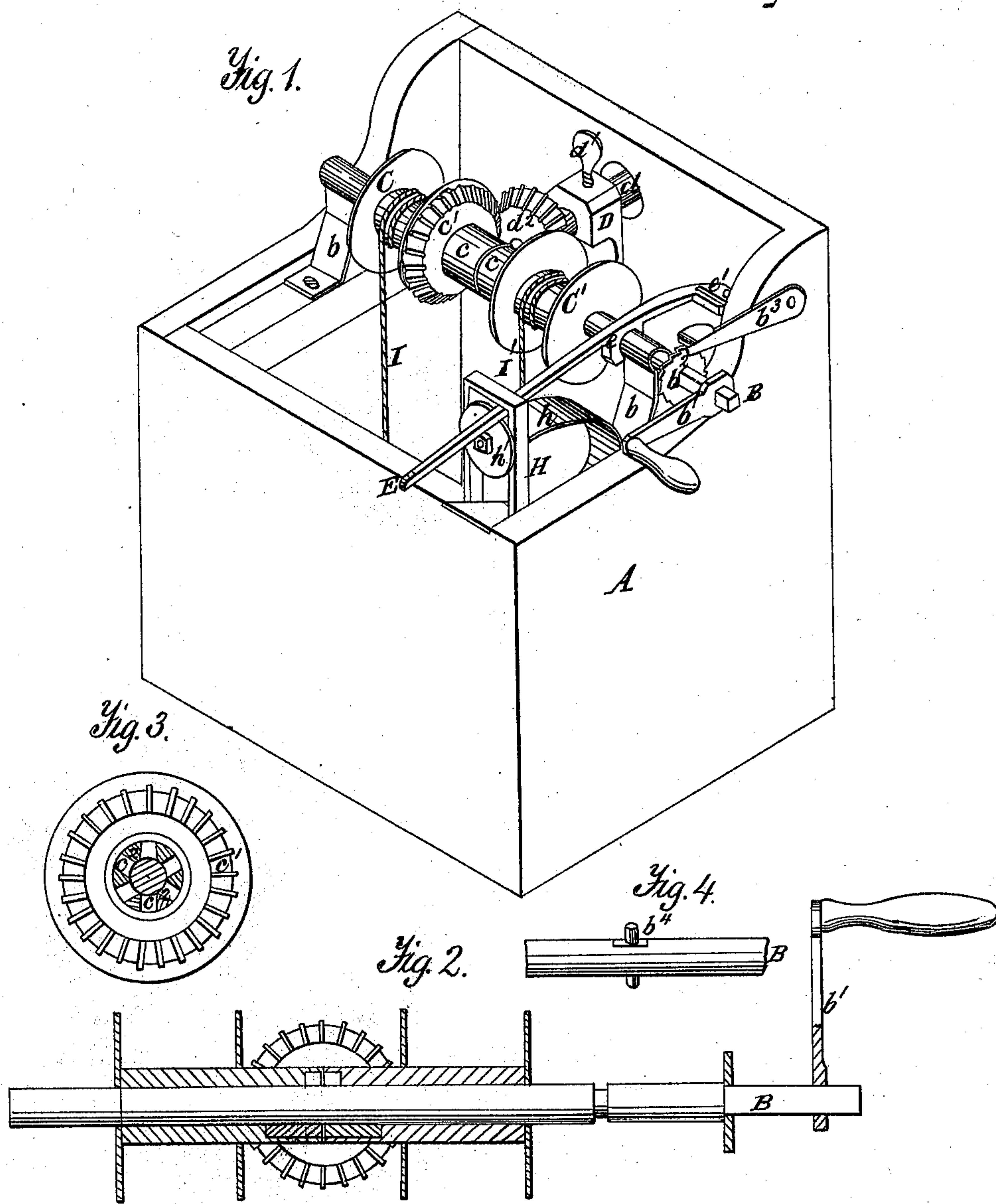


*J. Gruen,*  
*Windlass Water Elevator,*  
*No 81,494,* *Patented Aug. 25, 1868.*



*Witnesses.*  
*W. E. Humph.*  
*M. W. Beadle*

*Inventor.*  
*J. Gruen*  
*M. W. Beadle atty.*

# United States Patent Office.

JOSEPH GRUEY, OF KENDALLVILLE, INDIANA.

Letters Patent No. 81,494, dated August 25, 1868.

## IMPROVEMENT IN WATER-ELEVATORS.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOSEPH GRUEY, of Kendallville, in the county of Noble, and State of Indiana, have invented a new and improved Water-Drawer; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to an improved apparatus for drawing-water, which I call "The Imperial Water-Drawer," the novelty of which consists principally in certain devices whereby two or more buckets are made to ascend and descend alternately, without changing the direction of the revolution of the main shaft, as will be fully described hereinafter.

Figure 1 represents a perspective view of my invention, and

Figures 2, 3, and 4 represent views of different parts detached.

In the drawings—

A represents the well-curb, constructed in any suitable manner.

B represents the main shaft, supported in bearings,  $b$ , which is provided with crank  $b^1$ , and ratchet-wheel  $b^2$ , which latter engages with the pawl  $b^3$ .

$b^4$ , fig. 4, represents a short bar, inserted in a socket in the shaft B, at about its centre, from which project the pins upon each side, as shown.

C C' represent spools, placed loosely upon shaft B, to the inner side of each of which are attached the cylinder  $c$  and bevel-gear wheel  $c^1$ . Within each cylinder  $c$  is placed the bushing,  $c^2$ , which consists of a face-wheel with triangular projections, as clearly shown in fig. 3.

D represents a standard, situated in rear of the centre of the shaft B, and forming a bearing for the adjustable shaft  $d$ , which latter is regulated by means of the set-screw  $d^1$ .

$d^2$  represents a bevel-gear wheel, attached to shaft  $d$ , whose cogs fit accurately into the gear-wheels  $c^1$ .

E represents a lever, provided with the claw  $e$ , and pivoted at  $e^1$ .

Its free end is limited in its motion by the clevis H. The claw  $e$  rests in a groove in the shaft B, in such manner as not to interfere with its revolution.

H represents a clevis, within which is bent the spring  $h$ , as shown, which latter is provided at its free end with the wheel  $h^1$ .

It will be observed that the bearings  $b$  of the shaft B are so arranged as to hold the spools C C', and prevent any lateral movement, without interfering, however, with their free revolution. The shaft B, on the contrary, moves to a certain extent to either side, being operated by the lever E.

This lateral movement extends far enough to allow the pins of the bar  $b^4$  to engage with the projection of the wheel in either cylinder  $c$ , as may be desired.

I I' represent ropes, attached to spools C C', to which the buckets are attached.

From this description, the operation of my invention will be easily understood. The crank is always turned in the same direction.

If the lever E be moved to the left, the shaft B will necessarily be carried in that direction, and its pins will be caught by the projection in the cylinder  $c$  of wheel C, by which means the latter will be forced to revolve with the shaft. Motion is thus communicated to the gear-wheel  $d^2$ , and by it to the spool C', which latter is now loose upon the shaft B.

The buckets attached to spool C, therefore, ascend, and the buckets attached to C' descend. If the lever be moved to the right, the operation is reversed.

The pins of the shaft are caught by the projection in cylinder  $c$  of the wheel C', and the wheel C, therefore, becomes loose upon the shaft.

By this arrangement, when a bucket arrives at the curb full, it may be emptied and then returned to the well, the other bucket, in the mean time, ascending, simply by shifting the lever from one side to the other, the revolution of the shaft being continued.



The arrangement of the lever E is also especially desirable. The spring *h*, while serving to hold the lever firmly in place, readily yields when it is desired to shift it, in which latter operation the wheel *h*<sup>1</sup> very naturally assists, as it revolves with the lever as it is moved.

The different parts of the apparatus may be constructed in any suitable manner or of any suitable material.

I do not confine myself to the precise form here presented; for instance, any number of spools, ropes, or buckets may be used, if desired; also, two ropes to one bucket.

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

The water-elevator described, consisting of curb A, shifting-shaft B with bar and pins *b*<sup>1</sup>, loose spools C C' with gear-wheels *c*<sup>1</sup>, and cylinder *c* having the face-wheels *c*<sup>2</sup>, standard D, adjustable shaft *d* with gear-wheel *d*<sup>2</sup>, lever E, clevis H and spring *h*, with wheel *h*<sup>1</sup>, the whole being combined, arranged, and operated in the manner and for the purposes set forth.

This specification signed and witnessed, this 6th day of April, 1868.

JOSEPH GRUEY.

Witnesses:

N. TEAL,

N. L. SOUTHWORTH.