

J. HUBMANN.
WATER MOTOR.
APPLICATION FILED DEC. 24, 1908.

939,506.

Patented Nov. 9, 1909.
2 SHEETS—SHEET 1.

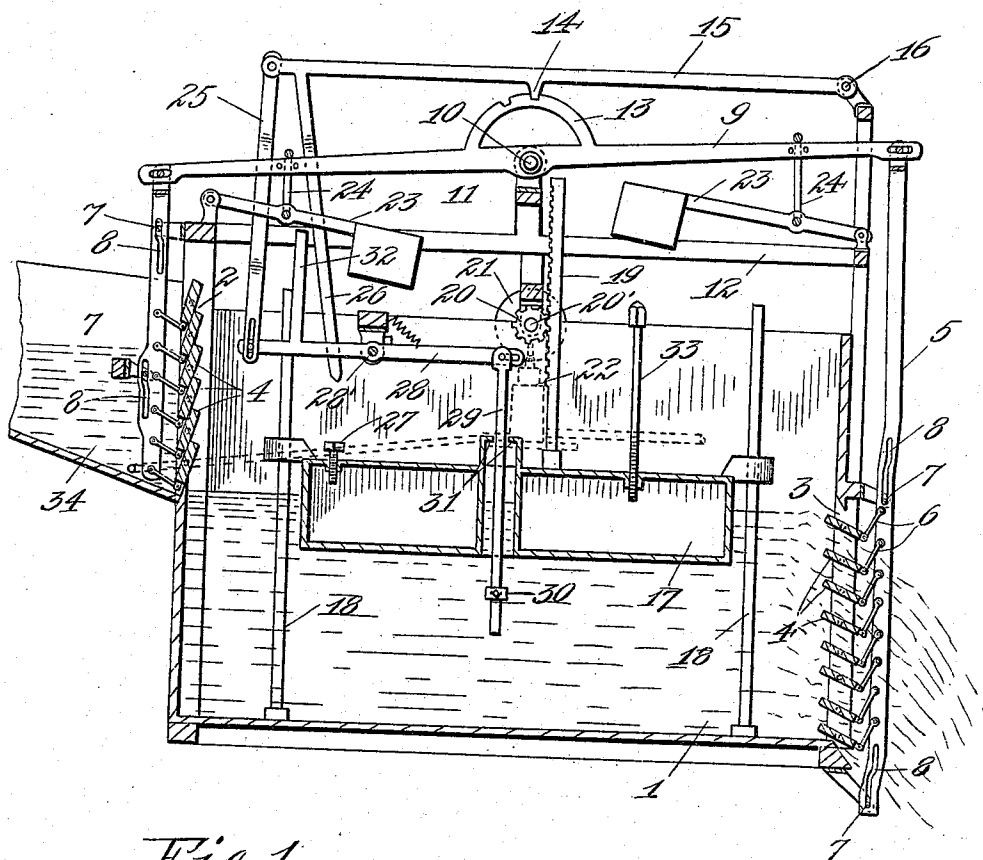


Fig. 1

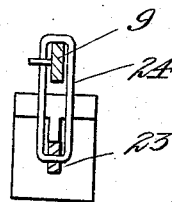


Fig. 4

Witnesses

Arbata Adams.
E. W. Crossman.

Inventor

Julius Hubmann

By

Adams & Brooks.

Attorneys

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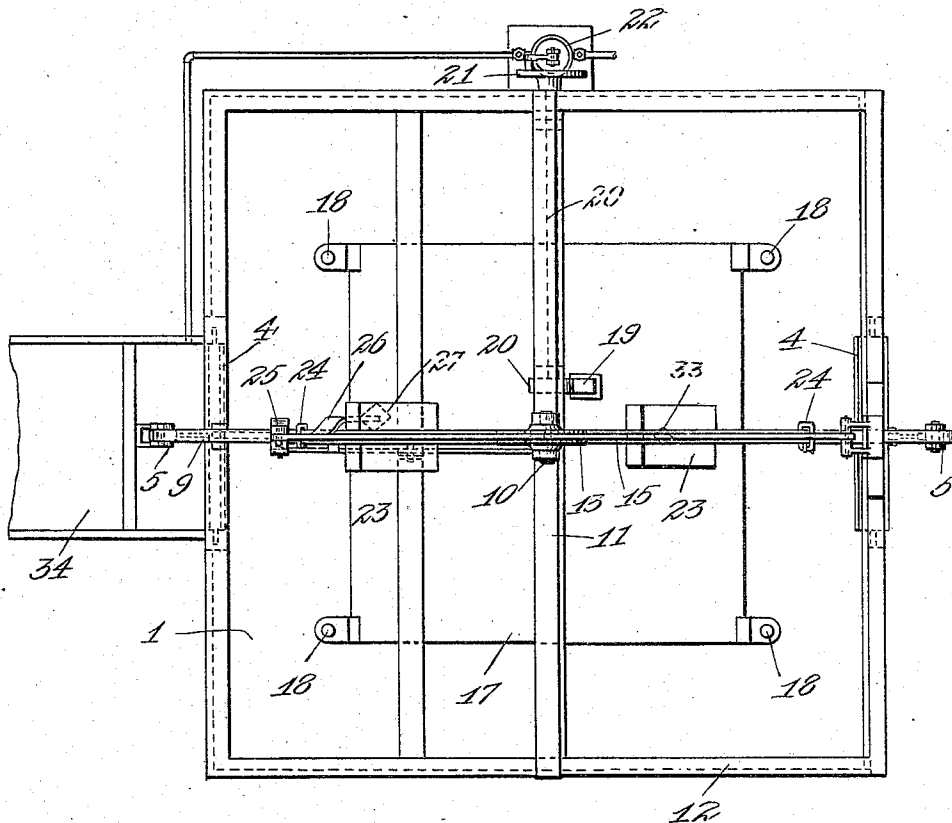


Fig. 2

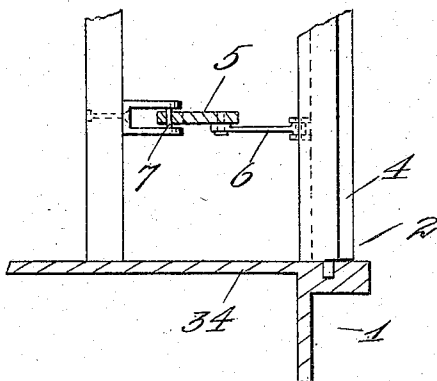


Fig. 3

Witnesses

Arleta Adams
E. W. Cressman.

Inventor

Julius Hubmann

By

Adams & Brooks

Attorneys

UNITED STATES PATENT OFFICE.

JULIUS HUBMANN, OF TACOMA, WASHINGTON, ASSIGNOR OF ONE-THIRD TO ELIZA DEAN AND ONE-SIXTH TO CHARLES F. BAILEY, BOTH OF SEATTLE, WASHINGTON.

WATER-MOTOR.

939,506.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed December 24, 1908. Serial No. 469,166.

To all whom it may concern:

Be it known that I, JULIUS HUBMANN, a citizen of the United States of America, and a resident of the city of Tacoma, county of Pierce, and State of Washington, have invented certain new and useful Improvements in Water-Motors, of which the following is a specification.

My invention relates to apparatus of the above type and aims primarily to provide means for controlling the ingress and egress of water whereby a constantly changing level of the water in the float chamber can be obtained to effect an alternate rise and fall of the float.

Other objects will be set forth as my description progresses and those features of construction, arrangements and combinations of parts in which my invention resides, succinctly defined in my annexed claims.

Referring now to the accompanying drawings, wherein my invention, in such form as now preferred by me, is illustrated: Figure 1 is a longitudinal sectional view of my invention. Fig. 2 is a top plan view thereof, and Figs. 3 and 4 are detail views, on enlarged scale.

Reference numeral 1 indicates the float chamber having ingress and egress openings 2 and 3 respectively, arranged one above the other and controlled by gates 4. This chamber can be of any desired construction and formation and gates 4, in the broad spirit of my invention, can be of any desired type. As now considered, however, I form gates 4 in horizontal sections, which latter are pivotally supported in the side walls of the openings 2 and 3 of the float chamber, and are so arranged as to when closed, overlap one another to prevent leakage of the water therebetween.

Slidably supported operating members 5, in the form of bars, are connected by links 6 to the respective sections of gates 4 for swinging the same, see Fig. 1.

In the present embodiment of my invention, members 5 are slidably supported on pins 7, secured to relatively fixed parts of the apparatus, said pins engaging in slots 8 of said members.

Slots 8 have off-set end portions and pins 7 in traveling through the same effect a slight lateral movement of the members 5 to insure of a more perfect closing operation of the gate sections.

Reference numeral 9 indicates a walking beam, the end portions of which have slotted connection with members 5. Walking beam 9 extends over the float chamber 1 and is pivoted at 10, on a cross member 11 of a suitable frame 12.

Reference numeral 13 indicates a notched segment provided on walking beam 9, in the notches of which a detent 14 of a lock bar 15, pivoted at 16 on frame 12, is adapted to engage to hold the walking beam against movement.

In the float chamber 1, a float 17 is supported for vertical sliding on suitable guides 18, and this float can be connected with any suitable mechanism so as to, during its vertical sliding movement transmit power thereto. In this connection, for the purposes of illustration, I have shown float 17, provided with a rack bar 19 with which meshes a pinion 20.

Pinion 20 is carried on one end of a shaft 20', journaled on frame 12, which shaft is provided on its other end with a crank 21 connected with the piston of a pump 22.

Reference numeral 23 indicates weights pivoted to frame 12, as shown, beneath the opposite end portions of walking beam 9 and having releasable connection therewith through the medium of links 24, see Fig. 4, which links while loosely receiving the end portions of the walking beam are made fast to the weights so as to move therewith.

On lock bar 15 I provide a pivoted link 25 and a relatively fixed depending arm 26, the latter of which lies in the path of a strike member 27, carried on the float.

Link 25 is connected to a lever 28, fulcrumed at 28' and connected to a rod 29 which extends through float 17 and is provided with a collar 30 which when engaged by strike lugs 31 of the float, upon lowering of the float, swings lock bar 15 to free walking beam 9. Swinging of lock bar 15 to free walking beam 9 also obviously takes place when, float 17 moves upwardly a sufficient distance for its strike member 27 to engage and force upwardly the arm 26.

Weights 23 both normally engage walking beam 9, as shown in Fig. 1, the one counter-balancing the other, and when it is desired to swing the walking beam to effect a relatively opposite arrangement of the gates, said walking beam is relieved of the weight of one of said weights so that the

other can operate. To effect this result, I provide lever 28 with an upwardly extending arm 32 for engagement with one weight 23, and float 17 with a suitable strike arm 33 for engagement with the other of said weights.

Referring to Fig. 1 the operation, briefly stated, is as follows: Water discharges through egress opening 3, allowing float 17 to lower until strike lugs 31 engaging collar 30 on rod 29, swings lever 28, to cause link 25 to elevate lock bar 15, and arm 32 to elevate the adjacent weight 23, when the other weight will swing walking beam 9 to operate gates 4 to open ingress opening 2 and close egress opening 3. When float 17 again starts to rise lock arm 15 is permitted to fall to engage its detent 14 in the other notch of segment 13.

Water can be directed for discharge into the float chamber, as through a race-way 34, from any desired source of supply.

During upward movement of the float, arm 33 elevates the other weight and lock bar 15 is elevated by arm 26 being struck by member 27, as previously described to effect movement of the gate sections to the position shown in Fig. 1.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, of the United States of America, is:

1. In a water motor, a float chamber provided with ingress and egress openings, gates for said openings of the float chamber, said gates being formed of sections supported for movement, means connecting the sections of each gate for simultaneous movement, means to lock the gate sections against movement, a float in said chamber, and means controlled by said float for operating said first means to alternately open the openings of said chamber to passage of the water.

2. In a water motor, a float chamber provided with ingress and egress openings, gates therefor, a float in said chamber, means controlled by said float to alternately open said gates, means for locking said gates against movement, and means operated by and during movement of said float to operate said lock means to a releasing position.

3. In a water motor, a float chamber provided with ingress and egress openings, gates therefor, a float in said chamber, means controlled by said float to simultaneously open one gate and close the other, means for locking said gates against movement of said

float, and means to operate said lock means to a releasing position.

4. In a water motor, a float chamber provided with ingress and egress openings, gates therefor, a float in said chamber, means controlled by said float for alternately opening said gates including a pivoted member each end of which is connected with a respective gate, means to lock said swingingly supported member against movement, and means operated by and during movement of said float to release said last means.

5. In a water motor, a float chamber provided with ingress and egress openings, gates therefor, a float in said chamber, means for simultaneously opening one gate and closing the other, lock means controlled by said float for holding said first means against movement, and means for operating said first means after it has been released.

6. In a water motor, a float chamber provided with ingress and egress ports, gates therefor, a float in said chamber, means for simultaneously opening one gate and closing the other, lock means controlled by said float for holding said first means against movement, and a weight for operating said first means after it has been released.

7. In a water motor, a float chamber provided with ingress and egress openings, gates therefor, a float in said chamber, a walking beam, means connecting said gates with the end portions of said walking beam for operation thereby, weights releasably connected with said walking beam, one weight normally counter-balancing the other, and means controlled by said float for alternately releasing said weights from said walking beam.

8. In a water motor, a float chamber provided with ingress and egress openings, gates therefor, a float in said chamber, a walking beam, means connecting said gates with the end portions of said walking beam for operation thereby, weights releasably connected with said walking beam on opposite sides of the fulcrum point thereof, and means for alternately operating said weights to a releasing position controlled by said float to be operated as the latter rises and falls.

Signed at Seattle, Washington this 15 day of December 1908.

JULIUS HUBMANN.

Witnesses:

HERCHMER JOHNSTON,
FRANK E. ADAMS.