

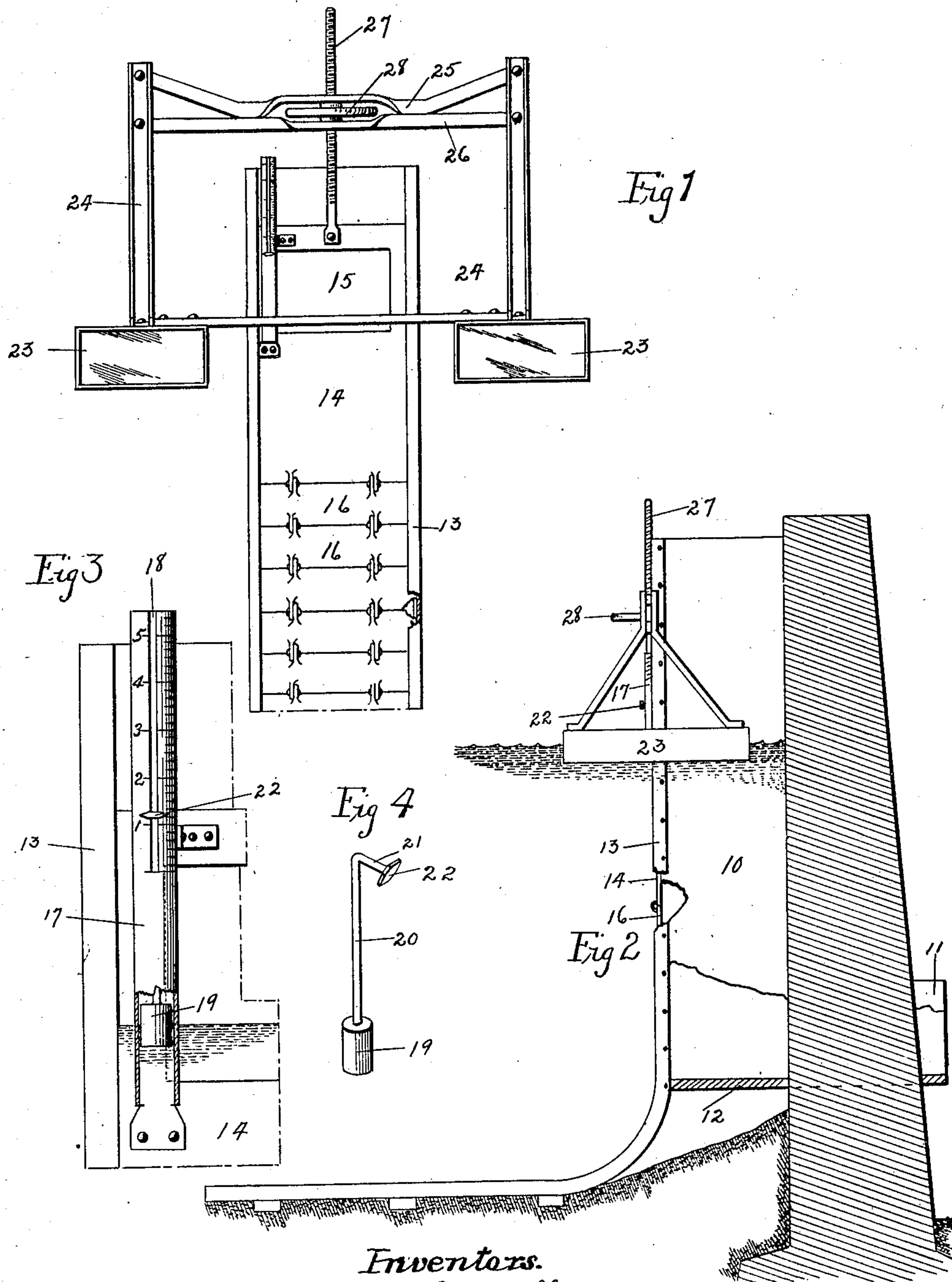
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PATENTED NOV. 12, 1907.

H. L. & H. K. FAIRALL & J. KUNZMANN.

AUTOMATIC WATER REGISTER.

APPLICATION FILED JULY 17, 1906.



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# UNITED STATES PATENT OFFICE.

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## **AUTOMATIC WATER-REGISTER.**

No. 871,060.

Specification of Letters Patent.

Patented Nov. 12, 1907.

Application filed July 17, 1906. Serial No. 326,935.

*To all whom it may concern:*

Be it known that we, HOWARD L. FAIRALL, HARRY K. FAIRALL, and JACOB KUNZMANN, citizens of the United States, residing at Highland, in the county of San Bernardino and State of California, have invented a certain new and useful Automatic Water-Register, of which the following is a specification.

The object of our invention is to provide an automatic water regulator of simple, durable and inexpensive construction designed to be used in connection with irrigating canals for the purpose of registering the flow of water from an irrigating canal, and our object is more specifically to provide means whereby the depth of the current flowing from the canal may be quickly and easily and accurately regulated so that the flow will continue at a predetermined depth regardless of the rise and fall of the water within the canal.

Our invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in our claims and illustrated in the accompanying drawings, in which—

Figure 1 shows a front elevation of the automatic water register embodying our invention. Fig. 2 shows a side elevation of same applied to an irrigating ditch or canal as in practical use, a part of the spillway being shown in section. Fig. 3 shows an enlarged detail view of a part of the weir gate with the indicating tube and indicator applied thereto, and Fig. 4 shows a perspective view of the floating indicator.

Referring to the accompanying drawings, we have used the reference numeral 10 to indicate the spillway having at its outer lower corners a discharge spout 11 and comprising a bottom 12 and upright sides to extend from a point above the highest water level of the canal to a point below the lowest water level and at the inner edges of said sides are the guides 13 for the weir gate, said guides extending from the top of said sides to a point below the bottom of the sides and inclined or curved downwardly and inwardly to rest upon the bottom of the canal or ditch.

The weir gate proper comprises a top plate 14 having a weir opening 15 near its top. Hinged to the bottom of the plate 14 is a series of plates 16 which are hinged together. All of the plates 14 and 16 are slidingly mounted within the guides 13 and by having the plates 16 hinged together, as shown, they will follow the guides 13 when the weir gate is moved either upwardly or downwardly, so that no matter in what position the weir gate is placed, the water cannot enter the spillway, except through the weir opening 15.

Fixed to the plate 14 of the weir gate below the weir

opening therein is an indicator tube 17 open at its top and bottom and having a slot 18 at its front face. It is also provided with a scale adjacent to said slot. Slidingly mounted within the scale tube is a float 19 provided with an upwardly projecting indicator arm 20 which has a lateral extension 21 at its top to project through the slot 18 and an indicator 22 thereon to stand adjacent to the scale numbers upon the said tube. This float 19 is arranged near the inner face of the weir gate so that it will float upon the smooth water inside of the canal and it will not be affected by the fall of water over the weir gate, but will always float on the water level of the main canal. The said scale is so arranged with relation to the bottom of the weir gate opening that when one inch of water is flowing through the weir gate opening, the indicator body will stand adjacent to the mark on the scale indicating one inch and so on.

We have provided means for causing the weir gate to rise and fall with the water in the main canal as follows: The reference numeral 23 indicates two hollow floats standing at the sides of the spillway and connected by a frame 24. At the top of this frame are two cross pieces 25 and 26. Fixed to the top of the weir gate is a screw threaded rod 27 passed upwardly through the cross pieces 25 and 26. 28 indicates a hand wheel having a screw threaded opening to receive the rod 27 and said wheel is mounted between the cross pieces 25 and 26 and is in engagement with both. In this way the weir gate may be adjusted relative to the floats.

In practical use, we first place the spillway and the guides 13 in position inside of the bank of the irrigating ditch or canal with the trough of the spillway projecting through the side of the ditch or canal so that the water may flow from it to the point where it is desired to be used. Assuming further that it is desired to cause the constant flow of water through the spillway amounting to a depth of two inches over the width of the weir gate opening, then the operator manipulates the hand wheel 28 until the indicator 22 stands adjacent to the point marked two inches upon the scale. When at this point, the level of the bottom of the weir gate opening will be exactly two inches below the level of the water in the irrigating canal. Assuming that the water in the irrigating canal should fall, then the floats 23 will fall a corresponding distance and carry with them the weir gate which will drop by gravity, its lower end extending inwardly along the bottom of the canal. The float 19 will also descend a corresponding distance so that the operator may know at a glance just how much water is flowing over the weir gate at a time. Correspondingly if the water in the canal should rise, the floats 23 would rise with it and elevate the weir gate a corresponding distance.



Having thus described our invention, what we claim and desire to secure by Letters Patent of the United States, therefor is—

1. In a device of the class described, a floating frame, a  
5 weir gate adjustably connected with the frame, and a floating indicator adjacent to the weir gate.
2. In a device of the class described, the combination with a stationary spillway with curved guides at the sides thereof, a weir gate formed of a series of plates hinged  
10 together, said plates slidingly mounted in the said guides, and means for vertically adjusting the weir gate.
3. In a device of the class described, a vertically movable weir gate formed with an opening, a floating frame connected therewith, a scale connected with the weir gate  
15 and a floating indicator adjacent to the scale.
4. In a device of the class described, a stationary spillway, a vertically movable weir gate formed with an opening connected with said spillway, a floating frame connected with the weir gate, a scale connected with the  
20 weir gate and a floating indicator adjacent to the scale.
5. In a device of the class described, the combination of a stationary spillway, guides at the sides thereof extended downwardly below the spillway and curved inwardly at their lower ends and a flexible weir gate having  
25 an opening therein slidingly mounted in said guides and means for vertically adjusting the weir gate.
6. In a device of the class described, the combination of a stationary spillway, guides at the sides thereof, curved downwardly and inwardly from the lower end of

the spillway, a weir gate comprising a top plate with an  
opening therein and a series of plates hinged to the bottom of the top plate all slidingly mounted in the said  
guides and means for vertically adjusting the weir gate. 30

7. In a device of the class described, the combination of a vertically adjustable weir gate having an opening  
therein, a floating frame for supporting the weir gate, a tubular scale fixed to the weir gate, a float within  
the tubular scale and an indicator carried by the float. 35

8. In a device of the class described, a stationary spillway, guides at the inner sides thereof, a weir gate slidingly mounted in the guides and comprising an upper  
plate formed with an opening and a series of plates hinged to the lower edge of the upper plate, a screw  
threaded rod fixed to the top of the weir gate, an open-ended tube fixed to the weir gate with its bottom below  
the opening thereof and having a slot in its inner side, a float mounted in said tube, an indicator connected with  
the float and projected through the slot, two floats at the sides of the spillway, two cross bars supported by the  
floats and a hand wheel rotatably mounted between the  
cross bars and having a screw threaded opening to receive the screw threaded rod. 40 45 50

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