

UNITED STATES PATENT OFFICE.

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BOTTLE-FILLING DEVICE.

No. 797,752.

Specification of Letters Patent.

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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 invention relates to devices for filling bottles with olives, pickles, and various other articles, and has for its object to improve the same in the several particulars hereinafter noted.

The invention 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 or in the process of assortment 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 the 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 simple and extremely efficient filling device and greatly reduces the amount of labor and time required to fill the bottles with the articles in the properly-assorted arrangement above indicated.

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

Figure 1 is a view, partially in side elevation, but with some parts broken away and with others sectioned, illustrating my invention applied to a table. Fig. 2 is a view,

partly in vertical section, but with some parts broken away, showing the bottle-filling device applied to a bottle. Fig. 3 is a vertical section showing a filled bottle inverted and resting upon the table shown in Fig. 1, the tubular "liner" of the filling device being placed within said bottle. Fig. 4 is a view, partly in section and partly in elevation, showing a filled bottle turned open end up and with the liner partially withdrawn from the same, the said bottle being rested on the table shown in Fig. 1; and Fig. 5 is a view corresponding to Fig. 2, but shows the device in which the liner is not employed.

The numeral 1 indicates a table having a flat top through which works a cylindrical plunger 2. The plunger 2 in this preferred arrangement of the filling device also works through an annular frictional clamp 3, which is secured to the bottom of the table-top and is provided with a spring-pressed section 4, that is subject to an adjusting-screw 5.

The numeral 6 indicates a plunger-lifting lever which at one end is pivoted to a leg portion of the table and at its free end engages the lever end of the plunger 2. The free end of this lever 6 is held in engagement with said plunger by weight 7, attached at the lower end of the cord 8, which cord runs over a pulley 9 and is attached to the free end of said lever. The pulley 9, as shown, is journaled in the bracket 10, secured to the bottom of the table-top.

The spring clamping device should be set to operate under sufficient friction to prevent movement of the plunger 2 under the action of the weight 7.

The numeral 11 indicates a foot-actuated lever which is pivoted at one end to a leg portion of the table and is yieldingly held upward by spring 12. The cord 8 is passed through the perforations 13 in the lever 11 and is of such length that when the plunger 2 is pressed downward to the extreme position the weight 7 will be moved upward into or nearly into engagement with said lever 11. As is evident, by placing the foot on the free end of the lever 11 and forcing the same downward the plunger 12 may be forced upward to its extreme position.

The numeral 14 indicates a bottle of cylindrical form the mouth of which has the same diameter as the interior of the bottle. This bottle will of course be made of glass.

The numeral 15 indicates a thin transparent

tube, preferably of celluloid, and is herein designated as a "liner." This cylindrical liner 15 is of such diameter that it closely fits around the plunger 2 and will closely fit within the bottle 14.

The numeral 16 indicates a transparent outer tube within which the liner 15 is adapted to be telescoped with close engagement. The two tubes 15 and 16 constitute a temporary holder into which the olives or other articles are adapted to be packed in the desired arrangement.

In the drawings the character Z indicates the olives.

The use of the device made up of the telescoping tubes 15 and 16 in connection with the table and the plunger 2, mounted as described, is as follows: The said two tubes are telescoped, the former within the latter, and each then telescope over the plunger 2, the said plunger being raised so that it projects nearly but not quite to the open upper end of the said tubes. One layer of the olives is then placed in proper arrangement in the upper end of the liner 15 and upon the upper end of the plunger 2. This of course may be done with the fingers. The first layer having thus been properly arranged, it is pressed downward and another layer is placed within the filler or inner tube 15. This operation is repeated and the successive layers are pressed downward until the temporary holder is properly filled with olives, at which time the plunger 2 will of course be forced downward to or approximately to its extreme lowermost position. The filled temporary holder is then removed from the plunger 2 and a plunger 2^a, which is of slightly larger diameter than the plunger 2 so that it fits the interior of the outer tube 16, is inserted into the lower end of the said outer end of 16, then the bottle 14 is inverted and telescoped slightly onto the upper end of the liner 15, and then by pressing downward on the bottle or by pressing upward on the plunger 2^a the liner 15, loaded with olives, is forced into the said bottle. Fig. 2 shows the liner 15, loaded with olives, as partially inserted into the bottle. Fig. 3 shows the inverted bottle with the liner and the olives completely inserted into the same. The bottle is then turned open end up and the liner 15 may then be withdrawn, leaving the olives properly arranged within the bottle. Fig. 4 shows the liner partially withdrawn from the bottle.

It is desirable that the layers of the olives which are at the bottom of the temporary holder after it is filled should be placed at the bottom of the bottle when transferred into the same. The said temporary holder after it is removed from the plunger 2 and before the plunger 2^a is inserted into the end of the same should be turned upside down, thereby making possible the above desirable result.

The reason for desiring the layers of olives

which are first packed into the temporary holder to be located at the bottom of the bottle is that the first layer located on the upper end of the plunger 2 is packed against a flat surface, and hence are in better alinement than those that are packed at the top of the holder. As is obvious, the olives which are thrown into engagement with the bottom of the bottle should be in almost perfect alinement. Hence it is of great importance that the temporary holder be made open at both ends so that it will receive one of the plungers at either end, thereby making the reversal of the holders, as above described, a possibility.

The liner 15 is very important when the device is to be used to fill bottles with stuffed olives, mustard-coated pickles, or other articles that would smear and mark the interior of the bottle if moved over the same. This liner 15 effectually prevents smearing of the bottles in loading the same. In some instances, however, the use of the liner is not absolutely necessary. Such an arrangement is illustrated in Fig. 5, wherein the tube 16 is employed as a temporary holder. In this instance the inverted bottle 14 is placed directly against the end of the tube 16 and is pressed downward onto the plunger 2^a, or the said plunger is forced upward, thereby forcing the olives from the tubes 16 into the bottles.

In Fig. 5 the tube 16 is illustrated as used in connection with the plunger 2^a; but it might be used in connection with the plunger 2, both in the operation of filling the temporary holder and in transferring the load from the holder into the bottle.

The so-called "liner" or inner tube 15 is preferably pliable, so that it may be sprung into different forms in cross-section, and the outer tube 14 must of course be rigid and have an interior passage corresponding in cross-section to the cross-section of the bottle to be filled. Hence it will be understood that the principal function of the outer tube is to give proper form to the inner tube while it is being filled preparatory to insertion into the bottle.

From what has been said it will be understood that bottles having various forms other than true cylindrical form may be filled by the use of the improved device described. It will also be understood that other modifications may be made 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 tube, which is open at both ends, and a plunger adapted to be inserted into either end of said tube, said tube affording a temporary holder for articles to be transferred therefrom into the bottle, substantially as described.

2. A bottle-filling device comprising a pair of telescoping transparent tubes, affording a temporary holder for the articles to be inserted into the bottle, said inner tube being insert-

ible into the bottle with such articles and being adapted to be afterward withdrawn from the bottle, substantially as described.

3. A bottle-filling device comprising a pair of telescoping transparent tubes 15 and 16, affording a temporary holder, said tube 15 being slightly longer than said tube 16 and being adapted to be inserted into a bottle in the act of transferring the load thereinto, substantially as described.

4. A bottle-filling device comprising a frictionally-supported plunger and a tube affording a temporary holder, said tube being open at both ends, substantially as described.

5. A bottle-filling device comprising a pair of telescoping tubes open at both ends, and a pair of plungers of different diameters, the one adapted to fit the interior of the outer tube and the other adapted to fit the interior of the inner tube, substantially as described.

6. A bottle-filling device comprising a table, a plunger frictionally seated in the tabletop and subject to a weighted lever, a second lever operating on the weight connections, to

raise said plunger, and an open-ended transparent tube adapted to be telescoped either end up, over the said plunger, substantially as described

7. A bottle-filling device comprising a rigid outer tube and a flexible inner tube, telescoping with each other, the said outer tube determining the form of the said inner tube, and the two tubes constituting a temporary holder for articles to be transferred therefrom into the bottle, substantially as described.

8. A bottle-filling device comprising a thin-walled tube which is open at both ends, and is of less diameter than the bottle to be filled, whereby it is adapted to be inserted into said bottle with the load temporarily contained therein, and a plunger insertible into either end of said tube, 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.