No. 860,075. PATENTED JULY 16, 1907.

C. L. BASTIAN.

DISCHARGE TABLE FOR BOTTLE FILLING MACHINES.

APPLICATION FILED JULY 5, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

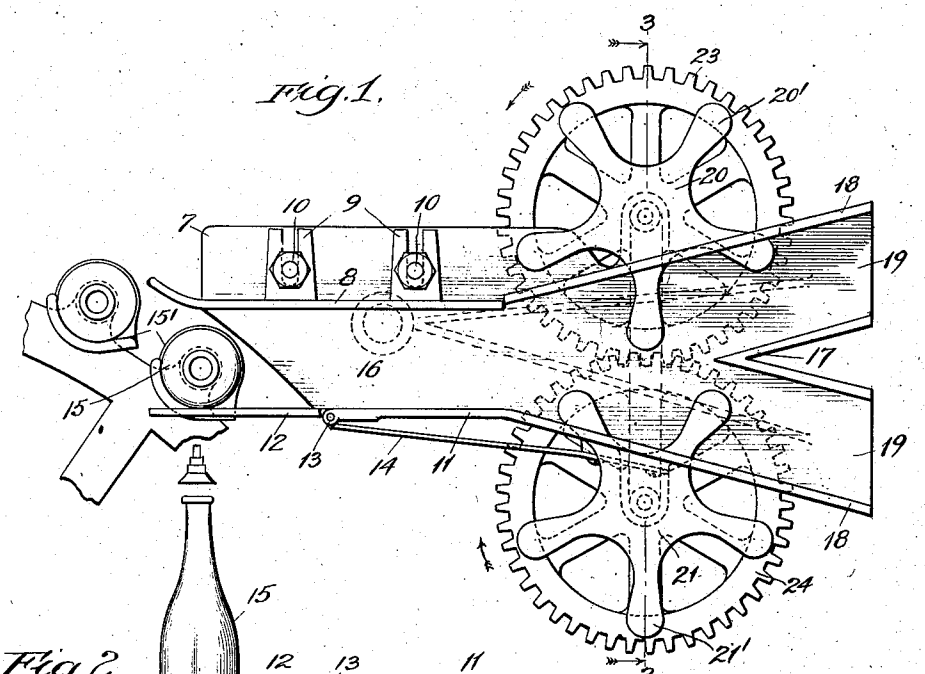


Fig. 2.

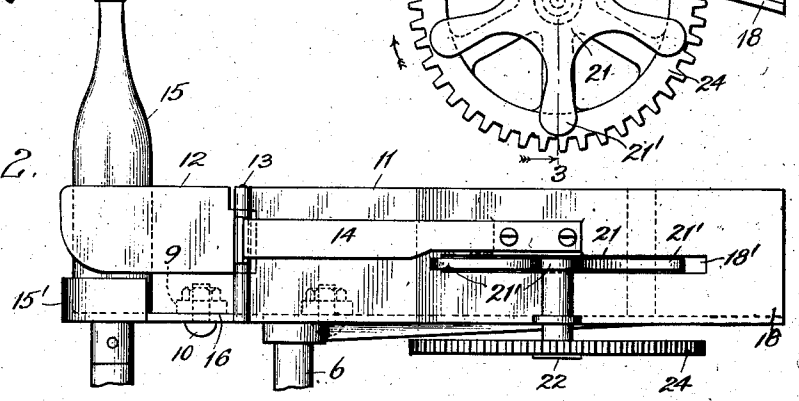
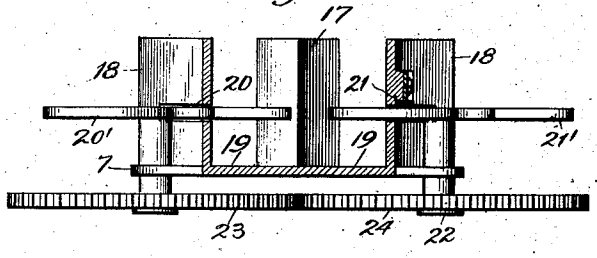


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

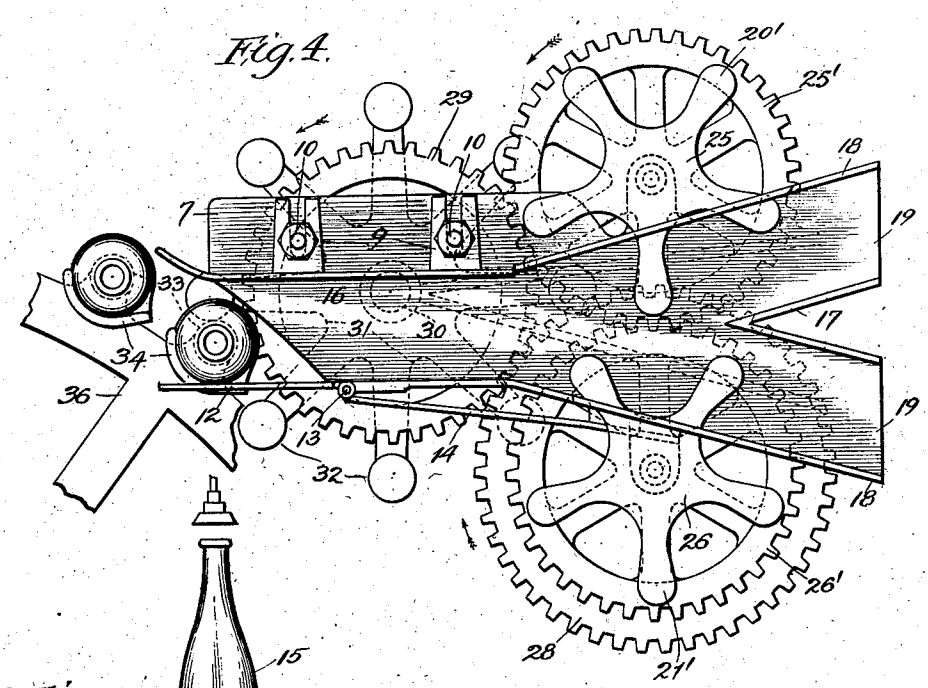
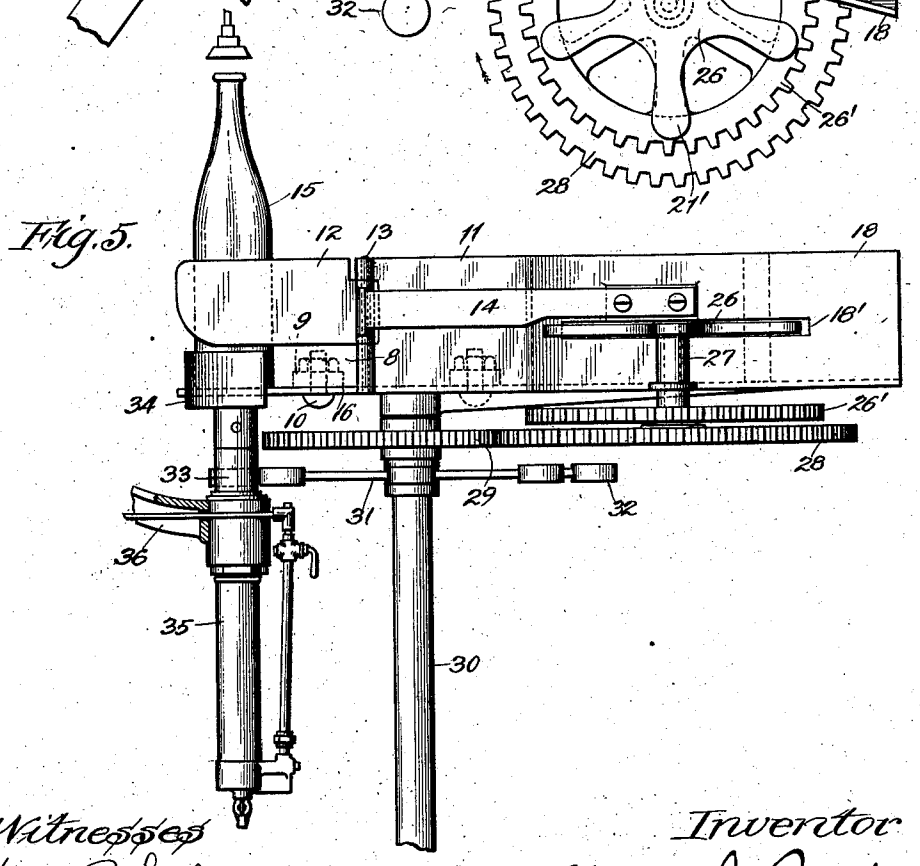


Fig. 5.



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UNITED STATES PATENT OFFICE.

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DISCHARGE-TABLE FOR BOTTLE-FILLING MACHINES.

No. 860,075. Specification of Letters Patent. Patented July 16, 1907.

Application filed July 5, 1906. Serial No. 324,760.

To all whom it may concern:

Be it known that I, CHARLES L. BASTIAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Discharge-Tables for Bottle-Filling Machines, of which the following is a specification.

In bottling establishments it is customary to seal the bottles immediately after they are filled and in view of the large capacity of the modern filling machine it is necessary to run more than one sealing machine in connection therewith.

The object of the present invention is to receive the bottles from the filling machine and automatically and rapidly distribute them equally to two sealing machines.

In the drawings Figure 1 is a plan view showing a portion of a filling machine with my invention associated therewith. Fig. 2 is an elevation. Fig. 3 is a sectional view on the line 3—3 of Fig. 1. Fig. 4 shows another form of the invention. Fig. 5 is an elevation, partly in section, of the invention as illustrated in Fig. 4.

Referring to the drawings 6 is a standard supporting the discharge table 7 which is provided with an adjustable side 8, said side having slotted lugs 9 projecting laterally therefrom to receive the bolts 10 which pass through the table and fasten this side in adjusted position. Opposite this adjustable side the table is provided with a stationary side 11 and a wing 12 hinged to the stationary side at 13 and normally held by a spring 14 in position across the path of the bottle 15. A narrow chute or passage-way 16 for the reception of the bottles is thus formed on the table between the adjustable side 8 and the stationary side 11. This chute is divided by an angular partition 17 and two sides 18 into two branch passages 19 which may lead to the sealing machines or elsewhere.

The bottles are supported on bottle rests 15′ which travel in a circular orbit and carry the bottles into engagement with the wing 12 whereupon they are moved into the chute in any suitable manner and thereafter push each other along. The adjustable side 8 is provided to adapt the chute for pint or quart bottles for it is desirable to keep the bottles in substantially a straight line in their passage through the chute so that they will not become jammed and fall off of the table.

To facilitate the movement of the bottles and distribute them alternately into the two branches of the chute I provide a pair of star wheels 20, 21 mounted on vertical shafts 22, journaled in bearings on the table and provided with intermeshing gear wheels 23, 24. The arms 20′, 21′ of the star wheels operate through slots 18′ in the sides 18 and they are arranged in staggered relation to each other so that as the wheels revolve the arm on one wheel will always be pointed towards the space between two arms on the other wheel as the arm passes the meshing point of the gears. Thus the bottles are automatically distributed by the star wheels first into one branch and then into the other. The pressure of the bottles as they are moved along the chute and against the star wheels causes them to rotate and the gears cause the star wheels to rotate in unison.

Referring to Fig. 1 it will be readily understood that the arm on the wheel 21 would push a bottle into the space between two adjacent arms on the wheel 20 and this is repeated alternately as the bottles are pushed through the chute.

In Figs. 4 and 5 I have shown a bottle distributing mechanism which is operated by the filling machine and referring thereto 25 and 26 are star wheels mounted on shafts 27 which carry the gear wheels 25′, 26′. One of the shafts also carries a gear 28 which meshes with a gear 29 mounted on a standard 30 and locked to rotate with a striker wheel 31. This striker wheel is made like a spider and has a plurality of arms preferably provided at their outer ends with rounded heads or anti-friction wheels 32 which project into the path of the movable part 33 of the filling machine.

The striker wheel may be actuated by engagement with various parts of the filling machine and it is therefore only necessary to refer to this as a movable part of the filling machine.

The machine as illustrated in Figs. 4 and 5 is a rotary filler in which the bottle rests 34 are raised by an air lift mechanism 35 carried on a revoluble spider 36.

The invention may be used in connection with any kind of a filling machine to which it may be adapted and is by no means specifically limited in its adaptation to a rotary filling machine with air lift means for the bottles. In this construction the star wheels are driven by the engagement of the movable part of the filling machine with the striker wheel, thereby actuating the train of gearing. The star wheels are set with their arms in staggered relation and distribute the bottles into the two branches of the chute, as herein before described, and this construction differs from that shown in Figs. 1–3 particularly in the fact that here the star wheels are positively driven by the filling machine while in the simpler construction of Figs. 1–3 the star wheels are actuated by the engagement of the bottles therewith. In both constructions, however, the part which furnishes the initial power for actuating the star wheels is the filling machine operating in the one case through the engagement of one bottle with another and in the other case through the medium of the striker wheel.

My invention provides for the rapid discharge and distribution of the filled bottles from the filling machine to sealing machines or elsewhere and this greatly increases the capacity of the bottling establishment by enabling a large filling machine to operate at the limit of its capacity. The standard supporting the table and distributing means may be mounted in any suitable manner but is preferably mounted on the base of the filling machine.

What I claim and desire to secure by Letters Patent is:—

1. A discharge table for bottle filling machines comprising a chute to receive the bottles from the filling machine and through which the bottles travel in a single row, a pair of star wheels located in the path of said bottles and between which the bottles travel, the arms of said star wheels being arranged in staggered relation, and means for causing said star wheels to operate in unison and distribute the bottles automatically and alternately into two rows traveling in separate paths.

2. A discharge table for bottle filling machines comprising a chute to receive the bottles from the filling machine and through which the bottles travel, said chute having diverging branches, a pair of star wheels located at the juncture of said branches with their arms in staggered relation, and means for causing said star wheels to operate in unison and distribute the bottles automatically and alternately to the branches.

3. A discharge table for bottle filling machines comprising a chute to receive the bottles from the filling machine and through which the bottles travel, said chute having diverging branches, a pair of star wheels located at the juncture of said branches and having their arms arranged in staggered relation to operate through slots in the sides of said branches, shafts carrying said star wheels, and gear wheels on said shafts and meshing with each other.

4. The combination with a rotary bottle filling machine, of a discharge table comprising a chute to receive the botles from the filling machine and through which the bottles travel, said chute having diverging branches, a pair of star wheels located at the juncture of said branches with their arms in staggered relation, shafts carrying said star wheels, gear wheels on said shafts meshing with each other, and a striker wheel adapted to be operated by the filling machine and geared with said gears.

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Witnesses:
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