No. 830,411. PATENTED SEPT. 4, 1906.

C. D. BUTCHART.

ADJUSTABLE OPENING STOP FOR HEAD GATES.

APPLICATION FILED JAN. 29, 1906.

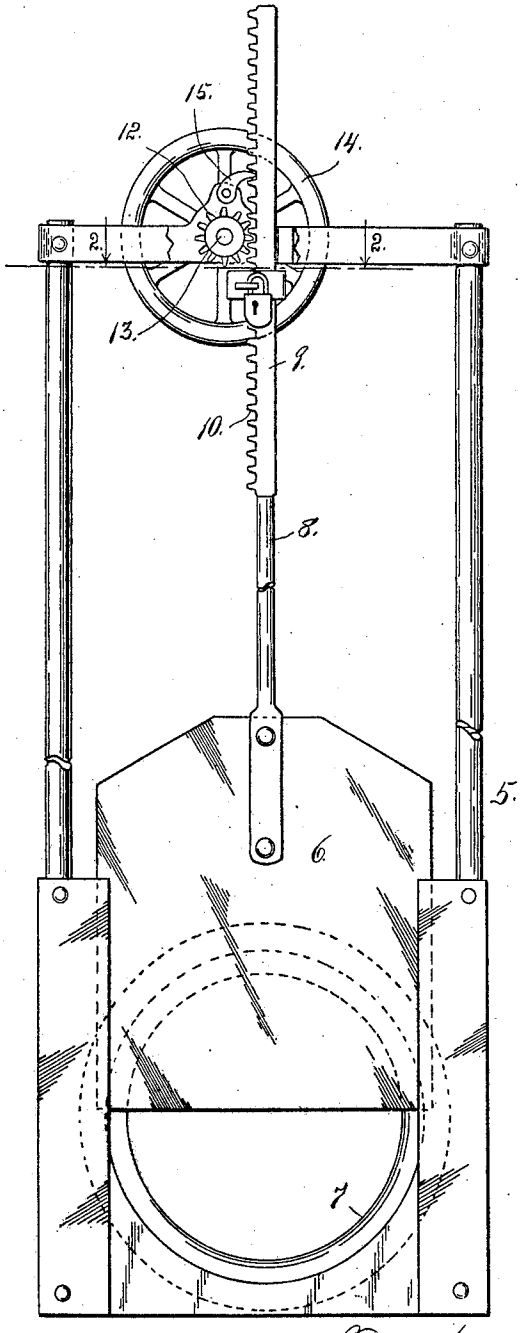

Fig. 1.

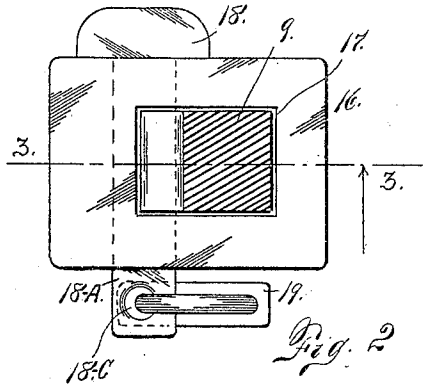

Fig. 2.

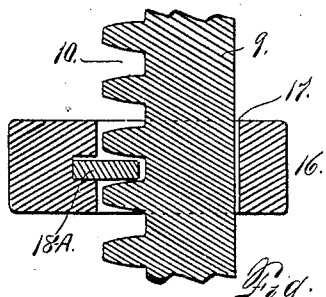

Fig. 3.

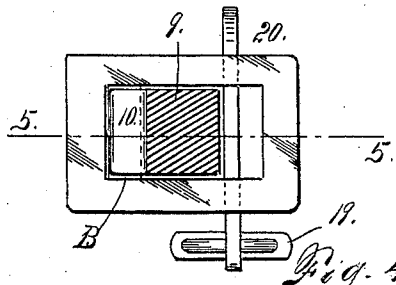

Fig. 4.

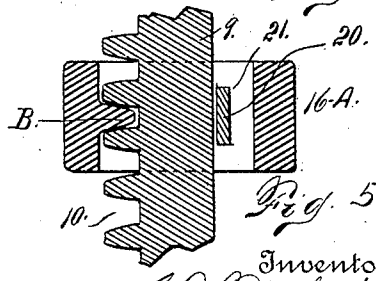

Fig. 5.

Witnesses
Otto E. Hoddick
Dena Nelson.

Inventor
C. D. Butchart.
By A. W. Brier
Attorney

UNITED STATES PATENT OFFICE.

CLARENCE D. BUTCHART, OF DENVER, COLORADO.

ADJUSTABLE OPENING-STOP FOR HEAD-GATES.

No. 830,411. Specification of Letters Patent. Patented Sept. 4, 1906.

Application filed January 29, 1906. Serial No. 278,452.

To all whom it may concern:

Be it known that I, CLARENCE D. BUTCHART, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Adjustable Opening-Stops for Head-Gates; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in what I term an "opening-stop for head-gates," used for controlling the consumers' supply of irrigating-water from the main ditch. In gates of this character some means must be employed to prevent the consumer from using more water than he pays for or is entitled to. This requirement makes it necessary that means be used to prevent the consumer from opening the gate wider than is required to give him the exact supply of water to which he is entitled by virtue of his arrangement with the company.

The object of my invention is to provide a stop device of this character which shall answer all the requirements and which shall at the same time be of simple and economical construction.

Having briefly outlined my improvements, as well as the function it is intended to perform, I will proceed to describe the same in detail, reference being made to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a front elevation of a head-gate equipped with my improvement. Fig. 2 is a section taken through the head-gate stem on the line 2 2, Fig. 1, looking downwardly, the parts being shown on a larger scale. Fig. 3 is a section taken on the line 3 3, Fig. 2, the stem of the gate being broken away both above and below the stop device. Fig. 4 is a view similar to Fig. 2, showing a modified form of construction. Fig. 5 is a section taken on the line 5 5, Fig. 4, the stem of the gate being partly broken away.

The same reference characters indicate the same parts in all the views.

Referring first more especially to Figs. 1 to 3, inclusive, let the numeral 5 designate a head-gate frame in which the gate 6 is vertically movable for the purpose of controlling the supply of water passing beneath the gate from a conduit 7. This head-gate is provided with a stem 8, whose upper portion 9 is cogged, as shown at 10, to engage a pinion 12, journaled in the upper part of the frame and operated for the purpose of raising and lowering the gate. The pinion 12 is fast on a shaft 13, to which is also attached an operating hand-wheel. The top of the frame is provided with an opening through which the stem 9 passes and in which the engaging pinion is also located; also, upon the upper part of the frame is pivotally mounted a pawl 15, adapted to engage the cogged portion of the stem to support the gate against downward movement.

Below the upper part of the frame is located a stop device which consists of a block 16, provided with an opening 17, adapted to receive the cogged portion of the stem 9. This block is provided with a transverse opening adapted to receive a locking-pin 18, this opening being so located that when the pin is inserted its shank 18^A will pass between two teeth of the cogged portion of the stem. This pin is provided with a head at one extremity, while its other extremity protrudes from the stop-block and is provided with an opening 18^C, through which the hasp of a lock 19 may be passed. The person in charge of the ditch or conduit from which the water is taken holds the key to this lock, and when the stop is properly adjusted to limit the opening movement of the gate it is impossible for the consumer to open the gate farther than the position of the stop will permit. The closing movement of the gate, however, is under the control of the consumer, and the water may be partly or entirely shut off, as may be desired.

Instead of the form of construction shown in detail in Figs. 2 and 3 that shown in Figs. 4 and 5 may be employed. In this case the block designated 16^A is provided with an interior projection B, adapted to pass between two teeth of the rack-bar or head-gate stem. It is necessary, however, that the opening of the stop-block shall be of sufficient size to permit the insertion of the stem without striking the interior projection B. After the bar is in place, however, the block is slipped over to cause the projection B to pass between two of the teeth of the stem. A locking-pin 20 is then inserted in a transverse opening 21 formed in the block. When in-

serted, the locking-pin is in such a position that the stem 9 cannot be moved to disengage its teeth from the projection B. The locking-pin 20 is also provided with an opening to receive the hasp of a lock 19.

From the foregoing description the use and operation of my improved device will be readily understood. After the quantity of water is determined to which any consumer is entitled the person in charge of the ditch or conduit adjusts the stop-block upon the toothed stem of the gate so that when the gate is raised or opened to the limit of movement permitted by the stop the consumer will receive exactly the supply of water to which he is entitled. This person or overseer of the ditch then locks the pin in place by the use of a lock 19 and takes the key. After this arrangement has been made it will be readily understood that the consumer can open the gate only to the limit allowed by the stop-block, while its downward movement is entirely under his control, so that he may shut off the water either partially or completely, as he desires and as circumstances may require.

Having thus described my invention, what I claim is—

1. In a device of the class described, the combination with a head-gate frame, of a gate provided with a toothed stem, the frame being provided with a top part through which the said stem passes, a stop-block adjustably mounted on the stem below the top of the frame, the said block having an opening to receive the stem, the block being also provided with a transverse opening intersecting the stem-opening, and a locking-pin inserted in the transverse opening and occupying such a position as to prevent the longitudinal movement of the stop-block upon the stem.

2. The combination with the toothed stem of a head-gate, of a stop-block provided with an opening to receive the said stem, and another opening extending at right angles to the stem and a locking device engaging the last-named opening and adapted to engage the teeth of the stem to lock the block against longitudinal movement on the stem.

3. The combination with a toothed head-gate stem, of a stop-block having an opening to receive the said stem, and a second opening extending at right angles to the first-named opening, and a locking-pin adapted to enter the transverse opening and engage the teeth of the stem, the transverse locking-pin opening being so located that a portion only of the pin intersects the stem-opening.

4. The combination with a toothed head-gate stem, of a stop-block having an opening to receive the stem, and a second opening occupying a transverse position with reference to the stem, and a locking-pin inserted in the transverse opening and engaging the teeth of the stem, the locking-pin having a head at one end and an opening at the other end, and a lock whose hasp is passed through the opening of the locking-pin for the purpose set forth.

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

CLARENCE D. BUTCHART.

Witnesses:

DENA NELSON,

A. J. O'BRIEN.