J. Daykin,

Windlass Water Elevator.

No. 37,903. Patented Mar. 17, 1863.

Fig. 3.

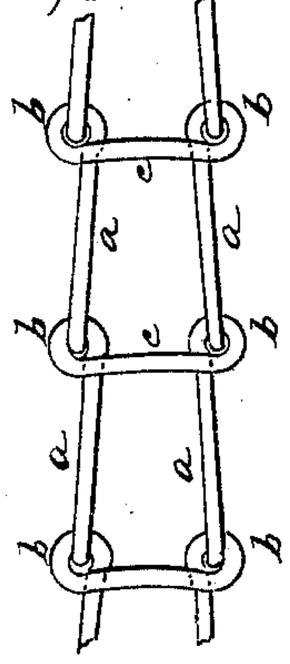


Fig. 4.

Fig. 5.

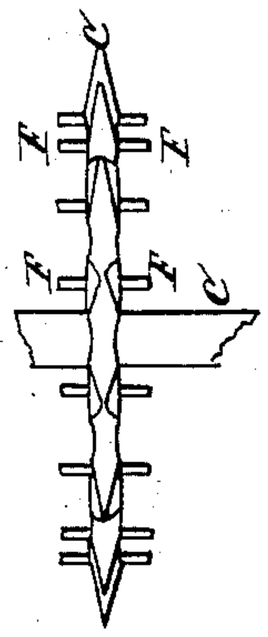


Fig. 2.

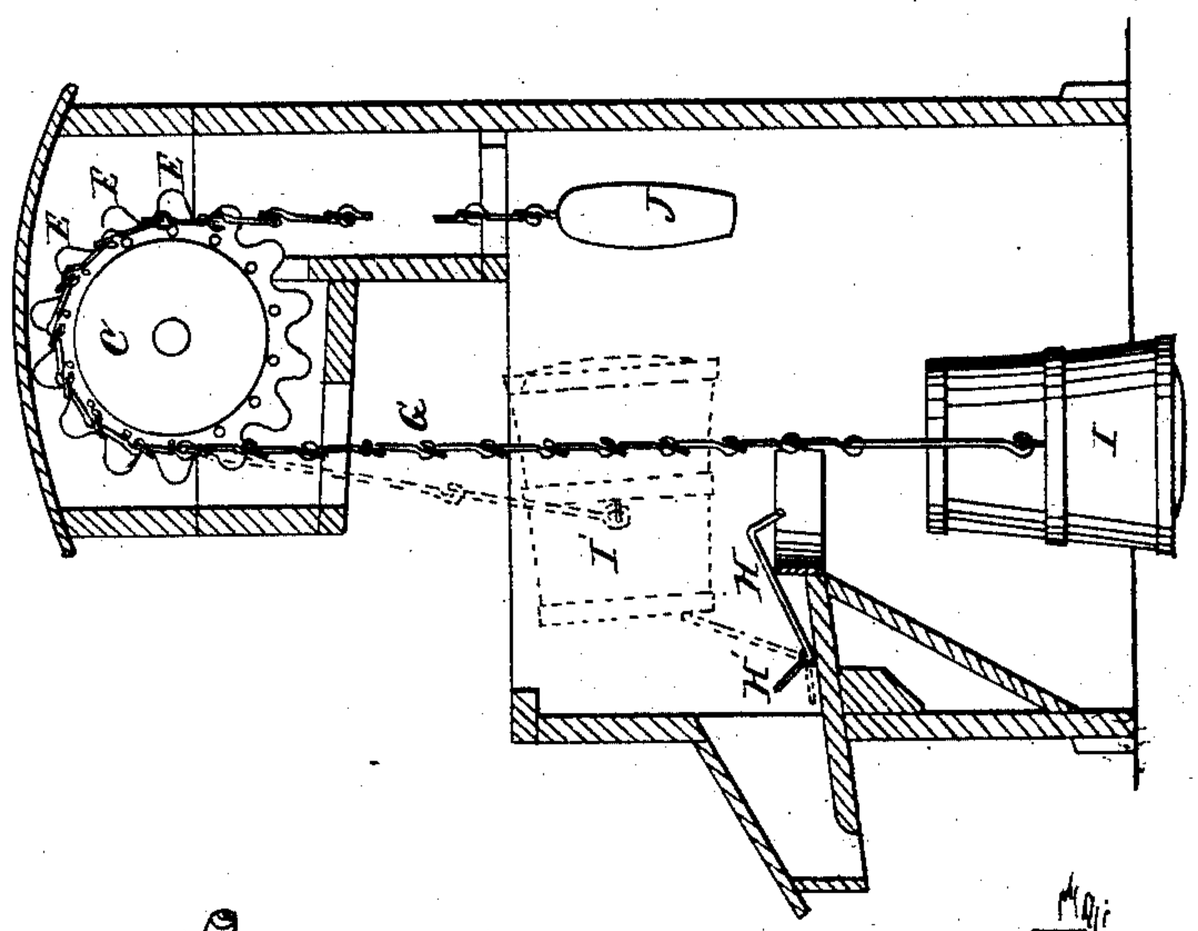
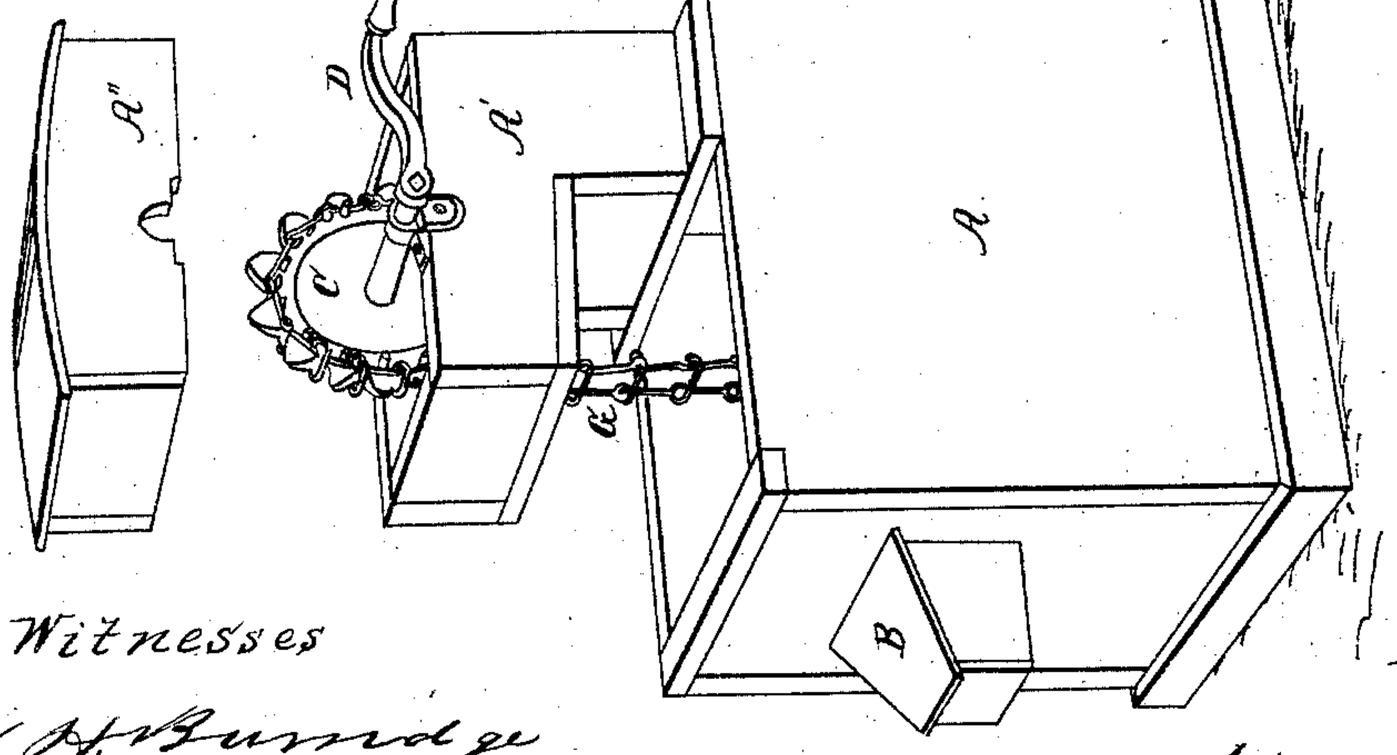


Fig. 1.



Witnesses

W. A. Burridge

Henry Poth

Inventor

James Daykin

UNITED STATES PATENT OFFICE.

JAMES DAYKIN, OF CLEVELAND, OHIO.

IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. **37,903**, dated March 17, 1863.

To all whom it may concern:

Be it known that I, J. DAYKIN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Water-Drawers; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view, Fig. 2 is a vertical section, and Figs. 3, 4, and 5 are sections representing the structure of the chain and wheel.

Like letters of reference refer to like parts.

The nature of my improvement relates to the structure of the chain, the form and structure of the wheel, and to the mode of tipping the bucket. The curb A is made in the usual form, with a stationary spout, B. At the side opposite the spout the curb is extended upward, as seen at A′. This elevation is surmounted by a cap, A″.

C represents a toothed windlass-wheel whose shaft C′ rests in boxes upon the top of the elevation A′. This wheel is rotated by means of a crank, D. The wheel C has upon its outer surface or periphery a series of cuniform projections or teeth, E, which pass between the links of the chain, hereinafter to be described. At the base of each of these teeth is a pin, F, projecting upon each side, the uses of which are hereinafter explained.

G represents a chain of peculiar construction and made of wire. Enlarged sections are seen in Figs. 3 and 4. Each link is formed from one piece of wire. The sides *a* are nearly parallel to each other. At *b* the wire is bent outward, forward, and inward, forming a complete ring or eye, as seen at *b* in Fig. 3, the middle portion of the wire crossing over from one to the other, as represented at *e*. The free ends of each link are turned into a close hook, which embraces the ring *b*, and are shut closely upon it, as seen at *d*, Fig. 4. The space bounded by the side pieces, *a a*, the transverse bar *c* of one link, and the transverse bar *c* of the adjoining link forms the space through which the teeth E of the wheel C pass. The middle of each link *a a*, therefore, rests upon the pins F, which prevents the chain from becoming wedged upon the cuniform projections E, and also prevents the bars *a a* from bending, and prevents the transverse bars *c* from wearing away by constant friction. The turn at *b* being a complete circuit, the two being connected by the bar *c*, the two rods *a a* can by no possible strain be brought into contact, but always preserve their proper distance from each other; consequently a lighter wire can be used than in any other form of flat chains. Upon the upper side of the spout, inside of the curb, is hinged a tipping-ball, H, which, when at rest, occupies the position seen in Fig. 2. As the bucket is drawn upward the flat chain causes the bucket to present the same side to the tipping ball H, and by causing the bucket I continually to ascend it is brought into the position shown by the dotted lines I′. A spur, H′, extends back from the hinge of the bail H, so that when the bucket descends into the well the bail H falls back to its original position. A counter-weight, J, is used to balance the bucket.

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

1. The flat chain, Figs. 3 and 4, when the links are formed by means of the rings or eyes *b b*, cross-bar *c*, rods *a a*, and hooks *d d*, arranged and operating substantially as set forth.

2. The herein-described windlass-wheel C, when constructed as specified, in combination with a flat chain arranged and operating as specified.

JAMES DAYKIN.

Witnesses:

W. H. BURRIDGE,

HENRY VOTH.