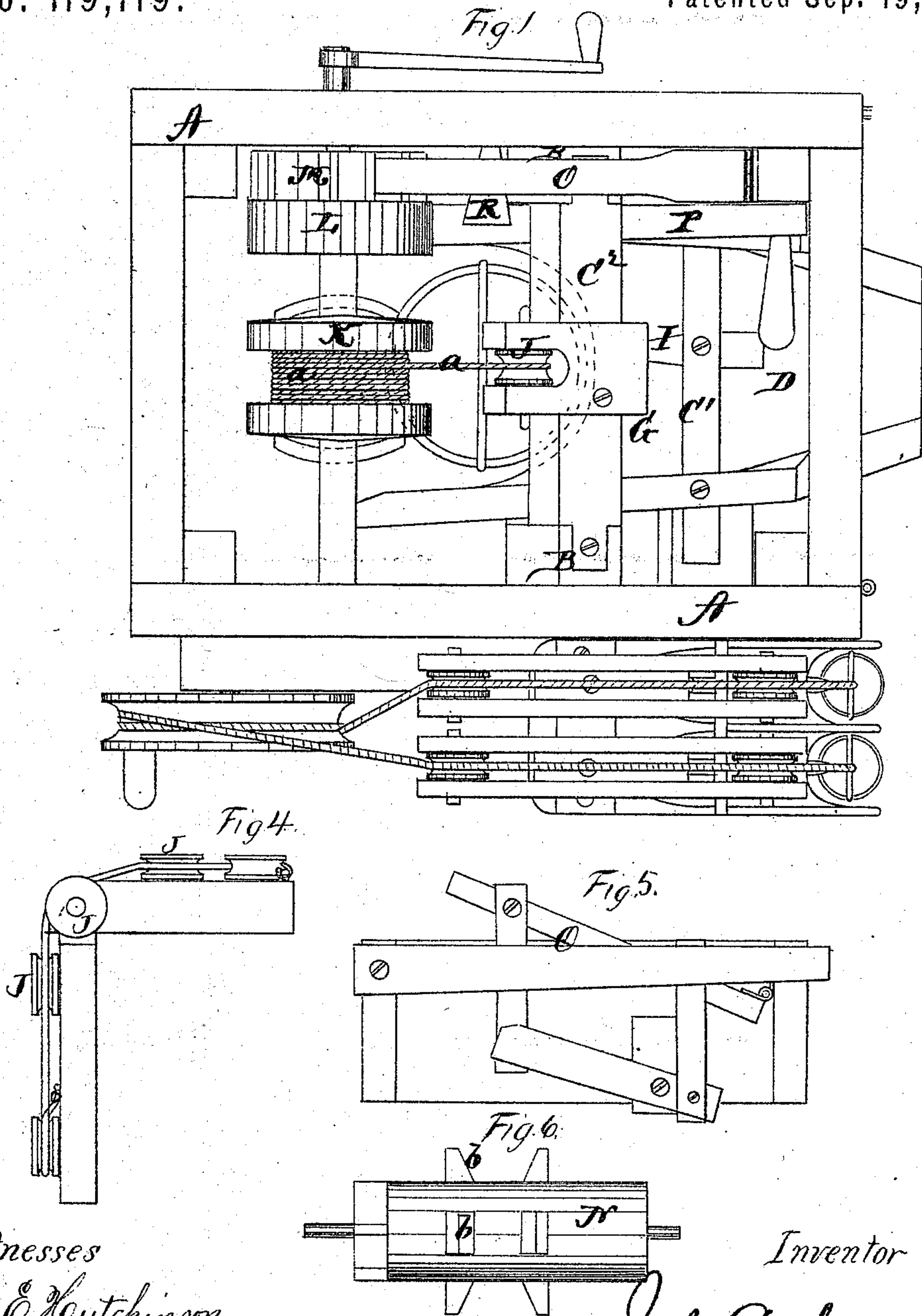


JAMES CURTS.

Improvement in Water Elevator.

No. 119,119.

Patented Sep. 19, 1871.



Witnesses  
 Jas. E. Hutchinson  
 C. L. Ewert.

Inventor  
 Jas. Curtis.  
 per Alexander M. M. M.  
 atyp.



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Fig. 2.

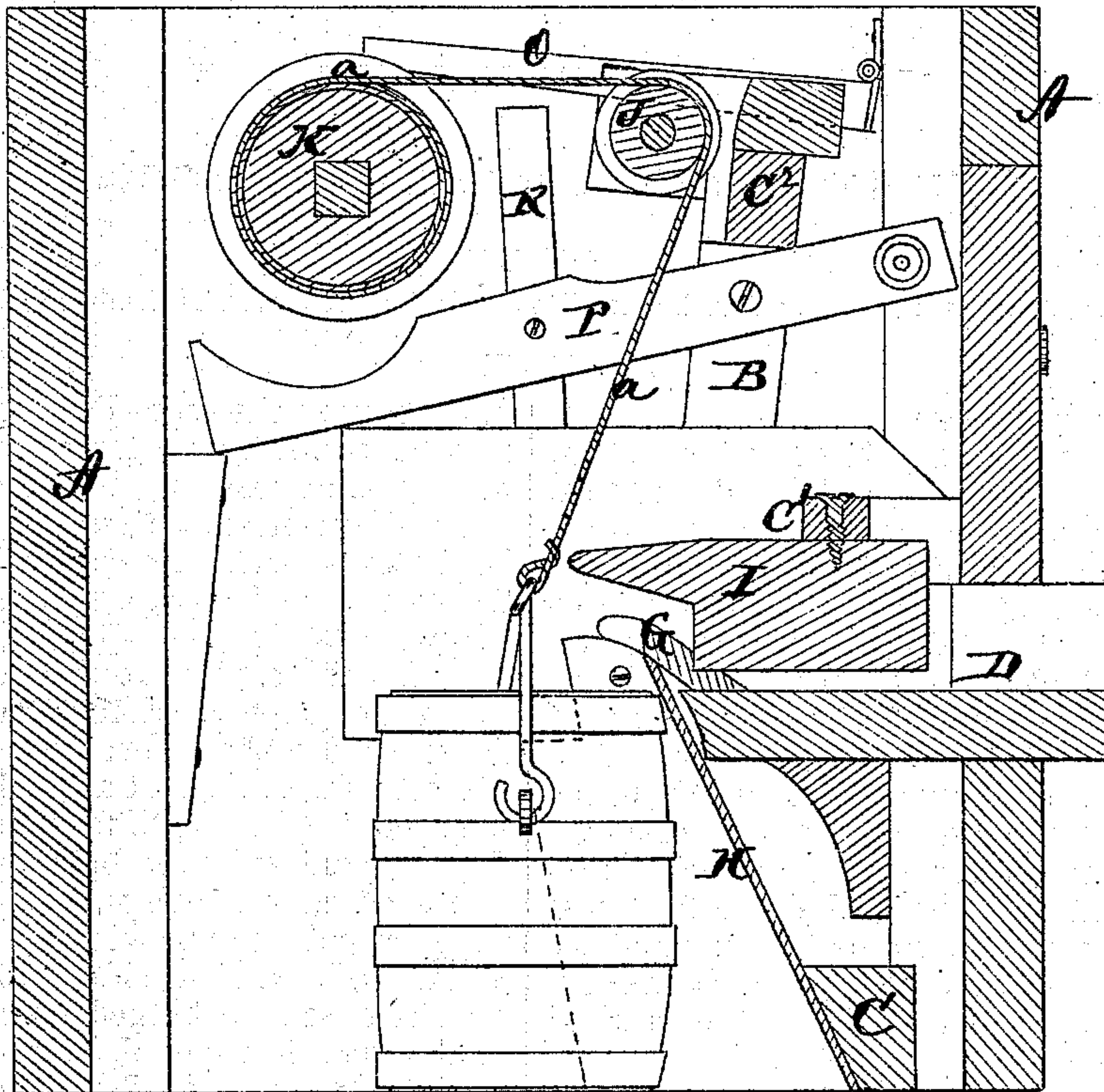
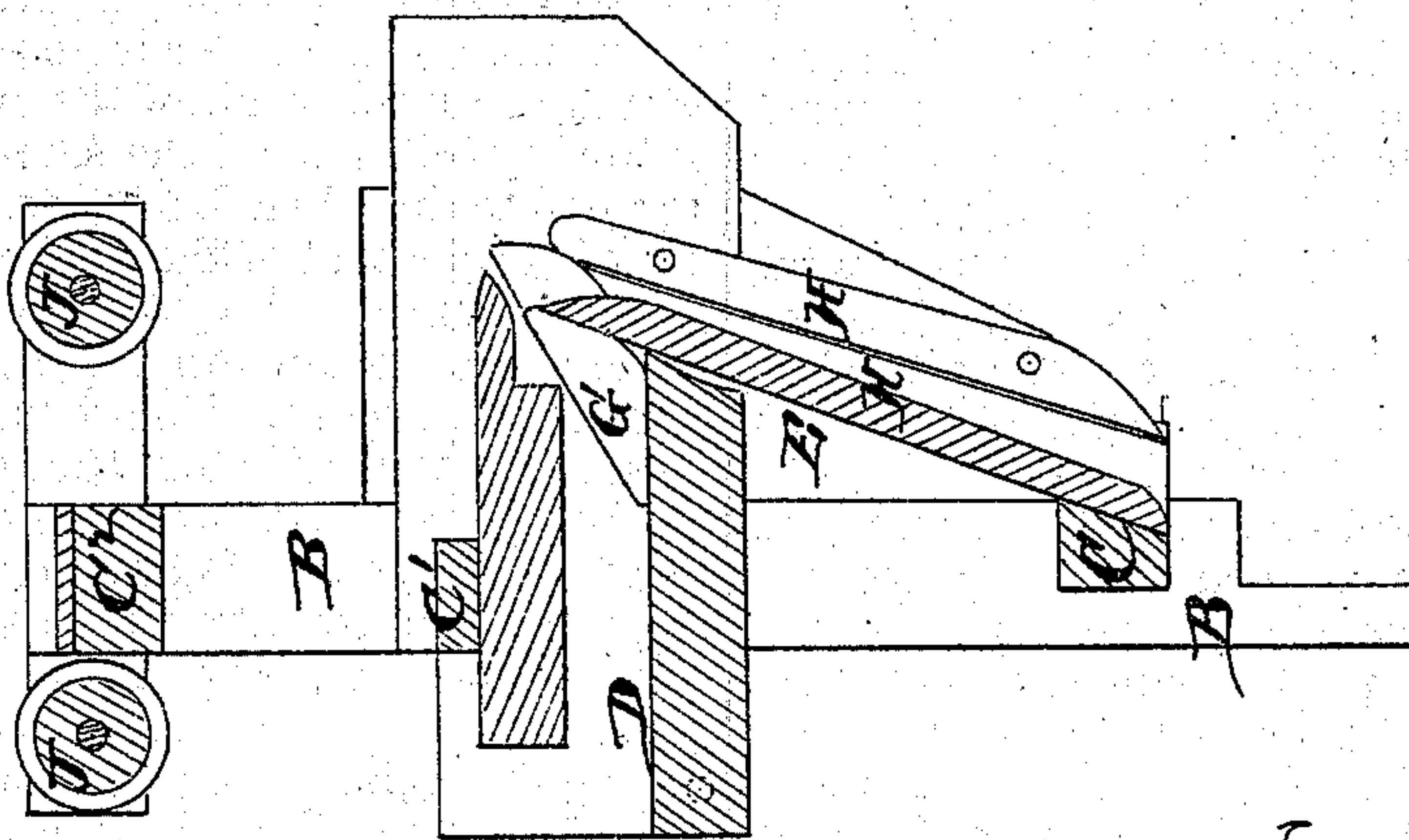


Fig. 3.



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# UNITED STATES PATENT OFFICE.

JAMES CURTS, OF OTTUMWA, IOWA.

## IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. 119,119, dated September 19, 1871.

*To all whom it may concern:*

Be it known that I, JAMES CURTS, of Ottumwa, in the county of Wapello and in the State of Iowa, have invented certain new and useful Improvements in Elevating Water from Wells or Cisterns; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing 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, 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 drawing, in which—

Figure 1 is a plan view, showing my device arranged for one and two buckets. Fig. 2 is a longitudinal vertical section, showing how my device is applied when the bucket is to be emptied below the windlass. Fig. 3 is a similar view of the bucket-guide and spout, showing the same applied to buckets emptying above the windlass. Fig. 4 is a side view of a device showing how the rope or chain may be turned at right angles, so as to place the windlass at any point away from the well. Fig. 5 is a side view, showing a modification of the brake represented in Fig. 2; and Fig. 6 is a side view of a roller or cylinder suitable for windlass.

A represents the well-house, within which the elevating mechanism is secured. B B are two parallel upright beams, connected by means of cross-bars C C<sup>1</sup> C<sup>2</sup>, placed suitable distances apart. Between the beams B B, and immediately below the cross-bar C<sup>1</sup>, is secured the spout D, the sides of which extend a suitable distance in rear of the beams, and have side pieces E E attached to them, which side pieces extend down to the lower cross-bar C. In the rear portion of the spout D, in an inclined plane, G, from the upper end of which to the lower cross-bar C pass a series of inclined slats, H, forming the bucket-guide. In the middle cross-bar C<sup>1</sup> is inserted a horizontal bar, I, the point of which extends above and in rear of the upper or rear edge of the incline G. The bucket, as it is drawn up, will be guided by the slats H until it strikes the bar I, when this bar causes the bucket to tip

and empty in the spout D, from whence the water may be carried by troughs or other suitable means to any point desired. In the upper cross-bar C<sup>1</sup> is a pulley-holder, with pulley J, over which the bucket-rope or chain *a* passes to the windlass K. This windlass is composed, as shown in Fig. 1, of two disks upon a square shaft, the disks being adjustable, so that they may be set for any amount of rope or chain to be used. Upon the same square shaft, near one end, are placed a smooth wheel, L, and a ratchet-wheel, M; or I may use a cylinder, N, for windlass, as shown in Fig. 6, said cylinder being provided with two series of ears or wings, *b b*, between which the rope or chain is to be wound, and a ratchet-wheel at one end. On one side, at the front end of the wheel-house A, is hinged a pawl, O, which works in the ratchet-wheel M, and on the inside of the upright beam B, on the same side of the well-house, is pivoted a lever, P, the rear end of which is shaped so as to fit and bear on the under side of the wheel L as a brake. To this lever is attached a post or pin, R, so that when the front end of said lever is forced down the pawl O will be raised to allow the bucket to pass down into the well, and at the same time the brake is applied to the wheel L so as to regulate the rapidity of the descent of the bucket. In place of this arrangement of pawl and brake I may use the arrangement shown in Fig. 5, which will answer the same purpose. This device, constructed as described, is used when the point of delivery is below the windlass and the windlass placed in rear of the spout. When, however, the point of delivery is above the windlass I use the modification shown in Fig. 3, the change consisting merely in having two pulleys, J J, in a bar placed at right angles with and upon the upper cross-bar C<sup>2</sup>. In this case the windlass will be in front of and below the spout. Two of these guides, spouts, &c., may be used with one windlass, side by side, as represented at the side of the well-house A in Fig. 1, so that two buckets may be used, one going up and the other down. When desired to place the windlass at a distance from the well the arrangement of pulleys shown in Fig. 4 is used, so that the rope or chain may be turned at right angles.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the spout D, incline G, sides E, inclined slats H, tipping-bar I, and one or more pulleys, J, all constructed and arranged within a single frame, substantially as and for the purposes herein set forth.

2. In a water-elevator, the arrangement upon one shaft of the windlass K, smooth wheel L, and ratchet-wheel M, in combination with the hinged pawl O, brake P, and bar R, all con-

structed and arranged substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of July, 1871.

JAMES CURTS.

Witnesses:

J. G. HUTCHISON,  
THOMAS K. SHEPHERD.

(118.)