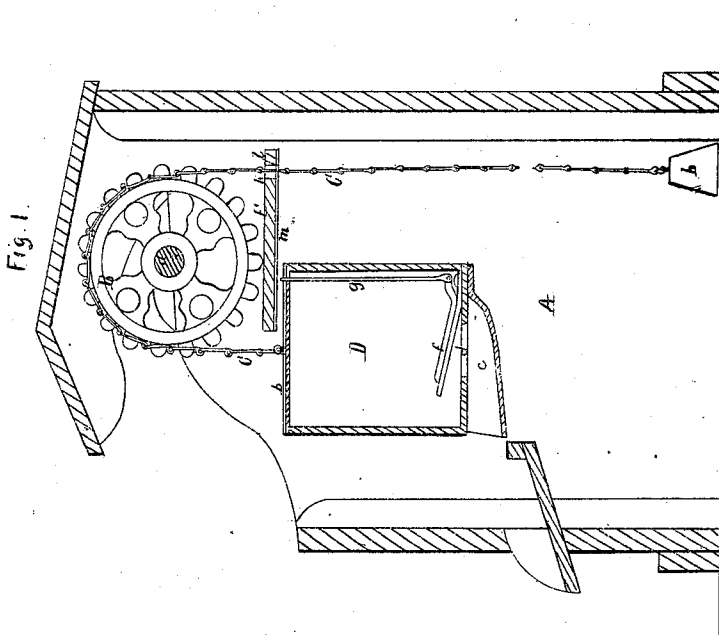
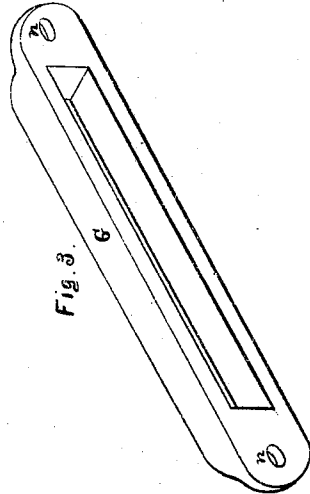
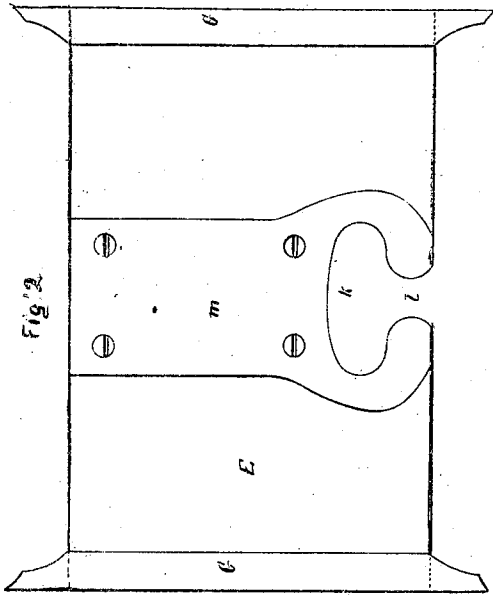


*M. C. Bignall.*  
*Water Elevator.*

*No 41,901*

*Patented March 15, 1864.*



Witnesses.

*Charles H. Cherry*  
*Sherwin*

Inventor.

*M. C. Bignall.*  
 By *J. Evans & Co.*  
*Atty*

# UNITED STATES PATENT OFFICE.

M. C. BIGNALL, OF SENECA FALLS, NEW YORK.

## IMPROVEMENT IN WATER-ELEVATORS.

Specification forming part of Letters Patent No. **41,901**, dated March 15, 1864; antedated March 14, 1864.

*To all whom it may concern:*

Be it known that I, M. C. BIGNALL, of Seneca Falls, in the county of Seneca and State of New York, have invented a new and useful Improvement in Apparatus for Drawing Water from Wells; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a central vertical section of my improved machine; Fig. 2, an enlarged plan of the under side of the cross-board; Fig. 3, a perspective view of one of the socket-irons of the cross-board detached.

Like letters of reference indicate corresponding parts in all the figures.

My improved machine is of that class where the bottom of the bucket is provided with a valve and spout for discharging the water when raised; and the invention consists in the use of a cross-board, provided with an opening or passage in which the chain runs, to prevent the counterbalance-weight from being drawn up over the reel when the bucket is lowered, and to guide the chain and prevent it from displacement or disarrangement on the reel.

As represented in the drawings, an ordinary curb, A, is employed, in which is mounted the usual shaft, *a*, and reel B, over the latter of which passes the chain C, having at one end the bucket D and at the opposite a counterbalance-weight, *b*. The bucket is provided with a spout, *c*, port *d*, and a valve, *f*, whose stem or rod *g* projects upward through a cross-piece, *h*, of the bucket, and strikes against a board, E, to trip, as is shown clearly in Fig. 1.

The cross-board E is of peculiar construction. On one side, at a position to correspond with the rear portion of the chain, is made an opening or passage, *k*, substantially of the shape shown in Fig. 2—that is, elongated in such a manner as to allow the flat links of the chain to operate easily, but narrowed at the entrance, as shown at *l*, so as only to allow the chain to be inserted edgewise, but when

once inserted not to be removed in its ordinary action.

There are two important advantages attained by this arrangement:

First. When the bucket is lowered to the proper degree to fill with water, the further progress of the chain over the reel is stayed by the weight striking against the cross-board, as it cannot pass the opening *k*. Consequently there is no danger of the weight and chain being carried up over the reel, and lost in the well by turning the reel too far back, as is frequently the case in ordinary devices.

Second. By the chains resting in the opening *k* that portion which is turning on the reel is not affected by the swaying or other irregular action of the pendent portion beneath, for the cross-board always serves as a stay or guide to the chain above it. Therefore the danger of the displacement of the chain from the reel, by reason of such irregular action or disarrangement of any kind, is obviated.

By the use of this device the chain can never get removed from the reel by accident, but is still readily placed in position or removed when desired, as it slips easily edgewise out or in the narrow opening *l*.

For the purpose of obviating wear on the under side of the board, where the valve-stem comes in contact with it, I prefer to cover a portion with a metallic plate, *m*, as represented in Fig. 2.

The usual manner of securing the cross-board in the curb is by nailing or screwing through from the outside. This splits the end of the board, which also decays in a short time, so as to be insecure against the strain applied to it. I employ at each end of the board a metallic socket, G, of sufficient size to admit the whole end of the board, and this socket is provided at each end with screw-holes *n n*, by which means it is screwed fast to the inside of the curb.

By the employment of this device the board is easily attached or detached at any time, and is retained firmly in place. Its ends, by resting in the sockets, are never split or injured in any manner; and if any portion de-

cays it is not liable to break away, as when nailed in place.

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

The cross-board E, provided with the opening or passage k, when said board performs the double office of guiding the counterpoise rope, belt, or chain; and thrusting the lower part of the bucket toward the spout or trough, as arranged with the chain

C and reel B, substantially as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

M. C. BIGNALL.

Witnesses:

R. F. OSGOOD,  
W. A. LODER.