

C. W. SEITZ.
IRRIGATING HEAD GATE.
APPLICATION FILED AUG. 24, 1904.

2 SHEETS—SHEET 1.

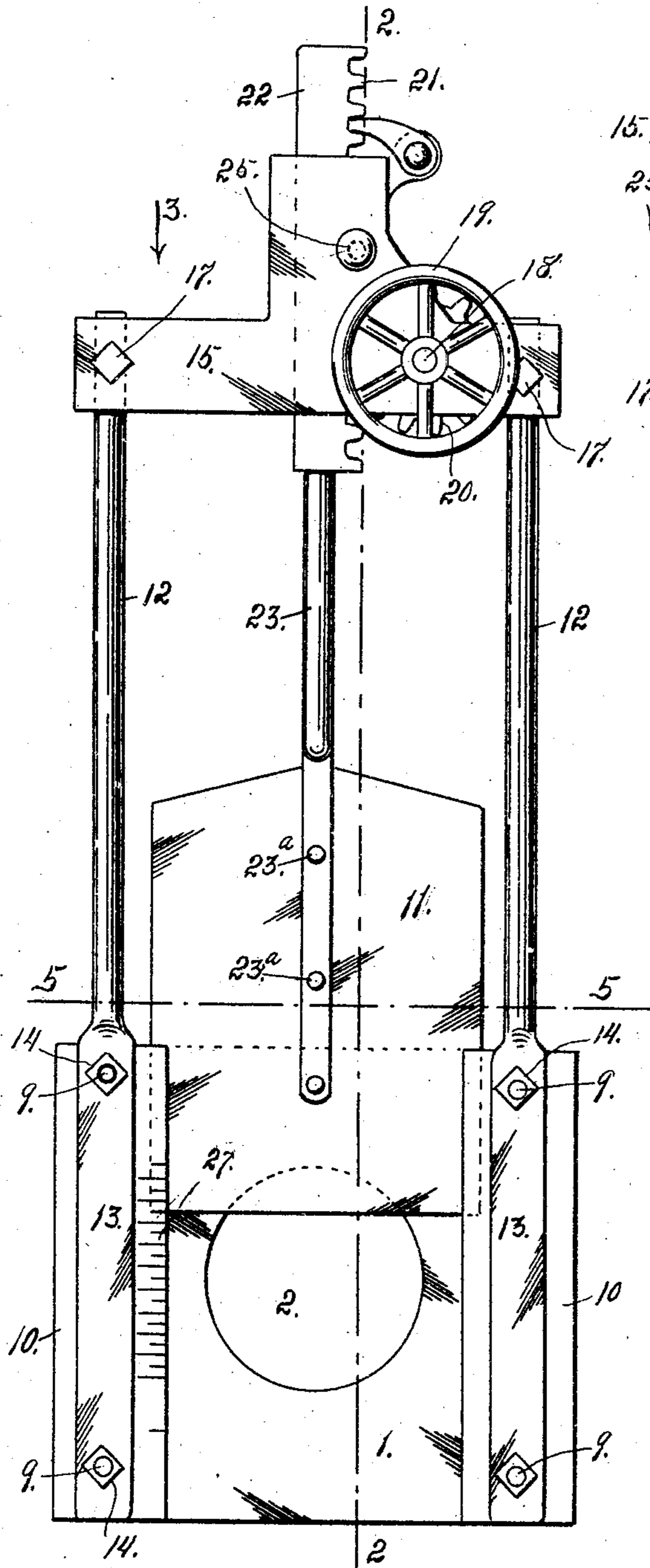


Fig. 1.

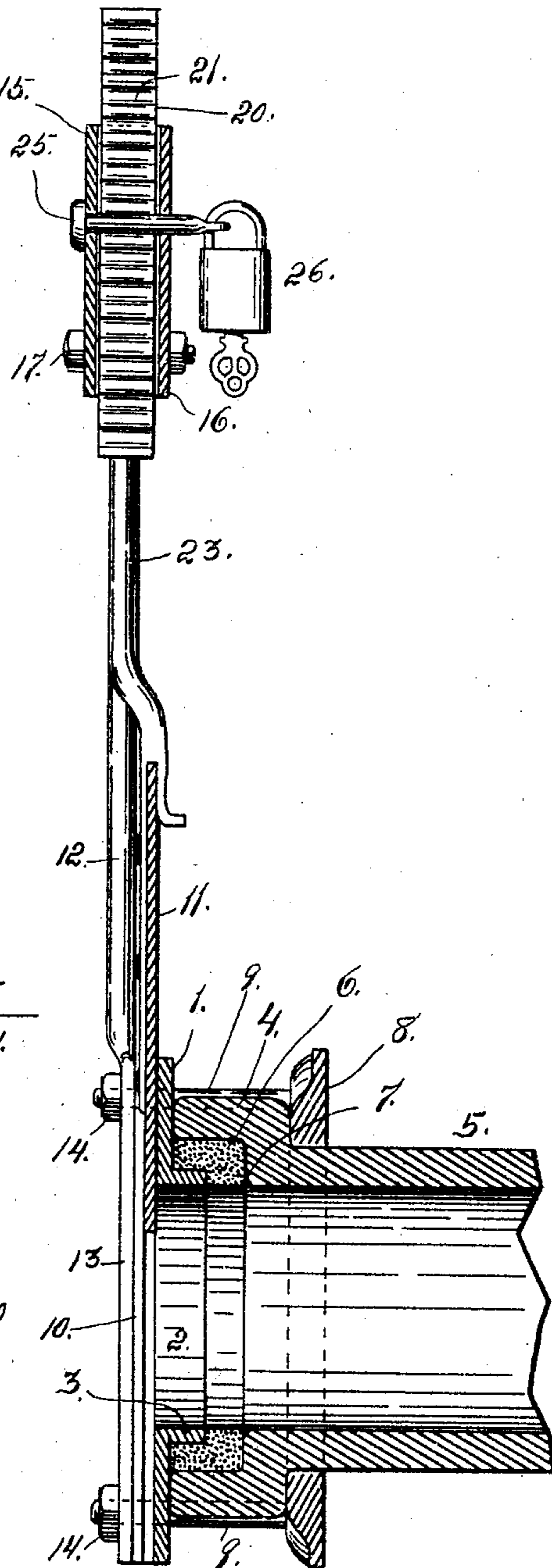


Fig. 2.

Witnesses
Otto E. Hoddick.
Dena Nelson.

Inventor
Chas. W. Seitz.
by *[Signature]* Attorney

UNITED STATES PATENT OFFICE.

CHARLES W. SEITZ, OF DENVER, COLORADO.

IRRIGATING HEAD-GATE.

SPECIFICATION forming part of Letters Patent No. 779,973, dated January 10, 1905.

Application filed August 24, 1904. Serial No. 221,946.

To all whom it may concern:

Be it known that I, CHARLES W. SEITZ, 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 Irrigating 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 figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in head-gates more especially intended for use in connection with irrigation where water is taken out of the main ditch into a branch ditch or lateral for use by consumers whose land is located along or adjoining the main ditch or canal.

My object is to provide a device of this class which shall be simple in construction, economical in cost, reliable, durable, and efficient in use; and to these ends the invention consists of the features, arrangements, and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a front view of my improved device or a view looking toward the side which is next to the ditch or canal when the device is in use. Fig. 2 is a vertical section taken on the line 2 2, Fig. 1, showing the device attached to the conduit through which the water passes from the ditch or canal. Fig. 3 is a top view looking in the direction of the arrow 3 in Fig. 1. Fig. 4 is a view of the upper part of the device with one member of the frame removed, while the other is shown partly in section. Fig. 5 is a section taken on the line 5 5, Fig. 1, looking downwardly. Fig. 6 is a detail view illustrating a modified form of clamping-plate construction, the two members being shown separated. Fig. 7 is a top view of the same with the members connected.

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

Let the numeral 1 designate a suitable plate provided with a centrally-located opening 2,

surrounded by a flange 3, which is surrounded by the bell 4 of the conduit 5 when the device is connected with the said conduit. The term "bell" as here used consists of an enlargement at one extremity of the pipe-section. Between the bell of the conduit and the flange 3 is a space filled with cement or other suitable packing material 6 for the purpose of making a water-tight joint. The bell or enlargement 4 of the conduit is considerably deeper or longer than the flange 3 of the plate, leaving a space between the free extremity of the flange 3 and the body of the conduit or the extremity where the bell or enlargement 4 begins. This space is designated 7 in Fig. 2 and is of sufficient width to allow the putting of the cement 6 or other packing material in place after the conduit has been connected with the plate 1.

A clamping-plate 8, provided with bolts 9, coöperates with the plate 1 in forming the connection between the head-gate and the conduit 5. The plate 8 engages the bell of the conduit on the outside and occupies a position opposed to the plate 1, which the free edge of the bell engages. The bolts 9, which, as shown in the drawings, are connected with the plate 8 at the time the latter is cast, pass through the outer edge of the plate 1 and through metal strips 10, which occupy positions on opposite sides of the gate proper, 11, and overlap the edges of said gate, as shown at 10^a. The outer edges of the plate 1 are reinforced, and the edges of the gate 11 occupy positions adjacent the offset formed by the reinforcement. Hence the overlapping part 10^a coöperates with the plate 1 to form ways in which the vertical edges of the gate are free to move vertically. To the strips 10 are secured vertical bars 12, whose lower extremities are flattened, as shown at 13, and connected with the strips and also with the plate 1 by means of the bolts 9 and nuts 14, which are applied to the threaded extremities. The upper extremities of the rods or bars 12 pass between the outer extremities of two plates 15 and 16, the said plates being connected with the bars by bolts 17, which pass through the plates and bars 12, the latter being provided with registering apertures for

the purpose. In the plates 15 and 16 is journaled a spindle 18, provided with a hand-wheel 19 and a pinion 20, the latter meshing with the cogs 21 of a rack-bar 22, made fast to the upper extremities of the stem 23 of the gate proper, 11. The lower extremity of this stem is secured to the gate by suitable fastening devices, as rivets 23^a. The plate 15 is provided with vertical separated flanges 24, which extend to the plate 16 and form a guide-way for the rack-bar 22.

The two plates 15 and 16 are provided with registering openings in line with the cogs 21 of the bar 22, through which a locking-pin 25 may be passed. This pin when in place passes between two of the cogs of the rack-bar and locks the gate in any desired position of adjustment. One extremity of the pin is apertured to receive the hasp of a padlock 26. It is evident that when this pin is in position and the lock is applied the vertical position of the gate can only be changed by a person holding the key to the lock.

The inner edge of one of the strips 12 is graduated adjacent the gate, as shown at 27, to facilitate the adjustment of the gate. These graduations may be such as to determine the quantity of water which will pass through the opening 2 into the conduit 5 when the gate proper is in any position of vertical adjustment.

From the foregoing description the use and operation of my improved device will be readily understood. In applying the device to the conduit 5 the plate 8 is of course detached from the plate 1. The bell of the conduit 5 is placed in position against the plate 1 and surrounding the flange 3 of the said plate. The clamping-plate 8 is then slipped over the end of the section of the conduit and moved up against the exterior shoulder of the bell of the conduit. When in this position, the bolts 9 protrude through the openings in the plate 1 and the strips 10 cooperate therewith, as heretofore described. Nuts are then applied to the rods, whereby the extremity of the conduit is securely held in place, my improved device being clamped thereto. The cement or other packing 6 is then put in place and allowed to stand until it is properly set or fixed. The gate may then be raised by turning the hand-wheel 19, whereby the water is allowed to pass through the opening 2 into the conduit in any quantity desired. After the gate has been properly adjusted the pin 25 is put in position and the padlock 26 applied, when the gate will be held in the desired position until the holder of the key wishes to change it.

In the form of construction shown in Figs. 6 and 7 the clamping-plate is composed of two members 8^a and 8^c, which are provided with overlapping apertured parts adapted to be connected by a bolt 8^d. The advantage of

this construction is that it can be applied to a pipe-section of any length without the necessity of separating the pipe in order to pass the clamping-plate over the free end of the section directly connected with the head-gate. In other respects this form of construction operates exactly the same as the integral form of clamping-plate shown in Figs. 2 and 5.

The upper part of the frame is provided with a lug A, upon which is pivotally mounted a dog B, adapted to engage the toothed rack of the bar 22, whereby the bar will be supported in any position to which it is raised through the instrumentality of the spindle and gear. It will thus be supported in position to permit the insertion of the locking-pin 25.

Having thus described my invention, what I claim is—

1. In an irrigating head-gate, the combination with a suitable frame whose lower portion is provided with a plate having an opening, and a flange surrounding said opening, a clamping-plate opposed to the first-named plate and having an opening sufficiently large to receive the conduit with which the device is to be connected, the clamping-plate being provided with bolts which pass through suitable openings formed in the frame-plate, for fastening the device to the bell end of the conduit, a vertically-movable gate mounted in the frame and arranged to control the opening in the frame-plate, and suitable means journaled in the frame and acting on the gate for controlling the vertical position of the latter, substantially as described.

2. The combination with a conduit having a bell extremity, of a head-gate comprising a plate having an opening surrounded by a flange which the bell extremity of the conduit surrounds, a space being left between the bell extremity of the conduit and the flange of the plate, the bell extremity of the conduit being wider than the flange of the plate, leaving a filling-space within the bell extremity of the conduit and around the flange of the plate, and a vertically-movable gate suitably mounted to control the opening in the plate, substantially as described.

3. In a head-gate, the combination with a suitable frame whose lower portion consists of an apertured plate provided with ways on opposite sides of the opening therein, a gate proper engaging said ways and provided with an upwardly-projecting stem whose upper end consists of a rack-bar, the upper part of the frame being fashioned to receive the rack-bar, a spindle journaled in the upper part of the frame and provided with a gear engaging the rack-bar, the upper part of the frame being apertured on opposite sides of the teeth of the rack-bar, a pin passed through the said apertures in the frame and between the teeth of the rack-bar, the said pin having an opening

at one extremity, and a lock applied to the pin, substantially as described.

4. In a head-gate, the combination of a frame provided with an apertured bottom plate having ways on opposite sides of the opening, upwardly-projecting bars connected with said plate and suitably separated, a top frame part consisting of two members secured to the upper extremities of the bars, a gate proper mounted to move vertically in the ways of the said plate, the said gate being provided with an upwardly-projecting stem whose upper extremities are provided with a rack-bar passing through the upper frame part which is provided with an opening for the purpose, a spindle journaled in the upper frame part and provided with a gear engaging the said rack-bar, the upper frame members being provided with openings on opposite sides of the teeth of the rack-bar, a pin passing through said openings and engaging the rack-bar teeth to lock the gate in the adjusted position, one extremity of the pin being provided with an opening, and a lock whose hasp is adapted to pass through the opening in the

pin whereby the latter is locked securely in place.

5. In an irrigating head-gate, the combination with a suitable frame whose lower portion is provided with a plate having an opening surrounded by a flange, of a two-part clamping-plate opposed to the first-named plate and provided with bolts which pass through openings formed in the first-named plate for the purpose set forth.

6. In an irrigating head-gate, the combination of a suitable frame whose lower portion is provided with a plate having an opening surrounded by a flange extending at right angles to the body of the plate, and a clamping-plate opposed to the first-named plate and having an opening large enough to receive a conduit whose extremities surround the flange of the first-named plate.

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

CHARLES W. SEITZ.

Witnesses:

DENA NELSON,
A. J. O'BRIEN.