

RECENT AMERICAN PATENTS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week; the claims may be found in the official list:—

Apparatus for Making Extracts from Tan-bark, Etc., by Means of Exhaust Steam.—The object of this invention is to utilize exhaust steam from steam engines, for the purpose of making extracts from tan-bark and other materials. The invention consists in the arrangement of a box with perforated sides and bottom, in combination with the pipe which conducts the exhaust steam to the vat containing the bark or other material to be extracted, in such a manner that the steam is free to expand and made to condense partially as it passes from the exhaust pipe into said box and all back pressure on the piston is avoided, and, at the same time, the full benefit of the action of the steam on the bark or other material is obtained. S. W. Pingree, of Lawrence, Mass., is the inventor.

Cross-plate Fire Surface for Steam Boilers.—The object of this invention is to increase the heat-transmitting power of the interior or heating surface of all kinds of steam boilers. Experience has shown that the mere providing of a large heating surface is not sufficient to transmit the heat generated in the furnace to the water; when the products of combustion are carried through flues or tubes, the lineal currents pass at right angles to the line of transmission of heat through the plate, the cylindrical mass of air is not equally heated from axis to periphery; while the temperature of the external stratum in contact with the metallic surface of the tube may be sufficiently lowered, the temperature of the interior portion, or cone, will remain nearly the same when it leaves as when it enters the tube. It is, therefore, evident other means must be found than the tubular system, in order to effect an improvement in the construction of the interior surface of steam boilers. To accomplish this is the object of this present invention, and for that purpose it consists in the construction of fire-boxes, flues, or tubes of any desired shape or dimension, with ribs projecting into the tube or flue and also into the water, which ribs have a spiral direction and diminish near the bottom of the flues so as to leave the same smooth to facilitate cleaning. The heated gases in passing through the flues or tubes must follow the spiral direction of the ribs, which continually break them up and cause them to mix so as to successively present fresh particles to the metal. The projecting ribs also vastly increase the heat-absorbing and conducting capacity of the surface, and enable a boiler of greatly reduced dimensions to supply a comparatively large amount of power. These tubes, flues, and fire-boxes, for all sizes of marine and land boilers, are made of cast iron in a peculiar manner, so that their strength will exceed that of the best boiler-iron flue or fire-box without stays, and as the heat-transmitting power of cast iron is to wrought or sheet iron plates as 66 to 39, it is obvious that cast iron is the proper metal for the flue or fire surface of boilers, while wrought iron is the natural metal for the outer shell by virtue of its superior tensile strength. Licenses to manufacture steam boilers, as well as all information on the subject, can be obtained from the inventor, Joseph A. Miller, engineer, No. 58 John street, and No. 614 Broadway, New York.

Machine for Cutting Moldings.—This invention relates to a new and useful improvement in the feed mechanism for cutting moldings, these in which pressure rollers are employed for feeding the stuff to its work. The invention consists in the employment or use of universal joints, applied to the shaft of the lower feed roller, in connection with a swinging frame, in which the shaft of the upper feed roller is placed, and with gearing for operating said machinery, the whole being so arranged that the bed on which one of the cutter shafts is fitted may be adjusted higher or lower, to suit the thickness of the molding to be cut, without at all affecting the operation of the feed rollers; the latter performing their function equally as well, whether thick or thin moldings are being cut, and without requiring any special adjustment to compensate for the variation of the thickness of the moldings. H. B. Smith, Lowell, Mass., is the inventor.

Wheel for Vehicles.—The tires of the wheels of vehicles are very liable to become loose, owing to the shrinking of the felloes of the wheel and the hub, and, more frequently, to the penetration of the ends of the spokes into the felloes and hub. When the tire of a wheel becomes loose, from either of the above causes, it has hitherto been the custom to remove the tire, and either cut it, and remold it, and shrink it again on the wheel, or to contract the tire without cutting it, by upsetting it with a machine, many of which are patented for the purpose. Both of these plans are attended with considerable trouble and expense, which it is the object of this invention to avoid. This invention consists in applying to the spokes of a wheel a nut and sleeve and a screw, arranged in such a manner that the spokes may be expanded or lengthened at will, and the tire always kept tightly on the wheel. C. J. Crane, of Burr Oak, Mich., is the inventor.

Street-sweeping Machine.—These improvements are embraced in two Letters Patent, the first of which principally consists in arranging upon and along the outside of the driving wheels, and upon a common shaft, extending in the same direction with that in which the machine moves, a series of brushes or brooms, made of any material adapted to street sweeping, which brushes, as the machine is drawn forward, revolve in a plane at right angles to the same, so that by guiding the machine along by the edge of the curbstone the brushes are thus brought close to the same, consequently, as they revolve, sweeping or throwing out the dirt and other refuse matters in the street near and within a short distance of the curbstone, toward the central portion of the street, or, at least, a sufficient distance to enable any of the ordinary sweeping machines when afterward drawn over the ground to sweep them up into a wagon therefor, or into suitable heaps, to be easily and readily put into a dirt cart for their removal. And the second, in so attaching that portion of the machine containing the endless belt, upon and by which the dirt, as fast as swept up from the street, is conveyed to the dirt-box of the machine, that it can be readily detached therefrom, or placed thereon, at pleasure, whereby, when the dirt-box has been filled to its utmost capacity, or as much as desired, it can be then drawn away to any convenient place for depositing the dirt, without necessarily carrying with it the sweeping devices of the machine. Andrew J. Roberts, Boston, Mass., is the inventor.

Quartz Crusher.—This invention relates to certain improvements in that class of quartz crushers in which the crushing is effected between a stationary and an oscillating jaw, in combination with suitable crushing rollers. The invention consists in the arrangement of a sieve between the working jaws and rollers, in such a manner that the pieces of rock, on being discharged from between the crushing jaws and while passing over the sieve, are divested from all fine dust adhering to them, and the full benefit of the rollers is obtained, which is not the case if the pieces of rock, enveloped in dust as they are when leaving the jaws, drop directly between the rollers. In order to keep the surface of the rollers clean and prevent the dust adhering to their surfaces, comb-shaped scrapers are applied, which are adjustable, so that their points can always be kept in contact with the periphery of the rollers. M. B. Dodge, of New York City, is the inventor.

It was a curious freak of the late tornado in Minnesota that stretched the telegraph wires sixty feet. When found by a repairer, the wire, though disconnected from any main battery, was so charged with electricity that it communicated a severe shock nineteen hours after the storm had passed. It is supposed that the wire was so overcharged as to become red hot, and in that condition stretched by the sheer force of the wind.—*The Telegrapher.*

CHEMICAL SCIENCE IN GERMANY.—Such is the appreciation of chemical science in Germany, says an English journal, that at the present time two large chemical laboratories on the most complete scale are in course of construction at Berlin and Bonn, at the expense of the State. They will cost, it is said, nearly \$400,000. The field open for chemical science in this country is very great, and we expect to witness a great revival of this important science.



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50,546.—Window-blind Fastening.—A. C. Arnold, Norwalk, Conn.:

I claim the plate and attachments, A, the angular-shaped bracket, D, pin, G, cord, H, and I, in combination, for the purpose described when depending on the lower sash being closed to make them effective, substantially as set forth.

50,547.—Bowlock.—M. T. Babb, Cape Elizabeth, Me.:

What I claim as my improvement is the slotted and ball-headed spindle, c, d, in combination with the cylinder, b.

50,548.—Apparatus for Generating Gas.—Joseph Bagot, New York City:

I claim obtaining the necessary motive-power to drive the exhausters of gas generating apparatus from the escaping waste heat of the retort furnaces, substantially as herein described.

50,549.—Envelope.—E. L. Barrett, Springfield, Ohio:

I claim the herein-described expansion envelope, when constructed as specified, for the purpose set forth, being a new article of manufacture.

50,550.—Sheep Rack.—J. S. Beads, Alabama Center, N. Y.:

I claim the rod board, D D, connected to the sides of the rack, so as to return thereon, in combination with the boards, E E, attached to the rod board, D D, by hinges or joints, substantially as and for the purpose set forth.

I further claim the revolving standards, B, arranged and applied to the racks, substantially as and for the purpose specified.

50,551.—Apparatus for Utilizing Heat from a Furnace.

—Silas Bennett, Newcastle, Pa.:

First, I claim the vertical tubes, H, located in the air heating chamber of the furnace, and used to assist the draught of heated air into the distributing tubes, J J, etc., which lead from the furnace to the place where the heated air is to be utilized.

Second, So inserting the air tubes into the air heating chamber, in connection with, and immediately beneath, the distributing pipes above them, that the apartments of the house may be supplied directly and separately with air from the cold-air duct, substantially as described and represented.

Third, The additional air tubes, W, for the introduction of exterior air into the circulation, as described and represented.

Fourth, The arrangement, as described and represented, for conducting the treated air from the furnace to appliances or apparatus for generating steam for culinary or drying operations, baking, etc., whether or not the same be previously or subsequently used for warming apartments.

50,552.—Coke Oven.—Jacob Bowers, Conneville, Pa.:

I claim placing the opening or doorway for discharging the contents of the oven below the level of the bottom of the oven, in combination with the moving bottom, so constructed and arranged as to make a passage from the interior of the oven to the doorway, when the bottom is lifted, and to close the communication when the bottom is set down, substantially as and for the purposes herein set forth.

50,553.—Saw.—Ira S. & C. N. Brown, Westerly, R. I.:

First, We claim, in combination with a saw plate and removable tooth, a locking device, adapted to lock or fasten the tooth after being placed in position, and arranged to admit of the removal of the tooth without necessitating the removal of the locking device from the tooth or plate, in whichever it is situated, all substantially as herein described.

Second, We also claim the bolt, a, tumbler, B, and spring catch, c, or their equivalents, in combination with a removable saw tooth and a saw plate, substantially as and for the purpose herein set forth.

50,554.—Broom Head.—J. D. Browne, Cincinnati, Ohio: I claim the mode of attaching the handle, and also securing fastening the clamp, as herein substantially set forth.

50,555.—Focusing Plate-holder.—S. W. Burrow, Allentown, Pa.:

First, I claim the adjusting screws, b, in combination with the frames, A, B, constructed and operating substantially as and for the purpose set forth.

Second, The springs or screws, or either of them, with or without plates, when used by means of an attachment to adjust the holder without moving the plate in the holder.

[This invention consists in the use of regulating screws, in combination, with or without springs, and with the frame holding the ground glass or focusing plate of a photographic instrument, in such a manner that by means of said screws the ground glass can be readily adjusted and brought into the proper focus without much loss of time, and with the greatest accuracy. It consists, also, in the application of protecting plates, in combination with the regulating screws and with the frame holding the ground glass, in such a manner that the operation of adjusting the ground glass can be effected without springs, simply by turning said regulating screws, and the screws are securely held in place, and not allowed to shift their position spontaneously.]

50,556.—Hand Stamp and Embossing Press.—William Burrows, New York City:

First, I claim the arrangement of a stationary guide, H, for an embossing stamp, and of a horizontally swinging printing stamp, in connection with one standard and bed plate, substantially as herein described.

Second, The opening, C, in the bed plate, A, arranged in relation with the swinging printing head, D, for the purpose and in the manner substantially as herein set forth.

Third, I claim the ink fountain applied directly to the printing head of a hand stamp, substantially as herein described.

50,557.—Horse Rake.—George E. Burt, Harvard, Mass.:

First, I claim the combination of the elevator, P, with the crank, r, and pitman, Q, constructed and operating substantially as described, for the purposes set forth.

Second, The combination of the arms, O, O', with the bar, G, constructed and operating substantially as described.

Third, The combination of the tooth, E, with the block, d, and the pin, l, and the arm, D, for the purposes set forth.

Fourth, The combination of the cylinder, W, the bolt, r, and the arm, D, for the purposes described.

50,558.—Well Packing.—James Calkins and J. Fraser, Buffalo, N. Y.:

We claim a seed bag, E, closing the whole aperture of the well,