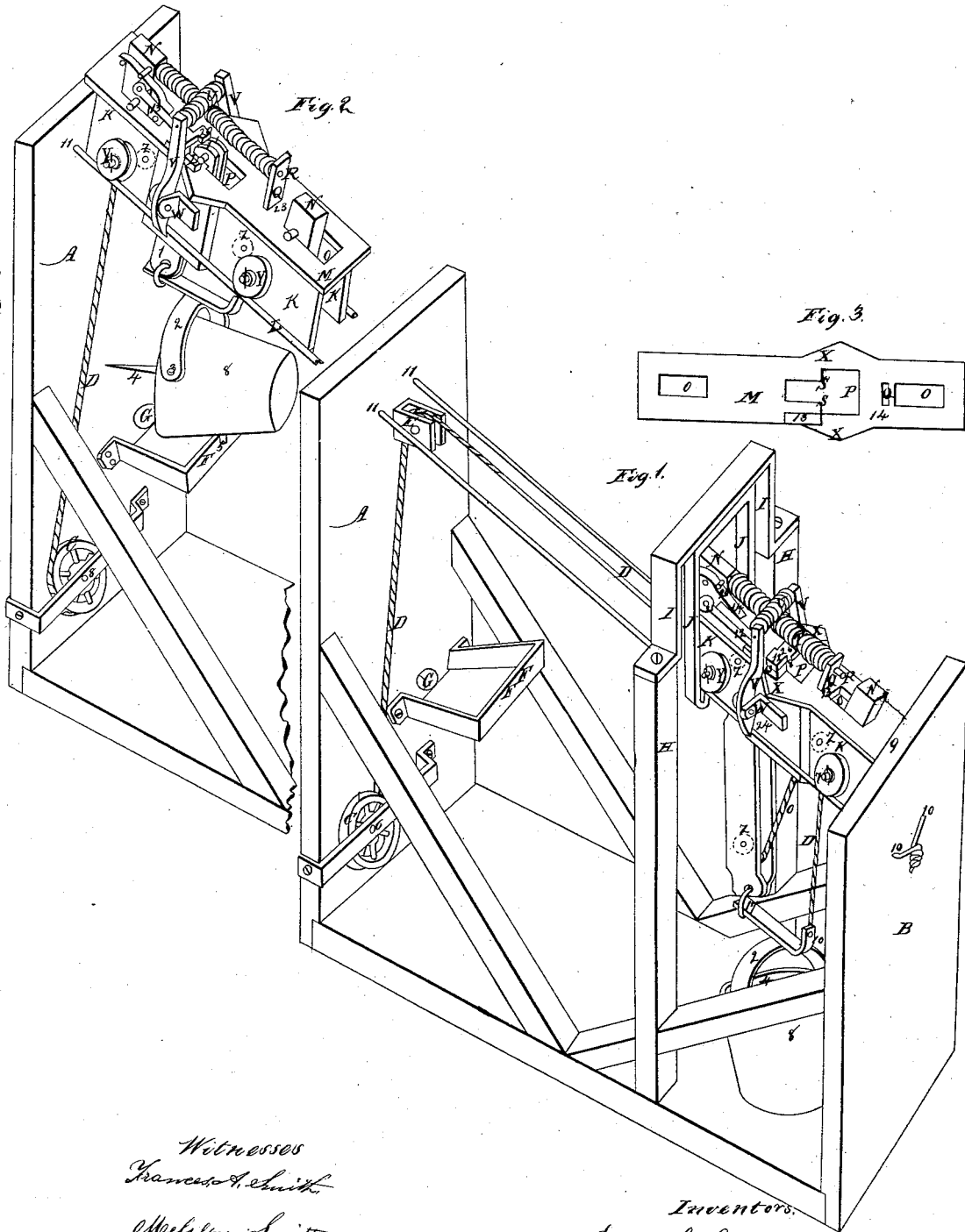


*Smith & Walling,
Windlass Water Elevator.*

No 35,183.

Patented May 6, 1862.



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UNITED STATES PATENT OFFICE.

DANIEL C. SMITH AND WILLIAM P. WALLING, OF ADRIAN, MICHIGAN.

IMPROVEMENT IN WATER ELEVATORS AND CONVEYERS.

Specification forming part of Letters Patent No. 35,183, dated May 6, 1862.

To all whom it may concern:

Be it known that we, DANIEL C. SMITH and WILLIAM P. WALLING, of Adrian, county of Lenawee, and State of Michigan, have invented a new and useful Improvement in Machines for Raising and Conveying Water from Wells and Springs to the House or Place Desired; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and letters of reference marked thereon.

This invention relates to a certain improvement in that class of water elevating and conveying machines in which the buckets or pails are connected to carriages that run on inclined wires or ways from the well or spring to the place desired, the wires being suspended by suitable shores.

Figure 1 of the accompanying drawings is a perspective view exhibiting the several parts—viz., posts A and B, windlass C, shaft 6, rope D, sheave E, sink F, spout G, posts H H, girt I, shores J J, carriage K, wires L L, plate M, blocks N N, slots O O, slot P, post Q, rod R, shoulder S, spring T, spring U, clamps V V, inclined planes X X, wheels Y Y, sheaves Z Z Z, pawl 12, catch 13, spring 14, tackle-block, (seen at the numeral 1,) bucket 8, its cover 4, and bail 2. Fig. 2 is a perspective view exhibiting parts that cannot be clearly seen in Fig. 1—namely, shoulder S, lug 18, rod 3, and pin 5. Fig. 3 exhibits the plate M removed from the carriage K for the purpose of explaining the slot P and catch 13 more clearly than can be done in Figs. 1 and 2.

The windlass C is attached to post A by means of its shaft 6. On the opposite end of said shaft is a crank attached, said crank being omitted in the drawings. The wires L L are attached to post A at 11 11, and on post B at 10 10 the rope D is attached to the windlass C, passing from thence around the sheave E and sheaves described by the dotted lines Z Z Z and attached to bail 2 at 16, thereby attaching the bucket 8 to carriage K by means of block 1, and the wheels Y Y, which are four in number, are attached on opposite sides of carriage K by means of their axles 7. The peripheries of said wheels are grooved to admit of their running on the wires L L. The bail 2 is attached to the bucket 8 by means of the

rod 3, said rod being firmly attached to the cover 4. (Seen in Fig. 2.) By reference to Fig. 2 it will be seen that the carriage is constructed of two pieces, (marked K K,) said pieces being held apart by means of blocks N N, the whole being riveted together, thereby leaving room between said pieces sufficient to admit of the sheaves described by the dotted lines Z Z. The clamps V V are attached to the opposite sides of carriage K by means of their pivots W, with their lower ends extending below the wires L L. The spring U is attached to the upper end of said clamps.

By reference to Fig. 3 it will be seen that the slot P is much wider at one end than at the other, which is to admit of the lug 18 (seen on the upper end of block 1 in Fig. 2) to pass through said slot, while the other end of slot is contracted to a suitable width to admit of the block 1 to pass between the shoulder S, as seen in Fig. 2. The pawl 12 is pivoted to post N at 21. The spring 14 is attached to the same post at 22. The catch 13 is firmly held or attached to plate M with one of its ends in range with the shoulders S S, as is seen in Fig. 3. The post Q is firmly attached to the plate M at 23. The spring T is attached to the post Q and block N by means of the rod R, that plays through the holes in the top of said block and said post.

We will describe the operation of our machine as follows: When the operator wishes to draw a bucket of water from the spring or well, he lets go of the crank heretofore described, which is attached to the farther end of shaft 6, which in turn leaves the windlass C free to revolve with said shaft, by which means the carriage K is liberated from its position, as seen in Fig. 2. The force of its gravitation causes the said carriage to descend the wires L L until the carriage K runs over the well or spring, at which point post B is struck at 9 by the end of plate M. The momentum acquired by the descent of carriage K on the wires L L causes plate M to move longitudinally sufficient to force the shoulder S from under the lug 18, at the same time contracting spiral spring T, that surrounds rod R between block N and post Q. Simultaneous therewith the inclined planes X X are forced between the tops of clamps V V under spring U, forcing apart the tops of

clamps V V and oscillating said clamps on pivots W. Only one of said pivots can be seen in the drawings, one being opposite pivot W on carriage K. When the tops of said clamps are forced out, the bottoms pinch the wires L L and force them firmly against the sides of carriage K at 24, thereby fastening the carriage K stationary over the well or spring while the bucket 8 is passing into the well or spring by its own gravity. The plate M, as seen in Fig. 1, is held in position by means of pawl 12 and catch 13. Then to raise the bucket from the well or spring the operator turns the crank on shaft 6, which in turn revolves windlass C, which in turn raises the bucket 8 by means of the rope D winding around windlass C. Then when the bucket is raised up the top of block 1 strikes pawl 12 at 26, and raises said pawl until it is liberated from the catch 13, leaving spring T free to force plate M, by means of post Q, back to its former position. As the plate M moves back, it withdraws inclined planes X X from between the tops of clamps V V, thereby leaving spring U free to contract the tops of clamps V V, forcing the bottoms of said clamps free from the wires L L, leaving the carriage K free to be drawn by rope D, as seen in Fig. 2. Thus it can be seen that the clamps V V perform a twofold office—viz., acting as guides while the carriage K is

ascending or descending the wires L L; secondly, acting as clamps to fasten the carriage K firmly over the well or spring while the water is being raised therefrom. As the rope D is wound on windlass C, the carriage K ascends the wires L L, carrying with it the bucket 8 by means of lug 18, resting on shoulder S, as seen in Fig. 2, until the sink F is struck by the lower part of bucket 8. Pin 5 on said bucket catches on sink F, and causes bucket 8 to tilt on rod 3 as the carriage advances and discharge its contents in sink F and to pass through spout G.

After having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, with carriage K, of the plate M, arranged to work in joint operation with spring T, pawl 12, incline planes X X, clamps V V, and lug 18, for the purpose set forth.

2. In combination with the foregoing, the bail 2, rod 3, and cover 4, connected together, as described, and for the purpose specified.

DANIEL C. SMITH.
WM. P. WALLING.

In presence of—

WM. S. GREENLY,
WM. H. GREENLY.