

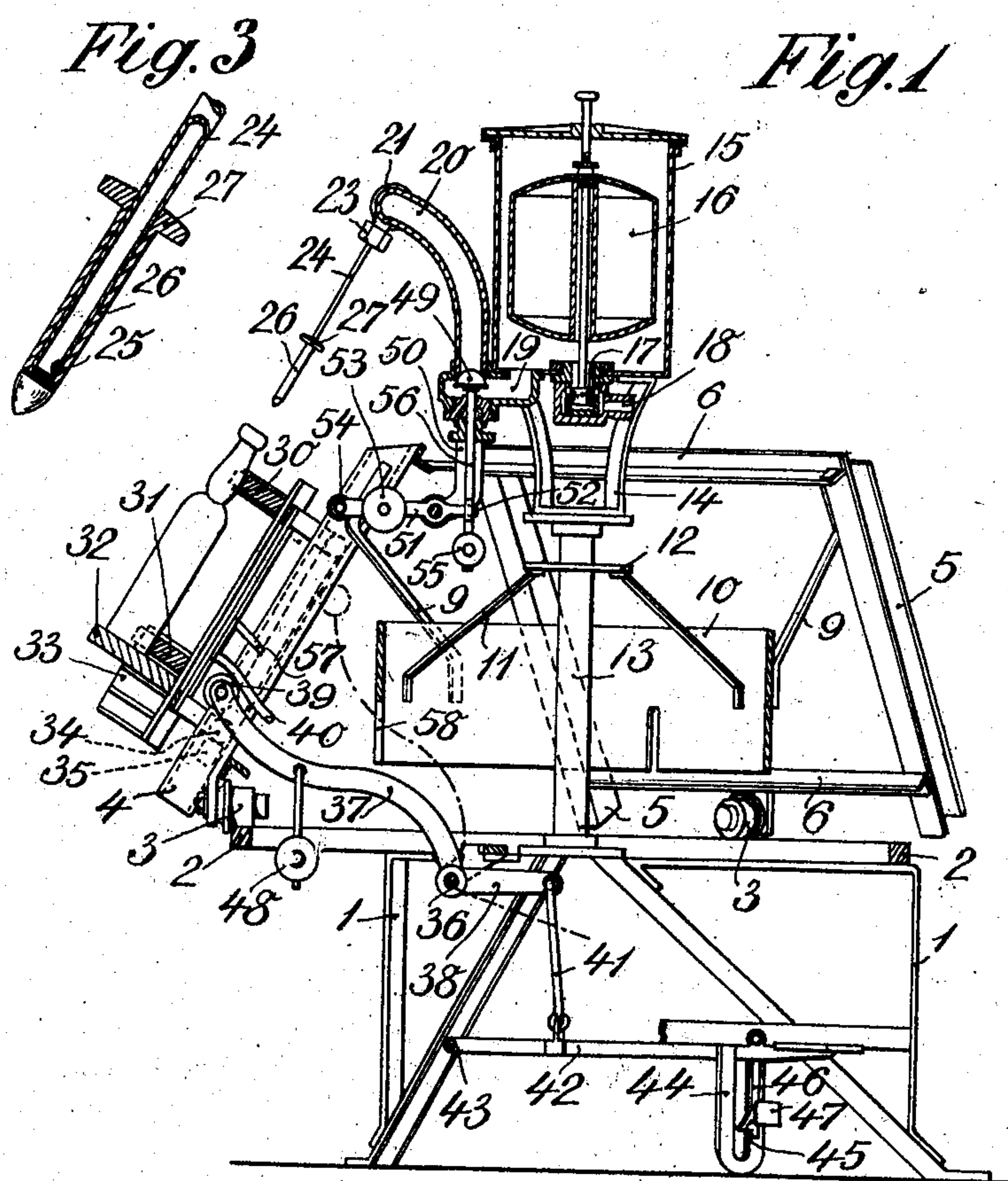
No. 827,262.

PATENTED JULY 31, 1906.

J. H. W. ORTMANN & C. W. HERBST.
BOTTLING MACHINE.

APPLICATION FILED AUG. 24, 1905.

2 SHEETS—SHEET 1.



Witnesses:-
[Signature]
Geo. Hilton

Inventors:-
John H. W. Ortman
& Carl W. Herbst
by *[Signature]*

Attorney

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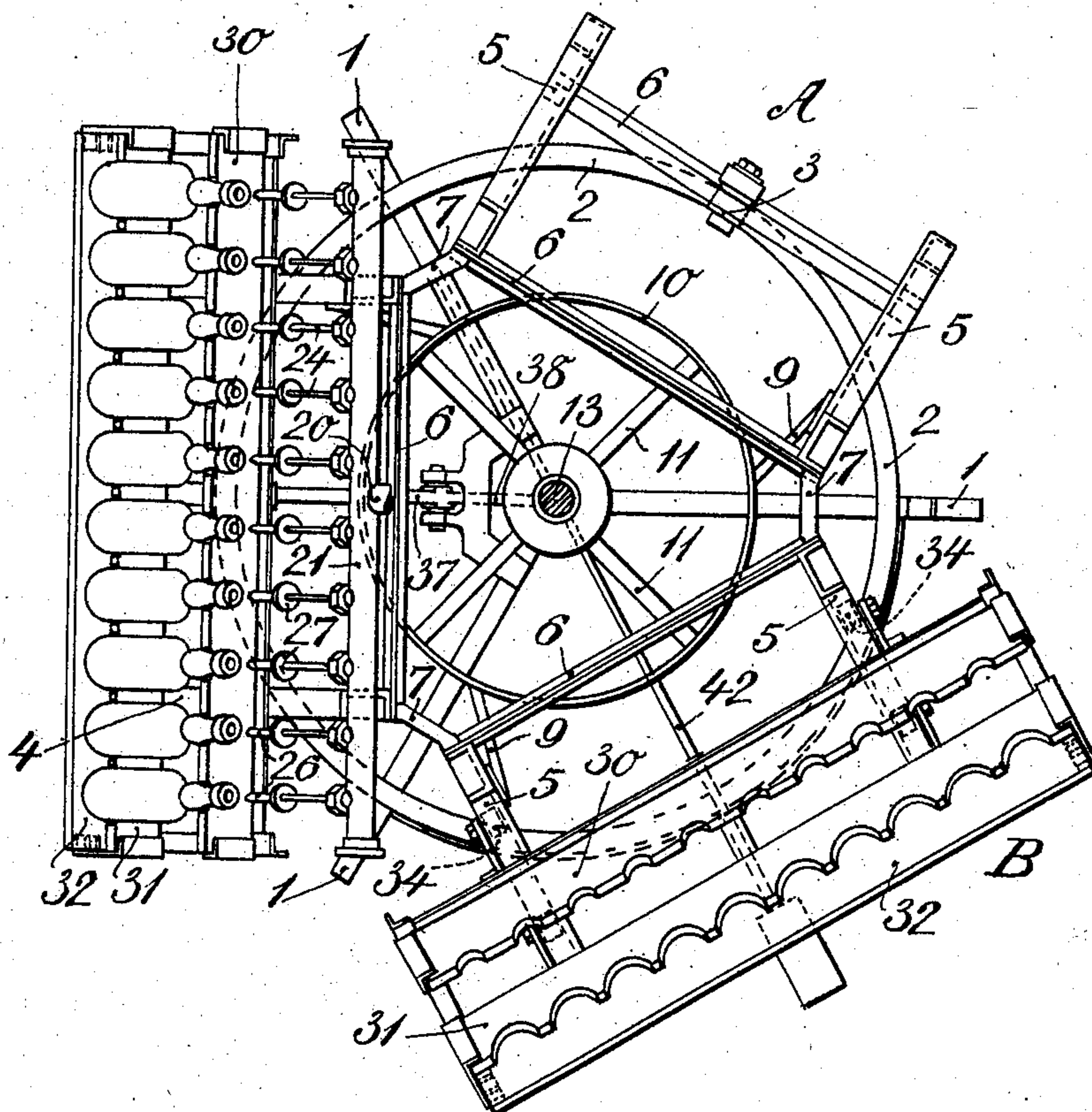
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2 SHEETS—SHEET 2.

Fig. 2



Witnesses:-

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Inventors:-

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UNITED STATES PATENT OFFICE.

JOHN HENRY WILLIAM ORTMANN AND CARL WILHELM HERBST, OF
HAMBURG, GERMANY.

BOTTLING-MACHINE.

No. 827,262.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed August 24, 1905. Serial No. 275,589.

To all whom it may concern:

Be it known that we, JOHN HENRY WILLIAM ORTMANN and CARL WILHELM HERBST, residing at 9 Gothenstrasse, in the free town of Hamburg, in the State of Hamburg, Germany, have invented new and useful Improvements in Bottling-Machines, of which the following is a specification.

The present invention refers to a bottling-machine in which the bottling-tubes are opened and closed automatically by raising and lowering the bottles, respectively.

In this machine the essential feature is that the bottling-tubes form part of a siphon which fills without need of a suction device attached to the tank vessel. It is of importance that the arms of said siphon are always filled with the liquid, so that when the bottles are raised the valves are opened and the liquid will instantly pass through the bottling-tubes.

In the drawings the invention is shown applied to a machine in which the bottles are carried by a triangular revolving frame. This frame revolves around the tank and will bring the bottles in sets in front of the bottling-tubes. This arrangement has the advantage that while one set of bottles is being filled another set of empty bottles can be placed into the machine and the full ones be removed, so that the filling process may be continuous.

In the attached drawings, Figure 1 is a vertical section through the new machine. Fig. 2 is a plan view. Fig. 3 is a longitudinal section through a bottling-tube.

The frame 1 of the machine may be made of hoop or angle iron and carries a bent bar 2, on which the rollers 3 of the bottle-carrier 4 run. The bottle-carrier is made of U-irons 5 and cross-stays 6. The said carriers are joined together by means of angle-irons 7, so that they form together a frame revolving around the tank on the rail-bars 2. By means of hoop-irons or the like a cylinder 10 is attached by the carrier 4, supported by arms 9. Arms 11, together with a ring 12, turning around the center pillar 13, serve to support and hold the cylinder 10.

On the center pillar 13 a bearing 14 is provided, carrying the tank 15. In this tank 15 a float 16 is mounted in the usual manner in connection with a piston-valve 17, controlling the flow of the liquid from the tank 15

through the tube 18. When the level of the liquid in the tank has sunk to a certain height, the valve 17 will open automatically and liquid enter the tank 15 through pipe 18 until the float 16 again closes the valve 17 by rising.

From the bottom of the tank a pipe 19 leads, from which an arm 20 is bent upward. This arm leads into a horizontal pipe 21, which carries the bottling-tubes 24, said tubes being connected to the pipe 21 by screw-joints 23. The bottling-tubes 24 are each provided with a lateral opening 25, Fig. 3, and carry sleeve-tubes 26 at their lower ends, which normally keep the mouth 25 closed. At the upper ends of the sleeve-tube flanges 27 are provided, against which the bottle rests at its mouth, and thus moves the sleeve-tube 26 along the bottling-tube 24, so that the opening 25 becomes free and the liquid can pass from the bottling-tubes into the bottles. An important feature is that the stream of liquid is projected against the walls of the bottle, so that no foaming is caused while bottling.

The bottles are carried by a carriage-like frame moving on frame 4. In this frame the bottles rest in suitably-shaped recesses in cross-bars 30 and 31 and rest with their bottoms against plate 32, which is fitted with its ends into guides 33, so that it can be adjusted according to the size of the bottles, so as to allow of bringing the bottles into a suitable position relatively to the mouth of the bottling-tubes. Suitably-arranged stops 35 prevent the bottle-carriers from falling out of the U-irons 5.

At the base of the machine a bell-crank lever 37 38 is pivoted on a pin 36. This bell-crank lever carries on its arm 37 a roller 39, which moves under an arm 40, attached to the bottle-carriage. To the arm 38 of said lever 37 38 a rod 41 is linked, which communicates with a foot-lever 42. The foot-lever 42 is pivoted to the pin 43 of frame 1 and moves between the arms of a hoop 44, attached to frame 1. Into the gap between the arms of hoop 44 a lug 45 projects, belonging to a loosely-pivoted arm 46. Said arm 46 carries a shoulder 47. By means of counterweight 48 the lever 37 38 is held in the position shown in Fig. 1. When the foot-lever is pressed down, the lever-arm 37 is raised so that roller 39 comes into contact with arm

40, and by turning of arm 37 the frame carrying the bottles is raised to the bottling-tubes. The foot-lever 42 is held in its lowest position by the lug 45 of the ratchet-lever 46 and can only be released after the ratchet 46 has been turned aside by pressing the shoulder 47. When lever 42 is released, the lever-arm 37 will fall, owing to the action of the counterweight 48 and the weight of the carriage, and the carriage will slide downward upon frame 4. The bottles are then removed from the bottling-tubes and the latter closed automatically by the sleeve-tubes 26 slipping over them.

As may be seen from Fig. 1, a valve 49 is arranged in the pipe 19, leading from the tank 15, which valve when closed separates the liquid in the arms of the siphon from the liquid in the tank 15. This valve is opened and closed in the following manner: To the arm 50 a bell-crank lever 51 52 is pivoted, the arm 51 of which carries a counterweight 53 and on its end a roller 54. The arm 52 of said lever fits into a slot in the stem 56 of the valve 49, weighted by a counterweight 55. When the bottles are raised, an arm 57, attached to the bottle-carrier, comes into contact with roller 54 and turns the lever 51 52 in such a manner that the rod 56 is lowered by its weight 55, and thus the valve 49 opened. In its closed position the valve 49 is secured by counterweight 53.

The bottles are placed on the cross-bars 30 31 of the bottle-carrier after the plate 32 has been suitably adjusted. The liquid passes from the tank 15 through pipes 20, 21, and 24 into the bottles, the float 16 being held down by hand for first filling the siphon, so as to keep valve 17 open until the liquid rises in the tank 15. The float 16 is so adjusted that the level of the liquid in the tank 15 will represent the liquid-line in the bottles. When the bottles are lowered by releasing the foot-lever, the filling-openings 25 are automatically closed by the sleeve-tubes 26, and the liquid contained in the tubes 20, 21, and 24 is shut off automatically from the liquid in the tank 15 by the closing of valve 49. After the bottles have been filled the frame carrying the bottles is revolved so far that the next set of bottles comes in front of the bot-

ling-tubes 24. The revolving frame moves on its rollers 3 on the circular bent bar 2. In order that on such rotation the arm 40 of the bottle-carriage comes to stand exactly over roller 39 of lever 37 38, the cylinder 10 of the revolving frame is provided with slots 58, into which the arm 37 will move when the foot-lever 42 is lowered. By the united action of lever 37 and slots 58 the exact adjustment of the bottles to the mouths of the bottling-tube is assured.

It is evident that this new machine allows a continuous working, for while one set of bottles is being filled the full bottles can be in the meantime removed from and empty bottles be replaced into the carriage.

In Fig. 2 is shown at A the carriage-frame without carriage. At B the carriage is shown together with the carriage-frame, but without bottles.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a bottling-machine, a triangular frame mounted to rotate on a vertical axis, the sides of said frame being inclined and provided with means for carrying bottles thereon, means for raising said bottles, a liquid-tank, a float therein, said float being adjustable to regulate the liquid-line in the bottles, filling-tubes communicating with the tank and provided with filling devices which are opened by the movement of the bottle against the same, and means for automatically closing said filling devices, said means comprising a gravity-valve mounted upon each filling-tube, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JOHN HENRY WILLIAM ORTMANN.
CARL WILHELM HERBST.

Witnesses:

OTTO W. HELLMRICH,
IDA CHRIST. HAUFERMANN.