

N. ADAMS.

Improvement in Water-Elevators.

No. 128,091.

Patented June 18, 1872.

Fig. 1.

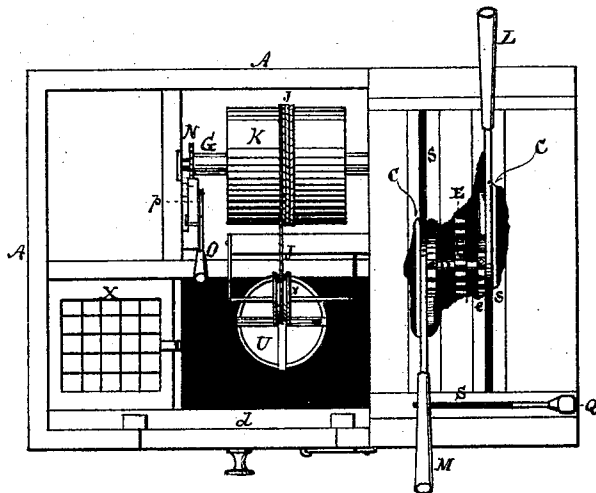
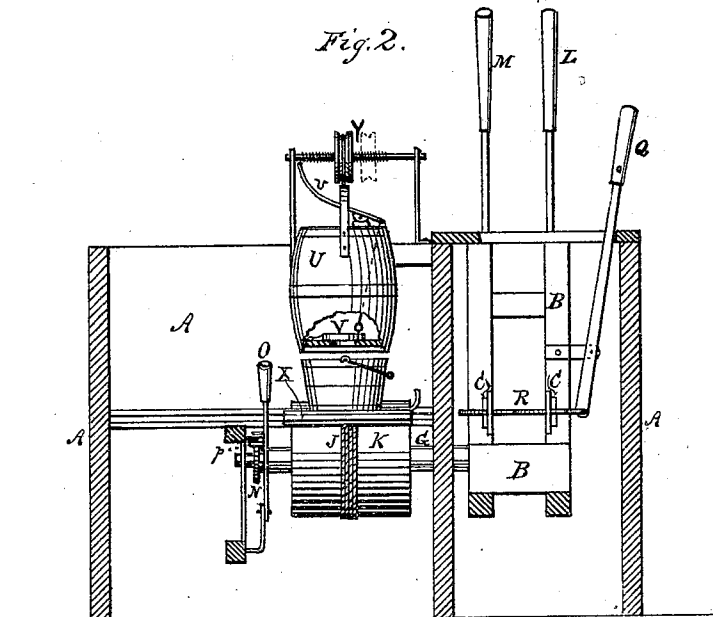


Fig. 2.



Witnesses:

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E. R. Brown

Inventor:

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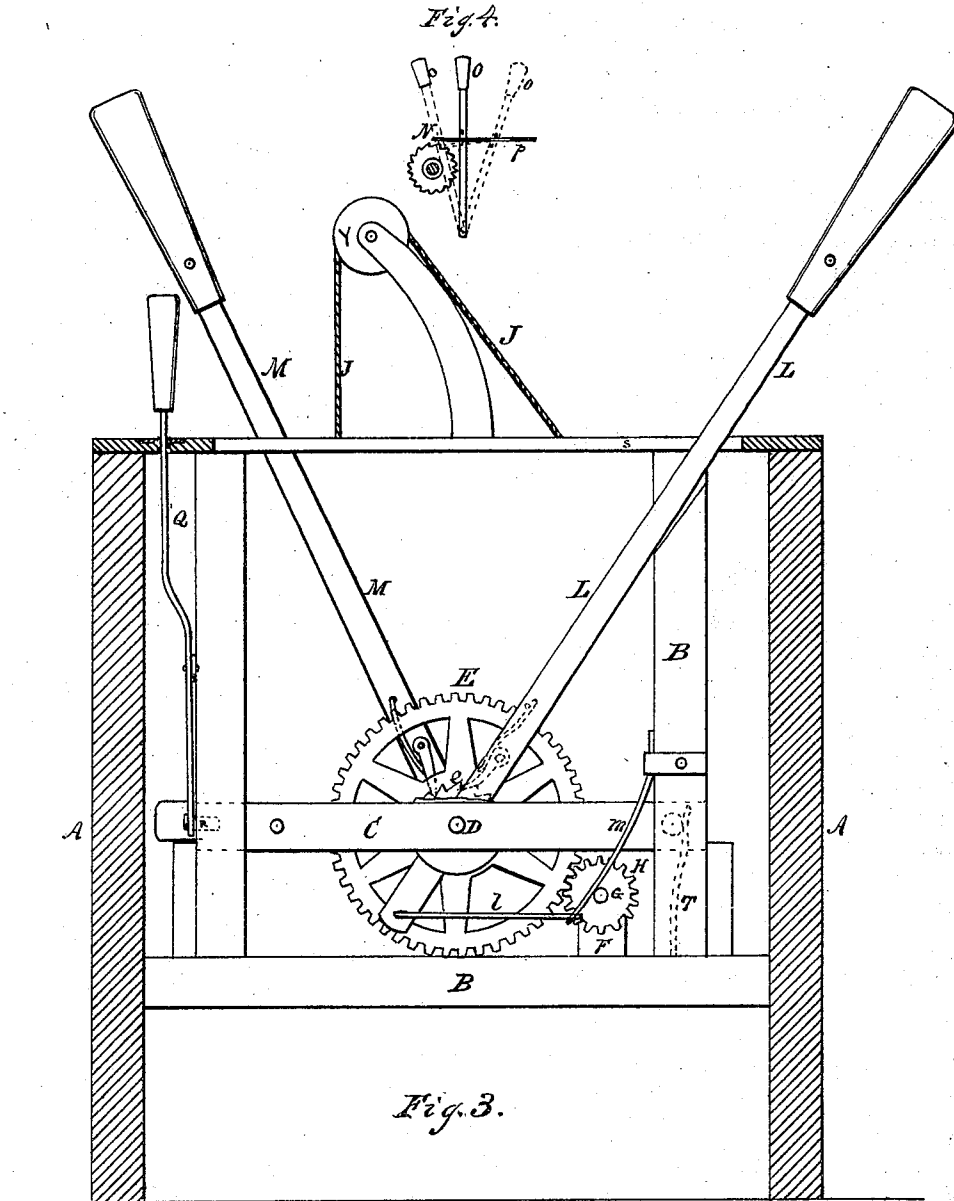


Fig. 4.

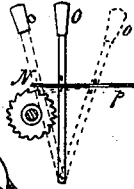
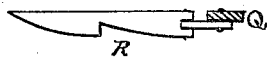


Fig. 5.



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UNITED STATES PATENT OFFICE.

NELSON ADAMS, OF IOWA CITY, IOWA.

IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. 128,091, dated June 18, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, NELSON ADAMS, of Iowa City, in the county of Johnson and State of Iowa, have invented a new and useful Improved Water-Elevator; and I do hereby declare that the following is a full, clear, and exact description thereof, sufficient to enable those skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, in which—

Figure 1 is a top view of my invention. Fig. 2 is a side view, partly in section. Fig. 3 is an end view, partly in section. Figs. 4 and 5 are detached views, hereinafter particularly referred to.

My invention relates to an apparatus particularly designed for raising water from wells, &c., but it may be used as a hoisting apparatus for general purposes by changing some of the parts. It consists in the peculiar construction and arrangement of parts, as hereinafter particularly described.

In the drawing, A represents a box or casing surrounding the working parts. It is provided with a lid or cover and with doors at the sides, one of which is shown at *d*. A portion of the cover is either hinged or made so as to be readily removed, and the remaining portion is secured to the casing and has slots *s* formed in it for the purpose hereinafter described. Attached to the inside of the casing A, near one end, is a frame-work, B, in which two rails, C, are arranged so that they may be made to slide longitudinally. In the rails C a shaft, D, is journaled, to which a continuous rotary motion may be imparted by means of alternately-acting levers L M, provided with pawls *a a* to engage with the ratchets *e e*, located upon said shaft. The gear-wheel E is placed upon the shaft D to transmit the motion of said shaft to other mechanisms, as hereinafter described. Attached to the lower part of the frame-work B is a standard, F, in which is journaled a shaft, G, carrying a pinion, H, near one end, the other end of said shaft extending nearly to the opposite side of the casing A, where it is journaled, and carrying a cylinder, K, for winding up the rope J, which passes over a pulley, Y, journaled in standards projecting above the top of the casing. The upper por-

tions of the levers L M work in the slots *s* in the cover and are provided with suitable handles. Both of said levers have their fulcrums on the shaft D, but the lever L extends a short distance below said shaft, and its lower end may be connected with the rod *l* attached to a spring, *m*, which is secured to the frame B, and which, being flexed by said lever at each return-stroke thereof, serves to increase the power and assist in the operation thereof. The shaft G has at one end a ratchet, N, which engages with a pawl, *p*, and holds said shaft stationary during the time when the wheel E and pinion H are out of gear. The pawl *p* may be thrown out of engagement with the ratchet N by means of a lever, O, as shown clearly in Fig. 4, so as to allow the shaft to revolve freely in either direction. When the lever O is thrown forward to raise the pawl *p* it may also be forced against the shaft G, so as to act thereon as a brake to prevent the too rapid revolution of said shaft. The gear-wheel E and pinion H may be thrown in and out of gear by means of the lever Q pivoted to a projection on the frame-work B and actuating a wedge-shaped sliding bolt, K, (see Fig. 5,) which passes through slots in the rails C C, (see Fig. 2,) near their front ends outside of the frame-work B. By moving the lever Q in one direction the wedge-shaped bolt R is forced into said slots and the rails C are made to slide forward and throw the wheel and pinion into gear, the motion in the opposite direction, to throw said wheel and pinion out of gear, being accomplished by a spring, T, shown in dotted lines in Fig. 3, when said wedge-shaped bolt is withdrawn. When thrown out of gear the pinion H and shaft G may revolve freely. The bucket U is provided with a valve, V, in the bottom, operated by a lever, *v*, so that the bucket need not be tilted to discharge the water, but, by placing a pail or other receptacle under the bucket and opening the valve, the water is discharged into the pail. A grating, X, is arranged to slide in the front part of the casing so that the pail may rest upon it when the water is discharged from the bucket. The surplus water will fall through the grating back into the well. The pulley Y, over which the rope J passes, may be journaled in standards projecting over the well; but to cause said rope

to lead properly upon the drum \bar{K} , I make said pulley to traverse in a lateral direction as it revolves by mounting it upon a screw-bearing.

Having described my invention, what I claim as new is—

1. In combination with a rotating shaft, D, provided with ratchets $e e$, the alternately-acting levers L M with pawls $a a$ engaging with said ratchets, respectively.

2. In combination with the lever L and the shaft and mechanism operated thereby, the spring m and connecting-rod l , co-operating with the applied power, substantially as shown and described.

3. The lever Q, provided with the wedge-shaped bolt R, combined with the sliding-rails C and spring T, as set forth.

4. Combined with the shaft G, ratchet N, and pawl p , the lever O, arranged to raise said pawl from its engagement with said ratchet and also to act as a brake for said shaft.

5. The bucket-receiving grating X, arranged as shown and described, for the purpose specified.

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Witnesses:

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