim the wheels, O, D and E, when arranged as specified and used in combination with the support, G, as set forth.

37,896.—Combined Wash-stand and Water-closet.—Samuel Bissicks, New York City : I claim the combination and arrangement of the stand, A, or its equivalent, with the bowls, B and C, faucet, I, valve, L, pipes, G, and E, and swirl, F, substantially as described.

37,897.—Machine for removing Snow and Ice from Railroads.—Matthew C. Bogia, Philadelphia, Pa. : I claim the fire-chamber, C, pipes, F and F', and blower, E, the whole being constructed, arranged on a track and operating substantially as set forth.

37,898.—Machine for rifling Cannon.—Adolphus Bonzano, Detroit, Mich. : I claim, first, The cutter-head, having its cutters, i, i, or stock, to which the said cutters are attached, fitted to grooves, r, r, with inclined bottoms, and having applied, in connection with them, a spring, t, and collars, q, s, substantially as herein specified.

Second, The employment for producing a regular or progressive twist of the rifle grooves of a barrel, m, connected by a cord or chain with the cutter bar, and geared with the said bar, substantially as herein specified.

37,899.—Lantern.—James K. Breckenridge, West Meriden, Conn. : I claim the combination of the head of the shaft of the mechanism that controls the wick with an opening in the lantern case, and a receptacle within the lantern; the combination as a whole operating substantially as set forth.

I also claim constructing the receptacle upon the interior of the lantern case with a slot to permit the introduction of the shaft of the mechanism that controls the wick of the lamp, substantially as set forth.

I also claim the combination of the receptacle within the lantern with the shaft of the instrument that acts upon the wick, the whole operating substantially as set forth.

37,900.—Washing Machine.—Adam S. Brown, Lebanon, Pa. : I claim the combination and arrangement of the slatted rubber, E, concave wash-board, D, jointed arms, H H J J, and rock-board, G, substantially as and for the purpose herein described.

37,901.—Linent.—Edward Conway, Dayton, Ohio : I claim the production by distillation, from the above-described ingredients, in the above-described amounts and strength; the above-described liniment, for the stopping of blood, the cure of rheumatism, cuts and inflammation of all kinds.

37,902.—Carriage Jack.—George L. Cummings, New York City : I claim the combination of the eccentric lever, C, with the upright slide rest, D, by which the power to raise the axle is obtained, substantially as described and set forth as above.

37,903.—Water Elevator.—James Daykin, Cleveland, Ohio : I claim, first, The flat chain (Figs. 3 and 4) when the links are formed by means of the rings or eyes, b, b, cross-bar, c, rods, a, a, and hooks, d, d, arranged and operating substantially as set forth.

Second, I claim the herein-described windlass wheel, C, when constructed as specified, in combination with a flat chain, arranged and operating as specified.

37,904.—Apparatus for nicking Horses.—Hampton Dodge, Buffalo, N. Y. : I claim, first, The saddle, C, in connection with the metal plate, A, for the purpose herein set forth.

Second, I claim the hinged bar, j, for the purpose specified.

Third, I claim the strap, g, the bar, j, and the crupper bars, H, arranged as and for the purpose herein set forth.

stay, H, with the soft body of the shot, A, essentially as and for the purposes herein described and set forth.

37,907.—Machine for lasting the Uppers of Boots and Shoes.—Martin R. Ethridge, Bethel, Maine : I claim the construction of the crimping jaws with "mitered" joints or ends arranged together, substantially as described.

I also claim the combination of a flexible or heel spring presser, E, as described, with the crimping jaws and a toe rest, substantially as specified.

I also claim the peculiar combination for operating or moving the crimping jaws, both toward and from the last, the same consisting in the yoke, M, the cam or cams, N, the springs, g, g, and the miter joints, b, b, the whole being arranged substantially as specified.

I also claim, in combination with the crimping jaws, mechanism substantially as described, for holding the last both at its heel and toe, and mechanism for adjusting it, at either or both ends, vertically with reference to the crimping jaws.

I also claim the combination and arrangement of the elastic cushions, a, a, with the crimping jaws, D, D.

37,908.—Car Coupling.—John J. Forts, Oshkosh, Wis. : I claim, first, The construction, application and adjustability of the guard, D, d, and the use thereof, in combination with the catch, c, and frame, a, a, substantially as set forth.

Second, The application of the arm, e, lever, f, and shaft, g, for the uses and purposes set forth.

37,909.—Machine for arranging Nails for use in Machines for nailing Shoes.—Othniel Gilmore, Raynham, Mass. : I claim the combination of the impeller or plunger, D, the two inclined planes, A, B, the space, C, and the receiver, I, the whole being arranged and to operate substantially as specified.

And, in combination with the impeller, I claim the conduit, H, so constructed and arranged with respect to the space, C, as to enable the reversed nails to be discharged laterally out of the collection in manner as specified.

37,910.—Machine for Miter Dove-tailing.—F. A. Gleason, Rome, N. Y. : I claim the particular arrangement of cutting tools, by which a miter dove-tail joint, complete in both its parts, i. e., tongue and groove may be cut at any intermediate point between extremes of any piece of lumber, doing the cross-cutting and dove-tailing simultaneously in the same operation.

37,911.—Evaporator for Saccharine Liquids.—James H. Hartwell, Jefferson county, Ind. : I claim, first, The divided pan, F, in combination with a furnace, also divided as shown, both arranged and operating substantially as described, and for the purpose set forth.

Second, The pan, F, composed of a longitudinally and horizontally divided portion, for the purpose set forth.

Third, I also claim the strainer, E, in combination with the double pan, F, and divided furnace, the whole to form an improved evaporator, as and for the purpose described.

37,912.—Corn Sheller.—Aaron Higley, Warren, Ohio : I claim the special arrangement of the hopper, B, slide rest, L, arms, N, springs, S, in combination with the toothed cylinder, C, when operating conjointly as and for the purpose set forth.

37,913.—Sewing Machine.—Amasa Bemis Howe, New York City. Patented in England Feb. 8, 1862. I claim in combination with the needle bar, B, the screw, p, and the spring, o, for adjusting and controlling the proper adjustment of said needle-bar box, and the needle bar and needle therein, substantially as described.

I also claim, in combination with the needle, the clip or arm, c, of the lever, c, d, e, f, and the cam, g, for bringing the needle into proper position should it be deflected by any cause, the whole operating in the manner and for the purpose herein specified.

I also claim the combination of the adjustable needle-bar box, with the clip, e, and its operative parts, substantially as described.

I also claim the arrangement of the compound levers and their action upon and with the feed wheel, as herein described and shown.

37,914.—Automatic Nose-bag.—Gustavus A. Hankinson, Manahocking, N. J. : I claim suspending the nose-bag in such manner that the natural movements of the horse in feeding will cause the bottom of the bag to approach or recede from his mouth, substantially as described.

37,915.—Beehive.—K. P. Kidder, Burlington, Vt. : I claim, first, Providing the division plates, E, with cleets, g, h, as shown and described, for the purpose of retaining or holding the bees in the division plates, E, in position in the hive, as specified.

Second, The regulator, F, provided with a longitudinal slot, k, two vertical slots, l, l', and a notch, j, combined as shown. The regulator being applied to the bee-entrance, m, by means of the button, G, substantially as and for the purpose herein set forth.

[This invention consists in the employment of division plates or comb-separators placed in the line between the comb-frames, and arranged in such a manner that each comb-frame will be properly retained in position, and also be enclosed within a narrow compartment isolated from those adjoining it, and the bees thereby prevented from building any comb but that in which worker bees are reared. The drone comb being thicker than the worker comb cannot be built within the narrow compartments. The invention also consists in the employment of a regulator constructed and arranged in such a manner that the capacity of the bee entrance may be altered at any time and in different ways, as circumstances may require.]

37,916.—Sugar Evaporator.—John K. Leedy, Bloomington, Ill. : I claim, first, The water tank, B, constructed in the manner and for the purpose herein specified.

Second, I claim the bottom of the pans arranged in the manner herein set forth, in connection with the rims on which they rest.

Third, I claim the movable reservoir and movable still, as herein fully described.

Fourth, I claim the extension of the side walls of the furnace for the purpose herein described.

37,917.—Mode of elevating Lamp Chimneys.—John G. Leflingwell, Newark, N. J. : I claim, first, The guides, B, or their equivalent, when attached to the exterior of the burner.

Second, I claim the slides, g, or their equivalent, when attached to the exterior of the gallery and working either on the insides or outside of guides, B.

37,918.—Preparing a Paint Oil from the Petroleum Residuum.—Adolph Millochau, New York City : I claim the process, substantially as herein specified, of manufacturing oil adapted to mixing with paints and colors from the acid residuum in the refining of petroleum or coal oils, as set forth.

37,919.—Poncho.—Peter W. Neefus, New York City : I claim a poncho convertible into a blanket or tent, and having attached to it an air pillow or air pouch, as and for the purpose substantially as described.

37,920.—Combined Wrench, Scraper and Screw-driver.—T. J. Penny, Wooster, Ohio : I claim, as an improved article of manufacture, a combined wrench, scraper and screw-driver, constructed substantially as herein set forth.

[This invention consists in combining a wrench, scraper and screw-driver all in one implement, so that the latter may be used in any of the above-named capacities, and answer equally as well as if made specially for any of the particular purposes specified.]

37,921.—Securing the Base-pin of Revolving Fire-arms.—Samuel Remington, Ilion, N. Y. : I claim so constructing the base-pin and arranging the joint of the lever in relation to the base-pin that said joint shall prevent the base-pin from being drawn entirely out of the frame, substantially as herein specified.

37,922.—Foot Corn Planter.—Giles Bolivar Roe, Paine's Point, Ill. : I claim the combination of the oscillating foot-board, F, with the box, A, plunger, E, spade, C, and plate, D, all in the manner herein shown and described.

[This invention consists in the arrangement of a foot-rest with suitable straps to fasten the foot on the same, in combination with the

rising and falling plunger that serves to force the seed from the planter into the ground in such a manner that said plunger can be operated and the planting effected entirely by the action of the foot.]

37,923.—Cattle Pump.—Giles Bolivar Roe, Paine's Point, Ill. : I claim, first, The drum, C, placed in the well, B, and provided with a valve, D, at its lower end; in combination with the elastic or flexible drum, I, connected with the movable platform, G, and communicating with the drum, C, to operate as and for the purpose set forth.

Second, The combination of the pipes, F, K, with the tube, E, arranged as shown, when used in connection with the drums, C, I, for the purpose set forth.

Third, The suspended or self-adjusting trough, M, placed on the platform, G, for the purpose herein set forth.

[This invention relates to an improved pump of that class which are designed for raising water for cattle or stock, and to be self-acting, that is to say, operated by the cattle while in the act of passing to the trough, or water receptacle, in order to drink.]

37,924.—Rifling Ordnance.—Tecumseh Steece, United States Navy : I claim a cannon, or other fire-arm, having at its rear end a smooth cylindrical bore, A, and near its muzzle longitudinal or nearly longitudinal grooves, B, which constitute enlargements in the bore, and are separated by lands, b, the ridges or inner surfaces of which lands are in their radial distance from the center equal to the radius of the smooth portion, A, of the bore, all as herein described, so as to guide the projectile during its entire passage through the bore, confine the gases as much as possible until the projectile approaches the muzzle and then permit their escape longitudinally, to impart rotation to the projectile by acting against oblique surfaces thereon, or on a sabot or casting to be used therewith.

[This invention is intended to combine the respective advantages of the smooth-bore and rifled cannon.]

37,925.—Mechanism for starting Sewing Machines.—A. S. Smith, Lockport, N. Y. : I claim the self-adjusting elongated segment, H, or its equivalent, whose lever is jointed to the frame, in combination with the friction wheel, G, whether said parts are provided with teeth or not, in such a manner that when at rest the segment is raised and removed from the wheel, but that when engaged sufficient motion is imparted to the wheel to throw the crank past the dead point, arranged and operating substantially as herein set forth.

In combination with the segment and its lever, I also claim the adjusting joint, composed of the pivot, f, and slots, g, g, or their equivalents, and the coiled spring, L, or its equivalent, for the purpose of allowing a vertical movement to the segment and producing the proper reaction, substantially as and for the purposes herein specified.

37,926.—Camp Stove.—L. H. Smith, Owensville, Ohio : I claim the construction of a portable stove in flanged sections, A, B, C, adapted to be extended for use by the elevation of the upper section, A, on legs, F, occupying sockets, E, and when not in use, to be slid within one another in the manner set forth.

37,927.—Machinery for assorting Bristles.—N. H. Spafford, Providence, R. I. : I claim, first, Automatically conveying the bristles to the feeding belts for the assorting devices preparatory to their being carded and evaned up by means of positive mechanical devices, arranged and operating substantially as described.

Second, The arrangement of the box, T, with its sliding plate, Y, and seizing tongues or jaws, so operating together as to first cause the tongues to seize or take a layer of the bristles inserted in the receiving chamber of the machine and then convey them to the belts, l and m, substantially as described.

Third, In combination with the mechanism employed in machines for assorting bristles, the devices hereinabove described, for feeding or conveying the bristles to the same, arranged and operating as set forth.

Fourth, The peculiar arrangement and combination of the cam-shaped wheels, L, M, with their rack bars, P, Q, connected with the box, T, and its plate, Y, in the manner and operating together as described for the purposes specified.

Fifth, Giving the pinion, a, engaging with the rack bar of the sliding plate, Y, a sufficient rotary motion while the box, T, is being turned upon its shaft, B, as a center, so as to prevent a leverage upon the same by the said bar and thus obviate friction and binding of the parts, substantially as described.

Sixth, Imparting to the bristles contained in the receiving chamber, a motion in the proper direction, by means of a pawl, w, and ratchet wheel, v, the said pawl being arranged and operating in connection therewith, substantially in the manner and by the devices described.

Seventh, The use of the vertical separator, i, for piercing and separating the bristles in their receiving chamber, arranged and operating as described.

Eighth, The forked swinging plate, I, so arranged and operated that while it prevents the escape of the bristles from the receiving chamber it will yet allow of the easy removal of the same by the devices described.

Ninth, The combination of the lever, n, loose tongue, e, of the sliding plate, y, and projecting rod or arm, q, of the driving shaft, arranged together and operating in the manner and for the purpose specified.

Tenth, Automatically drawing out or taking the bristles from the machine, according to their respective lengths, and thus assorting the same by means of a series of nippers or any suitable seizing devices operating substantially as described.

Eleventh, The combination of the traveling platform, k', studs, f', f', &c., and nippers, n', n', &c., so arranged and operating together as to open and close the said nippers, and to both seize the bristles and deposit them in boxes at the proper times, substantially as described.

Twelfth, The arrangement of the horizontal trip rod, s', having a reciprocating rectilinear movement at regular intervals of time, imparted to the same by any proper means, and operating substantially as described and for the purposes specified.

Thirteenth, The combination of the trip rod, s', inclined lever, v'', and cam-shaped grooved sector or drum, y'', operating together, as described.

37,928.—Lamp.—W. G. Sterling, Bridgeport, Conn. : I claim, first, The skeleton bridge spreader, G, constructed as herein described, when the same is combined with the wick tube and isolated from this tube and the lamp cap, by means of a non-conducting medium, substantially as described.

Second, Securing the bridge-holding cap, c, to the wick tube by means of a non-conducting cement substance as herein described.

Third, Pivoting the skeleton bridge, G, or its equivalent to an isolated cap, c, as and for the purposes herein described.

Fourth, The stops, e, e, on cap, c, in combination with the pivoted bridge, G, substantially as described.

Fifth, Constructing the open or skeleton bridge, G, of one piece of metal stamped out so as to form the pivot holes, openings, k, k, portions, l, l, and arched bridges, n, n, as described.

37,929.—Pipe Coupling.—S. R. Warner, New Haven, Conn. : I claim the combination and arrangement described of the rings, A, A, clamps, E, and forcing ring, F, in the manner and for the purpose substantially as herein specified.

37,930.—Coal-oil Burner for Lamps.—J. T. Van Kirk, Philadelphia, Pa. : I claim, first, The case, B, with the dome or deflector, G, connected permanently to the same, when combined with and rendered detachable from the case, A, substantially as and for the purpose herein set forth.

Second, So constructing and arranging the perforated cases, A, and B, that an annular space shall intervene between the two for the purpose specified.

37,931.—Sewing Machine.—William Weitling, New York City : First, I claim a double-thread holder operating in such a manner as to cross its two threads alternately to the right and to the left and having a reciprocating motion to and from the needle or needles of a sewing machine, substantially in the manner and for the purpose herein described.

Second, I also claim, in combination with a sewing mechanism provided with a thread-carrier operating through the opening of the button hole, a double-thread holder operating in such a manner as to cross its two threads alternately to the right and left, and having a reciprocating motion to carry the crossed threads to and under the needle and vertical thread-carrier, c, substantially in the manner and for the purpose described.

Third, I claim a thread-holder consisting of a pair of levers moving on a common fulcrum toward and from the needle or needles and having also a crossing motion of its arms whose ends, *e'* and *e''*, are each provided with an eye or thread leader for the passage of thread, as herein described and for the purpose set forth.

Fourth, I claim the combination of a shifting double-thread holder and a thread-carrier with a sewing mechanism, substantially as herein described and for the purpose set forth.

Fifth, I claim securing the thread-holder plate *b*, to the angular support, *q*, by means of double hinges, *l'* and *l''*, so to raise or lower the double-thread holders, *e'* and *e''*, at pleasure, substantially in the manner and for the purpose described.

Sixth, I claim the button-hole guide consisting of the two pins, *o'* and *o''*, whether attached to the bedplate or to the cloth-presser, when the same are constructed and operated substantially in the manner and for the purpose described.

37,932.—Mowing Machine.—James E. Wood, Worcester, Mass. :

I claim the combination of the arm, *p*, and the cam, *q*, or their mechanical equivalent or equivalents with the auxiliary wheel, *m*, its operative lever, and the cutter bar, *G*, hinged or applied to the frame, *A*, or the supporting part, *i*, thereof, substantially in the manner and so as to operate as described, the said appliances to the cutter bar and its supporter constituting what may be termed a duplex motion or mechanism, by the aid of which such cutter bar may be elevated or raised off the ground and above the same with great celerity when the mowing machine may be in use.

37,933.—Grate.—William Wright, South River, N. J. :

I claim a fire grate for furnaces constructed of a series of independent sliding bars, *C*, fitted in bearing plates, *B*, and extending through the front of the furnace, substantially as set forth.

[The object of this invention is to obtain a grate for furnaces which will admit of being cleaned with far greater facility than usual, without exposing the operator to the heat or dust attending the operation and without admitting any cold air into the furnace.]

27,934.—Skate.—J. M. Yates, Fultonville, N. Y. :

I claim, first, constructing the toe and heel plates, *B* and *D*, and runner, *A*, all in one piece, by turning and bending the ends of the runner and flattening the same, as set forth, in combination with the springs, *C* and *E*, attached to the plates, *B* and *D*, and resting on the runner, *A*, as set forth.

Second, Attaching the screw or heel spur, *F*, to a thumb plate, *G*, the latter having a slot made in it to allow the heel strap, *H*, to pass through, and the former being allowed to turn in the plate, *D*, substantially as and for the purpose specified.

[This invention relates to a skate in which springs are employed to admit of a certain degree of elasticity between the foot of the wearer and the runner of the skate, and consists in having the sole plate of the skate formed of two parts, to wit, a heel piece and a toe piece, which are constructed out of the same piece of metal as the runner, and in such a manner as to have a spring connection with it, said heel and toe pieces being also supported by springs, whereby the desired elasticity is obtained. The invention also consists in having the screw or heel spur of the skate attached to a button or revolving thumb plate, which is slotted to admit of the heel strap passing through it, whereby a proper bearing is obtained for the heel strap and the screw or spur rendered capable of being secured directly into the heel, in adjusting the skate to the boot or shoe, without the aid of a gimlet or without turning the skate as hitherto required.]

37,935.—Operating Ordnance.—M. L. Callender, New York City, and N. W. Northrup, Greene, N. Y., assignors to J. B. Eads, St. Louis, Mo. :

We claim the construction and arrangement of the gun, platform, and shield, so that it may be freely revolved while supported on a cushion of steam within the cylinder, as described.

Second, We claim the method of transmitting steam pressure to either or both sides of the turbine wheel, which is arranged with free rotation of the platform and shield, substantially as described.

37,936.—Knapsack.—A. N. Clark (assignor to the Rubber Clothing Co.), Boston, Mass. :

I claim the combination with shoulder straps radiating from an adjustable center strap, as described, of guides or loops fixed to the upper side of the knapsack, the whole being arranged together and operating substantially as described and for the purposes specified.

37,937.—Breech-loading Fire-arm.—Charles Jackson and Thos. Goodrem (assignors to Charles Jackson), Providence, R. I. :

We claim, first, The stop, *E*, arranged on a pivot, *d*, in such a manner, in combination with the barrel and breech and with a screw, *b*, or its equivalent, as to serve as a stop in both the opening and closing movement of the barrel, but so as to permit, when desired, the unscrewing of the barrel far enough to detach it from the breech, substantially as herein specified.

Second, The plate, *h*, attached firmly to the breech and applied in combination with the screw, *D*, to produce both a rotary and a longitudinal motion of the cartridge cases for the purpose of withdrawing them from the barrel, substantially as herein specified.

37,938.—Preparation of Aniline Blue.—Prosper Monnet, Lyons, France, assignor to Schneider & Heidlaut, New York City :

I claim the within-described process of producing the blue of rosaniline by treating pure rosaniline with acetate of aniline, substantially in the manner herein described.

[By this simple process the blue color can be produced from aniline in an easy and expeditious manner. The patent has been assigned in full to Messrs. Schneider & Heidlaut, 21 South William street, New York, and further information in regard to it and to M. Monnet's previous patents can be obtained through those parties.]

37,939.—Plow.—S. J. Olmstead (assignor to himself, W. S. Weed and D. S. Ayres), Binghamton, N. Y. :

I claim, first, The attachment of a wheel upon the landside, forming a large part thereof and projecting below the bottom of the plow, while its exterior or outer surface is in line with the landside, for the purpose of removing the friction of the plow while at work, as set forth.

Second, I claim making the supporting arm, *e*, of the wheel a part of the mold-board casting.

37,940.—War Rocket.—Pascal Plant (assignor to himself and Rufus Waples), Washington, D. C. :

I claim, first, The pressing of the rocket composition around the case of the powder magazine, forming a cylinder of less circumference than the interior of the outer case, that the gas may pass through the annular space to the holes in front, and thence pass to the cap pieces.

Second, One or more conical cap pieces of less diameter than the body of the projectile to give direction to the gas from the burning composition, constructed and operating substantially as and for the purposes described.

37,941.—Ring for Martingales.—W. M. Welling, New York City, assignor to S. G. Welling, New Rochelle, N. Y. :

I claim the ring for martingales, &c., manufactured as set forth, with a metal ring enveloped in composition, as and for the purposes specified.

37,942.—Submarine Battery.—Benjamin F. Smith, Jr., Albany, N. Y. Antedated Nov. 15, 1862 :

I claim the application to and combination with vessels of other than ordinary or suitable construction, of a mechanism for driving or thrusting shells or other explosive missiles against vessels or other bodies accessible by water and there by contact to explode, said mechanism being constructed and arranged to operate substantially in the manner herein set forth.

RE-ISSUES.

1,431.—Car Spring.—Augustus B. Davis, Philadelphia, Pa. Patented Feb. 15, 1859. Re-issued Jan. 6, 1863 :

I claim, first, A box of any suitable form and a plate, *C*, or its equivalent, adapted to the open end of the said box, and connected to the latter by a bolt or bolts, *D*, or other suitable fastenings, substantially as set forth, in combination with a series or nest of springs

arranged side by side, and free from contact with each other, each spring forming an integral part of the entire elastic medium composing the sole of the shoe, and the latter moving with the said box and plate to constitute an entire single self-contained car spring as described.

Second, The use within a box substantially as described of a series or nest of spiral or coiled springs when made of iron-wire, and treated by compression or impact prior to being deposited in the box as set forth for the purpose specified.

Third, The series or nest of springs combined with a box and plate so constructed that the compression of the said springs shall be limited and their constant availability thereby preserved.

1,432.—Elastic Cap for sealing Cans and Bottles.—Thos. R. Hartell & John Letchworth, Philadelphia, Pa., assignees by mesne-assignments of Rhoda Davis, late of Brookhaven, N. Y. Patented Feb. 24, 1857 :

We claim a rigid plate, *B*, of metal or other suitable material having a web or band of gum elastic so formed and arranged that when applied to a jar or other tubular object, the web or band will be stretched, and tending to return to its original form and dimensions will with the said plate hermetically seal the jar as set forth.

1,433.—Cream Pump.—M. A. Richardson, Sherman, N. Y. Patented Sept. 23, 1862 :

I claim the use of a screen or screens, *K*, within or closing the discharge outlet of a force pump, for the purpose of breaking the tenacious and hardened portions of cream, arranged and operating substantially as herein set forth.

4,434.—Grain-dryer.—Samuel Schuyler, Brooklyn, N. Y. Patented Jan. 22, 1861 :

I claim, first, So combining the several screens or platforms, *B* and *B'*, by means of chains and pulleys or other equivalent devices for adjusting their elevation, that all may be simultaneously raised or lowered at one end for the purpose of adjusting or varying their inclinations substantially as and for the purpose herein specified.

Second, The combination of the series of platforms, *B*, with the elevator, *M*, or its equivalent substantially as and for the purpose herein set forth.

1,435.—Composition for Blasting Powder.—W. R. Thomas & M. Emanuel, Jr., Catsaunqua, Pa. Patented April 9, 1861 :

We claim, first, A powder intended principally for blasting purposes, in which nitrate of soda is substituted for the nitrate of potash and the tendency of that salt to attract moisture is prevented by the use of ground bark or its equivalent instead of charcoal, substantially as above described.

Second, We claim a powder intended principally for blasting purposes composed of sulphur, nitrate of soda and ground bark or its equivalent, prepared substantially as above described.

1,436.—Blasting Powder.—W. R. Thomas & Morgan Emanuel, Jr., Catsaunqua, Pa. Patented March 11, 1862 :

We claim, first, The use of chlorate of potash with nitrate of soda and ground bark or its equivalent in the formation of an explosive powder, substantially as above set forth.

Second, An explosive powder compounded of nitrate of soda, sulphur, chlorate of potash and ground bark or its equivalent, substantially in the manner and for the purpose above set forth.

1,437.—Blasting Powder.—W. R. Thomas & Morgan Emanuel, Jr., Catsaunqua, Pa. Patented Dec. 9, 1862 :

We claim, first, In a blasting compound in which nitrate of soda and ground bark or its equivalent are used as two of the ingredients, the use of starch as a third ingredient, when combined and compounded with the other substances, substantially as described.

Second, In a blasting compound in which nitrate of soda, chlorate of potash and ground bark, or its equivalent are used, as ingredients; we claim the use of starch, as an additional ingredient, in the manner and for the purpose described.

Third, We claim the use of nitrate of soda, flowers of sulphur, chlorate of potash, starch, and ground bark, or its equivalent, when combined and compounded substantially in the manner and for the purpose above described.

1,438.—Cheese Vat.—C. M. Wilkins, West Andover, Ohio. Patented Nov. 22, 1859. Re-issued Dec. 24, 1861 :

I claim, first, The combination of the valve, *w*, with the heater, *F*, substantially as and for the purpose specified.

Second, The combination of the valve, *o*, with the pipe, *w*, for the purpose set forth.

Third, The combination of the valve, *N*, with the pipe, *B*, over the fire-box, *C*, of the heater, substantially as and for the purpose specified.

Fourth, Arranging the valves, *N* and *O*, to operate substantially as described, and for the purpose specified.

Fifth, Arranging the heater, *F*, as relating to the water vat, *A*, and reservoir, *L*, substantially as shown, and for reasons specified.

Sixth, I claim the use of the truss braces, *J* and *J'*, in the manner and for the purpose described and shown.

1,439.—Railroad Car Seats and Couches.—Theodore T. Woodruff, Philadelphia, Pa. Patented Dec. 2, 1856 :

I claim connecting and combining the two opposite sets of cross seats of a railroad car with additional frames to form the required length of cushioned surfaces to form couches in each compartment, substantially as described.

And I also claim, combining and connecting the backs of opposite cross seats of a railroad car when elevated to a horizontal position to constitute an elevated couch or couches, substantially as described.

And I also claim combining with the backs additional frames, substantially as described, to form the required length of couch, and thereby avoid the necessity of making the backs of an inconvenient height when used as backs to the seats.

And I also claim the connecting the backs of opposite cross seats when elevated to a horizontal position to form an elevated couch or couches, substantially as described, in combination with the opposite cross seats arranged so as to be convertible into couches, substantially as described.

And I also claim forming an elevated couch, above the couch formed by the backs of seats, by a series of hinged frames, substantially as described.

EXTENSIONS.

Re-issue 758.—Cut-off and Working Valve of Steam Engines.—George H. Corliss, Providence, R. I. Patented March 10, 1849 (No. 6,162). Re-issued May 13, 1851; again re-issued July 12, 1859 :

I claim the method substantially as described of operating the slide valves of steam engines, by connecting the valves that open and close the ports at opposite ends of the cylinder, with separate crank wrists or their mechanical equivalents, so that from the motion thereof each valve while its port is closed, shall move a less distance than it moves in opening and closing its port while at the same time the two wrists by which the two valves are operated have the same range of motion as described; whereby I am enabled to save much of the power heretofore expended in working the slide valves of steam engines, and by which also I am enabled to make a greater proportion of the movement of the valve available, for effecting a free passage of the steam through the ports of the cylinder.

Re-issue 759.—Cut-off and Working Valve of Steam Engines.—George H. Corliss, Providence, R. I. Patented March 10, 1849 (No. 6,162). Re-issued May 13, 1851; again re-issued July 12, 1859 :

I claim the combination of liberating valve gear with valves which are moved parallel to their seats and continue their closing motion after their ports are closed, and commence their opening motion before their ports open, substantially as described.

Re-issue 760.—Cut-off and Working Valve of Steam Engines.—George H. Corliss, Providence, R. I. Patented March 10, 1849 (No. 6,162). Re-issued May 13, 1851; again re-issued July 12, 1859 :

I claim the combination substantially as described, of an air cushion with the liberating valve gear of steam engines.

Re-issue 761.—Cut-off and Working Valve of Steam Engines.—George H. Corliss, Providence, R. I. Patented March 10, 1848 (No. 6,162). Re-issued May 13, 1851; again re-issued July 12, 1859 :

I claim the combination with the part of the valve gear that appertains to a liberating steam valve, of an instrument moved by the power of the engine in such manner as to effect the closing of the liberating valve, whenever the independent means provided for that purpose fail to act in its time.

Re-issue 762.—Cut-off and Working Valve of Steam Engines.—George H. Corliss, Providence, R. I. Patented March 10, 1849 (No. 6,162). Re-issued May 13, 1851; again re-issued July 12, 1859 :

I claim the combination of a helical cam with the opening and closing mechanism of the steam valve substantially as described.

Re-issue 763.—Cut-off and Working Valve of Steam Engines.—George H. Corliss, Providence, R. I. Patented March 10, 1849 (No. 6,162). Re-issued May 13, 1851; again re-issued July 12, 1859 :

I claim the method substantially as described for regulating the velocity of steam engines, by combining a regulator with a liberating valve gear.

6,161.—Machine for cutting Teeth of Beveled Gear.—George H. Corliss, Providence, R. I. Patented March 10, 1849 :

I claim, first, The method of cutting the cogs of beveled wheels by means of a reciprocating cutter that moves in or on a slide (or slides) that vibrates on an axis that coincides, or nearly so, with the apex of a cone representing the bevel of the wheel to be cut, substantially as herein described, by which vibration the depth of cut is determined and this I claim irrespective of the adjustment of the axis of vibration as described.

Second, I claim the guide bar (or its equivalent), on which the cutter carriage runs, and having its axis of vibration for the depth of cut as above described when combined with a secondary frame joined to the main frame at some point outside of the circumference of the wheel to be cut, that the machinery may be adapted to the cutting of cogs on various bevels, substantially as described.

Third, I claim in combination with the guide bar having an universal joint or the equivalent thereof and operated substantially as described in combination with the guide-plate to guide the cutter and determine the frame of the face of the cogs, as described.

Fourth, I claim making that part of the guide bar which rests against the guide plate to determine the form of the face of the cogs rest on a guide plate on the guide bar and properly beveled to relieve and clear the cutter for its back movement, substantially as described.

6,209.—Adjustable Cut-off.—Julius King, Bordentown, N. J. Patented March 20, 1849 :

I claim raising the valves by means of the tappets of a revolving shaft, acting against the adjustable sliding feet of horizontal vibrating levers which raise the valves, whereby the steam can be cut off at any point in the stroke of the piston that may be desired and the points of cutting it off changed from time to time without stopping the engine. I desire it to be understood that I do not limit myself to the precise arrangement of parts herein represented, but claim the right of varying the same to any extent that may be deemed advisable while I accomplish the same results by essentially analogous means.

I likewise claim reversing the motion of the engine by means of the clutch coupling arranged and operated substantially as herein set forth, and also by the same means throwing the chain which operates the valves out of gear, when it is required to work by hand.

DESIGNS.

1,734.—Solitaire Board.—James A. Bazine, Canton, Mass.

1,735.—Plate of a Stove.—E. J. Cridge, Troy, N. Y.

1,736.—Skate.—Frank Douglass, Norwich, Conn.

1,737.—Floor Oil-cloth.—George Green, Wappingers Falls, N. Y., assignor to Deborah Powers, Albert E. Powers & Nathaniel B. Powers, Lansingburgh, N. Y.

1,738.—Clock Case.—George B. Owen, New York City.

1,739.—Floor Oil-cloth.—James Paterson, Elizabeth, N. J., assignor to Deborah Powers, Albert E. Powers & Nathaniel B. Powers, Lansingburgh, N. Y.

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