

# United States Patent [19]

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[54] **MULTIPLE BOTTLING AND LABELLING MACHINES**

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[58] Field of Search ..... 141/98

[56] **References Cited**

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Primary Examiner—Houston S. Bell, Jr.

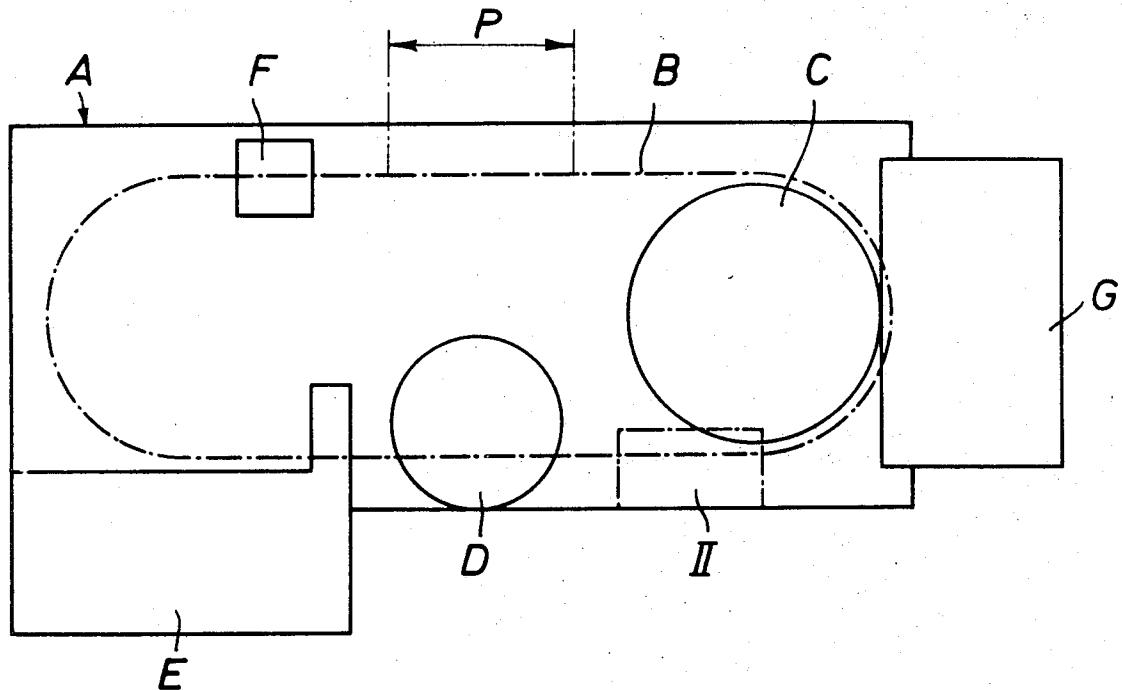
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[57]

## ABSTRACT

In a multiple bottling and labelling machine comprising, distributed over the path of a conveyor chain, a station for placing bottles on said conveyor, a filling station and at least one label application station, at least one orientation device arranged upstream of the label application station so as to rotate each bottle by a fraction of a turn around its axis.

6 Claims, 2 Drawing Figures



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FIG. 1

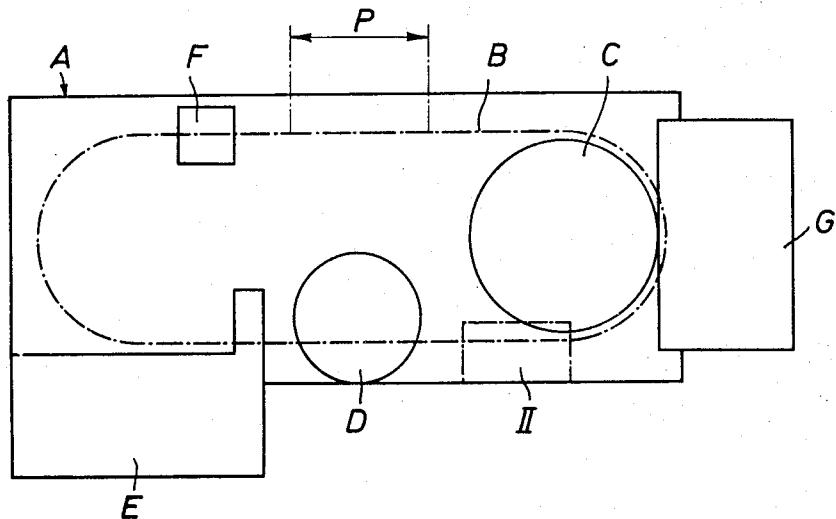
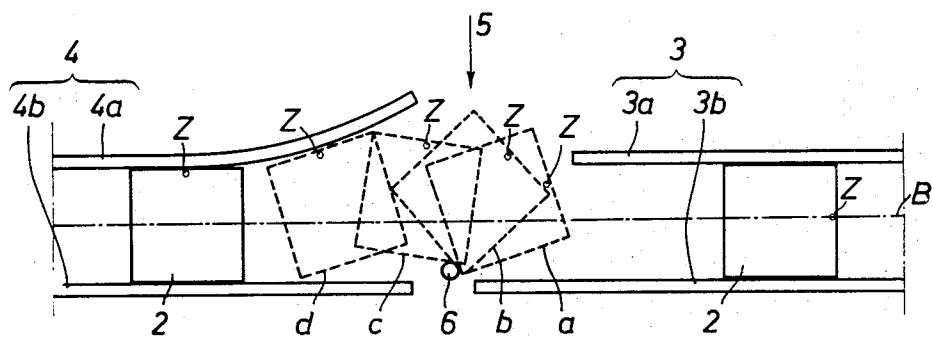


FIG. 2



## MULTIPLE BOTTLING AND LABELLING MACHINES

This invention relates to bottling and labelling machines and its object is to provide such a machine for affixing, on the periphery of each bottle, an enveloping label or at least two non superposed labels, for example, a first label and a second label without any manual assistance as regards the orientation of the bottles.

The invention therefore makes it possible for the machine during a complete cycle, to carry almost all operations, for example, filling combined with the application of plurality of labels, changing of orientation of the bottles around their axis, stoppering of the bottles and the application of labels over the entire periphery or over a peripheral part of the bottles different from that already provided with a counter-label.

According to the invention, the bottling and labelling machine which comprises, distributed over the path of a chain conveyor, a station for placing the bottles on said conveyor, a filling station and at least one label application station, is characterized by the fact that it comprises, downstream of the label application station, at least one orientation device arranged so as to rotate each bottle by a fraction of a turn around its axis.

In a preferred but non-limiting embodiment, the machine according to the invention may have the additional following characteristics :

When the machine has two label application stations, i.e., a first label application station and a second label application station, the orientation device is placed between the two previously mentioned stations ;

The bottle orientation device comprises, arranged above a conveyor chain which supports bottle carrying cups having a polygonal peripheral part pushed by lugs carried by certain components of the conveyor chain, lateral guiding means for said cups, which guiding means provide for a solution of continuity in whose area there is a stationary thrust-bearing arranged to be struck by one of the sides of the polygonal periphery of each cup and to induce the pivoting of said cup by a fraction of a turn so as to penetrate, in a new angular position, in that part of the guiding means located downstream of the solution of continuity ;

The periphery of the polygonal part of the bottle carrying cups is square, so that said cups with the bottles housed therein carry out a quarter of a turn as they pass from the upstream to the downstream part of the solution of continuity ;

The orientation device is placed between the filling station and a stoppering station ;

The second label application station is located, with respect to the filling station, so that the bottles are maintained by the latter station during the application of the second label ;

The second label application station is of the type comprising at least one additional label box magazine, a label gripping drum for the additional label, gumming means for the previously mentioned drum, a drum provided with pincers for the application of the additional labels and a smoothing means, and arranged so that the additional label application drum and the smoothing means are in operation (application of a label) as each immobilized bottle passes in front of them in the filling station ;

The label application station is of the type which laterally applies the labels, so that the bottles having ro-

tated a quarter of a turn receive the label, in the diametrical direction, opposite the label already affixed.

The appended drawing shows schematically and as a non-limiting example, one embodiment of the invention. In this drawing :

FIG. 1 is a schematic diagram of the improved machine according to the invention ;

FIG. 2 is a schematic and plan view of part II of FIG. 1.

10 In FIG. 1, A refers to the frame of the machine, B to the conveyor chain shown only by its path, C to the filling station of a known circularly moving type, D to the stoppering station, E to the label application station of a known type affixing the labels on that part of the bottle turned towards the front, when the direction of motion of the bottles by conveyor chain B is considered, and finally F refers to the capping station (or a station designed to carry out any other complementary operation).

15 20 The area in which the application (manual or mechanical) of the bottles occurs in the bottle-carrying cups is referred to as P.

A second label application station is associated with filling station C, which counter-label application sta-

25 tion is arranged to carry out the application operation as the bottle is tightly held in place while carrying out its translational movement through the corresponding filling mouth. For this purpose, said label application station is advantageously of the known type comprising

30 a second label magazine, a gripping drum for the second label, this drum being gummed by glue applying means, a drum provided with pincers for the application of the labels and a smoothing means, the affixing of the label onto the body of the bottle being carried out at the moment this bottle passes in front of said roller provided with pincers.

35 Because of the methods of application of the second labels and first labels respectively by stations G and E, it is necessary to rotate the bottles by a quarter of a turn around their axis between the previously mentioned stations. This rotation is provided by an orientation device II shown in greater detail in FIG. 2, which rotates the bottles one quarter of a turn.

40 45 This device II induces, in fact, the pivoting of the bottle-carrying cups 1, each of which presents at this point a square part 2 forming a bottle-carrying cup which rests, by means of a round part, on the conveyor chain which displaces it by means of pushing lugs with which certain components of said chain, equidistant from one another, are provided.

50 55 In the area comprising a change in orientation, the device comprises guiding means, the upstream part 3 of which, consisting of two lateral guides 3a and 3b for bottle-carrying cup 2, is separated from a downstream part 4, consisting of two lateral guides 4a and 4b, by a solution of continuity 5, in which is located a thrust bearing or abutment pin 6.

In FIG. 2, a, b, c and d refer to four successive intermediate positions of one and the same bottle-carrying cup 2 on which is shown, at Z a reference mark which indicates the 90° rotation undergone by the cup and, therefore, by the bottle engaged therein.

60 65 It can be seen that at the outlet, or opening of the upstream part 3 of the guiding means, the cup begins to occupy position a in which one of its sides strikes thrust-bearing 6, thus inducing the 90° rotation.

I claim:

1. In a multiple bottling and labelling machine comprising, a bottle conveyor, a station for placing bottles on said conveyor, a filling station, and at least one label application station, and an orientation device arranged upstream of the label application station for rotating each bottle by a fraction of a turn around its axis for proper alignment with a label application station.

2. In a machine according to claim 1 comprising a first label application station and a second label application station, the orientation device being placed between said label application stations.

3. In a machine according to claim 1 wherein the bottle orientation device comprises, bottle-carrying cups having a polygonal periphery pushed by said conveyor chain, lateral guiding means for said cups, a thrust-bearing disposed in the path of said cups and adapted to be struck by one of the sides of the polygonal part of each cup to induce the pivoting of said cup by a fraction of a turn so as to present a new angular position of the bottle on said conveyor between said guiding means downstream from said thrust-bearing.

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4. In a machine according to claim 3, wherein the periphery of the polygonal part of the bottle-carrying cups is square, so that said cups, with the bottles housed therein, carry out a quarter of a turn as they pass from the upstream to the downstream part of the solution of continuity.

5. In a machine according to claim 1 wherein the orientation device is placed between the filling station and a stoppering station.

6. In a machine according to claim 2 wherein the second label application station is of the type comprising at least one additional label magazine, a gripping drum for the additional label, gumming means for the previously mentioned drum, a drum comprising pincers for the application of additional labels and a smoothing means, and arranged so that the additional label application drum and the smoothing means are in operation during the passage in front of them of each bottle in the filling station.

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