C. W. L. Martine,

Chain Pump.

No. 84,293. Patented Nov. 24, 1868.

Fig. 2

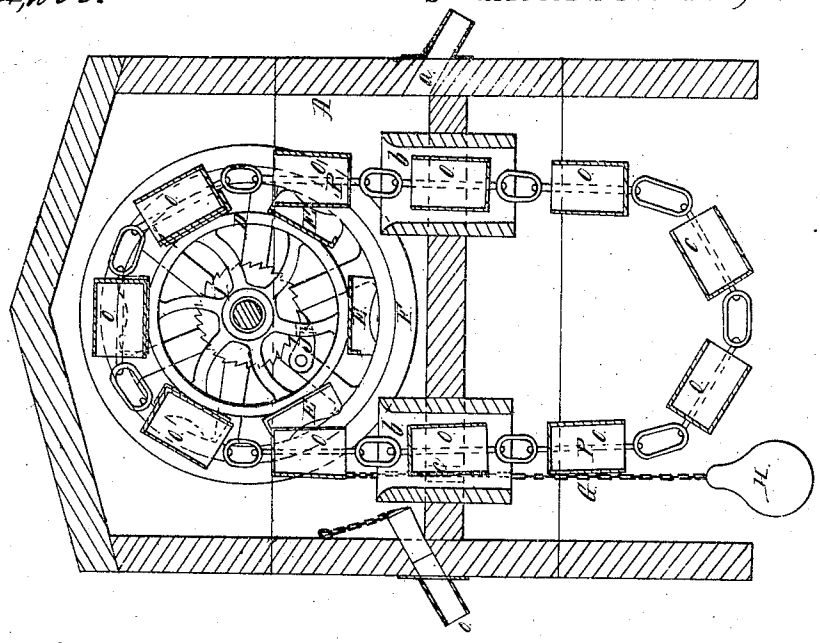

Fig. 3.

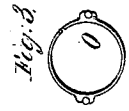

Fig. 1

Witnesses.
Gates Hollard
Ed. F. Condon

Inventor:
Columbus W. L. Martine
by Atkinson, Dana & Alter

United States Patent Office.

CORNELIUS W. L. MARTINE, OF SCOTCH PLAINS, NEW JERSEY.

Letters Patent No. 84,293, *dated November* 24, 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, CORNELIUS W. L. MARTINE, of Scotch Plains, in the county of Union, New Jersey, have invented, made, and applied to use, certain new and useful Improvements in the Construction of Water-Elevators; and I do declare that the following is a full, clear, and correct description of my invention, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side elevation of my improved water-elevator.

Figure 2 is a sectional view of the same.

Figure 3 is a top view of bucket used by me.

In the drawings, like parts of the invention are designated by the same letters of reference.

The nature of the present invention consists in certain improvements, as more fully hereinafter set forth, in the construction and operation of water-elevators.

The object of the invention is to cheapen the cost of manufacture, and to render the same more reliable in operation.

To enable those skilled in the arts to make and use my invention, I will describe its construction and operation.

A shows the box, or well-curb as it is termed by some, which may be made from wood, of any desired size.

This box I provide with an opening at each end, as at *a*, for the discharge of the water raised, which openings, when desired, may be closed by means of plugs, stoppers, or in any convenient way.

The box A has, also, inserted in it, the short tubes *b*, made just large enough to allow the buckets or cups to pass through the same, and an opening, *c*, through which passes the chain having the weight attached to it, as more fully hereinafter described.

B are boxes, secured upon the top or upper surface of the box A, to receive the shaft C.

C is a shaft, secured in the boxes B, upon which is placed about centrally the wheel D, provided with the lipped flanches E, to receive and carry the buckets or cups as they are raised from the well.

F is a grooved wheel, secured upon the shaft C, to which wheel F is attached a chain, G, provided with a weight, H.

Directly in front of this wheel F, upon the shaft C, is placed a ratchet-wheel, I, so positioned that the pawl J, secured upon the wheel F, will readily operate the same.

Upon the opposite end of the shaft C is placed a cog-wheel, L, gearing into a pinion secured upon the spindle M, to which is attached the crank or handle N, by which my water-elevator is operated.

O shows the buckets or cups, made of cast-iron, and having a longitudinal groove upon each side to receive the chain P.

This chain P is a continuous one, and is made up of a series of sections, connected together by means of the short links Q.

This chain is passed over the wheel D.

The apparatus is set in motion by turning the crank or handle N, by which motion is given to the shaft C through the cog-wheel and pinion, and to the wheel D, over which the chain is passed. By the revolutions of this wheel, the buckets or cups filled with water are elevated, and, as they are brought up, are received upon the lipped flanches, and held, as it were, upon the same, and, as they pass over the wheel, they empty the water carried by them into the box, and are returned to the well.

As soon as the operator releases his hold upon the crank, the pawl J catches into the ratchet-wheel I, and the weight of the water contained in the buckets being elevated will more than counterbalance the weight attached to the grooved wheel. The result is, that the buckets descend into the well, causing the shaft C to revolve, and thus giving movement to the grooved wheel F, and this movement is continued until the weight is brought up flush with the under side of the box, thus allowing the water contained in the buckets or cups to be removed from the effect of frost in the winter, and of heat in the summer.

It will be observed that the chain is a continuous one, encircling the buckets or cups; thus, both the chain and buckets are prevented from slipping.

The buckets are also independent of each other and of the chains, so that in case of accident or the breakage of a bucket, its place can be immediately supplied with a new one at small cost.

No fixtures are required at the bottom of the well, the buckets passing through the water by their own weight.

Having thus described my invention,

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

1. The chain P, and buckets or cups O, when combined, constructed, and operated, substantially as described for the purposes specified.

2. The combination of the chain P, buckets or cups O, ratchet-wheel I, pawl J, grooved wheel F, and weight H, constructed and operated substantially as shown, for the purposes indicated.

3. In combination with the subject-matter of the second claim, the shaft C, box A, and crank N, for the purposes set forth.

CORNELIUS W. L. MARTINE.

Witnesses:

A. SIDNEY DOANE,

GATES WILLARD.