

H. G. ROTH.
BOTTLE FILLING DEVICE.
APPLICATION FILED MAR. 30, 1905.

2 SHEETS—SHEET 1.

Fig. 1

Fig. 9

Fig. 10.

Fig. 11.

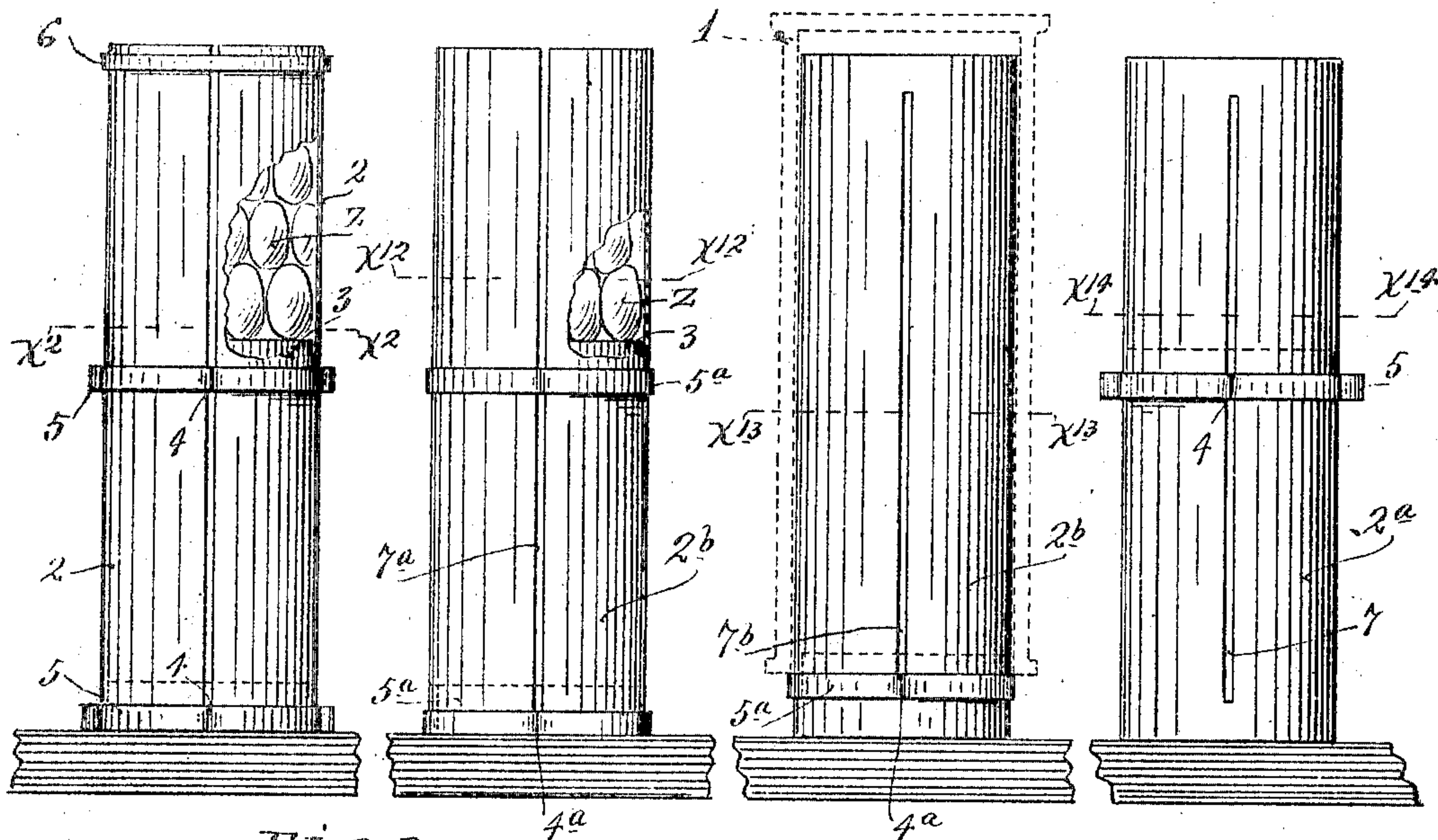


Fig. 3.

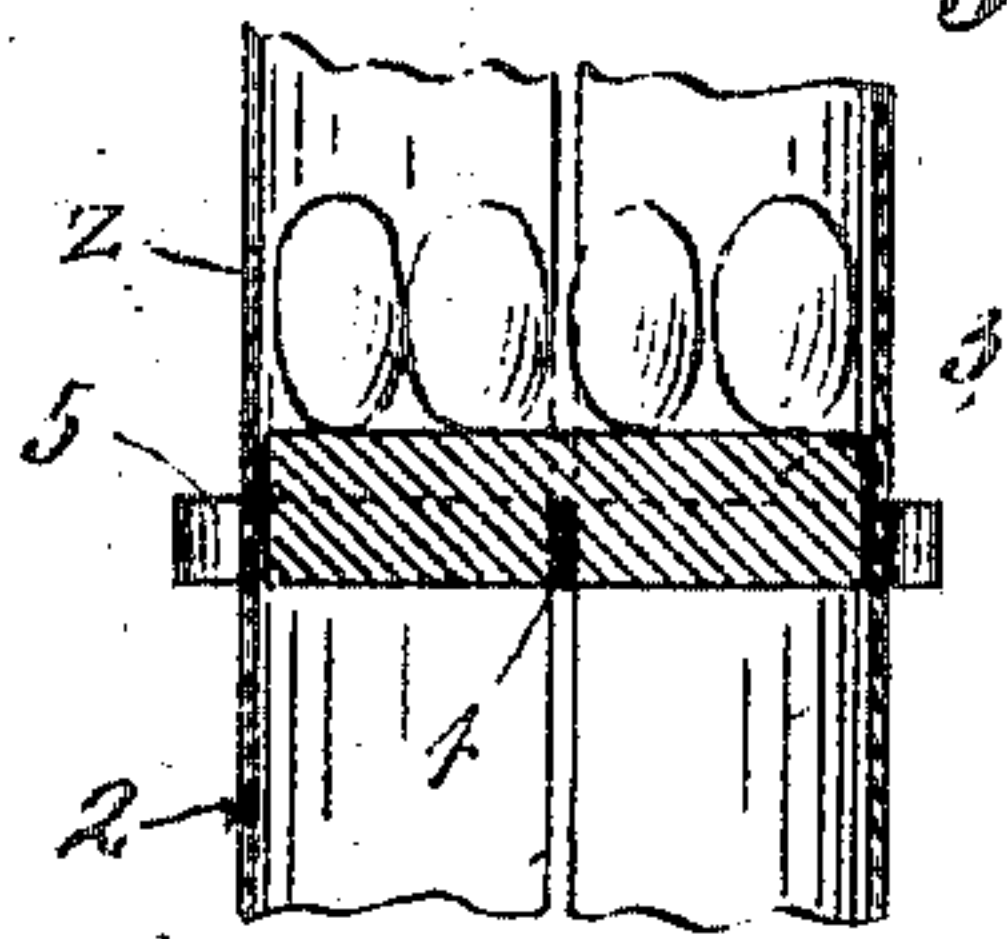


Fig. 2.

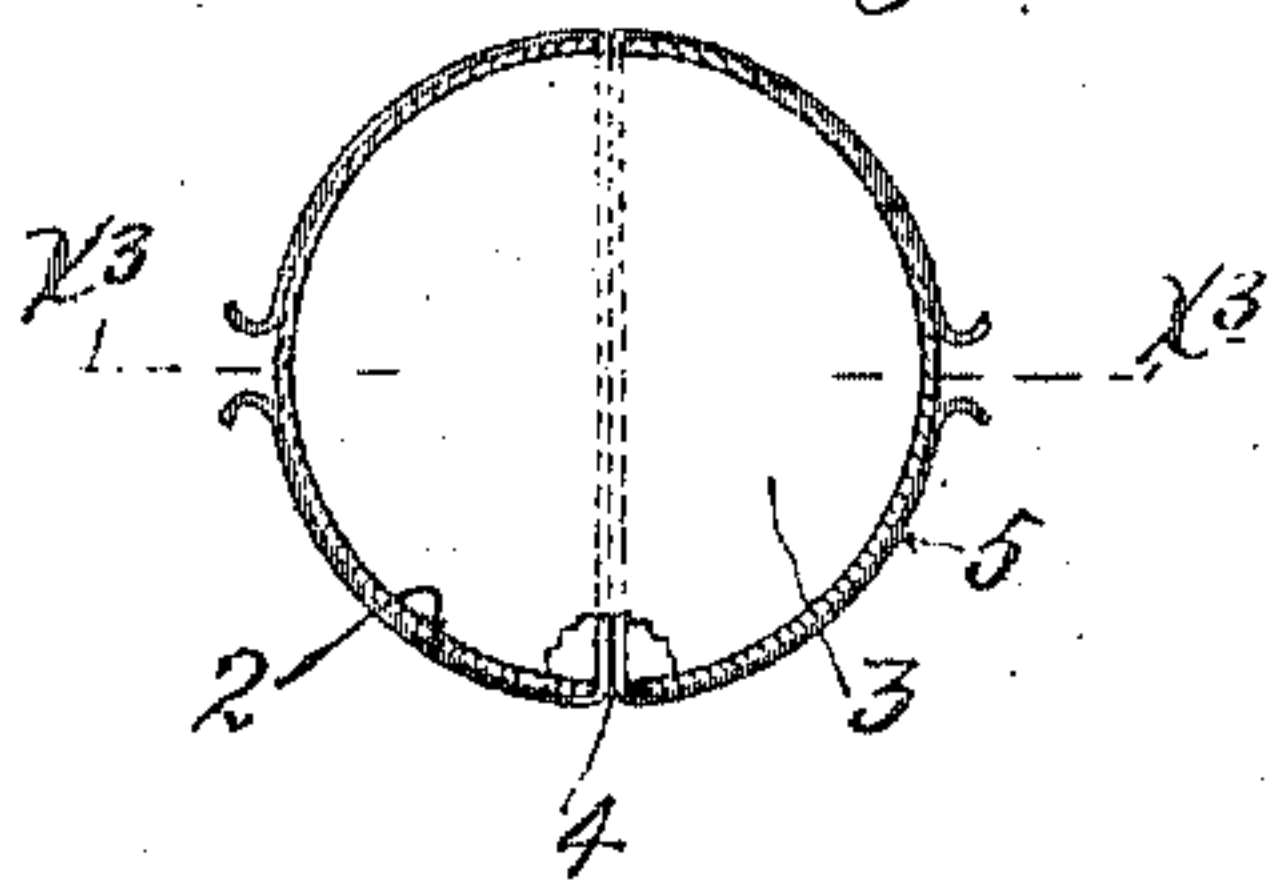


Fig. 12.

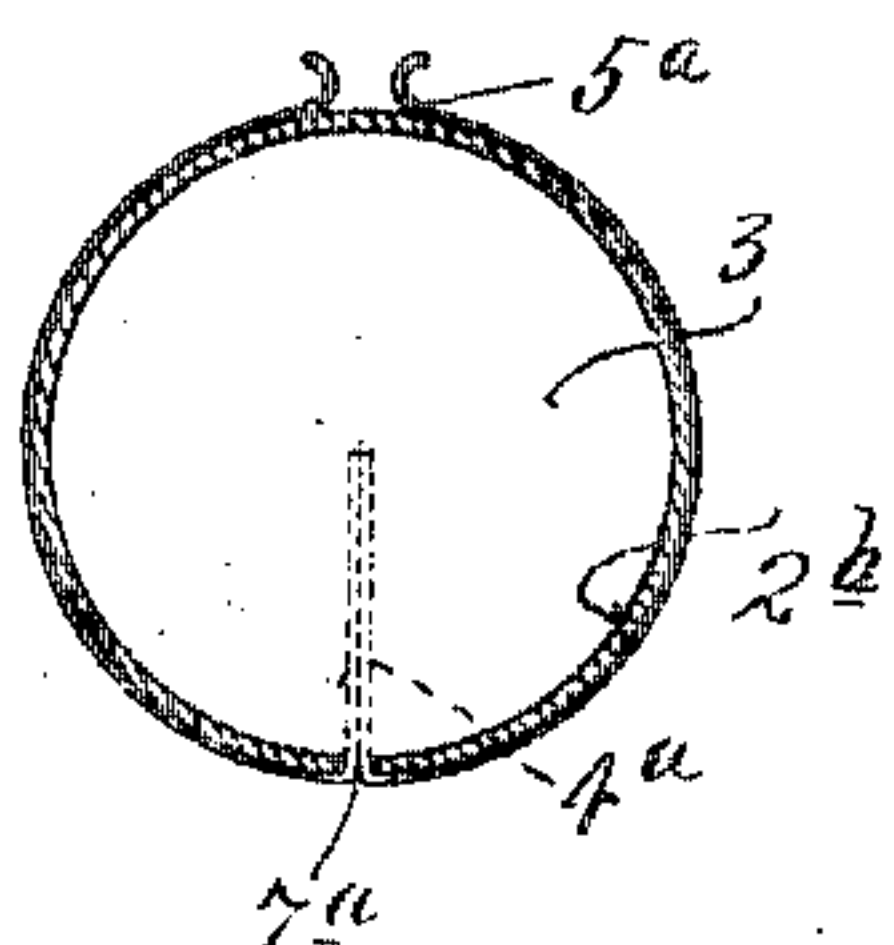


Fig. 13.

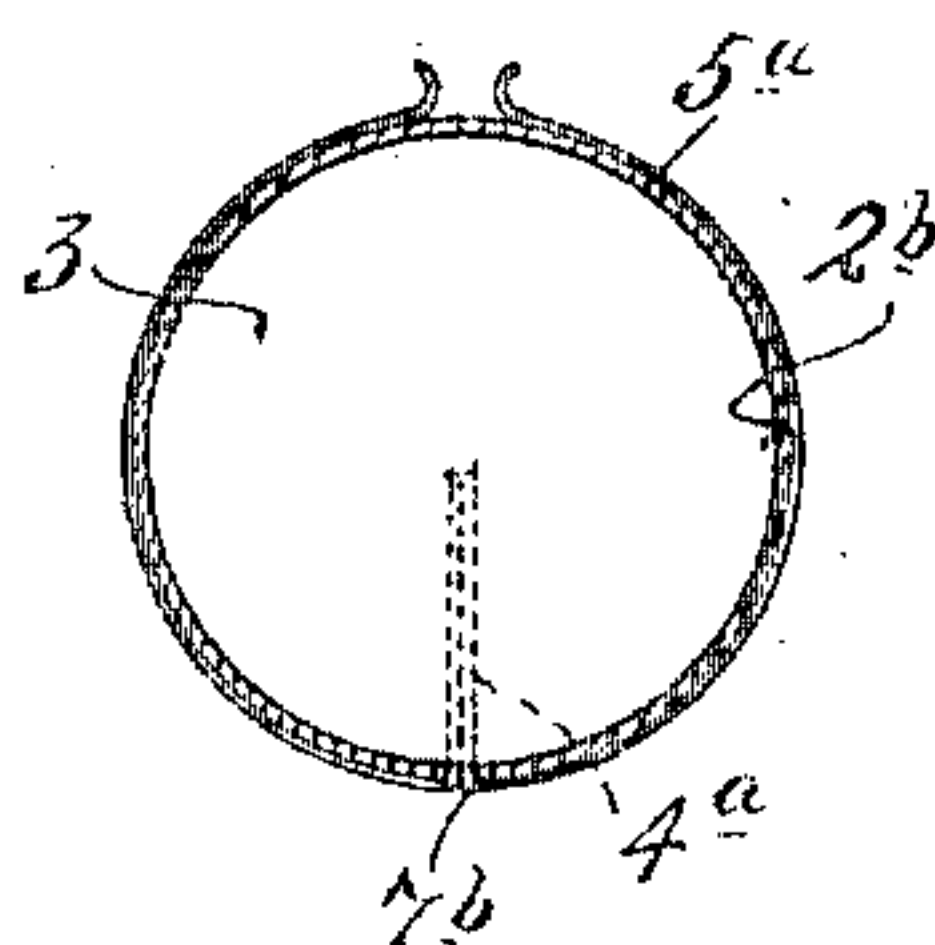


Fig. 14.

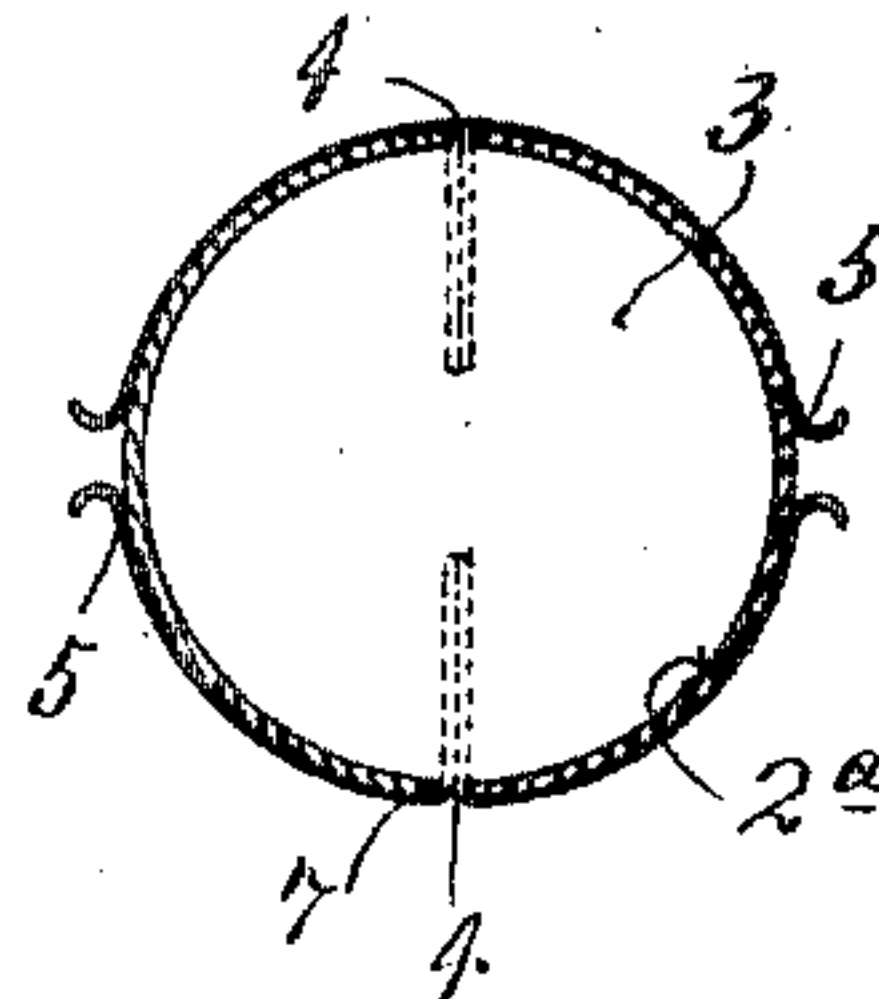
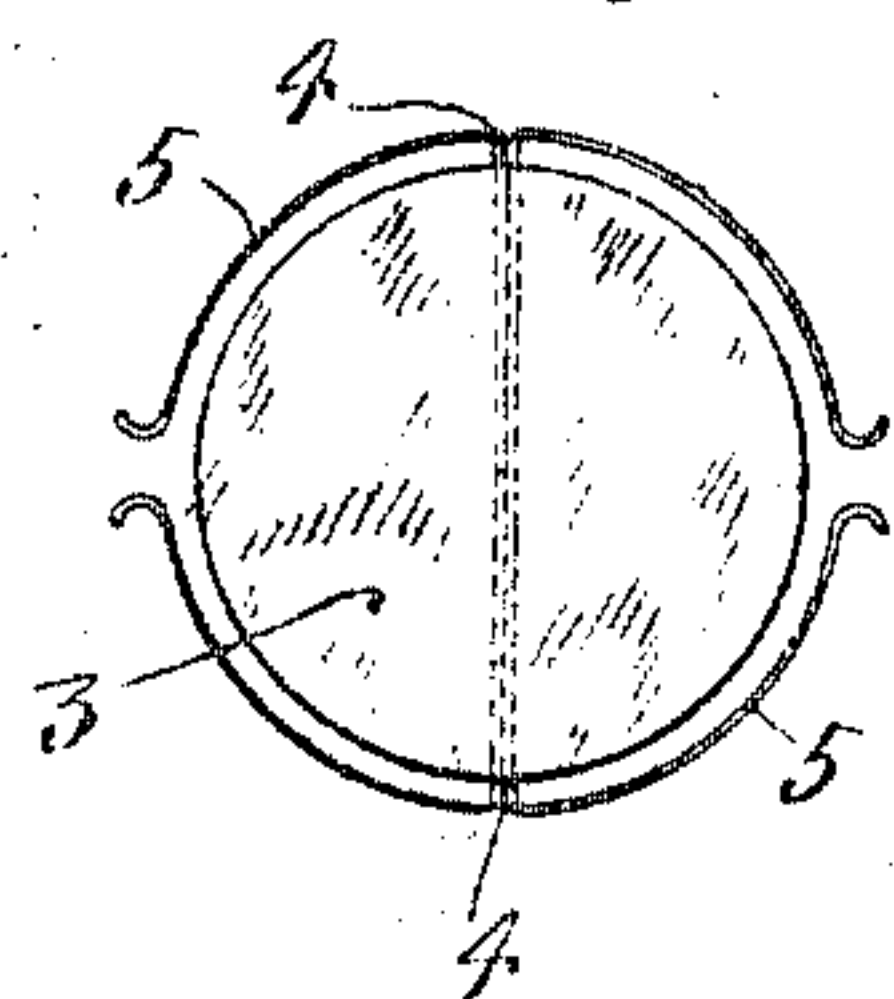


Fig. 15.



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2 SHEETS—SHEET 2.

Fig. 4.

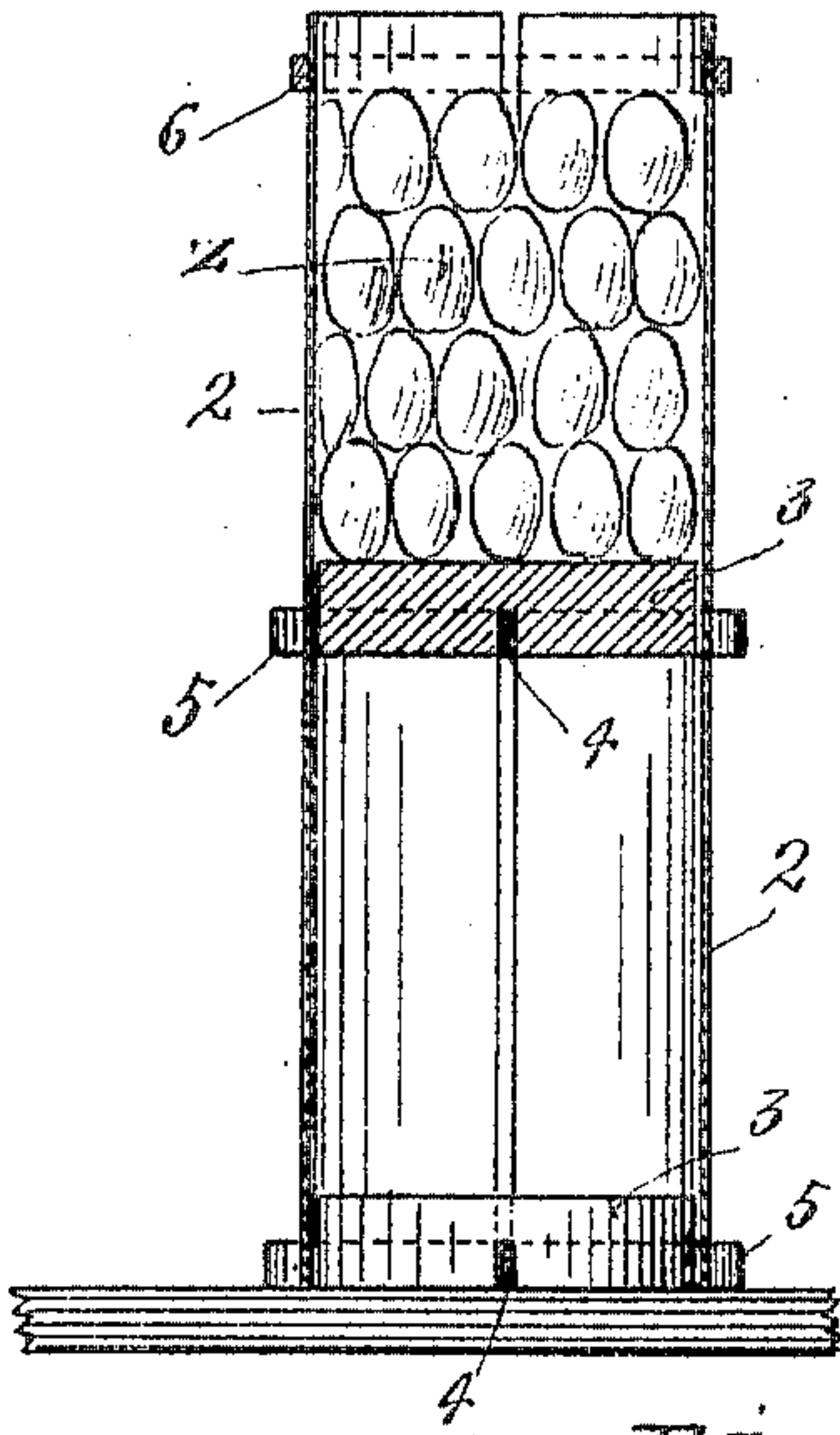


Fig. 5.

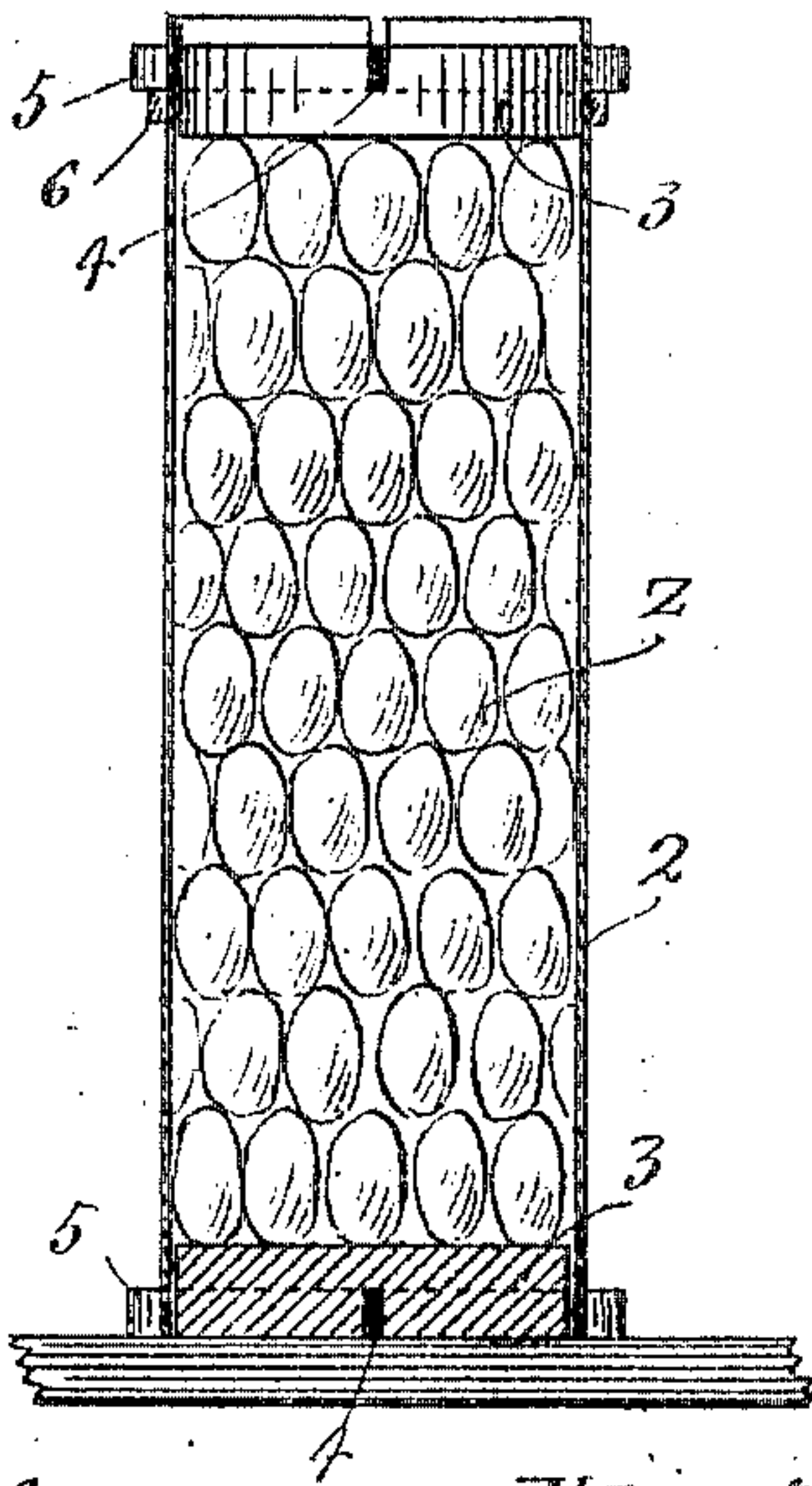


Fig. 8.

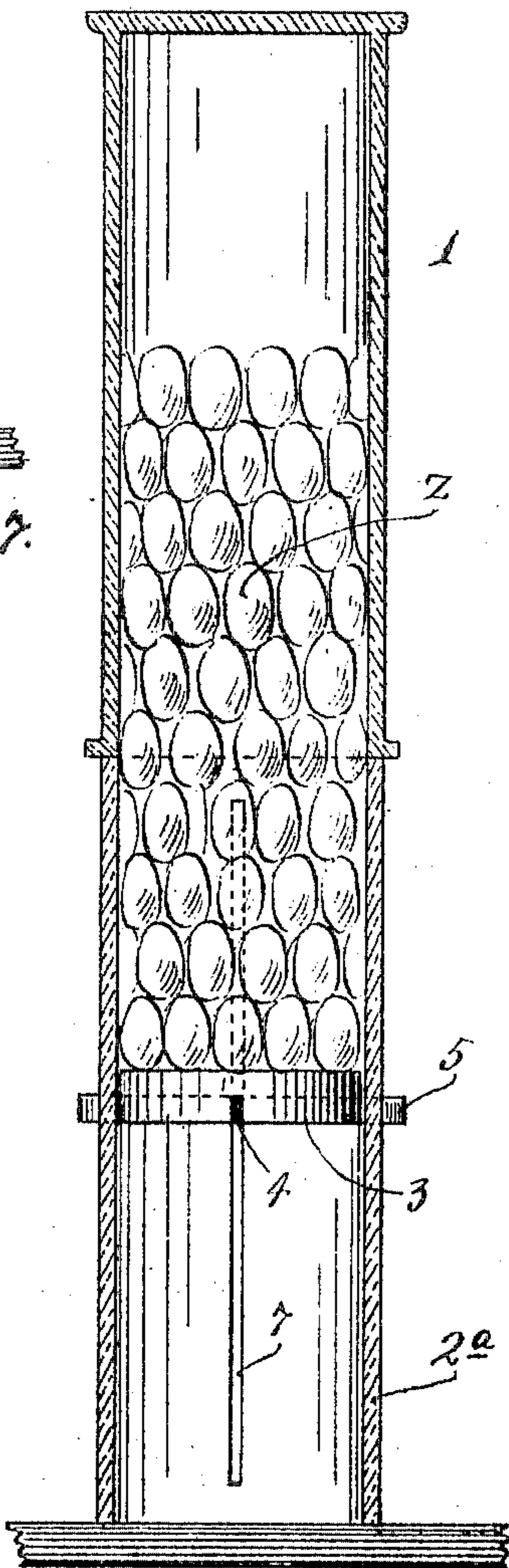


Fig. 6.

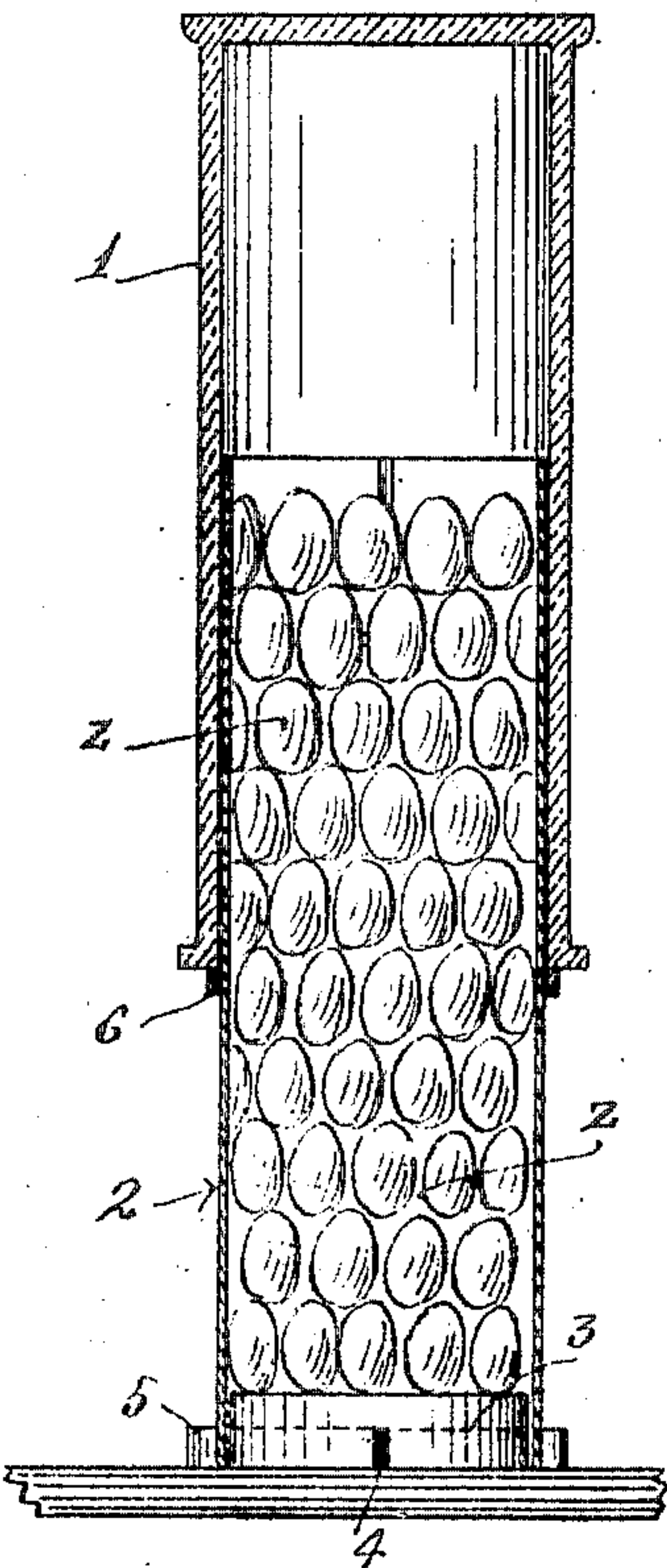
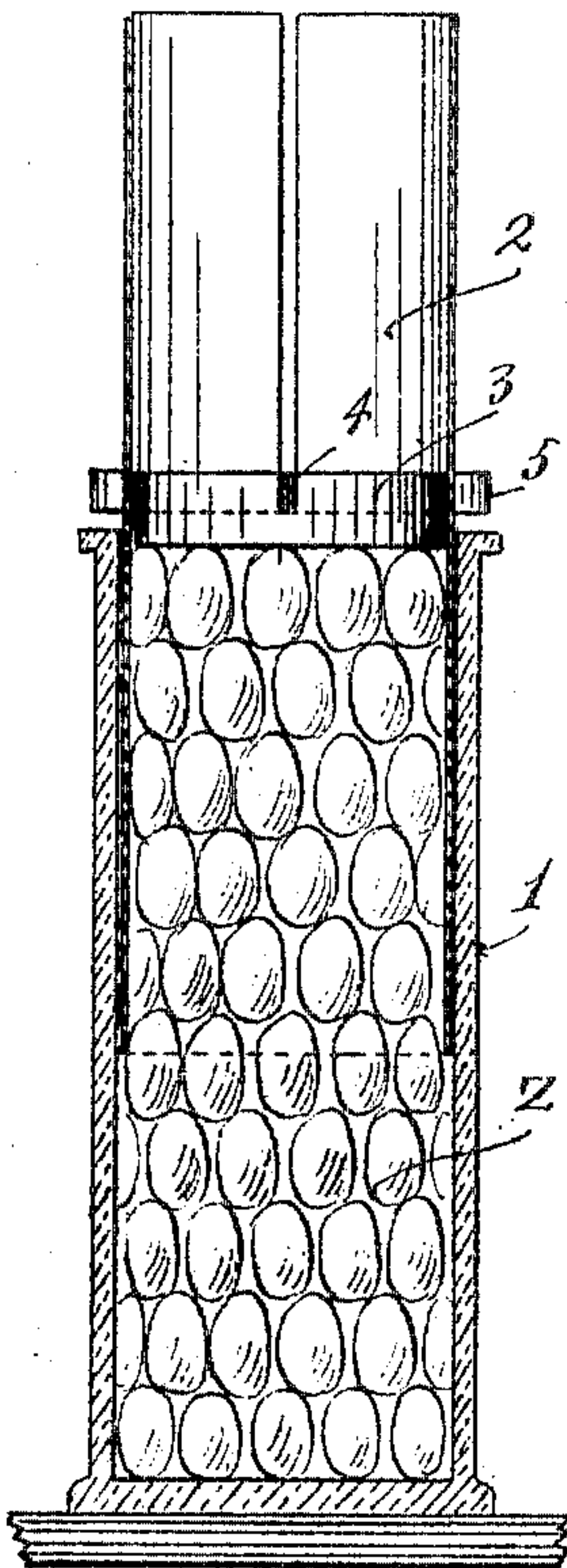


Fig. 7.



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UNITED STATES PATENT OFFICE.

HENRY G. ROTH, OF MINNEAPOLIS, MINNESOTA.

BOTTLE-FILLING DEVICE.

No. 797,754.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed March 30, 1905. Serial No. 252,814.

To all whom it may concern:

Be it known that I, HENRY G. ROTH, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Bottle-Filling Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention has for its object to provide a simple and efficient device for rapidly and economically filling bottles with olives, pickles, and other articles; and to this end it consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Figure 1 is a view in elevation with some parts broken away, showing a bottle-filling device designed in accordance with my invention. Fig. 2 is a horizontal section taken on the line $x^2 x^2$ of Fig. 1. Fig. 3 is a vertical section taken through the central portion of the device on the line $x^3 x^3$ of Fig. 2. Figs. 4 and 5 are complete vertical sections taken on the same line as Fig. 3, but illustrating different positions of the parts. Figs. 6 and 7 are vertical sections also on the same line as said Fig. 3, but illustrating different positions of the parts and showing the filler applied to a bottle, which bottle is shown in vertical section. Fig. 8 is a view corresponding to Fig. 6, but illustrating a modified construction of the bottle-filling device. Figs. 9, 10, and 11 are views in elevation, illustrating modified forms of the bottle-filling device. Fig. 12 is a horizontal section taken on the line $x^{12} x^{12}$ of Fig. 9. Fig. 13 is a horizontal section taken on the line $x^{13} x^{13}$ of Fig. 10. Fig. 14 is a horizontal section taken on the line $x^{14} x^{14}$ of Fig. 11; and Fig. 15 is a detail in plan, illustrating the construction of the follower and frictional support used in connection with the several forms of the device illustrated in Figs. 1 to 7, inclusive, and in Figs. 8 and 11.

The numeral 1 indicates a cylindrical bottle, the same being illustrated by full lines, but in section, in Figs. 6, 7, and 8 and by dotted lines in Fig. 10.

The construction illustrated in Figs. 1 to 7, inclusive, and in Fig. 15 will first be described.

The numeral 2 indicates a pair of semicylinders which when put together afford a temporary cylindrical holder into which the olives or other articles are adapted to be packed as preliminary to their introduction into the bottle. In the preferred form of the device the temporary holder is made up of transparent material and has thin walls, the external diameter of the same being such that the holder may be inserted with its load into the bottle. The said sections of the holder would preferably be constructed of celluloid, which while transparent has considerable rigidity even when thin. In this preferred construction the two sections of the holder are held together by a pair of heavy disk-like followers 3, that fit within the holder and are provided with diametrically-extended spring members 4, the outer ends of which are turned in reverse directions to form clamping-fingers 5, that are adapted to engage the exterior surface of the two sections of the holder and to nearly or quite embrace the same. The radially-projecting portions of the spring members 4 work in the slits afforded between the adjacent edges of the two sections of the holder. The only purpose of completely splitting or separating the body of the cylindrical holder 2 is to afford slits that run from end to end thereof, thereby permitting the followers 3 and their spring supports or clamps to be applied at one end and slid downward and off from the other end. Preferably a loose ring 6 is also slipped onto or over the sections of the holder. (See, for instance, Fig. 1.)

In the use of the device just described the parts are first put together as shown in Fig. 1; but the uppermost follower 3 is raised nearly to the top of the holder. Then the first layer of the olives or other articles is placed within the holder upon the said raised follower in the proper arrangement. Then the first layer, together with the raised follower, is pressed downward to make room for another layer, and the second layer is laid and pressed downward, this manipulation being repeated until the holder is filled or filled to the desired extent. The frictional clamping-fingers 5 will of course hold the raised follower and the load of olives or other articles contained thereon in whatever position it may be set. When the upper follower is forced downward against the lower follower, the latter is moved and may then be applied to the upper end of the holder, as shown in Fig. 5. The principal function

of the ring 6 is to hold the sections of the holder in position while one of the followers is removed. The filled holder may then be turned upside down, so as to bring the first packed layer of olives on top. Then the follower at the upper end of the holder may be removed and the bottle 1 telescoped over the filled holder, this operation being shown as partially completed in Fig. 6. Next the bottle with the filled holder should be inverted or turned so that the open end of the bottle will be turned upward. This being done the holder may be withdrawn either as an entirety, as shown in Fig. 7, or one section at a time. By the operation above described the first packed layer of olives, which are of course in the best alinement, will be placed at the bottom of the bottle. Where this result is not desired, it is not, of course, necessary to insert or turn upside down the temporary holder after it has been filled and before it is inserted into the bottle. By the use of the thin-walled holder capable of insertion into the bottle the articles are placed in the bottle in proper arrangement without being rubbed over the inner surface thereof, and hence without smearing the interior of the bottle. When a bottle is to be filled with stuffed olives, pickles put up in mustard, and various other articles which by rubbing contact with the bottle would smear or mark the walls of the same, the thin-walled holder capable of insertion into the bottle is highly important.

When the bottle is to be filled with articles which will not smear the bottle, a thick-walled holder 2^a, such as illustrated in Fig. 8, may be employed. This thick-walled holder should have the same interior diameter as the bottle which is to be filled. The said holder 2^a instead of being formed in sections is, as shown, formed integral and preferably of glass and is provided at diametrically opposite points with longitudinal slots 7, that extend nearly, but not quite, from end to end thereof and through which the radially-projecting portions of the spring members 4 are adapted to work.

The construction illustrated in Figs. 9 to 14, inclusive, is the same as that illustrated in Fig. 8, except that the holder is formed with thin walls and is preferably constructed of celluloid. In the construction illustrated in Figs. 9 and 12 a thin-walled holder 2^b is shown, and this holder is provided with a single slit 7^a, that runs from end to end thereof. The follower 3, employed by this kind of holder, is provided with radially-projecting spring members 4^a, the outer ends of which are bent to form approximately semicircular clamping-fingers 5^a, that frictionally engage the exterior of the holder, as best shown in Fig. 12. The construction illustrated in Figs. 10 and 13 is the same as that illustrated in Figs. 9 and 12, except that the holder 2^b instead of having a slit 7^a running from end to end thereof is

provided with a long slot 7^b, that terminates short of the ends thereof.

In all the devices described it will be noted that the follower affords a yielding or retreating support in the process of filling the temporary holder and affords a plunger or push device for forcing the articles from the temporary holder into the bottle in the one instance and for holding the olives down while the holder is being removed from the bottle in the other instance, as shown in Fig. 7.

The device described is simple and of small cost and by the use of the same bottles may be filled with olives or other articles in the desired arrangement at a much less cost than has hitherto been incurred in accomplishing the same result. In all forms of the said device the olives may be packed in the holder by the use of the fingers and without the use of pliers or tool of any form.

The said device is of course capable of modifications other than those illustrated within the scope of my invention as herein set forth and claimed.

It will be understood that when the device is intended to be inserted into a bottle to prevent smearing of the bottle in transferring the load into the bottle the temporary holder should be formed with very thin walls, but that otherwise the said temporary holder might have thick walls.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. A bottle-filling device comprising a temporary holder and a follower mounted to slide therein and provided with a part extending to the exterior of the holder and frictionally engaging the exterior thereof, substantially as described.

2. A bottle-filling device comprising a temporary holder and a follower mounted to slide therein, said follower having a part projecting through a longitudinal opening in said holder and adapted to be engaged by the fingers, substantially as described.

3. A bottle-filling device comprising a temporary holder having a longitudinal slot, and a follower mounted to slide within said holder and provided with a spring-clamp projecting through the slot of said holder, and frictionally engaging the exterior of said holder, substantially as described.

4. A bottle-filling device comprising a cylindrical holder having diametrically opposite longitudinally-extended slots, and a follower mounted to slide within said holder, and provided with reversely-turned spring clamping-fingers that work through said slots and engage frictionally with the exterior of said holder, substantially as described.

5. A bottle-filling device comprising a cylindrical holder, made in two parts, spaced at their edges to afford slits that run from end to end of the holder, and a follower mounted to slide within said holder, and to be removed

therefrom, and means for holding the sections of said holder together, substantially as described.

6. A bottle-filling device comprising a cylindrical holder which is split from end to end, and a follower mounted to slide within said holder and to be removed therefrom, and which follower has a frictional clamp working through the slit of said holder and engaging frictionally with the exterior thereof, substantially as described.

7. A bottle-filling device comprising a tubular holder having a longitudinal slot extended from end to end thereof, and a pair of followers adapted to work in said holder and having projections that work through the slot thereof, so that the said followers are adapted

to be applied to one end of said holder and to be removed from the other end thereof, substantially as described.

8. A bottle-filling device comprising a longitudinally-slotted thin-walled tube, adapted to be loaded, inserted into the bottle with the load and thereafter withdrawn, and a follower working in said tube and having a part projecting outward through the slot of said tube and adapted to serve as a finger-piece, substantially as described.

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

HENRY G. ROTH.

Witnesses:

ROBERT C. MABEY,

FRANK D. MERCHANT.