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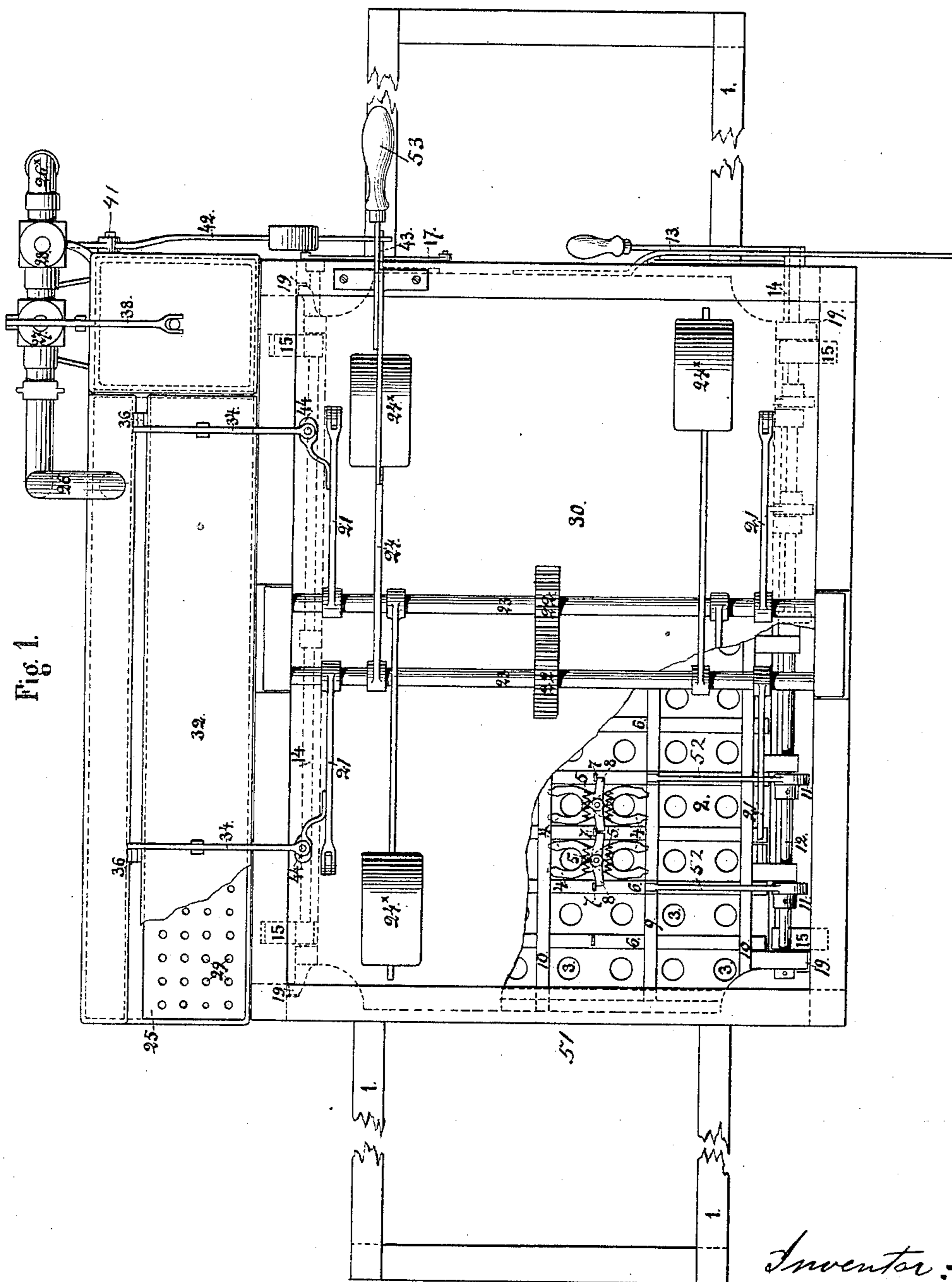
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E. F. GÖRANSSON.

BOTTLING MACHINE.

No. 339,053.

Patented Mar. 30, 1886.



Inventor:

Witnesses:
Arthur L. Morsell.
Arthur E. Clifford.

Ernst F. Göransson,
by Louis Bagger & Co.
his Attorneys.

(No Model.)

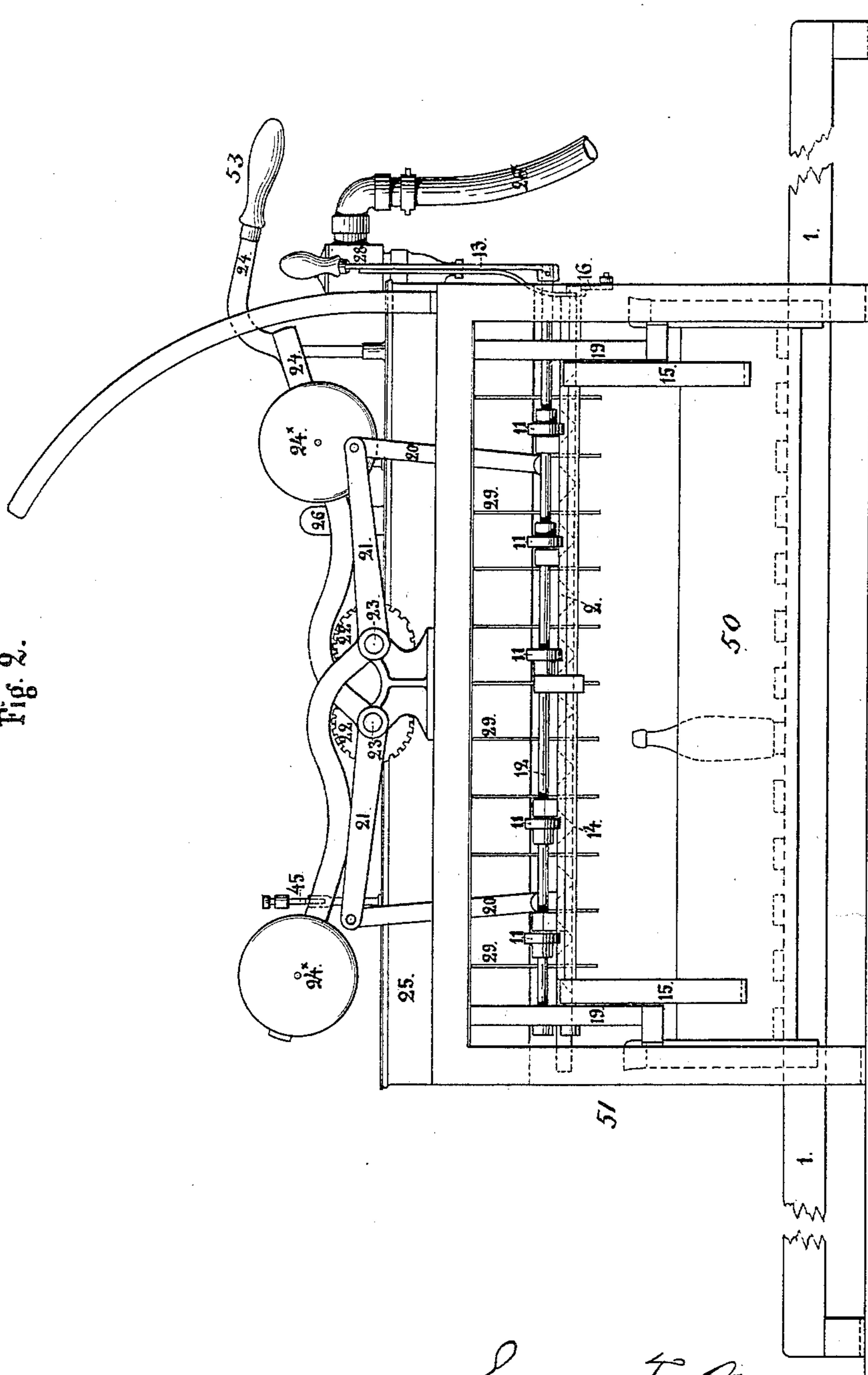
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Fig. 2.



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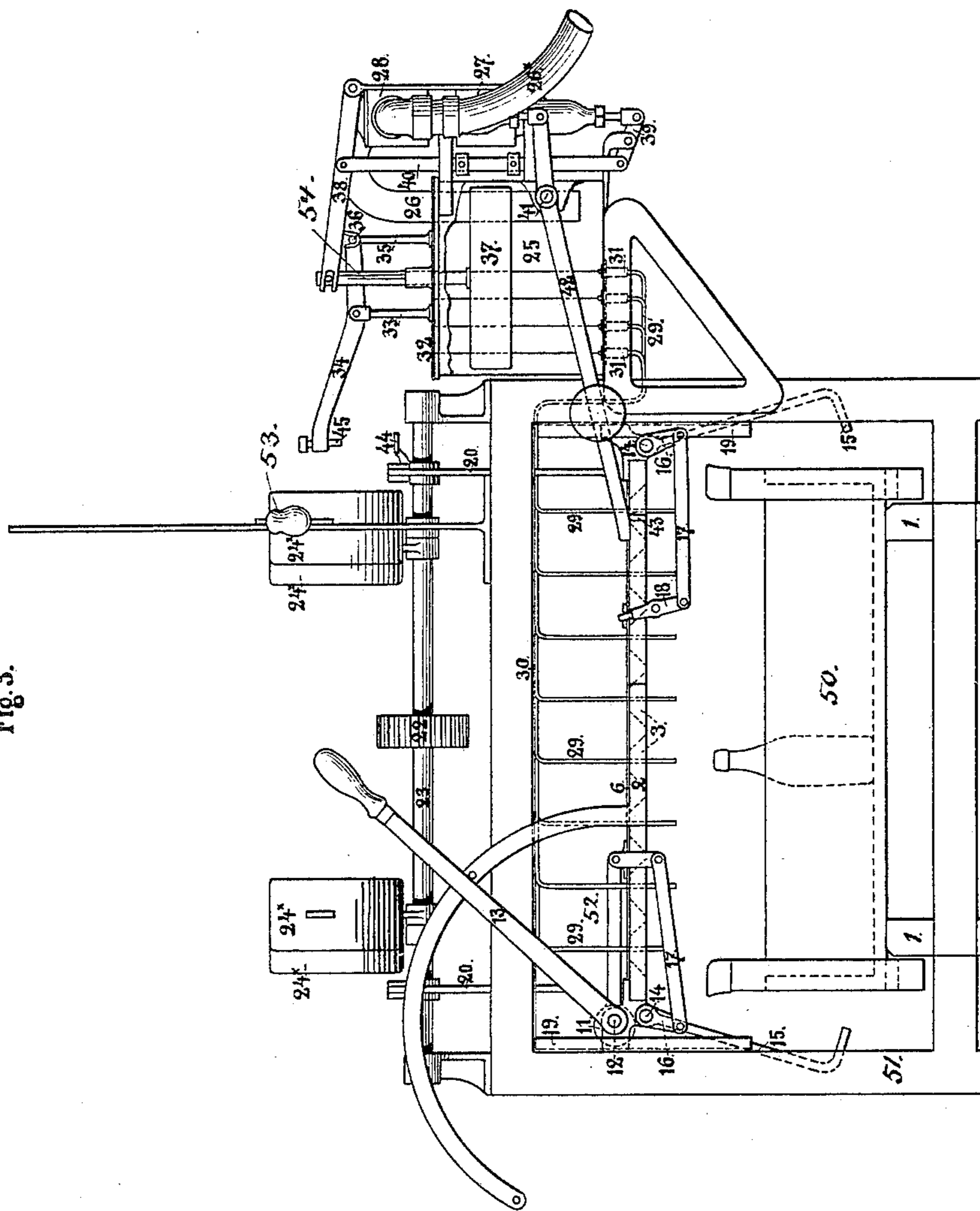
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Fig 3.



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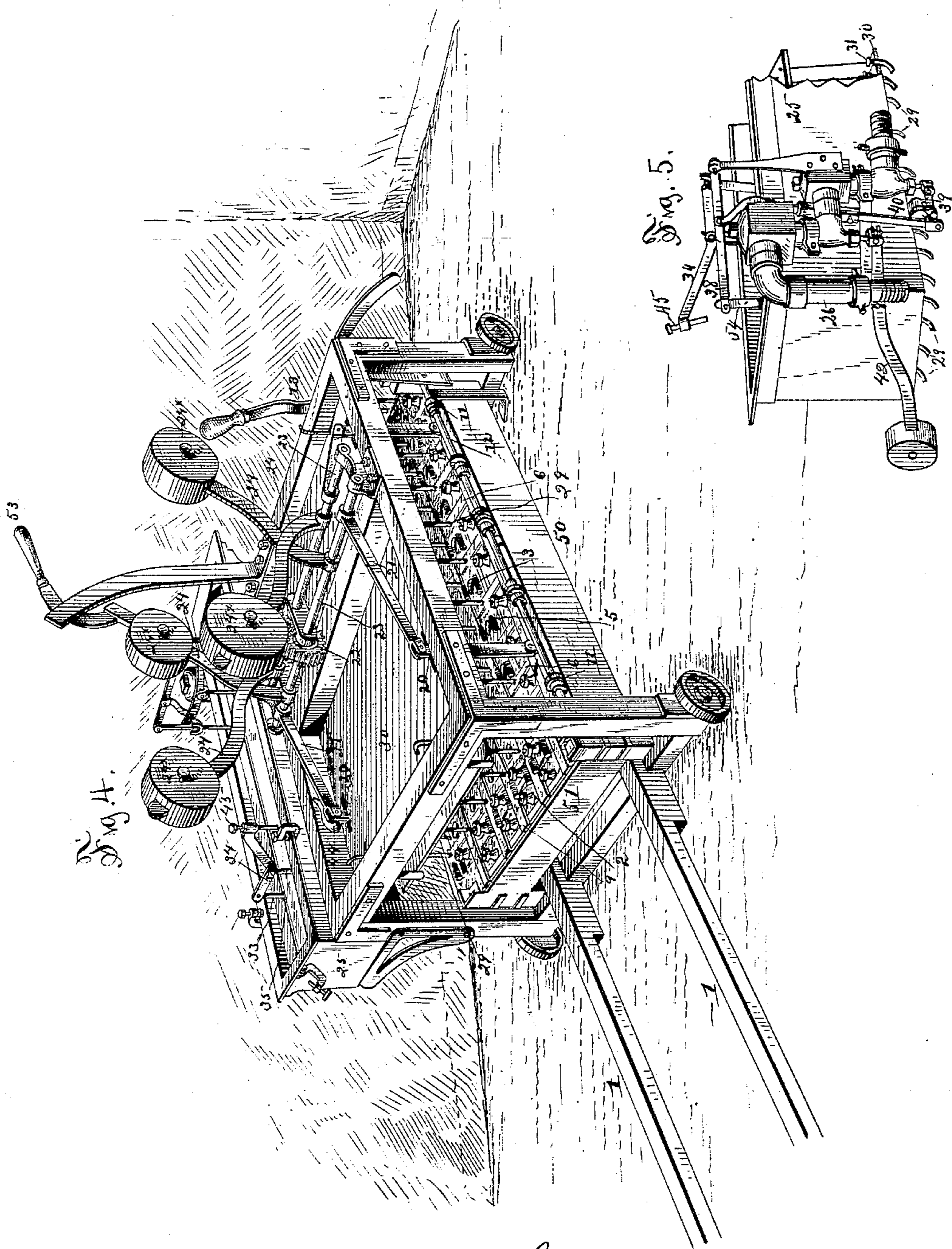
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UNITED STATES PATENT OFFICE.

ERNST FREDRIK GÖRANSSON, OF STOCKHOLM, SWEDEN.

BOTTLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 339,053, dated March 30, 1886.

Application filed September 24, 1885. Serial No. 178,050. (No model.)

To all whom it may concern:

Be it known that I, ERNST FREDRIK GÖRANSSON, a subject of the King of Sweden, residing at Stockholm, in the Kingdom of Sweden, have invented a certain new and useful Improvement in Apparatus for Bottling Wine, Beer, and other Liquids; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a plan view, partly broken away, of my improved bottling apparatus. Fig. 2 is a side view of the same. Fig. 3 is an end view of the apparatus, showing parts broken away. Fig. 4 is a perspective view of the machine, and Fig. 5 is a detail view of the pump.

Similar numbers of reference indicate corresponding parts in all the figures.

My invention has relation to apparatus for filling liquids into bottles; and it consists in the improved construction and combination of parts of an apparatus in which a basket, box, or crate containing bottles may be placed into the apparatus, the bottles lifted out of the said bottle-receptacle and filled, whereupon the bottles will again be placed into the receptacle when the operation may be repeated, as hereinafter more fully described and claimed.

In the accompanying drawings, 11 indicate two parallel tracks, upon which the basket, box, crate, or other bottle-receptacle 50 may be slid into the apparatus, the frame of which is marked 51. The lifting-plate 2 slides vertically in the frame, having guides 19 at the sides of the frame for guiding its travel, and this plate is provided with a number of perforations, 3, widening downward, which perforations register with the bottle-compartments in the receptacle. Tongs 4 are pivoted upon the lifting-plate at the perforations, (two being shown in Fig. 1 of the drawings,) having their curved arms adapted to clasp the necks of the bottles, and spiral springs 5 serve to draw the legs of the said tongs together, and one leg of each tong is provided with a laterally-projecting arm, 8, against the outer

end of which lugs 7 bear, the said lugs projecting from bars 6, sliding transversely upon the top of the lifting-plate. The bars are provided with cross-bars 9, which connect them and cause them to slide in unison, and the sliding bars are connected to eccentric disks 11, upon a longitudinal shaft, 12, by means of connecting-rods 52. This shaft is journaled in longitudinal bearings upon the lifting-plate, and is provided at one end with a hand-lever, 13, for rocking it.

Hooks 15 for supporting the bottle-receptacle during the process of bottling are secured projecting downward from two shafts, 14, journaled to rock at the sides of the lifting-plate, and the ends of the shafts are provided with cranks 16, to the ends of which are attached connecting-rods 17, one of which is directly attached to one of the sliding bars 6, while the other connecting-rod is attached to the lower end of a lever, 18, the upper end of which is attached to the sliding bar, while it has its fulcrum upon the lifting-plate.

Two rock-shafts, 23, are journaled transversely at the top of the frame of the apparatus, and are provided with cog-wheels 22, at their middles, the said cog-wheels meshing with each other, and these shafts are provided at their ends with arms 21, to the outer ends of which are pivotally attached upright rods 20, to the lower ends of which the lifting-plate is secured, the said rods and arms supporting the said plate. Levers 24, having counterpoises 24^x, sliding upon them, project from the rock-shafts and counterbalance the lifting-plate and its burden, and one of the levers is provided with a handle, 53, by means of which it may be raised or lowered and the other levers and arms, as well as the entire lifting-plate be manipulated.

25 is the reservoir, which is provided at its bottom with as many pipes, 29, as there are apertures in the lifting-plate, and these pipes are secured to a plate, 30, with their ends projecting so as to enter the necks of the bottles supported by the lifting-plate when the latter is raised.

The upper end of each pipe in the bottom of the reservoir is closed by means of valve 31, and these valves are supported from the cover of the reservoir by means of wires. The

said cover is provided with uprights 33, to the upper ends of which are pivoted levers 34, which have their fulcrums in bearings at the tops of uprights 35, having pins 36 resting in the bearings. The outer ends of these levers are provided with set-screws 45, which may be struck by plates 44, upon the arms supporting the lifting-plate, so that when the said plate is raised the plates 44 will strike the set-screws and raise the levers, which again will raise the cover and lift the valves, which will allow the fluid in the reservoir to escape through the pipes at its bottom.

The fluid enters the reservoir through a pipe, 26, which is provided with a regulating valve, 27, and a cut-off valve, 28, receiving its supply through a suitable hose or pipe, 26^x, from a receptacle, and the cut-off valve has its stem connected to a weighted lever, 42, pivoted upon a lug, 41, the free end of which lever is engaged by a lip, 43, projecting laterally from the lifting-plate, so that the cut-off valve will be closed when the free weighted end of the lever is raised by the said lip upon the lifting-plate.

A float, 37, slides within one end of the reservoir, and has an upright rod, 54, the upper end of which is pivotally connected with the end of a lever, 38, pivoted at one end, and an extensible rod, 40, is pivoted at its upper end to the said lever and at its lower end to a short lever, 39, to the other end of which the stem of the regulating valve is attached, so that when the float has been raised to its desired height by the liquid flowing into the reservoir the said float will, through the levers and adjustable or extensible rod, close the regulating valve, and thus close off the supply to the reservoir, the height at which the valve will be closed being regulated by extending or contracting the extensible rod. It will thus be seen that the receptacle containing the bottles may be pushed into the apparatus upon the track, when the lifting-plate may be lowered until the necks of the bottles project through the apertures between the legs of the tongs, when by tilting the hand-lever the sliding-rods may be drawn so as to cause their lugs to release the arms of the tongs, allowing the springs to force the tongs around the necks of the bottles, the tilting of the lever at the same time causing the hooks to catch the receptacle. The lifting-plate may now be raised, which will cause the bottles to be raised by their neck-flanges, and the receptacle will be supported upon the hooks a short distance below the bottles, and as the lifting-plate arrives to its uppermost position the lug upon the same will tilt the weighted lever, which closes the cut-off valve, while the ears or plates upon the arms supporting the lifting-plates will strike the set-screws at the ends of the levers supporting the cover of the reservoir, raising the end of the said lever and the cover, which will raise the valves from off the pipes leading to the bottles, allowing the fluid to pass through the said pipes into the bottles.

When the reservoir is empty, the lifting-plate is lowered, which will cause the cut-off valve to be opened and allow the reservoir to be filled, and the valves at the bottom of the reservoir for the pipes are also closed, so that the reservoir may be filled again, until the desired height is reached, when the float will close the regulating-valve by means of its levers and the extensible rod.

When the lifting-plate has reached its lowest position, the hand-lever is tilted, releasing the hooks supporting the bottle-receptacle, and the sliding-rods will bring their lugs to bear against the arms of the tongs, releasing the bottle-necks and allowing the bottles to rest in the receptacle, which may be removed and another receptacle with empty bottles put in its place. In this manner it will be seen that a great number of bottles may be filled at once, and by regulating the height to which the liquid is admitted into the reservoir, the height of the liquid in bottles of the same capacity may be regulated.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. An apparatus for filling liquid in bottles, consisting of a vertically-moving plate having apertures for the passage of the necks of a number of bottles, and clamps for clamping the necks of the bottles, pipes corresponding and registering with the apertures in the plate, and automatic valves for opening and closing the pipes, as and for the purpose shown and set forth.

2. In an apparatus for filling liquid in bottles, the combination of a frame having a track for the bottle-receptacle, a plate sliding vertically in the frame and having a number of apertures registering with the compartments in the bottle-receptacle, levers for raising and lowering the said plate, tongs having their legs projecting around the apertures and having springs for drawing the legs together, levers for forcing the legs of the tongs apart, hooks for supporting the bottle-receptacle from the lifting-plate, a reservoir for containing the quantity of liquor for one filling, pipes extending from the bottom of the reservoir and having their ends registering with the centers of the apertures in the lifting-plate, means for simultaneously opening and closing the said pipes by raising and lowering the lifting-plate, and a valve for automatically cutting off the supply to the reservoir at its desired height, as and for the purpose shown and set forth.

3. In an apparatus for filling liquid in bottles, the combination of a plate having a number of perforations for the reception of the necks of bottles, tongs pivoted upon the said plate and having their legs surrounding the apertures and having springs forcing them together and provided with laterally-projecting arms, one arm projecting from each leg, bars sliding transversely upon the lifting-plate and having lugs engaging the arms of the tongs, longitudinal rods connecting the sliding bars, a rock-

shaft journaled upon the side edge of the plate and provided with a hand-lever and with a number of eccentric disks and connecting-rods attached to the sliding bars and to the eccentric disks, and a filling-pipe registering with each aperture in the lifting-plate, as and for the purpose shown and set forth.

4. In an apparatus for filling liquid in bottles, the combination of a lifting-plate having a number of apertures for the reception of necks of bottles, a frame having a track for sliding a receptacle with bottles under the said plate, tongs for clamping the necks of the bottles and having laterally-projecting arms upon their legs, transverse sliding rods having lugs engaging the said arms, a rock-shaft in bearings at the side edge of the plate and having a hand-lever at one end and a number of eccentric disks, connecting-rods attached to the sliding rods and to the eccentric disks, shafts journaled at the side edges of the plate, and having cranks at their ends and downwardly-projecting hooks, a short lever pivoted at its middle upon the lifting-plate and having its upper end attached to one of the sliding rods, and pitmen attached to the cranks at one end and at the other end one to a sliding rod and the other to the lower end of the short lever, and a filling-pipe registering with each aperture in the lifting-plate, as and for the purpose shown and set forth.

5. In an apparatus for filling liquid in bottles, and having a number of downwardly-projecting filling-pipes, the combination of a plate having apertures and tongs for clasping the necks of bottles and having hooks for supporting the bottle-receptacle under the lifting-plate, transverse rock-shafts having pinions meshing with each other and provided with divergently-projecting arms, upright rods projecting from the lifting-plate and pivotally connected to the arms, and weighted levers projecting from the rock-shafts and having a handle projecting from one of them, as and for the purpose shown and set forth.

6. In an apparatus for filling liquid in bottles, the combination of a lifting-plate having means for clamping the necks of bottles and provided

with a laterally-projecting lip at one end and with upwardly-projecting rods, rock-shafts above the plate having intermeshing pinions and arms connected to the upright rods of the plate and formed with laterally-projecting lips and provided with levers having counterpoises, and one lever having a handle, a reservoir having a number of pipes for filling the bottles, provided with valves, a cover for the receptacle having wires for supporting the valves closing the filling-pipes, levers pivoted at one end and provided with set-screws at the other end and having rods attached to them and to the cover, the said levers being engaged by the lips upon the plate-supporting arms, a supply-pipe for the reservoir having a cut-off valve, and a lever attached to the stem of the said valve and having its end resting against the lip upon the lifting-plate, closing the valve when the plate is raised, as and for the purpose shown and set forth.

7. In an apparatus for filling liquid in bottles, the combination of a lifting-plate, supporting-arms for raising the same and provided with laterally-projecting lips, a reservoir having filling-pipes opening from its bottom, a cover for the receptacle having wires supporting valves for the apertures of the said pipes, levers pivoted at one end and having set-screws at their other ends adapted to be struck by the lips upon the supporting-arms and having rods supporting the cover, a supply-pipe provided with a regulating-valve and a cut-off valve, a lever attached to the cut-off valve and bearing with its free end against a lip upon the lifting-plate, closing the valve when the plate is lifted, a float supported in the reservoir and having an upright, a lever pivoted at one end, an extensible rod pivoted to the lever, and a short lever pivoted to the lower end of the extensible rod and to the stem of the regulating-valve, closing the valve when the float is raised, as and for the purpose shown and set forth.

ERNST FREDRIK GÖRANSSON.

Witnesses:

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MAGNUS ELLIOT.