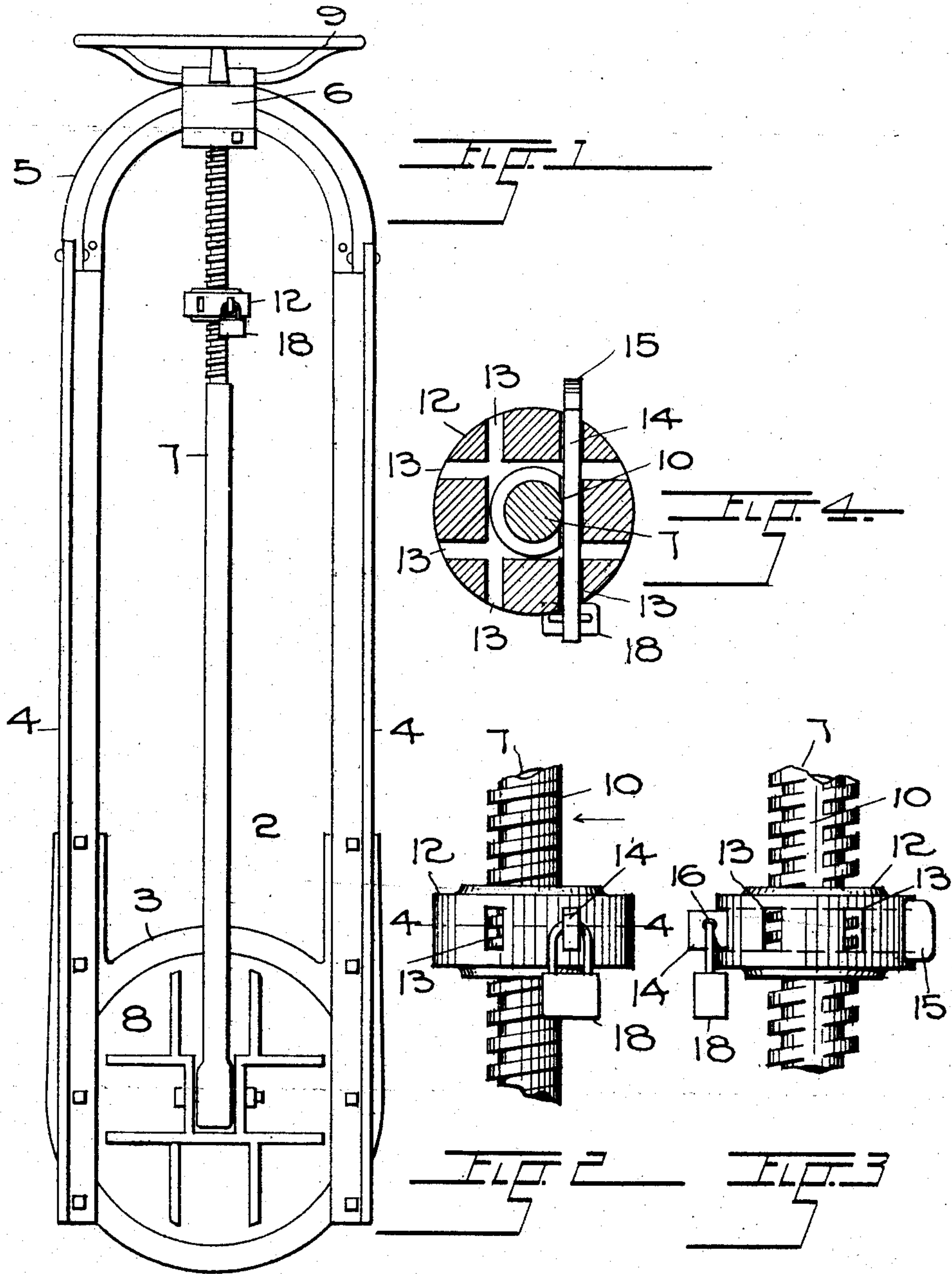


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ADJUSTABLE OPENING STOP FOR HEAD GATES.
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905,407.

Patented Dec. 1, 1908.



WITNESSES:
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CLARENCE D. BUTCHART, OF DENVER, COLORADO.

ADJUSTABLE OPENING-STOP FOR HEAD-GATES.

No. 905,407.

Specification of Letters Patent.

Patented Dec. 1, 1908.

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To all whom it may concern:

Be it known that I, CLARENCE D. BUTCHART, a citizen of the United States of America, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Adjustable Opening-Stops for Head-Gates, of which the following is a specification.

This invention relates to means for limiting the opening movement of head gates of reservoirs, irrigating ditches, canals and other water-ways and more especially of gates whose up and downward movement is effected by the manipulation of a nut or hand-wheel upon a screw stem, to the lower end of which the gate is fastened.

To properly protect the owners of the water supply from which the water flowing through the headgate into the laterals or irrigating ditches is derived it is essential that the gate should be locked against movement in excess of that required to produce the opening agreed upon in their contract with the consumer, while at the same time, these locking means should be of a character to permit the consumer, to reduce or entirely shut off the said opening if he so desires, and the object of the present invention is to provide a simple and durable device by the use of which the above stated requirements may be fulfilled in a practical and highly effective manner and which is capable of accurate, minute adjustment upon the gate stem to which it is secured. I attain these objects by the mechanism illustrated in the accompanying drawings in the various views of which like parts are similarly designated and in which

Figure 1 represents an elevation of a head gate with my improved stop in the operative position, Fig. 2 an enlarged, fragmentary view of the gate-stem upon which the device is secured. Fig. 3 a similar elevation looking in the direction of the arrow *a* Fig. 2, and Fig. 4 a section taken along the line 4-4 Fig. 2.

Referring to the drawings by numerals, the character 2 designates the head-gate frame which includes the head plate 3 whose opening registers with the out or inlet of the waterway, the parallel, longitudinally channeled uprights 4 which serve as guides for the gate during its vertical movement and the transverse, semi-circular brace 5 which connects the upper extremities of the up-

rights and which is provided at its vertex with a hollow boss 6 through which extends the stem 7 of the gate 8 by which the opening in the head plate 3 is regulated.

The up and downward movement of the gate 8 is effected by manipulation of a hand-wheel 9, which is supported upon the boss 6 of the cross-brace 5, in engagement with the upper extremity of the gate-stem 7. The latter consists of a threaded rod whose lower end is securely fastened to the gate and whose thread has been milled along one of its sides to produce a longitudinally extending, flat key-seat 10.

The device by means of which the gate may be locked against excessive upward movement, consists of a preferably cylindrical block 12 which is formed with a threaded bore to cooperate with the thread on the gate stem 7. The block 12 is furthermore provided with a plurality of preferably rectangular passages 13 which extend transversely in relation to its bore and which, in practice, serve as key ways for the reception of a correspondingly formed key 14. The latter consists of a stem provided at one of its extremities, with a head 15 and having at its opposite end an aperture 16 for the reception of the curved bolt 17 of a padlock 18.

When the block 12 is adjusted upon the gate stem 7, the innermost side of one of the keyways 13 extends in a vertical plane with the key seat 10 on the stem, so that the key, when inserted into the said way, will engage the latter's wall as well as the said seat and thus lock the block 12 against movement on the stem.

To frustrate attempts at unauthorized adjustment of the block upon the stem, I have provided the padlock 18 which, when inserted through the opening 16 in the end of the key 14 which protrudes beyond the end of the key way, will effectively prevent withdrawal thereof.

It will be observed that by reason of the plurality of keyways 13, the block 12 may be adjusted upon the stem 7, a distance which is but a fraction of the pitch of its thread, which fraction is so minute that it may be said that by means of my locking means the opening of the head gate can be regulated to any selected size within predetermined limits.

I wish it understood that, while I have shown and described my invention in the

best form now known to me, variations in the minor details of its construction may be availed of within the spirit of my invention, and that although I have shown the device
5 in association with a vertically movable head gate, it may be employed with equal results in connection with any gate or valve whose stem consists of a threaded rod.

Having thus described my invention, what
10 I claim is:

1. In a device of the class named, the combination with a threaded gate-stem of a stop-block thereon, and means whereby the said block may be locked upon the said stem at
15 successive points, the distance between which is a fraction of the pitch of the stem-thread.

2. In a device of the class named, the combination with a threaded gate-stem having a longitudinal key seat, of a coöperatively threaded block having a plurality of
20 keyways transverse with reference to the

stem and adapted to separately register with the said seat, a key adapted to be inserted in any one of the said ways, in engagement with the said way, and means to lock the
25 said key against withdrawal.

3. In a device of the class named, the combination with a threaded gate stem, having a longitudinal key seat of a coöperatively threaded block, having a key way, transverse
30 in relation to the stem and adapted to register with the said seat, a key, adapted to be inserted in the said way and having a head at one end and an aperture at its opposite end, and a lock whose hasp is passed through
35 the said aperture.

In testimony whereof I have affixed my signature in presence of two witnesses.

CLARENCE D. BUTCHART.

Witnesses:

G. J. ROLLANDET,
K. M. STUMP.