

(No Model.)

R. C. DUGAN.
WATER ELEVATOR.

No. 335,061.

Patented Jan. 26, 1886.

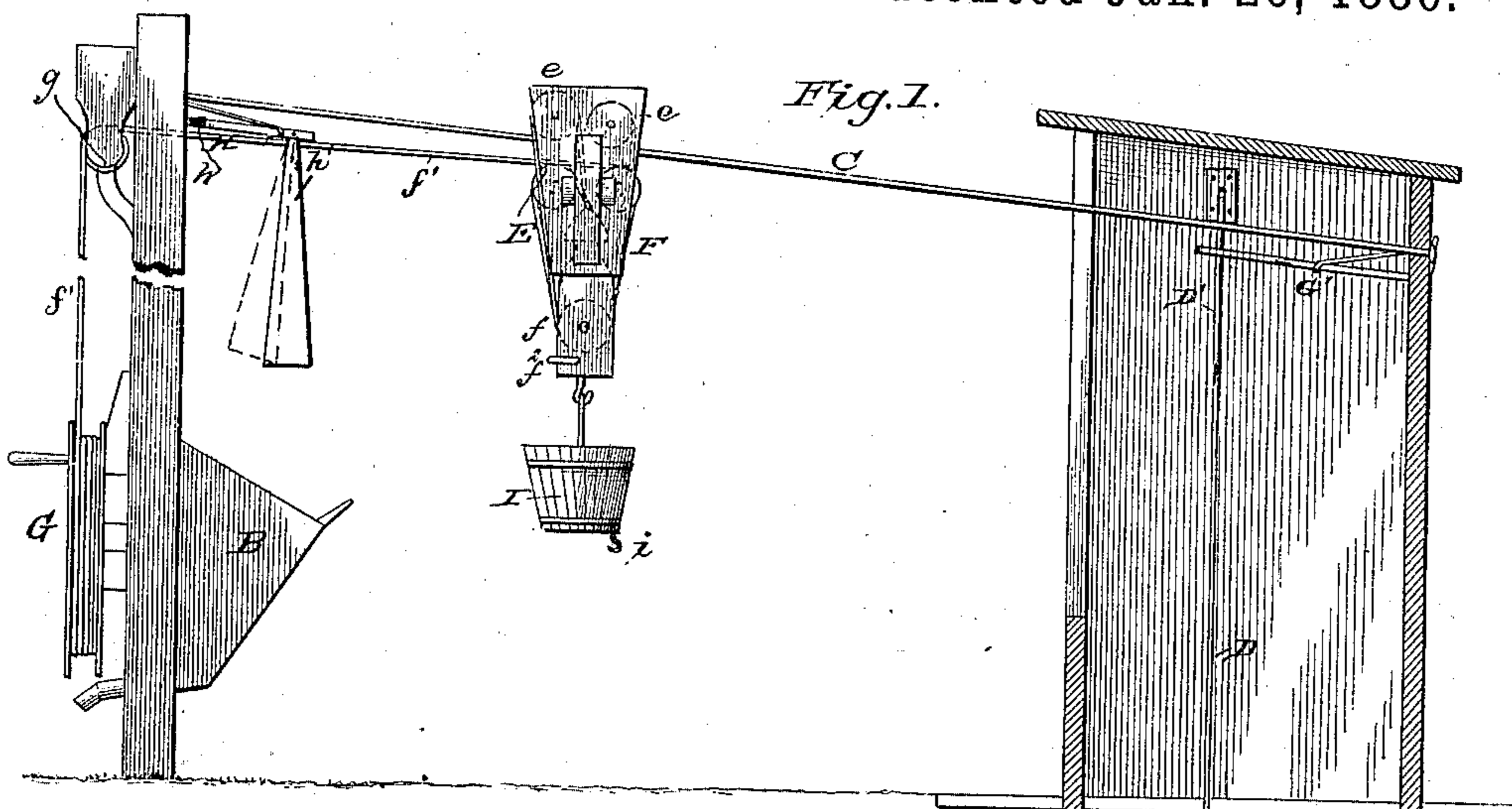


Fig. 2.

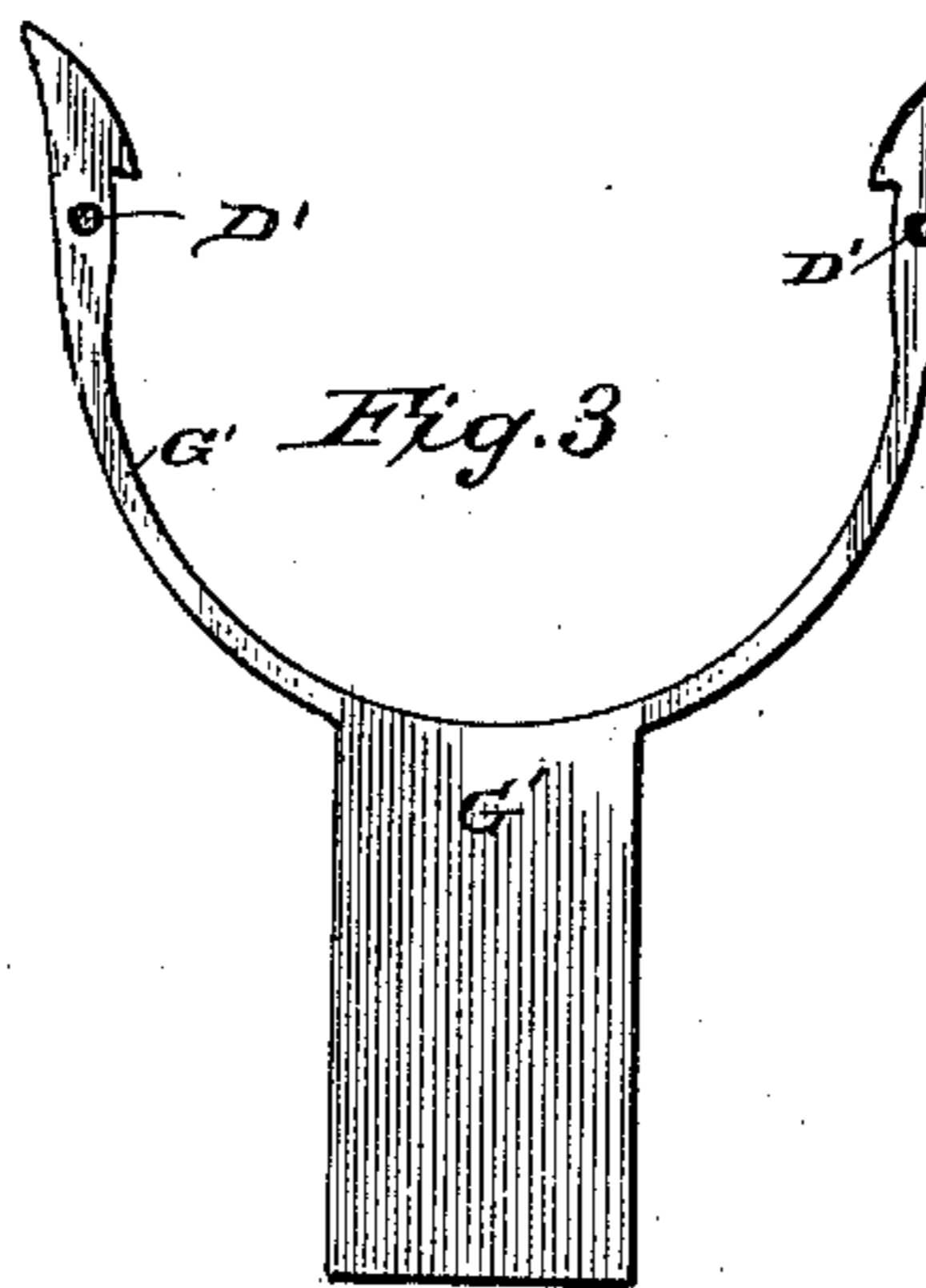
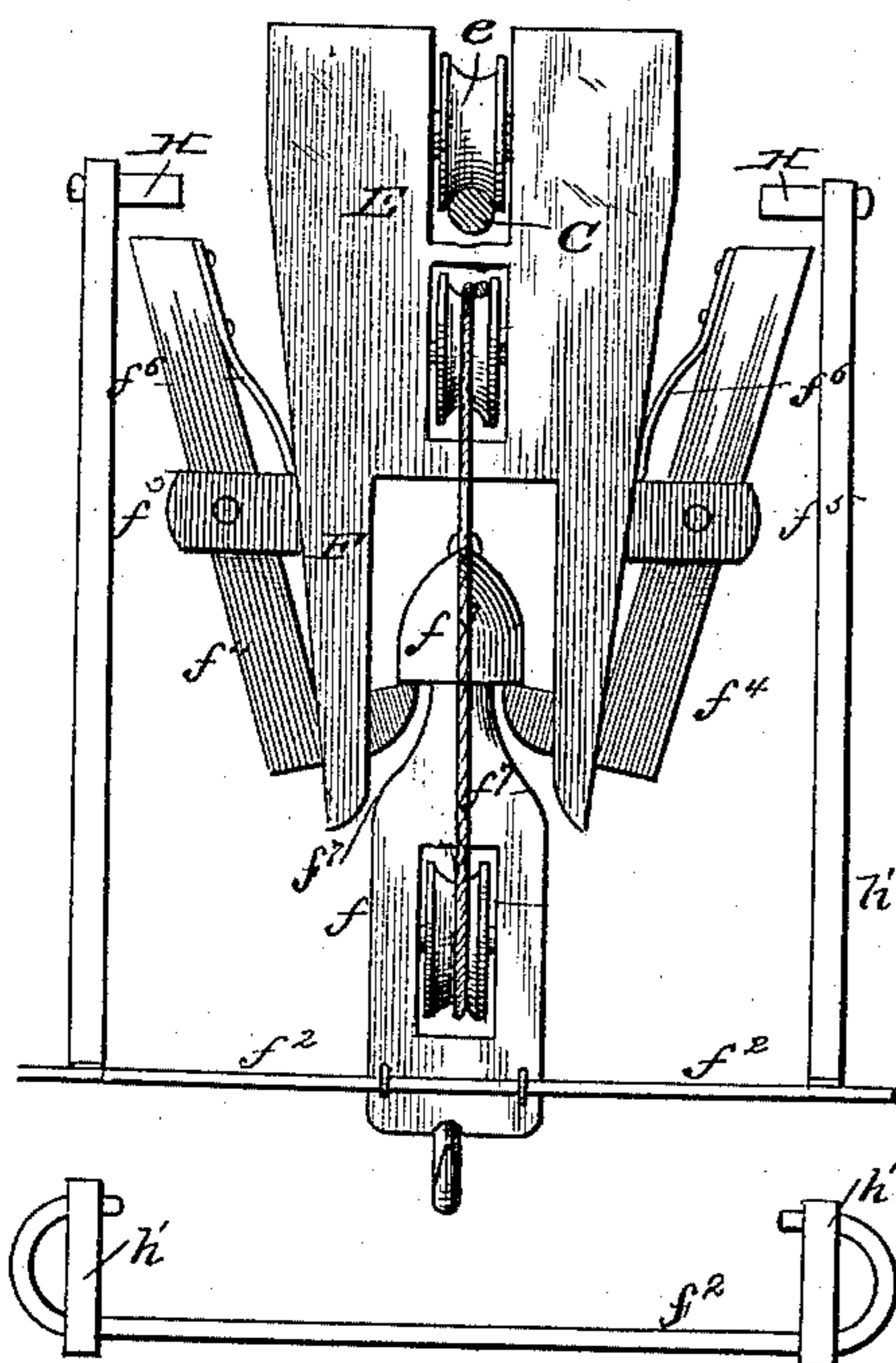
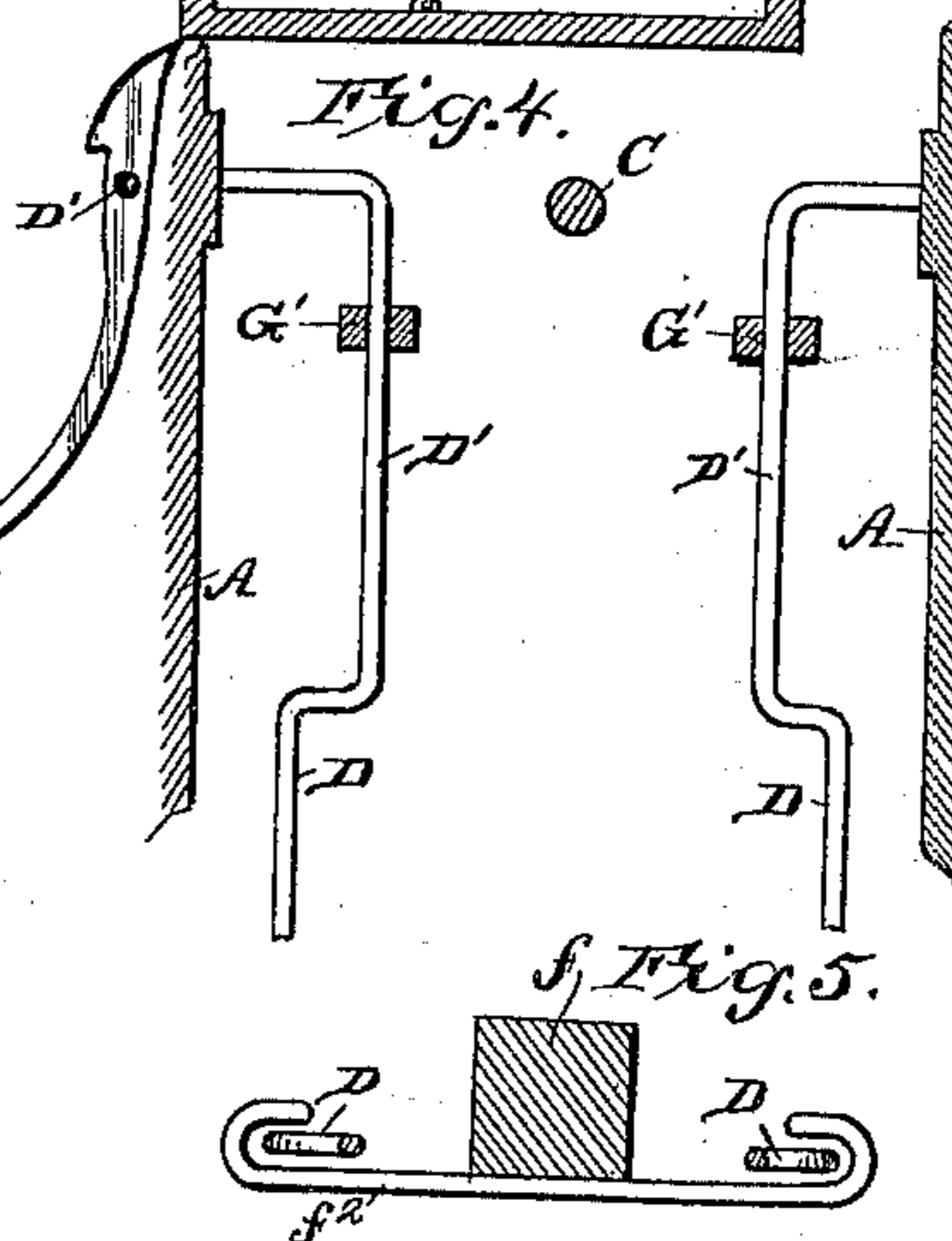


Fig. 4.



f. Fig. 5.

WITNESSES:

Fred. E. Dieterich
from Kemon

INVENTOR:

R. C. Dugan
BY *Munn & Co.*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ROBERT CALVIN DUGAN, OF MILLERSBURG, OHIO.

WATER-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 335,061, dated January 26, 1886.

Application filed April 10, 1885. Serial No. 161,816. (No model.)

To all whom it may concern:

Be it known that I, ROBERT C. DUGAN, a citizen of the United States, residing at Millersburg, in the county of Holmes and State of Ohio, have invented a new and useful Improvement in Water-Elevators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of the water-elevator and the means for operating it. Fig. 2 is a detail side view of the elevator turned one-fourth around from the position shown in Fig. 1. Fig. 3 is a plan view of the disengaging-fork which disconnects the elevator from the carrier. Fig. 4 is a detail in side elevation, and Fig. 5 is a horizontal section of the same when the parts f and f^2 are ready to descend the wire D D'.

This invention relates to water-elevators; and it consists in the detailed construction of the parts hereinafter described, by the use of which water may be drawn both vertically and horizontally from a well or spring and delivered to its required destination, the said mechanism being simple, cheaply constructed, and easily operated.

In the accompanying drawings, similar letters of reference indicate corresponding parts in all the figures.

A is the well from which the water is drawn, and B is the spout into which it is delivered.

C is a wire stretched over the point of delivery and the top of the well for the carrier to run on.

D are wires stretched in the well to guide the elevator which carries the bucket in its descent.

E is the carrier, provided with pulleys e , which run upon the wire C.

F is the elevator, made solid with the carriage E. This elevator is made with a loose portion, f , connected to it by the cord f' , which is fastened to the top of said loose portion and passes over three pulleys—one in the loose portion f and two in the main portion of the elevator—as shown in the drawings. The continuation of cord f' passes over a pulley, g , and is wound up by the windlass G, conveniently situated to the point of delivery.

A guide, f^2 , is attached to the loose portion of the elevator and engages with the wires D,

stretched inside the well. The guide f^2 consists of a bar of iron hook-shaped at each end, the hook-openings being on the side of the wire toward the well when the carrier is on the wire C, in order that the said hooks may disengage the wire D when the carrier is drawn away on the wire C. To this end the wires D are formed in their upper portion with inward offsets, D'. When the carrier comes into the well-top, the bar f^2 strikes the portion D', the hooks passing outside thereof, so that when permitted to descend the hooks engage the wires D, passing on over the shouldered end. On rising from the well the hooks disengage the wires D in the region D' to pass away from the well.

f^3 is the striking head of the loose portion, provided with shoulders which engage with the elevator-latches f^4 , pivoted on pins f^5 , and provided with springs f^6 .

G' is a fork secured at the top of the well for disengaging the loose portion f from the elevator.

H is a similar fork secured at the point of delivery, but provided with a hinge, h , and having wedge-shaped pieces h' , pivoted to the sides of it, which are swung forward out of the way by the two arms of the advancing guide f^2 , just as the latches f^4 pass in between the arms of fork H, and are sprung open, leaving the portion f to descend. Then the pieces h' resume their normal hanging position.

I is a bucket attached to the loose portion of the elevator, and provided with a hook, i , which engages with the edge of the delivery-spout when the bucket is drawn up the wire C and set free by the fork H, as described.

When the bucket is empty, it is raised by the windlass G until the head f^3 is engaged by the latches f^4 . On the way up the arms of the guide f^2 come under the lower ends of the pieces h' and lift the fork H out of engagement with the hooks f^4 , leaving them free to engage the head f^3 , and leaving the carrier E free to descend the wire C to the well.

The action of the mechanism is as follows: The carrier, with the elevator and empty bucket, is allowed to run down the wire C until the elevator-latches f^4 strike against the fork G', whereby the latches are sprung open and the loose portion f is disengaged. The loose portion thus descends the well and the bucket is

filled with water. The loose portion of the elevator is then raised by means of the windlass G until the head of the said loose portion is again held by the latches. The continued motion of the windlass in winding up the cord f' draws the shoulders f' of the loose portion f up between the latches f^4 , whereby their upper ends are closed and disengaged from the fork G', permitting the cord f' to draw the elevator and carrier up the wire C. At this time the latches on the elevator strike the fork H, and the loose portion f is again liberated. The motion of the windlass is then reversed and the contents of the bucket are emptied into the hopper. The fork H is raised on its hinge by means of the wedges h' , against which the guide f^2 strikes when the loose portion f is drawn up, so that the head of it re-engages with the latches of the elevator before the carrier is allowed to run down the wire, as before described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of wires D, standing within the well away from the walls thereof and provided with offsets D', an inclined supporting-wire, C, a carrier, E, provided with rollers e , to run on said wire C, a loose portion, f , provided with a cross-bar, f^2 , having its ends hook-shaped, as described, and a cord, f' , passing around a pulley in the said loose portion f and over pulleys in the carrier E, substantially as shown and described.

2. The combination of the fixed wire C, the carrier E, mounted thereon, the latches f^4 , pivoted to the carrier, the loose portion f , provided with the hook-ended bar f^2 , the hooked fork H, pivoted at h , and the wedge-shaped pieces h' , hung to the said fork in the path of the bar f^2 , substantially as shown and described, for the purpose specified.

ROBERT CALVIN DUGAN.

Witnesses:

L. R. CRITCHFIELD,
GEORGE W. EVERETT.