

verizer, of the chamber D, nozzle O, wearing pipe E and bushing H, substantially as described. 3rd. The combination, in a pulverizer, of the chamber F, chambers D, nozzles O, wearing pipes E, E and bushings H, H, substantially as described. 4th. The combination, in a pulverizer, of the chamber F, wearing pipes E, E, having flanges E and chambers D, D, substantially as described. 5th. The combination, in a pulverizer, of the chamber F, wearing tubes E, E, chamber D, D, and adjustable steam nozzles O, O, substantially as described. 6th. The combination, in a pulverizer, of the chambers D and F communicating with each other, and an adjustable steam nozzle O, substantially as described. 7th. The combination, in a pulverizer, of the steam nozzle O, with removable reduced opening G, the tapering chamber D and pulverizing chamber F, substantially as described. 8th. The combination, in a pulverizer, of the chamber D, steam pipe A and adjustable steam nozzle O, substantially as described. 9th. In a pulverizer and in combination with the pulverizing chamber F, the chamber D, the steam nozzle O and the jet exhaust apparatus, constructed and arranged to draw the pulverized material, exhaust steam, etc., from said chamber. 10th. The combination, in a pulverizer, of the removable bushings H, H and wearing pipes E, E, substantially as described.

NO. 23,298. Belt Coupling. (*Joint de Courroie.*)

Isaac E. McGiohan, New York, N.Y., U.S., 1st February, 1885; 5 years.

Claim.—As an article of manufacture, a double-ended gimlet-pointed screw provided with a suitable thread running its entire length, and adapted to be applied to a belt, substantially as described.

NO. 23,299. Ash Sifter. (*Crible à Cendres.*)

George W. Millner, Charlottetown, P.E.I., 1st February, 1886; 5 years.

Claim.—An ash sifter consisting of the box provided with drawers 3, 4 and inclined chute 5, the single inclined sieve 6 and the removable upper 9 having a cover 10 and removable bottom 11, provided with chain 12, whereon to gather the ashes and be subsequently replaced to dump them on to the sieve, as set forth.

NO. 23,300. Electric Battery Telephone.

(*Téléphone à Batterie Electrique.*)

The Bell Telephone Company, Montreal, Que., (assignee of Thomas D. Lockwood, Malden, Mass., U.S.), 1st February, 1886; 5 years.

Claim.—1st. A telephone apparatus comprising an outer case, a transmitter in one end thereof, and a hermetically closed liquid battery which substantially fills the space between the walls of said case and is secured thereto, as and for the purposes set forth. 2nd. The combination, in a hand telephone, of an electric battery, a variable resistance telephone and a circuit controller, whereby the circuit of the battery is completed through the transmitting telephone only when the instrument is grasped for use, substantially as described.

NO. 23,301. Drag Saw. (*Scie de Travers.*)

George A. Haggitt, Milbrook, (assignee of James H. Hulbert, Blanchard, Mich., U.S.), 1st February, 1886; 5 years.

Claim.—1st. In a wood-sawing machine, the combination, with a suitable frame, of a double crank shaft, a pivoted arm having a reciprocating slide, a pivoted rod connecting the said slide with the lower end of a swinging arm, toggle bars connecting the said swinging arm with pitman mounted upon the crank-shaft and a saw secured to the reciprocating slide, substantially as and for the purpose set forth. 2nd. In a wood-sawing machine, the combination of a pivoted arm having a reciprocating slide carrying the saw-operating mechanism for the said slide, and upright having a series of ratchets, a lever having a tooth engaging the same, and a rope or chain passing over a pulley at the upper end of the said upright, and connecting the said lever with the pivoted saw-carrying arm, which may thereby be raised to and retained at any desired elevation, substantially as and for the purpose set forth. 3rd. In a wood-sawing machine, the combination of a pivoted arm having a reciprocating saw carrying slide mechanism for raising and retaining the said arm, a pivoted rod connecting the slide adjustably with the lower end of a swinging arm or bar, adjustable toggle arms connecting the said swinging bar with the ends of pitman mounted upon a double-crank shaft, toggle bars connecting the said pitman with the ends of a lever pivoted at the front end of the frame of the machine and hand wheels or other mechanism for driving the said shaft, substantially as and for the purpose set forth.

NO. 23,302. Saw Swage. (*Etampe à Scie.*)

Thomas W. Smirle, Norwood, and James Chapman, Rockland, Ont., 1st February, 1886; 5 years.

Claim.—1st. In a saw-swage, the roller C journaled in the jaws A, provided with the cam projections a and rotated by the hand lever f, so as to draw out and widen a saw tooth placed between said cam projections and the anvil B, substantially as shown and described. 2nd. In a saw swage, the herein described brace composed of the rods i and j, held respectively, or vice-versa, by right and left-hand screw threads in the sleeves k, the block m and hand lever D, arranged to operate as shown and for the purpose set forth. 3rd. In a saw swage, provided with the roller C having the cams a, and operated by the hand lever f, the holding loop g attached to the lower ends of the jaws A, as herein described and for the purpose stated.

NO. 23,303. Rat Trap. (*Ratière.*)

William F. Brock, Toronto, Ont., 1st February, 1886; 5 years.

Claim.—A rat trap, composed of two rings A, D hinged together as shown, the upper ring D being drawn to the lower ring A by the action of a spiral spring e attached to a bar B, the act of closing of the

said rings together being controlled by a swinging bait block C, which releases a lug F attached to the upper ring A, all arranged and operating substantially as and for the purpose specified.

NO. 23,304. Car Heater. (*Calorifere de Char.*)

J. W. Johnson, Kansas, Mo. (Assignee of John E. Thoroughgood, Des Moines, Iowa), U. S., 1st February, 1886; 5 years.

Claim.—1st. The combination of the square metal frame B, the four metal sides C having flanges at their edges, the bottom or furnace support G, the furnace sides C11 having continuous flanges, extending outward from their edges, and vertical corrugations on their inside faces, the fixed top d, the hinged cover d', and the plate K adapted to form a chamber under the grate, substantially as and for the purposes specified. 2nd. A sliding drawer having blowers S, S, and a chamber at its front end, in combination with a furnace suspended from a car floor and provided with a chamber under the furnace grate adapted to receive the sliding drawer, for the purposes set forth. 3rd. The drawer R, R', having a slot R1 and the slide M, in combination with the box C, C1 and the furnace bottom K, to operate in the manner set forth for the purposes specified. 4th. A car-heating apparatus, composed of the following elements, to wit: a box suspended from the car floor, and provided with a register at its top, a covered furnace inclosed in the suspended box to produce a concentric chamber adapted to inclose a portion of a continuous tube, a case surrounding the suspended box to produce a concentric cold air chamber outside of the box, a slide or register for admitting air under and within the furnace, a blower for forcing cold air to the furnace fire when the car is in motion, and a steam-generating and heat-distributing tube partially coiled around the furnace and within the suspended box and partially within the car, to operate in the manner set forth. 5th. In a car-heating apparatus, the combination of a box pendant from the floor of a car, and enveloped by a cold air chamber by means of a case, a furnace inclosed within the pendant box and a steam generating and heat-radiating tube partially coiled around the furnace and within the pendant box to heat cold air and discharge it into the car, and also to radiate heat within the car for the purpose of maintaining pure, warm air and oven temperature within the car.

NO. 23,305. Nut Lock. (*Arrêlé-Ecrou.*)

Lyman C. Learned, Pittsfield, Mass. (Assignee of Almon Ross, Southport, Ct.), U.S., 1st February, 1886; 15 years.

Claim.—1st. A bolt C, with double thread a and b crossing each other, as shown in Fig. 1, to allow a right-hand nut to pass over a thread adapted to a left-hand nut, and vice-versa, as specified. 2nd. The combination of the screws c, with the nuts A, B, and screw-bolt C, substantially as described for the purpose specified.

NO. 23,306. Boot. (*Botte.*)

George Valiant, Toronto, Ont., 1st February, 1886; (Re-issue of Patent No. 17,896.)

Claim.—1st. A boot, having its fly or flap B partly cut away, substantially as set forth, and provided with a narrow button-hole strip of stronger material firmly attached thereto, substantially as described. 2nd. A boot, having the edge of its fly or flap cut, so as to receive a button hole strip and to leave a point or lip b, in combination with the button-hole strip A made of a single thickness of stronger material, substantially as described. 3rd. A boot, having the edge of the fly or flap of its upper serrated or scalloped, in combination with a piece of material sewed to the said edge, and having eyelets or button-holes stamped out of it, substantially as and for the purpose specified.

NO. 23,307. Centrifugal Dish Washing Machine. (*Machine Centrifuge pour Laver la Vaisselle.*)

Allen G. Ingalls, Granby, Que., 1st February, 1886; 5 years.

Claim.—1st. A dish washing machine, constructed substantially as herein shown and described, and consisting of a dish-water tank, a rotary rinsing water bucket having transverse partitions and discharge pipes, a basket to receive the dishes, pumps to discharge water over the dishes, lamp-heated flues and an operating mechanism, as set forth. 2nd. In a dish-washing machine, the combination of the tank A having flanges 11, the heating flues 7 having flanges 10, the basket G having flanges P, Q, R, the main shaft L and a driving mechanism with the upright bars H, the curved wings O and the cap tube N carrying the said wings and attached to the said shaft, substantially as herein shown and described, whereby the dish-receiving basket will be rotated, and currents of water will be directed against the dishes as they are carried around by the said basket, as set forth. 3rd. In a dish washing machine, the combination of the tank A, the rotary dish-receiving basket G, and a driving mechanism with the pumpshafts e, the guard tubes u, the cap tubes W having spiral flanges z and their casings y having discharge nozzles l at their upper ends, substantially as herein shown and described, whereby water will be discharged over the dishes as they are carried around in the said basket, as set forth. 4th. In a dish washing machine, the combination of the tank A provided with an internally toothed stationary gear wheel m at its top, the rotary basket G and the main shaft L, with the bucket S having transverse partitions 1 and discharge pipes V, the spindle J journaled to the said main shaft L and the gear wheels H, i, j, carried by the spider attached to the upright bars carrying the basket, substantially as herein shown and described, whereby the said bucket will be rotated to discharge its water by the revolving of the said basket and main shaft, as set forth. 5th. In a dish washing machine, the combination of the tank A, the rotary basket G carrying the dishes and the bucket S carrying the rinsing water, with the annular perforated plate 25 attached to the said tank, substantially as herein shown and described, whereby the water discharged from the said bucket will be distributed over the dishes, as set forth. 6th. In a dish-washing machine, the combination of the tank A and the bucket S, with the spiral flues 7, the cap plate 8, the lamp flues 5, the lamps 2 and a supporting mechanism, substantially