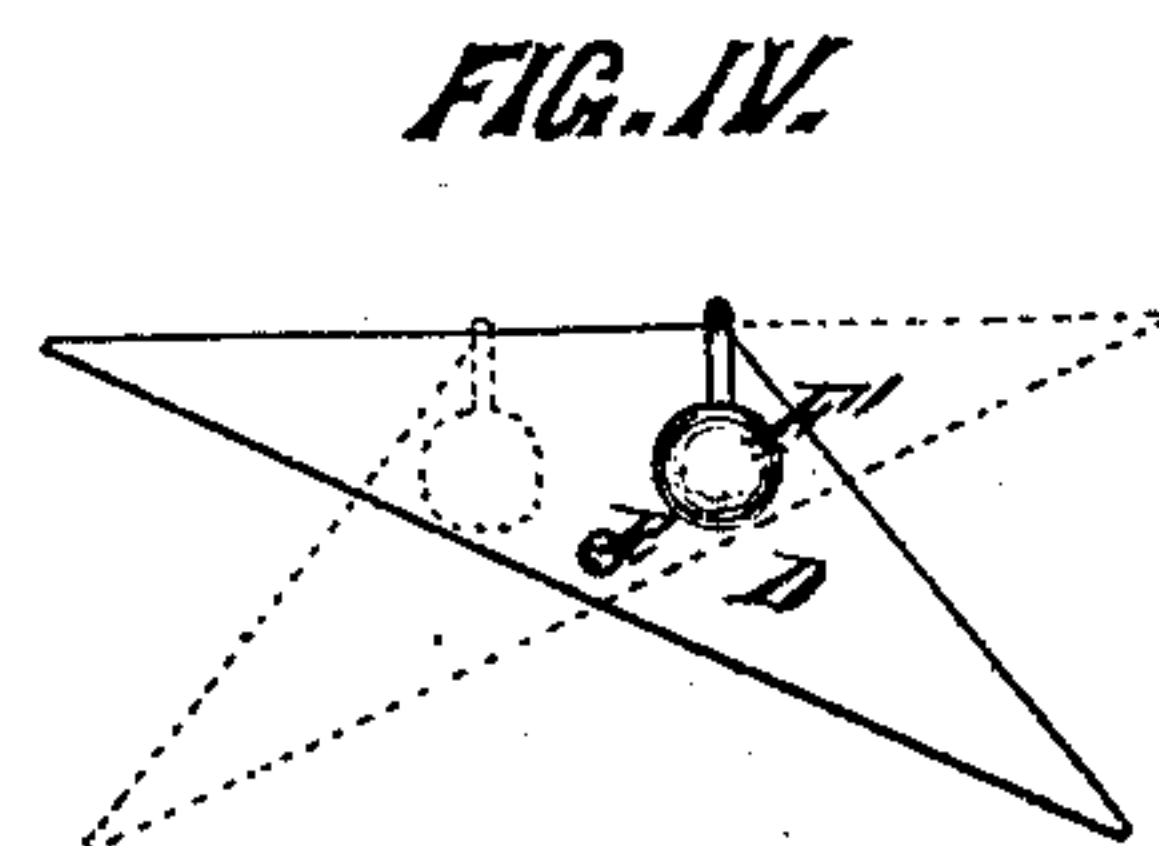
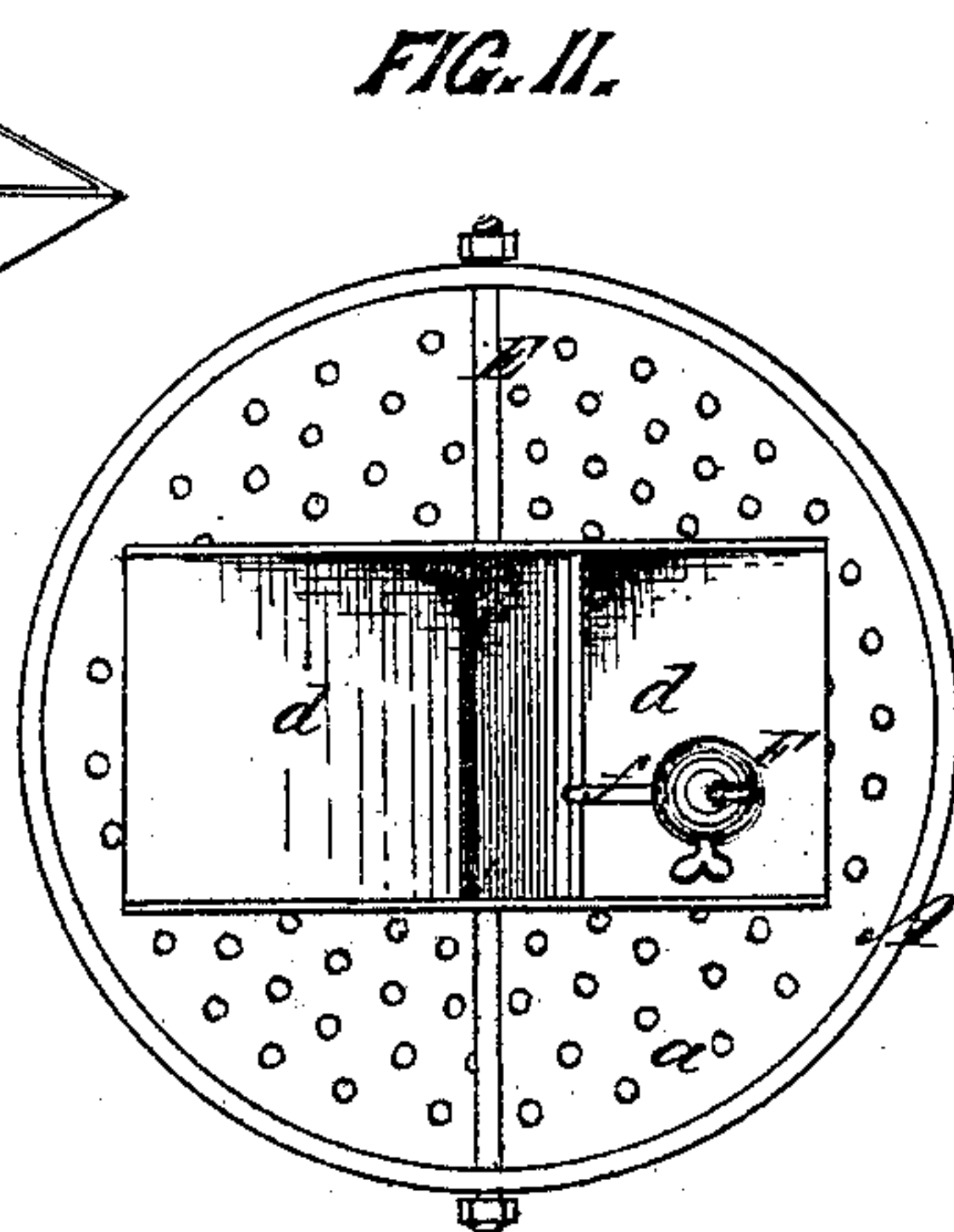
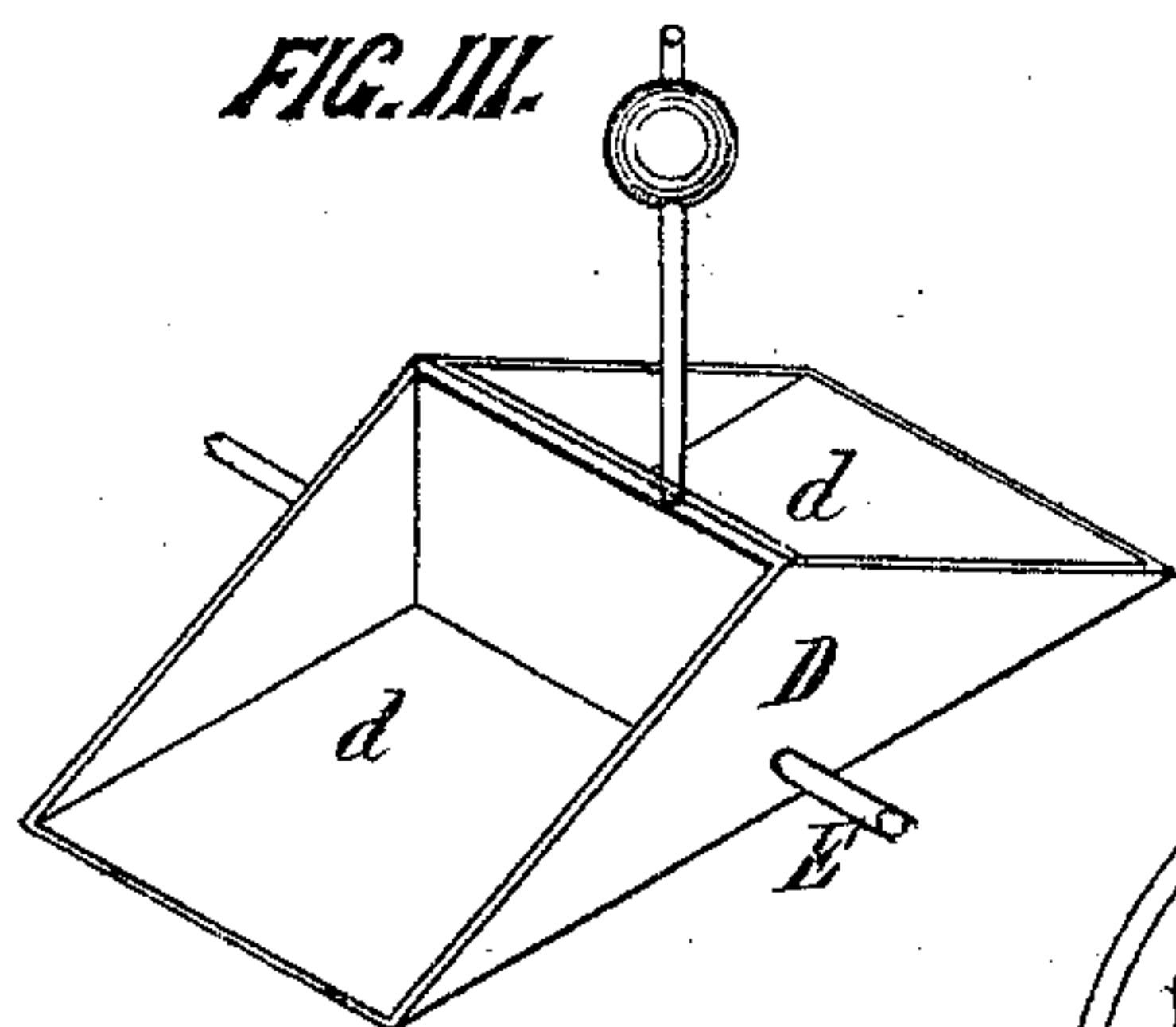
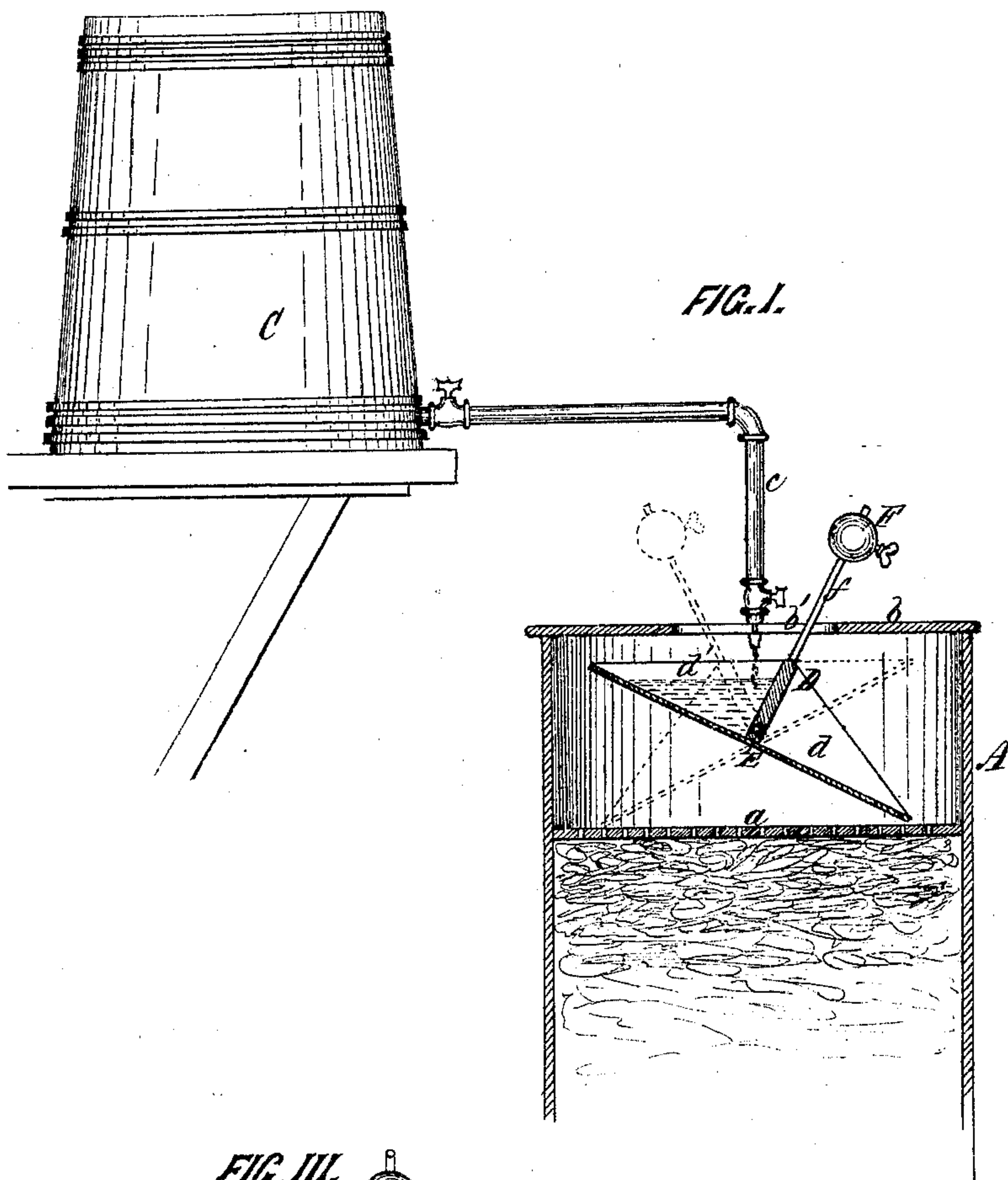


A. C. ROWE.

Improvement in Automatic Liquor-Dischargers.

No. 114,607.

Patented May 9, 1871.



*J. B. Crafford*  
*L. Summersfield*  
Witnesses.

Inventor  
*Arthur C. Rowe*  
By *Peck & Maitt* Attorneys.



# United States Patent Office.

ARTHUR C. ROWE, OF CHICAGO, ILLINOIS.

Letters Patent No. 114,607, dated May 9, 1871.

## IMPROVEMENT IN AUTOMATIC LIQUOR-DISCHARGES.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, ARTHUR C. ROWE, of the city of Chicago, in the county of Cook and State of Illinois, have invented a certain new and improved Automatic Liquid-Discharge for Vinegar-Generators, of which the following is a specification.

### *Nature of the Invention.*

This invention consists in an intermittent liquid-discharge, having a reservoir or compartment on each side of a central axis, and being provided with an adjustable weight or weights for the purpose of controlling and gauging the discharge of fluid into a vinegar-generator, as hereinafter described.

In the drawing—

Figure I is a vertical section of a vinegar-generator with my improved liquid-discharge applied thereto.

Figure II is a plan of the generator, with the cover removed to show the relative position of the parts.

Figure III, a detached perspective view of the intermittent discharge.

Figure IV, a diagram, showing a modification in the arrangement of the regulating-weight.

By reference to Figs. I and II—

A is the generator, of ordinary construction, with a common perforated head, *a*, and cover *b*, provided with a slot, *b'*.

O is a supply-reservoir, and

*c* the feed-pipe, passing into the cover of the generator *b*, and thence discharging into the compartments *d d'* of the automatic discharge D, which latter is hung on a central axis, E.

A rod, *f*, projecting perpendicularly from the plane of the axis E and from the center of the partition dividing the compartments *d d'*, has an adjustable weight, F.

In Fig. IV—

F' is a modified arrangement of the weight, differing only from F (Figs. I and II) in being a swinging weight.

The operation of the invention is as follows:

The dumping-reservoir D having received in one of its divisions, as *d'*, Fig. I, a sufficient quantity of liquid from the supply-pipe *c* to overcome the balance of the counterpoise F, the full compartment is borne down upon the perforated head of the generator *a*, thus discharging the liquid, and at the same time elevating the empty compartment *d* to the corresponding position occupied by *d'* under the feed-pipe, as shown in dotted lines; and when this compartment has received a sufficient supply from the constant stream through *c* to overbalance the counterpoise F the same operation is repeated as described in the case of *d'*, and so on.

The weight F on the rod *f*, by being raised and lowered, regulates the quantity of liquid the compart-

ments *d d'* will hold before discharging. This result is effected by carrying the center of gravity in the weight F further from a vertical line drawn through the axis of the dumping-reservoir D in proportion as the weight is raised. The slot *b'* in the generator-cover allows the rod *f* a free lateral motion.

The advantages gained by using the automatic feed are important as compared with the ordinary method, which consists in employing a man with a pail to supply the generator at regular intervals. It saves the constant employment of at least one man, and in large manufactories that of several men, night and day.

It will be noticed that each time the liquid is discharged the end of the compartment in which it collected is carried downward suddenly until it strikes the perforated head of the generator with a force equal to the gravity of the liquid, thus imparting a sudden jar and reaction to the generator-head, which has the effect of disturbing and discharging the "mother" which collects in and around the perforations in the head, and thereby leaving them unobstructed for the passage of the liquid just discharged. This shock to the generator-head happens at precisely the right moment, while the simultaneous overflow of the liquid acts in conjunction to disturb and remove the mother perfectly. This is an advantage of importance in the manufacture of vinegar, as it saves the time and labor consumed by stopping operations and removing the mother from the perforations in the generator-head by hand, so frequent and essential in the old method.

By the use of my device the liquid is also distributed over the generator-head with more evenness and greater regularity than heretofore, and therefore the mother is not so liable to collect and clog up.

The use of the adjustable weights enables both the quantity of liquid discharged and the intervals between the discharges to be regulated at pleasure and with precision.

I am aware that a liquid-discharge has been rendered intermittent on the principle of overcoming a counterpoise. I do not, therefore, claim this principle broadly; but

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

The arrangement of the discharge D, with its compartments *d d'* on the opposite sides of the central axis E, the upright rod *f*, and adjustable weight F, the whole constructed and operating, in reference to the perforated head *a*, substantially in the manner herein shown and described.

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

ARTHUR C. ROWE.

Witnesses:

J. B. GRIFFENHAGEN,  
C. C. PECK.