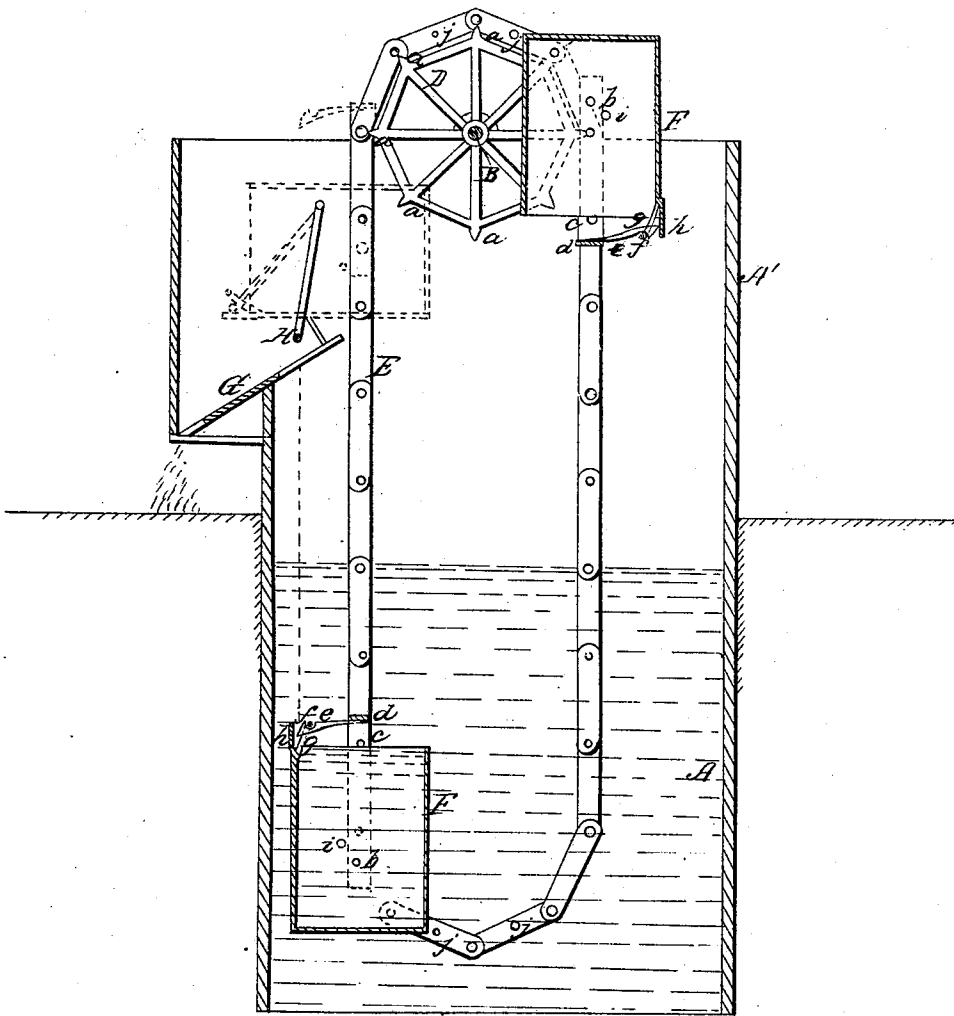


D. P. Farnham,

Chain Pump.

No. 16,535,

Patented Feb. 3, 1857.



UNITED STATES PATENT OFFICE.

D. P. FARNHAM, OF MILTON, WISCONSIN.

SELF-OPERATING DEVICE FOR TILTING BUCKETS IN RAISING WATER FROM WELLS.

Specification of Letters Patent No. 16,535, dated February 3, 1857.

To all whom it may concern:

Be it known that I, DANIEL P. FARNHAM, of Milton, in the county of Rock and State of Wisconsin, have invented a new and Improved Device for Raising Water; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, said drawing being an elevation of my improvement.

My invention consists in attaching buckets to two chains which pass over wheels attached to a shaft, the buckets being hung by pivots to the chains and so arranged, as will be presently shown and described, that the buckets are tilted as they reach the discharge spout, the water passing from the buckets into said spout. The buckets, after being tilted, assume their proper position and are secured in said position by a catch or fastening till they reach the proper point for being tilted.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents a well, and B, represents a framing on a curb A¹, a suitable distance above the well or its orifice. A crank is placed at one end of the shaft B, and two wheels D, are placed on the shaft B, one at each end. These wheels have notched projections or lugs *a*, on their peripheries to receive the links of endless chains E, which pass over the wheels D, one over each, the spaces between the projections being equal to the length of the links.

The chains E, extend nearly to the bottom of the well and are merely suspended therein, no drum or wheel being required at this point for the chains to pass around. To the chains E, two buckets F, are attached by pivots *b*, a pivot being secured to each side of each bucket and said pivots being fitted loosely in the ends of the opposite links *c*, one on each chain. The pivots are secured to the buckets nearer their lower than their upper ends and the ends of the links *c*, opposite to the ends in which the pivots *b*, fit, are connected by a cross tie *d*.

To the centers of the cross piece *d*, projecting wires or rods *e*, are attached, one to each cross piece, and a recess or notch *f*, is made in the outer end of each wire or rod in which a loop *g*, on the buckets catch. The wires or rods *e*, have a certain degree of elasticity so that the loops *g*, may spring the ends of the rods and pass into the recesses.

As the two wheels D, are rotated by turning the crank of the shaft B, the buckets F, pass down into the well at one side of the wheels and pass upward at the opposite side—as the buckets pass upward they are retained in a vertical position by the rods *e*, and loops *g*—and when the upper ends of the buckets reach a certain point above the discharge spout G, a projection or lip *h* on the buckets strikes against a pendent or swinging rod H, fitted within the framing or curb A¹, said rod H, throwing the loops *g*, free from the rods *e*, and the buckets then tilt, as shown in red, their upper ends inclining over the spout G, and the water escaping from the buckets into the spout. The buckets are prevented from tilting beyond, or much beyond, a horizontal position, by means of pins *i*, which are attached to the buckets just above their pivots *b*, and bear against the outer edges or sides of the links *c*. The links just behind those to which the buckets are attached have a pin *j* passing through them. These pins prevent the links of the chain from becoming entangled while making the turn at the bottom of the well.

As the buckets pass around between the wheels D, D, they assume an inverted position in consequence of the pivots *b* being near their bottoms and the loops *g*, pass over the rods *e*, and catch into the recesses *f*. The buckets are thus secured as they pass down into the well and around at its bottom and also remain secured while ascending filled with water till the projections or lips *h*, strike against the rod H, when the buckets are tilted, as previously described.

The above device is extremely simple, may be constructed at a small cost and is not liable to get out of repair.

I do not claim attaching buckets to end-

less chains for raising water for that is an old and well-known device, but

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

The fastening formed of the rods *e*, attached to the cross-pieces *d*, of the links *c*, and the loops *g*, on the buckets F, in combi-

nation with the pendent or swinging rod A, placed within the framing or curb A¹, the
10 above parts being arranged as described for the purpose set forth.

D. P. FARNHAM.

Witnesses:

H. G. GUNMAN,
W. G. HAMILTON.