

C. F. DRENK.
BOTTLE STOPPER.
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978,712.

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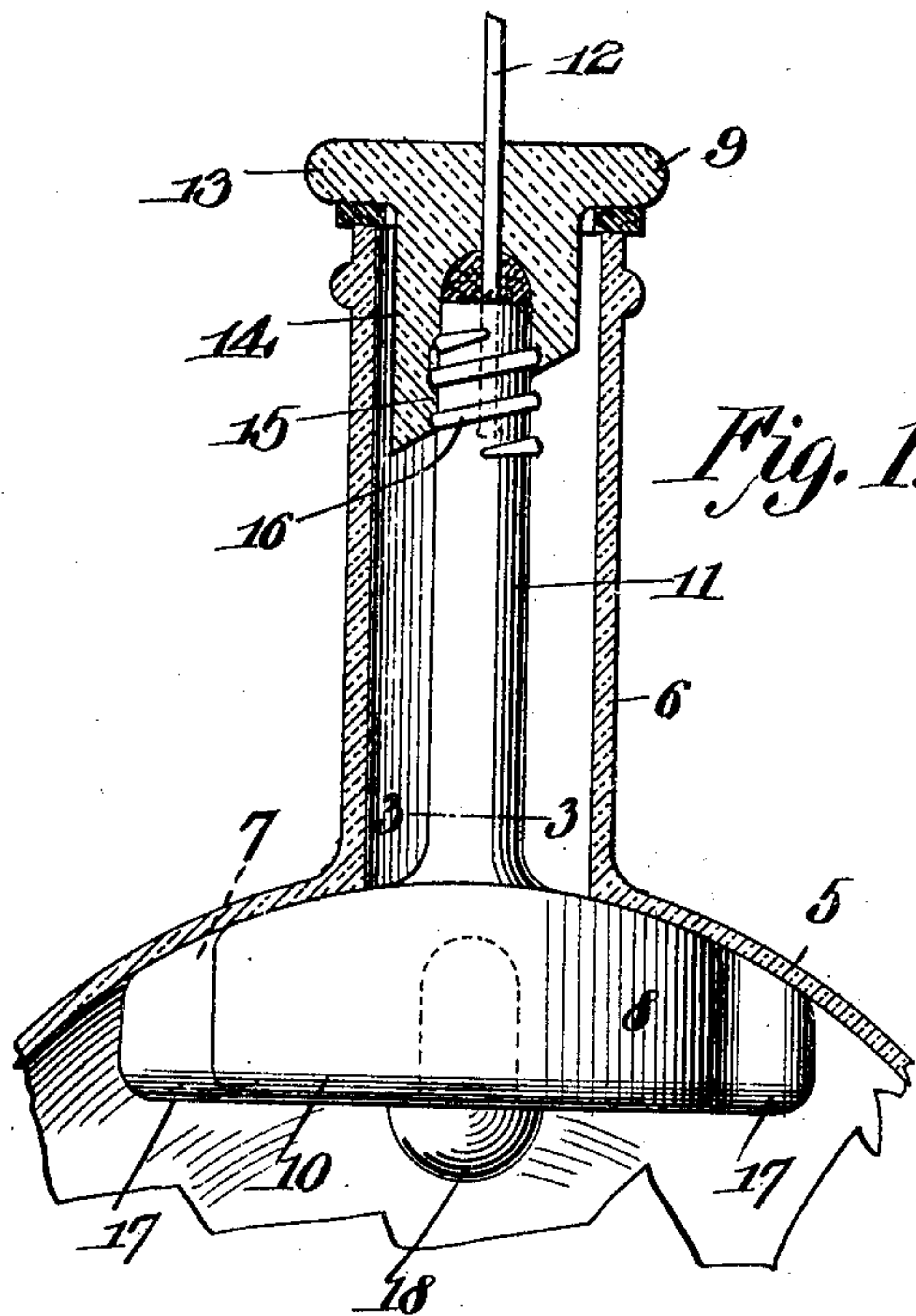


Fig. 1.

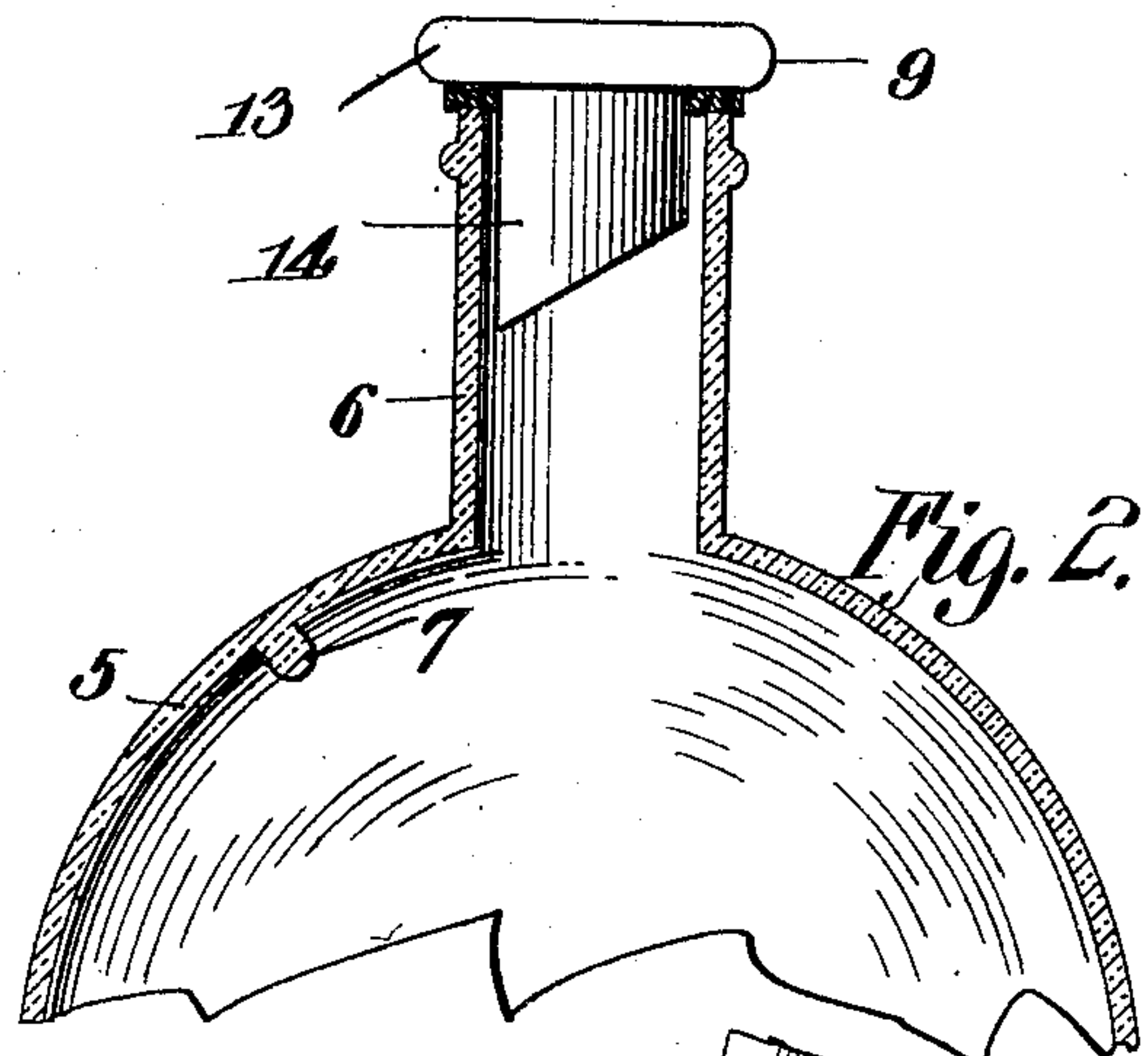


Fig. 2.

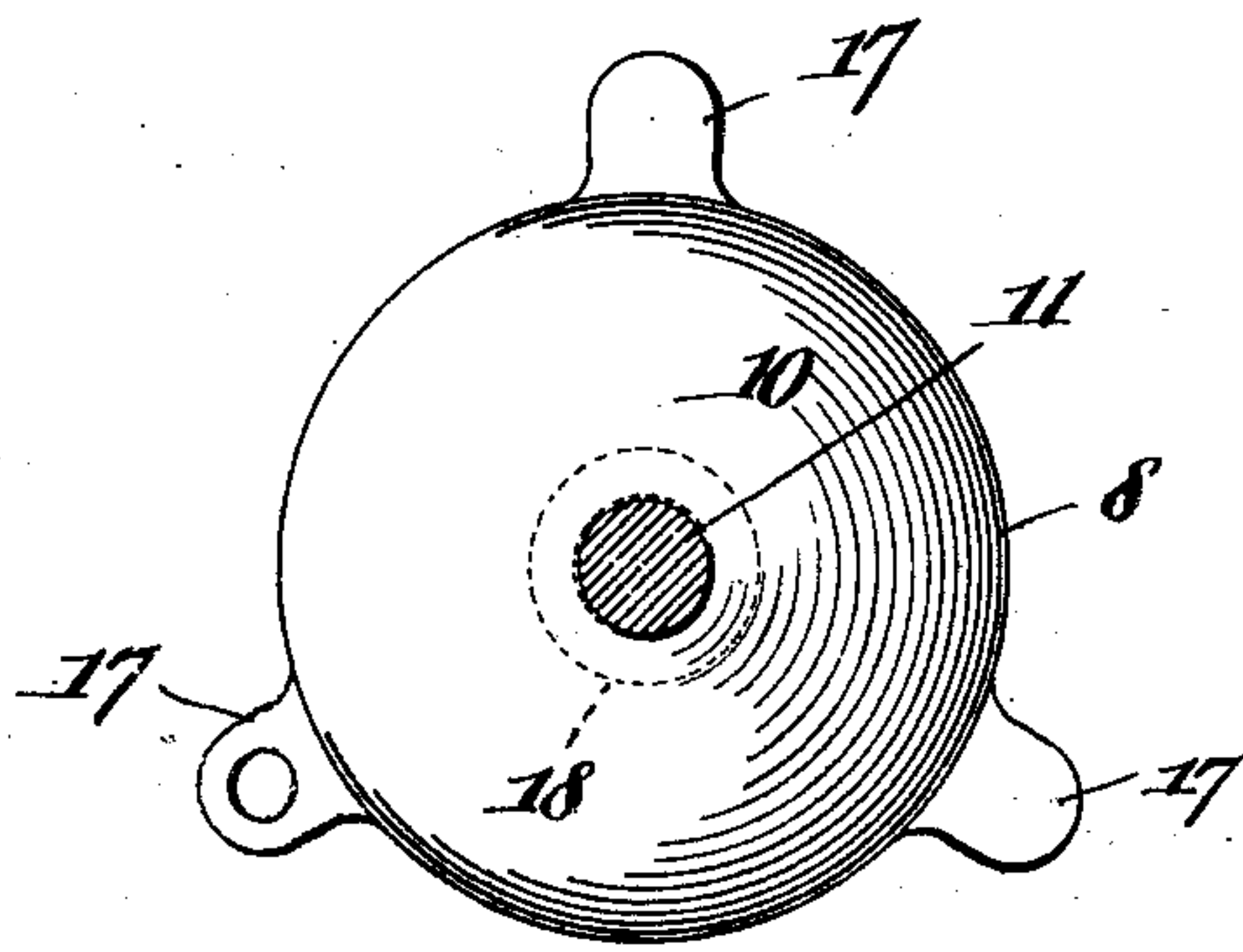
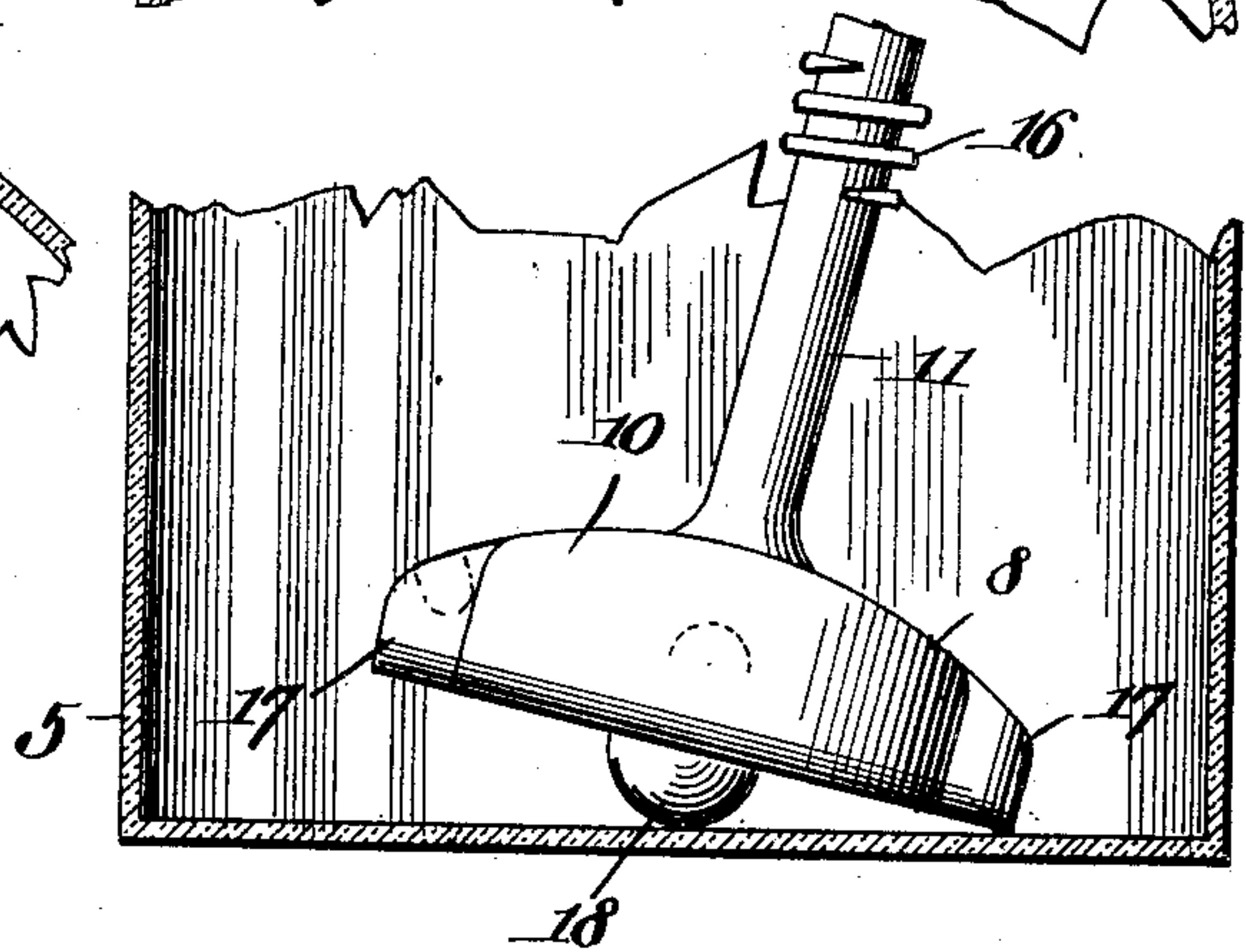


Fig. 3.

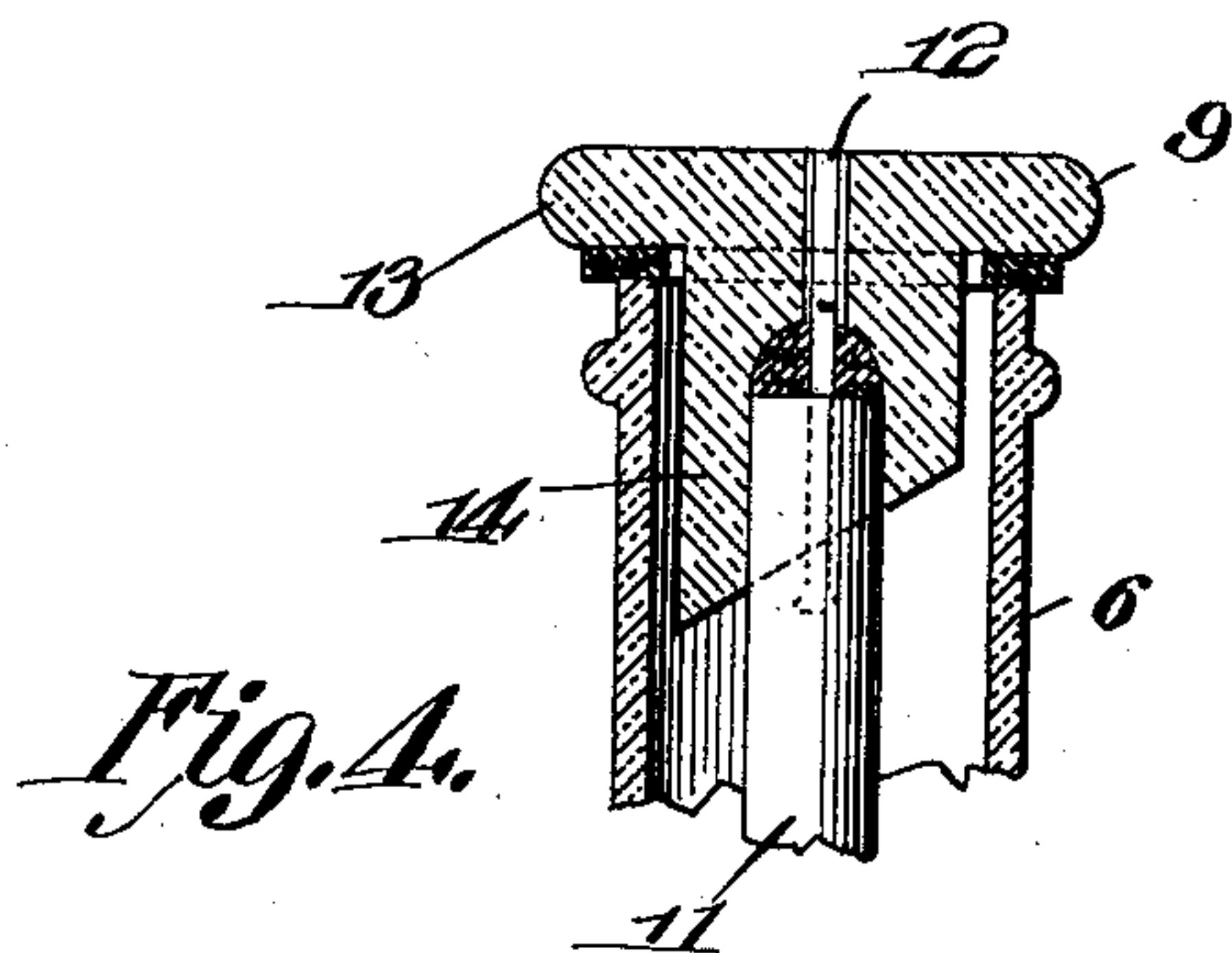


Fig. 4.

Witnesses

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BOTTLE-STOPPER.

978,712.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES F. DRENK, a citizen of the United States, residing at Elkhart, in the county of Elkhart and State of Indiana, have invented new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

This invention relates to bottle stoppers, and has particular reference to a stopper including in its construction two members, one of which will, at all times, be permanently combined with the bottle, while the other may be removed from the bottle when desired to gain access to the contents of the bottle.

One object of the invention is the provision of a stopper, the members of which are capable of being manipulated to seal the bottle only at the time the bottle is originally filled, the parts being so constructed and positioned, after the bottle is filled, that a surreptitious attempt to remove the contents of the bottle in the ordinary way will result in one of the sections falling into the bottle where it will remain, thus indicating to the purchaser that the stopper has been tampered with for the purpose of diluting or substituting the original contents of the bottle with an inferior substance.

Another object is the provision of a construction which may be applied to most forms of bottles now in use.

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

In the accompanying drawings, forming a part of the specification:—Figure 1 is a side elevation of the device partly in section, also showing the upper portion of a bottle in vertical section and the device applied thereto. Fig. 2 is a vertical section taken through the bottle and showing the position of one section of the device therein before the bottle is filled. Fig. 3 is a sectional plan view on

the line 3—3 of Fig. 1. Fig. 4 is a view similar to Fig. 1, showing a modified form of the device.

Similar numerals of reference are employed to designate corresponding parts throughout.

The body of the bottle is designated by the numeral 5 and the neck by the numeral 6. These parts may be of any desired contour and size. By reference to the drawings it will be seen that formed in the breast of the bottle and at a point adjacent to the juncture between the body and the neck is a depending teat 7, the function of which will appear later.

The device forming a part of the subject matter of the present invention comprises two sections, a stopper section designated by the numeral 8 and a cap designated in general by the numeral 9. The stopper section includes in its construction a circular base designated by the numeral 10. This member is considerably less in diameter than the diameter 5 of the bottle, but greater in diameter than the diameter of the neck 6, and its upper surface is shaped to conform to the curvature of the breast of the bottle upon which it bears when the bottle is filled, as shown in Fig. 1. Extending vertically from the center of the upper face of the base 10 is a stem 11. This member is considerably less in diameter and length than the diameter of the neck, and when in the position shown in Fig. 1, with the base bearing on the breast of the bottle, the upper end of this stem will extend to a point substantially intermediate the middle and upper end of the neck.

Anchored or otherwise secured in the upper end of the stem 11 is a section of a metallic rod or its equivalent, the same being designated by the numeral 12 and of a length corresponding to the combined lengths of the body and neck, the function of this element is to aid in placing the stopper to the position shown in Fig. 1 from that shown in Fig. 2. The substance of which the rod 12 is formed is frangible, the frangibility being increased by indenting the rod at a point adjacent to the stem 11 for a purpose to be presently described.

The cap section comprises a circular base 13 of greater diameter than the diameter of the neck 6, and depending from the central portion of this base is a skirt 14 having an

axial threaded opening 15 which receives the upper end portion of the stem 11 which is correspondingly screw threaded, as shown at 16. The base 13 is centrally provided with an opening which communicates with the threaded opening 15 and of a size to receive the rod 12.

Extending radially from the periphery of the base 8 of the stopper are a plurality of lugs 17, the upper surfaces of which are provided with seats capable of independently receiving the teat 7.

In the operation of the device and when the parts are in the position shown in Fig. 2 and the bottle has been filled, the stopper is pulled upward by means of the rod 12 until the base 8 bears on the breast of the bottle and the teat 7 is arranged in one of the openings of the lugs. It will be manifest when the stopper is so positioned that by virtue of the lugs, rotation of the stopper will be prevented. The rod is then passed through the bore in the opening of the cap and the skirt of the latter inserted into the neck until its threads engage with the threads of the stopper. By turning the cap a suitable number of times it will result in the flange 13 of the cap bearing on the upper end of the neck, after which the rod 12 may be broken off at its indented portion adjacent to the stem 11. When the parts are so positioned, it can be readily seen that in order to gain access to the bottle the cap must be first turned to disengage with the threads of the stem, and when this disengagement is effected the stopper will fall to the bottom of the bottle, and owing to the absence of the stem 12 it will be impossible to bring the stopper to engage with the cap so long as there is liquid in the bottle. In order to maintain the stem of the stopper in a position out of alinement with the axis of the neck after the stopper has fallen into the bottle a hemispherical projection 18 is formed on the central portion of the lower face of the base 8. By virtue of the surface of this extension, it will be evident when the stopper has fallen into the bottle that

the stem will invariably be tilted to bear on one side of the body of the bottle, thus rendering it difficult for an instrument to be inserted into the bottle to engage with the stem and withdraw the same to the neck.

In the modified form illustrated in Fig. 4, the parts are the same with the exception that the bore of the skirt and upper end portion of the stem are not screw threaded. In this connection the rod 12 snugly fits in the central opening of the base 13 and after the parts have been positioned, as shown in Fig. 5, and before the stem has been broken, the said stem is soldered or otherwise fixedly secured in the base 13, after which it is broken off in a plane with the upper face of the base.

From the foregoing it can be seen that I have provided a device which is comparatively simple in structure, inexpensive to manufacture, embodying few parts, and these so arranged that the danger of derangement will be reduced to a minimum.

Having thus described the invention what I claim as new is:—

In combination with a bottle having a neck; of a cap having a portion provided with a screw-threaded bore and insertible into the neck, a stopper provided with a base portion of greater diameter than the neck, the said base portion being centrally provided on its lower face with a hemispherical extension, and further provided on the central portion of its upper face with a stem of less diameter than the neck, the upper end of said stem being screw-threaded and insertible into the threaded bore of the cap, a frangible rod carried by the free end of the stem portion and insertible through the cap and serving to hold the upper end of the stem in position to be screwed into the bore.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES F. DRENK.

Witnesses:

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JAMES F. KLINE.