

May 22, 1934.

W. O. THATCHER

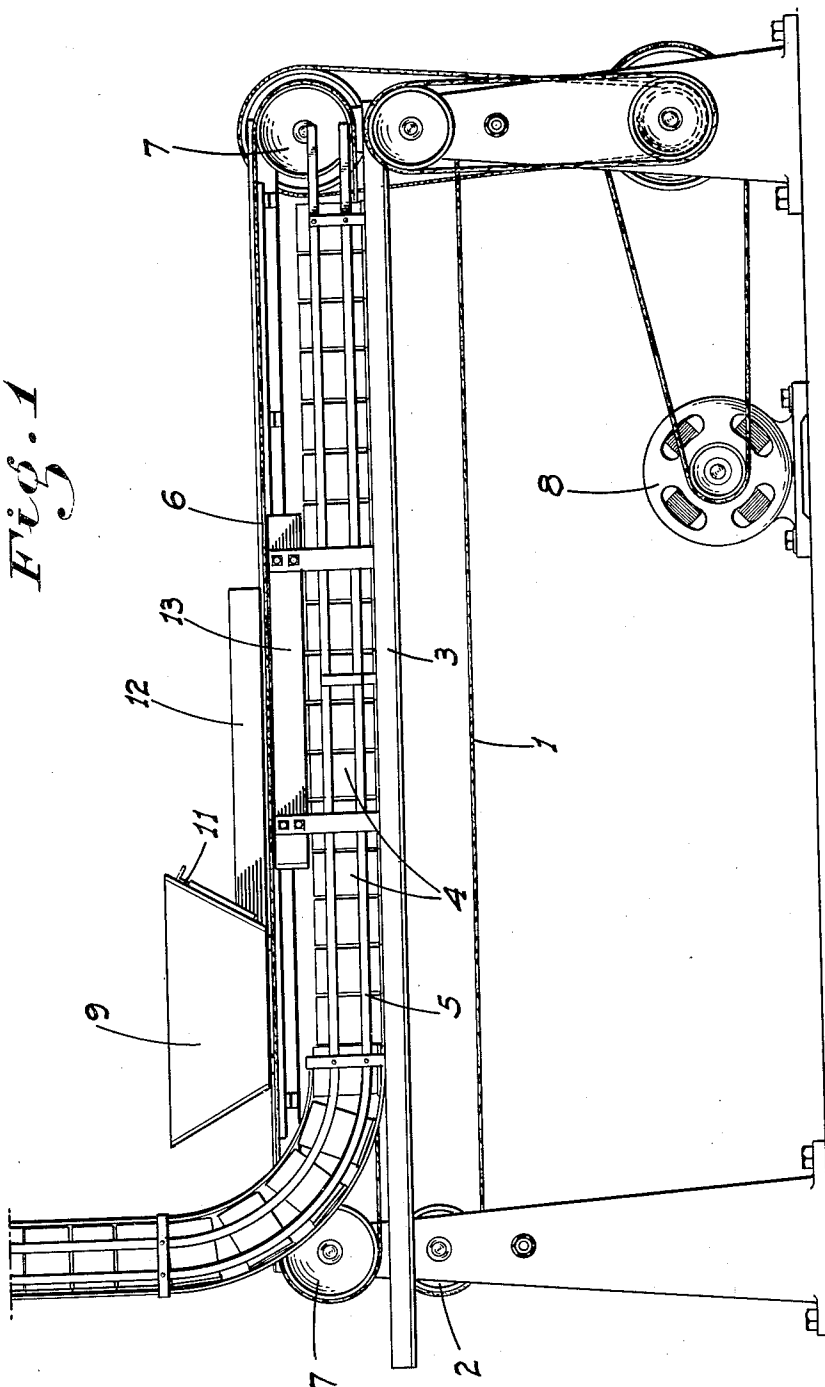
1,959,937

CAN FILLING MACHINE

Filed June 21, 1932

2 Sheets-Sheet 1

Fig. 1



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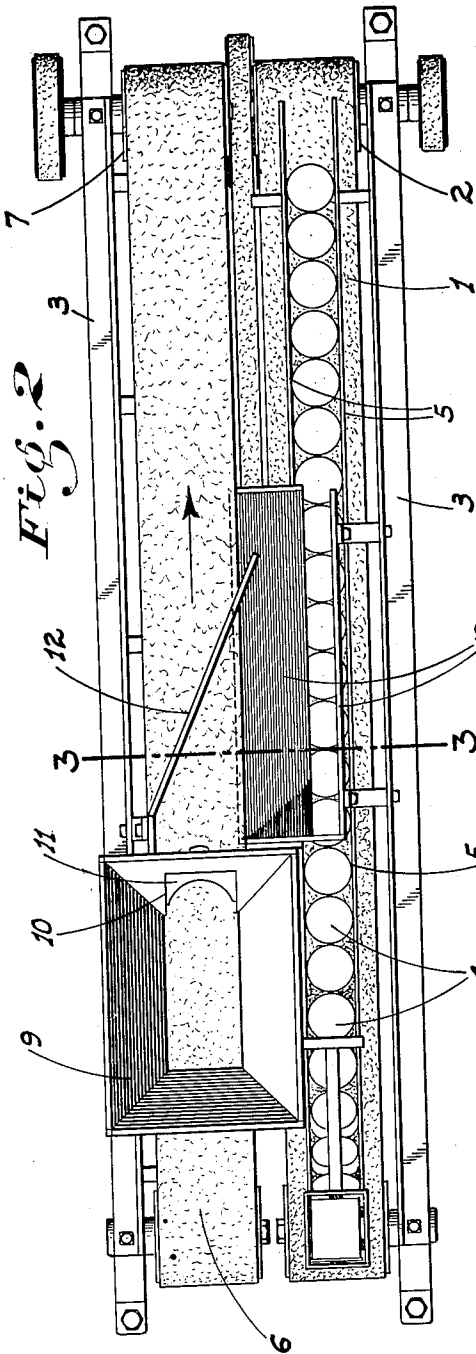


Fig. 2

Fig. 4

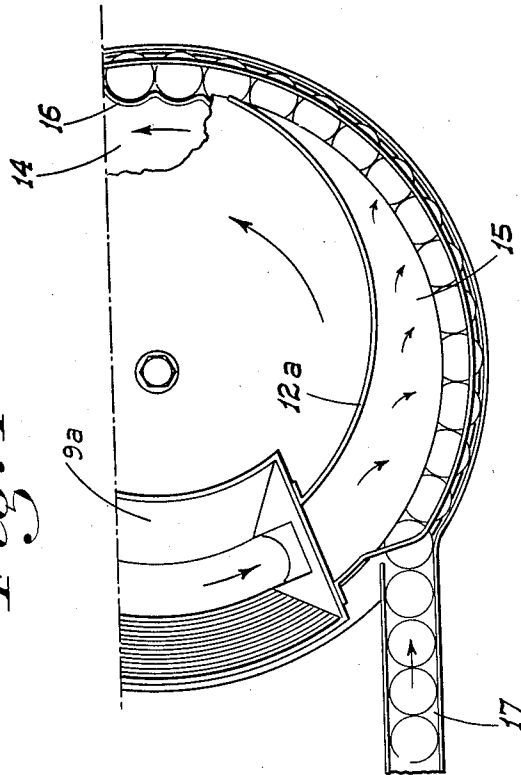
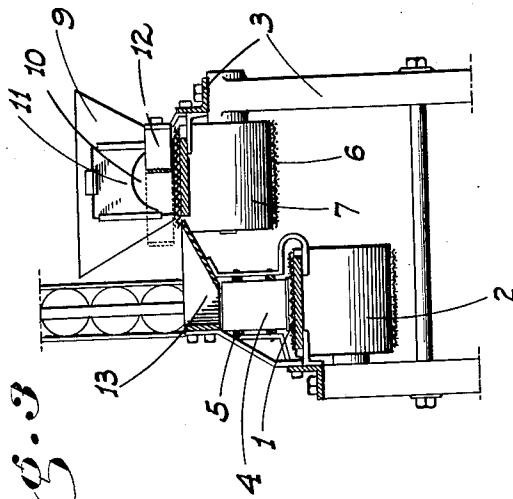


Fig. 3



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CAN FILLING MACHINE

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7 Claims. (Cl. 226—95)

This invention relates to canning machinery and particularly to a machine by which to fill cans of olives.

Olives at present are packed in the cans by hand on account of the fact that the only filling machines now on the market and which are designed for use with other products cannot be successfully used for olives since they tend to cause the olives to jam and to be frequently cut as they enter the cans. This latter feature while immaterial in various products, is highly objectionable with olives as the appearance of the olives is spoiled and their marketability is greatly lessened.

The principal object of my present invention therefore is to avoid such objectionable features by providing a machine especially designed for use with olives and so constructed that the olives will be fed into the cans without danger of any jamming and a resultant imperfect filling of the cans and without any danger of the fruit being cut or otherwise mutilated at any stage of the proceedings. While as above stated I have particularly designed my machine for use with olives it can also be efficiently used for other products as will be evident.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a side elevation of my improved filling machine.

Fig. 2 is a top plan view of the same.

Fig. 3 is a fragmentary cross section on the line 3—3 of Fig. 2.

Fig. 4 is a fragmentary top plan view showing a modified form of olive feeding means.

Referring now more particularly to the characters of reference on the drawings, and particularly at present to Figs. 1 to 3, 1 denotes a horizontal endless conveyor belt mounted on end pulleys 2 suitably supported in connection with a frame 3. A single row of cans 4 to be filled is fed onto the belt by any suitable mechanism so as to be disposed on the upper run of the belt in longitudinally aligned and abutting relation, being held in such alinement by guide units 5 of conventional form.

Extending parallel to the belt 1 to one side of and adjacent the same and on a somewhat higher level is another endless belt 6 mounted on end pulleys 7 suitably supported by the frame 3. One of each of the end pulleys of the two belts are driven in common and in the same direction by suitable connection with an electric motor 8 or the like and at such speed ratio that the belt 1 preferably travels faster than the belt 6. A stationary hopper 9 is disposed above the belt 6 toward its rear end, the upper run of said belt being close to the walls of the hopper and forming the bottom thereof. The front wall of the hopper has a backward slope and is provided with an opening 10 extending upwardly from the bottom, the available size of which is controlled by a vertical adjustable gate 11. The lower edge of the gate is cut with a concave curvature as shown, a feature which prevents the olives from jamming in the gate passage.

Mounted in a fixed position in front of the hopper and extending diagonally of the belt 6 from the side of the gate opposite the can conveying belt to a point somewhat beyond the near side edge of the belt 6 is a deflector board 12. This deflector sweeps the olives moving along the belt 6 from under the hopper off the side edge of said belt nearest the cans and into a horizontal filling trough 13 which extends lengthwise of the row of cans immediately above the same. The bottom of the trough is freely open as is its forward end and the bottom opening is directly over the central and widest portion of the cans only as in Fig. 2 and its width is such that there is no room for olives to become wedged or to drop through the spaces between the diverging edges of adjacent cans. The wall of the trough on the side nearest the belt 6 extends under the adjacent edge of said belt and slopes transversely to its lower end. The opposite wall of the trough however is preferably straight.

In operation the bottom layer of olives from the hopper is conveyed by the moving belt 6 through the gate opening and delivered against the deflector, which diverges them laterally into the filling trough as previously stated. This trough is of sufficient length to extend along a number of cans. In this manner the latter have plenty of time to be properly filled before passing from under the trough and only a few olives enter any can at one time. This prevents the possibility of the choking and wedging of the olives which would be had if it were attempted to fill the cans directly from the hopper. The

gate is regulated only according to the size of the olives being canned, larger olives of course requiring a larger outlet than smaller ones. The slope of the gate end of the hopper causes
 5 said end to be always filled and insures a constant and even feed of the fruit through the gate opening.

The construction and operation of the modified machine shown in Fig. 4 is essentially the
 10 same as above. The belts 1 and 6 however are replaced by concentric lower and upper discs 14 and 15 respectively. The disc 14 is somewhat larger than the upper disc and is provided with can locating and holding elements 16 ad-
 15 jacent its periphery; the cans being suitably fed onto the disc from a chute 17 of any convenient character. The hopper 9a is disposed over the disc 15 back of the chute; the deflector 12a extending from the inner side of the hopper
 20 at its outward end to the periphery of the disc 15 some distance beyond. The fruit moves from under the hopper and toward the deflector 12a and thence into the cans with the rotation of the discs; the upper disc overhanging the cans
 25 somewhat in the same manner as the filling trough 13 overhangs the cans in the type of structure first described.

From the foregoing description it will be readily seen that I have produced such a device
 30 as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from
 35 such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention what I claim as new and useful and desire to secure
 40 by Letters Patent is:

1. A can filling machine comprising a horizontal conveyor for a row of upstanding cans, a stationary open-bottomed filling trough disposed above the plane of said row of cans and
 45 extending lengthwise thereof, another horizontal conveyor disposed to one side of and above the plane of the top of said trough, an open bottomed hopper over and close to said last named conveyor, an outlet from the forward
 50 side of the hopper at the bottom whereby with the movement of said conveyor the products will be withdrawn from the hopper, and means functioning with the movement of said last named conveyor to deflect such withdrawn products
 55 into the trough.

2. A can filling machine comprising a horizontal conveyor for a row of upstanding cans, an endless belt conveyor extending to one side of said horizontal conveyor parallel thereto and
 60 above the same, an open bottomed stationary hopper over and close to the belt, the forward wall of the hopper having an outlet at the bottom, means to deflect the products passing

through the outlet to and over the side of the belt nearest the can conveyor with the movement of the belt, and means to deliver such deflected products into the cans.

3. A can filling machine comprising a horizontal conveyor for a row of upstanding cans, an endless belt conveyor extending to one side of said conveyor parallel thereto and above the same, an open bottomed stationary hopper over and close to the belt, the forward wall of the
 80 hopper having an outlet at the bottom, a deflecting element extending diagonally of the belt in front of the hopper and extending from the side of the outlet farthest from the can conveyor to the side of the belt nearest said conveyor, and an open bottomed filling trough extending frame under said side of the belt
 85 between the adjacent ends of the deflector and hopper, the bottom of the trough being open and disposed in the central transverse plane of the row of cans.

4. A can filling machine comprising a horizontal conveyor for a row of upstanding cans, an upper conveyor to one side of and above said horizontal conveyor and extending parallel
 90 thereto, a supply means delivering onto said upper conveyor, means functioning with the movement of said conveyor to deflect the products deposited thereon to and over the side of the same nearest the can conveyor, and means
 95 to deliver such deflected products into the cans.

5. A can filling machine comprising a horizontal conveyor for a row of upstanding cans, a stationary filling trough having a bottom discharge slot disposed closely above the plane of
 100 said row of cans and extending lengthwise thereof, and means to feed the products to be canned into said trough; the slot extending upbroken to the end of the trough toward which the cans are moving and said end of the trough being
 105 freely open upwardly from the slot.

6. A can filling machine comprising an open bottomed trough, a conveyor for a row of cans disposed under and movable lengthwise of the
 110 bottom of the trough, means to move the products to be canned lengthwise of and above the trough to one side of the same, and means to divert the products thus moving into the trough along a considerable portion of the length of said side simultaneously.

7. A can filling machine including a horizontal conveyor, a supply means delivering onto the same, means to gradually deflect products deposited on said conveyor to and over one side
 115 edge of the same for a certain portion of its length, and a conveyor for a row of cans to be filled disposed under said first named conveyor and arranged to support the cans in a row parallel to said edge portion of the first named conveyor whereby the deflected products will
 120 drop into the cans.

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