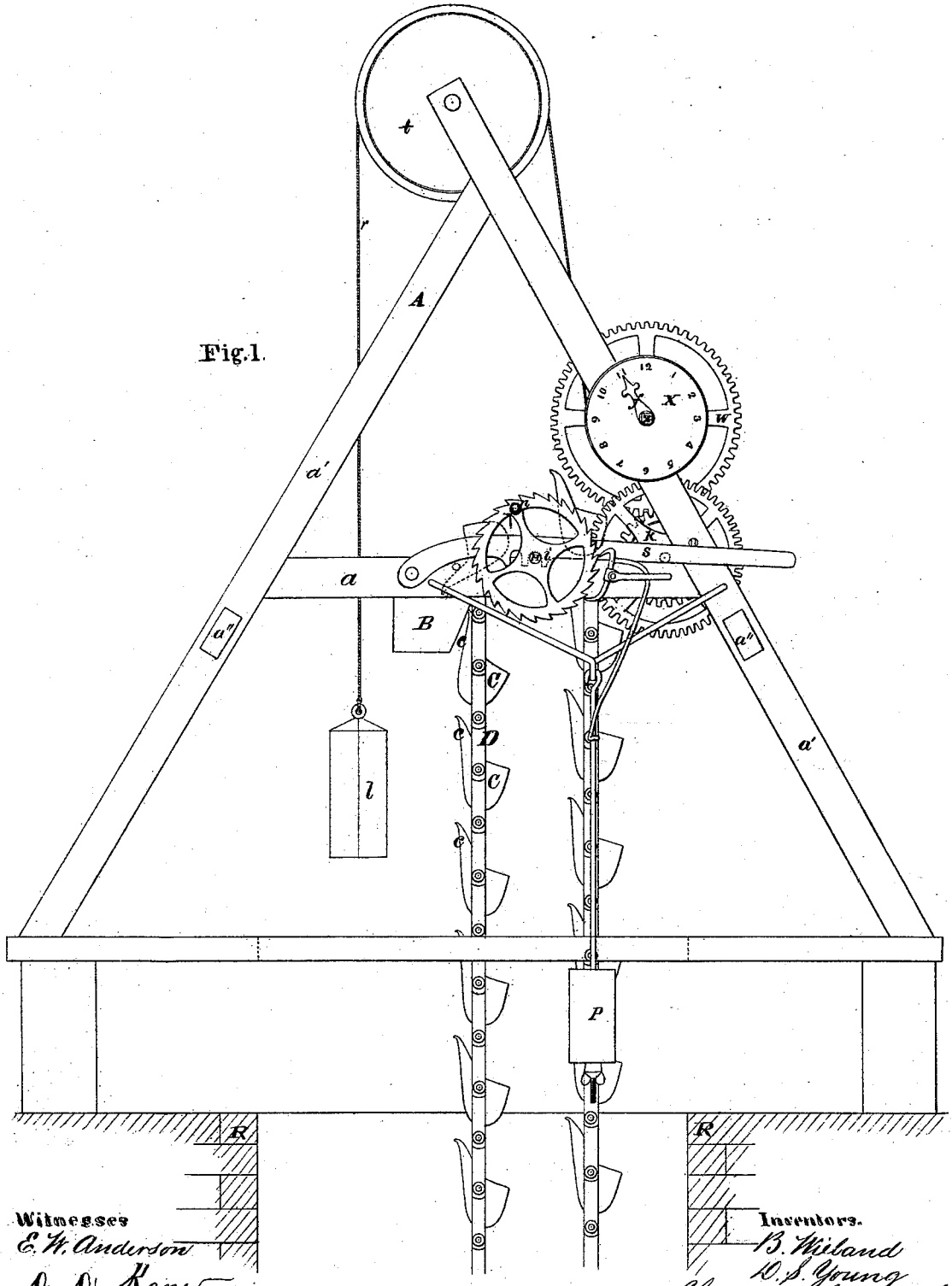
Wieland & Young,

2. Sheets. Sheet 1.

Chain Pump.

NO. 99,734. Patented Feb. 8. 1870.

Fig. 1.



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2. Sheets. Sheet. 2.

Wieland & Young,

Chain Pump.

No. 99734. Patented Feb. 8. 1870.

Fig. 2.

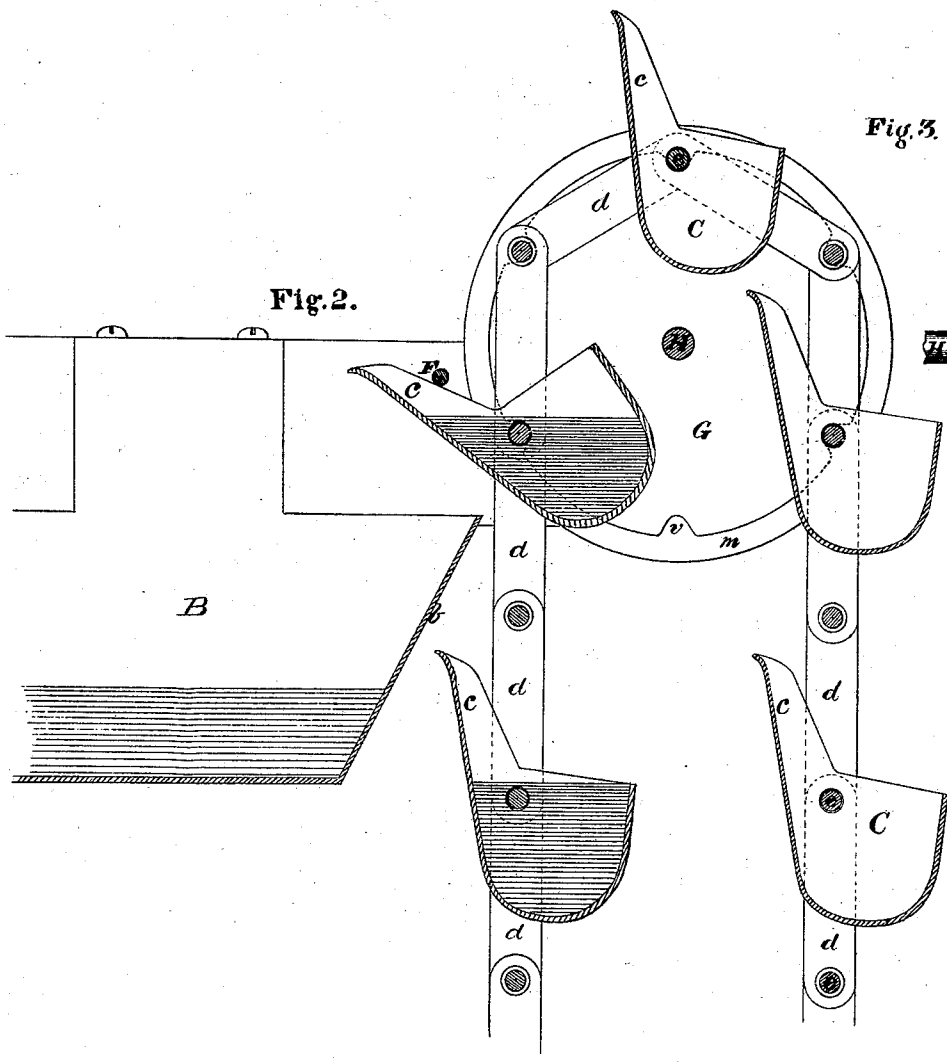
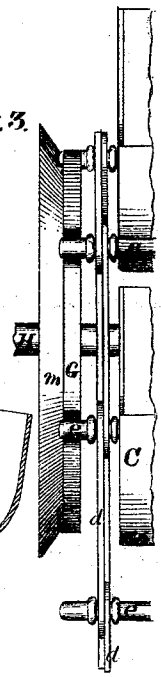


Fig. 3.



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BENJAMIN WIELAND, OF ONECO, ILLINOIS, AND DANIEL S. YOUNG, OF MONROE, WISCONSIN.

Letters Patent No. 99,734, *dated February* 8, 1870.

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 we, BENJAMIN WIELAND, of Oneco, in the county of Stevenson, and State of Illinois, and DANIEL S. YOUNG, of Monroe, Green county, Wisconsin, have invented a new and valuable Improvement in Water-Elevators; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a side view of my invention.

Figure 2 is a central vertical section of the same.

Figure 3 is a partial view, showing the flanched disk G.

Our invention has relation to means for elevating water, and consists mainly in the construction and novel arrangement of devices whereby a chain of pivoted buckets is raised from the well, and the contents thereof discharged automatically into the receiving-trough or tank.

Clock-work may be employed, as shown in the drawings, to turn the wheel over which the endless chain of buckets passes. For the same purpose, a hand-crank may be attached, or the elevator may be operated by steam or wind-power.

The letter A of the drawings designates the frame-work of the elevator, formed of eight pieces—four braces, *a' a'*, two ties, *a" a"*, and two cross-beams, *a a*—the whole being mortised and pinned together in a substantial manner.

B represents a tank, or the end of a receiving-trough, so formed that the side nearest the chain of buckets will flare, or have an inclination upward and outward. This flaring or inclined side has been lettered *b* on the drawings.

C designates the buckets, arranged to hang freely upon the rods or rungs *e*, which connect the sides of the ladder-chain D.

Each bucket has a lip or chute, *c*, formed upon the side next the tank B, made sufficiently long to keep the bucket engaged with the discharging-rod F, until its contents are entirely expelled.

D represents a ladder-chain, having a bucket pivoted on every other rung thereof.

These rungs or rods *e* serve also to connect the links *d d*, and are formed with a swell or band on each side of the links, to prevent the same from spreading.

The ends of the rods *e e* project outward on each side of the chain sufficiently to catch in the depressions *v v*, formed in the perimeters of the wheels or disks G G, fixed on the shaft H.

The disks G G are placed at the proper distance apart on the shaft, and are arranged with flaring guards or flanches *m m*, thereby keeping the ends of the rods *e e* always in proper position.

On the shaft H is fixed a spur-wheel, engaging with the wheel *k* of a system of clock-work operated by the weight *l* and the pendulum *p*.

The 'scape-wheel *i* is also fixed on the shaft H, and is provided with a handle, *n*.

The shaft H, with its wheels, can be disconnected from the system of clock-work at will, by means of the slots in the capping-bar *s*.

The weight-rope *r* passes over the pulley *t*, and is wound around a drum attached to the wheel *w*.

The clock-mechanism is wound up by means of a key applied to the square head of the shaft *z*, to which is also attached an indicator, *f*, arranged to register upon a dial, X, the number of buckets raised. The capacity of the bucket being known, the amount of water required can be elevated without ascending to the tank.

R designates the wall of a well, in section.

The operation of the elevating-mechanism is as follows:

The clock-work being wound up until the weight is at its highest elevation, the pendulum is set in motion, and the spur-wheel on the shaft H being in gearing, the buckets are drawn up from the well. As each bucket rises, it first comes in contact with the inclined face of the tank, and its projecting lip causes it to incline in the same direction, thereby forming a partial or imperfect chute for such water as may escape from the preceding bucket, throwing it into the tank. The bucket becoming still more elevated, the upper edge of the side *b* engages with the long face of the bucket, below the pivot, throwing this part thereof outward, and causing the projecting lip *c* to incline toward the tank sufficiently to become engaged with the discharging-rod F. Its contents are now emptied into the tank. The lip *c* passes from under the discharging-rod, and the bucket, recovering its upright position, passes over the wheel, and down into the well again. The weight should be arranged so that it will fall the length of the well, as far as the surface of the water. Experiment has shown that it does not require much weight to raise, in this manner, quite a quantity of water.

The operation can be stopped immediately by means of a sliding bolt attached to the frame, and arranged in a suitable position to be projected between the teeth of one of the larger wheels of the clock-gearing.

By means of the cam-face *b* and discharging-rod F, combined with the form of the bucket employed, a

great advantage is attained, in the fact that the full buckets are only required to be elevated sufficiently to discharge their contents into the tank, whereas, in similar elevators heretofore employed, it has been necessary to carry the water over the wheel.

Attention may be here directed to the fact that none of the water raised by my elevator will fall back into the well, the discharging devices being so arranged is to prevent loss.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In combination with the pivoted bucket C, provided with an elongated lip, *c*, the tank or trough B, having cam-face *b* and discharging-rod F.

2. A ladder-chain, D, arranged to carry a series of water-buckets, C, in combination with the notched disks G, having flanches or guards *m*.

3. The registering water-elevator, herein described, operated by clock-work, and provided with an endless chain, D, of pivoted buckets C C, arranged to discharge their contents before passing over the wheel.

In testimony that we claim the above, we have hereunto subscribed our names in the presence of two witnesses.

BENJAMIN WIELAND.

Witnesses as to BENJAMIN WIELAND:
J. M. HYNE,
R. A. MORRIS.

DANIEL S. YOUNG.

Witnesses as to DANIEL S. YOUNG:
WM. C. FILLEBROWN,
LEWIS ROTE.