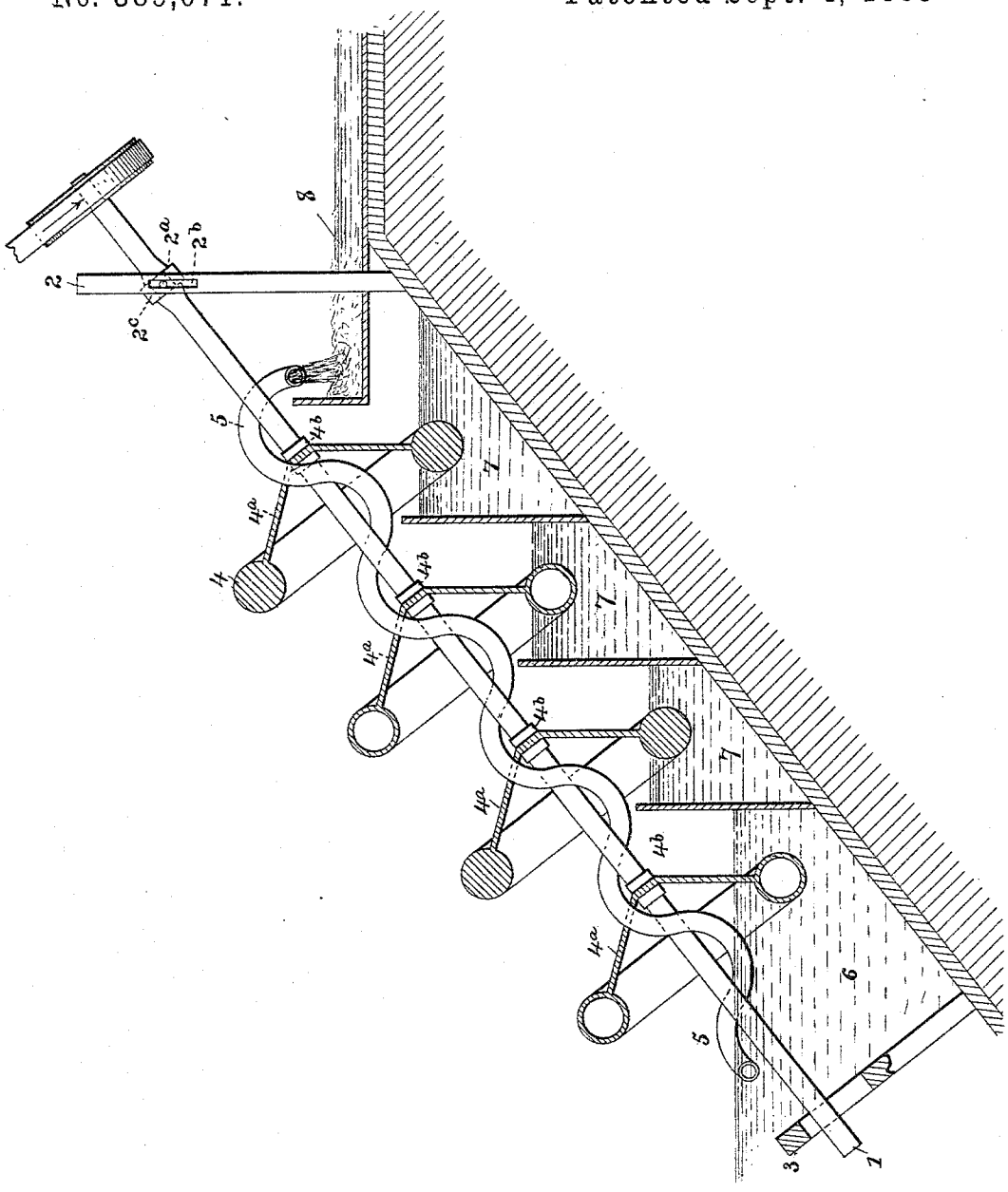
(No Model.)

C. E. GLESSNER.

WATER ELEVATOR.

No. 389,071. Patented Sept. 4, 1888.



Attest.
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UNITED STATES PATENT OFFICE.

CHARLES E. GLESSNER, OF GRAND JUNCTION, COLORADO.

WATER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 389,071, dated September 4, 1888.

Application filed January 4, 1888. Serial No. 259,770. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. GLESSNER, a citizen of the United States, residing at Grand Junction, in the county of Mesa and State of Colorado, have invented certain new and useful Improvements in Water-Elevators, of which the following is a specification.

My invention relates to water-elevators constructed upon the well-known principle of the Archimedean screw, and has for its object to provide anti-friction bearings for the spiral elevator which is to be revolved by any convenient means, such as a band-pulley or otherwise. To this end I provide a central shaft mounted in standards. On this shaft are fixed by a number of radial arms annular floats, and coiled around the shaft is a spiral pipe constructed in such a manner that the water will be raised thereby when rotated in the proper direction. This shaft is fixed with its standards in such position as to be at the proper incline and has its lower end immersed in the water-supply, while the annular floats each dip in boxes or troughs suitably constructed in proper position, whereby the whole is bouyed up. The upper end of the spiral pipe empties into a receptacle or trough provided for the purpose.

In order that my invention may be more fully understood, I will proceed to describe it with reference to the accompanying drawing, which represents a vertical section of my apparatus.

1 is the central shaft; 2 3, the posts or standards; 4, the annular floats, and 5 the spiral pipe.

6 is the supply in a stream or elsewhere, and 7 the troughs.

8 represents the receptacle into which the water is emptied.

To prevent longitudinal movement of the elevator-shaft, the same is journaled in a collar, 2^c, keyed by the pin 2^a, working in the vertical slot 2^b in the shaft 2. Thus it will be seen that the shaft has perfect freedom of vertical movement, but is restricted in its longitudinal movement. In the lower standard, 3, the same construction may be employed, or the shaft may project through a longitudinal slot in the standard, thereby having freedom of movement. The floats 4 are secured to the shaft by means of the web or radial arms 4^a, formed integrally with the sleeves 4^b, which may be keyed or secured to the shaft by any preferred means, such as a set-screw. The troughs 7 are filled with water supplied in any convenient manner—as, for instance, by supply pipe from the receiving-receptacle regulated to supply a quantity sufficient to compensate for evaporation and loss by other means. The driving mechanism may be of any preferred or convenient type, and I have therefore not shown it. The floats may be made of metal and hollow, or of some buoyant substance, as wood, and, if preferred, solid.

From the above construction it will be seen that on the rotation of the apparatus in the direction of the arrow the water will be taken in at the lower end of the spiral tube and conveyed to the upper end, where it will be emptied in the manner aforesaid.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a water-elevator, the combination, with the shaft for supporting the elevating-screw, of two or more troughs or tanks containing water, a like number of floats secured to said shaft and resting in the water in said troughs, the standards 2 3, having longitudinal slots through which said shaft passes, and a pin or projection on the shaft abutting against one of the standards, whereby the rotary and rising and falling movements only of said shaft will be permitted.

2. In a water-elevator, the combination, with an inclined shaft for supporting the elevator-screw, of two or more troughs, 7, containing water, arranged on an incline parallel with said shaft, a like number of annular floats resting in the water in said troughs and having arms 4^a and collars 4^b, for securing them to said shaft, the standards 2 3, having longitudinal slots for the passage of said shaft, the standard 2 having vertical slots 2^b, the collar 2^c on said shaft, and pin 2^a, secured to said collar and working in the slots 2^b, substantially as set forth.

CHARLES E. GLESSNER.

Witnesses:
O. J. KENNEDY,
J. MCFARLAND.