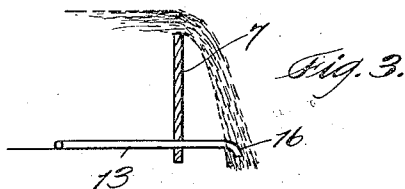
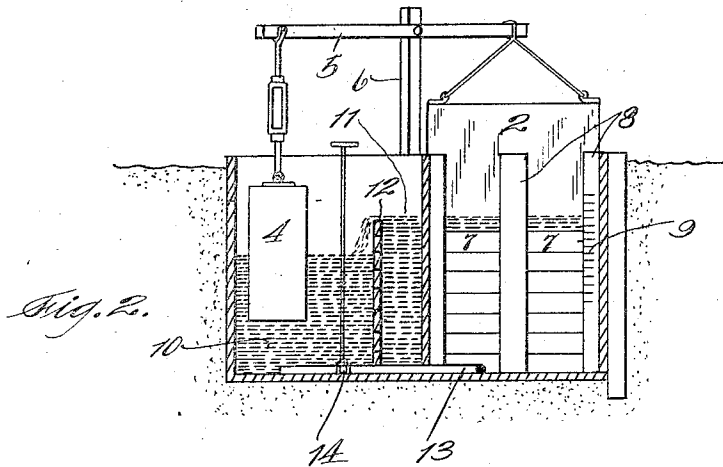
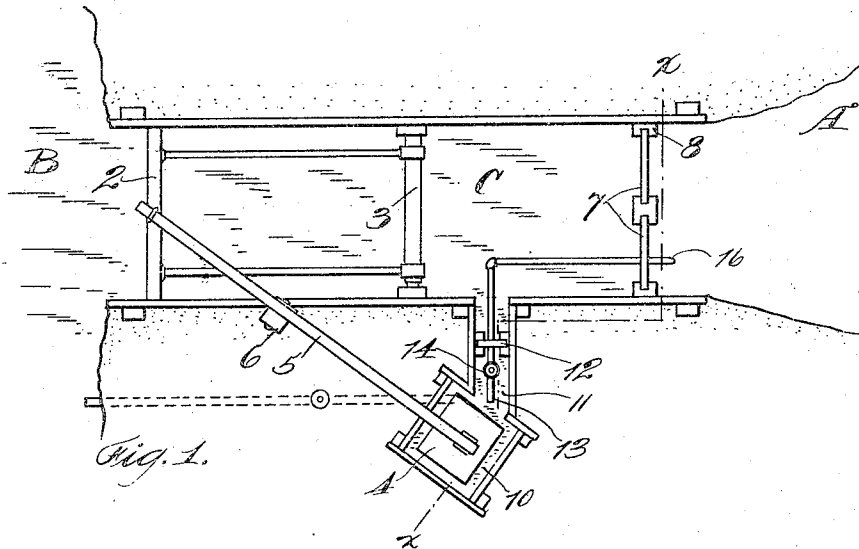


A. J. COLLAR.
DITCH GATE.
APPLICATION FILED JAN. 3, 1910.

981,171.

Patented Jan. 10, 1911



Witnesses

T. E. Maynard.
Charles Pickles

Inventor,
Adoniram J. Collar;
By G. H. Strong,
his Attor.

UNITED STATES PATENT OFFICE.

ADONIRAM J. COLLAR, OF YREKA, CALIFORNIA.

DITCH-GATE.

981,171.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed January 3, 1910. Serial No. 536,068.

To all whom it may concern:

Be it known that I, ADONIRAM J. COLLAR, a citizen of the United States, residing at Yreka, in the county of Siskiyou and State of California, have invented new and useful Improvements in Ditch-Gates, of which the following is a specification.

This invention relates to ditch gates, and more particularly to automatic, measuring gates.

It is an object of my invention to provide a ditch gate particularly adaptable for use in very level country; to combine in a simple form a self-adjusting gate, and a sight-measuring and controlling device; and to provide a reliable, relatively inexpensive gate.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a plan view. Fig. 2 is a vertical section on line $x-x$ Fig. 1. Fig 3 is a detail of the drain discharge.

At A is shown a ditch, canal, or flume, into which water is delivered from a suitable source as reservoir B or other headwater, and vertically adjustable in the ditch and close to its intake is a suitable form of closure or gate 2, pivoted at 3, and approximately balanced by a float 4. The gate and float are secured to the ends of a lever or beam 5 which is fulcrumed on an upright 6.

In some sections of the country where water is carefully used and valuable, it is desirable that the consumer may have full knowledge of the quantity of water being run into the ditch, and to be protected against flooding or unnecessary lack of water at all times, without constantly having to watch the ditch-gate. To provide for and accomplish this desideratum I introduce at the foot of the gate-way C a suitably constructed check-board, preferably in the form of a weir having removable sections 7 insertible in guides 8 marked with gradations 9. The operator or consumer having determined the volume of water desired in the ditch, then builds up the weir boards 7 to obtain the head, and adjusts the float 4 in a well 10 so as to lift the gate 2 and let in water from the source B. The well 10 is connected to the ditch A by a small branch or conduit 11 across which is placed a flash-board 12, which is made in movable sections

substantially like the weir board 7, before mentioned, whereby the vertical height of the flash board may be adjusted, the top of which flash board is raised to a plane as much higher than that of the weir, as will allow as much water to flow into the ditch as is wanted. The volume of water admitted beneath the gate will back up against the weir and rise above it, under pressure of the main source B, eventually falling into the well 10. If it be desired that one inch depth of water shall flow over the weir, then the flash-board 12 will be set that much higher than the top weir board, and the float 4 will so balance the gate that with a given mean level in the main B, the opening below the gate will just be sufficient to keep the desired amount of water flowing over the weir, and into the well.

In order to make the operation of the gate automatic there is led from the well bottom a drain pipe 13 having a controlling valve 14, and a downwardly turned end 16 just in the path of the water discharging over the weir 7. By opening the valve 14 a sufficient amount, water will constantly be discharged from the well, the consequence of which is that if the normal head of water in the main B falls then it will allow the level in the gateway to fall below the top of the flash-board, and the pipe 13 will drain water from the well 10, thus lowering the float 4, and simultaneously lifting the gate 2, thereby permitting a larger volume of water to pass into the gateway. Inversely, if the head-water in main B rises, more water will pass under the gate and over the flash-board 12, in quantities larger than the adjustable drain valve 14 is set to run off, and as the level in the well and gateway increases, the float will rise, and the gate 2 will be lowered until the normal condition of levels has again returned. By leading the drain 13 into the ditch and in the discharge water a double advantage is obtained. First, the drain is discharged near the well bottom, and second the suction produced by the discharged ditch-water as it falls around and past the drain end 16 tends to produce a vacuum, and increases the draining capacity of the pipe 13.

It will thus be seen that I have provided a gate of simple construction and automatic in operation, in combination with a weir-board over which the water is discharged:

and which affords a means always indicating at sight the height and width of the stream of water passing into the ditch. Preferably the check or weir board is centrally divided 5 thus delivering two separate, parallel streams into the ditch which I find by experience results in causing a less agitated current in the ditch.

Attention is particularly drawn to Fig. 1 10 in which is shown the connecting passage 11 between the well 10 and its supply or well-head C, in which the gate is controlled. The relative levels of water in the system are as follows: The highest level is in the main B, the next level is in the portion C of the 15 ditch behind the gate, and in front of the adjustable weir 7, the lowest level being in the tail-race or ditch A. Since the gate is operated by a fluctuation of level in the well 20 10, the drain 13 must necessarily discharge at a level lower than that in the section C or well 10, and this is done by leading it to the ditch A.

Having thus described my invention, what 25 I claim and desire to secure by Letters Patent is—

1. A ditch-gate pivotally mounted, a suspended counterweight, a centrally fulcrumed beam to the opposite ends of which said 30 gate and weight are connected, a well in which the weight is suspended, a measuring weir located in the gateway below the gate, and an adjustable flash-board over which water flows into the well from the gateway, 35 and a drain from the well.

2. In combination with a water supply, and a branch, an adjustable controlling gate operable in a gateway, means whereby said 40 gate is normally balanced, and a measuring check-board below said gate.

3. A control for ditches and the like, said control consisting of a main gate, a weir, an 45 interposed well and float, connections between the float and the main gate, and a limited discharge from the well.

4. A control for ditches and the like, said control including a main gate, a weir, a float 50 containing well connected with the water-space above the weir, a flash-board in said connecting passage, and a lever connecting the main gate and the float.

5. A control for ditches and the like, said device including a main gate, a weir, a float 55 and gate, a channel between the well and the water-space above the weir, and an adjustable flash-board in said channel.

6. A control for ditches and the like, said device including a main gate, a weir, a float 60 containing well, a lever connecting the float and gate, a channel between the well and the water-space above the weir, an adjustable flash-board in said channel, and a drain passage connected with the float chamber.

7. A control for ditches and the like, said 65 device including a main gate, a weir, a float containing well, a lever connecting the float and gate, a channel between the well and the water-space above the weir, an adjustable flash-board in said channel, a drain passage 70 connected with the float chamber, and a controlling valve in said passage.

8. A control for ditches and the like, said device including a main gate, a weir, and 75 means whereby the flow of water is controlled by the fluctuations of its flow.

9. A control for ditches and the like, said control including a main gate, a weir, a float-containing chamber connected with the 80 water-space between the gate and weir, a lever connection between the float and gate, and means to regulate the level of water in the float well.

10. A control for ditches and the like, said control including a main gate, a weir, a float- 85 containing chamber connected with the water-space between the gate and weir, a lever connection between the float and gate, means to regulate the level of water in the float well, and a visible gage for the flow 90 over the weir.

11. An automatic control for the flow of water, said control including a float-actuated head gate, and a delivery weir below said 95 gate, a channel and flash-board between the float well and the water-space above the weir, and an adjustable discharge from the float well.

12. An automatic control for the flow of water, said control including a float-actuated 100 head gate, and a delivery weir below said gate, a channel and flash-board between the float well and the water-space above the weir, and an adjustable discharge from the float well, said discharge leading into the outfall 105 from the weir.

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

ADONIRAM J. COLLAR.

Witnesses:

CHARLES A. PENFIELD,
CHARLES EDELMAN.