

UNITED STATES PATENT OFFICE.

J. S. BROWN, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. 44,593, dated October 11, 1864.

To all whom it may concern:

Be it known that I, J. S. BROWN, of Washington, in the District of Columbia, have invented a new and Improved Water-Elevator; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, making part of this specification, and representing a central vertical section through the entire apparatus, and also a side view of the bucket as it appears while drawing up.

My improvements may be applied to the common wooden windlass B, with a simple crank, *b*. The usual well-curb, A, requires no alteration except that its spout *a* sometimes may have to be changed in position to suit the position of the bucket D. In making new apparatus throughout, these parts are readily made to suit each other. The bucket D is also of any ordinary construction; but if it has no valve *f* at the bottom one has to be added, consisting of the common leather hinge and packing, with a lead or cast-iron weight upon it; and an ordinary conducting-spout, *g*, under the bottom conveys the water, as it comes through the bottom, to one side of the bucket; so as to direct it into the curb-spout *a*. The bail *d* of the bucket also may have any usual construction, and a simple rope or cord, C, to wind on the windlass is as good as anything else.

My first improvement consists in a simple curved link or rod, G, having an eye, *h*, at its upper end, into which the rope C is tied, and a similar eye, *i*, at the lower end, in which the bail *d* of the bucket hangs. This curved link is for the purpose of always bringing the mouth of the bucket-spout *g* next to the curb-spout *a* as the bucket comes up to discharge the water. This link is curved so as to fit the curve of the windlass, and is to reach around one-third of the circumference of the windlass, more or less, making it about five or six inches long for a windlass six inches in diameter. The link acts as a common chain-link while the bucket is ascending or descending, as seen in the lower representation of the bucket in the drawing; but when the link reaches the windlass, it matters not which way the bucket is turned, the hollow or concave side of the link will invariably turn to the windlass, and immediately bring the bucket-spout *g* toward the curb-spout *a*, as seen in the upper repre-

sentation of the bucket. The bucket comes up pretty close to the curb-spout *a*, but not so as to touch it, and rises high enough above the said spout to cause the water to flow down into it from the bucket-spout.

My second improvement consists in a piece of chain, *l*, or its equivalent, which, in connection with the curved link G, raises the valve *f* when the bucket rises to its full height, and thereby lets the water out of the bucket without any effort on the part of the person drawing the water. This chain is hung at the upper end into the upper eye, *h*, of the link, and at the lower end it is fastened to the top of the valve *f*. When the bucket is coming up, the chain hangs down straight, and is just long enough to allow the valve to shut close down on the bottom of the bucket, as seen in the lower view of the bucket in the drawing; but the moment that the bucket rises fully up, and the curved link fits around the windlass, the upper end of the chain also is caused to bend round the windlass, which takes up more of its length, and causes it to raise the valve *f* and let the water out, as shown in the upper view of the bucket in the drawing.

If it is desired not to lift the valve automatically in the act of drawing up the bucket into the right position for discharging the water, the chain or rod *l* may simply reach up to one edge of the bucket, and be held there by a staple or other means, and be provided with a ring or handle by which any one can reach it and lift it with the hand, and thus let the water out when desired, and all or only a part at one time.

There may be a heel, *n*, on a pawl or catch, H, which holds the windlass from turning back, so as to serve as a brake to bear against the windlass and prevent the bucket's going down too swiftly when the catch is lifted, so that it is not required to turn the crank back by hand in letting the bucket back into the well. A handle, *m*, is also conveniently added to the catch to operate it by. When the catch is raised out of the notches *p p* of the windlass, by continuing to draw back on the handle *m* with sufficient force, the heel-rubber *n* will bear against the surface of the windlass, and thus serve as a brake to let the bucket down gradually. The rubber *n* is widened, and may be covered with leather if desired.

There may be simple notches *p p* cut into the

end of the windlass for the catch H to take into, or an iron ratchet-wheel may be attached to the windlass. The catch may be made of wrought-iron or of malleable cast-iron. The curved link is made of round iron rod, and any small chain answers for the valve-chain.

These improvements are reduced to the utmost possible simplicity, and cost but a mere trifle. Their utility and convenience are very great.

The curved link G may be used for a tilting bucket by adding a single link like that of a common chain between its lower end and the bucket-bail, so as to allow sufficient motion to tilt the bucket after the curved link reaches the windlass. In this case the chain *l*, valve *f*, and bucket-spout *g* are dispensed with, and a

rod with a hook on the end attached to the curb in the proper position to catch one edge of the bucket and hold it so as to tilt the same.

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

1. The curved link G, constructed and operating substantially as and for the purpose herein specified.

2. The chain *l*, or its equivalent, operating in combination with the curved link G, or its equivalent, substantially as and for the purpose herein set forth.

J. S. BROWN.

Witnesses:

EDM. F. BROWN,

J. B. WOODRUFF.