Dec. 27, 1927. 1,654,476

A. M. AMEND

WATER GATE

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Fig. 1.

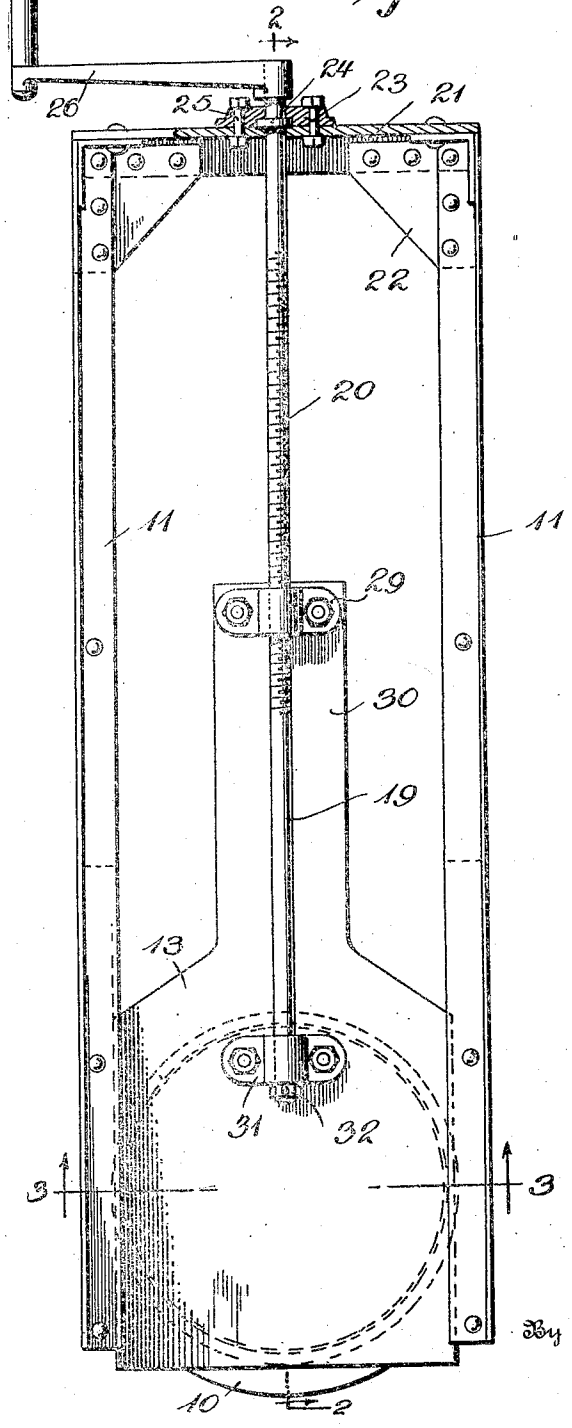
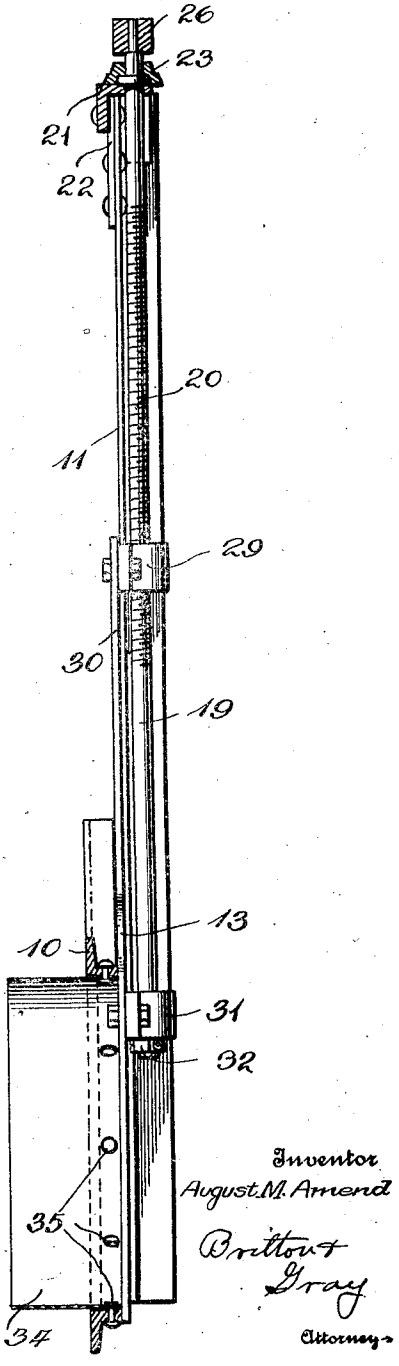


Fig. 2.



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Fig. 3.

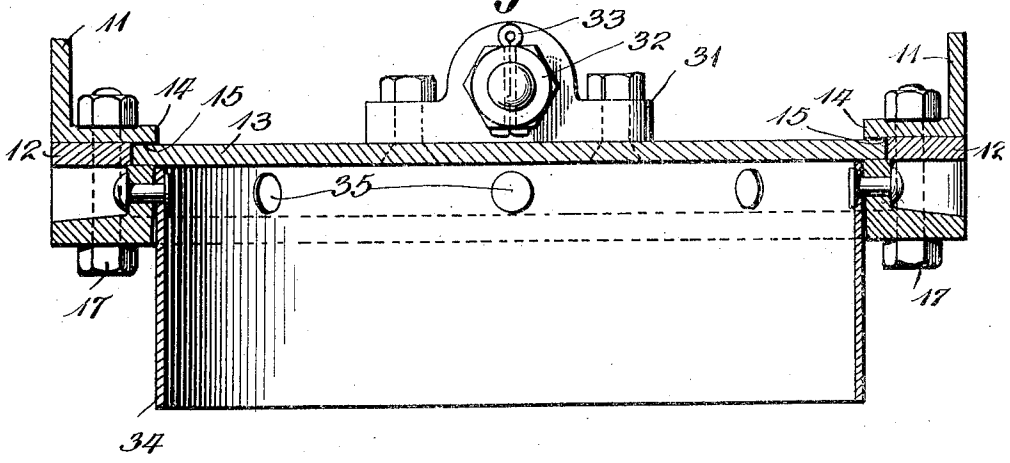


Fig. 4.

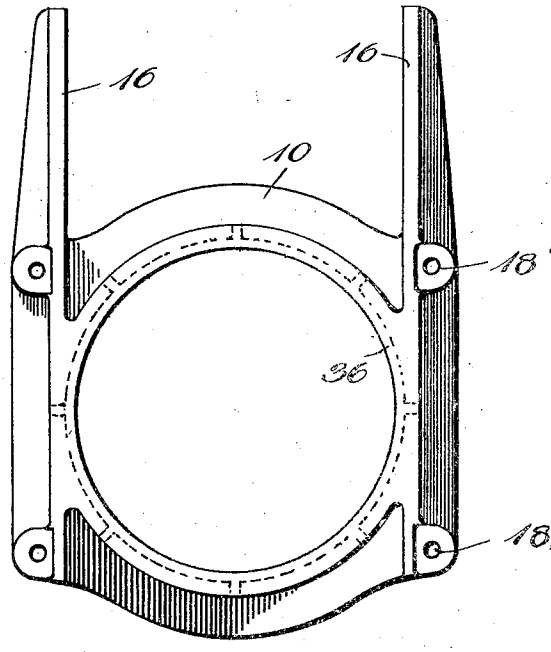


Fig. 5.

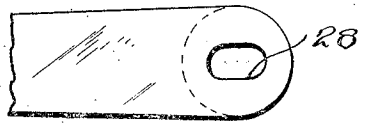


Fig. 6.



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UNITED STATES PATENT OFFICE.

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WATER GATE.

Application filed October 13, 1923. Serial No. 668,335.

The invention relates to water gates of a type particularly useful for irrigation, and has as an object the provision of an efficient gate that is adapted to give continued service without need of repair. A further object of the invention is the provision of a gate having means to connect a conduit thereto even though the axial line of the conduit is out of perpendicular to the gate frame.

An illustrative embodiment of the invention is shown in the accompanying drawing, in which

Fig. 1 is a front elevation;

Fig. 2 is a vertical section on line 2, 2 of Fig. 1;

Fig. 3 is a horizontal section on an enlarged scale on line 3, 3, Fig. 1;

Fig. 4 is a detail elevation drawn to a scale slightly larger than that of Fig. 1;

Figs. 5 and 6 are detail plan views of the crank and the end of the shaft coacting therewith respectively.

As shown, the device comprises a frame casting 10 having uprights 11 secured thereto and comprising angle irons. As shown, particularly in Fig. 3, spacing members 12 are provided between the frame casting 10 and the angles 11 to provide ways in which the gate plate 13 may slide. For this purpose, the edges 14 of the angles 12, are in vertical planes substantially tangent to the sides of the circular opening in the frame casting 10, and the edges of the spacing members 12 are spaced away from said plane to provide the ways 15 above referred to.

The frame casting 10 is shown as formed with upwardly projecting arms 16 to serve as guides for the gate plate 13 in its upward travel, and the spacing members 12 project upwardly to the top of said arms. The angles 11, frame 10 and spacing members 12, may be fastened together as by means of bolts 17 passed through openings 18 in the casting 10, and corresponding holes in the angles and spacing members.

To lift the gate plate 13 there is shown a vertical shaft 19, threaded as at 20, and journaled in an opening in the top angle frame member 21 secured to the upper ends of angles 11. Preferably gusset plates 22 are provided to brace the angle between the top and side frame members. To prevent vertical movement of the shaft 19 there is shown a casting 23 having a recess coacting with an annular flange 24 carried by the shaft 19, which casting 23 is secured to the frame member 21, as by means of bolts 25. To cause revolution of the shaft 19 there is shown a crank 26, the top of the shaft being given an elongated form, as shown in Fig. 6, at 27, and the opening 28 in the crank being formed to fit therewith.

To lift the plate 13 upon revolution of the shaft 19 there is shown a box 29 bolted to the top of the projection 30 from the plate, which box has an internally threaded opening to coact with the screw threads 20 upon the shaft 19.

To preserve the alinement of the lower end of the shaft 19 as the plate slides upwardly, there is shown a journal bearing 31 having a smooth bore adapted to receive the end of the shaft 19 and to slide upwardly thereon as the plate carrying the journal bearing moves upwardly. To limit the downward movement of the gate a nut 32 is shown threaded upon the shaft 19 and secured thereon, as by means of a cotter pin 33. It will be seen that when the gate is lowered so that the bearing 31 impinges upon the nut 32 a strain upon the crank 26 will cause the box 29 and the bearing 31 to coact in the form of a lock nut, and when the shaft 19 is prevented from lifting by means of the annular flange 24, the gate will be held down against any tendency to lift.

To unite a conduit with the gate there is shown a collar 34, which may be secured to the frame 10, as by means of rivets 35. To make the gate self-centering, or, in other words, to enable a conduit to be united thereto, even though the axis of the conduit is not strictly perpendicular to the plane of the gate, the opening in the casting 10, which receives the collar 34, is given a flare so as to have a frusto-conical inner surface 36. If the rivets 35 are not set up too tightly before the gate is installed a sledge hammer may be applied to the edges of the collar 34, and the same may be caused to move in the frusto-conical surface of the casting to assume a position with its axis at a slight angle to the plane of the gate, for the purpose above referred to.

Minor changes may be made in the physical embodiment of the invention without departing from its spirit.

I claim:

A water gate comprising in combination a slightly frusto-conical pipe connecting col-

lar, uprights formed integrally therewith, upright guide members secured to said collar uprights, a cross plate connecting said guide members at their top and a recessed bearing mounted midway said cross plate, a gate mounted to slide along said guide members, said gate being provided with a centrally located elongated extension extending upwardly therefrom, a screw threaded member mounted at the top of said extension, a plain bearing mounted near the center of said gate, an operating shaft having an integral collar mounted in said recessed bearing and said plain bearing, and having a screw threaded portion engaging said screw threaded member, and means for rotating said shaft.

AUGUST M. AMEND.