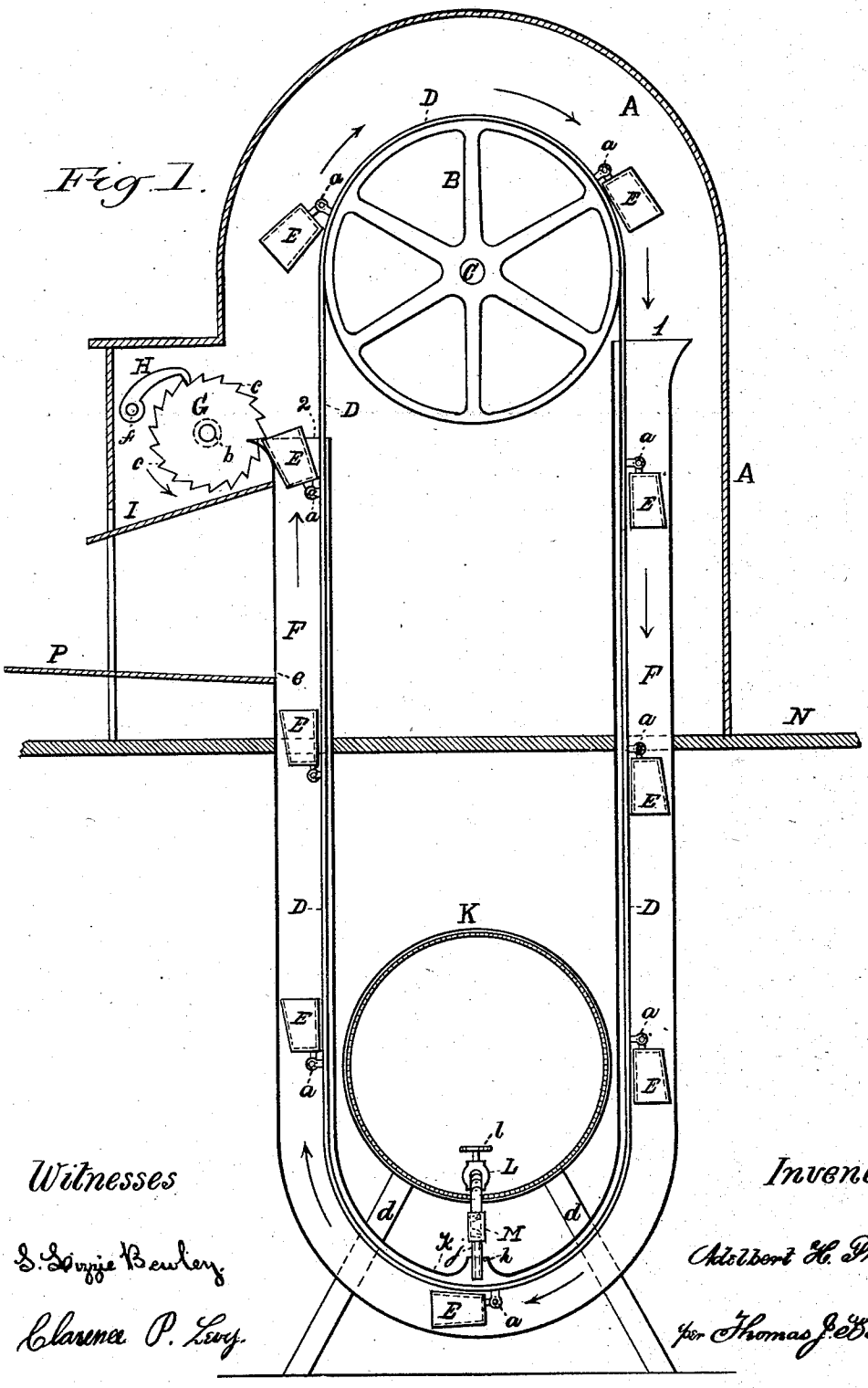
(No Model.) 2 Sheets—Sheet 1.

A. H. PHILLIP.

LIQUID ELEVATOR.

No. 315,337. Patented Apr. 7, 1885.

Fig. 1.



Witnesses

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(No Model.)

2 Sheets—Sheet 2.

A. H. PHILLIP.

LIQUID ELEVATOR.

No. 315,337. Patented Apr. 7, 1885.

FIG. 2

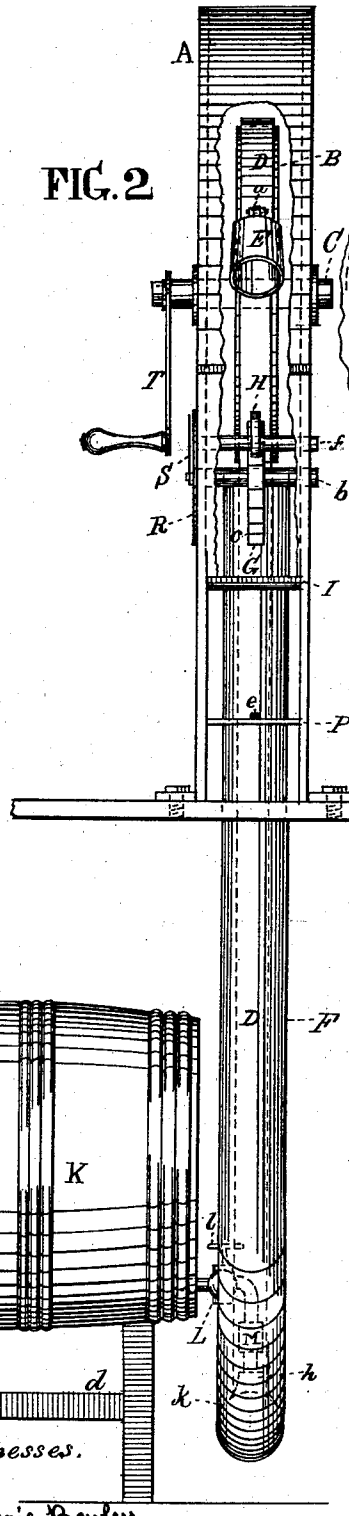
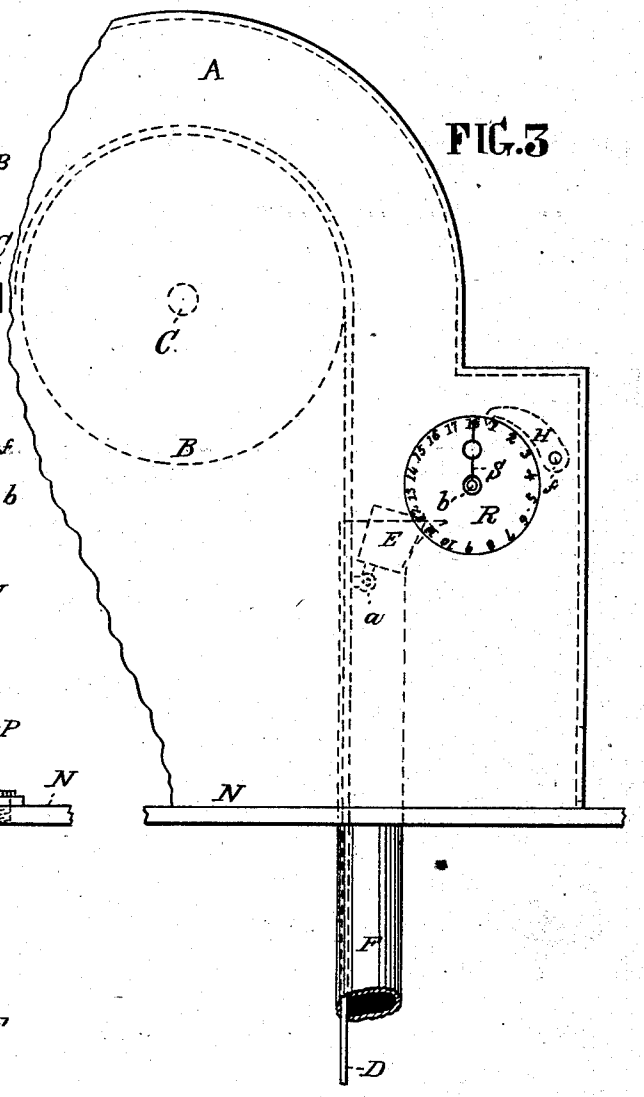


FIG. 3



Witnesses.

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UNITED STATES PATENT OFFICE.

ADELBERT H. PHILLIP, OF PHILADELPHIA, PENNSYLVANIA.

LIQUID-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 315,337, dated April 7, 1885.

Application filed October 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, ADELBERT H. PHILLIP, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Liquid-Elevators, of which the following is a specification.

My invention relates to a combination of devices for elevating liquids from a basement or cellar of a building to an upper story, and by the peculiar arrangement of a ratchet-wheel and a dial and pointer the number of buckets elevated may be registered, each bucket containing a specified quantity.

The invention consists of the following particulars: An endless chain or belt, provided with buckets hinged on their bottoms thereto, is carried upon a band or sprocket wheel revolved upon its axis by any suitable means, the bearings of the wheel being in the sides of the case or housings of the apparatus. The chain or belt in its movement carries the empty buckets down into one end of an elongated U-shaped tube, within which the oil is contained, (being fed into the tube by means of a valve and pipe-connection from a barrel or tank,) through said tube, wherein the bucket obtains its complement of liquid, and up and out of the other end, where a ratchet-wheel is so placed within the spout of the case as to engage a tooth with the lip of each bucket as it emerges from the tube, and move the wheel one tooth around, at the same time moving a pointer over the face of a dial on the outside of the case, whereby the number of buckets elevated are counted, the dial having numerals on the periphery of its face. The weight of the liquid contained within the bucket will cause it to overturn by reason of its hinged connection with the belt, and the contents will empty into a spout.

In the accompanying drawings, which make a part of this specification, Figure 1 is a side elevation, in section, of my improved apparatus. Fig. 2 is a front elevation with a portion of the case A broken away. Fig. 3 is a side view of a portion of the case A, showing the dial R.

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

A is the case of the apparatus; B, the band-wheel carrying the endless belt D and revolving with the shaft C, which has bearings in the sides of the case A. The buckets E are connected at their bottoms to the belt D by means of the hinges *a*.

F is the elongated U-shaped upright tube, made of sheet-tin for cheapness of construction, within which the buckets E are successively caused to enter at the opening 1 in the revolution of the belt and descend therein mouth downward around the curve at the bottom, where they fill with liquid, thence upward out of said tube at the end 2.

G is a ratchet-wheel, provided with teeth *c*, and revolving with the shaft *b*. This wheel is held in proper position for the engagement of a tooth with the lip of a bucket by the pawl H, hung on the pin *f*.

R is the dial on the outside of the case A, and S the pointer connected to the end of the shaft *b* of the ratchet-wheel.

I is the spout through which the liquid flows.

P is the platform for holding vessels to receive the liquid. It has an inward inclination toward the tube, and there is an opening, *e*, in the tube whereby spilled liquid is permitted to flow back into said tube.

N is the floor of the building.

K is the barrel, tank, or reservoir containing liquid. It is provided with a valve or stop-cock, L, in one end, and a pipe-connection with the curved bottom of the tube F. *d d* are horses or skids for holding the tank or barrel in position.

The operation is as follows: The barrel or tank K containing liquid—such as oil, vinegar, &c.—is placed in position upon the skids *d d*, and the valve or stop-cock L inserted in an orifice formed for its reception, and connection made with an orifice, *h*, in the upper surface, K, of the curved bottom of the tube F by means of a short pipe, *j*, and the sleeve or socket M, which has a right and left hand screw-thread connection to unite the parts, the valve-stem *l* is raised and communication opened, which causes the liquid to flow into and fill the curved portion of the tube F. Then motion is imparted to the band-wheel B (which may be a sprocket-wheel into which links of a chain fit) by means of a crank, T, on the outer end of the shaft C, which carries around the endless belt or chain D and

the hinged buckets E down into the end 1 of of the tube F, with the mouths of the buckets entering first. These buckets are carried around in the tube and become filled with the liquid contained in the curved bottom, and emerge from the other end, 2, where their weight causes them to tilt over and discharge their contents into the spout I and from thence into a vessel placed upon the platform P. At the same time that the buckets pour out their contents, a tooth of the ratchet-wheel engages with the lip of each bucket as it emerges from the tube and turns the wheel one tooth around, which causes the pointer S, connected to the outer end of the shaft *b*, (upon which both wheel and pointer are fast,) to move a corresponding distance around the face of the dial R, which is provided with numerals, as shown in Fig. 3, whereby the number of buckets elevated may be ascertained. The platform P has a slight incline toward the tube F, whereby any liquid that is spilled thereon is caused to flow back into the tube through the orifice *e*.

I am aware that an endless belt or chain carrying buckets that may be overturned has been in use for elevating liquids; but the particular improvements of my invention are the elongated U-shaped tube or pipe having communication with a reservoir from which it may be filled with liquid, and also retain the buckets' mouths upward in their ascent when filled, and the tilting buckets which successively engage with the teeth of the ratchet-wheel—that is, thereby causes to revolve and carry with it the pointer over the face of the dial; also the inclined platform, and the orifice in the tube for the return of spilled liquid.

I claim as my invention—

The combination of the case A, band or sprocket wheel B, belt D, hinged buckets E, tube F, and tank K, for elevating and discharging liquids, substantially as described.

ADELBERT H. PHILLIP.

Witnesses:

THOMAS J. BEWLEY,

JOHN S. SMITH.