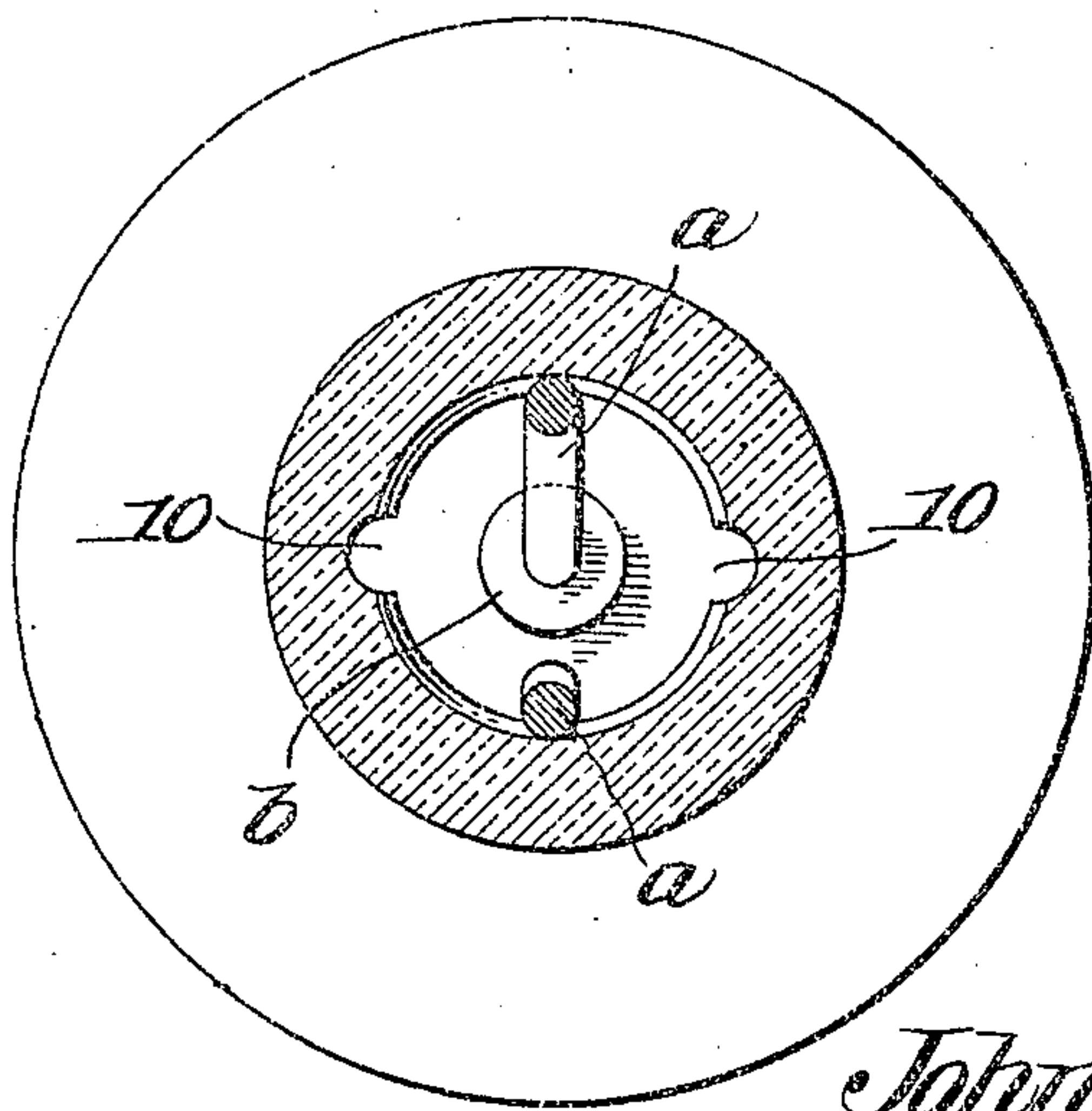
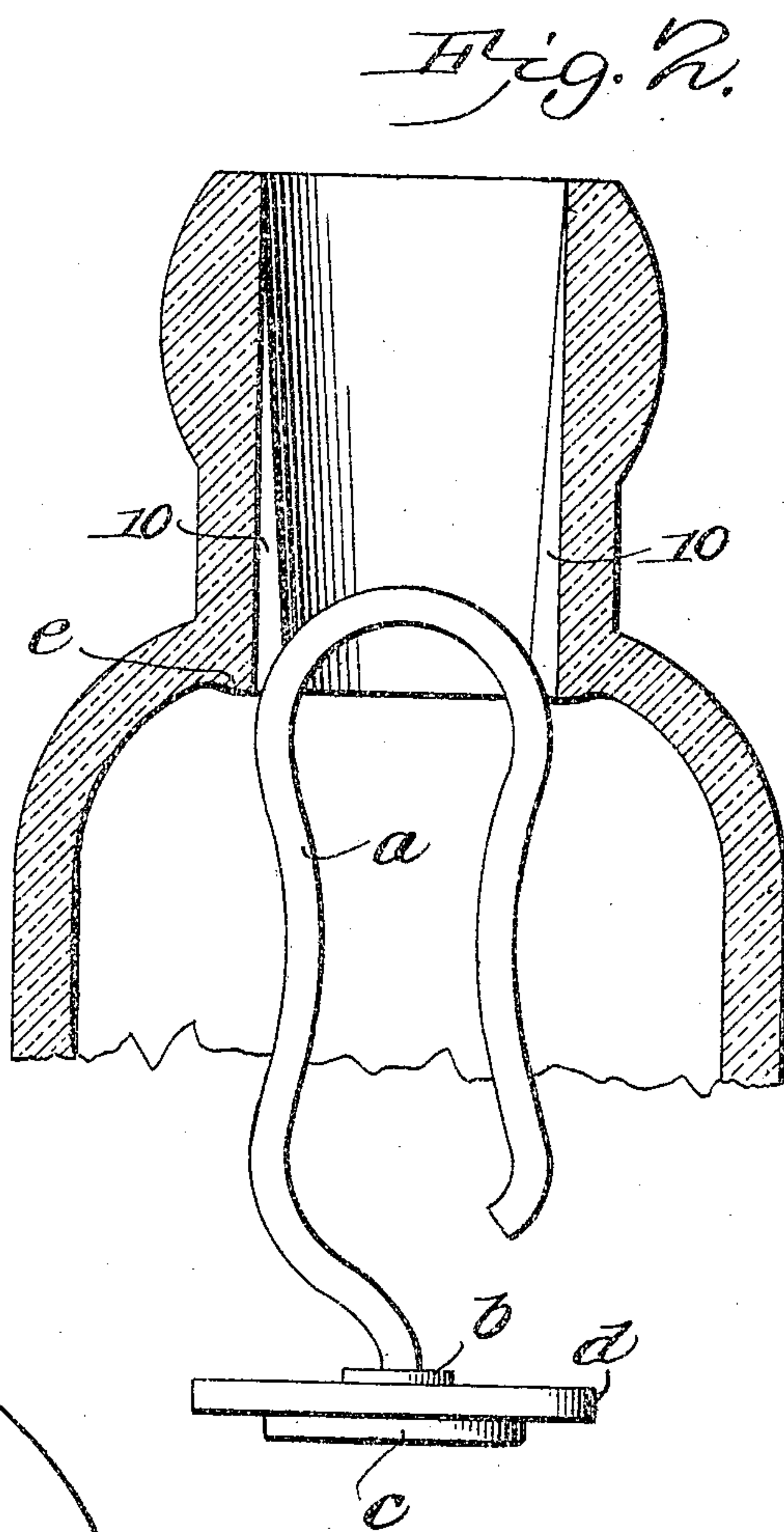
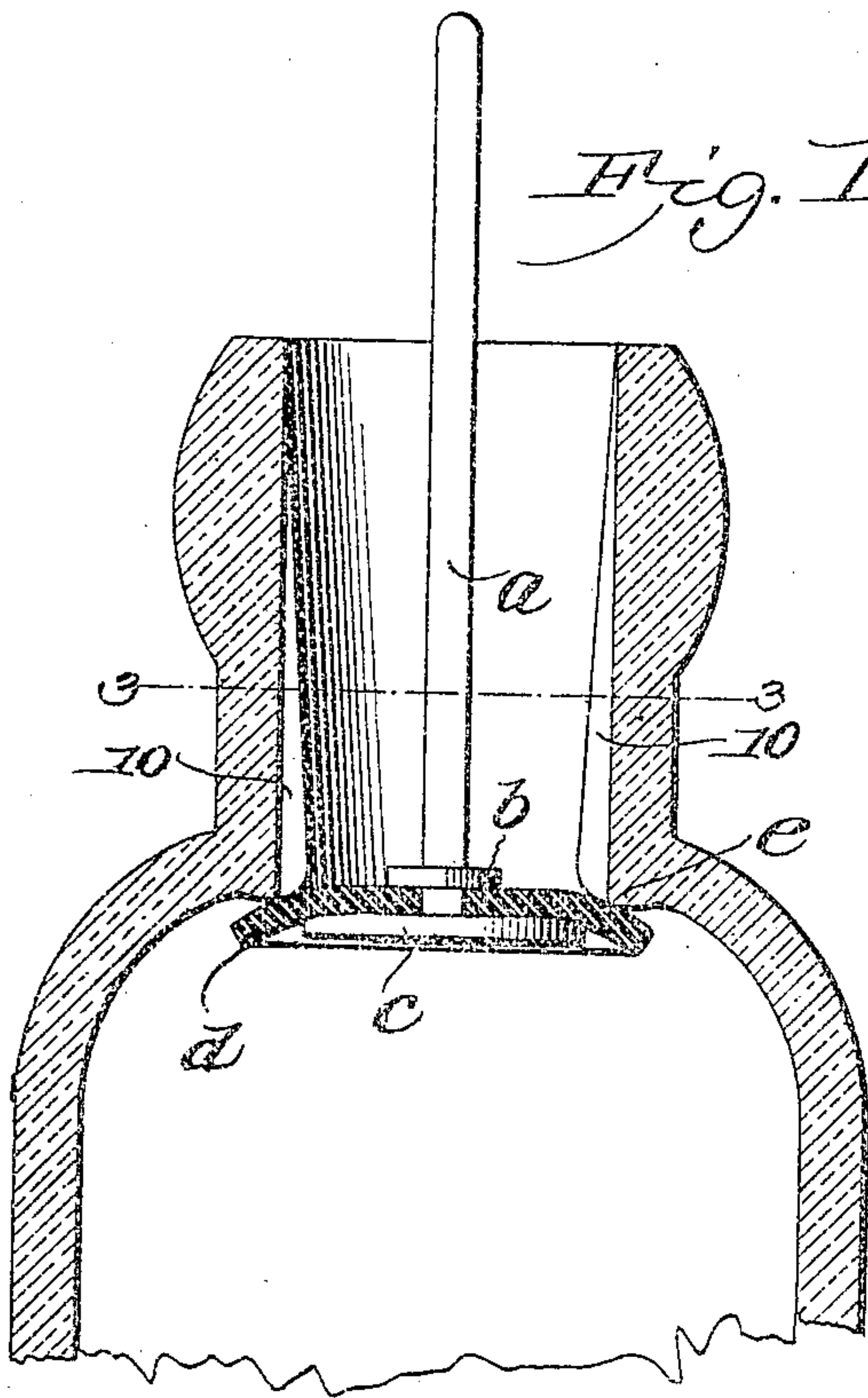


No. 795,393.

PATENTED JULY 25, 1905.

J. HOLLINGWORTH.
BOTTLE STOPPER.

APPLICATION FILED APR. 10, 1905.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN HOLLINGWORTH, OF PHILIPSBURG, PENNSYLVANIA.

BOTTLE-STOPPER.

No. 795,393.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed April 10, 1905. Serial No. 254,858.

To all whom it may concern:

Be it known that I, JOHN HOLLINGWORTH, a citizen of the United States, residing at Philipsburg, in the county of Center and State of Pennsylvania, have invented a new and useful Bottle-Stopper, of which the following is a specification.

This invention relates to bottles and bottle-stoppers, and especially to bottles employed for holding mineral waters, the principal object of the invention being to provide an effective form of bottle-stopper of such nature as to permit of the removal of the stopper from the neck and the thorough cleansing of the bottle.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a sectional elevation of the upper portion of a mineral-water bottle constructed in accordance with the invention and provided with a stopper. Fig. 2 is a similar view showing the stopper being forced within the bottle. Fig. 3 is a sectional plan view on the line 3 3 of Fig. 1.

Similar characters of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In mineral-water bottles, and especially bottles of that type provided with the well-known Hutchinson stopper, it is impossible to thoroughly cleanse the bottles by ordinary means, inasmuch as stoppers cannot be removed from the bottle when once placed in position therein. This type of stopper consists, as is well known, of an open loop *a* of spring-wire, one end of which is provided with a pair of spaced collars *b* and *c*, between which is clamped the central portion of a valve-disk *d*, the lower collar *c* being of such diameter as to prevent the withdrawal of the stopper from the bottle, but the upper disk being of such diameter that the stopper may be readily introduced into such bottle. The bottles are usually provided with tapered necks, and the upper portion of the loop *a* protrudes above the top of

the bottle when the stopper is in closed position, the stopper being usually opened by a sharp blow or pressure exerted on the protruding end of the loop and moving downward to a position somewhat below the seat *e*, that is formed at the base of the neck portion.

The principal object of the present invention is to provide a simple form of bottle which may be used in connection with these stoppers, the bottle being of such construction as to permit of the displacement of the stopper from the neck, the stopper being dropped within the bottle and the latter being then cleansed by the usual brushes or other mechanism.

In carrying out the invention the tapered inner portion of the neck is provided with two grooves 10, that extend from the valve-seat upward to a point close to the mouth of the bottle, said grooves being tapered in depth and their lowermost walls being parallel with each other, as will be seen on reference to Figs. 1 and 2. These grooves are formed diametrically opposite each other, and the space between their lower walls is equal to or greater than the greatest width of the loop *a*, so that if the latter is turned until its opposite sides enter the grooves the stopper may fall within the bottle, as shown in Fig. 2. To replace the stopper, it is merely necessary to invert the bottle and reintroduce the end of the loop into the grooves, and after pulling the loop into the neck said loop is given a quarter-turn, so that its opposite sides rest against the tapered portion of the bottle-neck, and said stopper may thereafter be used in the ordinary manner, being moved to open position by downward pressure on the protruding end of the loop.

The grooves 10 may be formed in any suitable manner, and while they are shown in the present instance as extended up to the mouth of the bottle it is obvious that they may terminate some distance below that point so long as sufficient space be retained for the downward movement of the link.

In place of forming two diametrically-opposed grooves it is obvious that a single groove of greater depth may be employed for the same purpose.

Having thus described the invention, what is claimed is—

1. A bottle having a neck, the inner wall of which is provided with a groove for the passage of the holding-loop of the stopper.

2. A bottle having a neck, the inner wall of which is tapered, said wall having a groove to permit the passage of the holding-loop of the stopper.

3. A bottle having a neck, the inner wall of which is tapered, there being a groove in said tapered wall, and a stopper having a spring-loop, the width of which is greater than the smallest diameter of the neck, said loop being movable to a position within the groove to permit the passage of the stopper to the interior of the bottle.

4. A bottle having a neck portion, the inner wall of which is tapered, said tapered wall being provided with a pair of diametrically-

opposed grooves extending upward from the base of the neck, and a stopper having a holding-loop of elastic material, the major width of which is greater than the smallest diameter of the neck, the distance between the lower walls of the grooves being equal to, or greater than the major width of the loop.

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

JOHN HOLLINGWORTH.

Witnesses:

W. H. HOLLINGWORTH,

W. D. CROSBY.