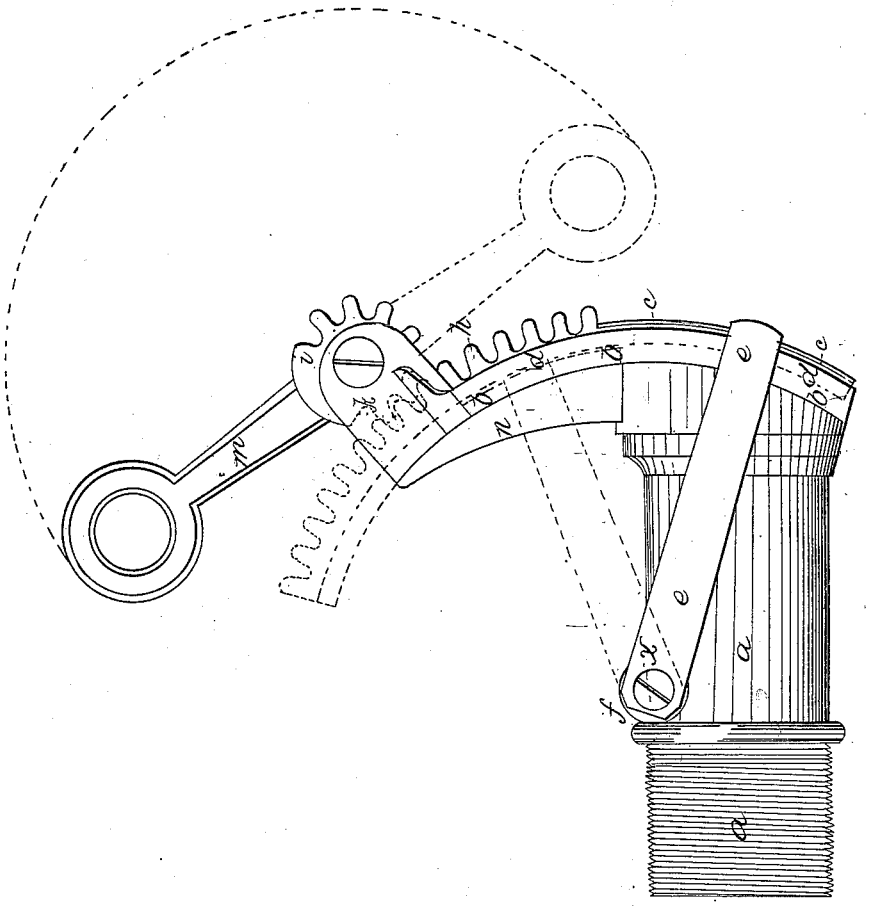
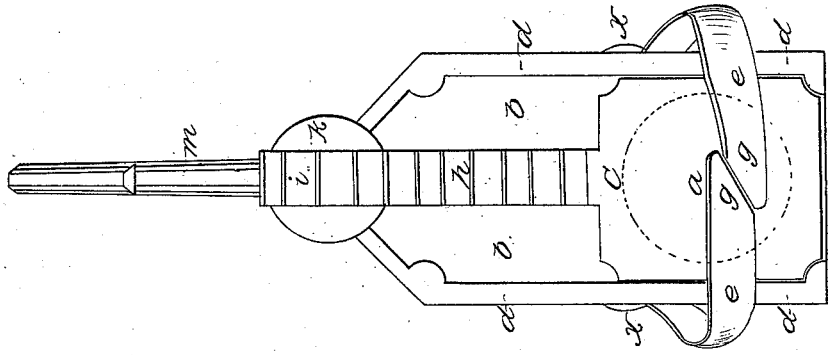
# J. Whittemore,

## Molasses Gate,

No. 1,359, Patented Oct. 9, 1839.





# UNITED STATES PATENT OFFICE.

SERVICE WHITTEMORE, OF BOSTON, MASSACHUSETTS.

## MOLASSES-GATE.

Specification of Letters Patent No. 1,359, dated October 9, 1839.

*To all whom it may concern:*

Be it known that I, the undersigned, SERVICE WHITTEMORE, of Boston, in the county of Suffolk, in the State of Massachusetts, have invented a new and useful improvement in the form, construction, and action of what is commonly termed a "molasses gate" or "tap" for drawing off molasses from the cask or other vessel that contains it.

The old form of molasses gate hitherto generally used is made with a cylindrical tube of about one inch and a quarter bore, on the outer end of which is cast a tablet standing perpendicular to the axis of the tube aforesaid. The aperture of said tube is closed by means of a square gate moving vertically upon the face of the tablet. This gate is made to rise and fall or in other words to open and shut by a rack and pinion the rack formed upon the stem of the gate and the pinion turning in a socket cast in the head of the tablet. The gate is pressed close to the face of the tablet by a convex steel spring attached to its outer surface, and this spring travels in guides upon each side of the gate, formed of iron wire.

To obtain sufficient pressure to resist the force of a column of molasses the height of a hogshead, it is necessary in the old form of molasses gate, that the spring should be very stiff and when such a spring is used the friction upon the guides is too great, and the lever handle by which the pinion is moved is liable to break, or, on the other hand, if the spring is not sufficiently stiff to resist such pressure as above described constant leakage is the consequence.

The following is a full and exact description of the molasses gate as improved by me, which consists of a cylindrical metallic tube (*a*) of one inch and a half bore, having upon its outer end a tablet (*b*) (see drawings) formed by the arc of a circle of four inches radius. The gate (*c*) which opens and shuts the aperture of the tube (*a*) is concave so as to fit the convex surface of the tablet (*b*) closely, and is kept in its proper position by guides (*d*) at each side projecting $\frac{1}{8}$ inch, and also by two radial steel springs (*e*, *e*). These two springs which press the face of the gate close to the tablet with a power equal to fifty pounds are placed one upon each side of the tube (*a*) and are secured at that end which forms the center of the arc of the tablet (*b*) by a screw (*x*) passing through a socket (*f*) cast in the solid metal with the tube (*a*) and lying upon the upper side and transverse to the axis thereof. The said steel springs (*e*, *e*,) pass from the center above described along the sides of the tube (*a*) curving around the face of the tablet (*b*) and are attached each by a rivet or pin to the gate at (*g*). The opening and shutting of the gate is performed by a rack (*h*) and pinion (*i*), the rack being formed upon a stem forming part of the gate and passing up through a socket in the head of the tablet, wherein is screwed the pinion, movable by a lever handle (*m*). At the back of the tablet is a rib to strengthen the same (*n*).

The drawing represents the gate shut, the dotted lines the position of the parts when the gate is open.

What I claim as my invention and desire to secure by Letters Patent is—

The mode of arranging the springs for keeping the gate firm in its seat, by attaching them to the socket (*f*) upon the tube (*a*) and making them movable upon it as a center, and conducting them along said tube and securing them to the center of the gate as above described, and in combination therewith and necessary thereto, making the tablet and gate of a curvilinear shape, the tablet forming a segment of an arch so as to allow the radial steel springs describing a motion on their pivots.

In testimony whereof I, the said SERVICE WHITTEMORE, hereto subscribe my name in the presence of the witnesses whose names are hereto subscribed on this tenth day of September A. D. 1839.

SERVICE WHITTEMORE.

Witnesses:

FRANCIS O. WATTS,

JOSEPH WILLARD.