

each other independent of the diaphragm contact as those formed by the end of the spring and pin on the post, and a carbon electrode, as set forth. 7th. The combination, with the diaphragm and resistance devices, of the collector and resonator Y having the tube *y* and the contractor X, substantially as and for the purpose set forth.

### No. 22,073. Gas Governor. (*Régulateur à Gaz.*)

James Stott, London, Eng., 14th July, 1885; 5 years.

**Claim.**—1st. So constructing and arranging a valve partition D that it may be moved over from one passage within a gas regulator as to reverse the flow of gas through the same, to enable the regulator to be available for up or down flow of gas to burners, as described with reference to Figs. 1 and 2 of the annexed drawings. 2nd. In connection with a reversible valve gas regulator, a branch or pipe N by which gas can be caused to enter the regulator for a down flow or for an up flow to burners, as described and shown in Figs. 1 and 2 of the annexed drawings. 3rd. Fitting two valves G, F, on the central stem of a gas regulator, said valves being in separate chambers, as shown at Figs. 1, 2 and 3 of the annexed drawings, to equilibrate the flow and prevent jumping under varying pressures.

### No. 22,074. Saw. (*Scie.*)

Alexander Bertram, Toronto, Ont., 14th July, 1885; 5 years.

**Claim.**—A series of mortise or ploughing teeth B, shaped substantially as shown, and separated by two or more chisel-shaped teeth A, shaped and operating substantially as and for the purpose described.

### No. 22,075. Sewing Machine.

(*Machine à Coudre.*)

The Empress Sewing Machine Company, Toronto, Ont. (Assignee of Charles A. Dearborn), New York, N.Y., U.S., 14th July, 1885; 5 years.

**Claim.**—1st. In a sewing machine, the combination, with a vibrating lever arm *g* and reciprocating bar *i*, of the articulating joint connecting the same, consisting of the cylindrical eye 5 and split expansible spherical stud or projection 6, substantially as shown and described. 2nd. The combination, with the arm *p* and bar *i*, of the cylindrical eye 5, split spherical stud 6 and expanding screw 7, substantially as and for the purpose set forth. 3rd. In a sewing machine, the combination, with a rotary cranked driving shaft *c* and *a*, vibrating shuttle-lever *k*, of a link connecting the two with the stud 10 and free spherical ring 12, arranged and operating substantially as herein set forth. 4th. In a sewing machine, the combination, with a rotary driving shaft and a reciprocating feed bar, of an oblique sliding crank or cam pin *u* projecting from the end of the shaft, engaged rotatively therewith and adjustable in and out therein, and arranged to revolve against a bearing face on the feed-bar, whereby an adjustable stroke of the feed-bar is obtained, substantially as set forth. 5th. The combination, in a sewing machine, with a rotary driving shaft and a reciprocating feed-bar, of the oblique sliding crank pin *u*, arranged in the end of the shaft and revolving against a projection on the feed-bar, with a manipulating device to slide the said pin *u* in or out, substantially as and for the purpose set forth. 6th. The combination, with the driving shaft *c* and feed-bar *s* having bearing face 22, of the oblique sliding crank pin *u* engaged in one end of the shaft, projecting spring *u'* and adjustable lever *v*, arranged and operating substantially as and for the purpose set forth. 7th. The combination, with the rotary driving shaft *c* and the feed-bar *s* with bearing faces 21, 22, of the eccentric *t*, oblique sliding crank pin *u* and retracting spring *j*, substantially as shown and described. 8th. In a sewing machine, the combination, with adjustable feed mechanism, of an adjusting or manipulating lever *p* and a graduated arc *o* over which the same is movable, substantially as shown and described. 9th. In a sewing machine, the combination, with the bed-plate and shuttle-race, of a swinging plate or plates pivoted at or near the shuttle-race and arranged to partly revolve or swing on their pivots in a horizontal plane to uncover or cover the shuttle-race, substantially as herein shown and described. 10th. In a sewing machine, the combination, with a pivoted swinging-plate or cover on the shuttle-race, of a pivotal stud and a tightening spring arranged to exert a constantly frictional pressure on the pivotal end of the plate to retain it in the opened or closed positions into which it may be swung, substantially as set forth. 11th. In a sewing machine, the combination, with the bed-plate and shuttle-race therein, of the swinging-plate P, pivotal stud *r*, and tightening spring *or*, substantially as and for the purpose set forth. 12th. In a sewing machine having a rotary driving shaft beneath the bed-plate and a slotted spool stand 36 mounted on the top of the overhanging arm at the back end thereof, the combination with the cam or eccentric 41 on the driving-shaft, of the cranked rock-shaft 40 actuated thereby and rising vertically at the back of the arm with its upper end provided with the vibrating take-up arm 39 working in the slot of the spool stand, substantially as herein set forth. 13th. In a sewing machine, the combination, with the bed-plate and a rotary driving shaft *c* beneath the same, and the overhanging arm having the spool platform 37 and slotted spool-stand 36 arm 41, cranked rock-shaft 40, spring 42 and take-up arm 39, arranged and operating substantially as and for the purpose set forth. 14th. In a sewing machine, the combination, with a presser foot bar having a cylindrical or rod like termination, of a presser-foot having a semi-tubular shank arranged to embrace the end of said bar with a circumferential slot to admit the clamp-screws, substantially as shown and described. 15th. In a sewing machine, a presser-foot provided with the guide 33, 34, arranged and operating substantially as and for the purpose set forth.

### No. 22,076. Machine for Excavating Snow.

(*Machine pour Enlever la Neige.*)

Danthus P. Bier, Henry E. Rolph and Henry M. Burchard, Marshall, Minn., U.S., 14th July, 1885; 5 years.

**Claim.**—1st. In a snow-clearing machine, the combination, with the rotating cutting-out drum A in front, of the raised adjustable deflector in rear of the upper portion thereof, substantially as specified. 2nd. In a snow-clearing machine, an elevated adjustable deflector

having roller bearings engaging a C-shaped track having a hinged end portion in rear, and devices for lowering said portion when the deflector is adjusted thereon, substantially as specified. 3rd. In a snow-clearing machine, the combination, with the rotating cutting-out drum A in front, of the raised adjustable deflector in rear of the upper portion thereof, and supported on rails, the car or receptacle having the centrally hinged bottom sections, and the swinging side, substantially as specified.

### No. 22,077. Lacing for Corsets, Gloves, &c.

(*Ligature pour Corsets, Gants, &c.*)

Abram S. Mann and Elbert B. Mann (assignees of Charles F. Spencer), Rochester, N.Y., U.S., 14th July, 1885; 5 years.

**Claim.**—1st. In a lacing, the combination, with a corset or other analogous article to be laced, of a set of single-bearings placed on one side of the opening, a set of double bearing placed on the other side, the two being directly opposite, and a cord attached to one side passing around one of the double bearings, thence around the single bearing, thence back around the other double bearing, thence along the side of the opening to the next double bearings, and in the same manner around the remaining bearings, whereby the lacing extends at right angles across the opening, as specified. 2nd. In a lacing, the combination, with a corset or other analogous article, of a set of single bearings placed on one side of the opening, a set of double bearings placed on the other side, the two being directly opposite, and two cords, one attached at the top and the other at the bottom passing around the bearings at right angles to the opening, as described, the free ends of the cords meeting intermediately and extending outward in opposite directions, as and for the purpose specified. 3rd. In a lacing, the combination, with a corset or other analogous article provided with double flaps at its lacing edges, of a bearing consisting of a shaft, a roller on the shaft located inside the flaps, two washers on the shaft on opposite sides of the roller also located inside the flaps, two washers on the shaft outside of the flaps, serving to attach the bearing to the flaps, and a lacing cord passing from side to side around the rollers, substantially as set forth. 4th. In a lacing, the roller bearings herein described, consisting of the shaft *c* provided with shoulders, the roller *d* resting and turning freely on the shaft, the washers *f, f'* resting on the reduced ends of the shaft and forming guides for the roller, and the outside washers *g, g'* for attaching the bearing to the flaps, as shown and described and for the purpose specified.

### No. 22,078. Manufacture of Hollow Ware

from Sheet Metal. (*Fabrication des Utensiles Creux en Tôle.*)

Charles B. Taylor, San Francisco, Cal., U.S., (Assignee of Clement Kind, Addington, New Zealand), 14th July, 1885; 5 years.

**Claim.**—The method of manufacturing sheet metal hollow ware, such as cans, pails, etc., consisting of first forming a flange on the edge of the top or bottom, substantially as described, and then in any suitable dies turning the edge of the sides over said flange, substantially as and for the purpose specified.

### No. 22,079. Sulky Plough. (*Charrue à Sidge.*)

Byron B. McVay and James Allison, (Assignees of Robert E. Linham,) Mansfield, Ohio, U.S., 14th July, 1885; 5 years.

**Claim.**—1st. In a plough having a tongue-joint, the combination of a fixed rack, a rotary disk-rack connected with the tongue joint, and an independent lever having dogs to engage with the fixed and rotary disk rack, substantially as described. 2nd. In a sulky-plough, the combination of a plough beam, and a tongue connected by a double pivot-joint which permits vertical and lateral play between the parts, a rack lever and pawl for adjusting and controlling the vertical movement of the parts, and a spring bolt for locking the tongue against lateral vibration, substantially as and for the purposes specified. 3rd. The tongue joint for sulky-ploughs having vertical beam-flanges, horizontal tongue flanges, and a spring locking-bolt, substantially as and for the purposes specified. 4th. In a sulky-plough, the combination, with the plough beam and the tongue connected by a joint having a verticle and horizontal pivot motion, of a rack lever and pawl, and a spring bolt for controlling the connections between the plough-beam and tongue, and a horizontally adjustable clevis-bracket having the wheel-caster attached thereto, substantially as and for the purposes specified. 5th. The combination, with a bracket clevis having a vertical pivot connection which permits of lateral adjustment of the bracket-clevis having a vertical pivot-connection which permits of lateral adjustment of the bracket on the beam, of a caster-wheel secured thereto and movable therewith, substantially as and for the purposes specified. 6th. The combination, with the plough and its beam, of a bracket pivoted on the beam, a rack secured to the outer end of the bracket, an elbow lever having a wheel spindle and pivoted on the bracket or rack, a lever and pawl for adjusting the elbow lever and braces which permit a limited play of the rack and outer end of the bracket, substantially as and for the purposes specified. 7th. The elbow-lever for sulky-ploughs, having uniform sides and a centrally arranged dog or pawl, whereby the same can be used for the land-wheel of either right or left hand ploughs, substantially as and for the purposes specified. 8th. In a sulky-plough, the combination, with the adjustable land-wheel and its pivoted bracket, of the brace adjustably connected with the plough-beam or standrad, substantially as and for the purposes specified. 9th. The combination, with a plough-standard, a land-side having a projection or lug on its inner face, and a furrow-wheel arranged between the same, of a stud or axle reduced and threaded at one end for attachment to the standard, and bored at the opposite end to receive the pin or lug on the landside, substantially as and for the purposes specified.

### No. 22,080 Waggon Brake Lock.

(*Arrête-Frein de Wagon.*)

Alexander Dougherty, Samuel T. Lockhart and John C. Lubker, Vallonia, Ind., U.S., 14th July, 1885; 5 years.