

No. 742,156.

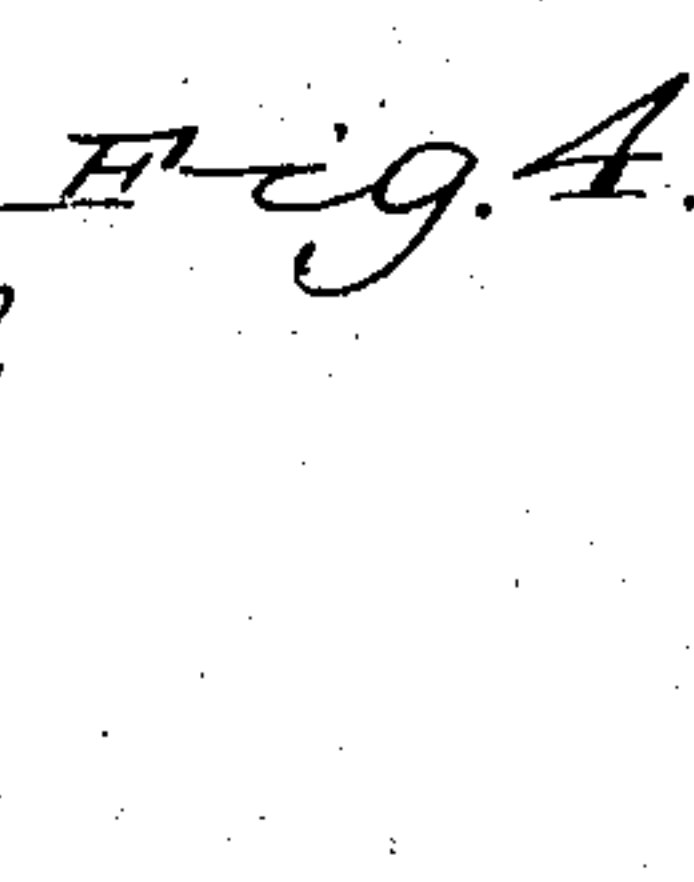
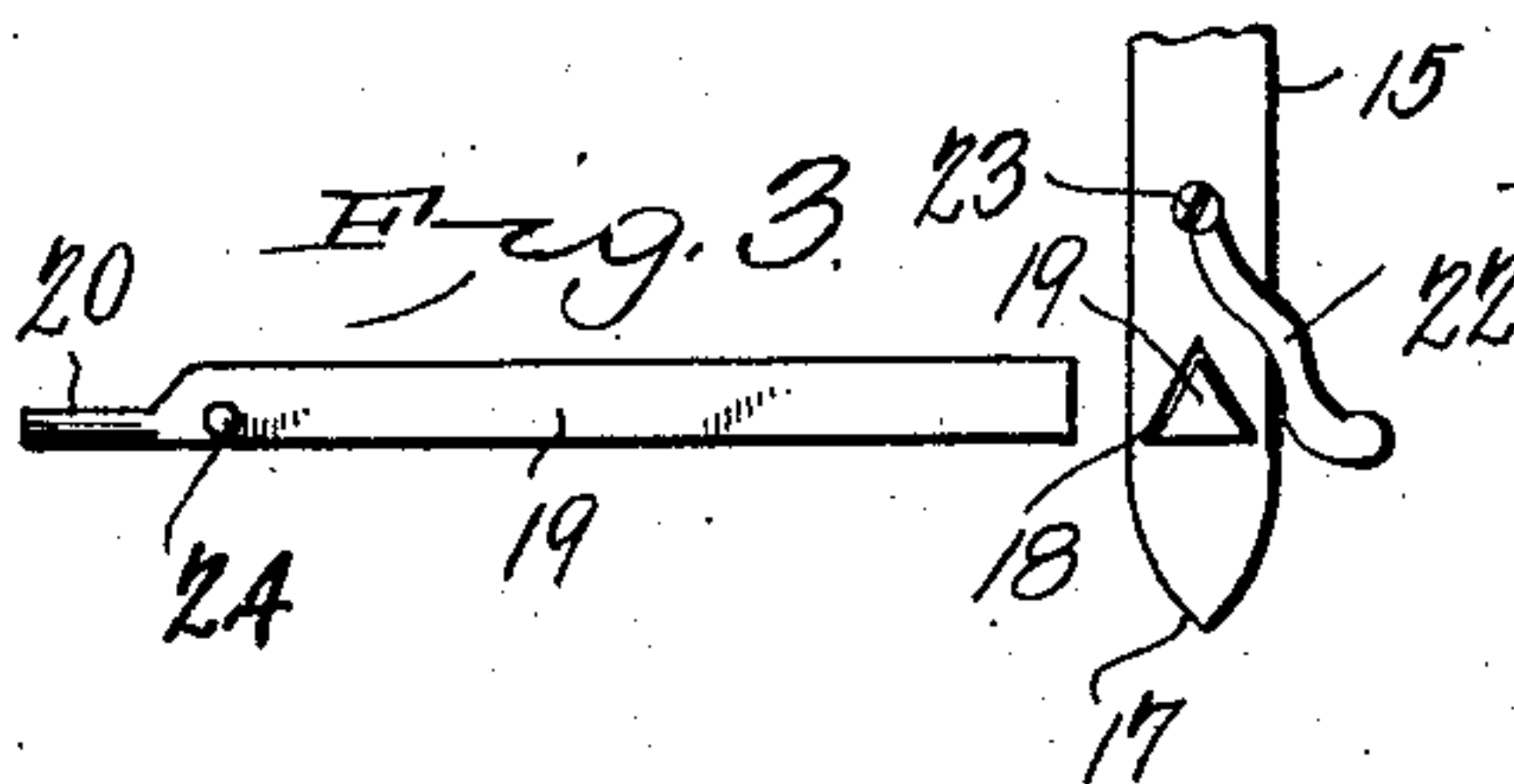
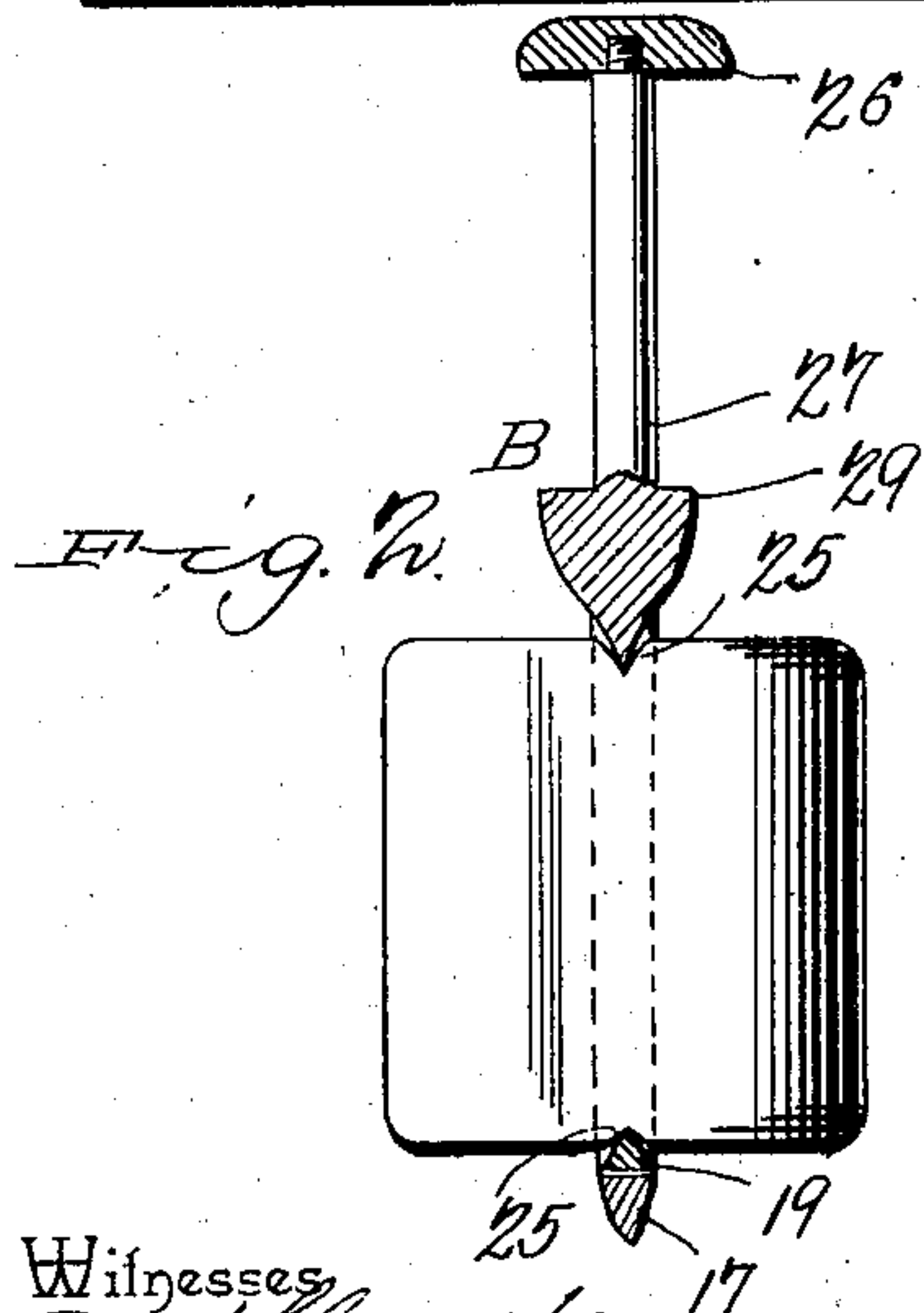
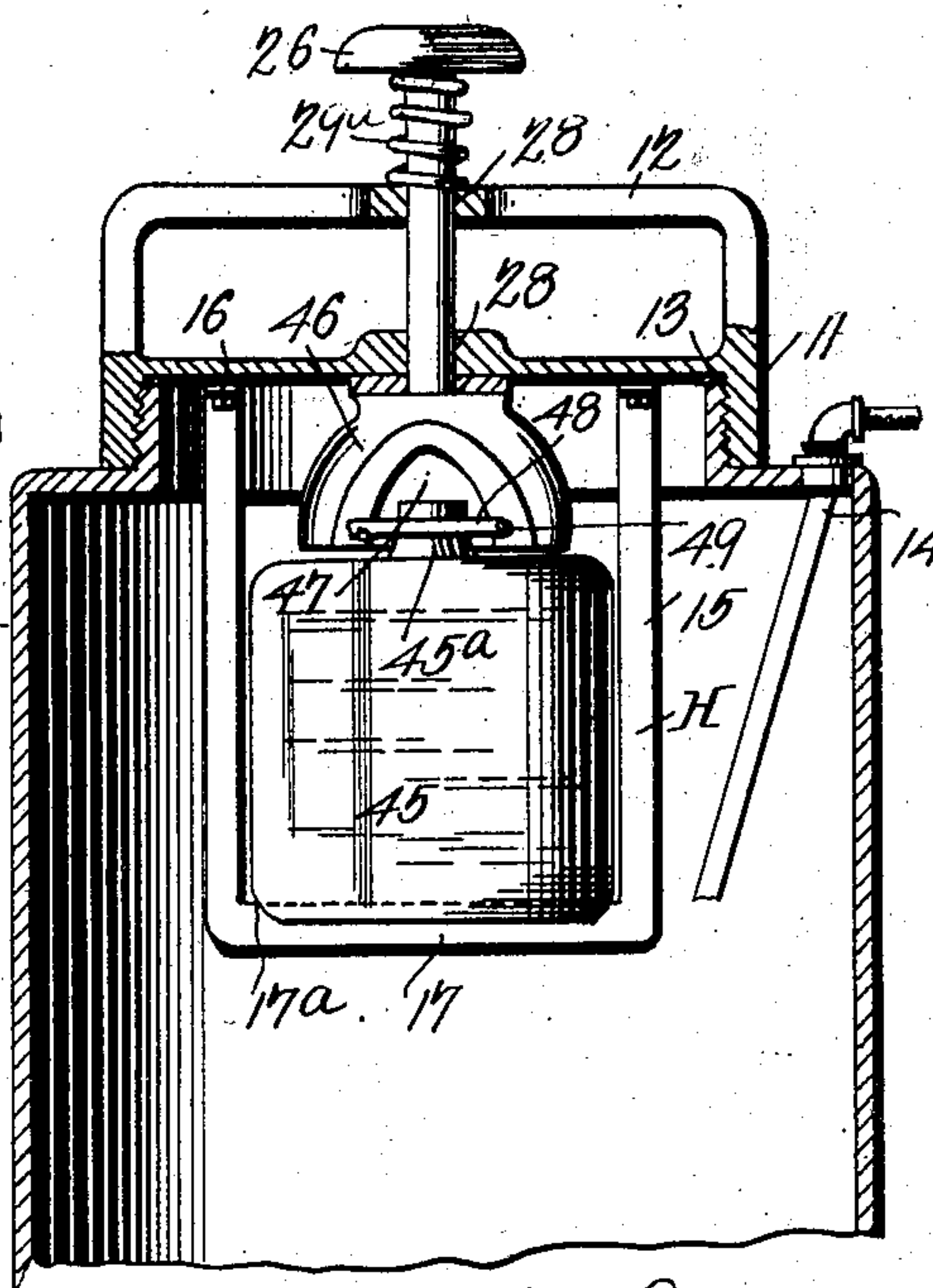
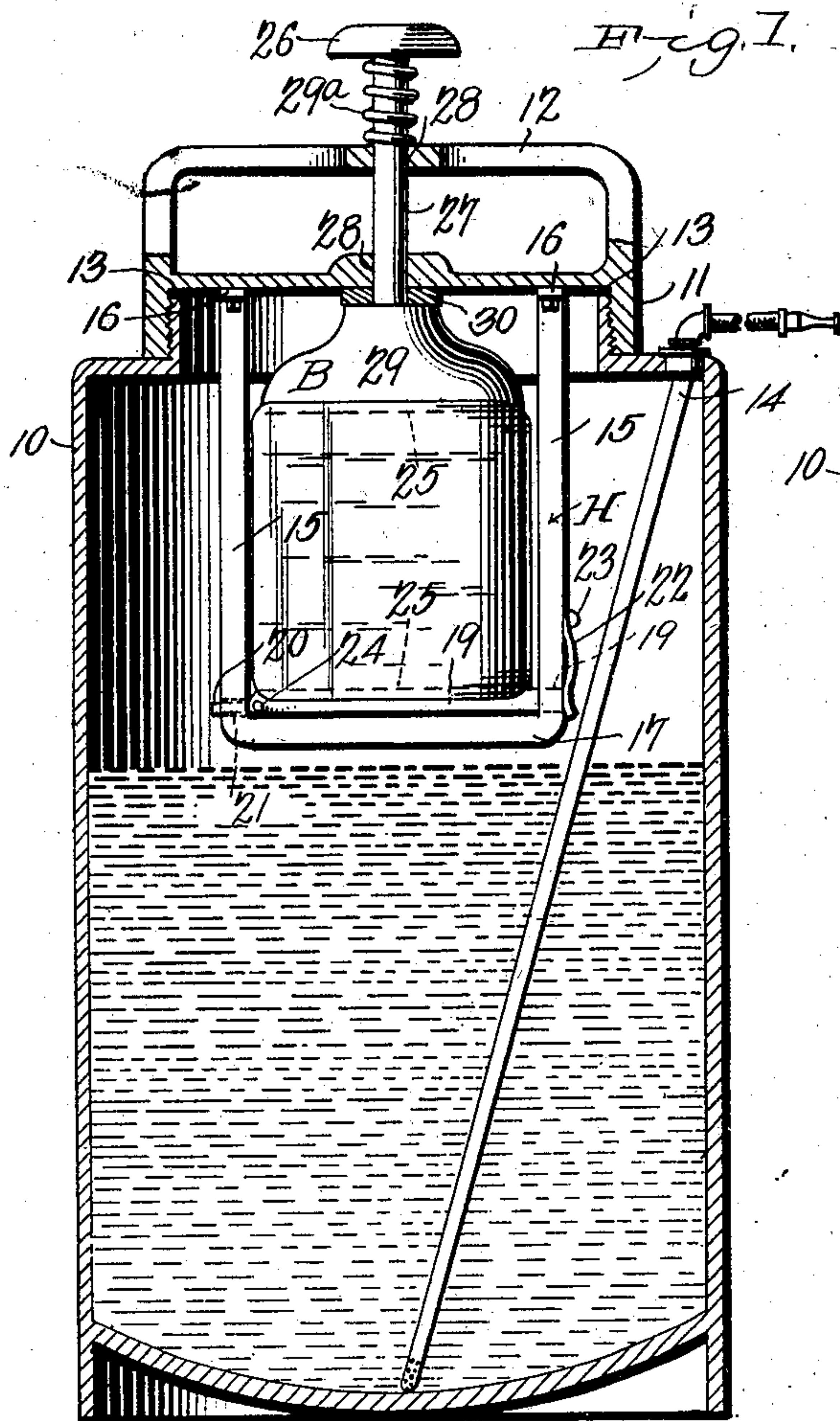
PATENTED OCT. 27, 1903.

E. J. BUCKLAND.
FIRE EXTINGUISHER.

APPLICATION FILED MAR. 16, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
E. J. Stewart
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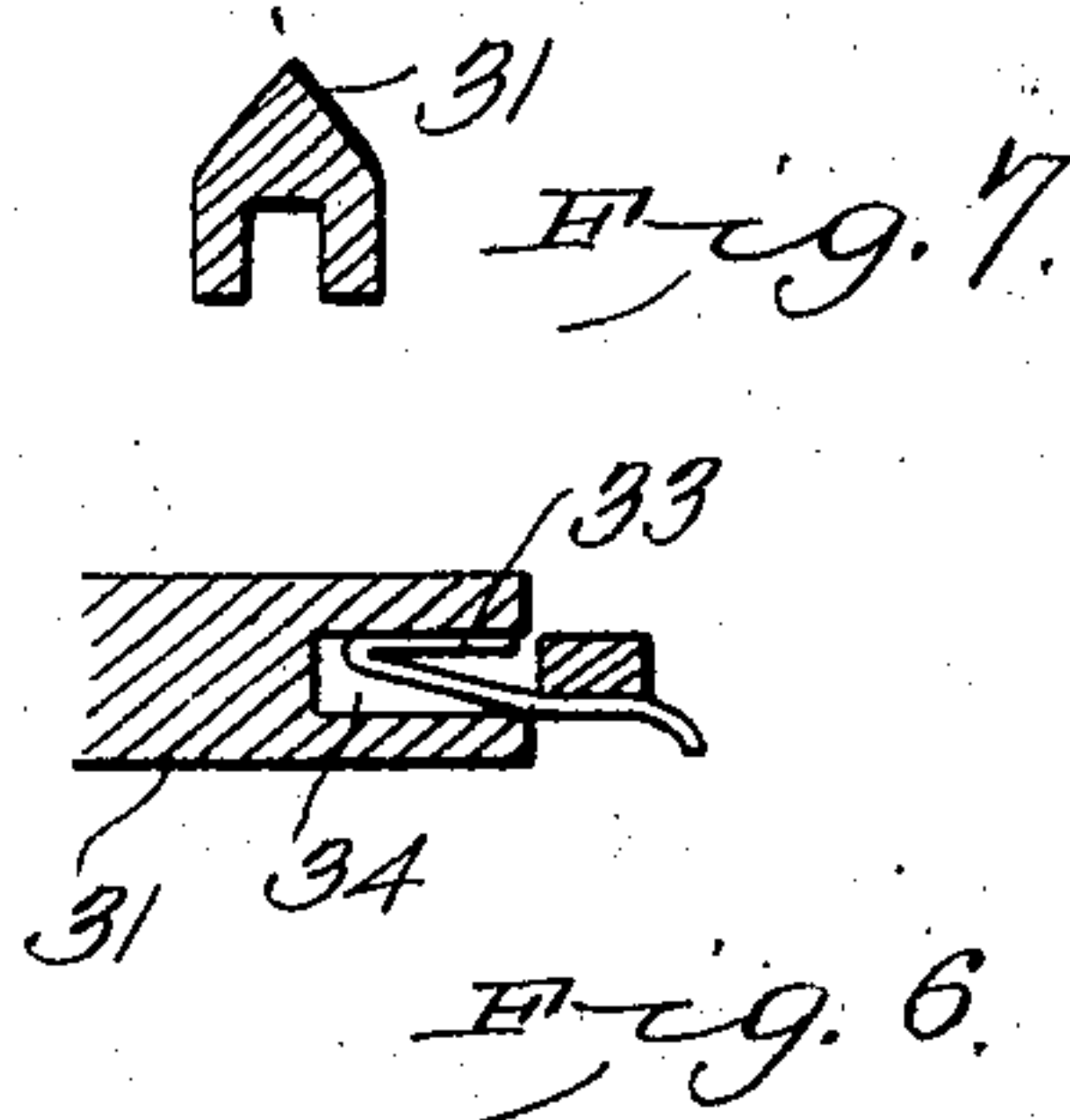
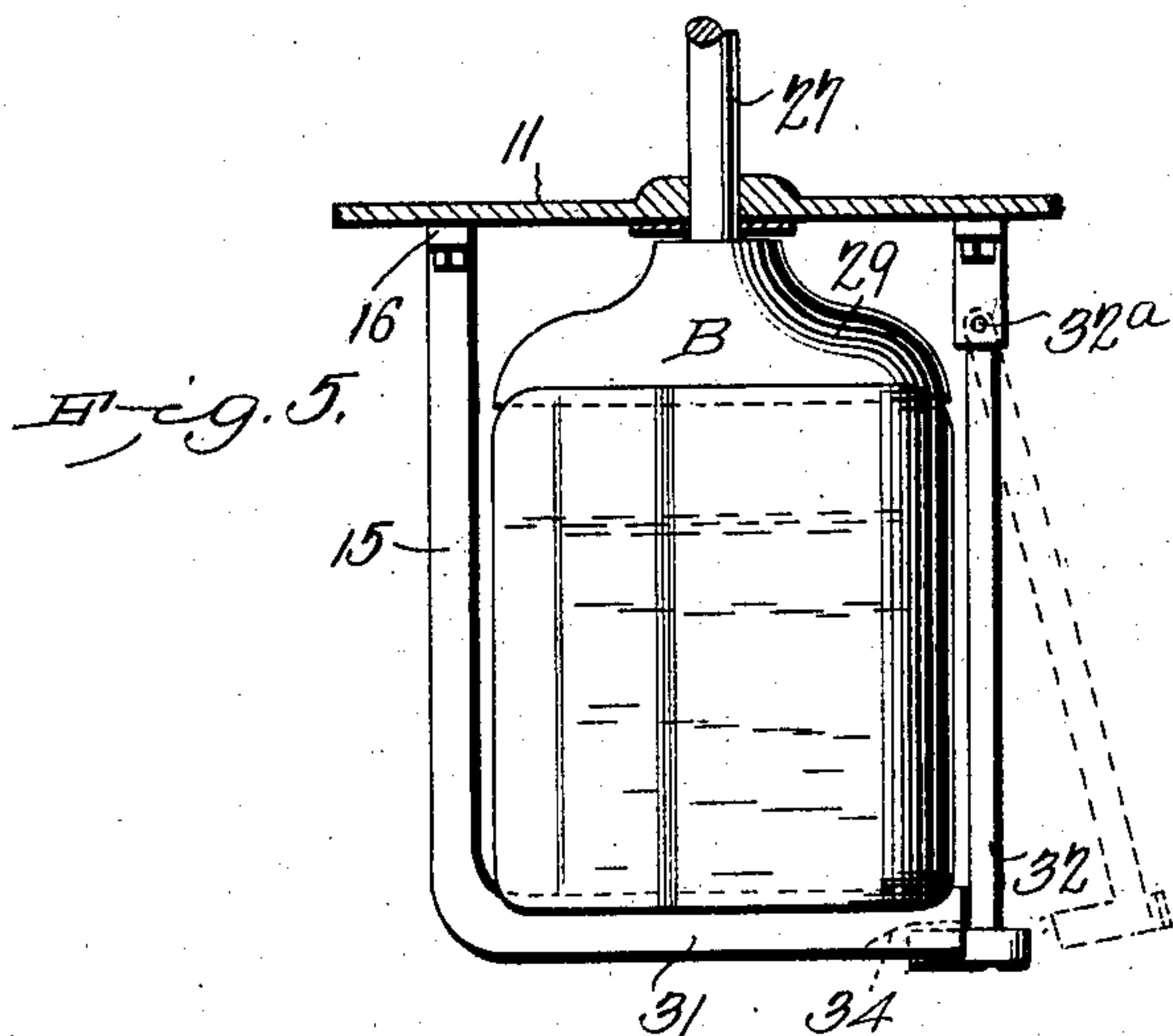
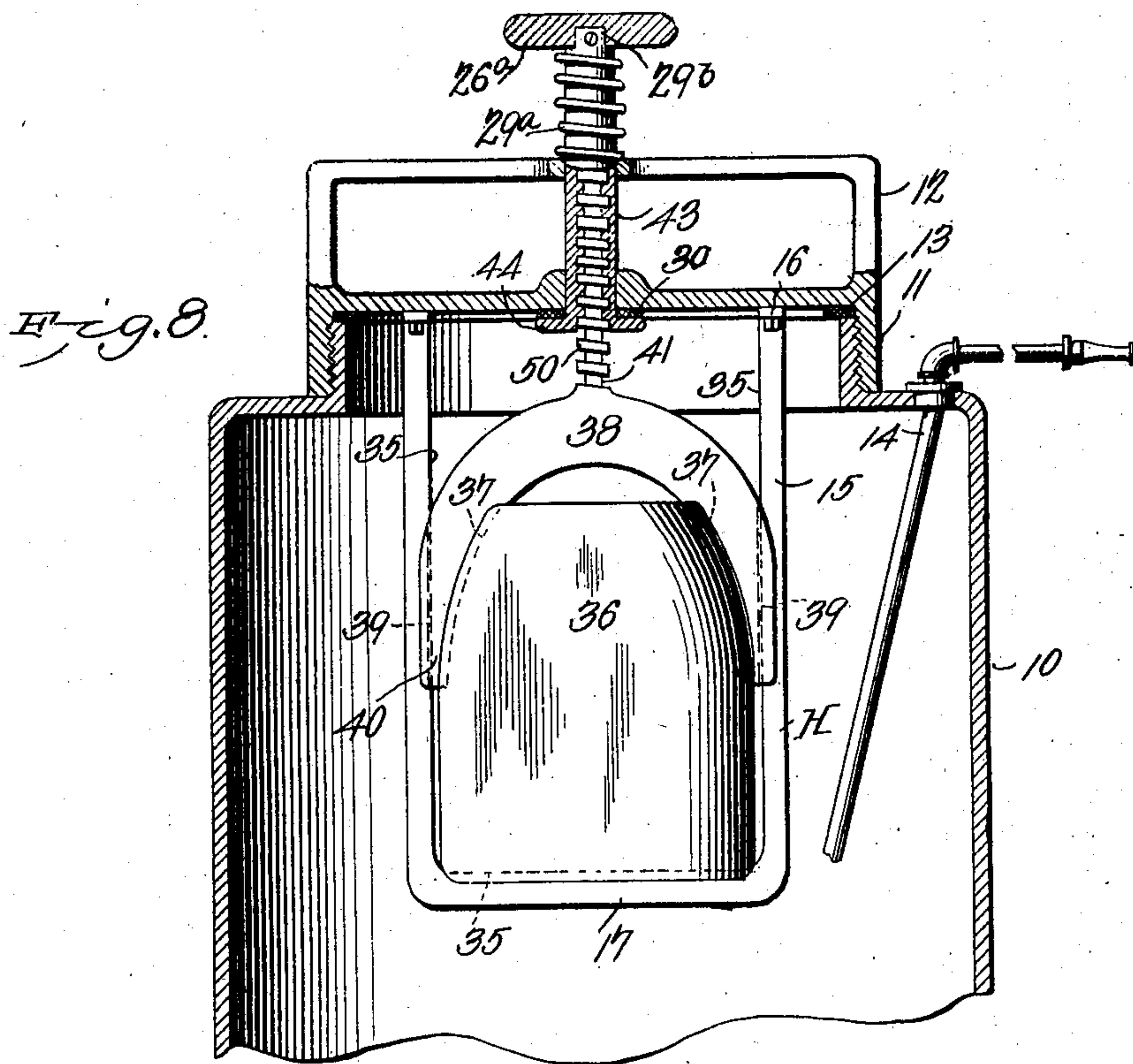
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UNITED STATES PATENT OFFICE.

ELIZABETH JOHNSON BUCKLAND, OF HUNTS CORNERS, NEW YORK.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 742,156, dated October 27, 1903.

Application filed March 16, 1903. Serial No. 148,118. (No model.)

To all whom it may concern:

Be it known that I, ELIZABETH JOHNSON BUCKLAND, a citizen of the United States, residing at Hunts Corners, in the county of Cortland and State of New York, have invented a new and useful Fire-Extinguisher, of which the following is a specification.

This invention relates to fire-extinguishers, and more particularly to that type in which acid is mixed with an alkaline solution to generate pressure and form a liquid more efficient in extinguishing a fire than is water.

It consists, more essentially, in means for supporting a vessel containing the acid and to means for releasing said acid therefrom.

Figure 1 is a sectional view of the receiver, illustrating one form of support having a removable lower bar. Fig. 2 is a vertical detail section; Fig. 3, an enlarged detail view of the supporting-bar of Fig. 1; Fig. 4, an enlarged detailed view of the means for returning said bar in position; Fig. 5, a side elevation of a modified form of support, illustrating a movable side bar; Fig. 6, a detail of the latch; Fig. 7, an enlarged section of the lower member of Fig. 5, showing the reduced upper edge and socket for the latch. Fig. 8 is a sectional view of the receiver, with another modification of the support and of the breaking member. Fig. 9 is still another modification, and Fig. 10 a detail section of the head of the breaking member illustrated in Fig. 9.

Similar characters indicate like parts throughout the several figures of the drawings.

In Fig. 1 the numeral 10 designates a tank of suitable shape and construction adapted to contain an alkaline solution, the neck of said tank being provided with a thread to receive a screw-cap 11, here shown as formed with a handle 12, by which the entire apparatus may be carried. A washer 13, of rubber or like material, furnishes a tight joint between the neck and cap, which together furnish a closed receiver. The usual discharge-pipe 14 extends through the top of the tank and to the bottom thereof and is provided with a suitable hose and discharge-nozzle. Secured to

the inner face of the cap is a holder H of such lateral dimensions that it may be readily withdrawn from the tank when the cap is unscrewed. This holder consists of a yoke having side bars 15, fastened to the cap by screws extending through the bent ends 16 and a bottom cross-bar 17. Through one of the side bars is an opening 18, here shown as of triangular form to receive a triangular bar or supporting member 19, extending across the holder in proximity to the bottom bar and having a reduced cylindrical portion 20, projecting into a similarly-formed opening 21 in the side bar. Adjoining the opening 18 is a spring-latch or retaining member 22, pivoted to the side bar at 23 and adapted to retain the supporting-bar in place or to be swung to one side to release it. A pin 24 may be inserted in the bar 19 close to the cylindrical extension to prevent its complete withdrawal through the opening 18.

The bar 19 serves to support a bottle or vessel, of glass or other frangible material, containing the acid, this being conveniently of the generally rectangular form shown and having at its bottom and top grooves or depressions 25 25. In the bottom groove is seated the reduced or triangular edge of the supporting-bar 19 and into the top groove projects a reduced edge formed upon a cutter or breaking member B. This breaking member consists of a head 29, having a stem 27, extending through openings 28 28 in the cap and handle. At the upper end of the stem is a head or contact piece 26, between which and the top of the handle is situated a spiral spring 29^a, holding the breaking member normally upward, with the head 29 in proximity with the under side of the cap, the washer 30 being preferably interposed to form a tight joint.

When the parts are assembled with the supporting-bar locked in place by the latch, the distance between the opposite reduced edges of said bar and the breaking member is such that both extend into their grooves and the bottle is securely retained thereby against displacement in a direction at right angles to the side bars and longitudinally of the yoke,

the side bars themselves preventing movement along the bottom bar.

To prepare the apparatus for use, the latch is swung from over the opening 18 and the bar 19 is withdrawn therefrom until substantially only the reduced portion remains within the yoke. At this time the bottle containing, preferably, sulfuric acid may be introduced by placing its upper groove in coaction with the edge of the breaking member, whereupon the bar 19 is pushed back to its original position with its upper edge occupying the bottom groove until the portion 20 enters the opening 21, when it is then locked in place by the latch. The tank is filled with a solution of sodium bicarbonate and the cap secured in place.

In use it is only necessary to press down upon the contact-head or strike it a blow, thus forcing the edges of the two bars into the opposite grooves and breaking the bottle by a very effective cleaving action, insuring its being at least divided in halves and the entire contents instantly released into the alkaline solution. This generates carbonic-acid gas and creates a pressure to eject the contained liquid through the discharge-pipe, while the excess of gas is taken up by the said liquid and forms a solution the extinguishing properties of which are well known.

In the form of my invention illustrated in Fig. 5 the bottle instead of being supported upon a separate bar is carried by the edge of the bottom bar 31 of the yoke, which is formed with a reduced upper edge to enter the bottom groove of the bottle. One of the side bars 15 is divided to provide a lower section 32, hinged at 32^a and preferably of spring-brass, formed at its lower end with a bent latch portion 33, which may engage and interlock with a recess 34 in the bottom bar. The swinging of this side-bar section about its pivot will permit the introduction of the bottle and the securing it in place by the latch.

As illustrated in Fig. 8, the side and bottom bars of the yoke may be formed integrally and are preferably provided with V-shaped reduced inner edges 35. Engaging the bottom bar is a bottle 36, provided with a groove at the bottom, as before, but having the upper portion of its sides inclined at 37 and also grooved. Upon the side bars as ways slides a breaking head or member 38, preferably of the general U shape, as illustrated, with suitable grooves 39 in its sides to coact with the side bars and having a reduced inner edge 40 to enter the grooves in the bottle at 37. The stem 41 of the head is threaded at 50 in an appropriate manner and engages the threaded interior of a sleeve 43, sliding through the cap and handle. In this form a flange 44 is provided at the lower end of the sleeve operating with the washer 30, and it has a spiral spring 29^a and contact-bar 26^a, fitting the angular end 29^b of the sleeve

43. It will be seen that here the breaking member is raised through the rotation of its threaded sleeve until sufficient space is made to introduce the bottle, which is then secured in place by the reverse rotation of the sleeve and lowering of the breaking-head. Pressure upon the contact-head forces down the sleeve, and the bottle is severed by the cleaving edge almost encircling it.

In Fig. 9 the bottom bar 17 has a reduced upper edge 17^a; but the breaking member is differently constructed, but still serves to assist in preventing lateral movement of the upper portion of the bottle. For this purpose the bottle 45 is provided with a neck 45^a, which is embraced by the breaking-head 46. This is conveniently of flattened bell-shaped form, having an opening through its side at 47, through which the neck of the bottle may be introduced. It is shown as locked therein by a latch 48, pivoted at 49 and extending across the opening. In this instance the bottle is cut by the reduced upper end of the bottom bar, the same as with the other constructions.

Except as indicated the same reference characters are employed in the figures illustrating different modifications of my invention.

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

1. In a fire-extinguisher the combination with a receiver of a vessel located within the receiver and provided with a plurality of oppositely-disposed grooved sides, and members having reduced edges for engaging said grooves.

2. In a fire-extinguisher, the combination with a receiver, of a frangible vessel therein provided with oppositely-situated grooved sides, and opposite members having reduced edges for engaging the grooves, one of said members being movable to provide for the insertion of said vessel.

3. In a fire-extinguisher, the combination with a receiver, a frangible vessel therein provided with a plurality of oppositely-disposed grooved sides, members having edges engaging said grooves, and means for forcing one of the members into one of the grooves to break the vessel.

4. In a fire-extinguisher the combination with a receiver, a support located therein, and a frangible vessel, said support being provided with a movable member to permit the insertion of the frangible vessel, of a breaking member comprising a head, a stem carried thereby and extending through an opening in the wall of the receiver, and means for forcing the head normally toward the receiver-wall.

5. In a fire-extinguisher, the combination with a receiver, of a yoke located therein, a removable bar supported by the yoke, and a vessel resting upon the bar.

6. In a fire-extinguisher, the combination
with a receiver, of a yoke located therein, a
movable bar carried by the yoke, a vessel en-
gaging said bar, and a latch for locking the
5 bar in position.

7. In a fire-extinguisher, the combination
with a receiver, of a yoke located therein, a
movable bar carried by the yoke, a vessel en-
gaging the bar, means for preventing the

complete removal of said bar, and a latch for 10
locking the bar in place.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses.

ELIZABETH JOHNSON BUCKLAND.

Witnesses:

LUCRETIA P. HUNT,

A. D. JOHNSON.