May 12, 1953 O. B. HAGEN ET AL 2,638,256

BOTTLE FILLING DEVICE

Filed Sept. 17, 1948

FIG. 6

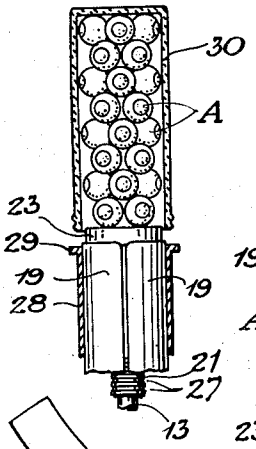


FIG. 7

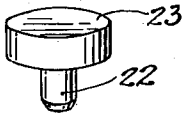


FIG. 2

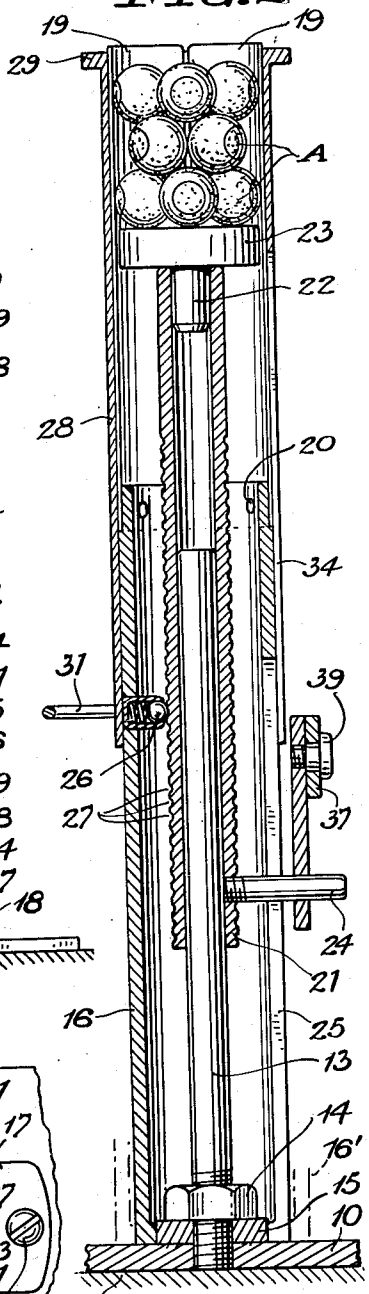


FIG. 5

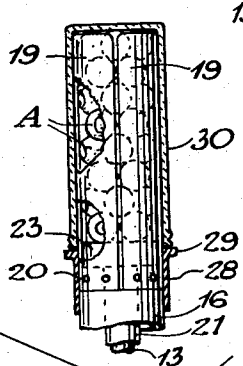


FIG. 1

FIG. 3

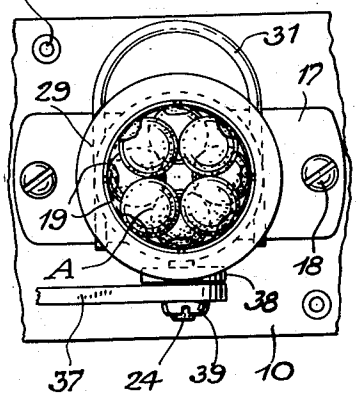
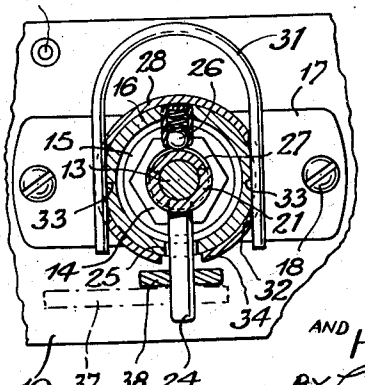


FIG. 4



INVENTORS
OTTO B. HAGEN
AND HUGO J. MULTHAUF
BY Christopher L. Waal
ATTORNEY

Patented May 12, 1953

2,638,256

UNITED STATES PATENT OFFICE

2,638,256

BOTTLE FILLING DEVICE

Otto B. Hagen, Wauwatosa, and Hugo J. Multhauf, Milwaukee, Wis.

Application September 17, 1948, Serial No. 49,712

4 Claims. (Cl. 226—16)

1

The present invention relates to filling devices adapted for packing olives, pickles, and other articles in orderly arrangement in containers such as transparent glass bottles.

It has heretofore been proposed to facilitate the packing of olives and the like in bottles by assembling the olives in prearranged groups which are then introduced into the bottles. However, such proposals have not been found successful, and it is still common practice to fill olive bottles by the relatively slow operation of individually placing the olives in the bottles.

An object of the present invention is to provide an improved and easily operated device of simple and durable construction for neatly and expeditiously filling bottles with olives and other articles.

Another object is to provide a bottle filling device which can be readily adapted for filling bottles of different sizes.

The invention further consists in the several features hereinafter described and claimed.

In the accompanying drawing,

Fig. 1 is a side elevation of a bottle filling device constructed in accordance with the invention;

Fig. 2 is a sectional elevational view of the device taken generally on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary top view of the device;

Fig. 4 is a transverse sectional view taken generally on the line 4—4 of Fig. 1;

Fig. 5 is a fragmentary sectional view of the device with an inverted bottle telescoped thereover;

Fig. 6 is a fragmentary sectional view showing the charge of olives in the raised inverted bottle, and

Fig. 7 is a perspective view of a detachable head for the filling device.

In the drawing, 10 designates a metal base plate adapted to rest on a suitable support 11 such as a bench top or table top. In some instances the base plate may be screwed or otherwise rigidly secured to the support, the plate having holes 12 for this purpose. A vertical guide rod 13 is rigidly secured to the base plate, as by a screwed connection, the rod having a lock nut 14 bearing against a metal disk or washer 15 which may be rigidly attached to the base plate. A tubular frame member or standard member 16 coaxially surrounds the vertical guide rod in radially spaced relation thereto and has bottom flanges 17 detachably secured to the base plate by screws 18, the frame member being centered by the disk 15. A plurality of thin, resilient sheet metal fingers 19 (four being shown in the present instance) are secured, as by rivets 20, or welding,

2

to the upper end of the tubular frame member, the fingers having a curved cross-section and forming a tubular structure extending above and coaxial with the frame member. A reciprocatory sleeve 21 is slidable on the guide rod 13 and has an open upper end adapted to receive the central stem 22 of a detachable disk-like head 23 which loosely fits in the tube-forming finger assembly. An actuating pin or stud 24 extends laterally from the lower end portion of the sleeve and projects through a vertical slot 25 formed in the tubular frame member. A detent member 26, such as a spring ball detent, is carried by the tubular frame member and is engageable in any one of a series of shallow grooves 27 formed about the sleeve to retain the sleeve in vertically adjusted position. If desired, more than one detent may be provided.

A tubular shell 28 slidably fits on the tubular member 16 and fingers 19 and serves to confine the fingers, the upper end of the shell having an annular flange 29 adapted to form a rest for an inverted olive bottle 30. The tubular shell 28 is detachably held in its uppermost position, shown in Figs. 1 and 2, by a U-shaped spring clip 31 which extends in cross slots 32 formed in opposite sides of the shell and engages in cross notches 33 formed at opposite sides of the tubular frame member 16. The shell has formed therein a downwardly opening vertical slot 34 to provide clearance for the sleeve-actuating pin 24.

A vertical post 35 is secured to the base plate 10 at a distance from the tubular frame member and carries a cross pin 36 on which a hand lever 37 is pivotally mounted at an intermediate point. One end of the lever is connected by a link 38 to the sleeve-actuating pin 24, the link being pivotally connected to the lever by a pivot screw 39. The lever also has a counterbalancing action on the sleeve 21 and its head 23.

The upwardly opening cylindrical space within the tube-forming fingers 19 is adapted to receive successive layers of olives A which are arranged in some predetermined orderly pattern, the lowermost layer resting on the disk-like head 23. In the passing position of Fig. 2, three layers of olives have been deposited. A sufficient number of olives are placed in the loading space within the fingers to fill the bottle 30 which thereafter is placed in inverted position over the fingers, as seen in Fig. 5, the charge of olives and the inverted bottle being later raised as seen in Fig. 6.

The fingers 19 and other parts of the device are formed of a durable non-corrosive material, such as stainless steel, to resist the action of the brine used in processing the olives.

In operation, the slidable sleeve 21 is raised

by the hand lever 37 to bring the disk-like head 23 near the upper ends of the spring fingers 19 which latter are confined by the raised tubular shell 28, the shell being held in its raised position by the U-shaped spring clip 31. The operator then places a layer of olives A on the head 23, the olives being neatly arranged in accordance with some predetermined pattern. Preferably, the olives are picked up individually by the fingers and placed in position. By way of example, the olives are here shown to be of the stuffed pimento type, and each layer consists of four olives with the stuffed end facing outwardly. As each layer is completed the head is moved downwardly a short distance against the restraining action of the detent 26, this movement being effected either by moving the lever 37 or by pushing downwardly on the previously deposited olives. The next layer of olives is then placed in position, and the operation is repeated until the desired number of olives is loaded in the device. By way of example, the olives in the successive layers are shown to be staggered, but various other arrangements may be provided. In some instances, as where each layer consists of five olives, the load or charge may be completed by a single centrally placed olive, not shown, to hide the central open space. When the charge is completed, the bottle 30 is placed in inverted position with its rim resting on the shell flange 29 and is pushed downwardly with the shell to the position shown in Fig. 5, the downward pressure releasing the spring retaining clip 31 from the notches 32 in the tubular member 16. The downward movement of the bottle brings the charge of olives and the spring fingers 19 within the bottle, the thin spring fingers 19 sliding along the inner walls of the bottle and adapting themselves in any irregularities in these walls. The outer end of the lever 37 is then pushed downwardly to raise the head-carrying sleeve 21, pushing the charge of olives upwardly and simultaneously raising the bottle above the spring fingers 19, as seen in Fig. 6. Preferably, the shell 28 is also raised at this time to confine the spring fingers against undue expansion. The charge of olives in the inverted bottle is confined by the head 23 which is projected above the fingers. The head 23 is then normally lifted from the upper end of the sleeve 21, together with the filled bottle, and the bottle is righted and set on the support 11, whereupon the head 23 is restored to the upper end of the sleeve 21 in readiness for another packing operation. The packed bottle is then in condition to be filled with brine and sealed.

When bottles of larger diameter are to be filled, the finger-carrying tubular member 16 is replaced by a similar but larger member 16' (shown in broken lines in Fig. 2) which is centered by the base disk 15, the substituted tubular member being provided with a corresponding slidable shell. The head 23 is also replaced by one of larger size. However, the original guide rod 13, sleeve 21, and post 35 remain on the base, and the same lever and linkage are used.

What we claim as new and desire to secure by Letters Patent is:

1. A container filling device, comprising a thin-walled tubular structure forming an upwardly opening article-loading space therein and adapted to receive an inverted container thereover; a member relatively reciprocable in said space in an axial direction; and an article-supporting head detachably mounted on the upper end of said member and forming a temporary closure for the filled inverted container when this container is removed from the tubular structure.

2. A container filling device, comprising an upstanding guide rod, a reciprocatory sleeve slidable on said rod, an article-supporting head detachably carried by the upper end of said sleeve, a frame including a thin-walled tubular structure surrounding said head and forming an upwardly-opening article-loading space therein and adapted to receive an inverted container thereover, said head being axially movable in said space, actuating means having an operative connection with said reciprocatory sleeve for axially displacing said sleeve, and detent means carried by said frame and laterally engaging said sleeve for holding said sleeve at an adjustable elevation on said guide rod.

3. A container filling device, comprising a base, an upwardly projecting stationary guide rod on said base, an article support reciprocable on said guide rod, an upwardly projecting frame detachably and replaceably secured to said base independently of said guide rod and having at its upper end a thin-walled tubular structure forming an upwardly opening article-loading space therein and adapted to receive an inverted container thereover, the upper end of said article support being axially movable in said space, and actuating means operatively connected with said support for reciprocating said support and for raising the filled inverted container from said tubular structure.

4. A container filling device, comprising a base, a tubular, longitudinally slotted frame member on said base having at its upper end a thin-walled tubular structure forming an upwardly opening article-loading space therein and adapted to receive an inverted container thereover, a reciprocable article support movable axially in said space, guide means for said support carried by said base, and an actuating member secured to and projecting laterally from the lower portion of said support through said slotted frame member.

OTTO B. HAGEN.
HUGO J. MULTHAUF.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
464,150	Davies	Dec. 1, 1891
797,752	Roth	Aug. 22, 1905
797,753	Roth	Aug. 22, 1905
797,754	Roth	Aug. 22, 1905
1,759,185	Campbell	May 20, 1930
1,788,958	Polk	Jan. 13, 1931
2,054,514	Landes	Sept. 15, 1936
2,147,818	Lang	Feb. 21, 1939
2,202,033	Stewart et al.	May 28, 1940