

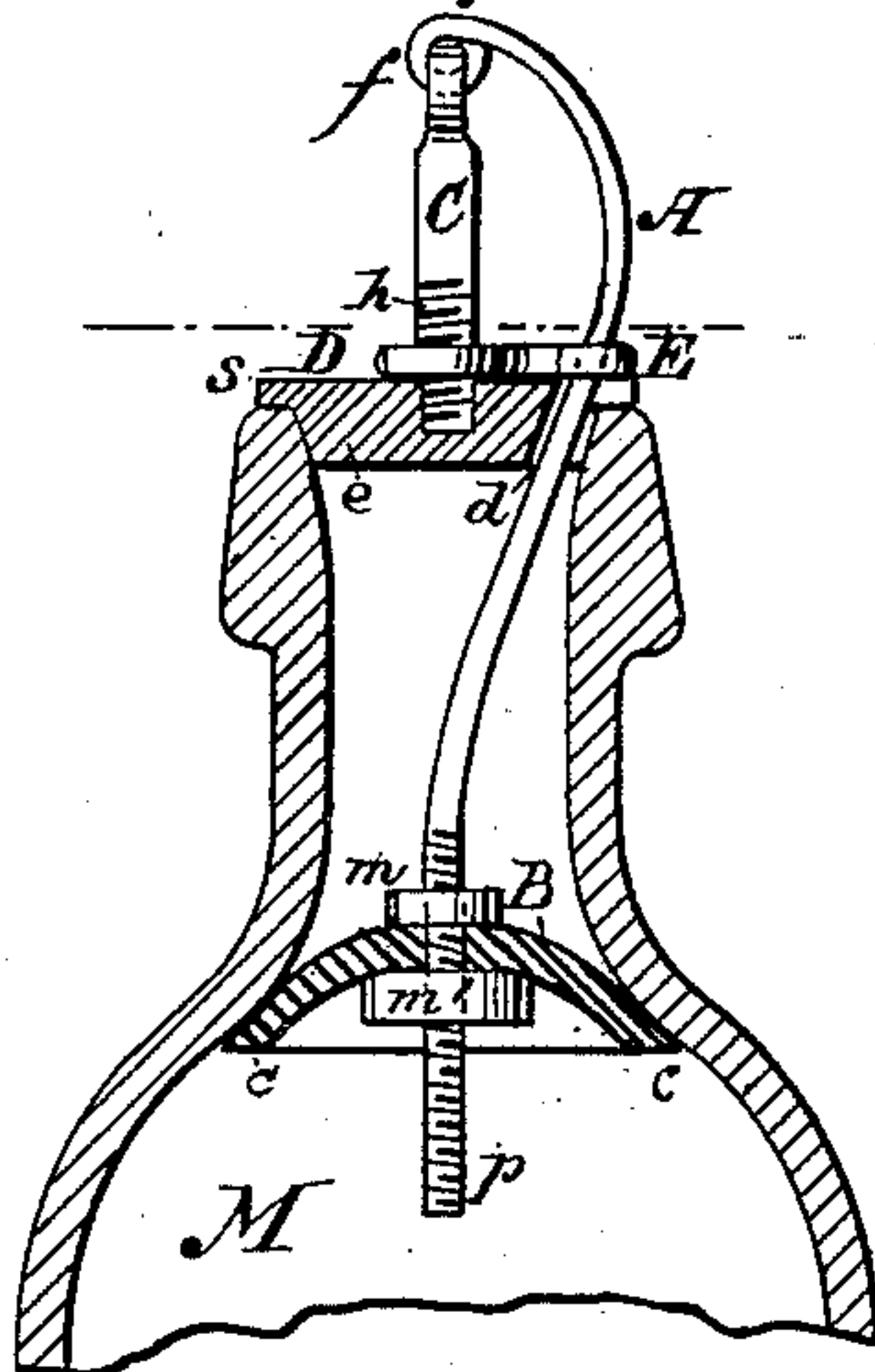
(No Model.)

H. F. CLEEVE.  
BOTTLE STOPPER.

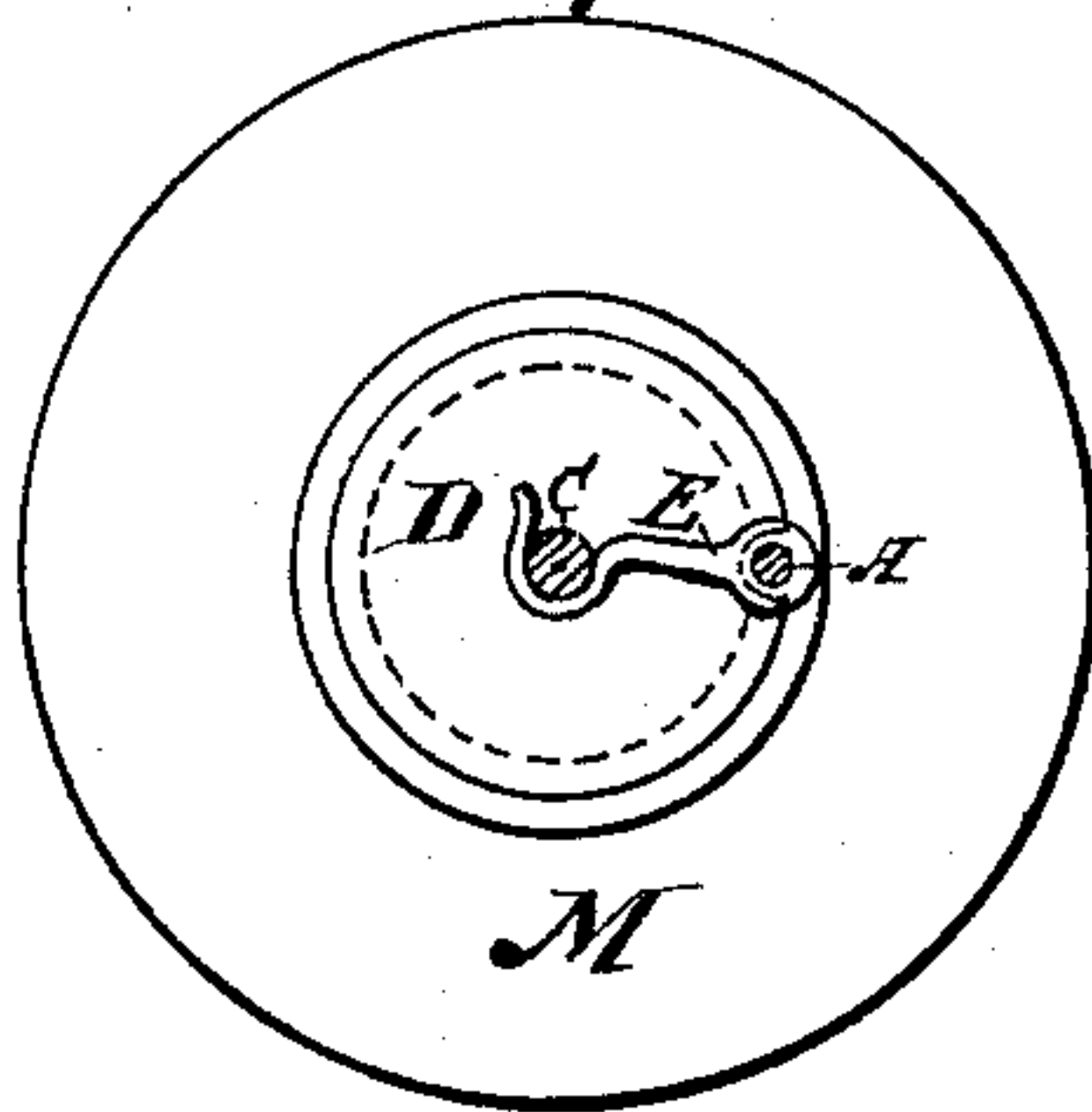
No. 245,995.

Patented Aug. 23, 1881.

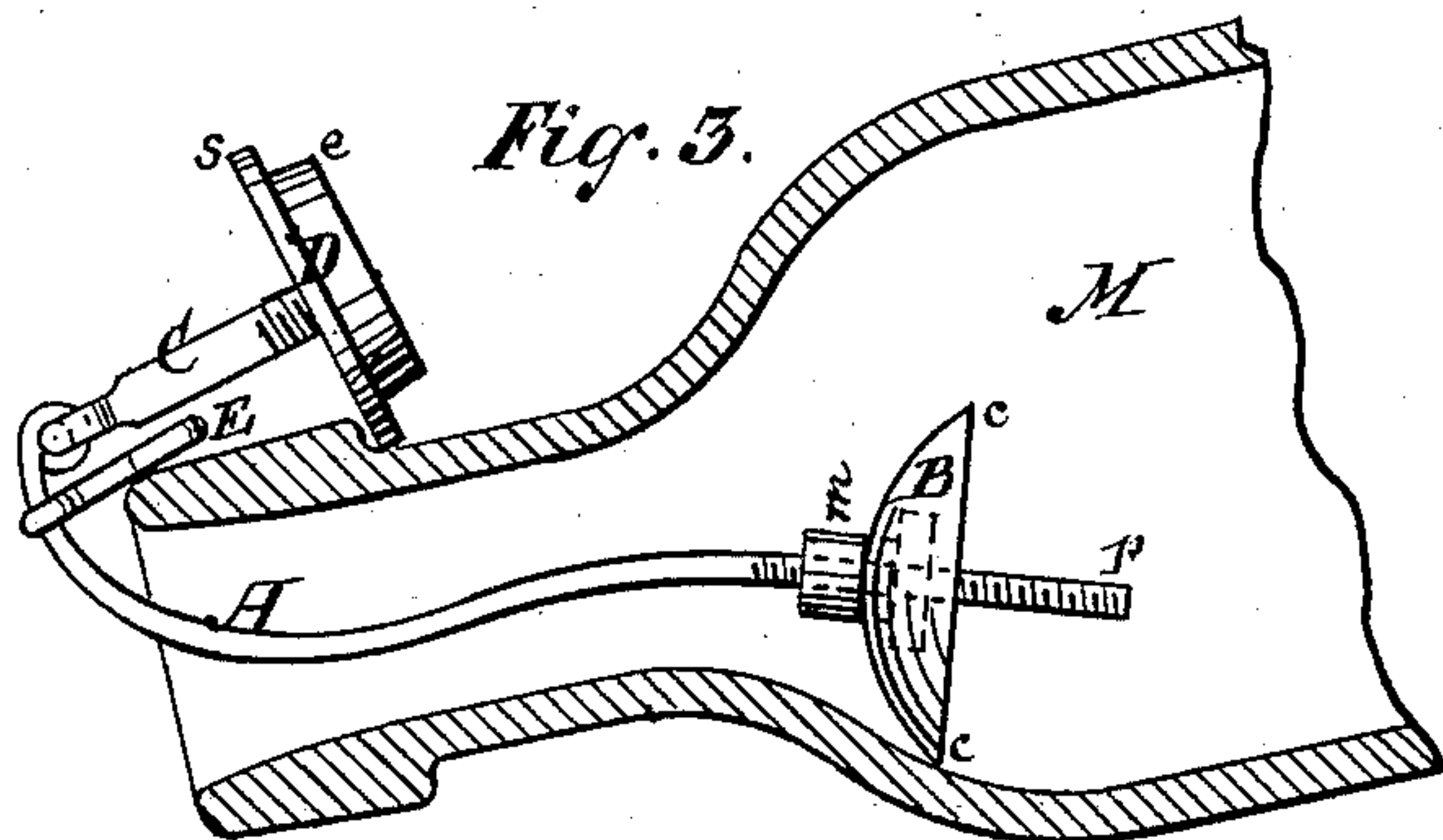
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY F. CLEEVE, OF BROOKLYN, NEW YORK.

## BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 245,995, dated August 23, 1881.

Application filed March 16, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY F. CLEEVE, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Bottle-Stoppers; and I do hereby declare that the following is a full, clear, and exact description of the invention, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in bottle-stoppers, more especially intended to be used in bottles containing beer or other fluids not bottled under pressure.

To this end my invention consists in constructing a stopper with a stem or rod having a flexible diaphragm attached to its lower end, of such size and construction, as hereinafter described, as that it can be easily forced into the neck of the bottle, but when once inserted cannot be easily withdrawn, and in having its upper part curved, and to which is hinged or jointed at its upper end a short spindle carrying a disk which fits into the mouth of the bottle when the bottle is closed, and which disk answers the purpose of preventing dust or dirt dropping in the neck of the bottle, and of effectually preventing the stopper from being displaced or pushed into the bottle by any accidental blow or pressure from without.

Figure 1 is a vertical section of a bottle fitted with my improved bottle-stopper, and showing position of same when the bottle is closed. Fig. 2 is a plan view, the upper portion being cut away. Fig. 3 is a section of a bottle, showing position of stopper when the contents of the bottle are being poured out.

In the several figures the same letters indicate corresponding parts.

A is a rigid stem or rod, made preferably of wire, having its upper part curved or bent.

B is a diaphragm, of rubber, cork, or other flexible material, fitted or attached to the lower end of the stem A by means of two rigid washers, *m m'*, of a less diameter than the diaphragm, or in any other suitable manner, so as to allow a rim of the flexible material *c* to project be-

yond the washers and to fit tightly into the shoulder of the bottle when the stopper is drawn up to its seat. The lower of these washers, *m'*, is of a larger diameter than the upper, thereby enabling the stopper to be forced easily into the neck of the bottle, but preventing it from being withdrawn when once inserted.

C is a spindle or stem fitted to and playing in an eye, ring, or hinge, *f*, at the upper end of the stem A, and hanging vertically therefrom when the bottle is closed.

D is a rigid disk, made of metal, rubber, wood, or any other suitable material, fixed to the lower end of the spindle C by screw-threads or otherwise, and having a shoulder, *s*, as shown in the drawings, so that when the stopper is drawn up into its seat and the bottle is closed the disk D fits closely into the mouth of the bottle and effectually excludes dust or dirt from the neck of the bottle. In some cases I construct the lower portion, *e*, of such disk, below the shoulder *s*, of soft rubber, cork, or other flexible material, or attach a band or rim of rubber, cork, or other flexible material round the lower portion of such disk, so as to insure its fitting tightly into the mouth of the bottle. The disk D is also provided with a slot, notch, or opening, *d*, to receive the curved or bent portion of the stem A when the bottle is closed and the disk D is in its place.

In some cases I attach the diaphragm B to its rod A and the disk D to its spindle C by screw-threads *p h* on such rod and spindle, so as to enable the diaphragm B and the dirt-excluding disk D to be adjusted to bottles having necks of different lengths.

In some cases I make use of a small hook, loop, or catch, *E*, attached to the spindle C and to the stem A, and playing loosely thereon, for the purpose of holding the disk D more firmly in its place when the bottle is closed. This hook, loop, or catch falls down or is turned aside when the bottle is closed and the disk D is in its place, and is pulled up to the upper extremities of the spindle C or the stem A when the bottle is opened, thus allowing the disk D to swing outward on its hinge.

The mode of operating my invention is as follows: To close the bottle the stopper is drawn up till the diaphragm B comes into close



contact with its seat in the shoulder of the bottle just below the neck. The disk D is then swung into its place in the mouth of the bottle, into which it fits, as before described, and when  
5 so in its place it serves not only to exclude all dust and dirt from entering the neck of the bottle, but also secures the stopper from being displaced or pushed into the bottle from any accidental blow, pressure, or otherwise. To open  
10 the bottle the disk D is swung out of its place, the stopper is pressed in, thereby lowering the diaphragm B from its seat, and the disk D drops on its hinge over the outside of the neck of the bottle, as shown in Fig. 3, thus giving free exit  
15 to the contents of the bottle, while the stopper is at the same time suspended and prevented from dropping into the bottle. By placing a finger over the disk D when the contents of the bottle are being poured out, both the dia-  
20 phragm B and the disk D are effectually kept out of the way of the issuing contents.

Having thus described the value of my invention, what I claim, and desire to secure by Letters Patent, is—

25 1. A stopper consisting of a curved stem, A, having attached to its lower end a flexible diaphragm, B, in combination with a rod or spindle, C, hinged or jointed to the upper end of the stem A, and having attached to the lower

end of said rod or spindle a dirt-excluding disk, D, slotted on its periphery for the reception of the stem A, substantially as described. o

2. The rod or spindle C, hinged or jointed to the upper end of the curved stem A, and in combination therewith the disk D, slotted on  
35 its periphery for the reception of the stem A, and attached to the lower end of the said rod or spindle to prevent the entrance of dirt to the neck of the bottle and to secure the stopper from being displaced, substantially as described. 40

3. The combination of the curved stem A, having attached to its lower end the diaphragm B, and having hinged or jointed at  
45 its upper end a spindle or rod, C, to which is attached a disk, D, slotted on its periphery for the reception of the stem A, and a hook, catch, or loop, E, for the purpose of holding the disk D firmly in its place, substantially as shown and described. 50

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of March, 1881.

HENRY F. CLEEVE.

Witnesses:

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J. BUDD.