

No. 23,988. Hot Water Heating Apparatus.*(Calorifère à Eau.)*

Octavo Charland, Gentilly, Que., 5th May, 1886; 5 years.

Claim.—1st. In a hot water heating boiler, the pipes A placed in a slanting position, the upper ranges of such pipes being smaller in diameter than those immediately below them and placed in zig-zag position, as herein shown and described. 2nd. The combination, in a boiler, of the pipes A made smaller in diameter in the upper part of the boiler, and placed in zig-zag positions with the baffle plate B and the header C, placed as shown and for the purpose set forth.

No. 23,989. Steam Boiler. (Chaudière à Vapeur.)

Joseph A. Mumford, Hantsport, N.S., 6th May, 1886; 5 years.

Claim.—1st. A steam boiler, closed at one end by an inwardly tapering fire-box C, and having smoke tubes E from the inner end of the fire-box to the other end of the boiler, as set forth. 2nd. A steam boiler, having an inwardly tapering fire-box C at one end, and smoke-tubes E from the other end connecting with the fire-box, the rear end of the boiler elevated, whereby the smoke tubes will have a slightly upward draft, as set forth, and the water level permit of a steam space beneath the dome B, as set forth. 3rd. In a steam boiler, having a fire-box C, tapering inwardly and provided with smoke tubes E, the grate bars L set to incline downwardly within the fire-box C, as set forth. 4th. In a steam boiler, the fire-box C tapering inwardly and having an outward extension provided with doors I, J, grate bars L, supported at one end by such extension and inclining downwardly within the fire-box C, as set forth. 5th. A steam boiler, having an inwardly tapering fire-box C at one end, smoke tubes E longitudinally at the other end, the rear end elevated and the lower end provided with a blow-off cock M, as set forth.

No. 23,990. Cabinet Folding Bed.*(Couchette Pliante.)*

Frank Munson and Frederick Shray, Buchanan, Mich., U.S., 6th May, 1886; 5 years.

Claim.—1st. In a cabinet folding bedstead, wherein the rails are folded upward in the centre, a series of cross-slats carried by one half of the side rails, and the series of cross-slats carried by the other half of the side rails, both series being so arranged that, when folded, the slats of one series will enter into the interstices between the slats of the other series, substantially as described. 2nd. In a folding bed, as described, the rail sections having slots at their central meeting points, combined with the connecting piece having pivots engaging with said slots, substantially as and for the purposes specified. 3rd. In a folding bed, substantially as described, the rail sections having slots at their central meeting ends, combined with a saddle having pivots inserted in said slots, as set forth. 4th. In a folding bed, of the kind described, coil springs secured upon opposite corners of the folding bed bottom, and connected by tension cords or cables, substantially as described. 5th. In a folding bed, of the kind described, coil springs L secured in opposite corners of the folding bed bottom, each provided with tension rod K, such tension rods being detachably secured to a cable or cord M in the longitudinal direction of the bed, substantially as described. 6th. In a cabinet folding bedstead, wherein the rails are folded upward in the centre, the meeting ends of the side rails being pivotally secured to and operating in conjunction with the saddle I, said saddle being provided with a foot projection N, substantially as and for the purposes set forth. 7th. In a cabinet folding bedstead, the combination of the main side rail adapted to be folded upward in the centre of the brackets P, carrying the central slats Q of the saddle I, and of the cleats C carrying the slats F, substantially as and for the purposes described. 8th. In a cabinet folding bedstead, the combination of the side rails C, provided with the stop H arranged to impinge against the shoulders of the head and foot sections, when such bed is extended, substantially as and for the purposes set forth. 9th. In a folding bed of the kind described, the combination of the head and foot sections A, B, with a locking device, such as the spring T, substantially as described. 10th. The combination, in a folding bed, of the two-part case A, B, saddles I and side rails C provided with intermeshing cogs or knuckles and having their ends enclosed beneath and pivoted to said saddles, as and for the purposes specified.

No. 23,991. Ventilating Attachment for Heating Stoves. (Appareil de Ventilation pour Poêles de Chauffage.)

Warren M. Brinkerhoff, Auburn, N.Y., U.S., 6th May, 1886; 5 years.

Claim.—1st. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two and provided with an air duct following the wall of said elbow and lying adjacent thereto, said duct communicating with the outer air at the end nearest the stove, and at the other end discharging into the elbow or smoke-pipe, substantially as described. 2nd. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two and provided with an air duct following the wall of said elbow, the wall of the elbow forming one wall of said duct, the latter communicating with the outer air at the end nearest the stove and at the other end discharging into the elbow or smoke-pipe, substantially as described. 3rd. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, said elbow having an air-duct following its wall, the wall of the air duct and elbow having integral connection, and the said duct communicating with the outer air at the end nearest the stove, and at the other end discharging into the elbow or smoke-pipe, substantially as described. 4th. The combination, with a stove, of an elbow provided with an air-duct which follows its wall and is of unequal diameter in cross-section, said duct communicating with the outer air at the end nearest the stove, and at the other end discharging into the elbow or smoke-pipe communicating therewith, substantially as described. 5th. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, said elbow being provided with an air duct following its wall and lying adjacent

thereto, and communicating at the end nearest the stove with a ventilator passage which extends toward the floor, and at the other end discharging into the elbow or smoke-pipe, substantially as described. 6th. The combination, with a stove and its smoke-pipe, of an elbow interposed between the two, said elbow having an air duct following and lying adjacent to the wall thereof, and communicating with a ventilator passage at the end nearest the stove, said ventilator passage extending toward the floor at a point outside the heater, while the duct discharges into the elbow or the smoke-pipe connected thereto, substantially as described. 7th. As a new article of manufacture and sale, an elbow for a smoke-pipe having an air duct which follows the wall of said elbow and is permanently connected therewith, said duct having communication at the end nearest the stove with the outer air, and extending towards the discharge end of the elbow, substantially as described.

No. 23,992. Vapor Burning Apparatus for Cook Stoves. (Appareil Fumivore pour Poêles de Cuisine.)

Frank E. Brown and George P. Train, Three Rivers, Mich., U.S., 6th May, 1886; 5 years.

Claim.—1st. The combination, with an ordinary fuel-stove, of the vapor-burning apparatus detachable within the fire-box, as shown, and having its feeder-pipe leading outward and upward into the flange of the stove-top, and a clamp having the fixed jaw and a movable jaw clamping the feeder-pipe and the flange of the stove-top, substantially as set forth. 2nd. The combination, with an ordinary fuel-stove, of a vapor-burning apparatus for detachable insertion within the stove, consisting of a supporting frame vertically and longitudinally adjustable, a burner or burners supported by said frame beneath the kettle-holes of the stove-top, and a supply-tank and feeder-pipe, substantially as set forth.

No. 23,993. Steam Engine. (Machine à Vapeur.)

William S. Arnold, Chatham, Ont., 6th May, 1886; 5 years.

Claim.—1st. In a steam engine, a cylinder having independent steam and exhaust ports, and a steam space shorter than the stroke of the piston, combined with two movable piston-heads reciprocatingly actuated, so as to prevent the formation of a steam space on the steam side of the piston during the initial portion of the stroke, and to alternately close and open each exhaust port, substantially as described. 2nd. In a steam engine having separate steam and exhaust ports, the combination of the cylinder, movable piston, cylinder heads, a sliding frame by which these piston cylinder heads are carried, and suitable connections with the crank shaft for reciprocating said sliding frame to cause said piston heads to alternately close and open each exhaust port, substantially as described. 3rd. In a steam engine, having a cylinder provided with independent steam and exhaust ports, and the steam space which is shorter than the stroke of the piston and is formed between movable piston heads, a sliding frame to which said piston heads are secured, and by means of which they are moved at the beginning of each stroke to translate the steam space of the cylinder, the necessary distance to accommodate it to the stroke of the piston and to alternately close and open each exhaust port, substantially as specified. 4th. In an engine, having independent steam and exhaust ports, substantially as described, the combination of the movable piston heads D, C, the sliding frame to which they are secured, of suitable connection with the engine for reciprocating said sliding frame to cause said piston heads to alternately close and open each exhaust port, and of a crank motion in said connection which stops on its centres so as to lock the sliding frame, all substantially as described. 5th. In an engine, substantially as described, the combination of the movable piston heads D, C, the reciprocating sliding frame by which they are carried, the wrists I, the rock-shaft K operated by the engine, the cranks L on said rock-shaft, and the links M all substantially as described. 6th. The combination, in a steam engine, with the movable piston heads C, D, and the rods H, and cross-heads G connecting the same, of the crank shaft A, disk B having projection C, the plate D, with projections E, C, the crank-shaft A and connections between the cranks A, K, substantially as and for the purpose specified. 7th. The combination, in a steam engine, of the side bars H, H, provided with wrist pins L, L, the cross-heads G, G, carried by said side bars, the piston rods F, F, all having an intermitting reciprocating motion derived from, and operated by the mechanism, consisting of the disk B, with projections C, said disk being secured to the shaft A, the plate D, with the projections E, C, the rod G, which connects the plate D to the upper end of the slotted rocking lever I, the sliding block J, the wrist pins O, P, the cranks L, L, the crank-shaft K and the connecting rods M, N, which connect the wrist pins O, P with the wrist pins L, L, on the side-bars H, H, all substantially as described and for the purposes specified. 8th. In a steam engine cylinder, the combination of the movable piston heads C, D, with the steam ports N, N, a valve M, a piston B moving independently of the piston heads C, D, and the independent exhaust ports O, O substantially as shown and for the purposes specified.

No. 23,994. Wrench for Saw Teeth. (Clé pour Dents de Scie.)

George F. Simonds, Fitchburg, Mass., U.S., 6th May, 1886; 5 years.

Claim.—1st. In a tool for fixing and detaching the removable portions of saws, a vise or positive clamping device to seize the removable portion, in combination with a lever attached to the vise to move it and the removable portion simultaneously, for the purpose set forth. 2nd. A tool for removing saw-teeth, consisting of the combination of lever E, jaws A, B provided with grooves e, e', screw C provided with spline d, and hand nut D, all constructed and arranged as set forth.

No. 23,995. Saddle Bag. (Sacoche de Courrier.)

Joseph J. Stephens, Coalesburg, Mo., U.S., 6th May, 1886; 5 years.

Claim.—1st. A saddle bag made with a body portion open at the