No. 649,355. Patented May 8, 1900.

J. L. RHEAD.

HEAD GATE LOCK.

(Application filed July 25, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

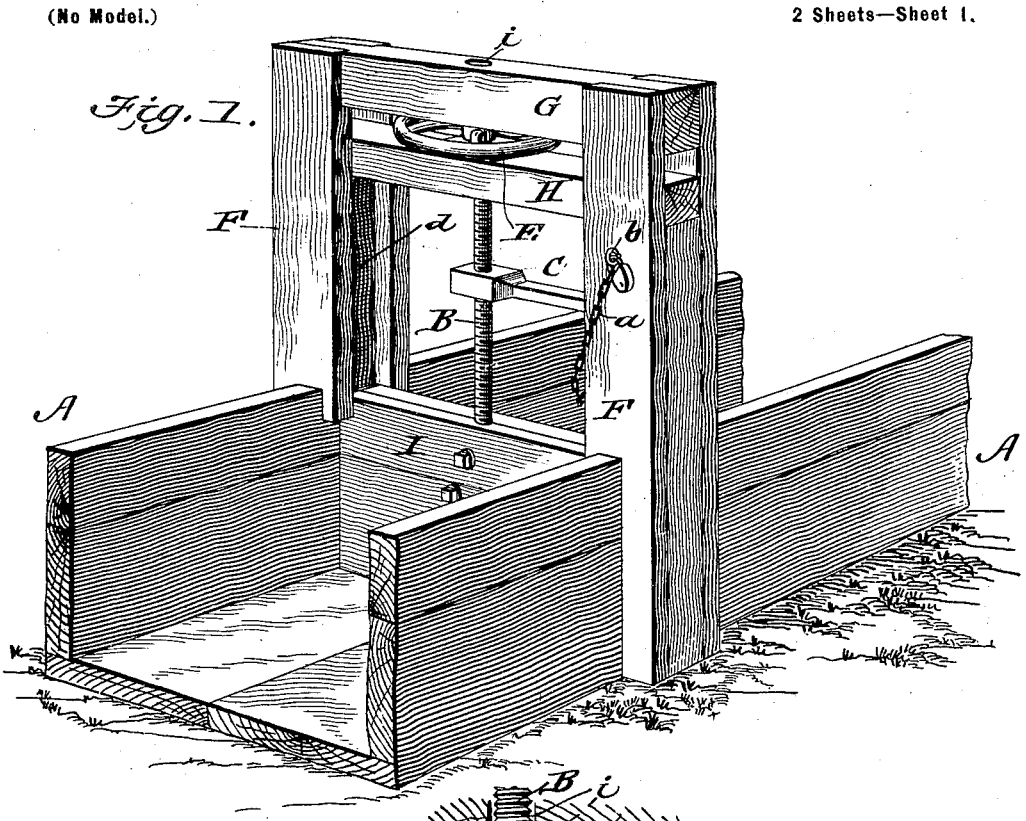
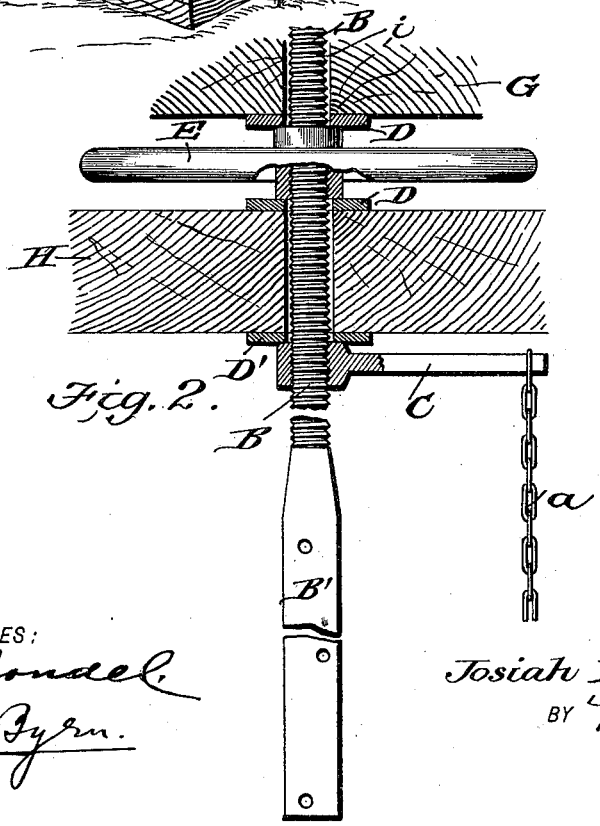


Fig. 2.



WITNESSES:

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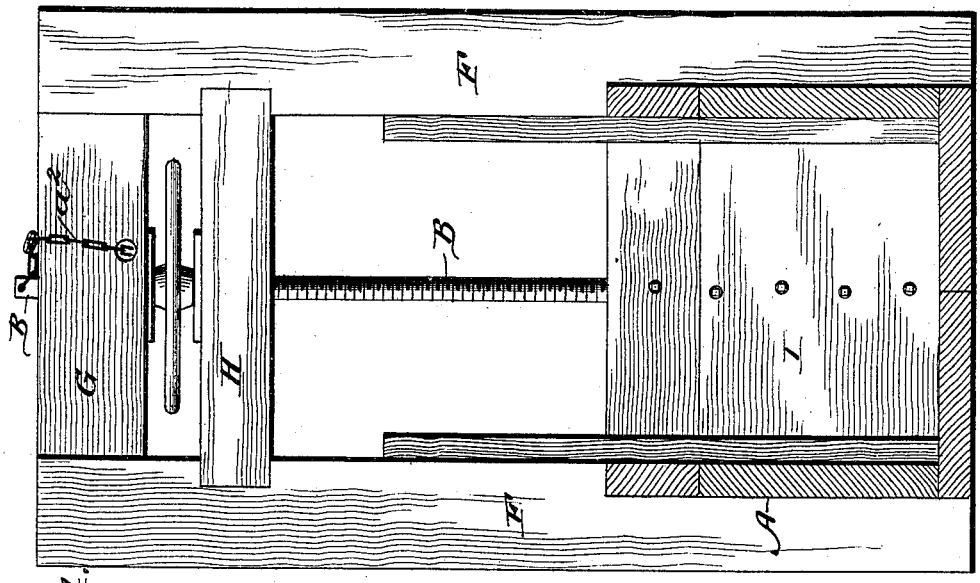

Fig. 4.

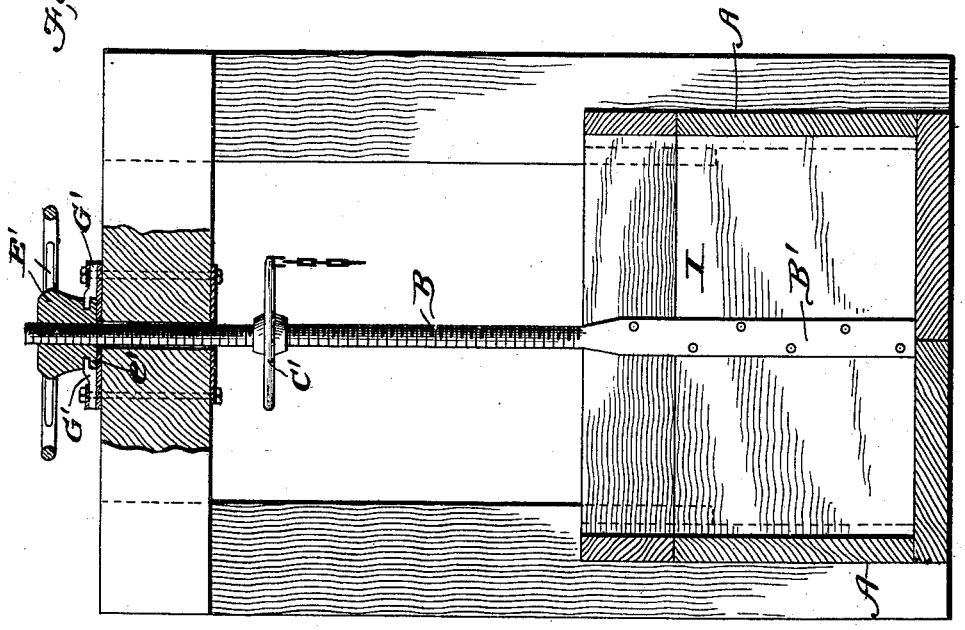

Fig. 3.

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JOSIAH LEWIS RHEAD, OF CORINNE, UTAH.

HEAD-GATE LOCK.

SPECIFICATION forming part of Letters Patent No. 649,355, dated May 8, 1900.

Application filed July 25, 1899. Serial No. 725,107. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH LEWIS RHEAD, of Corinne, in the county of Box Elder and State of Utah, have invented a new and useful Improvement in Head-Gate Locks, of which the following is a specification.

My invention relates to locking devices for the head-gates of irrigating ditches, canals, flumes, and waterways constructed in such a manner as to properly protect the interests of both the supply company and the consumer who uses the water. It is desirable in the interests of the company that the head-gate should not be opened more than a limited distance to admit the amount of water which the consumer contracts for, and yet the consumer frequently desires to be able to cut off the water or reduce its flow. If a gate is locked at the maximum opened position allowed by the supply company, the consumer has no control over the flow except by a second independent gate. My invention is designed to provide a single gate which may be locked by the supply company at its limited opened position and yet be perfectly under the control of the consumer in every range of adjustment less than the maximum and down to the point of closure; and to this end my invention consists in the mechanism hereinafter shown and described, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view; Fig. 2, a sectional detail; Fig. 3, a sectional elevation transversely to the flume, showing a modification of the invention; and Fig. 4 is a front view in elevation, showing another modification.

In the drawings, A is the boxing or sluiceway of the irrigating ditch or canal, on opposite sides of which are erected the vertical standards F, having guideways *d* on their inner faces and cross-beams G and H connecting their tops.

I is the gate, sliding vertically in the guides *d* and formed of two thicknesses of planking, between which is bolted the lower flattened end B′ of a vertical screw-stem B, arranged rigidly in the vertical central line of the gate. In adjusting the gate the screw-stem B rises and falls with the gate, passing through opening *i* in the top cross-bar when up; but said stem does not revolve. It is raised and lowered by a hand-wheel E, whose hub is interiorly threaded like a nut and fits into or meshes with the screw-thread of the stem B. This screw-nut wheel turns between two metal plates D D, arranged on the adjacent faces of the two cross-beams G H, so that as the wheel is turned it cannot move vertically itself, but raises or lowers the screw-stem B and the attached gate I in the guides *d*.

C is an arm with a perforated head at one end, which is screw-threaded interiorly to mesh with the screw-stem B, which passes through it. The other end of this arm C is anchored to a chain *a*, which in turn is connected to an eyebolt *b* by means of a padlock, the key of which is in the control of the supply company. The eyebolt *b* passes through only a portion of the standards F, which places the nut between timbers to prevent its being tampered with. The chain prevents the arm C from rotating on the screw-stem, and hence when the stem and gate rise the arm C acts as a stop by striking against a metal plate D′ on the lower side of the cross-bar H, as shown in Fig. 2, so as to prevent the gate from being raised over the allowed height, and yet the water-consumer may by reason of the slack of the chain turn the wheel E and adjust downwardly the screw-stem B, arm C, and gate I to any degree of reduced flow or complete closure, if desired. By unlocking the padlock and turning the arm C up or down on the screw-stem the supply company may set the stop-arm C at any point along the length of the screw-stem to determine the maximum flow allowed to each consumer.

As a modification of my invention I may, as in Fig. 3, substitute a stop-wheel C′ for the arm C, and I may dispense with one of the cross-bars at the top and arrange a hand-wheel E′ above the single cross-beam. In such case the hub of this wheel is flanged at *e*′, and its flange swivels beneath semicircular overhanging collar-plates G′, bolted through a face-plate on top of the cross-beam, or, as in Fig. 4, a chain a^2 with sufficient slack in it may be anchored to the top of the screw-rod B, so as to limit the upward movement of the same, and yet allow the gate to be closed.

In describing the wheel E of my invention I have for convenience called it a "screw-nut"

wheel; but I would have it understood that it is in function a swiveling screw-nut, and I may construct it in any desired form or size suitable for convenient turning.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A head-gate-locking mechanism, comprising a gate moving in guideways and having a screw-stem attached to the same so that it cannot turn, a screw-nut wheel meshing with the screw-stem but restrained as against longitudinal movement, and a stop device for limiting the opening movement of the gate and screw-stem substantially as described.

2. A head-gate-locking mechanism, comprising vertical standards with guideways, a gate moving in said guideways and having a screw-stem attached to the same so that it cannot turn, a screw-nut wheel meshing with said screw-stem, two cross-bars one above and the other below said screw-nut wheel, and a stop device for limiting the opening movement of the gate and screw-stem substantially as described.

3. A head-gate-locking mechanism, comprising a gate moving in guideways and having a screw-stem attached to the same so it cannot turn, a screw-nut wheel meshing with the screw-stem but restrained against longitudinal movement, an adjustable screw-threaded stop device embracing and meshing with the screw-stem, and a chain and locking anchorage for the same to prevent the stop device from being turned up or down on the screw-stem substantially as described.

4. A head-gate-locking mechanism comprising a gate moving in guideways and having a screw-stem attached to the same so it cannot turn, a screw-nut wheel meshing with the screw-stem but restrained as against longitudinal movement, an arm with a perforated screw-threaded end embracing the screw-stem, a loose chain attached to said arm, and a lock for the chain substantially as and for the purpose described.

JOSIAH LEWIS RHEAD.

Witnesses:
O. PETERSEN,
H. J. RICH.