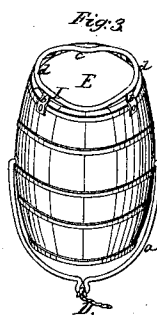
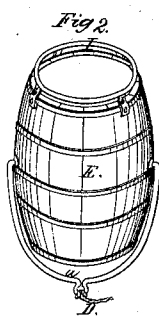
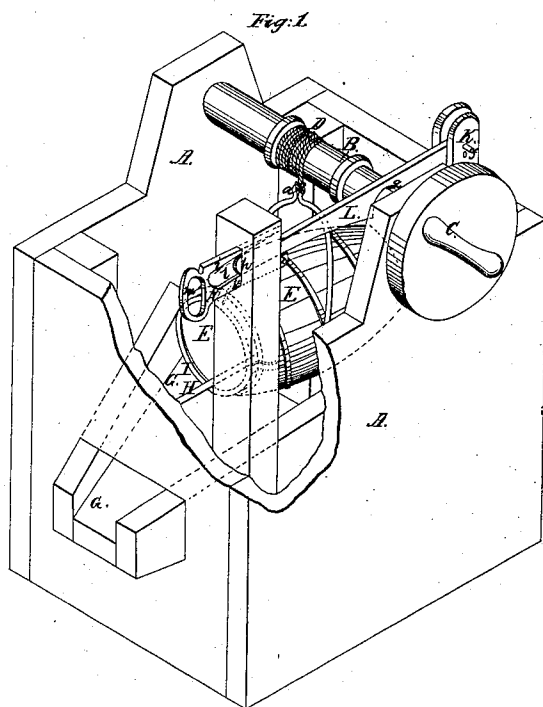


J. D. Squires,
Windlass Water Elevator,
Nº 30,893, Patented Dec. 11, 1860.



Witnesses:
Edw. H. Royce
Geo. H. Williams.

Inventor:
Jacob D. Squires,
by his attorney
R. F. Osgood.

UNITED STATES PATENT OFFICE.

JACOB D. SQUIRES, OF COLD SPRING, NEW YORK.

APPARATUS FOR RAISING WATER.

Specification of Letters Patent No. 30,893, dated December 11, 1860.

To all whom it may concern:

Be it known that I, JACOB D. SQUIRES, of Cold Spring, in the county of Putnam and State of New York, have invented a new and improved arrangement for tilting buckets and sustaining them at any desired point in raising water from wells; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, Figure 1 being a perspective view of a well curb provided with my improvements, a portion thereof being broken away to show the interior arrangement; Fig. 2, a perspective view of the bucket detached, and showing the ring secured thereto; Fig. 3, a similar view, showing a modification of the ring.

Like letters designate corresponding parts in all the figures.

A curb A, of ordinary construction is used, in which is mounted a windlass B, actuated by a winch C, and having a rope or chain D, winding on it, the lower end of said rope or chain being attached to the bail a, of the bucket E, in the usual manner. The curb is also provided with a spout G, over the inner end of which projects a tilting rod H, for tilting the bucket when it reaches the top of the well, substantially as shown in Fig. 1.

Various devices have before been employed for bringing the bucket to the proper position to be tilted on reaching the top of the well. In some of these, the bucket has been guided by wires anchored at the bottom of the well; in others, two ropes or chains have been used, being secured to the bucket in such a manner as to keep it from turning as it is raised; and others still have been employed, in which a band of hoop iron, or other similar article, is used in the place of the ordinary rope or chain. The great cost of such devices is an objection to their use. In my improved arrangement, but a single ordinary rope or chain is used, and the bucket is always brought to the proper position to be tilted, while the device is simple, cheap, and not liable to get out of order.

A ring I, of suitable diameter and size, and usually made of round iron, is secured to the top of the bucket by means of flanges or ears b, b, or in any other convenient manner, so that the ring can be easily detached from the bucket when desired. This ring

is usually raised a little distance above the top of the bucket, as represented, in order to avoid the accumulation of ice which collects about the bucket in cold weather. As the bucket is drawn up, this ring striking against the tilting rod H, causes said bucket to turn to the proper position to be tilted with the least possible friction.

Instead of making the ring plane horizontal, as above described, the two central opposite points c, c, thereof, on a plane with the vertical motion of the bucket in tilting, may be made depressed, or lower than the points d, d, at right angles thereto; and those portions of the rings between these raised and depressed points, may be gradually inclined, substantially as shown in Fig. 3. By this arrangement, when the ring strikes the tilting rod, near the bail of the bucket, or at any other point thereon, the bucket is always turned around to the proper position before it begins to tilt, and without any undue strain.

By the use of the arrangement above described, many important advantages are gained. But a single rope or chain is necessary, and that of the ordinary kind. The ring being made of iron, and perfectly smooth, friction is avoided to the greatest degree possible, and when it strikes the tilting rod, at any point of the ring, the slightest inclination of the bucket will cause said bucket to be turned to the proper position to be tilted. The ring also prevents the wear of the top of the bucket, which, being of wood, would soon be destroyed if it constantly came in contact with the tilting rod. Being removed from contact with the top of the bucket also prevents the accumulation of ice around the ring, an inconvenience that is experienced in most other self-tilting devices with which I am acquainted; the ice collecting over the top of the bucket, or the operating parts, being continually exposed to the water, freezing together so as to be very troublesome. The ring is also easily detached, so that when one bucket becomes useless it may be applied to another.

Instead of the ordinary ratchet wheel and pawl, used to prevent the windlass from running back in raising the bucket, I make use of the following arrangement: At a suitable position in the rear part of the well curb, is situated a standard K, to which is jointed a brake L, in any suitable manner, as shown at f. This brake extends forward over the

windlass B, a portion thereof being cut away as represented at *g*, to fit closely to the surface of the windlass; so that when said brake is pressed down, the friction will cause the windlass to turn harder. The forward end of the brake rests in a slot *h*, made through a standard M, extending upward from the well curb, said slot being made sufficiently large to also admit a sliding wedge piece N. This wedge piece is made with two projecting arms *i*, and *k*, having an intermediate space *l*, of suitable length and width to admit the end of the brake L. The end of the upper arm *i*, outside of the standard K, is of greater width than the inner end thereof, and the lower arm *k*, is made wedging in the opposite direction, so that as the wedge piece N, is pushed into the slot *h*, the brake bears on the windlass, and as it is drawn out, the brake is raised from it. The wedge piece N, is also provided with a suitable handle *m*, to receive the hand of the operator. The advantages of this arrangement over the ordinary ratchet wheel and pawl are, that in actuating the wedge piece N, the hand of the operator rests in the place it naturally would while the right hand is turning the winch, and the trouble of reaching over and ungearing the pawl from the ratchet wheel is avoided, the left hand retaining its hold of the wedge piece all the while. The bucket is sustained securely at any desired point in

raising, by merely pushing the wedge piece inward; and likewise, by the same action, the friction of the brake on the windlass is so easily regulated, that the bucket may be allowed to run down to the bottom of the well with safety, without the trouble of retaining the hold on the crank. In order to prevent the wear on the windlass by the brake, that portion which comes in contact therewith may be covered with a band of iron, or arranged in any other desirable manner.

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

1. The ring I, either plane or provided with the depressions *c*, *c*, attached to the bucket by ears *b*, *b*, or their equivalent, and leaving a space between the bucket and the ring, when the same is used in combination with the tilting rod H, substantially as herein set forth.

2. The wedge-piece N, provided with the wedge-shaped arms *i*, and *k*, and intermediate space *l*, the combination with the hinged brake L, acting on the windlass, substantially as herein described.

In testimony whereof, I have hereunto set my hand this 1st day of October, 1860.

JACOB D. SQUIRES.

Witnesses:

OLIVER TERWILLIGER,
ISAAC RIGGS.