

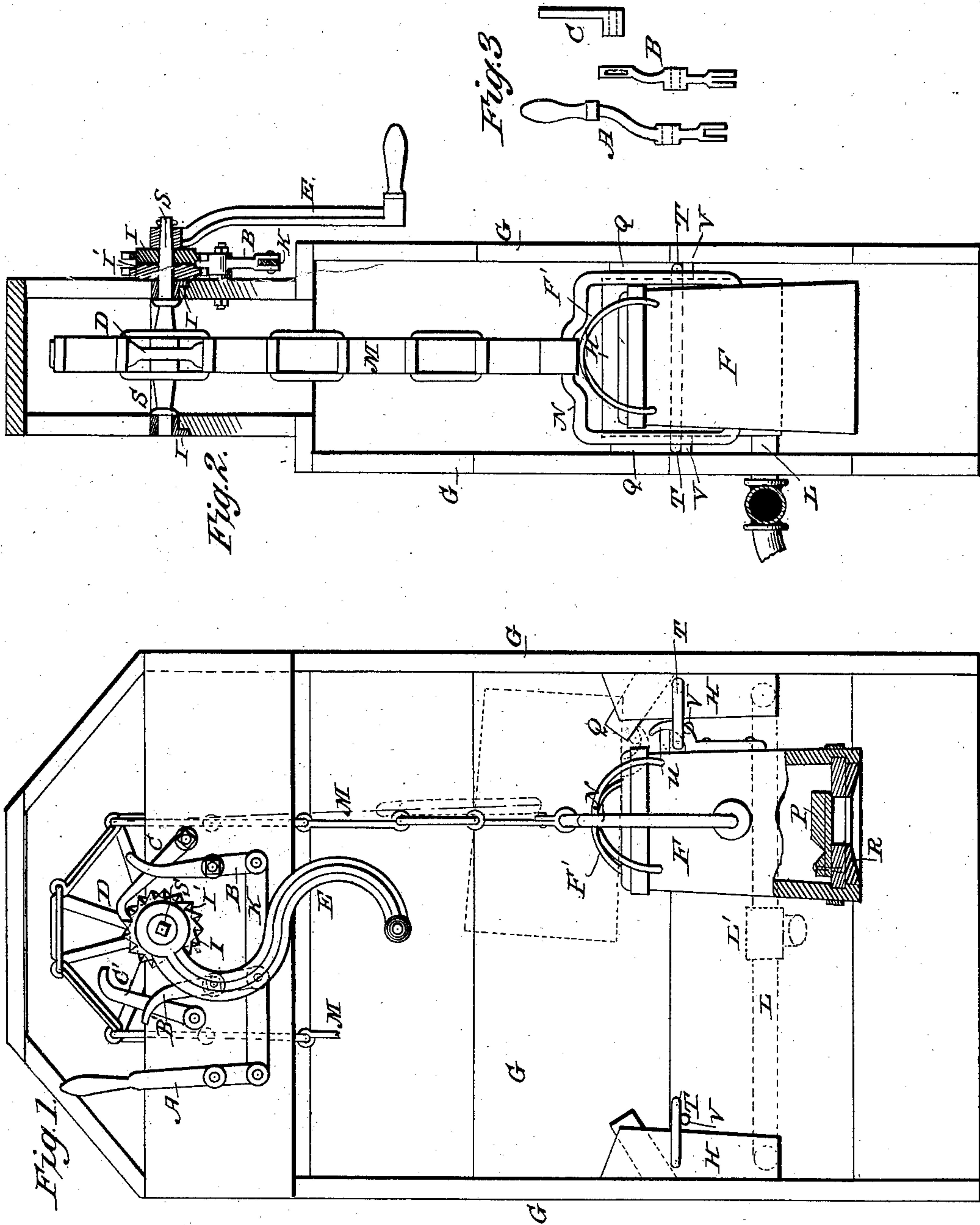
(No Model.)

J. W. & J. J. ADAMS.

WATER ELEVATOR.

No. 389,681.

Patented Sept. 18, 1888.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN W. ADAMS AND JOHN J. ADAMS, OF CHARLOTTE, NORTH CAROLINA.

WATER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 389,681, dated September 18, 1888.

Application filed September 26, 1887. Serial No. 250,759. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. ADAMS and JOHN J. ADAMS, of Charlotte, in the county of Mecklenburg and State of North Carolina, have invented a new and useful Improvement in Water-Elevators, of which the following is a specification.

The object of our invention is to provide a simple and effective device for drawing water out of wells for domestic purposes.

It relates to that general form of elevator in which a sprocket-wheel on a horizontal axis carries a chain whose ends descend into the well and are attached each to a bucket having a valve in its bottom, and which buckets are arranged to have a reverse motion, one descending while the other rises.

Our improvements consist in the means for reversing the action of the buckets, as will be hereinafter fully described.

Figure 1 is a side elevation with a part of the casing removed. Fig. 2 is an end elevation with a part of the casing removed, and Fig. 3 are details of the reversing devices.

G represents the outer casing, in the upper portion of which, in journal-boxes I I, is arranged a horizontal rotary shaft, S, having rigidly attached thereto a sprocket-wheel, D, and having outside the case a detachable crank-handle, E. Upon the sprocket-wheel D is sustained a chain, M, whose lower ends are each attached to a bucket, F, the projections of the sprocket-wheel serving to pass through the links of the chain and give it positive motion.

On the squared end of the sprocket-wheel shaft, just inside the crank, are slipped two ratchet-wheels, I I', whose teeth point in opposite directions. Upon these ratchet-wheels rest corresponding pawls, C C', upon opposite sides of the shaft. These pawls are pivoted upon shoulder-bolts attached to the well-casing and pass through slots in the ends of levers B B'. These latter are fulcrumed to the case on shoulder-bolts, and are pivoted or jointed at their lower ends to a connecting-bar, K, which is also jointed to the lower end of a hand-lever, A. The object of these devices is to hold the sprocket-wheel with its load in any position, one pawl being provided for one bucket and the other for the other

bucket, and arranged to act alternately by the adjustment of hand-lever A. Thus when the hand-lever is thrown in one direction one pawl is thrown into its ratchet-wheel and the other is thrown out, and vice versa. The reversal of the pawls is effected at each reversal of the revolution of the sprocket-wheel.

The chains are fastened at their lower ends to the bails N, in which the buckets are respectively hung. The buckets have each an upwardly-opening valve, P, in their bottoms, so as to admit water by simple immersion and retain it when the bucket is lifted. A weight or sinker, R, is also attached to the bottom of the bucket to cause it to be quickly submerged and filled.

H H are receptacles formed on the inner sides of the well-casing on opposite sides of the well. These receptacles are connected at the bottom with a single pipe, L, which has a T-coupling and spout L' at the side. On the inner side of each receptacle H is a pivoted link, T, resting upon stop V, while on the adjacent side of the bucket is a spur or hook, u. As the bucket rises full of water its spur u catches in link T, which rises with it until it strikes the inclined projection Q. This stops the movement of the upper portion of the bucket; but as its bail continues to rise the bucket is tilted, as shown in dotted lines, and its contents are discharged into the receptacle H, whence it passes to the discharge-spout L'.

F' are semicircular cross bars, two in number, which are arranged crosswise the top of the buckets. These bars act as guards to the buckets, protecting the top of one bucket in rising from the bottom of the other in descending. These guard-bars also act as guides to secure the proper engagement of spur u with link T.

We are aware of the fact that it is not new in water-elevators to employ two connected pawls in connection with two ratchet-wheels having reversed teeth, which pawls are, by reason of their connection, made to work alternately; and we do not claim this idea, broadly.

Having thus described our invention, what we claim as new is—

1. The combination, with winding-shaft S, having two rigid ratchet-wheels with oppo-

sitely-faced teeth, of the two pawls C C', piv-
oted in a vertical plane at their lower ends
upon opposite sides of the shaft, the two levers
B B', fulcrumed about their middle portions to
5 work in vertical planes, and having loops or
slots at their upper ends which loosely embrace
the pawls, the connecting-bar K, jointed to the
lower ends of levers B B', and a handle for os-
cillating said bar K, substantially as and for
10 the purpose described.

2. The combination, with winding-shaft S,
having two rigid ratchet-wheels with oppo-
sately-faced teeth, of the two pawls C C', piv-
oted in a vertical plane at their lower ends
15 upon opposite sides of the shaft, the two levers

B B', fulcrumed about their middle portions to
work in vertical planes, and having loops or
slots at their upper ends which loosely embrace
the pawls, the connecting-bar K, jointed to the
lower ends of levers B B', and a lever-handle, 20
A, fulcrumed between its ends to work in a
vertical plane, and having its lower end jointed
to bar K and its upper end projecting in the
form of a handle, substantially as and for the
purpose described.

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Witnesses:

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