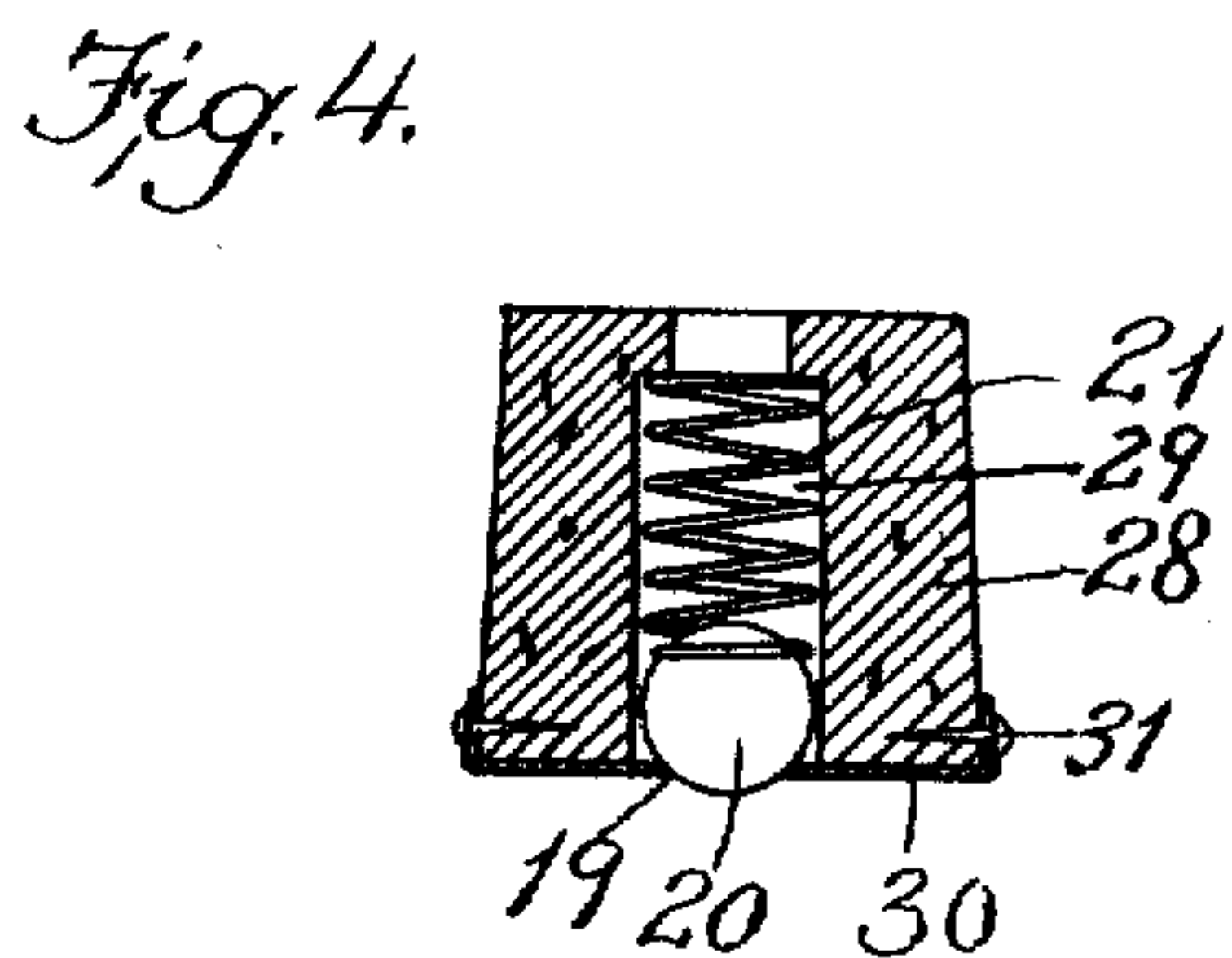
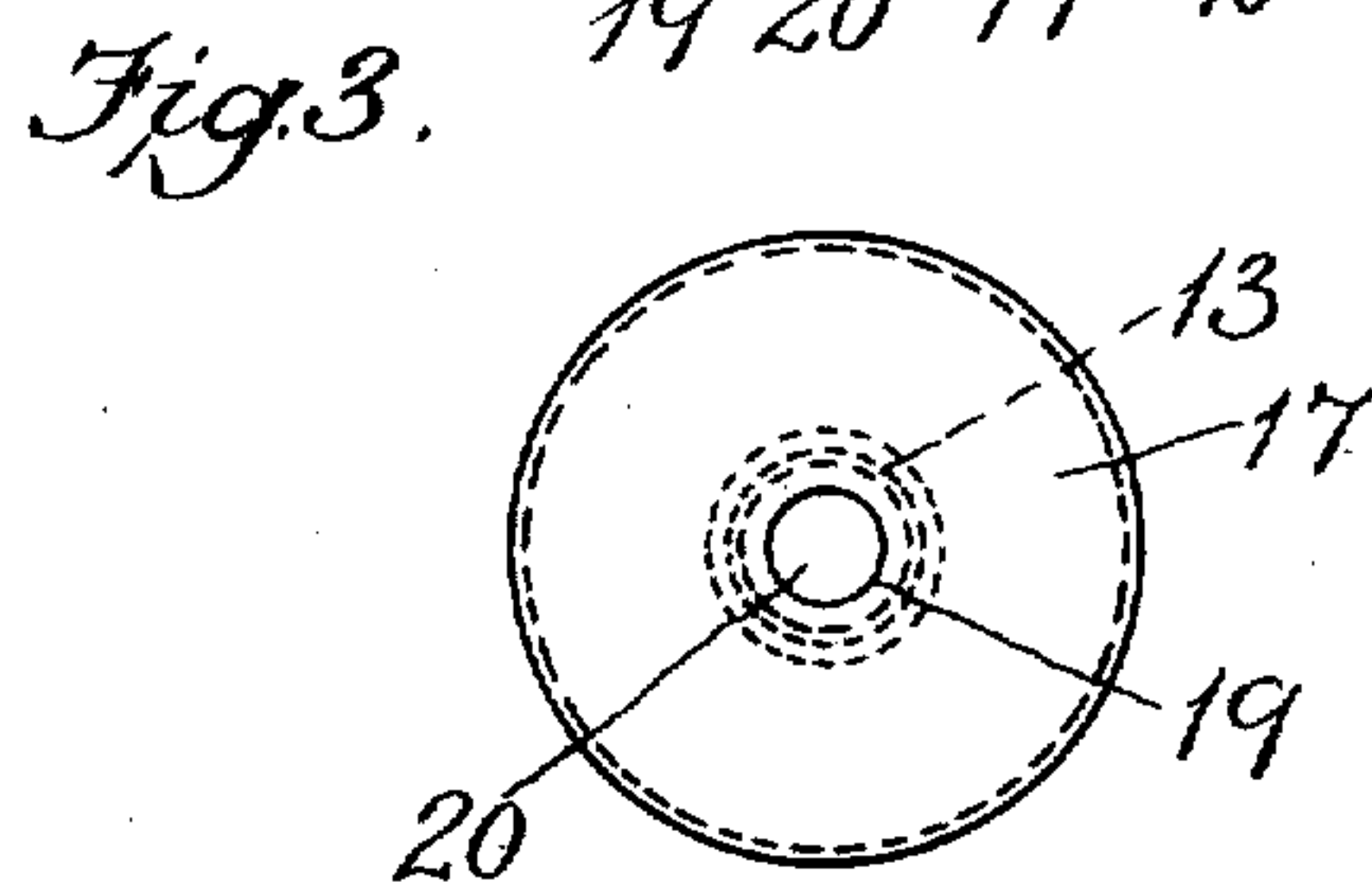
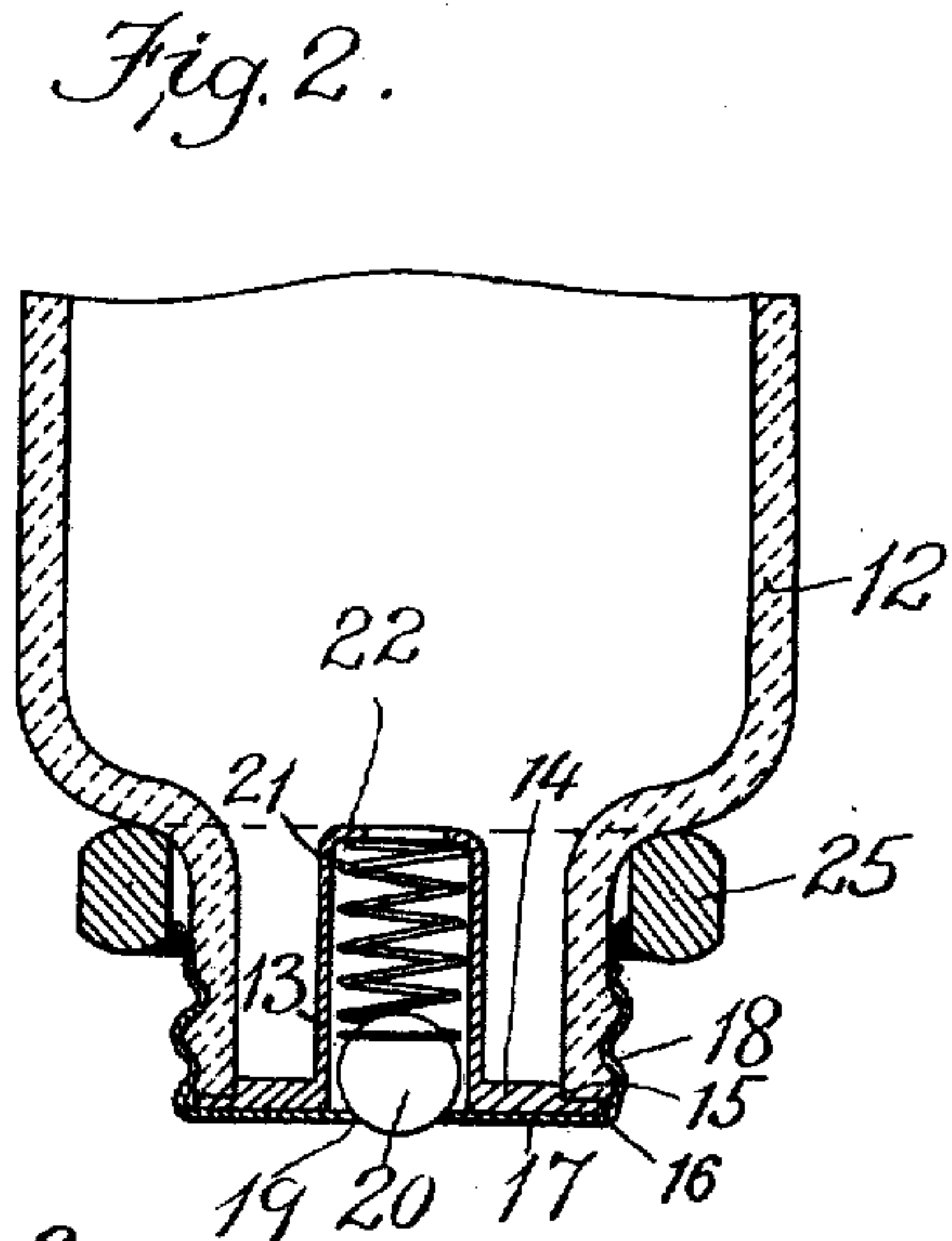
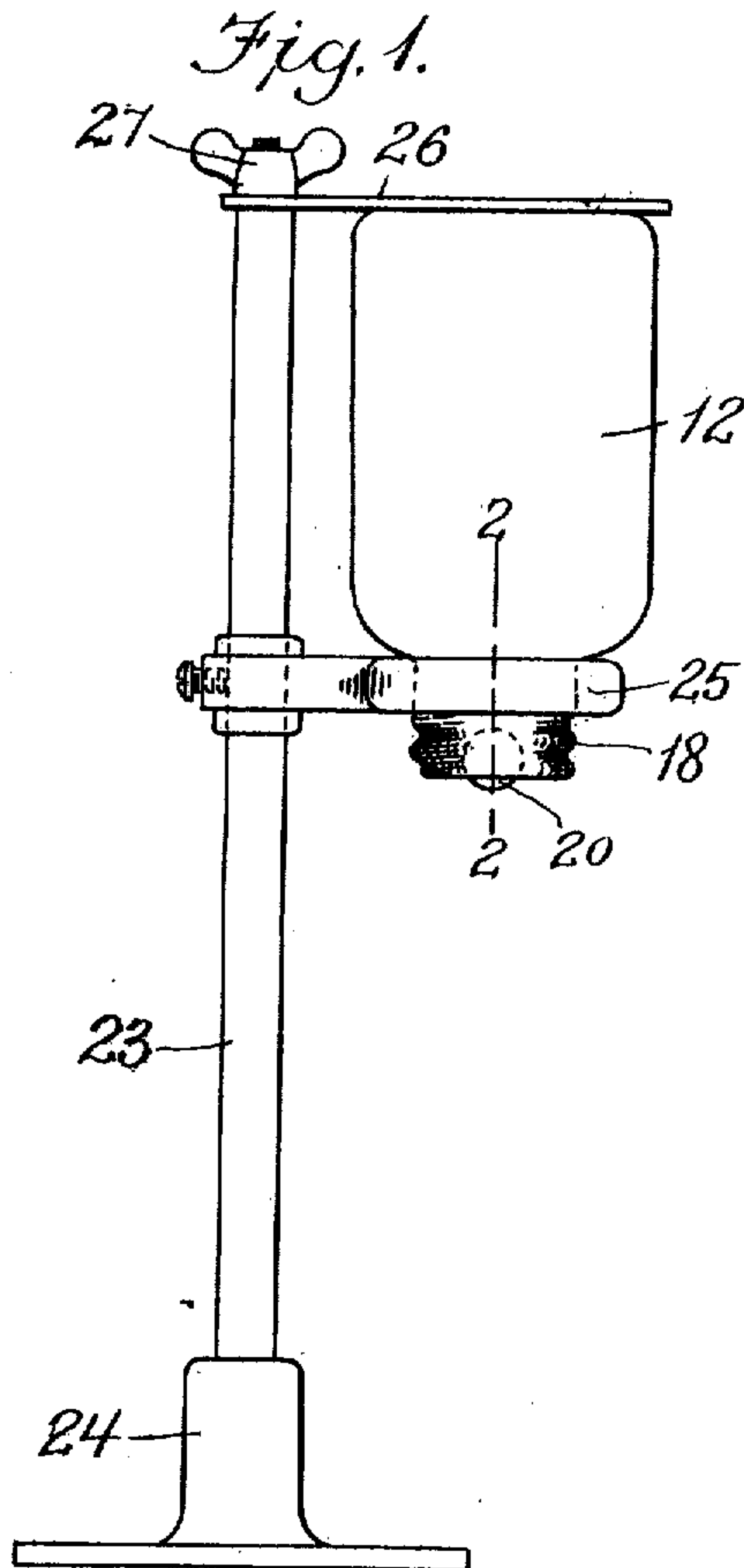


W. F. BOSTOCK.
LIQUID FEEDING DEVICE.
APPLICATION FILED JUNE 30, 1903.

912,794.

Patented Feb. 16, 1909.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM F. BOSTOCK, OF BROCKTON, MASSACHUSETTS.

LIQUID-FEEDING DEVICE.

No. 912,794.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed June 30, 1908. Serial No. 441,233.

To all whom it may concern:

Be it known that I, WILLIAM F. BOSTOCK, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Liquid-Feeding Devices, of which the following is a specification.

This invention has for its object to provide improved means for feeding a liquid directly from the bottle or other receptacle in which it is placed on the market, the feed of the liquid being under full control of the operator.

The invention has especial reference to means for feeding a composition used for filling cracks in patent leather toe-caps, and other parts of boots and shoes, to repair damages caused by the development of cracks in the patent leather after the boot or shoe has been completed.

The invention is embodied in a liquid feeding stopper having means for detachably engaging a receptacle, such as the bottle in which a crack-filling composition is placed on the market, and provided with a circular opening, the margin of which forms a valve seat, a ball valve fitting said seat, and a spring bearing loosely against the valve and adapted to press the valve against the seat, a portion of the valve projecting through the seat and outside the stopper so that it may be engaged by the operator's finger while the receptacle is in an inverted position, and rotated to cause a limited feed of liquid from the bottle without unseating the valve or opening it to such an extent as to cause an excessive feed, the quantity fed by the rotation of the valve, unaccompanied by any considerable removal of the valve from its seat, being limited to the quantity of liquid which adheres to the periphery of the valve, and is carried by the rotation of the valve through the valve seat and into contact with the operator's finger. In practice, the operator takes upon his finger a limited quantity of the composition, and uses his finger as a means for applying the composition to the cracks of the patent leather.

Of the accompanying drawings forming a part of this specification,—Figure 1 represents a side elevation of a liquid dispensing device adapted for use in a shoe factory or elsewhere, and including a bottle containing a charge of the liquid to be dispensed, and a holder adapted to support the bottle in an

inverted position, the bottle being provided with a liquid feeding stopper embodying my invention. Fig. 2 represents a section on line 2—2 of Fig. 1. Fig. 3 represents a plan view of the stopper. Fig. 4 represents a sectional view showing a modified form of stopper embodying my invention.

The same reference characters indicate the same parts in all the figures.

In the drawings, 12 represents a liquid holding receptacle which is, or may be, a bottle charged with a liquid composition, such as that usually employed for filling cracks in patent leather, the bottle being provided with a liquid feeding stopper embodying my invention hereinafter described.

In the embodiment of my invention shown in Figs. 1, 2 and 3, the stopper is composed of an inner member and an outer member. The inner member is composed of a hollow casing forming a valve chamber 13 which is open at its outer end, its open end or mouth being surrounded by a head 14 having a shoulder 15 adapted to bear against the interior of the neck of the bottle 12, and a flange 16 adapted to bear on the outer end of said neck. The outer member is a sheet metal cap 17, having means such as a screw-threaded flange 18 for detachable engagement with the bottle neck, the latter having a complementary screw thread. The center of the cap 17 has a circular opening 19 which coincides with the mouth of the chamber 13, and is of smaller diameter than the latter, the margin of said opening constituting a valve seat. 20 represents a spherical valve which may be made of metal or any other suitable material, and is formed to closely fit the valve seat 19, a portion of the valve projecting through the seat and beyond the outer end of the stopper when the valve is seated. 21 represents a spring which is supported by the chamber 13, and bears loosely against the valve 20, the spring being preferably of helical form, and its inner end being supported by an inwardly projecting flange 22 at the inner end of the chamber. The outer convolution of the spring bears loosely against the valve, there being no positive engagement between the valve and the spring, so that the valve is adapted to be rotated while in contact with the spring. The head 14 and cap 17 may be permanently secured together by solder or otherwise.

In Fig. 1 I show a holder in which the bottle is supported in an inverted position,

said holder comprising a standard 23 having a suitable supporting base or foot 24, an adjustable socket 25 adapted to embrace the neck of the bottle and engage the body of the bottle to support the latter, and a holding piece 26 pivotally connected with the standard by means of a thumb screw 27, said piece being adapted to bear on the bottom of the bottle and hold the latter in place. The holding down piece 26 may be swung away from the bottle to permit the removal of the latter and the insertion of another bottle.

The bottle supported as above described may be used as follows: The operator desiring to apply liquid from the bottle to a part of a boot or shoe applies a finger to the projecting portion of the valve 20, and if a considerable quantity of liquid is required, presses the valve inwardly to permit a maximum feed of liquid which is discharged upon the finger. The operator uses his finger to spread the liquid upon the part to be treated, the valve closing when the pressure of the finger upon it is removed. In case a minimum feed of the liquid is desired, the operator manipulates the valve in such manner as to rotate it without removing it to any considerable extent from its seat, so that the only liquid feed is that which adheres to the surface of the valve, and is transferred by the rotation thereof from the interior to the exterior of the seat. The operator is enabled, therefore, to regulate the feed of the liquid in accordance with the requirements of the work in hand. This is due to the fact that a portion of the ball valve projects outside the stopper and is externally unobstructed, so that the operator's finger may be conveniently applied to it to either rotate it for a minimum feed, or force it inwardly for a maximum feed.

In Fig. 4 I show a modified form of stopper composed of an inner member or body 28 of cork or other pressible material having a central opening 29 extending through it and constituting the valve chamber, and an outer member 30 which is a flange cap of sheet metal secured by tacks 31, or otherwise, to the inner member, the said outer member having a circular opening 19 forming a seat for the spherical valve 20. The body 28 is adapted to be inserted like an ordinary stopper in the bottle neck.

In practice, the valved stopper above described is substituted for the ordinary cork stopper with which the bottle 12 is provided when it is first charged and placed on the market. The user removes the original stopper and applies to the bottle in place

thereof a stopper embodying my invention. This simple substitution and the engagement of the bottle in an inverted position with the holder, organizes the device, which is therefore of very simple and inexpensive construction.

I claim:

1. A liquid feeding stopper adapted to be detachably engaged with a receptacle, and provided with a circular opening, the margin of which forms a valve seat, a ball valve fitting said seat, and a spring bearing loosely against the valve and adapted to press the valve against the seat, a portion of the valve projecting through the seat, and beyond the outer end of the stopper, said projecting portion being unobstructed so that it may be rotated by a finger pressed against it to cause a limited feed of liquid, and forced inwardly to cause a maximum feed.

2. A liquid feeding stopper comprising an inner member having a valve chamber and a head surrounding the outer end of the valve chamber and provided with a shoulder and a flange adapted respectively to engage the interior and outer end of a bottle neck, and an outer member formed as a cap adapted for detachable engagement with the bottle neck, and provided with a circular opening coinciding with the chamber and forming a valve seat, a ball valve movable in the chamber and adapted to fit said seat, and a valve-closing spring supported within the chamber and bearing loosely against the valve, the latter being rotatable between the spring and seat and projecting partially through the seat and outside the stopper for engagement with the operator's finger.

3. A liquid receptacle having a neck and a liquid feeding stopper detachably engaged therewith, and provided with a circular opening, the margin of which forms a valve seat, a ball valve fitting said seat, and a spring bearing loosely against the valve and adapted to press the valve against the seat, a portion of the valve projecting through the seat and beyond the outer end of the stopper, said projecting portion being externally unobstructed so that it may be rotated and pressed inwardly by a finger pressed against it, to cause either a limited or a maximum feed of liquid when the receptacle is inverted.

In testimony whereof I have affixed my signature, in presence of two witnesses.

WILLIAM F. BOSTOCK.

Witnesses:

F. M. HAUTHANY,
F. M. BIXBY.