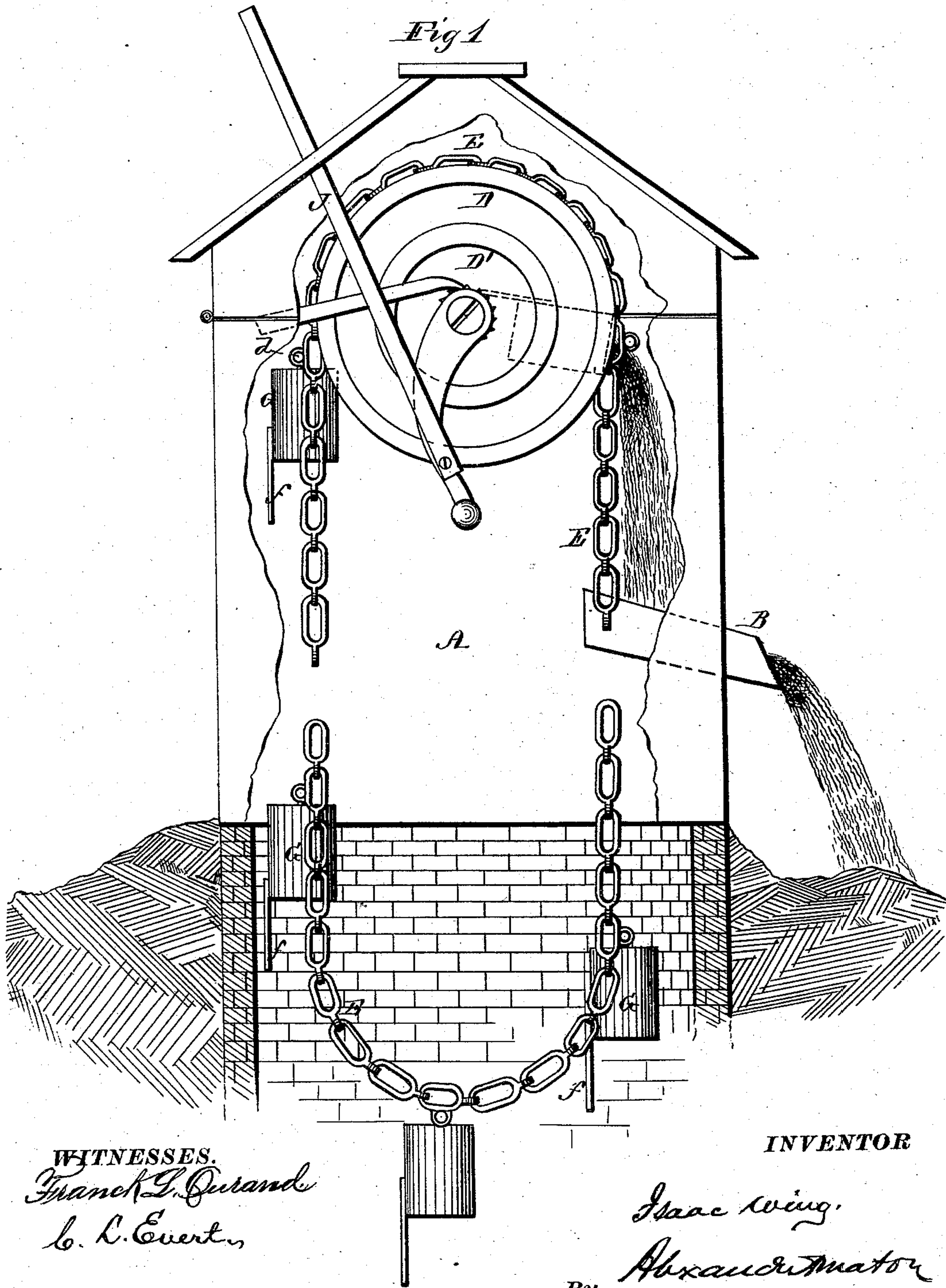


I. WING.
Water Drawers or Elevators.
No. 156,834. Patented Nov. 10, 1874.



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Fig 2

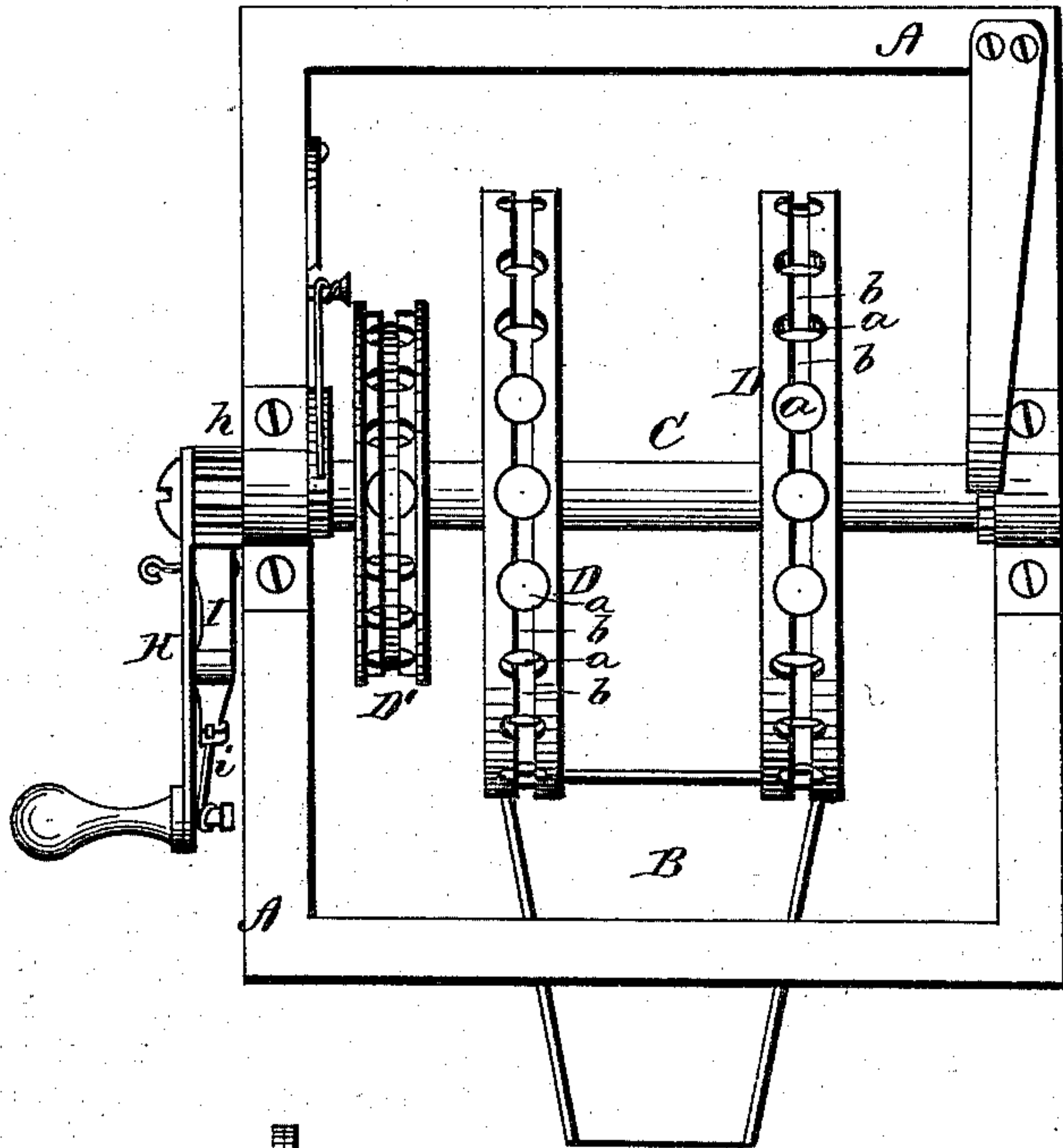


Fig 3

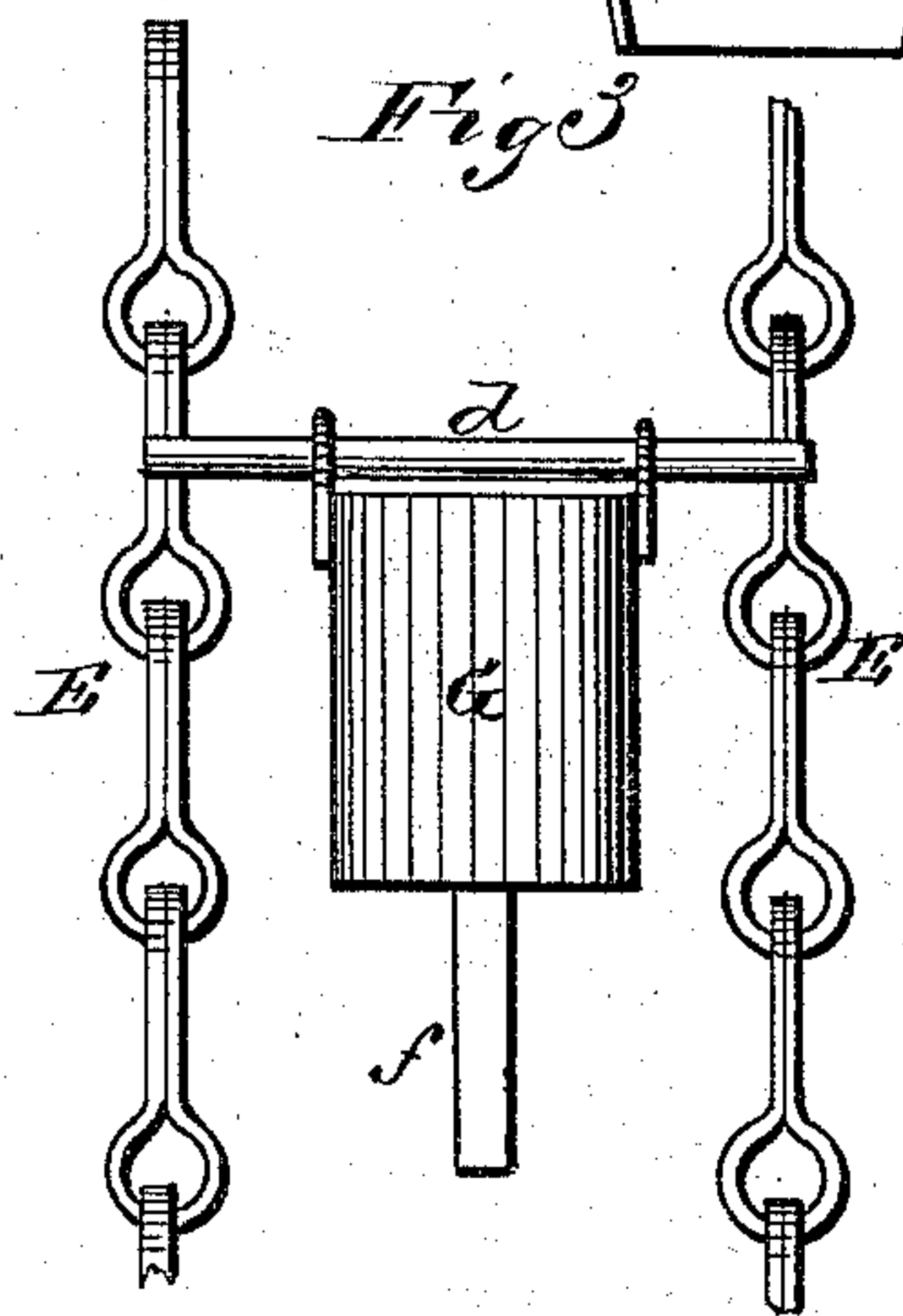
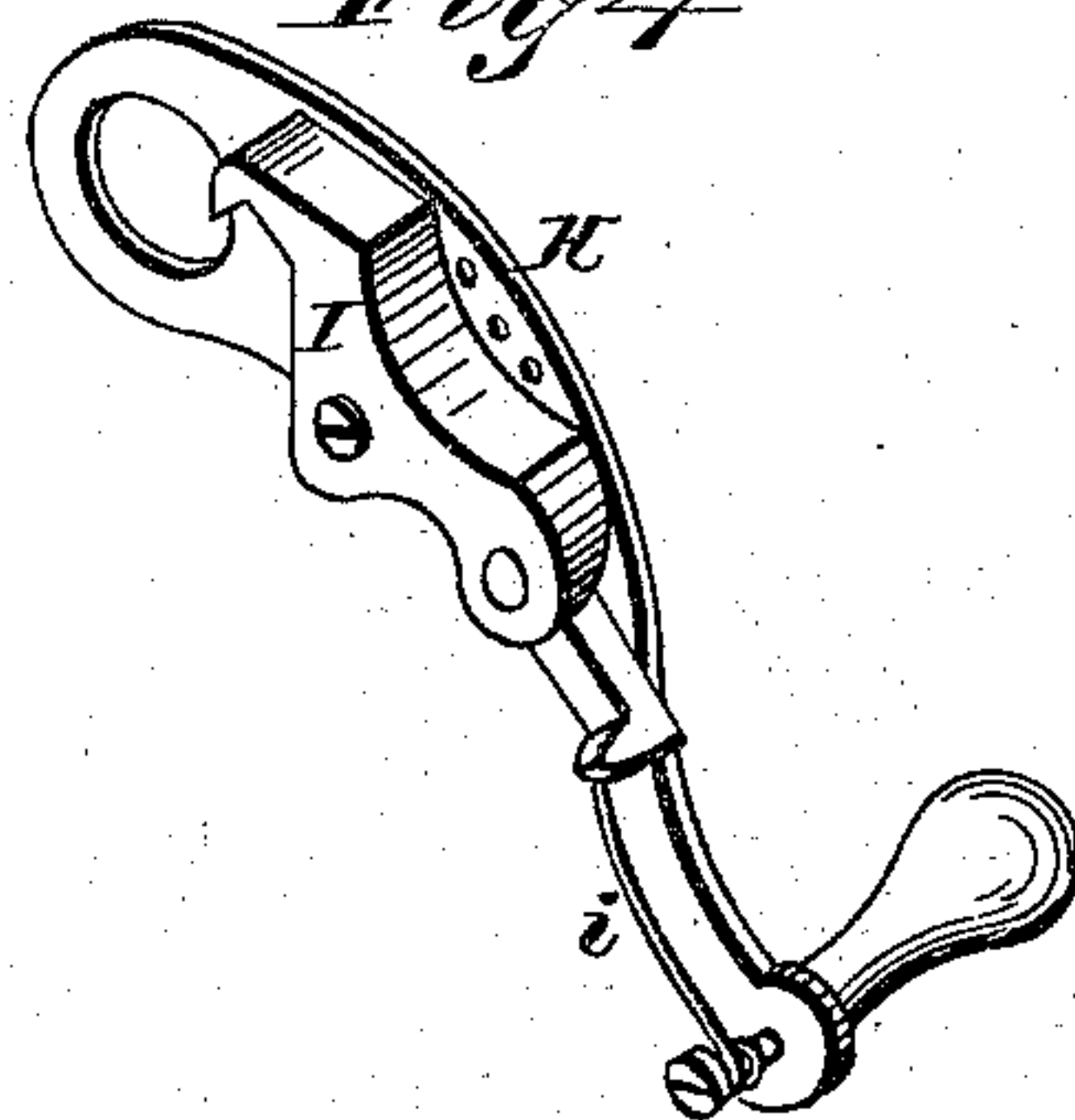


Fig 4



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UNITED STATES PATENT OFFICE.

ISAAC WING, OF TOLEDO, OHIO.

IMPROVEMENT IN WATER DRAWERS OR ELEVATORS.

Specification forming part of Letters Patent No. **156,834**, dated November 10, 1874; application filed April 25, 1874.

To all whom it may concern:

Be it known that I, ISAAC WING, of the city of Toledo, in the county of Lucas and in the State of Ohio, have invented certain new and useful Improvements in Water Drawer or Elevator; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a water-elevator for elevating water from a well or cistern, or any place where water is to be elevated, by a continuous line of buckets operated by means of a crank or other power, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side elevation, partly in vertical section, of my water-elevator. Fig. 2 is a plan view of the same, the roof of the case being removed. Figs. 3 and 4 are detached views of certain parts thereof.

A represents a square case of any suitable dimensions, to be placed over the top of a well, cistern, or other place from which water is to be elevated, and provided with a spout, B, in one side. Across the top of the case A is placed a shaft, C, with journal turned on each end to fit in the boxes where the shaft rests on the case. On the shaft C, at suitable distance apart, are secured two wheels or pulleys, D D. At regular intervals around the circumference of each wheel are made circular recesses *a a*, connected by means of straight grooves *b b*, as shown particularly in Fig. 2. Around each wheel is passed an endless chain, E, composed of alternate links and chains, as shown in Figs. 1 and 3, to fit in the recesses and grooves on the wheel. The chains are connected together by means of a series of rods, *d d*, at any desired distance apart, making, as it were, a chain-ladder, on the rounds of which the buckets G G are loosely suspended, the wheels being such a distance apart that the buckets will pass between them

unobstructed. The buckets G G are of sufficient length so that they will ride free and clear over the shaft C when elevating water, except as hereafter provided. On one side of each bucket is attached an arm, *f*, which extends down far enough to strike the shaft C when the bucket is a little past the center over the shaft, staying the bottom of the bucket in this position while the top passes over with the surface of the pulleys or wheels, emptying the water into the spout B, and on still farther to a point where the bucket is nearly inverted, when the bottom is released and the bucket assumes its upright position on its way down to the water, when it again fills and proceeds up, as before described. As many buckets may be used on the chains E E as can conveniently be elevated in accordance with the power applied, at equal distances apart, some of which will be descending while others are ascending with their load of water. To one side of the wheels D on the shaft C is placed a smaller wheel, D', of the same construction, for the purpose of attaching power to the elevator. One end of the shaft C is extended beyond the sides of the case A and upon this end is placed a crank, H, to manipulate the elevator by hand, and on the same end of the shaft, inside of the crank, is secured a ratchet-wheel *h*. Attached to the inner side of the crank H is pivoted a dog, I, held by a spring, *i*, against the ratchet-wheel. As the crank is worked one way the dog will catch, and when reversed the dog will ride over, the shaft at this junction being held in position and kept from reversing by means of a suitable ratchet-dog on the inside of the case.

This makes it easy even for a child to elevate water by simply working the crank H a short distance at a time where it can produce the greatest amount of force on the crank. It also makes it advantageous to attach a pitman, J, to the crank, as represented in Fig. 1, for the purpose of operating the same with a windmill, for elevating water on large stock-farms or for railroad purposes. By means of the pitman attached to a windmill, the crank can be moved any desired distance, thus elevating water fast or slow, according to the power and demand.

Having thus fully described my invention,

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

1. The wheels *D D*, attached to a shaft, *C*, and provided with recesses *a* and grooves *b* in their circumference, in combination with the chains *E E*, rods *d d*, and buckets *G G*, substantially as and for the purposes herein set forth.

2. The buckets *G*, suspended upon the rods between the chains and provided with the

arms *f* extending below the bottom of the buckets, as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of February, 1874.

ISAAC WING.

Witnesses:

THOMAS A. KAUP,
Capt. ANTHONY W. ADAMS.