

No. 769,968.

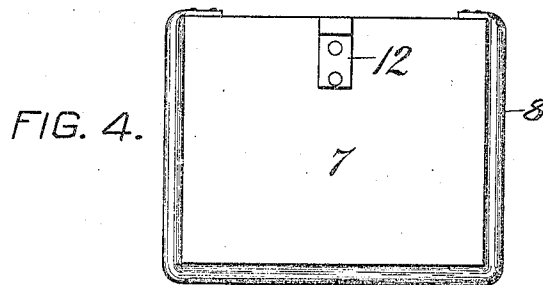
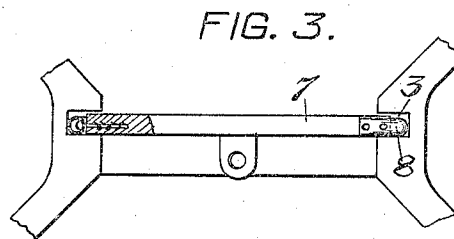
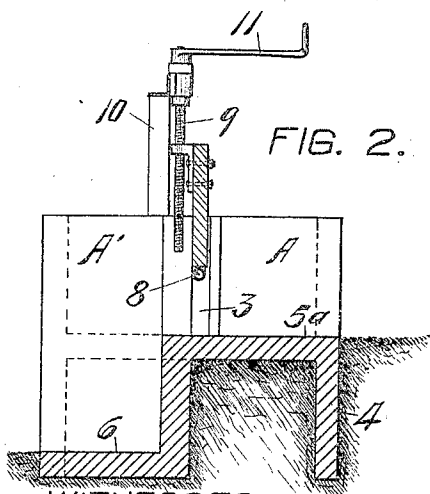
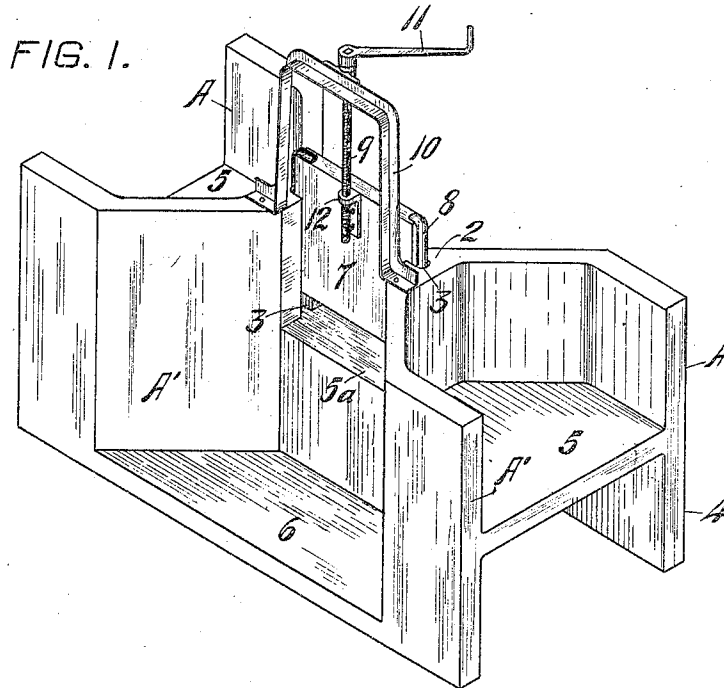
PATENTED SEPT. 13, 1904.

W. J. WARREN.

HEAD GATE FOR IRRIGATING DITCHES.

APPLICATION FILED MAY 23, 1904.

NO MODEL.



WITNESSES,

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UNITED STATES PATENT OFFICE.

WILLIAM J. WARREN, OF MODESTO, CALIFORNIA.

HEAD-GATE FOR IRRIGATING-DITCHES.

SPECIFICATION forming part of Letters Patent No. 769,968, dated September 13, 1904.

Applicator filed May 23, 1904. Serial No. 209,239. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. WARREN, a citizen of the United States, residing at Modesto, in the county of Stanislaus and State of California, have invented new and useful Improvements in Head-Gates for Irrigating-Ditches, of which the following is a specification.

My invention relates to a head-gate and connections therefor especially adapted for use in conjunction with irrigating and like ditches which are made in the soil.

It consists of a concrete base with means for preventing the seepage of water and a gate with means for moving it in grooves or channels formed in the base, said gate having elastic flexible peripheral edges adapted to make a tight joint.

My invention also comprises details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is a cross-section of same. Fig. 3 is a plan, partly in section, of gate. Fig. 4 is an elevation of same.

In the construction of irrigating-ditches the lateral ditches are employed at stated intervals, through which water is taken from time to time from the main ditch. These ditches are usually made through porous and sandy soil, and in order to prevent leakage it is necessary to provide means for fitting the gates very closely and to provide a base of such a nature that the water cannot percolate through the soil or wash away the foundation.

In the construction of my apparatus I make concrete structures A, which are here shown with two divergent and vertical sides of sufficient depth to extend into the soil so far as to substantially prevent any seepage or passage of the water. The apices of these portions of the structure are not pointed, but have a sufficient width transversely, as shown at 2, and are grooved, as shown at 3. These ends are placed a sufficient distance apart to provide the required waterway between them, and in this position the gate is set, as will be hereinafter described. The opposite ends of the divergent walls after being separated as

far as may be desired by their divergence are continued parallel with each other for a considerable distance. These structures have downwardly-projecting ribs or walls 4, which may be approximately central of the bottoms 5, and they extend into the earth a considerable distance, thus making a complete seal against the percolation of water in loose or sandy soils. These structures are set into the bank of the ditch and stand parallel therewith, so that the gate-opening is substantially at right angles with the line of the ditch, and the walls 4 extend down into the soil to a considerable depth. The walls A adjacent to the main ditch extend approximately down to a level with the bottom, and the walls A' upon the opposite side are made considerably deeper, so that there will be a fall from the level of the bottom of the gate to the floor 6 of this portion, which, as shown, is at a considerable distance below that portion of the floor 5^a which is substantially on a level with the floors 5 and upon which the gate is adapted to close. The object of this is to provide a sufficient fall into the lateral ditch which abuts against the walls A' and substantially at right angles with the main ditch, which extends parallel with the structure upon the opposite side. Thus when the gate is opened the water will pass across the floor 5^a and will fall upon that portion 6 which is lower than 5^a and thence will flow gently into the lateral ditch without disturbing the soil which forms the bottom of said ditch.

The gate 7 is here shown as rectangular in shape and adapted to slide in the grooves 3. The edges and bottom of the gate have an elastic peripheral binding 8, which forms a tight joint with the grooves 3 and with the bottom 5^a, against which the gate is closable, so that all leakage of water will be prevented.

The gates may be operated in any suitable or desired manner. In the present case I have shown a screw 9, passing through a yoke 10, in which it is turnable, having a suitable crank or hand-wheel, as at 11. The lower end is here shown as passing through a screw-threaded nut, as at 12, which is fixed to the gate so that by turning the screw the gate may be raised and will stand at any desired

opening and when closed will be held tight against the bottom and in the groove in which it is slidable.

It will be understood that any other well-known or suitable means for operating the gate, such as a lever or the like, may be employed without altering the character of my invention, and it will also be understood that the concrete structure may be extended and contain a series of gates.

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

1. A concrete structure embedded in the soil forming the bank of a ditch, said structure having vertically-disposed grooves or channels and a gate slidable in said grooves, said gate having elastic packing upon the edges adapted to form a water seal.

2. A gate mechanism for irrigating-ditches, said mechanism comprising a concrete structure composed of vertical walls sunk in the bank of the ditch having a transverse gate-space with vertical grooves or channels, and floors, one of said floors being substantially upon the main ditch-level and the other below said level and connecting with the lateral ditch, and a gate fitting and slidable in the grooves or channels.

3. A gate structure for irrigating-ditches, said structure comprising vertical concrete walls, convergent toward each other and having a gate-space between the ends of the convergent sections with vertical grooves or channels therein, a floor for said structure and a gate-opening substantially on the level with the ditch, a second floor upon which the floor

of the gate-opening discharges, said second floor being at a level below that of the gate-opening and vertical downward extensions of the walls to said floor-level.

4. A gate and structure for irrigating-ditches, said structure comprising parallel concrete walls with convergent adjacent ends, said ends having grooves or channels, a floor at the bottom of said walls and gate-opening, a second floor upon the discharge side, said second floor being lower than the main floor and communicating with a lateral ditch, and vertical walls extending downwardly from the main bottom into the soil forming the bank of the main ditch.

5. A gate structure for irrigating-ditches, said structure comprising concrete walls fixed vertically in the bank of the main ditch and substantially parallel with its course having floors and extensions beneath said floors into the soil of the bank, a transverse vertical channelled space between said walls, a gate having flexible or elastic peripheral edges fitting the channels and the bottom to form a tight joint, means by which said gate is raised or lowered, a second floor below that of the gate-opening upon the discharge side, said second floor being lower than that of the gate-opening and connecting with the lateral ditch.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM J. WARREN.

Witnesses:

HENRY P. TRICOU,
S. H. NOURSE.