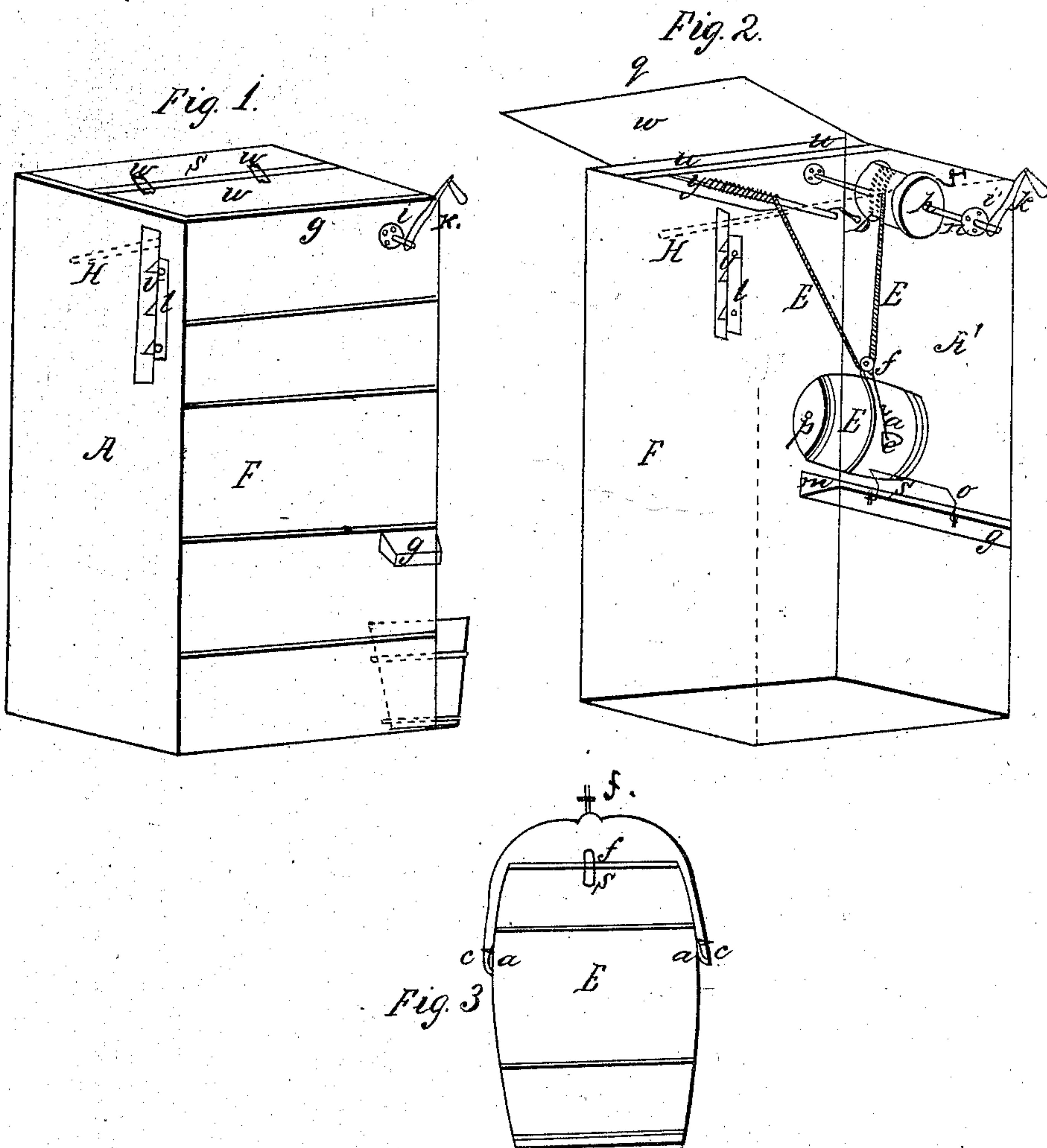


E. Mosher,
Windlass Water Elevator,
N^o 32,580. *Patented June 18, 1861.*



Witnesses,
Prof James K. Deary
A. V. Bump

Inventor,
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UNITED STATES PATENT OFFICE.

ELI MOSHER, OF FLINT, MICHIGAN.

WATER-ELEVATOR.

Specification of Letters Patent No. 32,580, dated June 18, 1861.

To all whom it may concern:

Be it known that I, ELI MOSHER, of the city of Flint, in the county of Genesee and State of Michigan, have invented a new and
5 useful Improvement in Water-Drawers; and I 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,
10 making a part of this specification, in which—

Figure 1 is a perspective view of a water-drawer ready for use. Fig. 2 is a vertical transverse section of the same. Fig. 3 is an
15 enlarged perspective view of a bucket, &c.

In order to obtain water from wells for domestic use various devices have been devised.

My device is of that class by which water
20 is raised from wells by means of buckets.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

I construct the frame of my water-drawer
25 after the box form. I select boards for the ends A A' from fourteen to eighteen inches in width, in length about three feet. Their length forms the height, and their width forms the width of the frame. I then cut
30 any width boards as seen on side F about three feet long and nail them to each of the edges of A A'. The trough *g* should be made and put in its place before all the boards are nailed on the side F. The trough
35 *g* is made by taking a board about six inches wide for the bottom and one three inches wide for the front edge. Nail the bottom to one edge of this then saw off the end *m* in a little beveling so as to give some descent
40 from *m* to *g*. Then nail the other edge of the bottom to A' and the end *m* to side F. The bail *o* should now be put in its place. This bail *o* is an old well known device and needs no description. The end of trough *g*
45 may be made after any of the known forms for guiding the water into the pail.

W is a lid which should be at least three-fourths the width of the top. This lid should be kept shut in stormy weather and
50 if desired kept open when pleasant. It is provided with hinges *u u* and a hook *q* for fastening the lid down when desired.

S is a narrow strip of board nailed to the side F' and ends A A'. To this *w* is
55 fastened by *u u*.

h is a crank which is put on the end of shaft *n*. The middle of *n* should be eight square for about one-third of its length. The ends are provided with journals of the usual form. The boxes *i i'* are made of cast
60 iron. That part of said boxes in which the journals rest is simply a ring about three-fourths of an inch wide provided with a broad flange on one edge. In this flange are holes for screws for fastening them to their
65 place. The flange of box *i* is screwed directly to inside of F'. There is a hole bored in side F to allow shaft *n* to pass through. This hole is large enough for the ring part
70 of *i'* to be driven into it from the outside. Then it may be fastened by screws. And broad pulley *h* can be made by cutting boards or plank the length and breadth that the pulley is to be. Then lay them together
75 and fasten them by nailing or pinning. Then bore a hole for shaft *n* and drive the shaft *n* into it the proper distance. Then the pulley should be turned with a thick flange on the side toward the crank *h* and a
80 thin flange on the opposite end (or side).

H is a brake. This may be made of iron or of wood. I prefer to make them of iron. They should be bent nearly as seen in Fig. 2, so as to pass over the thick flange of pulley
85 *h* and under adjusting shaft *y*. One end is fastened to A' by a bolt or screw directly over the thick flange on *h*. The other end passes through A in the slot *v* which keeps this end in its place. Adjusting shaft *y* is
90 made of wood. On each end is a journal. Holes are bored in the sides F. F' for said journals. To one end of said shaft is affixed a ratchet wheel *p*. Said ratchet wheel is provided with a pawl *b* which is secured
95 to the inside of F, by a screw so as to act on *p*.

t, is a ratchet plate of iron.

e, e', is a rope or cord.

f, is pulley and pulley block. The pulley-block may be made of cast iron.
100

l, is the bail of the bucket. This bail passes through the lower part of pulley block *f* and is bent on each side as seen in Fig. 3, to keep the pulley-block in its place.
105 The pulley may be cast of iron or made of wood.

a, a, are ears of bucket E.

c, c, are stops on the ears. In the center of the lower end of the ears are holes for
110 the ends of *l* which are bent at right angles

inward. The ears are then put on and riveted. The form of the ears is not essential. The ears and stops are cast of iron together. The stops should be placed from one to two inches above the holes for the bail, and one on one ear, the width of said hole to the right hand from a straight line, and the other in the same position at the left hand forming right hand and left hand ears for purposes hereafter shown. The form of the stops on the ears is not essential. All that is necessary is that they project out on the ear far enough so as not to allow the bail *l* to pass. The ears are placed on the bucket about one-third of the length downward from the top, and from one-half to an inch to one side of the center toward the hook, *s'*, as seen in Fig. 2.

p, is a valve for filling the bucket. Having thus described the construction of the parts of my invention which are new and partially those that have been in use heretofore I will now proceed to show the operation and point out some of the advantages arising from the use of the combination. In order to raise a bucket filled with water out of a well so that hook *s'* will come up so as to catch to bail *o* and empty the bucket of its water some plan must be had that will prevent the bucket from turning around. Instead of using a flat chain a flat rope or several small ropes sewed together or a belt (all of these have been used) I use the pulley and block, *f*, with any cord or small rope, one end of which is fastened to pulley *h* the other end is put around pulley, *f*, and fastened to the adjusting shafts, *y*. It will be seen that by this arrangement the bucket must come up so that hook, *s'*, will catch to, *o*, every time. It will also be seen that but one hook is necessary by this device as the bucket cannot come up the other side around.

The advantages of the use of the ears with stops *c, c*, are that the bucket is kept from tilting backward and forward, and the water is not spilled. By placing the ears as described the greater weight of water is on

the opposite side of the bucket from the hook, *s'*, which causes the bucket to tilt so that the stops, *c, c*, come in contact with the bail, *l*, and the bucket is kept from further tilting.

The uses of the adjusting shaft are the lengthening and shortening the cord to suit the depth of water as the water in most wells rises and falls with heavy rains. By this adjusting shaft the length of cord may easily be adjusted to suit the distance to the water. By simply turning the shaft *y* in one direction the cord is lengthened and by turning in the opposite direction it may be shortened. By this arrangement the cord may be all unwound from broad pulley, *h*, and the bucket allowed to fill with water. Yet the cord will not reach the water nor get wet. The brake *H* is used to keep pulley, *h*, from turning, when it is desired to stop the bucket at any point. This is done by pressing upon the end at, *H*, until the pressure is sufficient to keep pulley, *h*, from turning. Then this end of *H* may be swung under one of the teeth on ratchet plate, *t*.

When desired to lower the bucket for water all that is necessary is to disengage the brake *H* and the bucket may be allowed to run down at any degree of speed desired. The speed may be governed by pressure applied to the brake *H*.

Having thus described the construction and operation of those parts that are new, what I claim as new and desire to secure by Letters Patent, is—

1. The adjusting shaft (*y*), in combination with the hoisting apparatus described, all being arranged and operated in the manner set forth.

2. Brake (*x*), serrated plate (*v*), adjusting shaft (*y*), ears (*a a*), stops (*c c*), and hoisting apparatus, when all shall be arranged and operated in the manner and for the purpose specified.

ELI MOSHER.

Witnesses:

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