before set forth. 10th. The combination of stiff c, c, levers and lever jointed at S, Fig. 2, pivots D, B, chains H. H, slide clutches I, I, side springs B, B, substantially as and for the purpose hereinbefore set forth.

No. 21,399. Harrow. (*Herse.*)

John P. Armstrong, Alvinston, Ont., 13th April, 1885; 5 years.

Claim.—1st. A harrow tooth, provided with the central cutting edge c, the concave faces *d*, *d*, and the double-shouldered and T-shaped head *e*, substantially as shown and described and for the purpose set forth. 2nd. In a harrow, the diagonally-placed girts A, B, C, D, E and F, connected by the end cross-bars H passing on each side of the harrow teeth under the shoulders of the head, and secured thereto by the bolts *b*, substantially as shown and described. 3rd. In a harrow, the combination of the girts A, B, C, D, E and F, formed as shown, and the end cross-bars H, having the slotted hook holes *f*, with the draw-hooks J, having their hook ends returned and flattened, substantially as shown and for the purpose set forth.

No. 21,400. Machine for Pulverizing Ores, etc., by Centrifugal Force. (*Machine à Force Centrifuge pour Pulvériser les Minerais, etc.*)

Gédeon Frisbee, Elmore, Ohio, U.S., 13th April, 1885; 5 years.

Claim.—1st. The combination, the metal casting, the disks *d*, the arms B, B and the drivers D, all combined and arranged substantially as described. 2nd. In combination with the chamber H, of the lugs *e*, *e*, *e*, the shaft S, all combined and arranged substantially as described. 3rd. In comoination with the disks *a*, the drivers D, D, the arms B, B and the rollers A, substantially as and for the purpose described.

No. 21,401. Street Shaft and Gully.

(Entrée d'Egout et Egout.)

Percival W. St. George, Montreal, Que., 13th April, 1885; 5 years.

Claim.—1st. A street gully, formed of a single piece, in shape a cylinder, with one stopped end, and having the first joint of sewer connection made in one with it, all substantially as set forth. 2nd. The combination, with a gully made of a cylinder, with one stopped end, of one or more lengths of cylinders corresponding thereto in material and diameter, and a shaft top having an open front and manhole cover, all as herein set forth. 3rd. The combination, with the shaft top D, of the bar E, set across opening in same, and arranged, substantially as herein set forth.

No. 21,402. Tobacco Pipe Cleaner. (*Cure-Pipe.*)

John Wilson, London, Ont., 13th April, 1885; 5 years.

Claim.—The combination of a rubber casing A, integral with the tapered shank E, in which reservoir C and channel D are formed, substantially as shown and described and for the purpose specified.

No. 21,403. Cuff Fastener and Adjuster.

(Mode de Poser et Assujétir les Manchettes.)

Theodore B. Wilson, Chicago, Ill., U.S., 13th April, 1885; 5 years.

Claim.—1st. In a cuff-holder and adjuster, the combination, with the strip A, having the off-set A^1, and the prong A^2 at one end, of the clasp or pin B fastened to the opposite end, substantially as set forth. 2nd. In a cuff-holder and adjuster, the combination, with the strip A, having the off-set A^1, prong A^2, and spur C at one end, of the spring clasp or pin B fastened to the opposite end, substantially as set forth.

No. 21,404. Gas Lamp. (*Lampe à Gaz.*)

Francis H. Wenham, London, Eng., 13th April, 1885; 5 years.

Claim—The new and improved arrangement of gas lamp, wherein are employed a ring burner situated at the lower end of an air bearing chamber *c*, and a disc or button *h* beneath the burner, the space between this chamber and the burner, and also the central orifice in the said burner being covered with gauze, or divided or perforated plates, substantially as and for the purposes hereinbefore described with reference to the accompanying drawings.

No. 21,405. Rock Drill. (*Foret de Mine.*)

Sylvanus Hussey, Buffalo, N.Y., U.S., 13th April, 1885; 5 years

Claim.—1st. The combination, with the drill bar and clutch head, of the actuating lever D provided with side rollers e^1, and a tooth e^3, and an actuating segment having star ing arms *e* and a releasing roller e^2, substantially as set forth 2nd. The combination, with the drill bar, provided with a feed screw *m*, the drill frame and a screw nut held in the drill frame against turning, of a clutch head G, whereby the drill bar is turned, and a ratchet coupling which permits the clutch head to turn forward in the direction of the feed and prevent it from turning backward, substantially as set forth. 3rd. The combination, with the drill bar *g*, provided with the feed screw *m*, of the clutch head G, secured to the tube J, a screw nut R, connected with the tube J^1 and held against turning, and a ratchet coupling J^2 connecting the tubes J, J^1, substantially as set forth. 4th. The combination, with the drill bar *g*, provided with a longitudinal groove *i*, of the clutch head G, and a feather I pivoted to the clutch head G, whereby the feather can be disengaged from the groove, substantially as set forth. 5th. The combination, with the drill bar *g*, provided with a longitudinal groove *i*, of the clutch head G, feather I pivoted to said clutch head, and a lock nut *n*, whereby the feather is secured in place, substantially as set forth. 6th. The combination, with the drill bar, provided with a feed screw *m*, of the guide sleeve P, enclosing the feed screw, and a divided nut R, composed of two parts pivoted to the sleeve P, substantially as set forth. 7th. The combination, with the drill bar, provided with a feed screw *m*, of the guide sleeve P, provided with a flange p^1, the divided nut R composed of two parts pivoted to the flange p^1, and a stop pin r^4, secured to the flange p^1, substantially as set forth. 8th. The combination, with the drill bar, provided with a feed screw *m*, of the cross-head M, springs *n* connected therewith, the guide sleeve P seated in said cross-head, and the divided nut R pivoted to said sleeve, substantially as set forth. 9th. The combination, with the drill bar, provided with a feed screw *m*, of the cross-head M, springs *n* connected therewith, the guide sleeve P seated in said cross-head, the divided nut R pivoted to the sleeve P, the tube J^1 attached to said cross-head, the clutch head G attached to the tube J, and the ratchet coupling J^2 connecting the tubes J, J^1, substantially as set forth. 10th. The combination, with the drill frame and a drill bar provided with a feed screw *m*, and cross head M, of the tubular rods *n*3, rods n^1, springs *n* and screw nuts *o*, substantially as set forth. 11th. The combination, with the drill bar and the swinging frame A, provided with side bars K, K, connected at their lower ends by a cross-head K^2, of the upright bar *l* and the guide sleeve L, adjustably secured to the bar *l*, substantially as set forth.

No. 21,406. Grate Bar for Furnaces and Stoves. (*Barreau de Grille pour Fourneaux et Poêles.*)

James Kerr, Cobourg, Ont., 13th April, 1885; 5 years.

Claim.—The perforated grate bar consisting of the ribs A, with perforations B, and connecting brices C, provided with a diagonal perforated web D, having serrated teeth E, the whole as shown and described for the purpose set forth.

No. 21,407. Corn Broom. (*Balai de Houque.*)

Charles Boeckh, Toronto, Ont., 13th April, 1885; 5 years.

Claim.—A hollow shank A, with a plug B fitted into it, and the corn broom D tied thereon, in combination with the handle C, fitted into the hollow shank A and having a screw formed on its end to fit into a screwed hole made in the plug B, substantially as and for the purpose specified.

No. 21,408. Double Carbon Arc Lamp.

(*Lampe à Arc à Double Charbon.*)

Elihu Thompson, Lynn, Mass., U.S., 13th April, 1885; 5 years.

Claim.—1st. The combination, with two carbon-carriers in an electric-arc lamp, of a movable releasing-stop for the feeding mechanism of one carrier, and suitable means for bringing said stop into releasing position upon the descent of the other carrier to a predetermined position. 2nd. The combination, in a double-carbon lamp, of a releasing-clutch for one of the carbon-carriers, a movable releasing-stop for said clutch, and means for bringing said stop into releasing position upon the descent of the other carrier to a predetermined position. 3rd. The combination, in a double-carbon lamp, of a releasing-stop for the feed mechanism of one of the carbon-carriers, mounted on a lever, and a lug or projection on the other carbon-carrier for tilting said lever, and carrying said lever into releasing position when the latter carrier has moved to a predetermined point. 4th. The combination, in a double-carbon lamp, of a feed clamp or clutch for one of the carbon-carriers, a releasing-stop for said clutch mounted on a lever placed to hold the stop out of releasing position, and a projection on or connected with the other carbon-carrier for tilting said lever and moving the stop into releasing position. 5th. The combination, in a double-carbon lamp, of a releasing-stop for the feed-controlling clamp of one carrier, and means connected directly or indirectly with the other carrier for controlling the position of said stop, as and for the purpose described. 6th. The combination, with two carbon-carriers, of a releasing-stop with the other carrier for setting said stop into releasing position, and a stop or catch for limiting the movement of the releasing-stop in the setting operation. 7th. The combination, with two carbon-carriers, of feed clamps or clutches actuated by a common magnet system, a fixed releasing-stop for the clamp or clutch of one carrier, and a movable releasing-stop for the clamp or clutch of the other set, by a button or other suitable device connected with, or controlled by, the first carrier. 8th. The combination, with a clutch for a carbon-carrier, of a releasing-stop *t* mounted on, or supported by, one arm of a lever, and a button-stud or its equivalent, as described, upon the other carrier, which button or stud engages with the other end of a lever when the carbon is wholly or nearly consumed. 9th. The combination of a carbon-carrier R^2, a feed clutch ^{2}, a stop *t*, a lever F, a carbon-carrier R, and a button B. 10th In a double-carbon lamp, the combination, with the feed-controlling mechanism engaging with one carbon or carrier, of a releasing-stop, detent, or such like, releasing device adapted to cause a release of said feed mechanism, whenever through wasting of said carbon in the arc, the feed-controlling mechanism is lowered to a predetermined extent, said releasing device being mounted in a movable support, or means for holding the same out of feed-releasing position while the other of the two carbons is in action. 11th. The combination, in a double-carbon lamp, of feed-regulating devices for the two carriers, and a fixed end a movable releasing-stop for the respective feed devices of said carriers mounted on a common adjustable support, as and for the purpose described. 12th. In a double-carbon electric lamp, the adjustable support P carrying the fixed releasing-stop J for one carrier, and the movable releasing-stop *t* for the other carrier, as and for the purpose described. 13th. The combination, with the two carbon-carriers R, R^2, of the clutches O, C^2, releasing-stop J, *t*, a movable support for the stop *t*, and means connected with carrier R for setting the stop O in releasing position.

No. 21,409. Gas Cooking Stove.

(*Cuisinière à Gaz.*)

John Somerville and William H. Y. Webber, London, Eng., 13th April, 1885; 5 years.

Claim.—1st. In a gas cooking stove having a roasting or baking