E. JAGENBERG.

MACHINE FOR PLACING BOTTLES IN TRANSPORT CASES.

APPLICATION FILED OCT. 21, 1913.

1,090,855.

Patented Mar. 24, 1914.

2 SHEETS—SHEET 1.

FIG. 1.

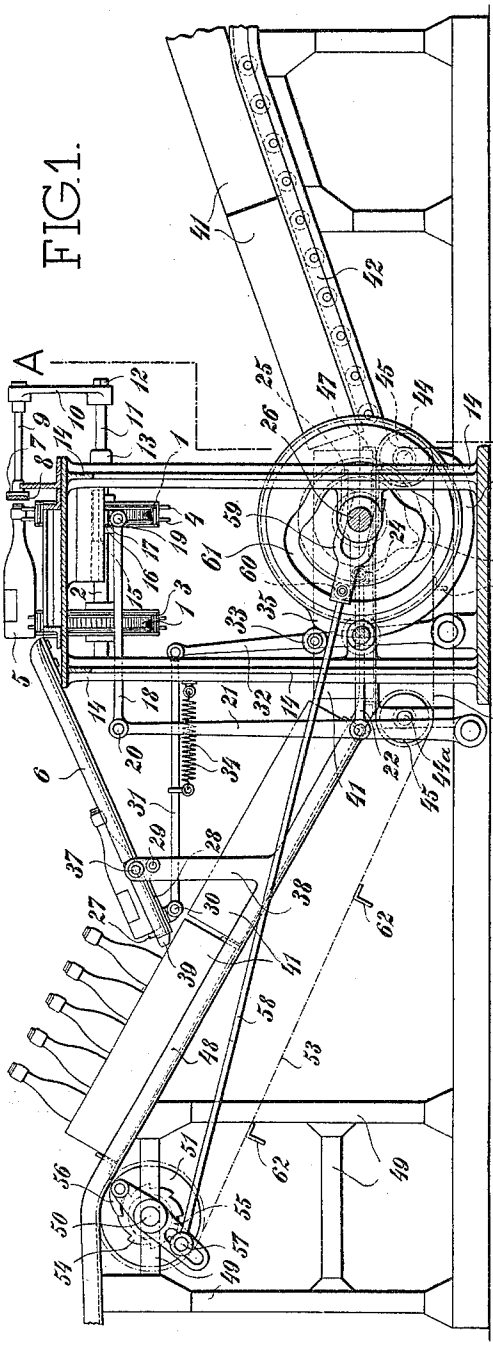
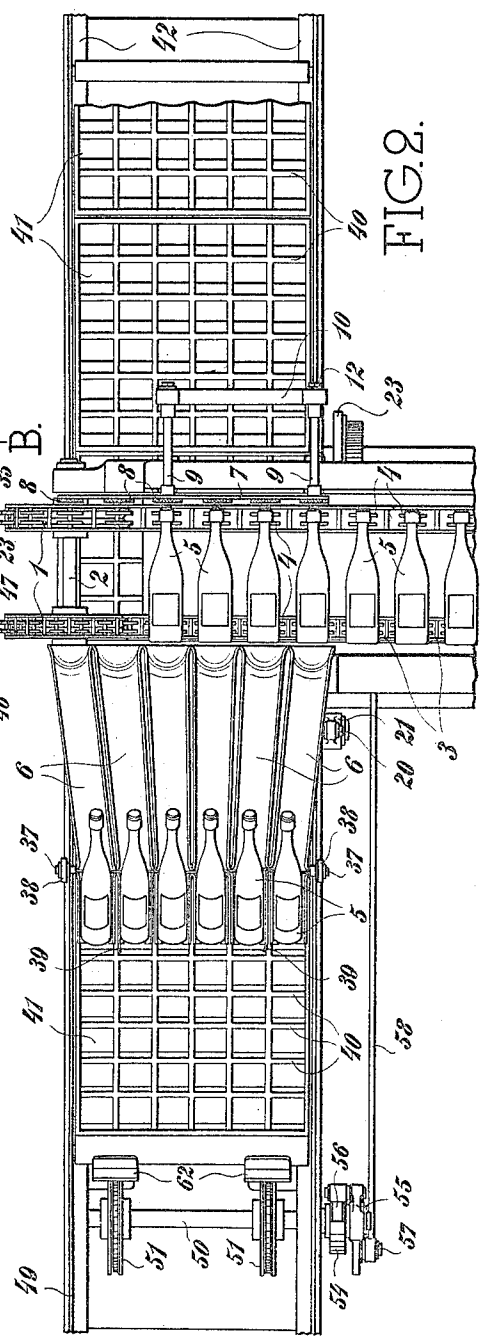


FIG. 2.



Witnesses:
Daniel Holmgren.
Marga Gröneberg.

Inventor:
Emil Jagenberg
by his Attorneys
Briesen & Bumpf

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

E. JAGENBERG.

MACHINE FOR PLACING BOTTLES IN TRANSPORT CASES.

APPLICATION FILED OCT. 21, 1913.

1,090,855. **Patented Mar. 24, 1914.**

2 SHEETS—SHEET 2.

FIG.3.

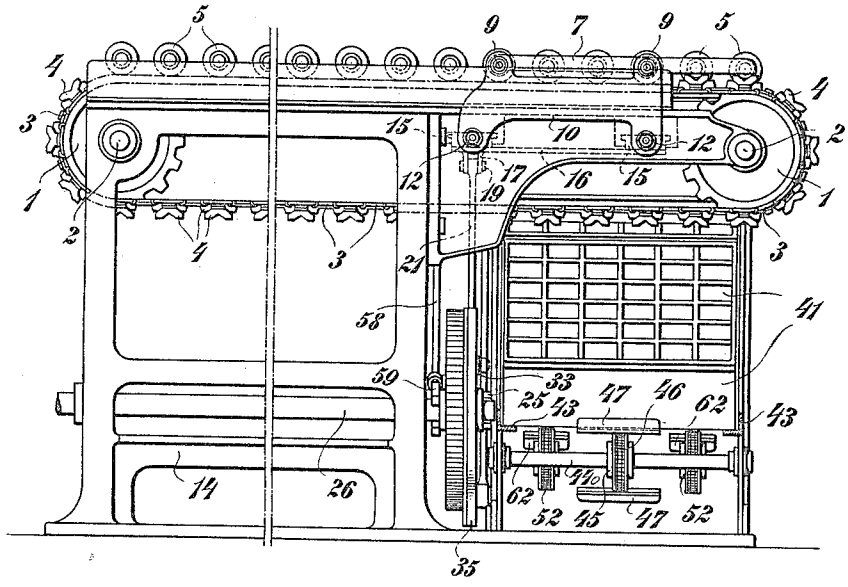


FIG.4.

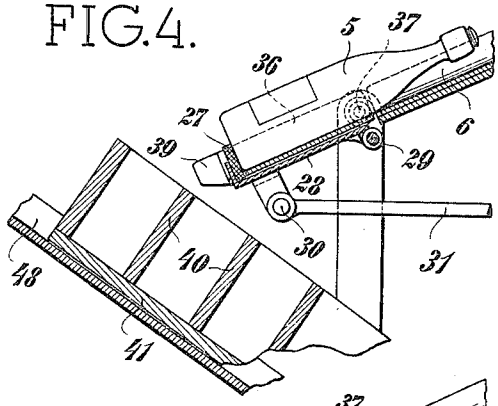
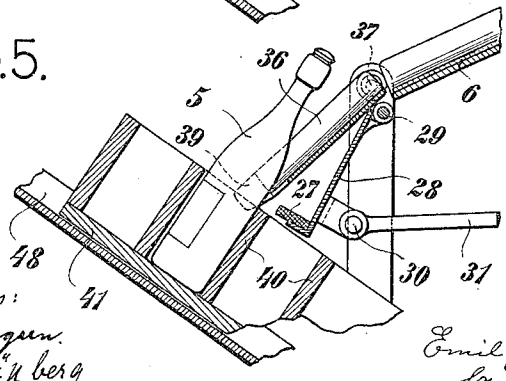


FIG.5.



Witnesses:
Daniel Holmgren.
Marga Gplin berg.

Inventor:
Emil Jagenberg
by his attorneys
Briesen & Gumpel

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EMIL JAGENBERG, OF DUSSELDORF, GERMANY.

MACHINE FOR PLACING BOTTLES IN TRANSPORT-CASES.

1,090,855. Specification of Letters Patent. Patented Mar. 24, 1914.

Application filed October 21, 1913. Serial No. 796,408.

To all whom it may concern:

Be it known that I, EMIL JAGENBERG, manufacturer, a subject of the German Emperor, and residing at 107 Himmelgeisterstrasse, Dusseldorf, Germany, have invented certain new and useful Improvements in Machines for Placing Bottles in Transport-Cases, of which the following is a specification.

The present invention relates to a machine for placing the bottles into the transport cases.

Hitherto the bottles were placed into the transport cases by hand. This was in so far of a disadvantage, as by such manipulation the freshly applied labels were easily displaced or soiled. Besides the output obtained by such manual labor was not sufficient to meet very high demands. These inconveniences and difficulties are obviated by the arrangement forming the subject matter of the present invention, as by the use of this arrangement the labels are not touched in any way, and the bottles are placed simultaneously in large numbers into the cases, so that a large output is the result.

In the accompanying drawing the arrangement according to the present invention is exemplified.

Figure 1 is a side elevation. Fig. 2 is a plan view and Fig. 3 is a sectional view on the line A—B in Fig. 1. Figs. 4 and 5 represent the placing device at two different operative positions.

Over four sprockets 1, which are rigidly fitted to two shafts 2, run the endless chains 3. The links of these chains are provided with V-shaped rests 4, into which the bottles 5 are placed. The bottles 5 are conveyed to these chains by some suitable means, after they have been labeled. The one of the shafts 2 is driven by a suitable gearing at a low speed, so that the bottles will slowly advance on the chains.

The bottles are placed into the rests 4 with their labels facing upward so that these labels do not come in contact with anything. In front of the one chain are provided several inclined chutes 6, having approximately the shape of half the section of a bottle. The upper ends of these chutes are somewhat enlarged and arranged at the same pitch as the rests on the chains. The lower ends of the chutes are somewhat closer to each other corresponding to the arrangement of the individual cells in the bottle case. By means of a pusher or plunger the corresponding number of bottles is pushed off the chain into these chutes, when the chain has advanced the bottles into the respective position, so that there is a bottle in front of each chute. The pusher consists of a plate 7 which is fitted with pads 8, made of felt or rubber on the side toward the chains, so that its impact against the bottles is softened. This plate 7 is carried by two rods 9, which are secured to a plate 10, which, again, is fitted on two rods 11 and is there held by means of screws 12. The rods 11 pass through eyes 13 in the frame 14 of the machine and are coupled to two slides 15, which travel in guides on the frame of the machine. The slides 15 are coupled with each other by means of a bar 16, which has an eye 17, to which a rod 18 is hinged by means of a pin 19. The rod 18 is linked by means of a pin 20 to a lever 21 pivoted to the base of the machine, which lever 21 is coupled to a rod 22, which is again coupled to a roller 24 riding in a cam groove 23. The end of this rod 22 is forked at 25, and encircles the shaft 26, on which the cam 23 is fitted. The plate 7 is therefore reciprocated by the rotation of the cam 23.

The bottles are so placed on the chains 3, that their bottoms are turned toward the chutes 6. When, then, there is a bottle in front of each chute, the plate 7 is quickly advanced so that a bottle is pushed into each chute. In these chutes the bottles slide downward until they strike against the padded bottoms 27 of these chutes. These bottoms are fitted to the broad plate or foot 28 which is rigidly attached to a shaft 29 journaled beneath the chutes. To plate 28 is linked by means of pin 30 a rod 31, which is coupled to the lever 32 pivotally journaled in the base of the machine. This lever 32 is pressed by means of spring 34 with the roller 33 against the cam 35 fitted to shaft 26, and this cam 35 will, by its rotation cause at times a rapid swinging of the plate

28 and thereby a lowering and raising of the bottoms 27. The plate 28 extends beneath all chutes 6, the lower sections 36 of which above the said plate are connected with each other and connect only loosely with the upper longer portions of the chutes. The outer walls of the two outermost chute parts 36 are provided with pins 37 which are journaled in brackets 38 on the frame of the machine. When the bottoms 27 are lowered with the plate 28 therefore all chute parts 36 will simultaneously be lowered as they are no more supported by plate 28. The sides of the chute parts 36 are provided with downward extensions 39 which, when the chutes are lowered, bear against the edges 40 of the cells of the transport cases 41.

The transport cases 41 are placed on the inclined roller path 42 on which they roll downward. Arrived below they pass onto the guide rails 43 secured to the frame of the machine. Below these rails 43 two shafts 44, 44^a are journaled in the frame of the machine 14, on which shafts are fitted two sprockets 45 over which runs an endless chain 46. This chain carries outward strips 47 which are arranged at a pitch corresponding to the length of the transport cases. To the rails 43 are attached rails 48 which are inclined upward and lie beneath the chutes 6. These rails are supported by a frame 49, in which a shaft 50 is journaled, on which two sprockets 51 are fitted. On the shaft 44^a are fitted beside the sprocket 45 two further sprockets 52 over which run two endless chains 53, which lead upward between the rails 48 and run over sprockets 51. Also these endless chains carry outward strips 62 at a pitch corresponding to the length of the transport cases. On the shaft 50 is fitted a ratchet wheel 54, and next to the same is loosely mounted a lever 55 which carries at its one end a pawl 56 engaging in the teeth of the ratchet wheel and is coupled at the other end by means of pin 57 with a rod 58, the other end of which carries a fork 59 and a roller 60. The fork engages around the shaft 26 and the roller bears against a cam disk 61 fitted on shaft 26.

When the transport case 41 has rolled onto the rails 43, the strips 47 engage behind it and force it onto the upward inclined rails 48 where it is seized by the strips 62 of the chains 53 and conveyed upward. The chains 46 and 53 are intermittently driven by the cam 61 and the ratchet gear 54, 55, 56 so that the travel by one revolution of shaft 26 is each time equal to the distance from center to center of two rows of cells behind each other in the transport cases. These cells are, thus, successively and intermittently brought beneath the bottoms 27 of the chutes 6, as shown in Figs. 4 and 5. When the transport case then is standing still, the plate 28 is drawn down, whereby also the chute parts 36 are turned down, until their extensions 39 lie against the walls of the cells. When, now, the plate 28 is still further lowered, the bottoms 27 leave the mouths of the chutes and the bottles lying on these chutes drop into the cells of the transport case. The cases are, thus, filled row after row, any breakage of the bottles being prevented by their gentle descent along the chutes, from the lower more steeply set sections of which they drop from a small height into the cells. The extensions 39 bear each time against the edge of the cell, so that even if, in case the cells are a little larger or smaller and are not sufficiently far advanced, the chutes lead directly into the cells and it is impossible for the bottles to settle on the walls of the case. By the upwardly inclined path 48 it is rendered possible, as the cells to be filled are likewise inclined, to give the parts 36 an incline for the bottles to glide on, as shown in Fig. 5, so that the travel of the bottles is here braked by the gliding friction, and nevertheless the bottles drop almost vertically into the cells, so that the labels are not liable to be torn off by frictional contact with the body of the case. The plate 28 rises immediately again, the plate 7 pushes the bottles which, in the meantime have been advanced, again into the chutes and the chains 46 and 53 advance a little, so that the next following row of empty cells moves beneath the chute parts 36. The shafts 26 and 2 respectively may be driven by any suitable means.

I claim:

1. A machine for charging cases with bottles, comprising a plurality of inclined chutes, means for charging bottles into the upper ends of said chutes, a foot adapted to be projected across the lower ends of the chutes, means for withdrawing the foot, and means for supporting a case opposite the chutes.

2. A machine for charging cases with bottles, comprising a plurality of inclined chutes, having pivoted lower sections that are adapted to engage a case, means for charging bottles into the upper ends of the chutes, a foot adapted to be projected across the lower pivoted sections of the chutes, means for withdrawing said foot, and means for supporting the case opposite the chutes.

3. A machine for charging cases with bottles comprising a plurality of inclined chutes, a conveyer extending across the upper ends of the chutes, bottle-rests on the conveyer, a plunger adapted to push the bottles from the bottle-rests into the chutes, a foot adapted to be projected across the lower ends of the chutes, means for withdrawing the foot, and means for supporting a case opposite the chutes.

4. A machine for charging cases with bottles, comprising a plurality of inclined chutes, means for charging bottles into the upper ends of said chutes, a foot adapted to be projected across the lower ends of the chutes, means for withdrawing the foot from the chutes, an inclined case-support arranged opposite the chutes, and means for intermittently advancing a case along said support.

In testimony whereof I hereunto set my signature in the presence of two witnesses.

EMIL JAGENBERG.

Witnesses:

MARTIN FEYBESSE,

FRANK V. BRIESEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."