

inverted triangular sash-bars into which the glass lights are embedded in putty or other cement, the apex of each sash-bar being provided with draining troughs C leading into the main drain trough E closed at its ends, in combination with the main trough F having draining apertures G leading into it from the trough E, and draining aperture H leading out from the trough F, but arranged not to come opposite to the draining apertures G, substantially as and for the purpose specified.

No. 18,667. Sugar Bowl. (*Sucrier*.)

Hiram McCarthy, Mount Forest, Ont., 13th February, 1884; 5 years.

Claim.—1st. A bowl having a discharging tube in its bottom, in combination with two valves, one located at or near the top, and the other at or near the bottom of the tube, the said valves being so shaped and arranged that when one must be closed before the other commences to open, substantially as and for the purpose specified. 2nd. In a bowl having a tube extending from its interior, a valve F, shaped as shown and located at or near the top of the tube, a valve G similarly shaped and located at or near the bottom of the tube, in combination with a spindle H, arranged to connect and operate the two valves F and G, substantially as and for the purpose specified. 3rd. A bowl A having a tube E, extending from its interior and provided with valves F and G, located as described and connected together by the spindle H, in combination with the spring I arranged to act on the spindle H, substantially as and for the purpose specified. 4th. A bowl A, having a tube E extending from its interior and provided with valves F and G, located as described and connected together by the spindle H, provided with a handle J, in combination with the spring I arranged to act on the spindle H, and the stops K located on the opposite side of the valve F and arranged to limit its stroke, substantially as and for the purpose specified. 5th. A bowl A, supported by the standards C, fixed to the base plate D, a tube E extending downwardly from the interior of the tube, in combination with the valves F and G, connected together by the spindle H, having a handle J and operated by the spring I, arranged substantially as and for the purpose specified.

No. 18,668. Percentage Calculator.

(*Table de Calcul de Commission.*)

Sylvester J. Tucker, Richmond, Va., U. S., 13th January, 1884; 5 years.

Claim.—1st. The combination of the stationary and the movable triangles having graduated scales and numbers, as described, and the movable marker, substantially as shown and described. 2nd. The combination of the stationary and the movable triangles having graduated scales and numbers, as described, and the movable marking-cord and segmental guide for the same, substantially as shown and described. 3rd. The combination of the stationary and the movable triangles having graduated scales and numbers, as described, and the movable and the stationary markers, substantially as specified. 4th. The combination, with the triangles of the movable marking-cord, the loose collar and pin for securing it at one end, and the slide and segmental guide at the other end, substantially as shown and described. 5th. The combination of the stationary triangles, the movable triangle having a longitudinal slot in its base and the set screw for adjusting and holding said triangles in any desired relation to each other, substantially as shown and described. 6th. The combination of the stationary triangle having the percentage-scale B arranged along its hypotenuse, the movable triangle having the number bearing scale D arranged along its hypotenuse and the markers, substantially as specified.

No. 18,669. Door Spring. (*Ressort de Porte.*)

Ira W. Moore, New York, N. Y., U. S., 13th February, 1884; 5 years.

Claim.—1st. In a door spring, substantially as described, the attaching plates *h* constructed with the hub *az*, projecting into the socket of the door, and having the flaring mouth *H* and an opening through said hub for the spring, substantially as described. 2nd. The spring *c* attached to the door, substantially as described, and connected by pivot *k* to the head *e* of the device that connects the spring with the jamb, which head projects outwardly from the face of the jamb, in combination with the door plate *b*, having flaring mouth *H* and spring *d*, substantially as described. 3rd. The combination, with a door spring, substantially as described, of a detachable connecting device consisting of a lever latch *n* and a notched head *e* of said spring, substantially as described. 4th. In a detachable connecting device for door springs, the spring head *e* having shoulders *a*, bearing against ledges *bx* of the mouth plate, substantially as described, to relieve the connecting latch *n* of the pressure of the spring when the door is closed, and retain the spring head in the connecting position, as set forth. 5th. The combination, in a door spring device, of the jump plate *p*, having the reversely arranged slots *u* in the flange *v*, and the latch *n*, reversible on a pivot *t*, located relatively to said slots and the hole *q*, for the spring head, substantially as described. 6th. The combination, with the latch *n* of a door spring device, of a flanged jamb plate *p*, having slot *u* for the latch, with a notch *z* in its wall, in which the latch is secured by the tension of the spring, substantially as described. 7th. In a door spring device having a ribbon spring or strip *c*, and a coiled spring *d*, the said ribbon spring doubled and looped around the pivot *k* of the spring head, together with solid or imperforate end fastenings *g*, substantially as described. 8th. The combination of an adjusting screw-threaded attachment *m* having slotted head *l*, with the ribbon spring *c* and coiled spring *d*, of a door spring device, said ribbon spring having solid or imperforate end fastenings *g*, substantially as described.

No. 18,670. Heating Apparatus.

(*Appareil de Chauffage.*)

Robert Johnson and John F. Buerkel, Boston, Mass., U. S., 13th February, 1884; 5 years.

Claim.—1st. The employment, in heaters, of a circulating fluid consisting of a mixture of glycerine and lime water, as set forth. 2nd.

A heater provided with circulating pipes, filled with a liquid consisting of a mixture of glycerine and lime water, substantially as and in the proportions set forth. 3rd. The combination of the stove radiators, outlet pipe *a* and inlet pipe *e*, and coil communicating at the inner end with the inlet, substantially as set forth. 4th. The combination of the radiators stove, two or more flat coils *D* and branched inlet and outlet pipes, substantially as set forth. 5th. The combination, in a car, of a stove at one end, and radiating pipes communicating with a boiler in the stove and arranged mainly at the end of the car, opposite that in which the stove is placed, substantially as set forth. 6th. The combination, in a car, of a boiler stove, a pipe extending from the stove to the opposite end of the car, back to the centre, to the opposite side and then to and from the end opposite the stove, to the same end as the stove, and back to the centre and then to the stove, substantially as set forth. 7th. The combination of a stove, boiler therein, radiating circulating pipes and outlet and inlet connecting pipes, the former being smallest in diameter, for the purposes set forth. 8th. The combination, in the boiler, of the head, screw pipe, manganese packing and nut and washer, substantially as specified.

No. 18,671. Automatic Feed Water Regulator for Steam Boilers. (*Régulateur d'alimentateur d'eau automatique pour Chaudières à Vapeur.*)

John Christman, Syracuse, N. Y., U. S., 13th February, 1884; 5 years.

Claim.—1st. The combination, with an upright cylinder communicating with the steam and water spaces of a boiler, and connected with the water-induction pipe, a float arranged within said cylinder and adapted to close the aforesaid pipe, as and for the purpose specified. 2nd. An automatic feed-water controller for steam boilers, consisting of an upright cylindrical chamber communicating with the steam and water spaces of the boiler, and having a steam education port communicating with the actuating-cylinder of the feed-water pump, a float arranged to control the egress of steam from said chamber, and a horizontal disk suspended from the float and spanning the chamber to receive a direct vertical water-pressure, and thereby overcome any suction that may be exerted on the float by the steam-education port, substantially as set forth. 3rd. The combination, with the cylinder A provided with the steam and water pipes *a* and *b*, of the steam-education port *c* arranged central of the axis of the cylinder, and provided with the valve-seat *d*, and the float F provided with the horizontal disk *f*, and the valve-stem *e* projecting upward from the centre of the float, substantially as shown and set forth. 4th. The combination, with the cylinder A provided with the steam and water pipes *a* and *b* and with the steam-education port *c*, and the float F provided with the valve-stem *e*, as shown, of the push-rod *i*, substantially as in the manner and for the purpose specified.

No. 18,672. Metrical Carburetter.

(*Carbureteur Métrique.*)

Walter M. Jackson, Providence, R. I., U. S., 13th February, 1884; 15 years.

Claim.—1st. The combination, with the metrically-governed mechanism for distributing hydro-carbon liquids to gas air, of a device for automatically regulating the flow of liquid from a reservoir to the carburetter, a separate box containing such mechanism, a meter and an oil reservoir and connecting pipes, substantially as specified. 2nd. In combination with a meter for measuring gas or air, the metrically-governed mechanism for distributing hydro-carbon liquid to the gas air, fixed within the meter case and consisting of a liquid receiving box, a distributing wheel therein mounted on a shaft having a cog wheel, connected by gearing with a cog wheel on the dial shaft of the meter, whereby the hydro-carbon liquid may be supplied to air or gas meter, whereby the hydro-carbon liquid may be supplied to air or gas meter, and properly proportioned quantities, substantially as described. 3rd. In combination with the liquid distributing carbon distributing box and the metrically-governed liquid distributing and measuring device therein, a float and valve arranged, as described, for automatically regulating and controlling the admission of liquid to said box, whereby the liquid may be supplied to the gas air in regulated and measured quantities, as specified. 4th. The liquid hydro-carbon receiving and distributing box having a supply pipe and a discharge opening, in combination with a float and valve properly connected therein for automatically controlling the flow of liquid to the box, and a distributing wheel provided with suitable gearing and the dial shaft of the meter, a liquid hydro-carbon reservoir and a connecting pipe, as and for the purpose specified. 5th. The liquid hydro-carbon receiving and distributing box having a strainer, in liquid induction pipe provided with a valve seat, a float located in combination with a conical valve seated in the pipe, a float located in said box and a connecting pivoted lever, all constructed and arranged as described. 6th. In a hydro-carbon liquid supply and distributing apparatus for metrical carburetters, the displacing filling its horizontal area, whereby it is quickly affected by the inflow or outflow of a small quantity of liquid, in combination with the liquid quantity mechanism, and a meter for the measurement of the quantity of gas or air delivered to the carburetter, substantially as described. 7th. In an apparatus for measuring and distributing hydro-carbon liquid to carburetters, a meter, the displacement chamber having an inlet liquid pipe and valve, and a pivoted displacer connected with the valve and provided with a counterbalancing weight, in combination with the measuring and distributing apparatus connecting and delivering hydro-carbon liquid to carburetters, as described. 8th. In an apparatus for measuring and delivering hydro-carbon liquid to carburetters, a meter, a displacing chamber having an inlet pipe and valve, and a displacer arranged therein, in combination with a measuring chamber having measuring and distributing devices arranged therein connected by gearing with the dial shaft of the meter and a pipe connecting the two chambers, substantially as described. 9th. The combination, with the displacing chamber and displacer of the induction tube and valve, the tube being provided with a foraminous cap wrapped closely with wire, substantially as and for the purposes specified. 10th. In an apparatus for metrical supplying fluid hydro-carbon to carburetters, a float or displacer