No. 797,753. PATENTED AUG. 22, 1905.

H. G. ROTH.

BOTTLE FILLING DEVICE.

APPLICATION FILED MAR. 30, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

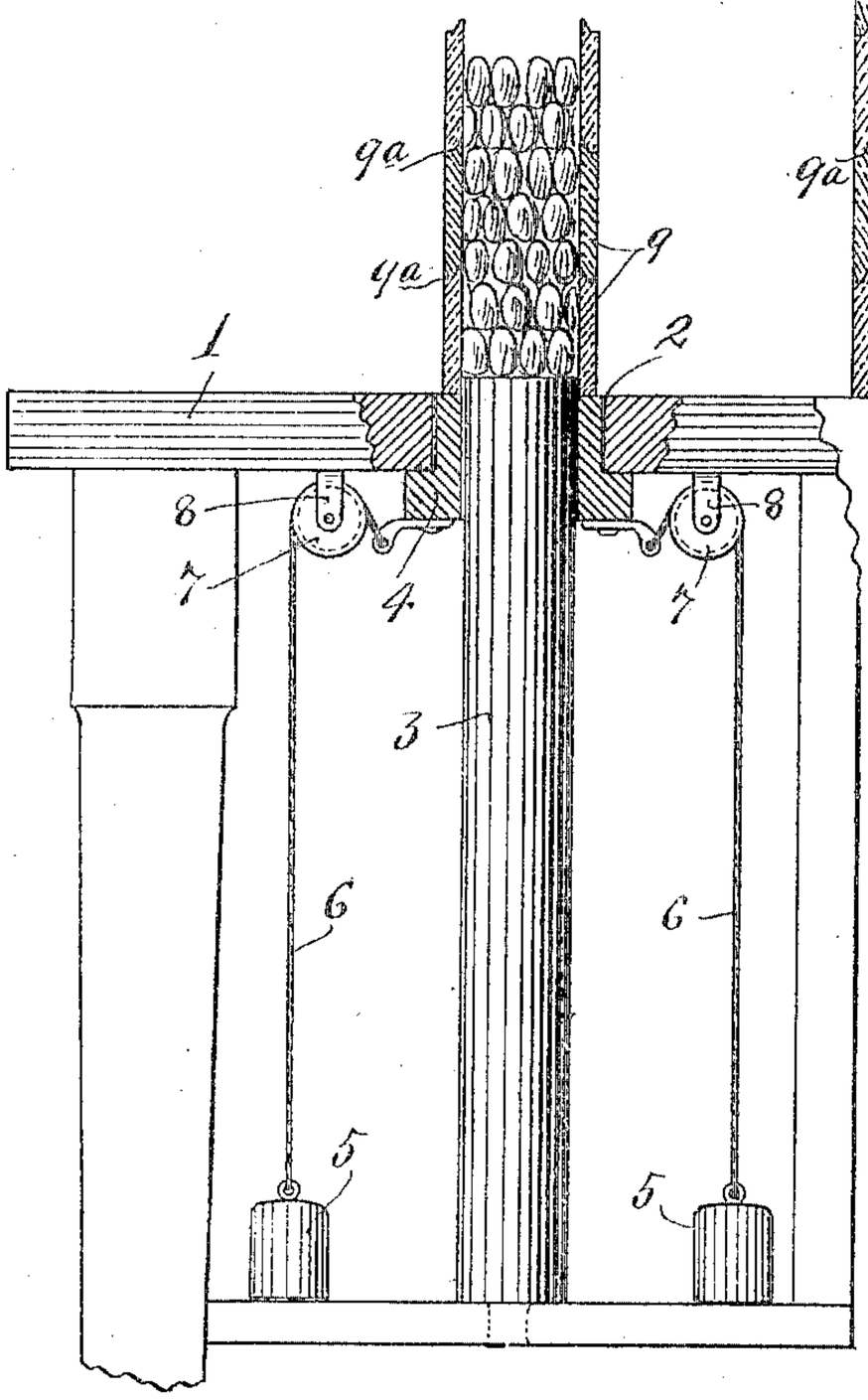


Fig. 3

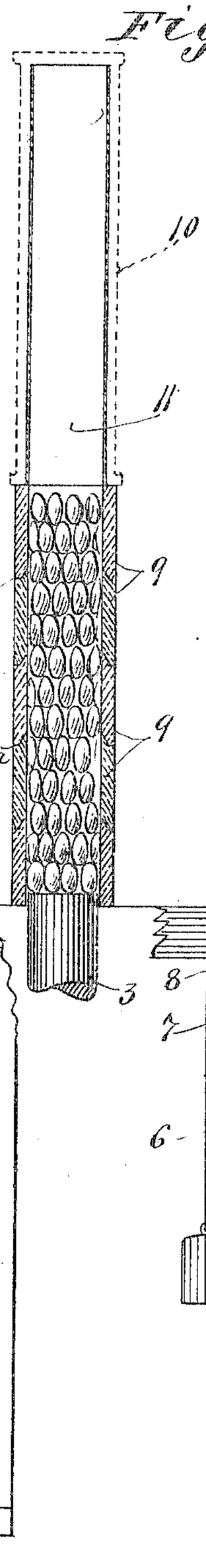
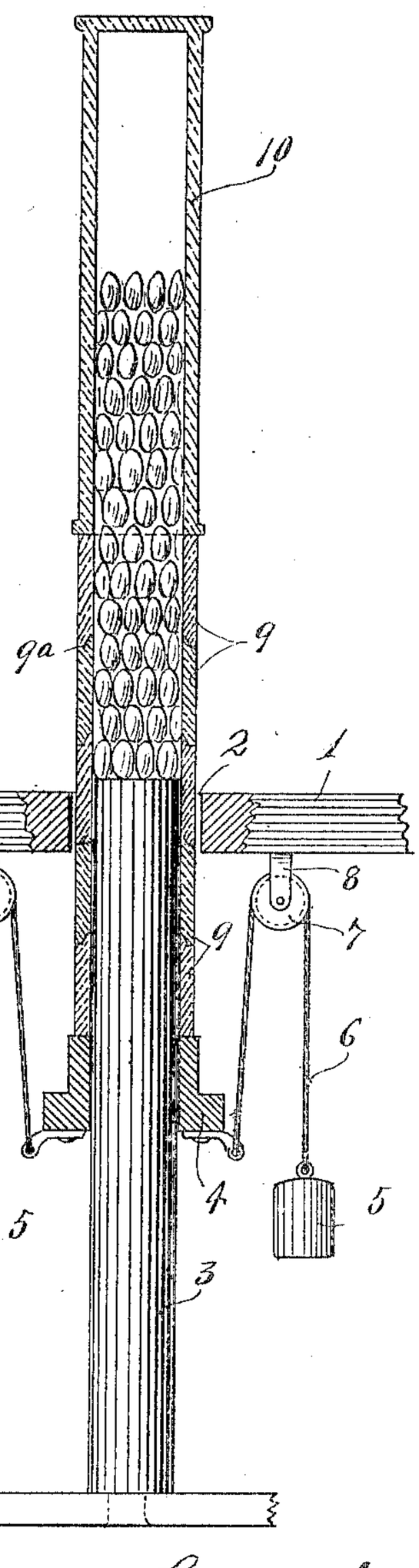


Fig. 2.



Witnesses.
A. H. Opsahl.
E. W. Jeppesen.

Inventor.
Henry. G. Roth.
By his Attorneys.
Williamson & Merchant

No. 797,753. PATENTED AUG. 22, 1905.

H. G. ROTH.

BOTTLE FILLING DEVICE.

APPLICATION FILED MAR. 30, 1905.

2 SHEETS—SHEET 2.

Fig. 4

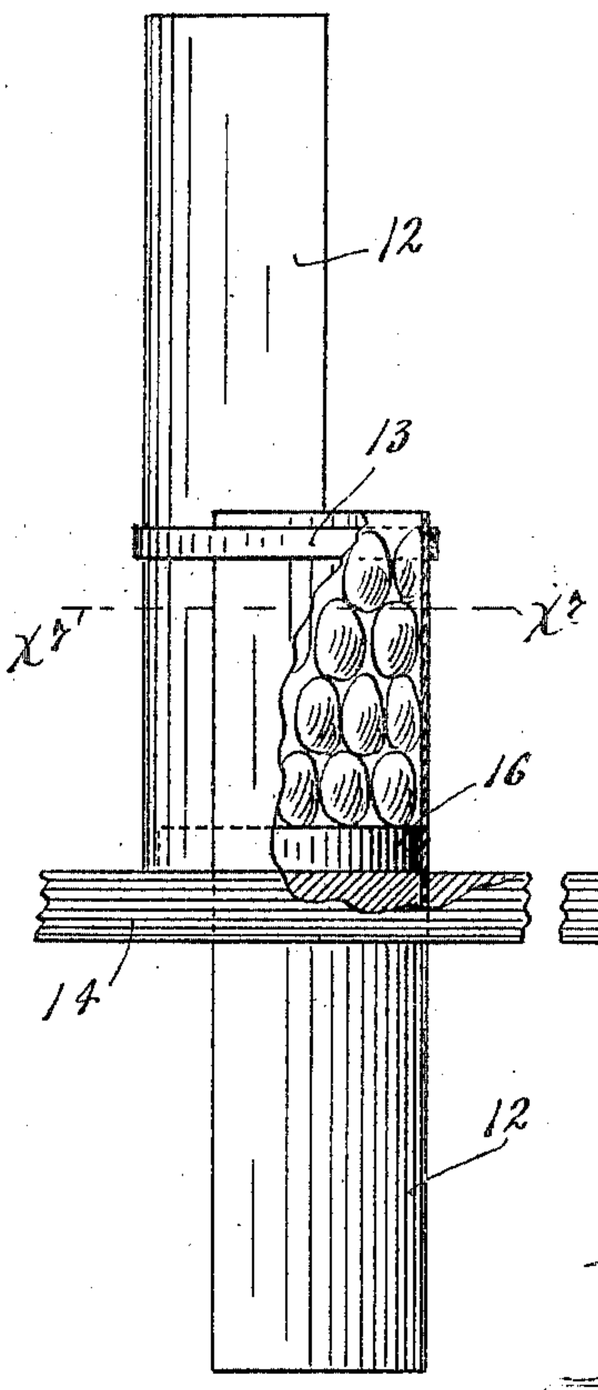


Fig. 5

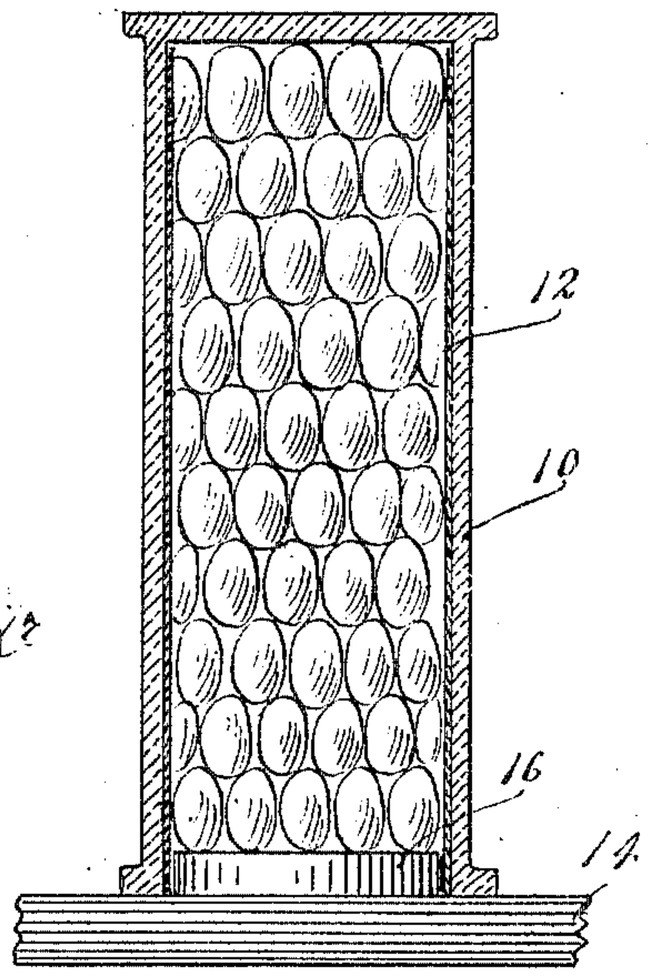


Fig. 6.

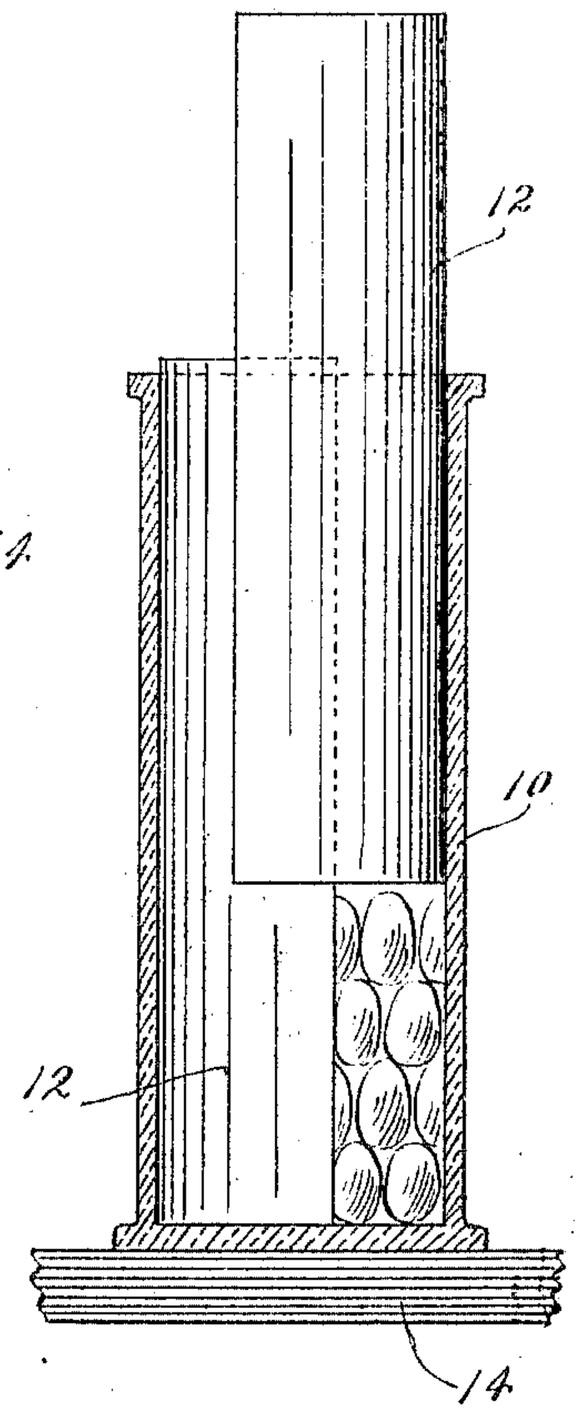


Fig. 8.

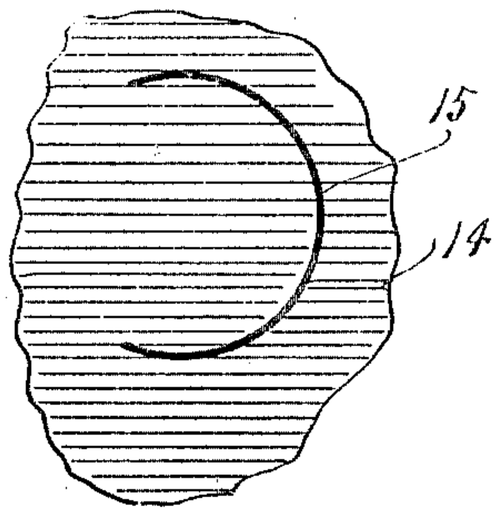


Fig. 7.

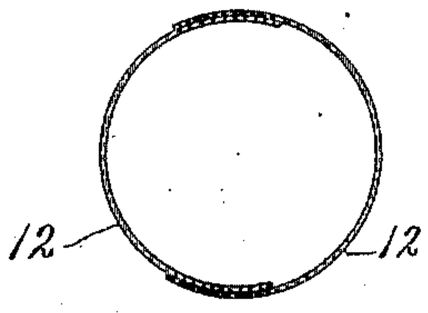
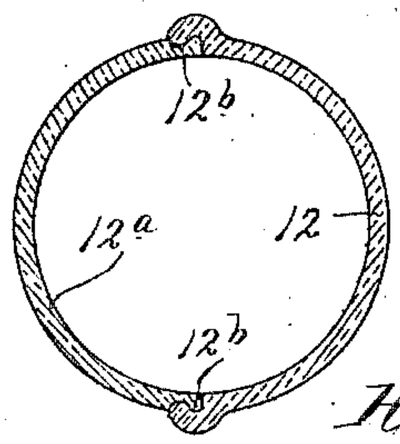


Fig. 9.



Witnesses.
A. H. Opsahl.
E. W. Jeppesen.

Inventor
Henry G. Roth.
By his Attorneys.
Williamson Merchant

UNITED STATES PATENT OFFICE.

HENRY G. ROTH, OF MINNEAPOLIS, MINNESOTA.

BOTTLE-FILLING DEVICE.

No. 797,753. Specification of Letters Patent. Patented Aug. 22, 1905.

Application filed March 30, 1905. Serial No. 252,813.

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 simple and efficient means for rapidly and economically filling bottles with olives, pickles, and the like; and to this end it consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

It is a well-known fact that such articles as olives, pickles, and the like are usually arranged in bottles in carefully selected and positioned layers, so that those exposed to view through the transparent walls of the bottle will present an attractive appearance and so that there will be as little waste space as possible left within the bottle. In the process of packing as hitherto carried out long-jawed pincers have been used, by means of which the articles after having been assorted are placed in a desirable arrangement, first in the bottom of the bottle and then are piled up in successive layers until the bottle is completely filled. This old process has been very slow and has required skilled labor, chiefly because of the difficulty of properly arranging the articles at the bottom of the bottle by the use of pincers and on account of the difficulty of removing such articles, which after having been placed in position are not found to be of the proper size to fill in or complete the layer.

My invention provides a means for filling bottles with olives and various other articles in selected layers and greatly reduces the cost of thus filling the bottles.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a view, partly in elevation and partly in vertical section, illustrating the improved bottle-filling device in its preferred form. Fig. 2 is a view similar to Fig. 1, but showing the parts in different positions and also showing a bottle into which the prearranged load of olives is being forced. Fig. 3 is a view in vertical section, showing the sectional tube, which affords a temporary holder, and also a tubular "liner" which is used in connection therewith. Fig. 4 is a view in side elevation with some parts broken away, illustrating a modified form of the sectional tube which affords a temporary holder. Fig. 5 is a view in vertical section, showing the holder illustrated in Fig. 4 filled with olives and inserted into an inverted bottle. Fig. 6 shows the said bottle inverted and with one of the sections of the holder partially withdrawn from the bottle. Fig. 7 is a horizontal section on line x^7 x^7 of Fig. 4. Fig. 8 is a plan view showing in detail a portion of the supporting table or shelf, and Fig. 9 is a horizontal section illustrating the modified means for slidingly connecting the two sections of the tubular holder.

Referring first to the construction illustrated in Figs. 1 to 3, inclusive, the numeral 1 indicates a table provided at its top with a large perforation 2, through which projects the upper end of the fixed vertically-disposed cylindrical guide-post 3, which operates as a plunger. An annular follower 4 works on the post 3 and is provided with a reduced upper portion that is adapted to project through the perforations 2 of the table-top, as shown in Fig. 1. This follower 4 is yieldingly held upward, preferably by weights 5, attached to the lower ends of the cords 6, that run over guide-pulleys 7 and are attached to said follower, and the guide-pulleys 7, mounted in brackets 8 on the bottom of the table-top. The sectional tubular temporary holder is made up of a plurality of rings or short tubular sections 9, that aline with each other, and at their abutting edges have telescopically-interlocking joints 9^n, formed by reducing the exterior of the one end section and increasing the bore of the abutting end section of the adjacent tubes.

In the use of the device described one tube-section is first placed upon the follower 4 and is telescoped slightly onto the upper end of the guide-post 3, whereby it is held in position. This short tubular section is then filled with olives, layers being properly arranged with the use of the fingers. The one section being filled, another section is added, and that section is then filled. This operation is continued until enough filled sections have been added to properly fill the bottle.

In the above operation it will be seen that the temporary holder is filled from the bottom upward and that this may be done by the

use of the fingers and without the use of pincers or other tools, thus making the work very rapid of accomplishment.

The numeral 10 indicates a cylindrical bottle having a mouth-opening of the full diameter of its interior. To fill this bottle—that is, to transfer this load from a temporary holder therein to said bottle—the said bottle is inverted, and its upper end is alined with the upper end of the upper main tubular section 9, as shown in Fig. 2, and the said bottle and the said temporary holder are forced downward, thereby causing the fixed guide 3 to act as a plunger to force the load out of said temporary holder and into the bottle. This transfer of the load from the temporary holder to the bottle is shown as partly accomplished in Fig. 2 of the drawings.

As is evident, the weight-held follower of 4 will yield downward when the bottle is pressed onto the temporary holder, as above described, but will be automatically returned to its normal or uppermost position whenever it is relieved from the pressure on the bottle.

For use in loading some articles—such as stuffed olives, cauliflower, and pickles mixed with mustard, for example—I preferably employ a thin tubular lining 11, which has such diameter that it is adapted to be inserted into the bottle with the load. In the use of this filler it is applied to the upper end of the uppermost section of the sectional temporary holder, as shown in Fig. 3, and the load from the said temporary holder is forced into the said liner. Preferably before forcing the load into the liner the bottle 10 is placed over the said liner, as indicated by the dotted lines in Fig. 3. After the liner within the bottle has been filled with the transferred load of olives the said liner may be withdrawn from the bottle. By the use of this liner 11 the olives or other articles are held out of sliding contact with the walls of the bottle, and in the process of loading the danger of smearing or marking the walls of the bottle is avoided.

In the modified construction illustrated in Figs. 4 to 8, inclusive, the temporary holder is made up of two cylindrical segmental sections 12, each of which extends through an arc of more than one hundred and eighty degrees, so that the two sections are adapted for telescoping movements the one upon the other. A clamping-ring 13 is placed around the upper portion of said section 12.

A table or supporting-shelf 14 is formed with a segmental slot 15, through which one of the cylindrical segments 12 is adapted to be forced downward through the table.

The numeral 16 indicates a thick disk, which is loosely placed within the holder afforded by sections 12 and is rested upon the table 14, as shown in Fig. 4.

In the use of this device the one cylindrical segment 12 is forced downward through the slot 15 of the table-top until its upper end is quite close to the disk 16. Then the first layer of olives or other articles is placed upon the disk 16 within the said temporary holder. Then the depending section 12 is slipped farther upward and another layer of olives is placed within the holder. The process of building up the successive layers in the holder is repeated, and the depending section of the holder is successively raised until the holder is completely filled or filled to the desired extent. Then the inverted bottle 10 is telescoped over the filled temporary holder, under which action the loose ring 13 will be forced downward.

By referring to Fig. 5 it will be noted that the disk 16 when removed will leave a space for the cork of the bottle. After the filled bottle has been turned open end up the sections 12 may be withdrawn from the bottle, thereby leaving the load within the bottle. (See Fig. 6.)

It will be noted that in the use of this form of a device, as well as in the form of the devices illustrated in Figs. 1 to 3, inclusive, the articles are packed at the bottom of the temporary holder and are built upward, the temporary holder being extended from time to time, so that the articles may be arranged in an upper layer by the use of the fingers.

Fig. 9 illustrates the manner of connecting relatively rigid and thick sections 12^a, said connection being accomplished by interlapping grooves and flanges 12^b, extended longitudinally of and at the edges of the said members 12^a.

A thick holder, as shown in Fig. 9, would not be adapted for insertion into a bottle and the load would have to be forced therefrom into the bottle.

The rings or short tubular sections 9 of the holder, (illustrated in Figs. 1, 2, and 3,) the cylindrical segments 12 of the construction, as illustrated in Figs. 1 to 7, inclusive, and the sections 12^a (illustrated in Fig. 9) should all be transparent, so that the operator may observe the arrangement of the layers of olives or other articles which are being placed in layers.

The said sections 9 and 12^a will preferably be made of glass, while the said sections 12 will be preferably made of celluloid.

It will of course be understood that the bottle-filling device is capable of modifications other than those illustrated in the drawings within the scope of my invention, as herein set forth and claimed.

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 made up of a plurality of sections, substantially as described.

2. A bottle-filling device comprising a temporary holder made up of a plurality of sections, adapted for successive rearrangement,

so as to build up the holder from its bottom toward its top, substantially as described.

3. A bottle-filling device comprising a temporary holder, made up of a plurality of movable sections and a plunger adapted to work in said holder to force the load therefrom, substantially as described.

4. A bottle-filling device comprising a fixed plunger, a movable, yieldingly-held follower, working on said plunger, and a tubular temporary holder adapted to fit the said plunger, and to rest upon said follower, substantially as described.

5. In a bottle-filling device, the combination with a fixed plunger and an annular yieldingly-mounted follower thereon, of a sectional tube, affording a temporary holder and adapted to work over said plunger and to rest upon said follower substantially as described.

6. A bottle-filling device comprising a sectional tube, and a thin tubular liner, substantially as described.

7. A bottle-filling device, comprising a temporary holder made up of a plurality of ring-like sections, having interlocking engagement at their abutting ends, substantially as described.

8. A bottle-filling device, comprising a tube made up of a plurality of ring-like sections 9, having interlocking engagement at 9^a, at their abutting ends, and the tubular liner 10, which latter is adapted to be inserted into a bottle, substantially as described.

9. A bottle-filling device comprising a temporary holder, made up of a plurality of ring-like sections, having interlocking engagement at their abutting ends, and a plunger adapted to work in said holder, substantially as described.

10. A bottle-filling device comprising a temporary holder made up of a plurality of sections, a thin-walled tubular liner having approximately the same internal diameter as said holder, and adapted to be inserted into the bottle to be filled, substantially as described.

11. A bottle-filling device comprising a temporary holder made up of a plurality of sections 9, interlocking at their edges, a plunger adapted to work in said holder, and a thin-walled liner having approximately the same internal diameter as said holder, and adapted to be inserted into the bottle to be filled, substantially as described.

12. A bottle-filling device comprising a tubular holder, a thin-walled tubular liner, and a plunger, which liner has approximately the same internal diameter as said holder and is adapted to be inserted into the bottle to be filled, and which plunger is adapted to be passed through said holder and liner, substantially as described.

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

HENRY G. ROTH.

Witnesses:
ROBERT C. MABEY,
F. D. MERCHANT.