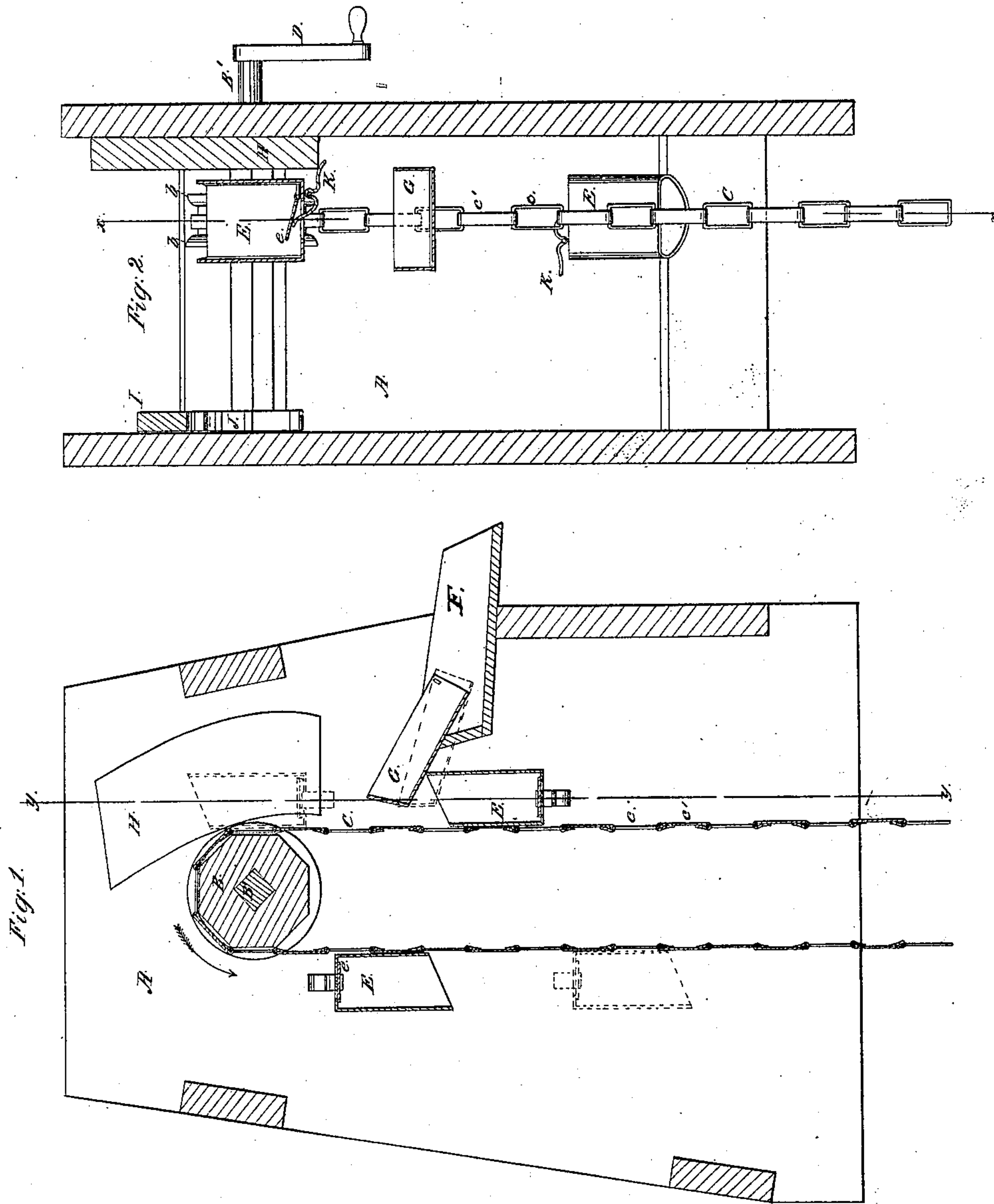


*H. Hawkins,*

*Chain Pump,*

*N<sup>o</sup> 38,679.*

*Patented May 26, 1863.*



Witnesses:  
*J. Shuttin*  
*R. H. Mayhew*

Inventor:  
*H. Hawkins*  
*By Thummo*

# UNITED STATES PATENT OFFICE.

HUGH HAWKINS, OF LOCK HAVEN, PENNSYLVANIA.

## IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. 38,679, dated May 26, 1863.

*To all whom it may concern :*

Be it known that I, HUGH HAWKINS, of Lock Haven, in the county of Clinton and State of Pennsylvania, have invented a certain new and useful Improvement in Water-Elevators; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical transverse section at *x x*, Fig. 2, of a well-curb with my invention applied. Fig. 2 is a vertical longitudinal section of the same at *y y*, Fig. 1, showing a different position of the buckets.

Similar letters of reference indicate corresponding parts in the two figures.

The subject of my said invention is a simply constructed device for elevating water to any required height and automatically discharging the same.

The invention consists in the combination of an endless chain, provided with one or more buckets of peculiar construction, with a trough pivoted to the main discharge spout or trough, and operating substantially as hereinafter described.

It consists, secondly, in a novel device for discharging the contents of said buckets.

To enable others skilled in the art to which my invention appertains to fully understand and use the same, I will proceed to describe its construction and operation.

A in the drawings may represent a well-curb of wood, brick, or other suitable material, erected at the mouth of a well, cistern, or reservoir.

B represents an octagonal pulley rigidly secured on a shaft, B'. Over this pulley works an endless chain, C. The pulley B may be rotated by means of a winch or crank, D, of common construction, on the end of shaft B'. The chain C is formed of links *c* and bars *c'*, of nearly equal length, being so constructed to conform to the octagonal or other polygonal shape of the pulley B.

E E are buckets or vessels for containing water, the front part of which, or the part whose top comes in contact with the pivoted trough, to be hereinafter described, is of semi-cylindrical form, and is formed with a slanting top, higher in front than at the rear. The back or hinder part of the bucket is made flat to adapt it to pass readily over the pulley,

and is so attached to the chain C as to prevent any obstruction being offered to the motion thereof in its passage over said pulley and enable it while ascending to retain a vertical or upright position upon the chain, until it comes in contact with the pivoted trough above referred to.

To retain the water in the bucket until the latter reaches the proper position in its ascent, and then discharge it automatically, the bottom of the bucket is provided with a large aperture, covered by a valve, *e*. The said valve closes by its own weight and that of the water upon it, until the bucket approaches its highest position, and is then raised by a lever, K, coming in contact with a cam-surface, H, on the side of the curb.

F is the discharge spout or trough.

G is an inducting-trough, loosely pivoted at its respective sides, near the front part thereof, to the inside of the trough F and projecting backward to a considerable distance, its rear end being in very close proximity to the chain C.

I is a pawl working into the teeth of a ratchet-wheel, J, in customary manner, to prevent the retrograde motion of the chain.

Operation: The shaft B' being rotated in the direction indicated by the arrow, the buckets are carried down within the well or cistern, and, being filled with water, are elevated by the continued motion of the chain C. Each succeeding bucket in its ascent comes in contact with the rear end of the trough G, which trough, being loosely pivoted to the trough F, as explained, is readily raised or elevated to a sufficient distance to permit the passage of the bucket. In raising the trough the bucket is tilted slightly forward, but being higher at the front than at the rear side, and otherwise formed as hereinbefore described, little or no water is spilt during the operation. When the bucket has passed the trough G, the latter, falling, resumes its normal position directly under the bucket. The bucket continues to ascend until it reaches the pulley B, and is about to pass over the same, when the end of the lever K, which is directly beneath the valve *e*, being forced upward by its opposite end striking forcibly against the cam-surface H, raises the said valve *e* and permits the water to fall down onto the trough G, whence it flows into the main trough or spout F and out at the mouth thereof. The flat back of the



bucket, resting on the edges *b* of the pulley B, secures the bucket against lateral deflection, and holds it securely in position for the operation of the lever.

The chain may be provided with any desired number of buckets, and thus a continuous stream of water caused to flow into and from the spout.

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

1. The combination of the angular or sprocket pulley B, chain C, buckets E, lever K, and

cam block H, all constructed and operating substantially as and for the purposes set forth.

2. The described combination of the hinged trough G, with the buckets E and trough F, for the purpose specified.

The above specification of my improvement in water elevators signed this 14th day of February, 1863.

HUGH HAWKINS.

Witnesses:

OCTAVIUS KNIGHT,  
JAMES H. GRIDLEY.