

J. STORER.
Fountain.

No. 226,428.

Patented April 13, 1880.

Fig: 2.

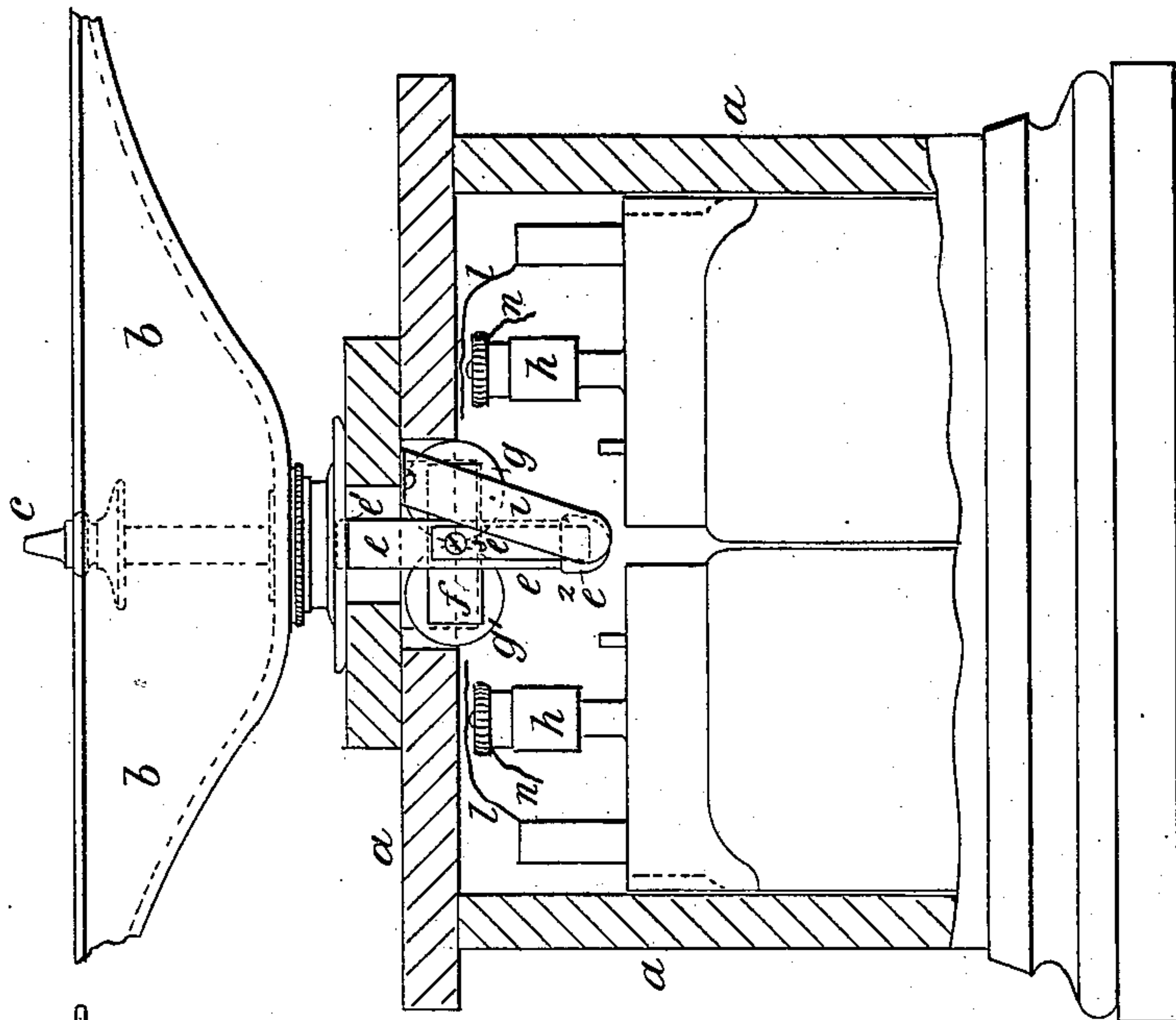
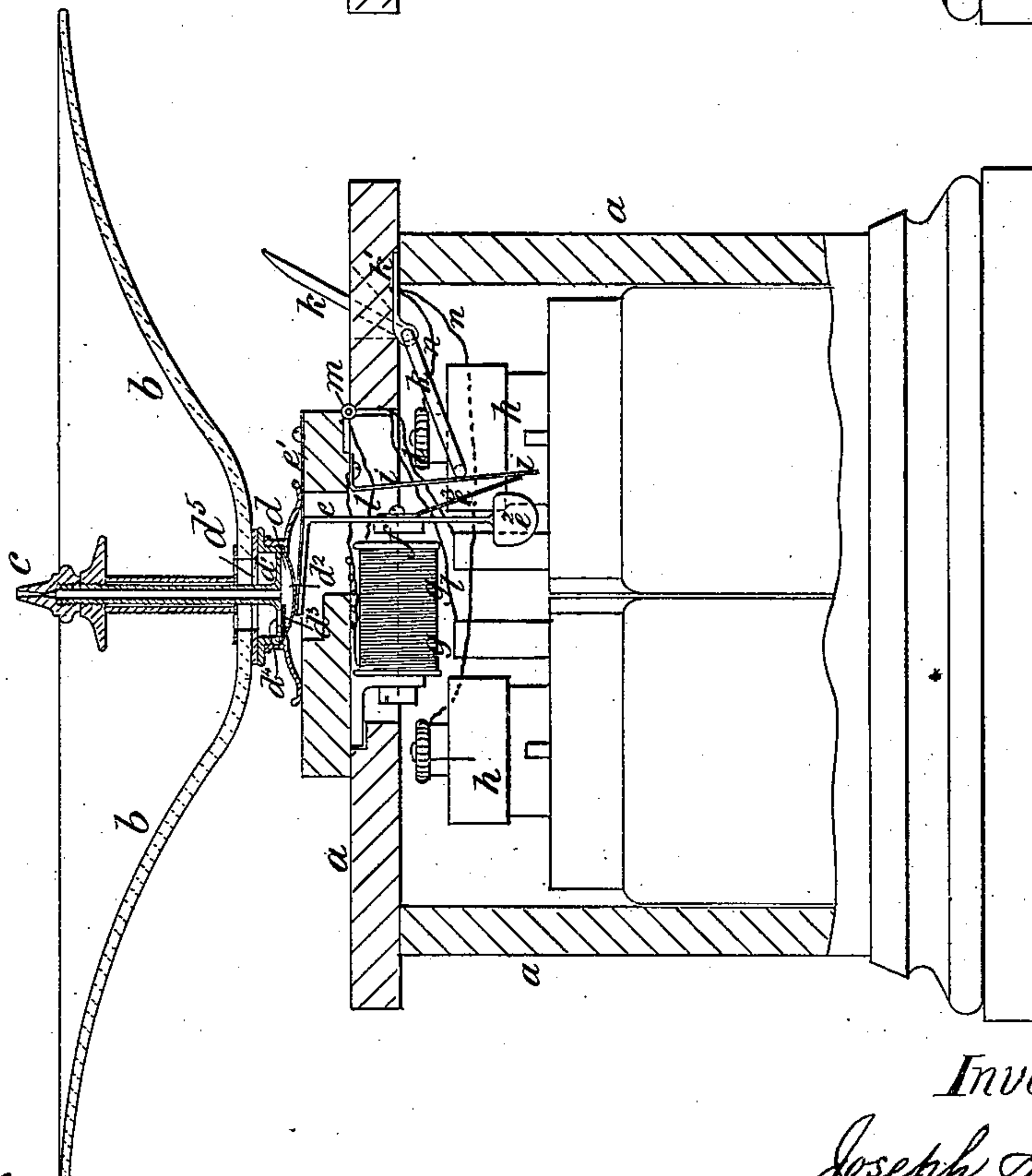


Fig: 1.



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Fig. 3.

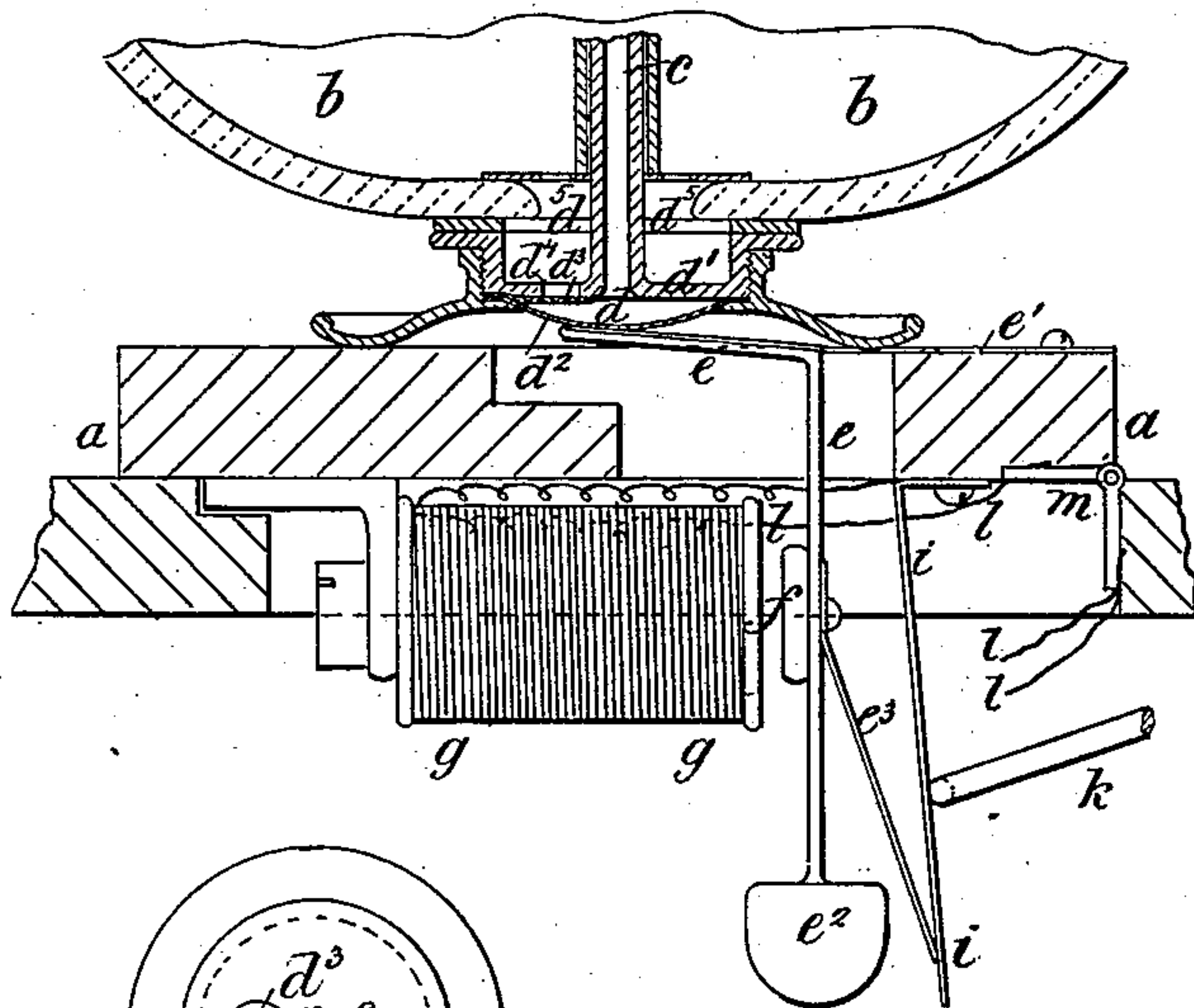


Fig. 4.

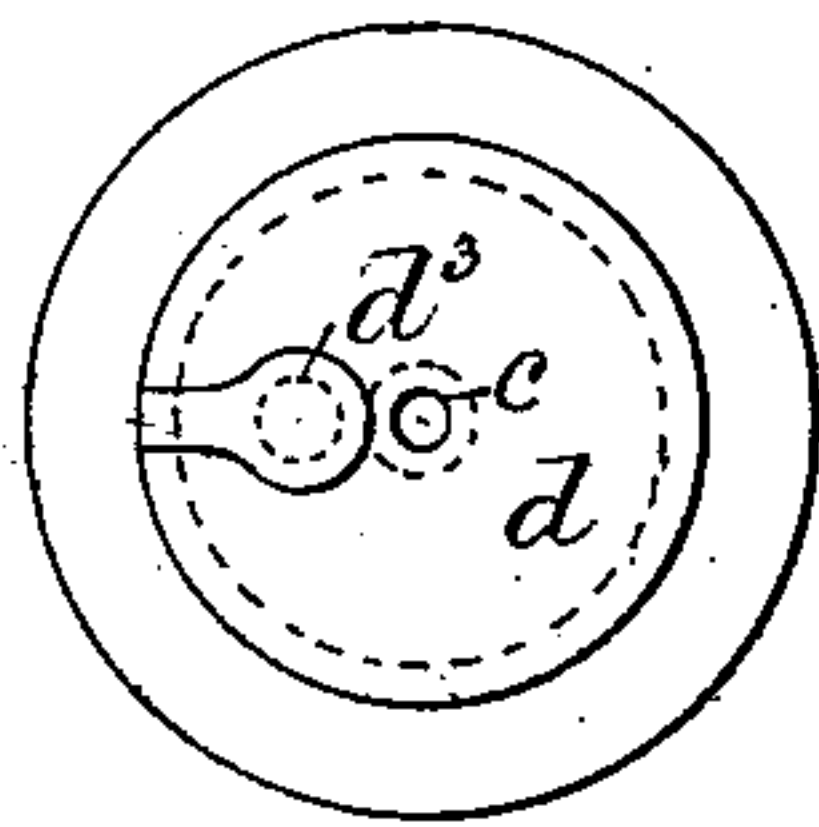
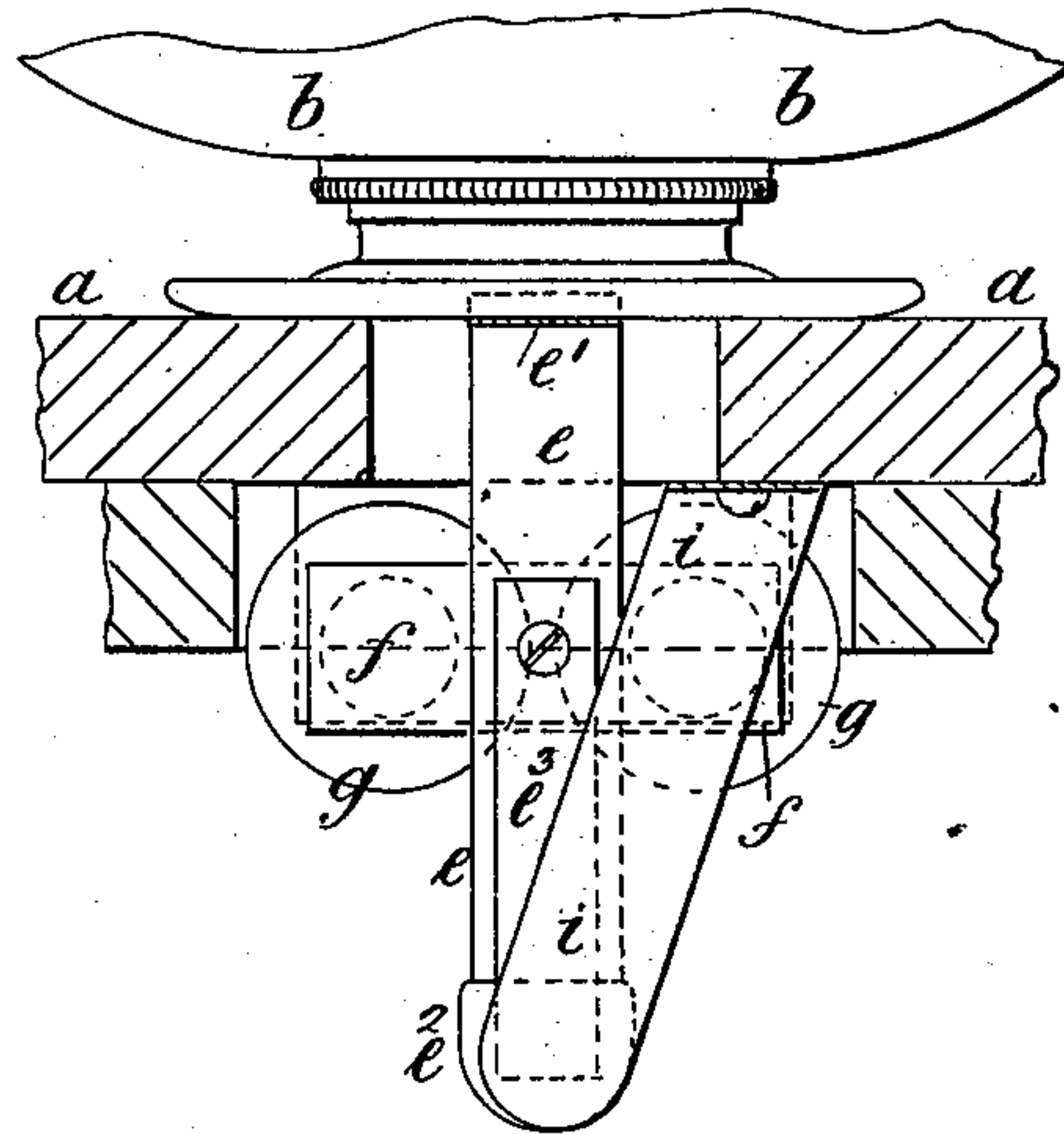


Fig. 5.

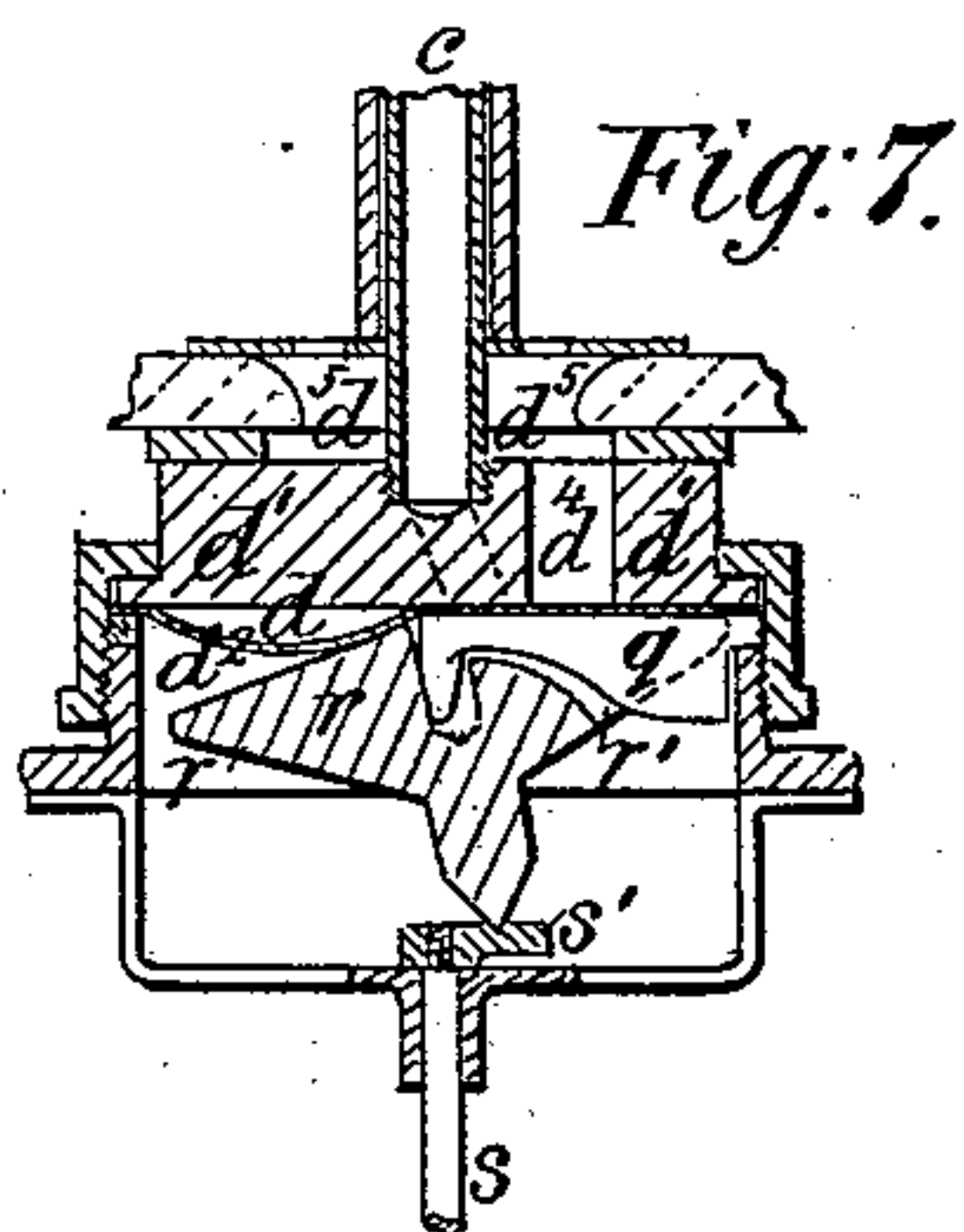


Fig. 7.

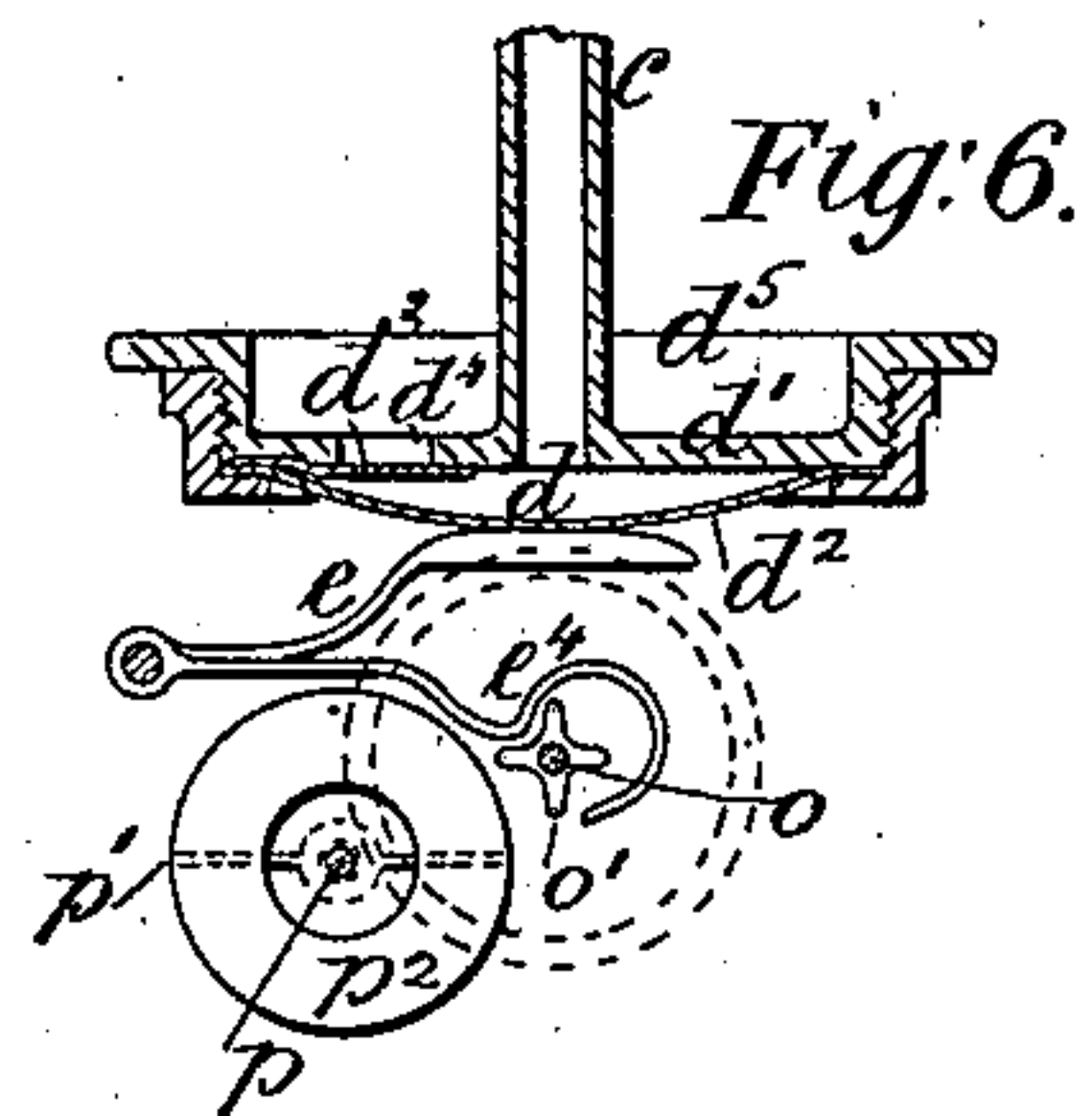


Fig. 6.

Fig. 8.

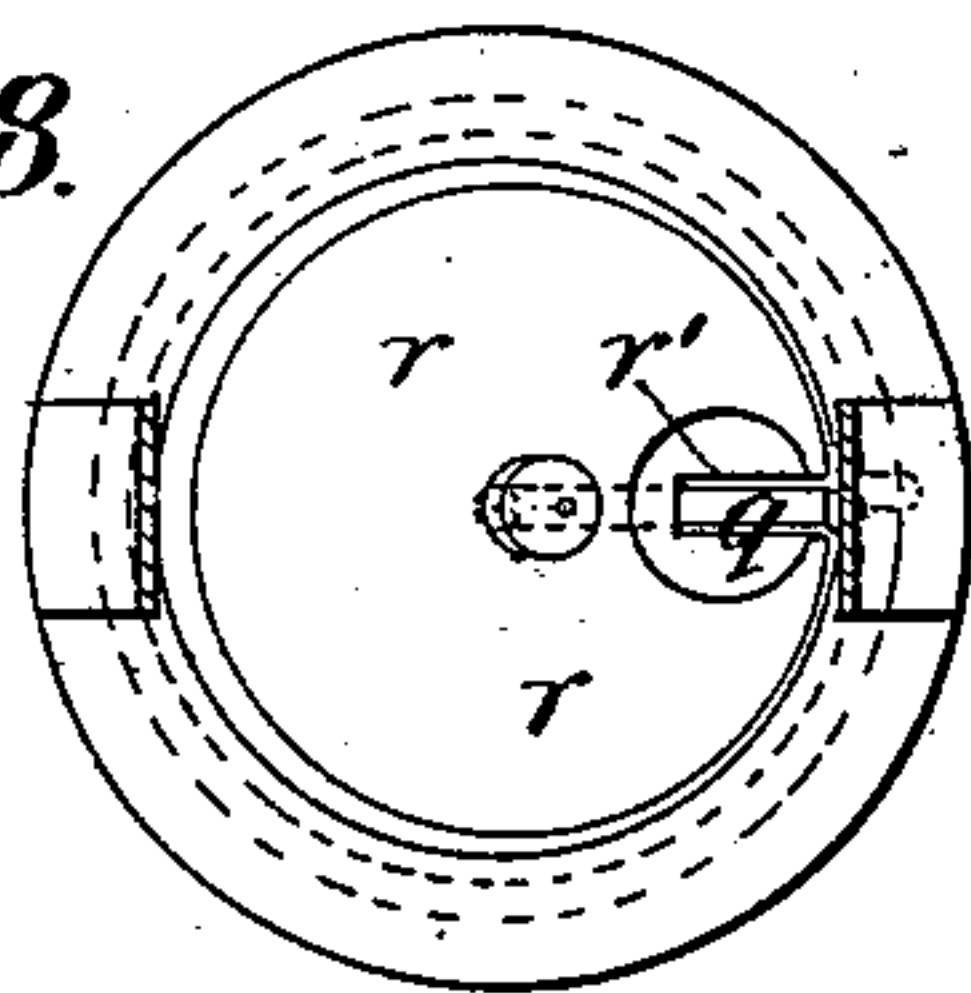
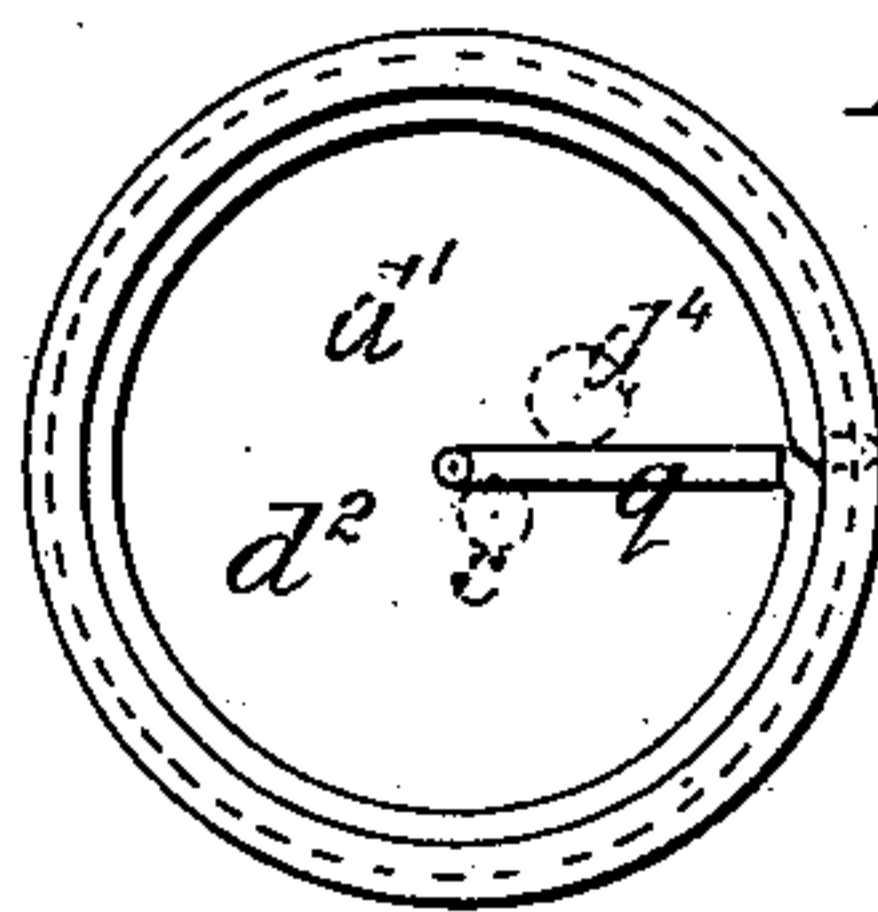


Fig. 9.



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UNITED STATES PATENT OFFICE.

JOSEPH STORER, OF HAMMERSMITH, ENGLAND.

FOUNTAIN.

SPECIFICATION forming part of Letters Patent No. 226,428, dated April 13, 1880.

Application filed January 21, 1880. Patented in England October 29, 1879.

To all whom it may concern:

Be it known that I, JOSEPH STORER, of Hammersmith, in the county of Middlesex, England, have invented new and useful Improvements in Fountains, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

The invention has for its object improvements in fountains, and relates to means whereby a small quantity of water or other liquid contained in the basin or dish is in communication with a small pump or forcing apparatus, and is constantly used and reused to produce a continuous or apparently continuous jet through the nozzle of the fountain.

For this purpose I connect the lower end of the jet-pipe with a chamber, into which it opens. This chamber also communicates, by a hole in the top plate thereof, with the water in the basin or dish, and such hole is provided with a valve which opens inward. The bottom of the said chamber is formed of flexible material, and is acted upon by a lever or striker set in rapid motion by means of electrical or mechanical power.

By these means I give a number of very rapid pulsations to the bottom of the forcing-chamber, thereby producing, apparently, a continuous jet from the nozzle; or the lever or striker may be dispensed with, and a cone or conical roller with continuous rotary motion employed in lieu thereof, in which case the inlet-valve is dispensed with, and a division is fixed in the forcing apparatus between the inlet and outlet openings. When using electrical power other forms of forcing apparatus may be employed.

One form of electrical power I have found to answer consists of a battery connected with an electro-magnet and an armature, the latter having formed or fixed thereon a lever or striker, which acts against the flexible part of the forcing apparatus. I would, however, remark that other forms of electrical apparatus may be employed without departing from the nature of my invention; and in order that my said invention may be more clearly understood and readily carried into effect, I will proceed, aided by the accompanying drawings, more fully to describe the same.

In the drawings, Figures 1 and 2 are two vertical sections, at right angles to each other, of a fountain constructed according to my invention and operated by electro-motive power. Figs. 3 and 4 are similar views of parts of the same, drawn to an enlarged scale; and Fig. 5 is an under-side view of parts of the forcing apparatus. Fig. 6 is a vertical section of parts of similar forcing apparatus to that shown in the above figures, but representing one mode of driving the same by clock-work or other mechanical power. Fig. 7 is a vertical section. Fig. 8 is an under-side view; and Fig. 9 is an under-side view, with parts removed, of another form of forcing apparatus, which may be driven either by electrical clock-work or other mechanical power.

In all the figures like parts are marked with similar letters of reference.

I will first describe the apparatus represented at Figs. 1, 2, 3, 4, and 5.

a is the base of the fountain, *b* is the basin or dish, and *c* is the jet-nozzle, the lower end of which is open to the interior of the chamber *d* of a small pump or forcing apparatus, consisting of a rigid top plate, *d'*, a flexible bottom or cover, *d''*, and a valve, *d'''*, which acts to open and close the hole *d''''*, communicating with the interior of the chamber *d*, and with a chamber, *d''''''*, communicating with the bottom of the basin or dish *b*.

The flexible bottom or cover *d''* is acted upon by a lever or striker, *e*, connected to and set in rapid motion by an armature, *f*, which is acted upon by an electro-magnet, *g*, placed in communication with a battery formed of one or more cells, *h*. The lever or striker *e* is carried by a spring, *e'*, and is weighted at *e''*, to prevent too rapid an action thereof.

The lever *e* carries a spring contact-piece, *e'''*, which acts in combination with another spring contact-piece, *i*, the latter of which is capable of regulation by a lever, *k*, to regulate the extent of motion given to the lever *e*.

The coils around the electro-magnet are connected to the battery by wires *l*, in contact with the hinge *m*, by which the basin or dish and working parts of the fountain are connected with the base, and the contact-piece *i* is connected with the battery by wires *n*, which are connected to the plate *k'*, carrying the axis

of the regulating-lever k . These connections may, however, be otherwise arranged, as will be well understood. I prefer to employ two or more cells, h , as shown, thereby maintaining the action of the fountain for a considerable time.

The action of the fountain is as follows: Water being supplied to the basin or dish b , and the electrical apparatus set in action, a comparatively rapid motion is given to the lever e , but not so great as that ordinarily given to the armature of an electro-magnet. This action causes the upper end of the lever e to strike the flexible bottom or cover d^2 in rapid succession, thereby causing the water contained in the chamber d to be forced through the jet-nozzle c , while, as the chamber d expands in the interval between each blow of the lever e , such chamber is supplied with water or other liquid from the basin or dish b through the hole d^4 and past the valve d^3 , which at such time opens for such purpose, but which, when the blow is given to the flexible cover d^2 , closes, thereby causing the water forced out of the chamber d to pass out thereof through the nozzle c . By these means a continuous or comparatively continuous jet is produced through the jet-nozzle c .

I would here remark that other forms of electro-motive apparatus may be employed for giving motion to a small pump or forcing apparatus for a fountain, as will be readily understood.

At Fig. 6 I have represented a method by which the small pump or forcing apparatus hereinbefore described can be operated by clock-work. In this view I have not thought it necessary to show the train of gearing; but I have represented the lever e as provided with a tail-piece, e^4 , which is operated by a pinion, o' ; or it may be by a crank or eccentric on the shaft o , to which rapid rotary motion is given, such shaft o being geared with the shaft p , which carries a fly, p' , and heavy wheel or disk, p^2 , as shown, to regulate the speed of the clock-work.

At Figs. 7, 8, and 9 I have represented a different form of small pump or forcing apparatus, which may be operated by means of clock-work or other mechanical power, or may be operated by any convenient electro-motive power. In this arrangement the valve d^3 is dispensed with; but the chamber d is divided on one side of its center by an abutment or division-piece, g , pressing the flexible cover or bottom d^2 at such part against the plate d' .

A cone or conical roller, r , which is formed

with a slot or opening, r' , to receive the abutment or division-piece g , receives rapid rotary motion by means of the crank s' on the shaft s , operated by electrical clock-work or other mechanical power. Thus by the rapid rotation of the cone or conical roller r the chamber d is caused to be alternately and gradually filled and emptied, and there is no interval in the action of the pump or forcing apparatus except during the short period when the cone or conical roller r is passing the abutment g .

I would here remark that fountains constructed according to my invention may be made of various ornamental designs, and the basin or dish b and operating parts may be connected with the base a by an intervening pedestal of any desired design, in which case the electrical or other motive power would be preferably placed in the base of the apparatus; and motion would be communicated to the small pump or forcing apparatus from the striker or lever e , or other operating part of the motive power, by a balanced rod or shaft, as will be readily understood.

Having thus described the nature of my said invention and modes in which the same may be carried into effect, I would have it understood that what I claim is—

1. A fountain having a basin or dish perforated at the bottom, a receiving or collecting chamber, d , having a flexible bottom or cover, d^2 , and a jet-nozzle projecting at its lower end into said chamber and receiving its supply therefrom, the flexible bottom d^2 being operated upon to force the water upward, substantially as described.

2. The combination, in a fountain, of dish or basin b , jet-nozzle c , collecting-chambers d d^5 , valve d^3 , flexible bottom d^2 , and lever e , actuated by an electro-motor, for the purpose of pulsating said flexible bottom and projecting liquid upward through the nozzle, as explained.

3. In a fountain, the combination, with a pumping or forcing apparatus communicating with the liquid in the basin or dish and with the jet-nozzle, and provided with a flexible bottom, of a weighted spring lever or striker, e , spring contact-pieces e^3 i , and lever k , as and for the purpose set forth.

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Witnesses:

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