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LIST OF PATENT CLAIMS

Issued from the United States Patent Office FOR THE WEEK ENDING NOVEMBER 23, 1851.

To E. B. Bigelow, of Clinton, Mass., for improvement in Wires for making Pile in Woven Fabrics.

I do not limit myself to any particular form or mode of attaching the weight, as this may be variously modified. But I claim combining with the flat pile or figuring wire, employed in weaving looped or piled fabrics, and attached to or near one thereof, a weight, for the purpose and in the manner substantially as described.

To Elias Howe, Jr., of Cambridge, Mass., for improvement in Fastenings for Garments.

I claim the opening, closing, and fastening together, the two sides of a garment, or other article, by means of the clasps and ribs, operating in combination, substantially in the manner described.

I also claim the method of connecting the clasps one to the other, in pairs, and in the series of pairs, by the links, cord, and beads, substantially in the manner set forth.

To H. H. Huntley, of Cincinnati, O., for improvement in Cooking Stoves.

I claim the driving flues opening from the floor, as described, and, in combination with this, the chamber, for the purpose described.

To Geo. W. Carleton, of Brunswick, Me., for improvement in Cooking Stoves.

I claim the employment of the three movable plates, constructed and arranged as described, viz., one of the plates being hollowed, affording a passage or flue, when not cut off by the damper through which the heat passes, warming the ovens formed by the plates, the plates being capable of being withdrawn from the stove, or varied in a vertical position, by which arrangement the stove can be converted into an air-tight or draught wood or coal cooking stove, cooking range, or a wood or coal draught or air-tight radiating stove; or into a Franklin stove, substantially as set forth.

To Jonathan & John J. G. Collins, of Chester, Pa., for improved Safety Apparatus for Steam Boilers.

First, we claim the bent tube formed and arranged substantially as described, to contain mercury, in combination with the lever of the safety valve, or its equivalent, and connected with the steam boiler by means of a swivel and a pillar connection, or its equivalent, whereby the varying pressure of steam varies the actual weight upon the valve.

Second, we also claim the combination of the connecting rod and the lever, and the shaft for connecting the mercurial gauge, with the catch box, and the projection on the catch box, whereby the mercury in the gauge, being the weight, holds down the safety valve, or sets it at liberty, by the pressure of steam from the pillar and swivel, said pillar being supplied with steam from the boiler or boilers, as described.

Third, we also claim the combination of the rod with the spiral spring upon it, and a small pulley at the top of it, with the notched pulley for holding the catch box together, so long as the full part of the said pulley is on the small pulley, or setting it at liberty, when that part of the pulley that is cut out comes opposite the small pulley, and thereby allowing it to ascend, as described.

To Elijah Goldthait, of Fort Wayne, Ind., for improvement in Plows.

I claim, first, the cutter, or its equivalent, to separate the sward for the first furrow, at a proper distance from the coulter, acted upon by the prop and lever, or their equivalents.

Second, I claim the piece fastened to the heel

of the mould board, in combination with the cutter to turn wide furrows.

Third, I claim the mode of connecting the tongue and plow, respectively, to the axle, by means of the link and the loose tenon on the tongue, substantially as described, so as to allow the team to walk entirely aside from the furrow or direct course of the plow, in plowing prairies, marsh, or other land with soft under strata, and make the plow run smoothly and work well; and so as also to enable the plowman to take an extraordinarily wide furrow, with one member of the team walking in the furrow, with a common yoke, thus dispensing with the long yoke now commonly used for that purpose.

Fourth, I claim the rope and lever, or their equivalents, in combination with the mode of connecting the tongue and plow to the axle, substantially as described and for the purposes set forth.

To Daniel King, of Brooklyn, N. Y., for improvement in Centrifugal Sugar Drainers.

I claim centrifugal machines for separating fluid from other matter, constructed and operating as set forth, with detachable vessels, containing the substance to be operated upon, irrespective of the exact mode of attachment, the number of vessels used, or the form.

To T. H. Mortimer & J. M. Gardiner, of Charleston, S. C., for improved method of operating Rudders. Patented in France June 11, 1851.

We claim controlling the operation of the rudders, in such a manner as to bring either into operation while the other is stationary, by means of the sins or studs on their tillers, in combination with the grooves or slots in a wheel or disc, receiving motion upon an axis or by the equivalents of the same, substantially as described.

To Orrin Newton, of Pittsburgh, Pa., for improvement in the manufacture of Door Knobs.

I claim the combination and arrangement of the arms, sliding plate, springs, and lever, substantially as described, operating in the manner, or any analogous way, for the purpose set forth.

To Milo Peck, of New Haven, Ct., for improvements in Drop Presses.

I claim the general arrangement and combination of the crank and shaft, with its sweeps moving in the same direction with the moving gear or pulley, and the ratchet wheel, jointed together and running loose upon the shaft, constantly in the same direction, substantially as I combine them, for the purpose described.

I also claim the lock in combination with its sweep and springs, and with the crank, to stop its motion not too abruptly, and to hold it until it is unlocked, by the hand or foot of the workman, substantially as described.

To D. F. Phillips, of Republic, Ohio, for improvement in Cider Mills.

I wish it to be understood that I make no claim to originality of invention to any part of the mill, separately considered; nor do I claim as new any part of the arrangement of the press, grinding cylinder, or hopper. But I claim the arrangement of the parallel slicing knives, in combination with the reciprocating follower, made as described, with channels and ribs on its inclined face, when used with a grinding cylinder and concave, made and arranged as described, for first slicing the apples and then delivering the slices, successively, to the grinding cylinder, to be reduced to pumice in the manner described.

To Franklin Skinner, of Dunkirk, N. Y., for improvement in Shingle Machines.

I claim, first, the peculiar form and mode of adjusting the riving plate, the same being self-adjusting by means of the spring upon which it rests, and the end of the plate contiguous to the riving knife being bent upward, (to accommodate irregularities in the grain of the shingle timber), as specified.

Second, the employment in combination with a shingle shaving machine, of the rolls, levers, hanging rod, spring, and bent lever, or their equivalents, the whole being arranged and operated in the manner and for the purpose described; the levers, rod, and spring acting upon the rolls, and pressing them uniformly towards each other, for the purpose of unwinding or straightening the rived shingle in the first instance, and the bent lever (being operated by the motion of the connecting rod, and acting upon the spring) having the effect

of increasing the force or pressure of the rolls upon the shingle (as the latter passes between them), for the purpose of preventing the splitting of the shingle, in advance of the cutters, as they approach the thin end of the shingle, as set forth.

To Wm. M. Smith, of Georgetown, D. C., for improved Valve for Oscillating Engines.

I do not claim the circular valve, nor the manner of reversing the engine by turning the valve. But I claim the arrangement of the piston valve, with a ground face, in a cylindrical steam chest, as described, by which the necessity of packing about the trunnion and plummer block is avoided, consequently saving much friction in the trunnion.

To F. A. Stevens, of Burlington, Vt., for improvement in Railroad Car Brakes.

I claim the combination and arrangement of the levers, link rods, and shoes, or rubbers, substantially as described, whereby each wheel of both trucks of a car is retarded with an uniform force, when the brake is put into operation.

RE-ISSUE.

To Solyman Merrick, of Springfield, Mass., for improvements in the Screw Wrench. Dated Aug. 17, 1835. Extended May 14, 1849. Re-issued Nov. 25, 1851.

I claim combining with a wrench, in which the inner jaw slides on a bar permanently attached to the outer jaw and making part of, permanently attached to the handle, substantially as described, a screw-thread and nut, connecting the movable jaw with the said bar between the said movable jaw and that part of the handle grasped by the operator, in the manner and for the purpose as described.

I also claim the arrangement of the screw upon the circular edges of the flat bar, in the manner and for the purpose described.

DESIGN.

To Ezra Ripley & N. S. Vedder, (assignors to Low & Hicks), of Troy, N. Y., for Design for a Parlor Stove.

Pneumatic Pile Driver.

A very excellent paper upon this mode of sinking piles was recently read before the English Association of Civil Engineers, by G. J. Hughes, C. E. The bridge erected upon the piles crosses the Medway at Rochester (Eng.)

The bridge was described, as being designed to consist of three large openings, a central one of 170 feet in width, and two others, each of 140 feet in width, spanned by cast iron segmental girders, and of a passage to admit masted vessels to the parts of the river, across which a movable bridge would be placed. Each of the river piers occupied an area of 1,118 square feet, and rested upon a series of cast iron cylinder piles, 7 feet in diameter, placed 9 feet apart longitudinally, and 10 feet transversely, so that there were fourteen under each pier. The cylinder piles in the abutments were 6 feet in diameter, of which the "Strood" abutment required thirty, and the "Rochester" abutment twelve. Each pile was composed of two, three, or more cylinders, 9 feet in length, bolted together through stout flanges; the bottom length had its lower edge bevelled, so as to facilitate the cutting through the ground. The bed of the river was originally presumed to consist of soft clay, sand, and gravel, overlaying the chalk, and accordingly the application of Dr. Pott's pneumatic method for forcing the cylinder piles into the ground, which had been successfully carried out in similar positions, was contemplated; but after a few trials, the ground was found to consist of a compact mass of Kentish rag-stone, so that the mere atmospheric action upon the piles, induced by a partial vacuum, would be ineffective in such a situation. It was therefore decided, that the pneumatic process should be reversed, so as to give each pile the character of a diving-bell; for which purpose one of the cylinders, 7 feet in diameter, and 9 feet in length, had a wrought iron bolt securely bolted to it, through which two cast-iron chambers, D shaped in plan, with a sectional area of 6 square feet, appropriately called air locks, projecting 2 feet 6 inches above the top of the cylinder, and 3 feet 9 inches below the cover. The top of each air lock was provided with a circular opening, two feet in diameter, with a flap working on a horizontal hinge, and an iron door, 2 feet by 3 feet 4 inches, with vertical hinges below the cover; each air lock was also furnished with

two sets of cocks, the one for forming a communication between the cylinders and the chamber, the other between the chamber and the atmosphere. Compressed air was supplied to the cylinder pile by a double-barrelled pump, 12 inches in diameter, and 18 inches stroke, driven by a six horse-power non-condensing steam engine. At first the expelled water was made to pass into the river, from beneath the lower edge of the pile; but when the stratum became so compact as to oppose a high degree of resistance to the passage of the air, an outlet was formed through the side of the uppermost cylinder, by the introduction of a pipe, having the form of a syphon, the long leg of which reached to the bottom of a pile, and was subject to the pressure of the condensed air on the surface of the water within, whilst the short leg, leading into the river had the effect of relieving the amount of compression, providing a vacuum was once obtained in the body of the syphon. Such an effect was readily produced by connecting the summit with the exhaust side of the air pumps, by a pipe which could be opened or closed at pleasure. To insure the downward motion of the pile, and to give it a weight which should be at all times superior to the upward pressure, two stout-trussed timber beams were laid on the top of the cylinder, in a direction suitable for bringing the adjacent piles into action as counterbalance weights, by four chains passing over cast iron sheaves.

Two light wrought iron cranes were fixed inside the cylinder, the jibs of which swept over the space between the air locks and windlasses, inside, for the purpose of hoisting the loaded buckets and lowering the empty ones.

The method followed in working the apparatus was found to be so simple in detail as to be perfectly intelligible to all the workmen employed. The pumps being set in motion, the flap of one of the air locks and the door of the other were closed; a few strokes compressed the air within the pile sufficiently to seal the joints, and whilst the pumping was in progress, the men passed through the air locks to their respective stations. When the water was shallow, the pile descended, by scarcely sensible degrees, as fast as the excavation by hand permitted; but when the water was deep, the excavation was carried down full 14 inches below the edge of the pile, which then descended, at once, through the whole space, as soon as the pressure was eased off.

We wonder what has become of this invention in our country. It was illustrated in Vol. 5, Scientific American, and has been patented here; but we have heard nothing about it in a long time.

American Astronomers in Europe.

The Paris correspondent of the Boston Atlas says:—

"The names of the Messrs. Bond (father and son) have been again mentioned with honorable praise by M. Arago before the Academy of Sciences, when communicating to that body the observations of Mr. W. C. Bond and Mr. G. P. Bond who discovered a new ring in the interior of the old ring of Saturn. M. Arago observes, however, that as to the question of the unity or variety of Saturn's rings, no definite opinion can be formed until astronomers shall have observed stars in the black bands, which seem to mark the limits of the several rings, and this cannot be done until Saturn, which is placed 330 millions of leagues from the sun, shall pass over that way, where stars are so numerous. The astronomers of the Roman Observatory have remarked five or six rings around Saturn."

Castor Oil for Light.

The Jacksonville (Ill.) Journal says, it may not be generally known that castor oil is better for lamps than sperm or lard oil, which is the fact. Some years since, when this oil was cheaper than either of the others, the editors of that paper used it in their parlor lamps, much pleased with the result; it gives a white, clear and beautiful light, and does not clog the wick. It sells in Illinois at one dollar a gallon.

A marble statue of the late Chief Justice Tindel has been placed on the town pump of his native place, Chelmsford, Eng., an odd conceit, which provokes not a little merriment.