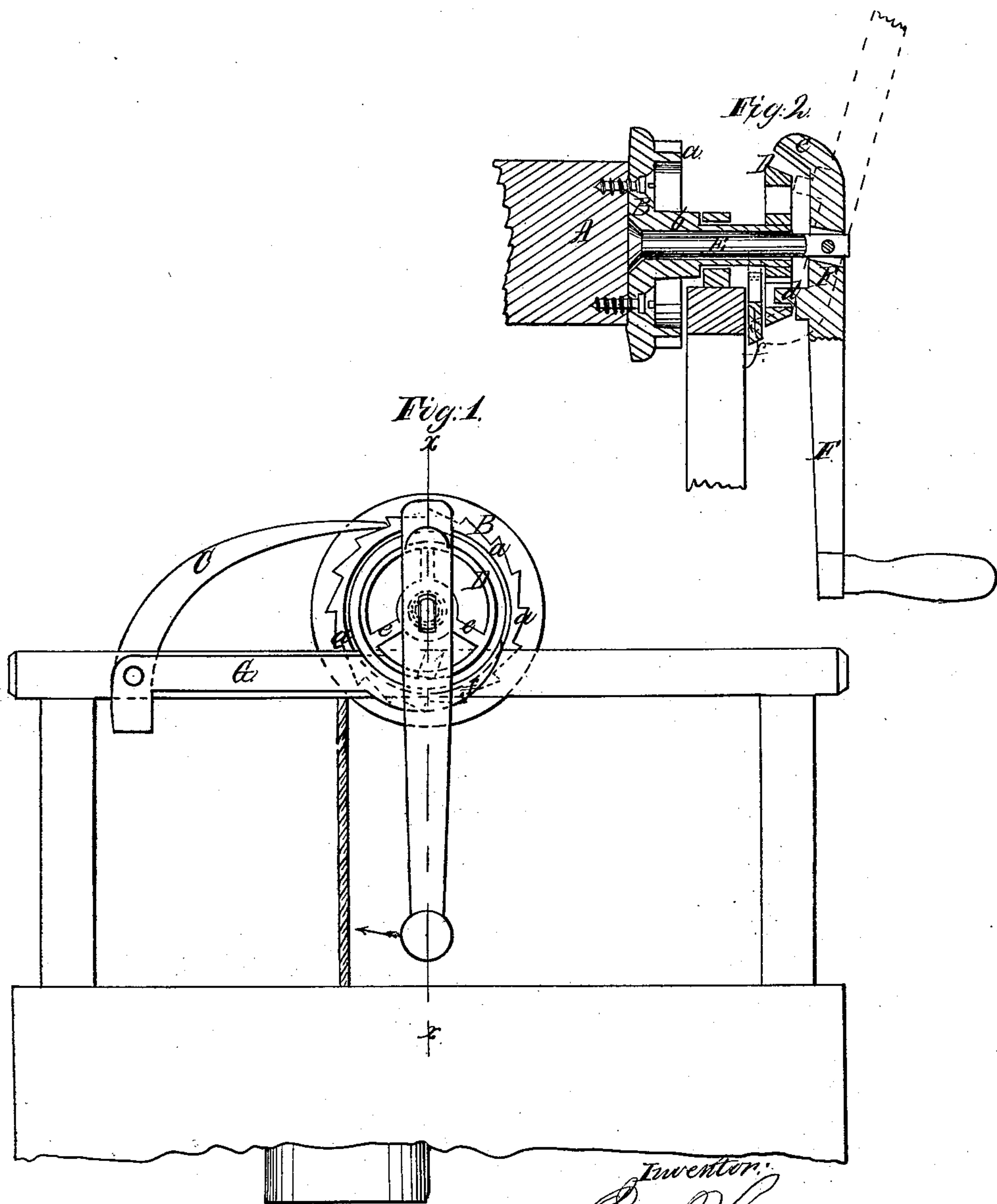


E. Hoyt.

Windlass Water Elevator.

N^o 53621.

Patented Apr. 3, 1866.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWIN HOYT, OF STAMFORD, CONNECTICUT.

IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. 53,621, dated April 3, 1866.

To all whom it may concern:

Be it known that I, EDWIN HOYT, of Stamford, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Water-Elevators; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improvements. Fig. 2 is a transverse vertical section of the same, taken in the plane of the line *x x*, Fig. 1.

Similar letters of reference indicate like parts.

My invention consists in the employment of a friction-wheel of novel construction, by which, in combination with a crank, also of novel construction, and an automatically-operating pawl, the elevation of the bucket is easily accomplished and the velocity of the descent of the same is perfectly regulated, one hand being only required to operate the entire thing, whereby should a careless management of the crank take place no accident could occur by a too rapid descent of the bucket.

A designates the windlass, having suitable bearings at one end in the well-curb, and at the other end a plate, B, is attached, which carries or has formed upon it a series of ratchet-teeth, *a a*, (see Fig. 1,) which, in connection with a pawl, C, provides a means for preventing the windlass turning in a direction to permit the bucket to descend. This plate B has a shaft, *b*, on one side, which constitutes the journal at this end of the windlass, and it is mounted in suitable bearings in the well-curb. To the other end of this shaft *b* there is attached a friction-wheel, D, which, in the present instance, has its periphery beveled outward; but this may be a squared face, if desired. In practice the plate, shaft, and friction-wheel will be cast in one piece, which will produce a firm and strong piece of work and reduce the expense of manufacture. Through the shaft *b* there is run a pin, E, which extends out beyond the friction-wheel D, and upon this there is pivoted the crank F in such manner that said crank shall have a lateral play, for the purpose presently to be specified.

Upon one end of this crank there is formed a projection or brake, *e*, (see Fig. 2,) which is beveled so that its inner face will correspond to the bevel on the friction-wheel. There is also formed on this crank, on the other side of the point at which it is pivoted, a lug or pin, *d*.

The inner face of the friction-wheel D has recesses formed in it, or arms or catches *e* (see Fig. 1) placed across it, against which the lug *e* strikes when it is desired to rotate the windlass.

To the pawl C there is attached a bar or rod, G, which has a bent end, *f*, so arranged that when the crank is turned in a position with the brake *c* downward the said brake will raise it up and thus release the pawl.

The operation of the parts above described is as follows: When it is desired to lower the bucket the crank is turned with the handle upward, and by reason of the lateral play which the crank has upon its nut or pin the lug *d* may be pressed in a direction toward the well-curb, which at once brings the brake against the bent end *f* of the rod G, so as to disengage the pawl from the ratchet-wheel. Now the brake is caused to press or bear against the friction-wheel as hard or tightly as desired, and thus the rotation of the wheel may be checked, as desired; and it will be noticed that the moment the said brake is withdrawn from the friction-wheel the rod G will be permitted to fall down, which will cause the pawl to engage with the teeth of the ratchet-wheel, and thus the rotation of the windlass is immediately stopped. Thus no accident can occur by a careless management of the crank. To draw up the bucket, the lug *e* is thrown into the recesses and against the arms *e* upon the face of the friction-wheel, when the windlass can be rotated, and consequently the bucket elevated. The whole operation is simple and easy, one hand only being required to operate this water-elevator, either for drawing up the bucket or allowing it to descend in a proper manner, as can be readily understood.

I am aware that a patent has been issued to Jacob H. Best, dated August 8, 1865, wherein a provision for checking the descent of the bucket is shown—namely, a projection is formed on the inner side of the wrench, which can be pressed against the side of the ratchet-wheel, so as to operate as a brake, and this is the

only feature similar to mine, and its arrangement and application are altogether different from mine, as is obvious.

What I claim as new, and desire to secure by Letters Patent, is—

1. The friction-wheel D, having either a beveled or plain periphery, in combination with the brake on the end of the crank F, constructed and arranged substantially as described.

2. The brake *c* on the end of the crank F, in combination with the friction-wheel D, pin E, end plate, B, and windlass A, substantially as specified.

3. Hanging or pivoting the crank F on a pin, E, which is secured loosely in the friction-wheel D by the plate B, whereby the crank and pin revolve together for adjusting the brake to the required position for arrest-

ing the velocity of the windlass, substantially as specified.

4. The recesses and arms *e* in the friction-wheel D, and inclined as shown, substantially as and for the purpose specified.

5. The lug *d* on the crank F, as arranged in relation to the recesses and arms *e* in the friction-wheel D for rotating the windlass, substantially as herein specified.

6. The rod G, attached to the pawl C, when arranged as described, and used in combination with the projection *c* on the crank.

The above specification of my invention signed by me this 15th day of November, 1865.

EDWIN HOYT.

Witnesses:

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