and tube sheet by means of a thimble passing over the end of the tube and screwing into the tube sheet, and a ring or gasket of india-rubber or other packing material which is inserted into a cavity in the sheet and compressed around the tube by means of the thimble, in such manner as to make a steam-tight joint, but freely permit the longitudinal expansion of the tube. It also consists in the construction of such thimbles with their openings of circular form at their inner ends for the reception of the tubes, but square or other polygonal form at their outer ends for the reception of a wrench or key by which to screw them into their places. Measures have been taken to secure an English patent for this invention. The above improvement is the invention of John V. V. Booraem, of Jersey City, N. J.

Mold for Casting Printer's Type.—This invention relates to molds for casting type either singly or several at a time from any material, more especially type made of a mineral composition which is in a plastic but not a fluid state at the time of molding. It consists first, in certain constructions of the mold whereby facility is afforded for detaching the type from them; second, in certain means of insuring the registering of the molds with the matrices; and third, in a certain mode of applying a receiver for the material of which the type are to be made, a plunger for pressing the material into the molds, and a cut-off for separating the molds from the receiver, in combination with each other and with the mold box, whereby great facility is afforded for casting the types, and for removing them from the mold after casting. The above improvement is the invention of R. W. Davis and D. Davis, of the City of New York.

Device for Gilding Moldings.—This invention consists in the employment of a tip or brush applied to an arm which is attached to or connected with a slide and has a spring bearing against it; all being arranged in such a manner that the operator can, with the greatest facility, remove or take up the metal leaf from the book or pile and deposit it upon the molding. The invention also consists in using, in connection with the tip or brush arranged as above specified, an endless apron arranged to operate conjointly with the brush slide, in such a manner as to admit of the leaf, when applied to narrow moldings, being cut by the operator into strips of a width to suit the moldings. The invention further consists in a means employed for feeding the molding to the brush, the feed mechanism being arranged to operate conjointly and automatically with the brush and endless apron. The above improvement is the invention of Robert J. Marcher, of New York City.

Applying Power to Car Brakes.—This invention relates to an improved mode of applying the power to that class of car brakes which are actuated from the locomotive, and it consists in the employment of a friction wheel applied to an adjustable shaft having a screw upon it, which by actuating said shaft, may be thrown in gear with a worm wheel on a shaft having a loose drum upon it and connected with the shaft by means of a spring pressing one end of the drum in contact with a conical hub attached to the worm wheel; all being arranged in such manner that the brakes of a train of cars will be in complete control of the operator or engineer. The above improvement is the invention of A. I. Ambler, of Chicago, Ill.

Instrument for Taking Soundings.—The object of this invention is that of taking soundings from vessels navigating shallow waters without stopping or checking the speed of such vessels. The principle is of a self-acting nature, the depth of water being at all times shown by a self-adjusting index. It is a well-known fact that there is a certain fixed relation between the pressure and the depth of water, and that, therefore, if the pressure of the sea at a certain point below the surface be known, that pressure accurately indicates the depth. This invention is founded on these physical facts. An elastic air-tight bag is inclosed in a small metallic vessel attached to a tow line secured to the vessel. An india-rubber tube is connected with the bag by an air tight joint. This tube is lashed to the said tow-line with its upper end put in communication with an ordinary pressure gage. This pressure gage is graduated in such a manner that its divisions correspond with the pressure produced by one foot column of water. The index of the gage, therefore, in place of showing as usual the number of pounds of pressure to which it is subjected, will show what column of water corresponds with the pressure within the gage. In other words, the index will show how far the instrument is immersed below the surface of the water. Thus, by mere inspection the depth of water may at all times be accurately ascertained, without the inconvenient and inaccurate process of heaving the lead as hitherto. The above improvement is the invention of John Ericsson, of the City of New York.

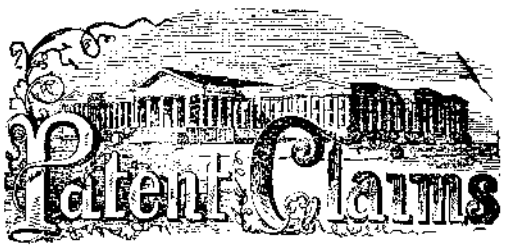
Mode of Applying Brakes to Cotton Lappers, &c.—In lappers and breaker cards and other machines for condensing a number of sheets of cotton or fibrous material into one sheet or lap, a friction brake is employed to produce the necessary pressure on the roll around which the lap is wound, to give the lap the required degree of compression; and this brake requires to be thrown out of operation when the lap has attained its full size and is ready to be taken out and to remain inoperative while the full lap roll is being removed and a fresh one substituted, and be brought again into operation on the starting of the machine to commence the formation of a new lap. The brake is usually kept in operation by means of a weight attached to a foot lever or treadle, and when it requires to be thrown out of operation the attendant has to press his foot on a treadle to raise the weight, and this pressure has to be continued to keep the brake inoperative while the roll is being changed. The object of this invention is to render the brake automatic, and to this end it consists in combining it with the shipper or other device which stops and starts the feed rolls of the machine in such manner that it is thrown into operation by the act of starting the feed rolls and out of operation by the act of stopping the said rolls.

Machinery for Preparing Cotton &c.—In preparing laps for carding, some attempts have been made to combine an opener and a cleaning trunk with a lap-head for the purpose of forming what is known as a breaker lap, but such combination has never been made to operate with perfect success, owing to the difficulty of combining a suitable number of draft cylinders at the mouth of the trunk to prevent excessive back pressure on the opener and in the trunk, such pressure causing the fiber to be badly curled and to come out in bunches. It has been common, in connection with such combinations, to use a blow-fan on the opener to drive the cotton through, but this tends to pack the fiber in the trunk and cause it to become choked up. This invention consists in a certain arrangement of an endless apron in combination with the draft cylinders, as hereinafter described, at the mouth of the trunk, whereby the use of three or more of such cylinders is permitted instead of only two, which is the greatest number it has hitherto been practicable to use. The above improvements are the invention of Richard Kitson, of Lowell, Mass.

NEW PROTECTION FOR STEAM BOILERS.—Compressed hair or hogs' bristle is now being placed about the steam drums of such vessels in the navy as have their boilers exposed. Experiments prove that this substance possesses great power of resisting shot. As compared with cotton, it is far superior. A hundred pound rifle-shot was fired in the Washington Navy Yard at a bale of cotton about 80 yards from the gun; it penetrated and passed out the other side to a long distance; the same shot fired at a bale of compressed bristles, penetrated and dropped out 16 inches from the other side, showing the power of the projectile to be wholly spent. This is a patented article.

This paragraph was written before the report on this article was received from the Ordnance Department. There would seem to be some discrepancy between them.

INTERESTING AND VALUABLE REPORTS.—By favor of the Ordnance Department we have been provided with reports of recent experiments tried at the Washington navy yard, on certain targets, guns and projectiles, brought thither for inspection by officers of the Government. Two such reports will be found on page 238 of the present number. Fuller details will be found by perusing the report. We hope to make these articles, in future, a special and interesting feature of the SCIENTIFIC AMERICAN.



ISSUED FROM THE UNITED STATES PATENT-OFFICE

FOR THE WEEK ENDING SEPTEMBER 22, 1863.

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.

40,005.—Car Brake.—A. I. Ambler, Chicago, Ill.:

I claim the screw, I, and a worm wheel, J, the latter being place on a shaft, K, working or rotating in fixed bearings, and the screw placed on a shaft, D, having a swinging or adjustable bearing, the above parts being arranged substantially as shown, and used in combination with a friction wheel, H, placed on the shaft, D, and arranged relatively with a flange, d′, of a wheel, C, of a locomotive, to operate as and for the purpose herein set forth.

I further claim, in combination with the screw, I, worm wheel, J, and friction wheel, H, arranged as shown, the spring, M, and drum, L, applied to the shaft, K, as and for the purpose specified.

40,006.—Pump.—C. C. Alexander, Denver, Colorado:

I claim the peculiar arrangement of the cylinder to a reservoir by means of the pipes; fastened to a cylinder head and to a check valve seat, substantially as hereinbefore described.

40,007.—Railroad Car Brake.—A. I. Ambler, Chicago, Ill.:

I claim, first, The frictional clutch, G, placed on the axle of the tender or engine and actuated through the medium of the levers, A F, and rod, E, in connection with the chain, I, lever, K, and bar, N, the latter being provided with the shoe, k, and all arranged as shown, to operate as and for the purpose set forth

Second, The shaft, O, with pulley, Q, in connection with the pulley, T, on the axle, U, the pendent arm, m, with rod, P, attached and connected with the chain, E′, through the medium of the pulleys, p g, arranged as shown, or in any equivalent way, to operate as and for the purpose set forth.

Third, The connecting of the drum, R, on the shaft, O, with the pulley, Q, on said shaft, by means of a spring, S, arranged with nuts, s, substantially as shown, for the purpose of limiting the tension of the chain, u, and the power of the brakes, as set forth.

Fourth, The combination and arrangement of the clutch, G, chain, I, lever, K, chain, E′, shaft, O, with pulley, Q, attached, the pulley, T, on the axle, U, drum, R, on shaft, O, connected therewith by a clutch and spring, the chain, u, attached to drum, R, and applied to the brakes, all in the manner substantially as and for the purpose specified.

40,008.—Rotary Pump.—C. L. Adancourt, Troy, N. Y.:

I claim the arrangement of the packing pieces, C and H, with rounded stems to fit into sockets, b or j, substantially in the manner and for the purpose herein described.

I also claim the combination of the grooved flanges, d, with the sliders, F, and piston, D, substantially as and for the purpose described.

[This invention consists in the arrangement of a rounded stem on the back of the packing pieces, in combination with correspondingly rounded sockets, in the face of the stationary abutment in the cylinder and in the faces of the sliders in the rotary piston, in such a manner that the action of the water itself keeps said packing pieces tight.

40,009.—Feathering Paddle Wheel.—Alvaro Buttrick, Chelsea, Vt.:

I claim the arrangement of the spiral-faced movable self-adjusting hub, B, spindles, F, and floats, E, with the spiral clutches, H H′, cams, G, and guides, I I′, all operating in the manner herein shown and described.

[This invention relates to that class of feathering paddle wheels the floats of which are arranged to turn about axes perpendicular or nearly so, to the axis of the shaft of the wheel for the purpose of presenting the blades flatwise to the water during a portion of each revolution of the wheel, and edgewise during the remainder of the revolution. It consists in certain improved means of producing the above-mentioned feathering movement, which is operative in whichever direction the wheel rotates, and which varies the said movement to suit the reversal of the rotation of the wheel.]

40,010.—Shears and Scissors.—Joel Bryant, Brooklyn, N. Y. Ante-dated July 29, 1863:

I claim the construction and exclusive use of shears and scissors, S, figures 1 and 2, when made with curved blades, A and B, and with their rivets, R, set on a line with the curve of the said blades, A and B, substantially as herein described and for the purposes as herein set forth.

40,011.—Construction of Fly Wheels.—Joel Bryant, Brooklyn, N. Y. Ante-dated June 9, 1862:

I claim the within-described mode of using fly-wheels, W, in connection with portable or other machines, M, figures 1, 2, 4 and 6, when the said fly-wheels, W, are set to run within or beneath the base, B, of said machines, M, on anti-friction roller bearings, G, or their equivalent, substantially as herein described and for the purposes set forth.

40,012.—Monochord Tuning Instrument.—E. D. Bootman, Edmeston, N. Y.:

I claim the movable bridge bearing or stop, composed of two pieces of steel or other metal, J K, as described, in combination with the mortises, e e, in the sound board, substantially as and for the purpose herein set forth.

[The principal object of this instrument is to enable those who play the pianoforte to tune their own instruments. It is composed of a single string or monochord arranged over a sound board in a suitable case, and a bridge, bearing or stop which is movable upon the sound board to stop the string at the point to make it produce a requisite note. The improvement consists in a very simple and effective construction of the said movable bridge, bearing a stop and mode of applying the same to the sound board.]

40,013.—Joints for Tubes of Surface Condensers.—J. V. V. Booraem, Jersey City, N. J.:

I claim forming the joint between the tube and tube sheet by means of a packing, a, of india rubber or other suitable material surrounding the tube, and a hollow screwed thimble passing over the tube and screwing into the tube sheet, substantially as herein specified.

40,014.—Application of Blowers to the Furnaces of Locomotives.—F. B. Blanchard, New York City:

I claim combining the fan shaft of the blower with the driving or other wheel of the locomotive, by means of cranks, f f and d d, rods, e e, a shaft, D, gears, g g′, pinions, h h′, and clutches, i j and i′ j′, the whole applied and operating substantially as and for the purpose herein specified.

[This invention relates to the driving of the blower by gearing from the driving or other axle of the locomotive to effect combustion in a

closed furnace; and it consists in a certain system or arrangement of gearing couplings and crank connections between the said axle and the shaft of the blower, for the purpose of driving the blower at different speeds, and affording convenience for changing the speed or throwing it out of gear whenever desired.

40,015.—Tuning Attachment for Pianofortes.—Richard Beebe, West Springfield, Mass.:

I claim, first, The combination of the monochord with the pianoforte, in such manner that the sound-board of the pianoforte constitutes the sound-board for the monochord, rendering any peculiar or separate sound-board for the monochord unnecessary, substantially as herein described.

Second, The combination with the so-applied monochord of a movable key, by which it can be struck simultaneously with any one of the strings by the action of the same hand, substantially as herein set forth.

[The object of this invention is to so far simplify the tuning of the pianoforte as to enable any person, capable of tuning unisons and octaves, to put the instrument in correct tune; and to this end it consists in the attachment of a monochord directly to the sound-board of the instrument, with the addition of such apparatus as may be necessary for bringing the monochord and the string to be tuned, simultaneously under the easy control of the hanp, thus obtaining a sufficient volume of sound [without the necessity of constructing the monochord with a separate sounding apparatus of its own after the manner of the guitar and viol, as has been usual.

40,016.—Steam Boiler.—A. F. Barton, Dedham, Mass.:

I claim the improved steam generator as constructed with the smoke-flue, H, and the crescent-shaped water-vessel, F, combined and arranged with the main boiler, E, substantially in the manner and so as to operate as specified.

40,017.—Coffee and Water Cup for Soldiers.—C. L. Barritt, New York City.:

I claim, as a new article of manufacture, the use of a cup having a filterer or strainer in it, in form and principle of operation substantially as hereinbefore set forth.

40,018.—Carding Engine.—F. A. Calvert, Lowell, Mass. Patented in England in 1861:

I claim the improved carding machine as constructed with its licker-in, made substantially as described, and combined with the main card cylinder, a retainer, and mechanism by which, when rotated, such licker-in shall be made, not only to seize the fibrous material from the feeding rollers, and transfer it to, and work it, when on the retainer, but operate to continuously strip the main card cylinder at its rear, substantially as hereinbefore specified.

I also claim the combination of the toothed licker-in, one or more retainers, and machinery by which such licker-in may be driven or rotated at a velocity greater than that of the retainer or that of either of them when more than one may be employed.

40,019.—Folding Tag.—J. B. Clark, Plantsville, Conn.:

I claim the stationary folding plates, H I, in combination with the movable folding plates, F F G, the plates F, being attached to pivoted arms, C, on a sliding plate, B, and the plate G, attached to a sliding plate, G, the arms, C, being operated by the slots, d, and pins, c, when the plate, D, is moved alone, and all arranged to operate substantially as and for the purpose herein set forth.

[This invention relates to a new and improved machine for folding the ends of tags in which folded ends the meal eyelets are fitted to receive the strings which secure the tags to the articles designed to receive them.]

40,020.—Rock Drill.—Charles Courtois, Volcano, Cal.:

I claim a drill, A, having its head, b, formed square and beveling with concave sides, and the concave edge, c, about one-third the width of the face of the square, as shown and described.

Also the employment or use of the die, B, with a cavity, d, corresponding to the shape of the head, b, as described for the purpose of sharpening the drill, A.

[This invention relates to the peculiar shape of the drill and to the die which serves to sharpen the same.]

40,021.—Revolving Fire-arm.—James Maslin Cooper, Pittsburgh, Pa.:

I claim, first, The use in revolving fire-arms, susceptible of being operated by the trigger of a positive locking bolt, for locking the revolving breech, independently of the action of the trigger, at all times excepting when the cylinder is being revolved, substantially as hereinbefore described.

Second, Placing the locking bolt on the left hand side of the axis of the revolving cylinder, where the cylinder revolves from right to left (and *vice versa* where it moves in the opposite direction), for the double purpose of ensuring the entry of the head of the bolt into its recess or notch in the cylinder, and of aiding the revolution of the cylinder just before firing, so as to lock the breech before the hammer is at full cock, substantially as described.

Third, Double-locking the cylinder at the moment of firing so as to hold it perfectly rigid, by means of the hand or driver, operated by the trigger to sustain it in one direction, and the locking bolt to receive the pressure and sustain it in the opposite direction, substantially as described.

Fourth, The use of a gate attached to the recoil shield, placed at the end or throat of the hammer recess, having a narrow slot or hole of less width than a percussion cap, to allow of the passage of the point of the hammer to strike the cap, for the purpose of preventing the passage of spent caps into the hammer recess, and also to prevent the caps from projecting so far backward as to interfere with the rotation of the revolving breech, substantially as described.

Fifth, The use of a groove or grooves in the arbor or base pin of revolving breech fire-arms where such groove or grooves are parallel to the axis of the base pin, for the purpose herein before described.

Sixth, So constructing and arranging the hammer, trigger, and driver of hammer cocking revolving breech fire-arms, as that the cocking of the hammer will draw back or set the trigger, holding it in a drawn position so as to be fired by a mere touch, substantially as described and for the purposes set forth,

40,022.—Mangle.—Charles Crozat Converse, Dubuque, Iowa:

I claim the winding roller and its auxiliary apron, substantially as described, in combination with the bottom roller and endless apron, substantially as and for the purpose specified.

40,023.—Ratchet Tube Cutter.—Abel Crowfoot, Chicago, Ill. Ante-dated March 11, 1862:

I claim the combination with a common ratchet drill stock of the cutter, U, with either a square or angular shaped cutting edge, the lever, W, feed screw, T, head, Q, and extension rod, B, for the purpose of cutting off boiler flues in the manner set forth.

40,024.—Stuffing for Mattresses, Pillows, &c.—A. C. Crondal, New York City:

I claim a stuffing for mattrasses, cushions, &c., composed of ground cork and oil, made as herein shown and described.

[This invention relates to a certain process for preparing cork rubbish or waste, and to the use of the cork thus prepared for stuffing mattresses, pillows, &c.]

40,025.—Wheel Vehicle.—H. C. Drew, Oshawa, Canada West:

I claim the combination of the segment guides, J J, pivoted bar, L, and bars, j j, with the front axles and the tougue, K, in the manner herein shown and described.

[This invention relates first to an improved means employed for reducing the friction attending the running of wheel vehicles, and second, to a novel arrangement of the front wheels and draught-pole thereof, whereby the wheels in passing over obstructions which may lie in their path, are prevented from acting upon the draught-pole and moving the same laterally as hitherto, a result which greatly fatigues the team.]

40,026.—Shirt.—Abraham Drey, Baltimore, Md.:

I claim a double bosom shirt when composed of an inner bosom, d, and outer flaps or lapels, a a, substantially as and for the purposes described.

40,027.—Manufacture of Match Sticks.—S. C. Ellis, Jersey City, N. J.:

I claim the employment or use of rotary cutters, A A′, substantially such as herein specified for the purpose of producing match sticks.

[The object of this invention is to produce match sticks, the transverse section of which presents the shape of a circle, square or any other desirable form, of wood without splitting or shaving and without reference to the direction in which the grain of the wood runs, by the action of rotary cutters acting upon the wood at different points and in such a manner that by the action of said cutters the grain is crowded down in raising the shaving, and thereby the toughness of the sticks is improved and the surface of each stick is rendered even and smooth without reference to the direction in which the grain of the wood runs.]

40,028.—Instrument for taking Soundings.—John Ericsson, New York City:

I claim obtaining soundings by means of an air bag or its equivalent, loaded to touch bottom and connected by means of a tube with a register or pressure gage attached to the vessel, the pressure of air in which gage indicates the depth of water.

40,029.—Molasses Faucet.—John & Samuel Fahrney, Boonsboro, Md.:

We claim, first, The combination and arrangement of the pipe, A, cylinders, D E, valve, R, piston, F, opening, O, and valve, Q, as described.

Second, In combination therewith the stop cock, S, as described.

Third, In combination with cylinder, E, the valve, R, opening, O, piston, F, with the plug, d, the screw rod, G, and crank, K, as described.

Fourth, The combination of the piston, F, piston rod, G, cross bar, H, thumb-screw, v, and sliding rod, u, as and for the purposes described.

40,030.—Punch Block.—John D. Filkins & John M. Filkins, Johnson Township, Ind.:

We claim as a new article of manufacture, the punch block, a, in combination with the steel plate, b, the set screw, c, mortise, e, and guide, f, constructed substantially as and for the purposes set forth.

40,031.—Table Cutlery.—Joseph W. Gardner, Shelburne Falls, Mass.:

I claim as an improvement in table cutlery a knife or fork having its handle or bolster made and applied together in manner substantially as herein before described and as represented in the accompanying engravings.

40,032.—Oil Cup for Machinery.—Thomas W. Godwin, Portsmouth, Va.:

I claim, first, The arrangement with an oil cup, of the valve, L, or its equivalent, the valve stem, G, and the cup, N, as shown and described.

Second, The arrangement within an oil cup, of the stems G and G, and their valves, when constructed and operated substantially as shown and described.

40,033.—Air Heating Furnace.—William H. Harris, Grand Rapids, Mich.:

I claim the arrangement and combination of the curved tubes, B, forming the fire grate of the furnace, cold air passages, E, air heating chamber, F, drum, H, provided with the tubes, J, and the furnace, A, as herein fully shown and described.

[The object of this invention is to obtain an air-heating furnace which will admit of the air having a direct or unbroken passage through the air-heating chamber, and at the same time be brought in contact in its passage through said chamber, with a large area of heating surface.]

40,034.—Machine for Shearing Iron.—Anson Hardy, Boston, Mass.:

I claim, first, So attaching the rotary knife to the carriage which carries it, that without raising or lowering said carriage, said rotary knife may be raised or lowered, for the purpose of increasing or diminishing the distance between the stationary straight knife and the said rotary knife, in the manner substantially as herein described.

Second, I claim the combination of wrough-iron trusses, in the manner substantially as herein shown, with the upper and lower beams and side pieces and the rotary knife of the machine for the purpose of adding rigidity to said upper and lower beams and side pieces, and also for the further purpose of causing said machine to do its work with a less expenditure of power, and with very much less risk of breaking said rotary knife.

Third, I claim suspending the knife carriage to the lower side of the upper beam and bracing it laterally against the rear side piece below the lower side of the carriage, in the manner substantially as herein described, so as to obtain a much greater distance than has ever before been obtained, between the upper and lower beams, for the purpose of enabling the workman conveniently to secure the sheet of metal to be cut, in the exact position desired, between the knives, and for the purpose of enabling said workman to see distinctly if said sheet of metal is accurately placed.

40,035.—Black-board and Map-case.—Wm. C. Herider, Miame Town, Ohio:

I claim a combined black-board and map case, substantially as herein shown and described.

[This invention consists in the employment or use of a case constructed of rectangular form and having a door at its front side, which may comprise one half the length of the front of the case, the door being hung upon hinges or arranged so as to slide, and the whole of the front of the case being painted black so as to serve as a blackboard, while the interior of the case at its top and bottom is provided with guides or grooves in which frames or slides are fitted and on which maps are secured, the frames being equal in light to the interior of the case, and equal in length to one half the length of the case; all being so arranged that when the device is not used as a black-board, the door may be opened and any one of the frames or slides shoved back into the part of the case at one side of the door so that any one of the maps in the open part of the case may be exposed.]

40,036.—Shingling Hipped Roofs.—Asahel R. Holcomb, Naples, N. Y.:

I claim substituting for the ordinary small triangular pieces that complete the courses at the hip, the joint shingles, b c d, each projecting to the base line of the course already laid, arranged so as to be securely nailed and held in place without splitting or warping, and without the necessity of weatherboards, and furnishing an extra thickness of covering, substantially as herein set forth.

40,037.—Coffee Roaster.—Samuel Hoyt, New York City:

I claim, first, The hollow shaft, B, in combination with a roasting drum, the shaft serving to bear and todrive the roasting drum, A, and being provided with apertures, k k, in its circumference, and outlets at one or both ends to conduct off the gases from the interior of the drum either into an aromatizing chamber, G, or off into the chimney, substantially as described.

Second, Making a part of the frame within which a coffee roaster is arranged of tubes, d d, which are slotted or punctured in such manner that they constitute fluid or gas burners, substantially as and for the purposes described.

Third, The combination with an aromatizing chamber, G, of a roasting drum, A, the same communicating with each other by means of a hollow shaft or equivalent device, substantially as and for the purposes described.

Fourth, The combination of a corrugated cylindrical drum and a series of gas or fluid burners, which constitute the ties or longitudinal parts of the frame in which the drum is arranged, substantially as and for the purposes described.

Fifth, A cylindrical corrugated tight roasting drum composed of one continuous piece of corrugated metal and two plates or heads which are scolloped around their edges or circumferences, as and for the purpose described in combination with an axial shaft as set forth.

40,038.—Beehive.—Alexander Hogg, Rutland, Ohio:

I claim a beehive composed of a rectangular box or case, A, provided with a slatted bottom, E, and with vertical partitions, g g, and horizontal partitions, h i, all arranged as shown, to form compartments to receive drawers, B C D D′, the drawers, B, being at the sides of the drawers, D D′, and the drawers, C, above the latter, a communication being formed between the drawers, D D′, and B C, as shown, and the drawers, D D′, being constructed and arranged as shown so as to form the body or main part of the hive, and still either of the drawers rendered capable of removal, for the purpose specified.

[The object of this invention is to obtain a beehive which will be proof against the intrusion of the bee-moth, and which will afford great facilities for applying slide drawers to the main hive and removing them therefrom, and which will also afford great facilities for forming new colonies from the parent hive without allowing the bees to swarm, the invention at the same time admitting of the spare honey being readily removed from the drawers and also admit of the combs in the main hive being rendered very accessible in case their removal is required.

40,039.—Machinery for finishing Rim-bases of Ordnance.—E. F. Howard, Boston, Mass.:

I claim finishing or cutting the rim-bases of ordnance, by the employment of a cutting tool, guided automatically by a pattern, cam, rotating and feeding mechanism, substantially as described.

I also claim giving to the pattern, L, the reverse movement in the manner and for the purpose as set forth.

40,040.—Rubber Attachment for Wash-boards.—John Hull, Vienna, N. J.:

I claim attaching the rubber, B, by means of the joints, d d, on its upper surface to the wash-board, A, by means of the jointed or flexible frame formed of the rods, e e, shaft, f and arms, h, when the frame is pivoted or jointed to the lower end of the wash-board as herein shown and described.

40,041.—War Rocket.—J. B. Hyde, Newark, N. J. Ante-dated April, 25, 1863:

I claim the construction of a rocket case with the ring, a, combined with the apertures, c c, and core, E, by means of the channel, d, or their equivalent, substantially as described.

Second, I claim the radial adjustable fuse, f, arranged as described for igniting the contents of the shell directly or through the agency of the inner fuse, e, as described.

Third, I claim the hood match, p, and its protector, r, secured and ignited as described, and

Fourth, I claim the partially guarded match, h, with its branches for simultaneously igniting the rocket and shell fuse as described.

40,042.—Press for Charging Rockets.—J. B. Hyde, Newark, N. J. Ante-dated April 22, 1863:

I claim employing one of the bars or ties of the frame work of a condensing press as the axle or journal for a rotating working table or platten for supporting or carrying the work to be acted upon by the press, and arranged in the manner and for the purpose specified.

40,043.—Machine for Crushing Sugar and forming it into Blocks.—G. A. Jasper, Charlestown, Mass.:

I claim the above-described improved sugar-crushing and blocking machine, having its parts arranged and constructed substantially in manner and to operate as specified.

40,044.—Faucet and Vent.—Jacob Jahraus, Buffalo, N. Y.:

I claim the compound discharge nozzle composed of the cylinders, G and H, in combination with the hollow valve piston, K (with or without the holes, K′,) valve-stem, C, and valve, c1 c2, and lever, E, arranged and operating for the purposes and substantially as described.

I also claim the valve, P, arranged and operating upon the outside of the ventilating plug, M′, substantially as set forth.

40,045.—Roller Attachment for Breast Straps.—F. Jones, Prescott, Wis.:

I claim the frame, A, provided with the roller, B, and the hook, b, when applied to the neck yoke and breast straps, substantially as and for the purpose specified.

[The object of this invention is to obtain a simple means to prevent horses in double harness being shoulder-jammed, and also prevent the friction and rubbing on the shoulders of the horses caused by the lateral motion of the ordinary breast straps, as well as to prevent the wear of the breast straps caused by the rubbing of the same through the rings which connect them to the neck yokes.]

40,046.—Water Elevator.—W. D. Jones, Hagaman's Mills, N. Y.:

I claim the peculiar arrangement of the several parts of the described friction clutch and crank combined, in combination with the pawl, g, shaft, a, and crank, handle or lever, d, constructed and operating substantially as and for the purposes shown and described.

40,047.—Haversack.—Thomas Kech, New York City:

I claim a haversack formed of pervious material and having a detachable or impenetrable side-piece, the whole arranged to operate substantially as described for the purposes set forth.

40,048.—Brakes to Cotton Lappers.—Richard Kitson, Lowell, Mass.:

I claim so combining the brake with the shipper that it is brought into action when the operation of the machine commences, and is thrown out of operation when the operation of the machine ceases, substantially as herein described.

40,049.—Machine for Preparing Cotton and other Fibrous Material for Carding.—Richard Kitson, Lowell, Mass.:

I claim the arrangement of the endless apron, G, and draft cylinder or screws in combination with each other and in relation to the mouth of the trunk and to the lap-head substantially as herein specified, whereby several sheets of fiber delivered from the cylinders or screens are united and delivered in a united state to the lap-head.

40,050.—Lamp Burner.—C. H. Kupfer, Hoboken, N. J.:

I claim, first, The arrangement, within a burner, of a fluted cone, F, constructed and operating substantially as set forth.

Second, The deflecting cap, G, when provided with a contraction, h, at about half way of its height, but whether with or without the perforations, m m, the whole constructed and operating substantially as described.

Third, The combination with said fluted cone, F, of the perforations, b b, operating as specified.

Fourth, The combination of the fluted cone, F, the cap, G, contracted as described, and the perforations, b b, the whole constructed and operating as above-mentioned.

Fifth, The arrangement set forth for attaching the cap G, to the body, A, of the burner, so as to form an air-space, q, to diminish the conduction of heat to the oil reservoir.

40,051.—Removing Spikes from Guns.—Augustus Lafever, Battle Creek, Mich.:

I claim, first, The mode herein-described of unspiking guns by means of an annular bit in combination with the adjustable frame, A, substantially as described.

Second, The adjustable frame, A, constructed and operating substantially as described.

Third, The self-adjusting socket, C, in combination with the adjustable plate, B.

40,052.—Corn Sheller.—C. J. Legg, Penn Yann, N. Y.:

I claim the shelling and husking cylinder, A, constructed with hinged radially-vibrating staves, B B, controlled by springs, a a, and with teeth arranged spirally both upon the staves and intermediate portions of the cylinder, substantially as herein specified.

I also claim the combined construction and arrangement of the fixed staves, c c, and hinged radially-vibrating staves, D D, controlled by springs, H H, together composing the concave to the shelling cylinder, substantially as herein set forth.

40,053.—Apparatus for Ornamenting Gum Jewelry, &c.—Norman Lanphear, Monmouth, Ill.:

I claim the forming of letters or other devices in or upon the surface of articles of gutta percha, india-rubber or other gum, by the use of the clamping tool, A, anvil, a, die stock, b, and set screw, c, all constructed, combined and arranged as herein shown and described, so as to be adapted for use by heating that portion only of the tool which presses or forces the dies or devices into the gum.

[This invention consists in the application of a heated instrument to letters or other ornaments to be inserted in gutta percha, india-rubber or other gums, in such a manner that by a moderate pressure, combined with the heat, the set is forced in to its desired

depth, and, by suddenly cooling the instrument and gum while the pressure is still maintained, the expansion of the gum in cooling is prevented and the letter or other ornament is firmly retained.]

40,054.—Explosive Shell.—Wm. Maginn, New York City:

I claim the ring, C, and attached hammer, b, applied to operate within a double groove, d d′, in combination with a nipple, c, and fuse hole, g, substantially as and for the purpose herein specified.

[This invention consists in certain means of exploding a percussion cap, by the rotary motion of a projectile in a rifled piece of ordnance, for the purpose of igniting a time fuse. It also consists in a certain construction of an explosive projectile for the purpose of providing for the effective scattering of bullets or the missiles without exploding the body of the projectile, which acts like a solid shot.]

40,055.—Apparatus for applying Metal Leaf to Moldings, &c.—R. J. Marcher, New York City:

I claim, first, The employment or use of the tip or brush, I, attached to an arm, H, and arranged with or without a spring, a*, or with the equivalent of a spring, to operate substantially as and for the purpose herein set forth.

Second, The endless apron L, in combination with the arm, H, tip or brush, I, and slide, G, arranged for joint operation as and for the purpose specified.

Third, The combination of the endless apron, L, slide, G, arm, H, tip or brush, I, and the sliding bar, B, which supports the molding, C, actuated from the slide, G, through the medium of the pawl, E, lever, F, and the rack in the bar, B, substantially as and for the purpose set forth.

40,056.—Bed for Invalids.—J. N. Morrison, Philadelphia, Pa.:

I claim, first, the combination of the jointed leg-rests, E E, and jointed supporting bars, F F G G, when the said parts are constructed and arranged to operate in the manner and for the purposes herein specified.

Second, The carriage, H, constructed and operated substantially as set forth, to place either the pad, L, or pan, M, beneath the aperture a, in the bed.

Third, The elevating lever, P P, and retaining ratchet, R, or equivalent devices, operating in any manner substantially as described, to raise the pad or pan and retain it in the aperture, a.

Fourth, The air-tight cover, T, employed in the described combination with the carriage, H, to close the pan, M, when not in use.

Fifth, The combination of the removable swiveled standard, W, swivel, V, and clamp screws or nuts, u v, for securing the desk or table, U, in any required position.

40,057.—Lantern.—William Mullins, Steubenville, Ohio:

I claim surmounting the oil cup with a hot-air chamber, and supplying heat thereto by means of the bent tube, D, passing over the flame of the lamp from a point below the bottom of the oil cup, and discharging into the air chamber in the manner and for the purpose specified.

40,058.—Device for Supplying Gas Retorts with Liquids.—E. L. Norfolk, Salem, Mass.:

I claim maintaining a regular supply of hydro-carbon for gas purposes by means of the chamber, A, and connecting pipes, E and F, or their equivalents, the whole operating in the manner and for the purpose set forth.

40,059.—Cross-cut Sawing Machine.—G. D. Pearson, Ypsilanti, Mich.:

I claim the combination of the working bar, G, saw, K, and guide block, J, with the circular guide posts, b b, and the mode of raising and lowering the saw by means of the crank shaft, N, and the manner of attaching the machine to the log, arranged and operated in the manner and for the purpose herein explained.

40,060.—Smut Mill.—Dan Pease, Floyd, N. Y.:

I claim a stationary hollow cylinder for a smut machine composed of small cast-iron pieces, constructed, combined and connected as herein described, and for the purposes described.

I also claim separately the construction of the cast iron pieces of which the said cylinder is composed, in such manner and form as that the internal trenches alternate with the intervening ridges as herein described, and for the purposes described.

I also claim the clearers, x, on the top covering of the revolving cylinder, constructed and arranged as described and for the purposes described, the whole being constructed, combined and arranged substantially in the manner herein set forth.

40,061.—Coal Hod.—Jesse Pilbeam, Seneca Falls, N. Y.:

I claim the ring, C, constructed as described in combination with the receptacle, A, and base, B, arranged and operating substantially as herein set forth.

40,062.—Pump.—F. D. Prudhomme, Paris, France:

I claim, first, The combination of two pumps, one being a lift and the other a force pump, arranged as herein shown, or in any equivalent way, to operate conjointly in the manner as and for the purpose specified.

Second, The particular construction of the lift pump as herein described, to wit: two solid pistons of equal size fitted in a cylinder divided into two compartments by a fixed partition, forming a resisting surface to the action of the water as described.

Third, The combination of the cylinders, M A A′, pistons, P B B′, pipes, F′ J J′, and valves, D D′ d d′ L L′, all arranged and operating substantially as set forth,

Fourth, The described arrangement and combination of parts constituting the double acting driving pump without valves, but with a solid piston transmitting motion to the lift pump pistons through continuous columns of water, whereby the use of a rod extending down the well, mine-pit or shaft, is dispensed with.

[My invention relates to the construction of machinery or apparatus or raising water, by means of which water may be lifted from considerable depths in an uninterrupted or unbroken stream.]

40,063.—Machine for Breaking and Cleaning Hemp, Flax, &c.—Gelston Sanford, Great Britain, and James E. Mallory, New York City:

We claim the pair of toothed rollers, one of which has a longitudinal reciprocating motion as well as a rotary motion, in combination with fluted rollers, having a continuous rotary motion, substantially as described and for the purpose set forth.

40,064.—Hay and Cotton Press.—Wilbur Read, Greenwood, Cal. Ante-dated Oct. 17, 1862:

I claim the combining with the drums, G G′, arranged as described, the loose shaft, g, with its lever, H, spur wheel, h, with its toothed hub, i, spur wheel, j, sliding plate, k, levers, m and p, all arranged substantially as set forth, and causing the drums, G G′, to operate upon their respective ropes, c and s t, as herein specified.

[This invention relates to an improvement in applying power to a cotton or flax press. The object of the invention is to communicate the required alternate pressures and releasing movement to the follower of a cotton press, from the continued circular motion of a common sweep or lever to which a horse is attached, or to stop the movement of the follower at pleasure, while the horse continues to walk in a circle.]

40,065.—Boys Sleds.—N. C. Sanford, Meriden, Conn.:

I claim, first, Attaching the rudder, D, to the rear end of the seat, B, between the runners, C, in the manner and for the purpose shown and described.

Second, The application of the flanges, f, and rib, g, in combination with the runner, C, and rudder, D, constructed and operating in the manner and for the purpose substantially as specified.

[The object of this invention is to facilitate the operation of steering a sled in "coasting" or going down a steep hill, and to enable every boy or child to slide down sitting comfortably in an upright position, legs and feet all aboard and guiding his vehicle by the motion of his feet, or by pulling a cord in the easiest and simplest manner.]

40,066.—Distance Indicator for Railroads.—S. O. Schoonmaker, Wright, N. Y.:

I claim the double incline plane or lifter, M, together with the arrangement of the striker, K, spring, L, lever, G, and vertical rod, E, and catch, D, when used in combination with the distance indicator, substantially as and for the purpose specified.

40,067.—Operating Ordnance.—M. W. Wappich, Sacramento, Cal.:

I claim, first, Elevating and depressing guns by their trunnions, by means substantially as and for the purposes described.

Second, Providing a gun carriage which is constructed of cheeks, C C, lateral braces, arranged above and below a gun which oscillates on, and is elevated and depressed by, its trunnions, substantially as described.

Third, So constructing a gun carriage and mounting a gun (which swings on its trunnions) therein, that while the gun can be raised or depressed and the carriage remain stationary, the trunnions will have a rigid and firm support, substantially as described.

Fourth, The application of compressing jaws, F F, to a gun carriage in such manner that they will operate simultaneously upon the lower surfaces of the flanches of the chassis, and press upwards or in direct opposition to the gravity of the carriage, substantially as described.

Fifth, Adapting the slow cams, s s, to operate in conjunction with the loose collars, g g, on the axle, P, for the purpose of throwing the gun carriage upon its truck wheels, substantially as described.

40,068.—Deodorizing Petroleum, Naphtha, &c.—R. N. Warfield, Rochester, N. Y.:

I claim deodorizing petroleum, naphtha, &c., by the introduction of a volume of steam into the liquid beneath its surface, by means of the pipe, C, and drum, B, or in an equivalent manner, so that the steam is distributed throughout the contents, and removes the gas by its passage through the oil, substantially as herein set forth.

I also claim passing the steam through the box, E, or its equivalent, containing chloride of lime, muriate of ammonia and stone lime, so that the steam becomes impregnated with the principles of those elements prior to entering the oil, for the purpose of further purification, substantially as specified.

40,069.—Rolling Leather.—Joel Whitney, Winchester, Mass.:

I claim first, The arrangement of the geared screws, a a, and the geared actuating shaft, with the rollers, V V′, and springs t2 t2, so that the lower as well as the upper roller is adjustable, substantially as set forth.

Second, I claim combining the rollers, V V′, with an actuating shaft and bevel wheels located below the lower roller, by means of which power may be applied to the rollers through the rotation of such shaft and wheels, and by a lever power additional thereto, all from a point below the lower roller substantially as and for the purpose described.

Third, In combination with pressure rollers, V V′, to which power may be applied from a point below the lower roller, either solely by an actuating shaft and bevel wheels, or, in conjunction with a lever power additional thereto, I claim the application of rubber springs, t2 t2, and the pendent ratchet, h, substantially as and for the purpose described.

Fourth, I claim the combination of the parts, a and p′, by means of the bracket, Q, as and for the purpose set forth.

40,070.—Gun and Blasting Powder.—G. B. Wiestling, Oxford Furnace, N. J. Ante-dated Dec. 3, 1862:

I claim the manufacture of gun and blasting powder of charcoal, sulphur, nitrate of soda and chlorate of potassa, either with or without nitrate of potassa, by the process herein specified.

40,071.—Surgical Splint.—Charles Wittmann, M. D., Brooklyn, N. Y.:

I claim, first, A perforated sheet-metal splint made in the manner and for the purposes substantially as herein shown and described.

Second, The application of the buckles, c′ g, and eyes, c e, with or without springs, t, in combination with the two parts, A′ A″, of a splint as described, for the purpose of effecting an elastic or unelastic extension and counter-extension to the limb.

Third, The double-hinged serrated bar, B, with the adjustable spring catch, j, in combination with the splint, A′ A″, constructed and operating in the manner and for the purpose substantially as shown and described.

Fourth, The adjustable pivot, h, in combination with the rods, a* d, carrying the parts, A′ A″, as described for the purpose of accommodating the joint of the splint to the axis of the joint of the limb to be treated.

Fifth, The application of the screws, l l′, with hinges, l*, l*, to the foot-plate, A‴, as and for the purpose specified.

Sixth, The arrangement of the springs, n, in combination with the foot-plate, A‴, constructed and operated in the manner and for the purpose substantially as set forth.

40,072.—Quartz Crusher.—James D. Whelpley, Boston, Mass.:

I claim, first, Revolving the radial cutters, L, or their equivalents, close to the bottom and side of a suitable tub or cylinder, and causing the material which is to be broken, to fall by its own weight upon said cutters, whereby while falling in a free and open space, and held by inertia alone, it is effectually broken or shivered to pieces, substantially as described.

Second, In combination with the horizontally revolving cutters, L, the grate or perforations, N, in the periphery of the tub, substantially as and for the purpose described.

40,073.—Stove.—Wiley S. Wright, St. Lonis, Mo.:

I claim, first, Supporting the inner end of sliding stove doors upon the top edge of the lower part of the door frame, by means of hooks which are applied to and move with doors, substantially as described.

Second, The outside auxiliary supports, e e, in combination with hooks, c c, arranged on the inside of the doors, substantially as and for the purposes described.

Third, In combination with the inner hooks and outer supports I claim the overhanging strip, b, applied to the door frame, substantially as and for the purposes described.

40,074.—Hand Stamp.—Victor Beaumont, New York City:

I claim, first, The combination in one instrument of a hand stamp with an inking pad, under an arrangement substantially as hereinbefore described, so that the stamp shall be inked automatically without the use of inking rollers, substantially as herein set forth.

Second, The method of connecting the inking pad with the head or knob of the stamp, by means of articulated pendant rods in combination with guides or their equivalent, for giving to the pad when actuated by the knob the requisite motion for clearing the path of the stamp, substantially as herein set forth.

Third, Combining with the stamp and inking pad a frame so arranged as to constitute the means for firmly holding the paper; for supporting the instrument and for properly guiding the pad and stamp in their various movements during the operation of the instrument, substantially as herein described.

Fourth, The employment in combination with a knob and inking pad united as herein before referred to, of a shank tube and extension spring for holding the pad against the stamp when the instrument is not in use, and for maintaining the stamp ready inked before a downward motion is imparted to it, substantially as herein described.

Fifth, The combination with a knob sliding upon the shank of a helical spring, located within the knob and around the shank and between reverse flanges applied to the knob and shank respectively, in the manner and for the purposes substantially as herein described.

Sixth, Combining the head or knob of a hand stamp operated by pressure applied to the head, with the inking pad, so that the said pad is brought out of contact with the stamp, before the stamp itself partakes of the movement imparted to the head, substantially as set forth.

Seventh, Enlarging the guide slots in or about the plane in which the pad rests in contact with the stamp, so as to allow a sufficient play of the pad for the occasional renewal of surfaces of contact, substantially as herein shown and described.

40,075.—Mode of directing Motion.—Andrew Buchanan, Jersey City, N. J., assignor to himself and Wm. A. Righter, Newark, N. J.:

I claim the oscillating and longitudinally moving arms, C, slide, F, and stationary-are formed or curved guide, f f′, the whole applied in combination with each other and with the body whose motion is to be directed, substantially as and for the purpose herein specified.

40,076.—Mold for Casting Printing Types.—R. W. & D. Davis (assignors to themselves, Daniel Appleton & Co., John Perkins & Nehemiah P. Stanton), New York City:

We claim, first, The construction of the mold in parts of a series of strips, g g h h, fitted loosely to and combined by a flexible and elastic connecting piece, F, substantially as and for the purpose herein specified.

Second, The combination of the tenons or projections, j j, on each or any number of the strips, g g, and corresponding mortises or recesses in the matrix block or matrix strip, substantially as and for the purpose herein specified.

Third, The mold slide, D, receiver, G, plunger, G′, and cut-off, H, the whole applied in combination with each other; and with the box, A, and cover, B, substantially as and for the purpose herein specified.

40,077.—Lock.—Randolph S. Foster (assignor to himself, C. Walsh & J. C. Nobles), Sing Sing, N. Y.:

I claim in combination with a double-bitted key, G, the cam-wheel, F, tumblers, E, and bolt, C, constructed and operating together in the manner and for the purpose herein described and represented.

40,078.—Grinding Mill.—S. S. Howard (assignor to Edgar D. Gillis). Milton, N. Y.:

I claim, first, The arrangement of the feed-regulating plates, K K, between the cap, J, and the plate, L, substantially as and for the purpose herein shown and described.

Second, The annular plate, L, provided with the ears, O O, in connection with the pendant rods, p p, attached to the hopper, M, and passing through the ears or lugs, O O, for the purpose of securing the hopper to the mill and rendering the plate, K, accessible for adjustment.

[This invention relates to certain improvements in that class of grinding mills which are portable and designed for domestic purposes, such, for instance, as grinding feed for stock. The invention consists in constructing and arranging certain parts of the mill in such a manner that it may be furnished at a much less cost than those of a similar kind hitherto constructed.]

40,079.—Machine for Oiling Tanner's Leather.—George Huttelmaier (assignor to himself and Henry P. Mueller), Allegheny, Pa.:

I claim the process of subjecting tanned hides to friction in a close heated cylinder or other vessel, so constructed as to retain its heat for a considerable time, and containing melted grease for the purpose of greasing them, substantially as hereinbefore described.

40,080.—Coil Oil Lamp.—A. C. Ketchum (assignor to Wm. P. Pettingill & S. T. McDougall), New York City:

I claim, first, The application of the partition or cross-bar, E, to the tube, B, and base, a.

Second, I claim the peculiar mode of attaching the jacket, D, as shown in Fig. 1.

Third, I claim the combination of the jacket, D, with the partition, E, and attached to the tube and base, B and A, substantially as described, thereby making a simple and economical burner.

40,081.—Printer's Quoins.—Hippolyte A. Marinoni & Francois Noel Chandré (assignors to Richard March Hoe), Paris, France:

We claim the combination of toothed or cogged roller quoins and furniture having corresponding racks, teeth, or cogs, substantially as herein described.

40,082.—Apparatus for attaching Pumps to Bungs of Barrels.—Francis A. Pratt (assignor to Pratt, Whitney & Co.), Hartford, Conn.:

I claim the employment in combination with the suction pipe of a portable pump, of a crab, or saddle, C, a hooked bolt, b, and a clamp screw, h, or their respective equivalents, combined, arranged, and operating to secure a barrel pump to a barrel, substantially in the manner hereinbefore described.

40,083.—Method of Utilizing Exhaust Steam.—Treat T. Prosser (assignor to himself and M. C. & K. A. Darling), Fond du Lac, Wis.:

I claim, first, Applying the exhaust steam of a steam engine under pressure greater than that of the atmosphere to a boiler or boilers, or any part thereof, whether the boiler or boilers be used separately or in combination with the boiler or boilers, either exclusively for the purpose of generating steam in the boiler or boilers or for aiding the fire to generate it.

Second, The valve, f, or its equivalent in combination with the diaphragm, c, and exhaust steam tubes or flues, with or without a steam chamber around the boiler for regulating the pressure to be given the exhaust steam.

Third, The chamber, K (Fig. 7 and 21 and cross section Fig. 14), constructed and arranged in the manner and for the purpose set forth.

40,084.—Tucking Device for Sewing Machines.—Israel M. Rose (assignor to J. Wilcox), New York City:

I claim, first, The mechanism herein described to be used as an attachment to sewing machines for marking tucks, said mechanism being constructed and arranged so that when actuated by the needle arm or other moving parts of the sewing machine it shall form a well defined ridge on the face of the cloth opposite that in contact with the table, substantially in the manner hereinafter shown and described.

Second, As the sewing machine attachment, I claim the device or mechanism for marking tucks, said mechanism consisting of jaws arranged in pairs closing and opening at regular intervals to seize and release the cloth, in the manner and for the purposes herein set forth.

Third, So combining the parts of a sewing machine attachment for marking tucks for action substantially as set forth, as that the jaws are brought down in contact with, to impinge upon the cloth while yet open, and are closed by the resistance then offered to the further descent of the jaws, substantially as herein shown and described.

Fourth, Combining with the jaws acting substantially as herein before described a metal strip arranged in line parallel with the feed and operating in conjunction with the jaws, substantially in the manner and for the purposes set forth.

40,085.—Gas Compensator.—Addison Smith (assignor to himself and James M. Sayre), New York City:

I claim, first, Combining with a cylinder provided with ports and a valve mechanism substantially as described, the inverted cup and fluid joint for operating the valves and regulating the pressure of gas, substantially as described and set forth.

Second, The combination with an inverted cup and fluid joint of a double valve, whereby a small movement of the inverted cup causes the valve to give increased communication between the pipes, and thereby more quickly and evenly regulates the pressure of gas, substantially as described and set forth.

40,086.—Pawl and Ratchet.—George G. Taylor, Worcester, Mass., assignor to A. Brown & L. G. Kniffen, Worcester Mass., and Thos. H. Dodge, Nashua, N. H.:

I claim, first, The circular pawl supporting socket, D, in combination with the rear end of the pawl, a′, substantially as shown and described.

Second, The combination of the pawl, a′, socket, D, flange, A′, and spring, S, when constructed and arranged to operate in relation to each other and the ratchet teeth, b b, as shown and described.

Third, I also claim the combination of the internal flange or hub, B′, with the parts, B and A, as and for the purposes set forth.

40,087.—Felting Machine.—Enoch Waite, Lawrence, Mass., assignor through mesne assignments to the Berkeley Manufacturing Company:

I claim a combination of a picker, a perforated cylinder, F, or its equivalent and machinery for felting, the whole being arranged and so as to co-operate substantially as described.

I also claim a machine or combination, composed not only of machinery for making felt, but of a mechanism or apparatus for applying paste or cement to a sheet of paper or the equivalent thereof, when applied to make felt in manner and under circumstances substantially as described.

I also claim the combination composed of felting mechanism, a pasting apparatus, a perforated or woven wire cylinder, F, and a picker, the whole being made and arranged so as to co-operate substantially as specified.

I also claim the combination of one or more stripping bobbins, R R, or the equivalent thereof and suitable supporting devices therefor with the machinery, substantially as described, for producing felt fabric.

I also claim in combination with the felting mechanism a means of heating one or more of its platens, whereby they may be rendered capable of drying and smoothing the felted fabric, or the same and the paper to which it may be connected.

RE-ISSUES.

1,541.—Clap-board Joint.—William Baker, Utica, N. Y. Patented May 16, 1854:

I claim, first, The construction of the joint of clap-boards or jointed siding for houses and other buildings in such manner that the boards when laid on the frame, shall lie flat and solid for their whole width against the frame of the building; and at the same time shall preserve the appearance and advantage of clap-boarding in front, by the outer lip of the upper board at each joint overlapping outside the board next below it for shedding the water, as described.

Second, I claim the combination of the lock, a, in the rear of the joint, for holding the board to the frame at the lower edge as described, with the extended lip, C, Fig. 1, in front for covering the

bead of the nail as described. The whole being constructed, combined, and arranged, substantially in the manner and for the purposes herein set forth.

1,542.—Sugar Mold Carriage.—Theo. A. Havemeyer (assignee of T. A. Havemeyer & Henry Snitzpan), New York City. Patented March 18, 1862:

I claim, first, The adjustable plates, G H, provided with arms, f f', and arranged or applied to the carriage, substantially as and for the purpose set forth.

Second, In combination with the adjustable plates, G H, the frame, A, provided with recesses, k, to receive the tips, l, of the molds as specified.

Third, Providing the frame, A, with a recess, e, and its front part or end, substantially as shown, to receive the caster wheel, C, when said frame, recess and caster wheel are used in combination with or applied to a sugar mold carriage, for the purpose herein specified.

Fourth, The hollow post, E, arranged to receive the arbor, c, of the caster wheel, C, and attached to the frame, A, to support the front end of the plates, G H, substantially as set forth.

Fifth, The combination, construction, and arrangement of the parts herein shown and described, to operate as and for the purpose specified.

[This invention relates to an improved carriage for conveying sugar molds from the coolers in the refinery, to the apartment in which they are placed to admit of the draining operation being gone through with. The object of the invention is to obtain a carriage for the purpose specified which will admit of being adjusted to suit molds of different sizes and also be capable of being moved about with greater facility than those previously constructed.]

1,543.—Sewing Machine.—John Batchelder, Lisbon, Conn. Patented May 8, 1849. Extended May 8, 1863:

I claim, first, In combination the holding surface which supports the material immediately about the needle horizontally under the thrust of the needle, and the continuous discharging feed which moves the material horizontally under and past the needle upon and over such holding surface, each having the functions and mode of operation hereinbefore specified.

Second, I claim in combination the holding surface which supports the material immediately about the needle horizontally under the thrust of the needle, the continuous discharging feed which moves the material horizontally under and past the needle upon and over such holding surface, and the receiving and supporting or discharging plate which receives the material from the feed and insures its free passage from the feed and machine during the operation of the machine in sewing a seam, each having the functions and mode of operation hereinbefore specified.

Third, I claim in combination the horizontally holding surface immediately about the needle, the continuous discharging feed, the receiving and supporting or discharging plate and the yielding pressure holder, each having the functions and mode of operation herein before specified.

Fourth, I claim in combination the horizontally holding surface immediately about the needle, the continuous discharging feed, and the yielding pressure holder, each having the functions and mode of operation herein before specified.

Fifth, I claim in combination the horizontally holding surface immediately about the needle, the continuous discharging feed, the yielding pressure holder, and a sewing mechanism, each having the functions and mode of operation herein before specified.

Sixth, I claim in combination the horizontally holding surface immediately about the needle, the continuous discharging feed, the yielding pressure holder, and the reciprocating eye-pointed needle, each having the functions and mode of operation herein before specified.

Seventh, I claim in combination the receiving and supporting or discharging plate, and the continuous discharging feed, each having the functions and mode of operation herein before specified.

Eighth, I claim in combination the horizontally holding surface immediately about the needle, the continuous discharging feed and the reciprocating eye-pointed needle, each having the functions and mode of operation as herein before specified.

Ninth, I claim in combination the continuous discharging feed, the receiving and supporting or discharging plate, and the yielding pressure holder, each having the functions and mode of operation herein before specified.

DESIGN.

1,819.—Stove.—Garrettson Smith & Henry Brown, Philadelphia, Pa., assignors to H. C. March & E. Sisler, Lawrenceville, Pa.:

NOTE.—The total number of patents recorded above is eighty-six, THIRTY-FOUR of these were solicited through the Scientific American Patent Agency.

Back Numbers and Volumes of the Scientific American

VOLUMES I., II., III., IV., V., VII. AND VIII. (NEW SERIES) complete (bound) may be had at this office and from periodical dealers. Price, bound, $2 25 per volume, by mail, $3—which includes postage. Every mechanic, inventor or artizan in the United States should have a complete set of this publication for reference. Subscribers should not fail to preserve their numbers for binding. VOL. VI. is out of print and cannot be supplied.

Notes and Queries

T. H. S., of Conn.—If you read the advertising pages of the SCIENTIFIC AMERICAN you will find the article you desire. A long list of such substances was printed in this journal some five weeks ago. Read your paper more carefully.

E. A. H., of Ill.—You are probably aware that your article was printed from your own copy. If there are obscurities in it you are responsible—not we.

J. R. H., of Pa.—An assignment for a patent must have a five cent revenue stamp attached, and to a power of attorney there must be attached a $1 stamp.

F. A. M., of N. Y.—We regret that we are unable to publish your article on "Storms" The subject is of limited interest. Your M. S. S. is subject to your order.

E. J., of N. H.—The plates of iron steamers are made water-tight in the same way that steam boilers are: they are riveted and the edges of the plates are afterwards calked with a calking tool. The plates are sometimes lapped and sometimes riveted to an inner sheet, on which two plates are laid; thus giving a flush surface outside. Armor plates are not calked to prevent leakage; they are not generally tongued and grooved although this plan has been used.

E. W., of N. Y.—It is not true that heat as an action of matter is a new theory, but it has only been fully demonstrated within a few years. Some ancient writers on philosophy considered heat to be an action or motion of matter.

C. N. B., of Pa.—There is no single work published on the carding, dyeing and finishing of woolen fabrics.

H. T., of Pa.—Measures have been taken, we believe, to lay another Atlantic telegraph cable in the summer of 1864. The cable is now being manufactured by Glass, Elliott & Co., of London, who have also undertaken to lay it.

J. C. S., of N. H.—Cinnabar is the sulphuret of mercury (vermillion, the gaudy pigment, is the bi-sulphuret), a dark blood-colored ore that yields quicksilver—a liquid metal. It is found in many parts of the world—Spain, Hungary, Peru—but most abundantly at the New Almaden mines, in California. The chief use of it is in the extraction of the precious metals, gold and silver from their ores; without its aid more than half would be wasted. The Spanish give it the ugly name of *azoque*; the French call it *vis argent*. Besides its use in medicine, mercury is used in gilding, silvering mirrors, making thermometers and barometers, and for many other purposes. It is put up in iron flasks, weighing about 25 ponnds. It is said the Rothschild's once bought up all the quicksilver in Spain, for several years, and realized thereby several millions of dollars. The works in San Jose county are one of the curiosities of California. We think it fortunate for diseased humanity that its preparations—calomel and corrosive sublimate—are going out of use as medicines. Mercury boils at 660°, and freezes at 40° below zero. It is sometimes, though rarely, found in a native fluid state.

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, Sept. 23, to Wednesday, Sept. 30 1863:—

H. T. M., of N. Y., $12; E. L. M., of N. Y., $25; A. G., of N. Y., $25; J. L. G., of N. Y., $16; J. F. B., of Wis., $45; G. T., of N. Y., $20; R. A. T., of N. Y., $20; J. H. B., of N. Y., $20; E. C., of N. Y., $61; J. L. K., of N. J., $20; C. N. of N. Y., $20; O. & F., of N. Y., $20; W. D. Jr., of Pa., $20; E. M., of N. Y., $20; D. D., of N. Y., $25; F. C., of Mass., $26; L. & K., of Conn., $20; E. K., of Pa., $15; J. C, of Mich., $25; E. S. H., of N. Y., $25; J. M., of N. Y., $25; W. S., of N. Y., $25; S. & C., of N. Y., $16; H. P., of Maine, $45; S. C. S., of Ill., $20; G. B. D., of Ill., $20; C. R., of Pa., $20; W. S. D., of Pa., $90; L. S., of N. Y., $20; W. W., of N. J., $16; R. H. S., of Mich., $45; C. D., of Ohio, $20; H. A., of N. Y., $20; D. S. S., of Ind., $16; H. G D., of Ky., $16; E. P., of Ohio, $10; A. B. J. F., of Ind., $26; A. H., of Ill., $25; G. T., of N. Y., $25; J. H. R., of N. Y., $25; T. N. & J. N. C., of N. Y., $41; J. W. N., of N. Y., $20; T. J. W., of N. H., $20; W. T. E., of N. J., $16; C. T. D., of N. J., $45; J. K., of Iowa, $20; A. W., of N. Y., $45; W. M., of Mass., $30; E. K. S., of N. Y., $10; A. & G., of N. Y., $16; J. E. Van Z., of Ky., $20; W. W., of Pa., $22; G. W. P., of N. Y, $16; E. H., of N. Y., $25; G. R. W., of Conn., $44; T. B., of N. Y., $16; E. J. E., of Ill., $28; R. B, L., of Ohio, $26; W. S., of Ill., $16; S. M. P., of Ohio, $15; W. B. W., of N. Y., $25; R. L. S., of Mich., $20; D. W., of Ill., $21; J. H., of Ill., $16; K. V. B., of N. Y., $10; G. W., of Iowa, $25; A. E. McG., of Minn., $16; P. S. F., of N. Y., $25; H. W., of C. W., $20; G. & G., of N. Y., $25, H. S. W., of Mich., $20; P. C., of Pa., $25; R. E. & A. G., of N. Y., $16; J. R.; of Ind., $16; J. B., of Ohio, $16; J. B. R., N. Y., $300; S. G. W., of Ill., $25; H. H., of Pa., $25; F. S. D., of Ill., $16; W. A. S., of N. Y., $25; G. K. G., of Cal., $15; W. L. R. V., of N. Y., $16.

Persons having remitted money to this office will please to examine the above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, and inform us the amount, and how it was sent, whether by mail or express.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from Wednesday, Sept. 23, to Wednesday, Sept. 30, 1863:—

H. T. M., of N. Y.; E. S. H., of N. Y.; G. T., of N. Y.; E. L. M., of N. Y.; J. M., of N. Y.; J. H. R., of N. Y.; A. G., of N. Y.; W. S., of N. Y.; T. N. & J. N. C., of N. Y.; F. C., of Mass.; E. J. E., of Ill.; D. D., of N. Y.; G. R. W., of Conn.; A. H., of Ill; S. G. W., of Ill.; H. H., of Pa.; G. & G., of N. Y.; E. H., of N. Y.; J. C., of Mich.; P. S. F., of N. Y.; A. B. J. F., of Ind.; W. B. W., of N. Y.; E & W., of N. Y.; P. C., of Pa.; W. A. S., of N. Y.; L. & K., of Conn.; H. L., of Mich.; G. W., of Iowa; L. & P., of N. Y.; W. S. D., of Pa.