

No. 610,198.

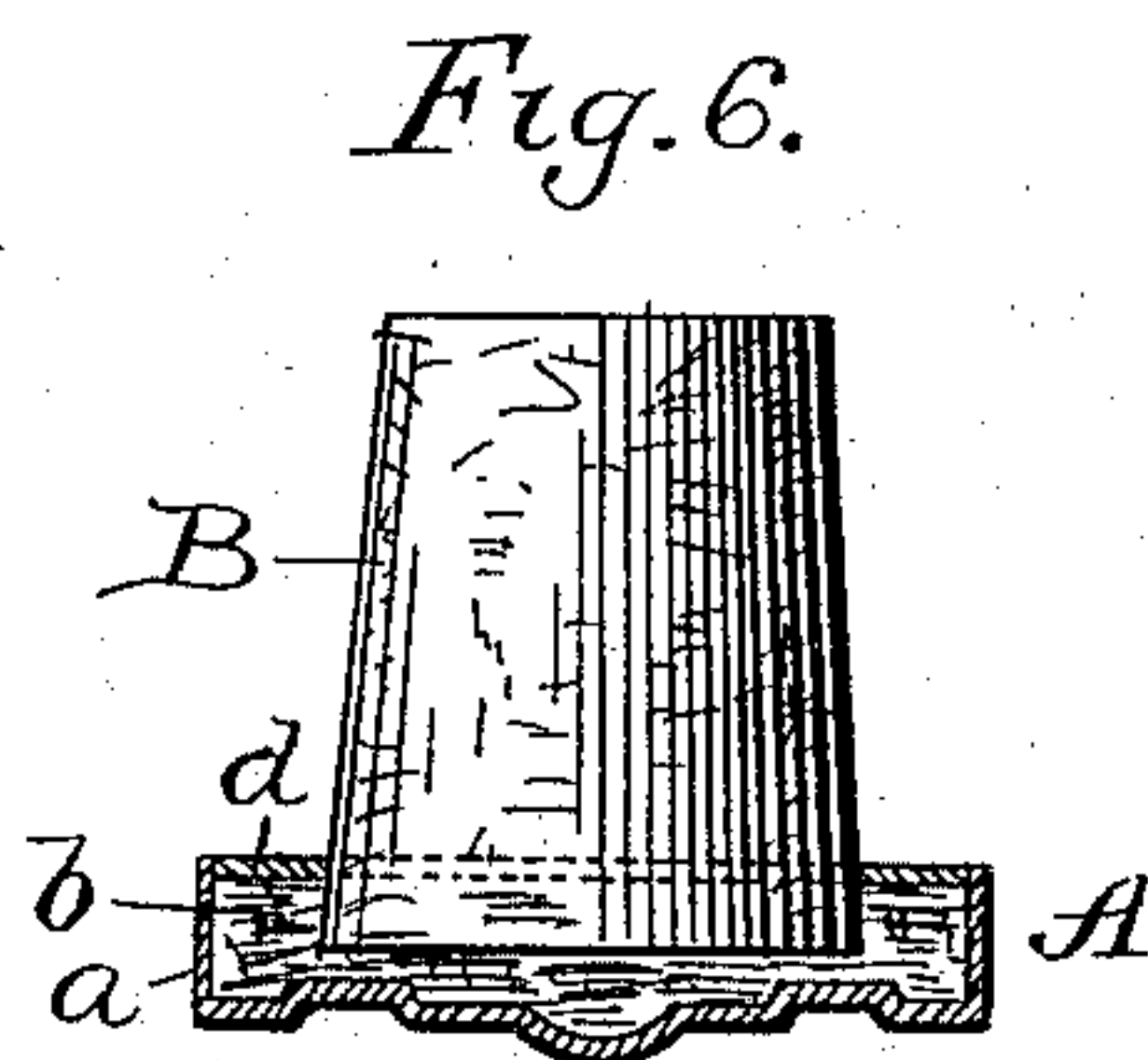
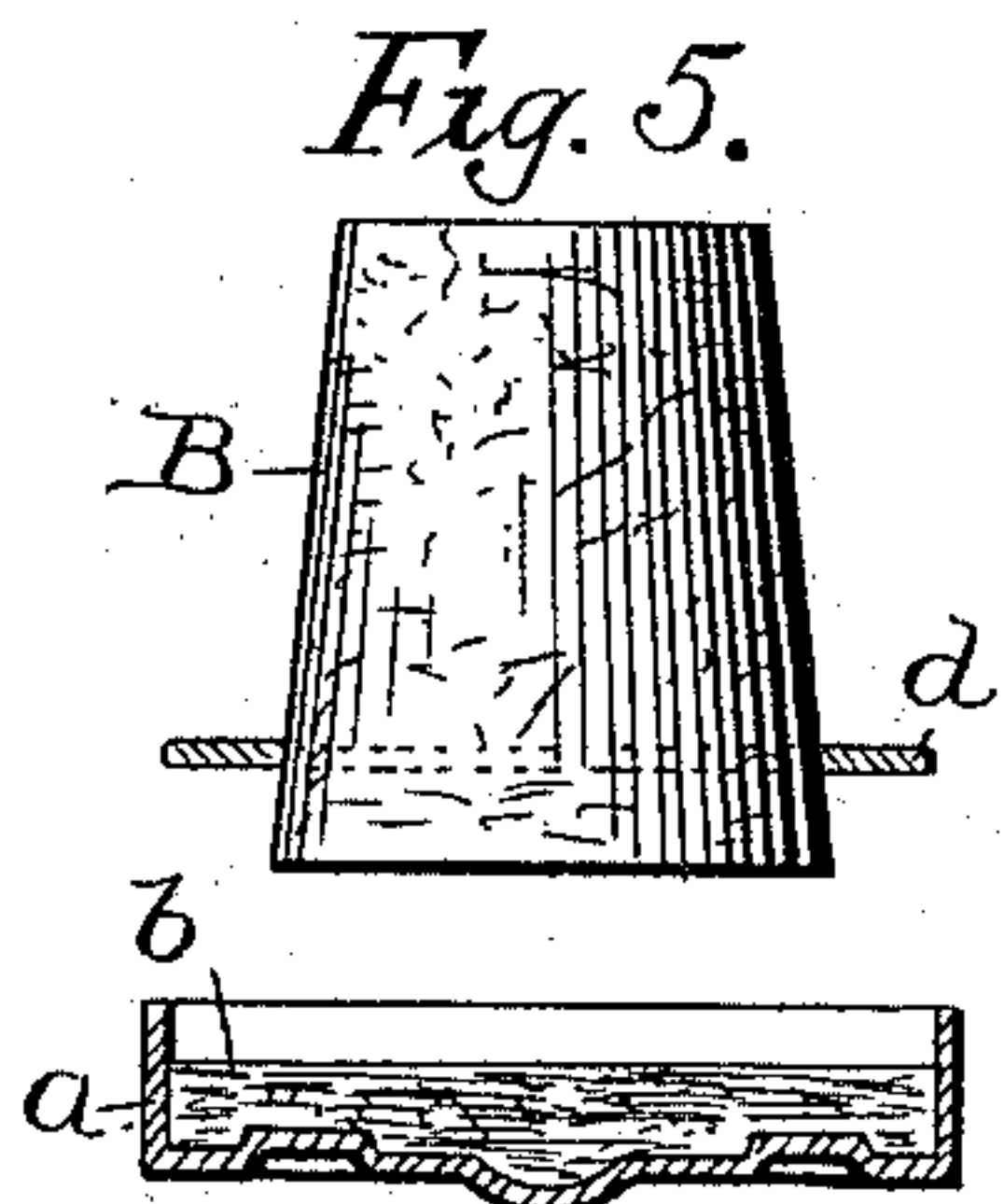
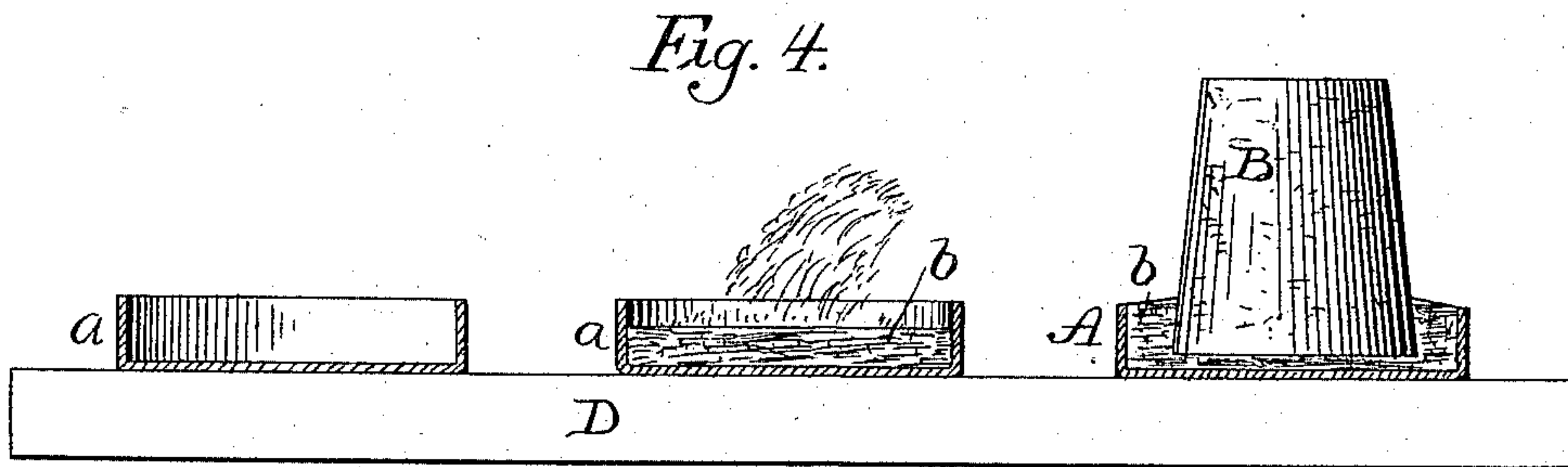
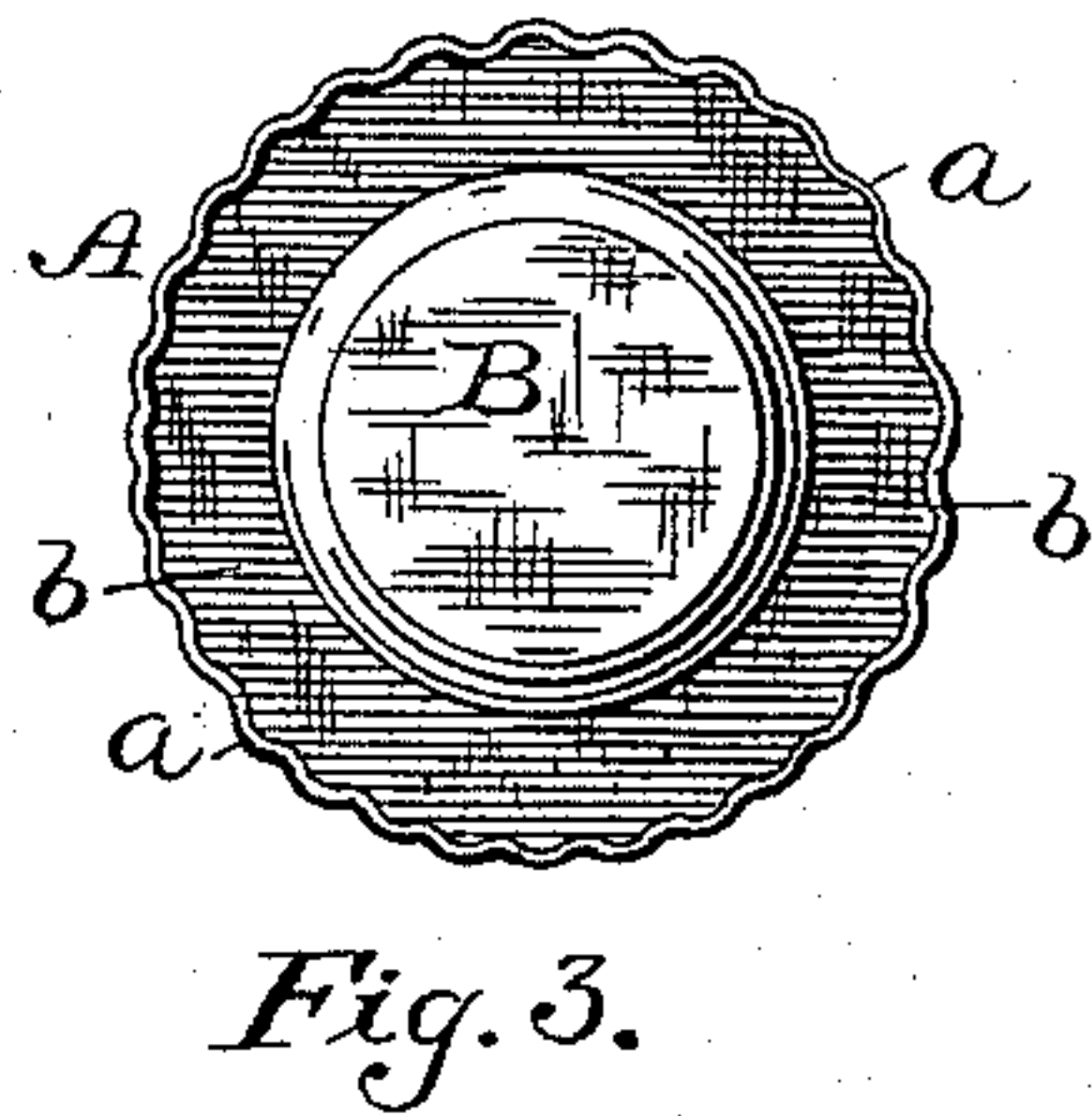
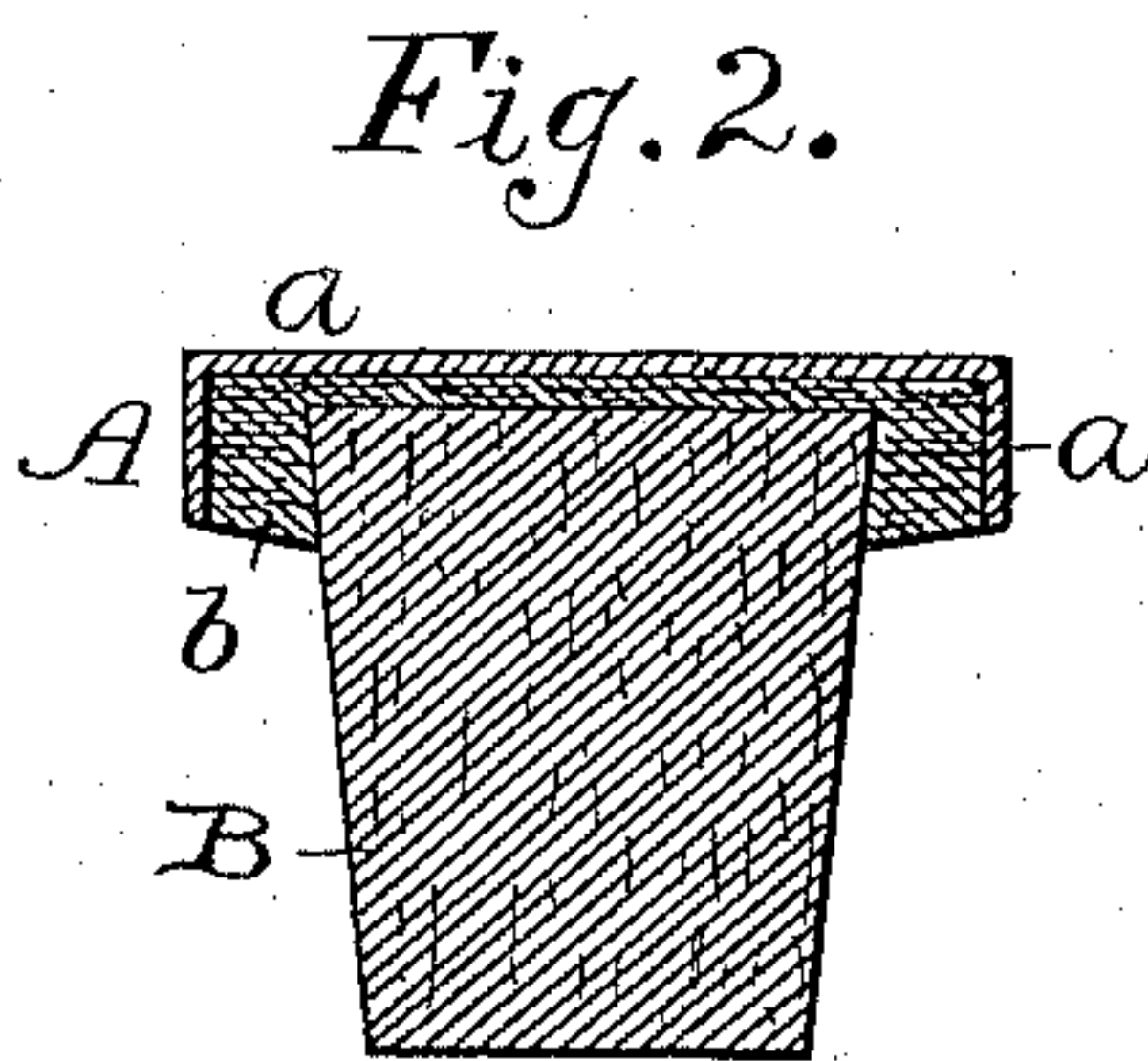
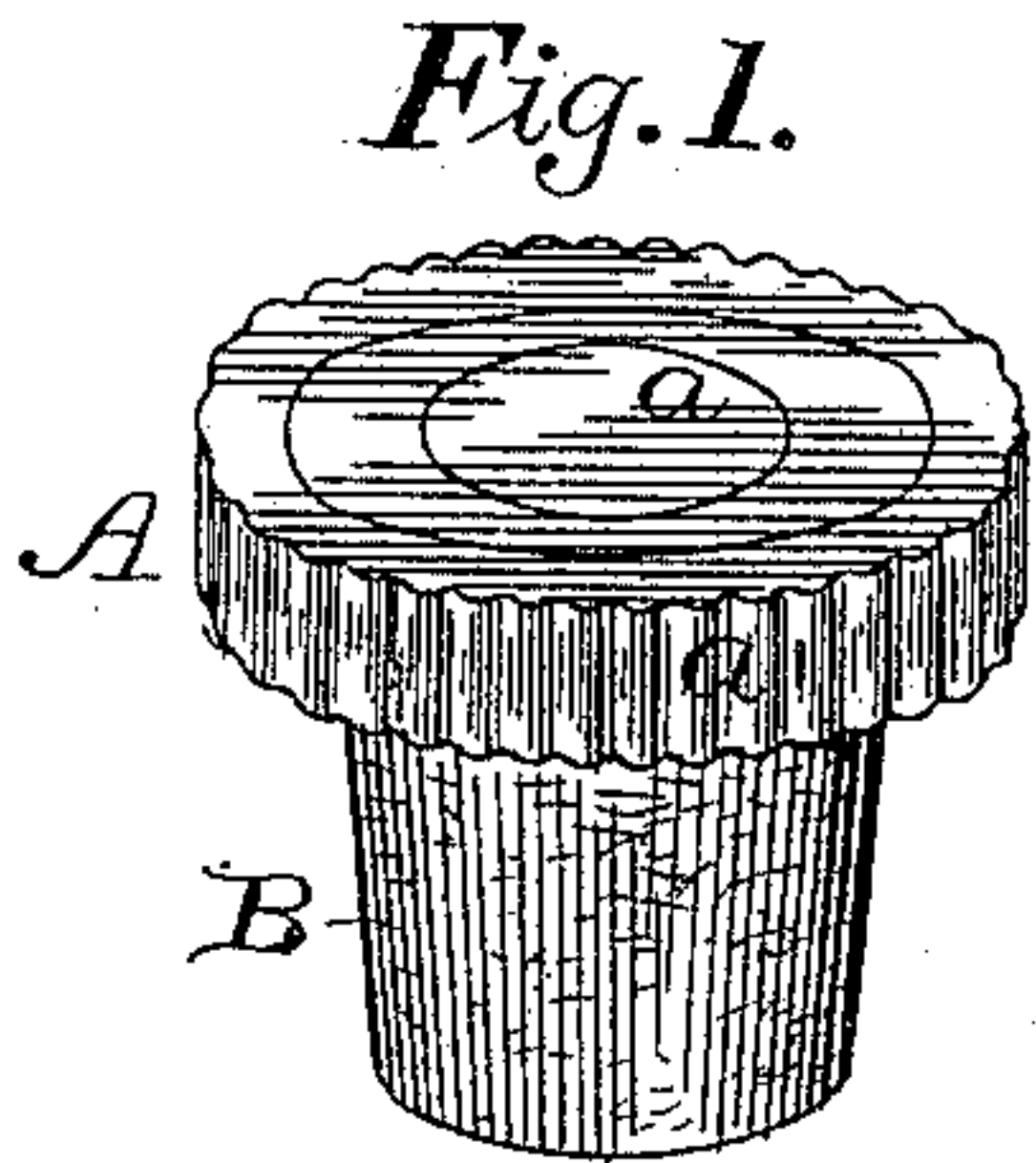
Patented Sept. 6, 1898.

H. L. PHILLIPS.
BOTTLE STOPPER.

(Application filed Dec. 31, 1897.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

Fig. 7.

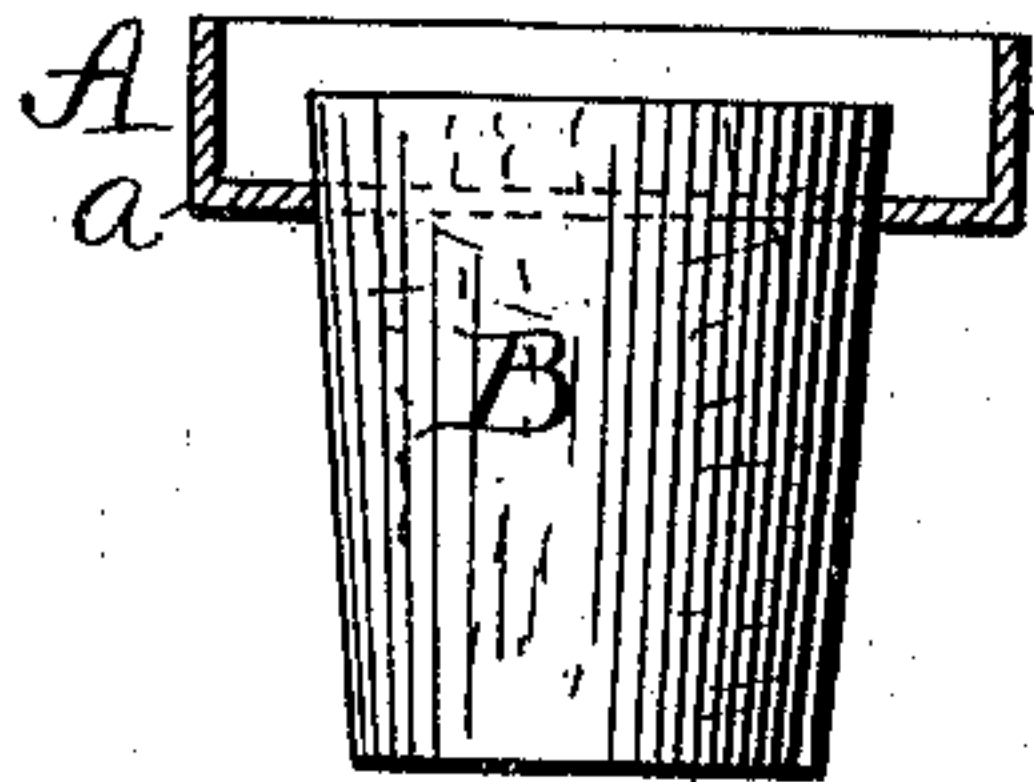


Fig. 8.

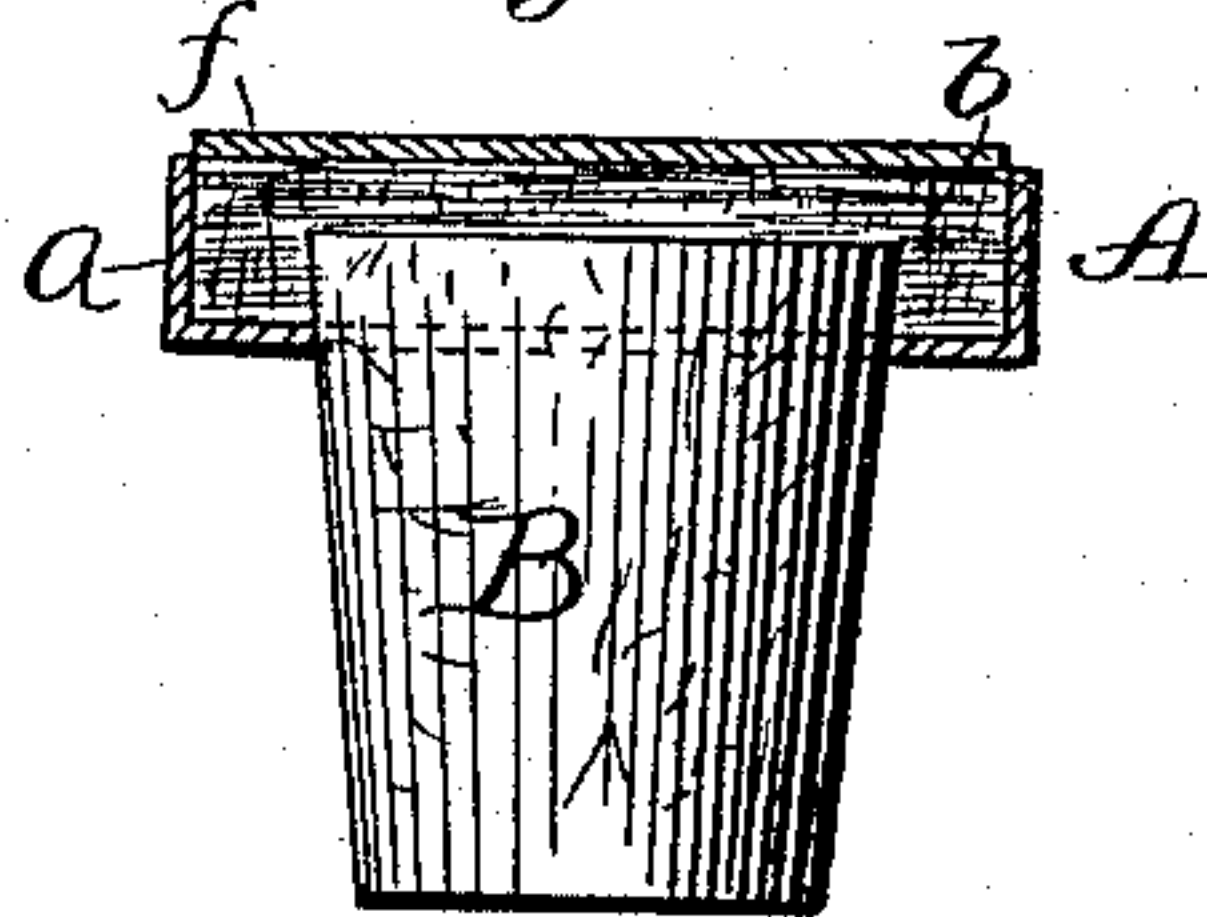


Fig. 9.

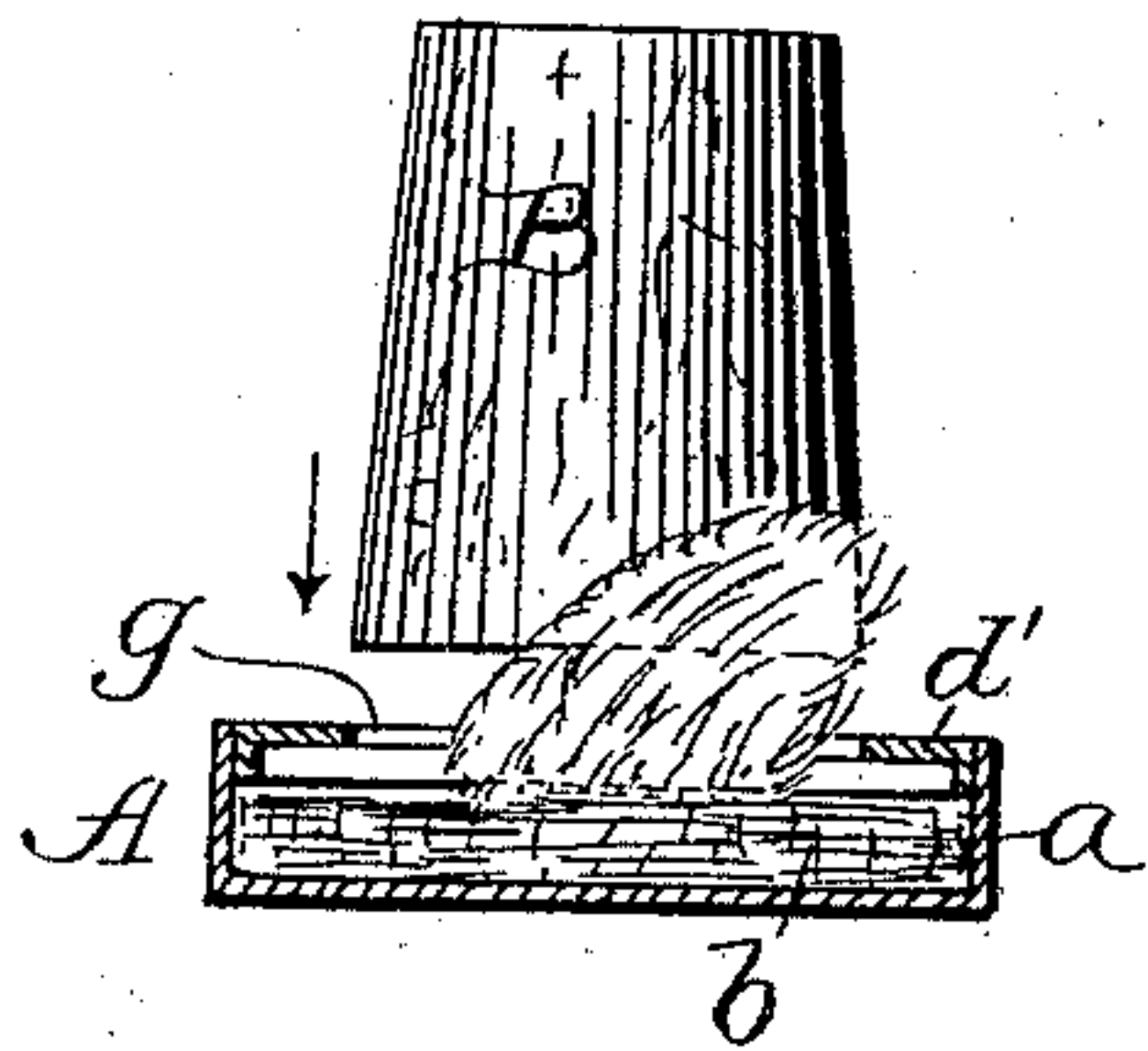


Fig. 10.

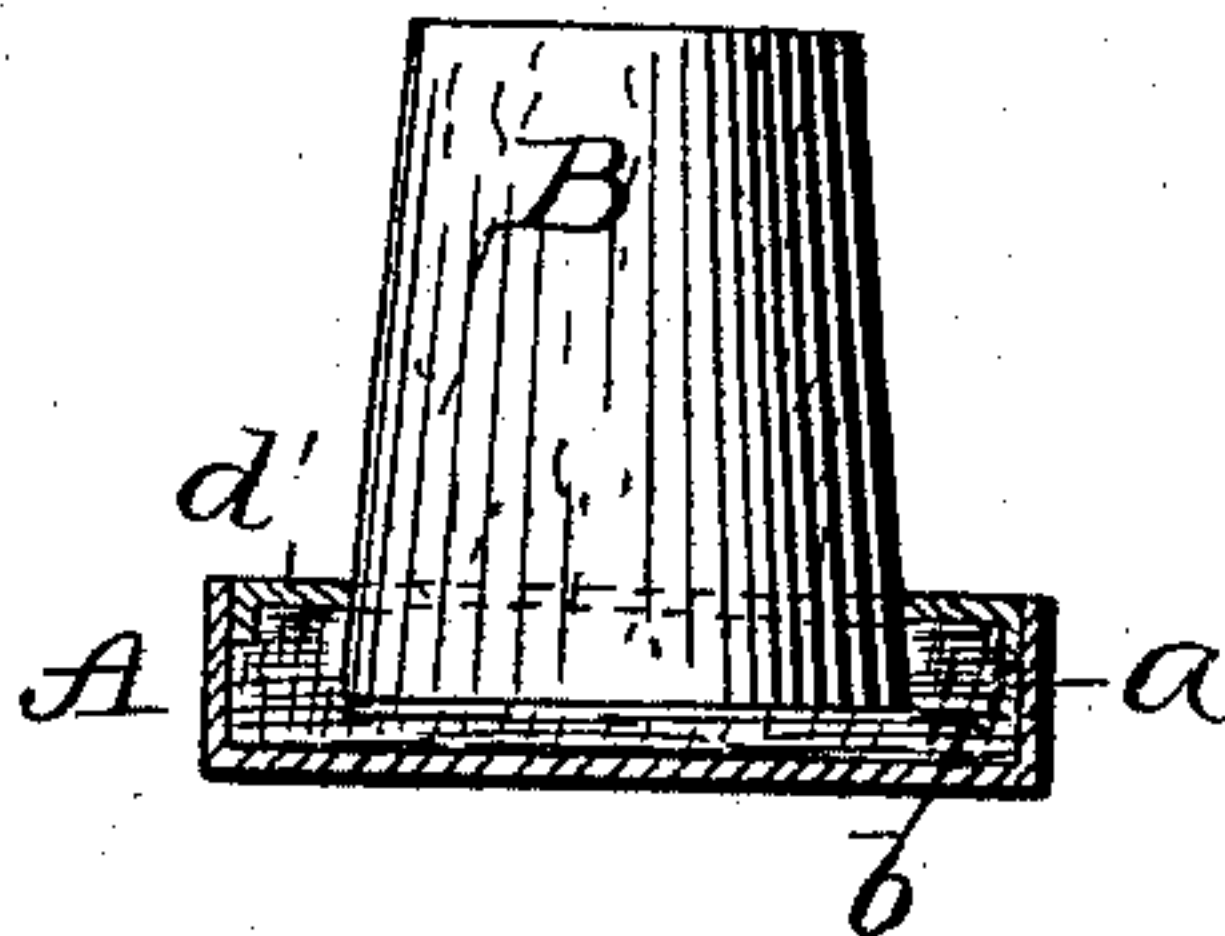
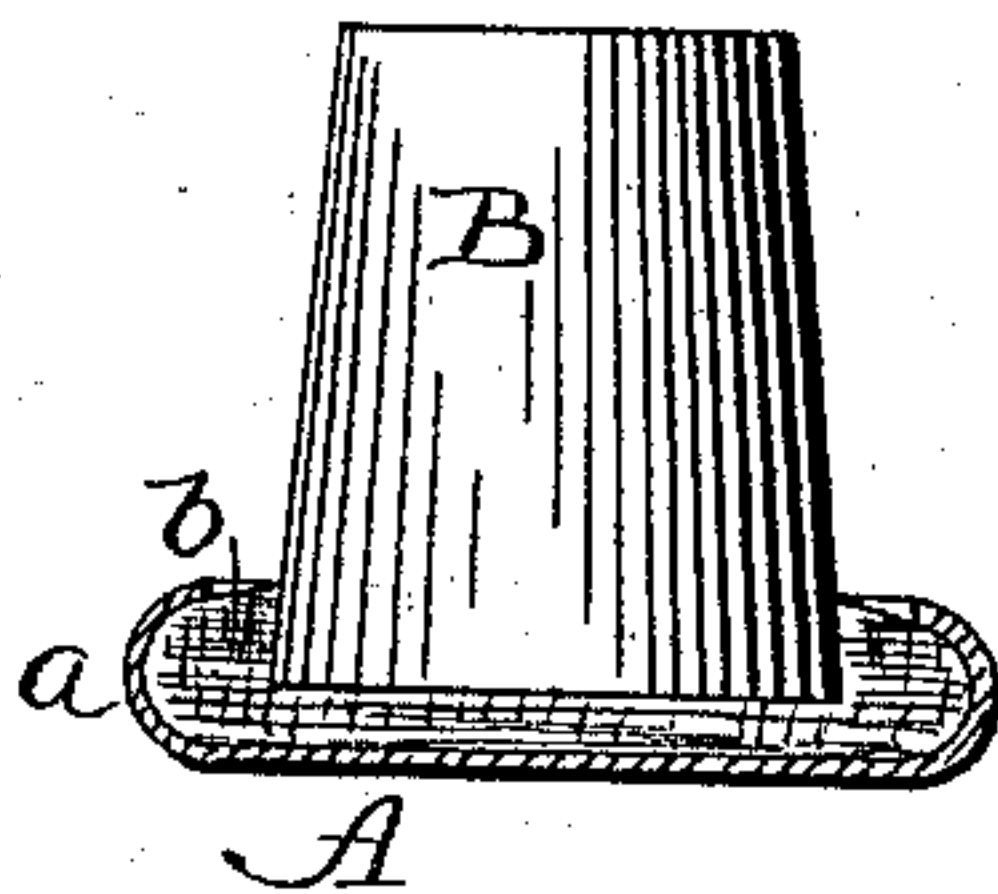


Fig. 11.



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UNITED STATES PATENT OFFICE.

HENRY LOUIS PHILLIPS, OF LONDON, ENGLAND, ASSIGNOR TO CHARLES M. HIGGINS, OF NEW YORK, N. Y.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 610,198, dated September 6, 1898.

Application filed December 31, 1897. Serial No. 664,984. (No model.) Patented in England June 16, 1891, No. 10,160.

To all whom it may concern:

Be it known that I, HENRY LOUIS PHILLIPS, a subject of the Queen of Great Britain, residing at London, in the county of Middlesex, England, have invented a certain new and useful Improvement in Bottle-Stoppers, (for which I have been granted Letters Patent in England, No. 10,160, dated June 16, 1891,) of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to that class of simple bottle-stoppers consisting of a cork or plug provided with an overhanging disk or head secured thereto to afford a better grasp to the hand when inserting or removing the stopper.

Heretofore in such stoppers the grasping-head has been usually made of a thin disk of wood glued on the cork, and in some cases a thin covering of sheet metal has been spun over the wood.

The object of my invention is to produce a greatly-improved stopper of this class which will be simpler and cheaper in construction, handsomer in appearance, afford a better grasp to the hand, and particularly in which the attachment of the cork to the head will be much more secure than heretofore.

To this end my invention may be stated to consist mainly in a stopper composed of a hollow or cupped shell of sheet metal or other suitable material forming the grasping-head, in combination with a cork or plug having its top embraced within said shell and a filling of solidible cement between the cork and shell, in which the top of the cork is immersed and which unites the cork and shell directly and firmly together, thus making the attachment of cork and shell absolutely secure and entirely dispensing with the interposed wooden disk heretofore used.

In the drawings annexed, Figure 1 is a perspective view of my improved stopper. Fig. 2 is a vertical section thereof, and Fig. 3 is an inverted plan view. Fig. 4 is a sectional elevation illustrating the process of formation or succession of steps taken in the making of my improved stopper. Fig. 5 is a sectional elevation of the separate parts of the stopper just before the cork is immersed in the cementing-filling in the grasping-shell. Fig. 6 is a sectional view of the same parts united

to form the finished stopper. Figs. 7 and 8 are vertical sections of a slightly-modified construction. Figs. 9 and 10 are similar views of still another modification, all embodying the same principle. Fig. 11 is a vertical section showing a slight modification of the stopper shown in the first figures.

Referring to Figs. 1, 2, and 3, A indicates the grasping-head of the stopper, and B the cork or plug. This grasping-head is made of two distinct elements—viz., an external cup or shell *a*, of thin sheet metal or other suitable material, and an internal filling or layer *b*, of solidible cement, in which the top of the cork is embedded or immersed within the rim of said sustaining-shell *a*, as shown clearly in Figs. 2 and 3. The grasping-shell *a* may be perfectly flat on the top, as seen in Figs. 1 and 2, or it may be beaded or corrugated, as shown in Figs. 5 and 6; but it is preferably made with straight vertical sides on its grasping rim or periphery, as clearly shown in Figs. 1 and 2, and this rim or periphery is deeply or distinctly fluted or corrugated, as shown in Figs. 1 and 3, thus affording on the exterior a firm and easy grasp for the hand, which prevents slippage and enables the stopper to be easily inserted into or removed from the neck of the bottle or other receptacle, as will be readily understood. The rim may be left plain or smooth, but the corrugations are manifestly preferable. Not only do they afford a better grasp to the hand externally, but internally they afford more secure attachment or anchorage for the cementing filling layer or filling *b* between the cork and shell, preventing the loosening or turning of the one within the other, due to any possible shrinkage, as will be understood. The union of the cementing-filling *b* with the shell *a* and cork B will, however, be particularly secure and intimate, for the cementing-filling is preferably composed of some fusible cement, such as sealing-wax of some kind, or of sulfur or resins, &c., which being poured hot and fluid into the shell and the cork then immersed therein, as shown in Figs. 4, 5, and 6, will unite with almost chemical adhesion to cork and shell, so that when said cement has become solidified and cooled the three parts will be so securely connected that it will

be impossible to detach the cork from the grasping-head without breaking it off bodily, whereas heretofore the union of the cork and the wooden disk by glue was not very
 5 secure, and the disk frequently becomes detached by torsional strain in inserting or removing the stopper from the bottle and often falls loose from the cork by shrinkage or cracking of the glue. Such detachment is ab-
 10 solutely impossible in my construction, for it will be seen on reference to Figs. 2 and 4 that not only is the extreme top of the cork cemented to the grasping head or shell by the interposed cement, but the sides or pe-
 15 riphery of the cork are also engaged, and the cork thus completely embraced and surrounded by and deeply embedded in the cement layer within the grasping-head for a fraction of its length, thus making the con-
 20 struction peculiarly strong and secure, yet very simple and inexpensive.

I prefer, as already stated, to use a fusible or resinous cement for the layer or filling, but any other solidifiable cement may be used,
 25 such as mixtures or compounds containing the following substances—that is to say, red lead, plaster, resin, gypsum, linseed-oil, (preferably boiled,) and Portland or other hydraulic cement; but I do not restrict myself to any
 30 cement or composition made from any of said materials or substances, as other cements or compositions may be found sufficiently suitable for use in some of the various forms of my novel stopper herein described. For in-
 35 stance, I may make a suitable cement as follows: I take of gypsum fourteen parts by measure and of linseed-oil (preferably boiled) two parts by measure. I first melt the resin in an iron vessel and gradually add the pow-
 40 dered gypsum and afterward the oil; but, as above stated, I wish it to be distinctly understood that my invention is not restricted to the use of any cement.

The process of making the stopper is very
 45 simple and will be readily understood from Fig. 4. The cup or shell *a* being placed inverted or with its open side up on a metal or wooden table *D*, as shown in the extreme left of Fig. 4, the shell is then filled up to the
 50 proper height with a duly-proportioned charge of hot liquid cement *b*, as shown at the middle of Fig. 4. The broad end of the cork *B* is then plunged centrally in the hot cement and placed down therein to the proper depth
 55 and held an instant, when the cooling and solidifying of the cement will unite the cork and shell firmly to each other, as will be readily understood and as clearly shown in Fig. 4. When the cement is cooled and so-
 60 lidified, the stopper will be completed and ready for use, as seen in Figs. 1, 2, and 3.

In some cases I prefer to slip on the end of the cork at the proper point a ring or washer
 65 *d*, of sheet metal or other material, as seen in Fig. 5, which will act as a stop to limit the plunging or immersion of the cork in the fusible cement, as seen in Fig. 6. This ring

d is an easy fit for the cavity of the shell, shown in Figs. 5 and 6, and it thus also serves
 as a guide or centering device to fix the cork 70 centrally in the shell and at the same time cover and conceal the cement around the cork at the mouth of the shell, thus making a much better finish and contributing to se-
 75 curity and accuracy of construction, as will be at once appreciated.

In Figs. 7 and 8 I show a somewhat-modified construction, in which the shell *a* is open
 on the top with central hole in the bottom, in which the cork is tightly inserted, with its 80 upper and larger extremity projecting within the said shell to the proper extent. A fusible cement *b* is then poured into the shell around and over the cork to or about to the level of the mouth of the shell, and finally a 85 top plate *f* is placed on the top of the cement, thus concealing the cement and finishing the construction. It will be readily seen that the cement *b* will of course adhere firmly to the
 90 shell *a*, cork *B*, and plate *f*, thus uniting all firmly together with the effect already de-
 scribed.

In Figs. 9 and 10 the shell *a d* is made in the form of a little hollow box, with a central
 opening *g* on the side *k*, where the cork is to 95 be attached, as shown best in Fig. 9. This opening *g* is a free or loose fit for the broad end of the cork instead of the tight fit, as in Fig. 7, and after the shell is filled to the
 100 proper depth with the cement *b* poured through the opening *g*, as shown in Fig. 9, the cork is then inserted through the opening and plunged in the cement till it just begins to
 105 exude around the cork at the opening *g*, as seen in Fig. 10, when the cork will then be-
 come firmly united with the shell, as will be understood.

The shell *a* or its parts *a*, *d*, *d'*, or *f* in the several figures may all be made of thin sheet
 metal struck up in the desired form, or of 110 tough paper, celluloid, or other suitable material. I, however, greatly prefer to make these parts of ordinary enameled tin-plate decorated or printed in one or more colors
 115 with any desired proprietary names, devices, or figures, which will enable very artistic and permanent effects to be got in a very inex-
 120 pensive manner and will greatly increase the attractiveness of the stopper and add to its advertising value.

It is of course understood that the plug or stopper *B* is to be made of ordinary cork, rub-
 ber, soft wood, or any other material usual or suitable for a stopper.

The sides or rim of the shell *a* is preferably 125 made vertically straight and fluted, as already described; but the rim may be of a rounding or similar form, as shown in Fig. 11, which rounded or overturned rim may be left plain or may be knurled or fluted, as will be under- 130
 stood.

I am aware that it is old to form a bottle-stopper with a wooden head having a recess therein in which is fitted a cork or plug, the

latter secured in the former by means of cement placed between the two and arranged as shown in the English Patent No. 3,835 of 1879, and of course do not claim any such construction. In fact, my stopper is essentially different therefrom in that its head consists, in the first place, principally of a thin shell, and, in the second place, of said shell connected to a cork or plug by means of cement, which is placed between the two at the sides thereof, whereby the tapering shape of said cork or plug acting on the cement forms a dovetail, and thereby the shell and cork are firmly held together.

15 What I claim is—

1. An improved bottle-stopper consisting of an external grasping-shell *a*, cork or plug B, and an internal cement layer *b*, between the sides of the cork and shell and uniting the two, substantially as and for the purpose set forth.

2. In a bottle-stopper, the combination with the cupped shell *a*, of the cement layer *b* filling said shell, and a tapering cork or plug B having its larger end projecting within said shell and immersed in said cement, substantially as and for the purpose set forth.

3. The combination with the shell *a*, of the cork or plug B projecting thereinto, a cement filling *b* between cork and shell, and a cen-

tralizing-guide *d*, or its equivalent, arranged and operating, substantially as and for the purpose set forth.

4. The combination with the shell *a*, of the cork or plug B projecting thereinto, a cement filling *b* between cork and shell, and an annular plate or washer closing the mouth of the shell and surrounding the cork at its point of protrusion from the shell, substantially as described.

5. A bottle-stopper consisting of a sheet-metal shell or head *a*, a cementing-layer *b*, and cork or plug B, arranged in said shell with said cement between the sides of said shell and cork, substantially as herein shown and described.

6. A bottle-stopper consisting of a cupped shell *a* having vertical fluted sides or rim, a cork or plug B having its end projecting into said fluted shell, and a cementing-filling *b* between the two at the sides and top thereof, substantially as and for the purpose set forth.

In testimony whereof I affix my signature, in the presence of two witnesses, this 17th day of December, 1897.

HENRY LOUIS PHILLIPS.

Witnesses:

JOHN E. DENNEY,
FRED C. HARRIS.