

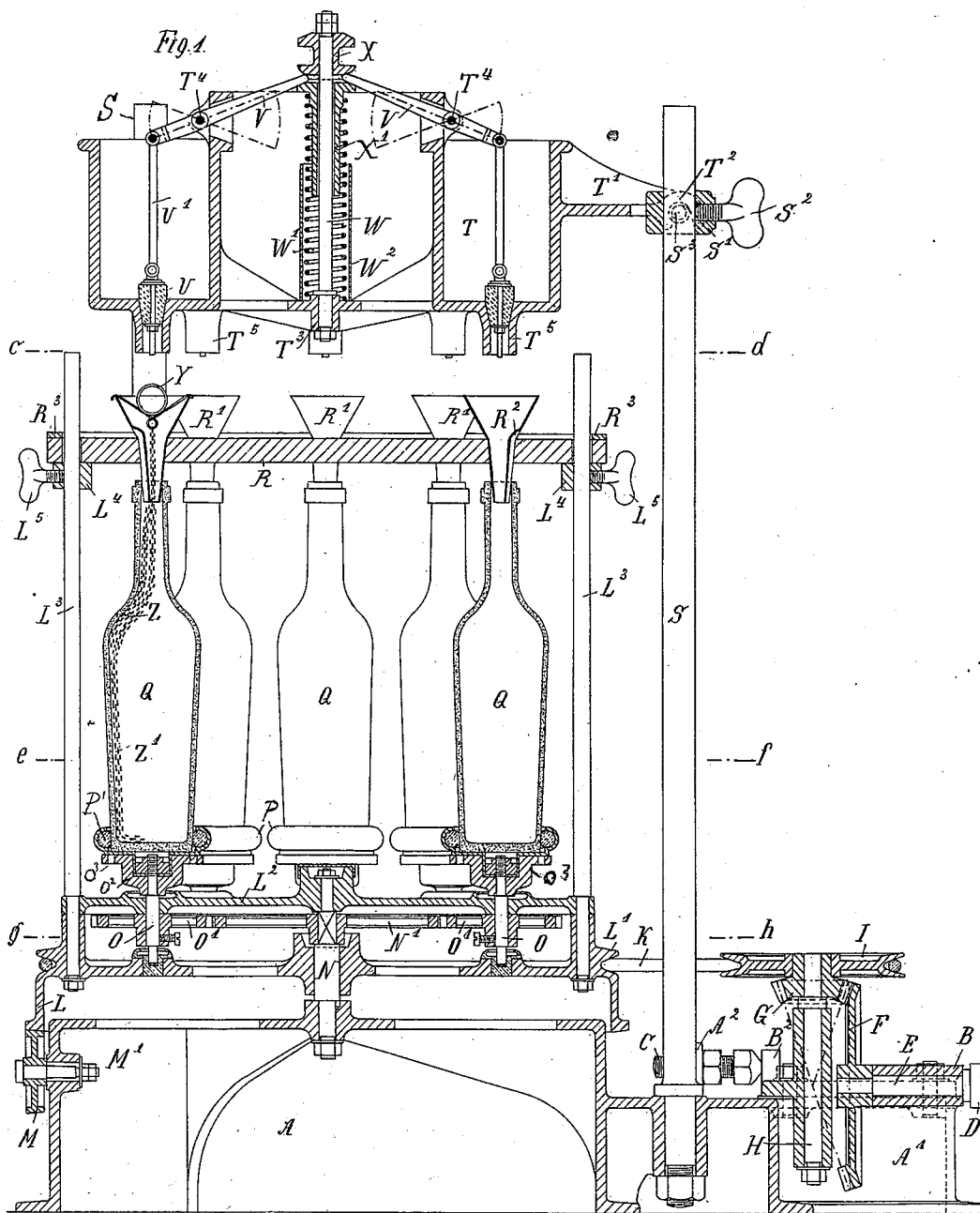
(No Model.)

4 Sheets—Sheet 1.

J. J. F. PENNINK.
BOTTLE WASHING AND FILLING MACHINE.

No. 550,056.

Patented Nov. 19, 1895.



WITNESSES:

M. C. Massie.

A. J. Birney

INVENTOR:

Jean Jacques François Pennink
by *Maxtenqui*
his attorney.

(No Model.)

4 Sheets—Sheet 2.

J. J. F. PENNINK.

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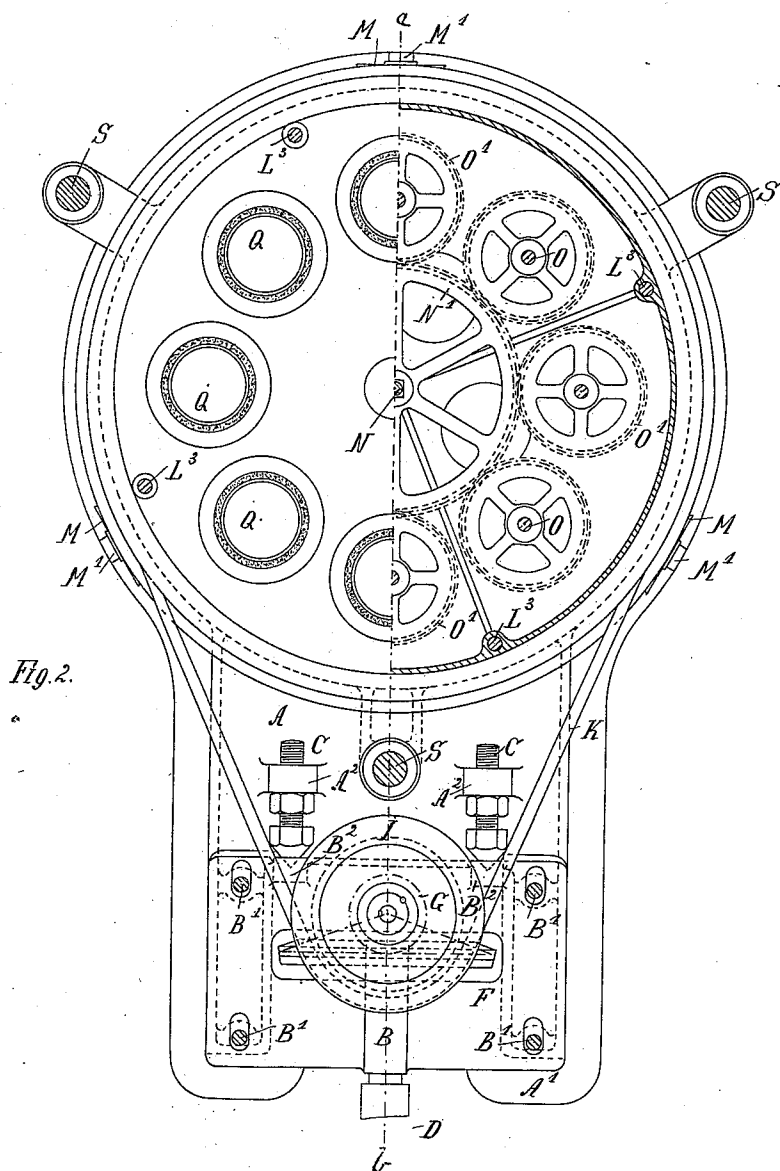


Fig. 2.

WITNESSES:

M. C. Massie.

A. J. Birney.

INVENTOR:

Jean Jacques Francois Pennink
by "Max Teng" his attorney.

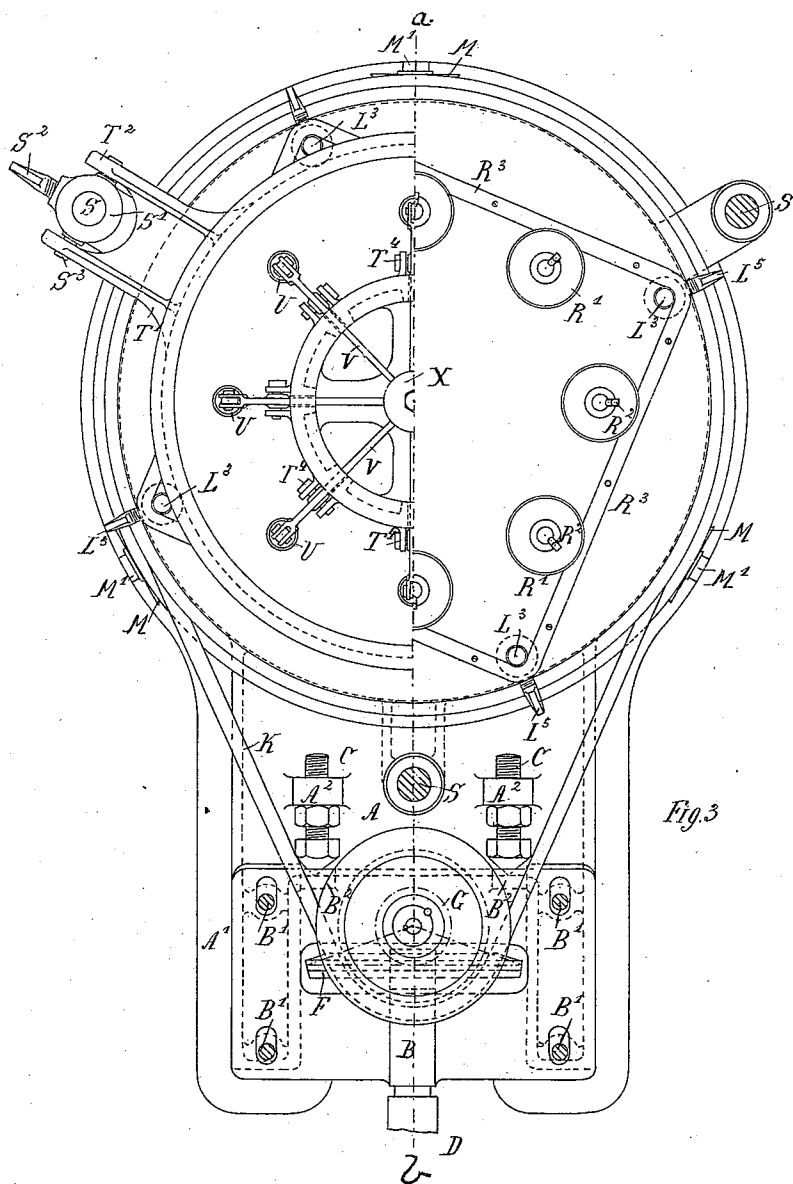
(No Model.)

4 Sheets—Sheet 3.

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Patented Nov. 19, 1895.



WITNESSES:

M. C. Massie.

A. J. Birney

INVENTOR:

Jean Jacques Francois Pennink
by *Max Sengui*
his attorney.

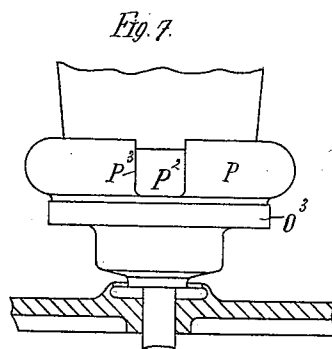
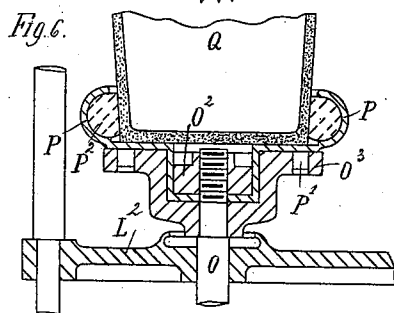
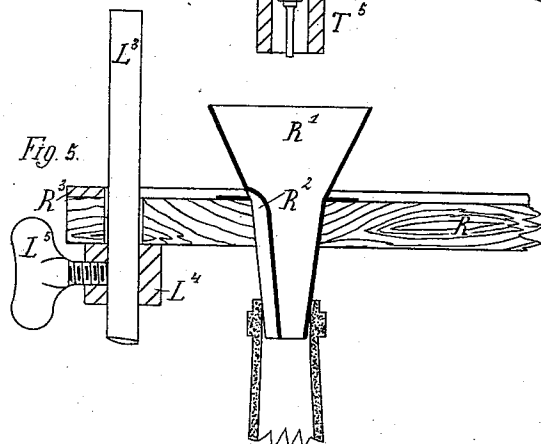
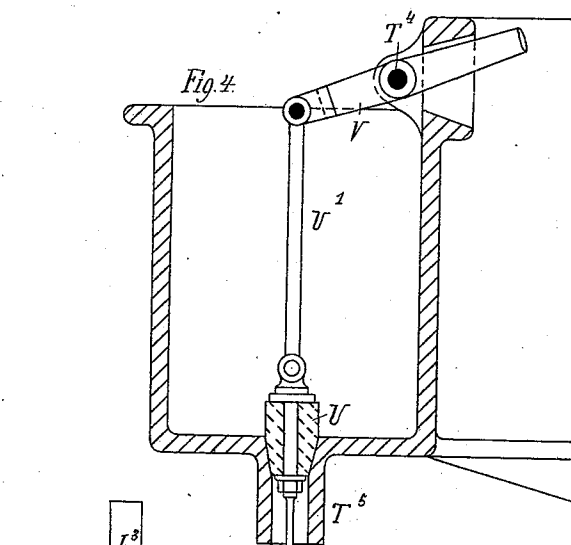
(No Model.)

4 Sheets—Sheet 4.

J. J. F. PENNINK.
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No. 550,056.

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WITNESSES:

M. C. Masie.

A. J. Birney

INVENTOR:

Jean Jacques Francois Pennink
by "Maxtengui"
his attorney.

UNITED STATES PATENT OFFICE.

JEAN JACQUES FRANÇOIS PENNINK, OF HAARLEM, NETHERLANDS.

BOTTLE WASHING AND FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 550,056, dated November 19, 1895.

Application filed April 16, 1895. Serial No. 545,965. (No model.)

To all whom it may concern:

Be it known that I, JEAN JACQUES FRANÇOIS PENNINK, a citizen of the Kingdom of the Netherlands, residing at Haarlem, Netherlands, have invented a new and useful Bottle Washing and Filling Machine, of which the following is a specification.

My invention relates to a machine to be driven either by hand or by power, and so arranged that a number—say eight or twelve—of bottles can be easily and quickly placed around a vertical axis, filled partly and simultaneously with water or other washing fluid, and then moved around the vertical axis, while obliging at the same time the bottles to revolve around themselves, so as to clean them quickly and effectively. The machine is also adapted to fill the said number of bottles at a time with wine or other fluids.

This machine is shown on the accompanying four sheets of drawings, in which—

Figure 1 is a vertical longitudinal section of the machine, taken in the plane of the line *a b* in Figs. 2 and 3; Fig. 2, on the right hand, a horizontal section taken in the plane of the line *g h* in Fig. 1, and on the left hand such a section through the line *e f* in Fig. 1; Fig. 3, on the right hand, a horizontal section taken in the plane of the line *c d* in Fig. 1, and on the left hand a ground plan. Fig. 4 is a detail sectional view, partly in elevation, on an enlarged scale, of a portion of the fluid-tank, showing the discharge-nozzle, stopper, and attached mechanism. Fig. 5 is a similar view of one of the funnels and the clamping-collar. Fig. 6 is a similar view of the bottle-holder. Fig. 7 is a detail elevation of the bottle-holder.

Similar letters refer to similar parts throughout the several views.

On the ground-plate *A* the vertical central axle *N* is fixed, around which the bottle-supporting frame is made to revolve. This frame consists in the casing *L L*² at the bottom, the four vertical studs *L*³, and the disk *R* at the top. The said casing is made in two parts—viz., the disk *L* and the cover *L*²—which are united by the bottom ends of the studs *L*³ *L*³. In the casing the central gear-wheel *N'* is fastened on the central axle *N* so that it cannot turn. Around the central axle *N* the eight vertical axles *O O* are pivoted in the disk *L* and the cover *L*², while they carry each a gear-

wheel *O'*, working into the central gear-wheel *N'*. When the casing *L L*² is turned around the central axle *N*, the eight gear-wheels *O'* *O'*, will be obliged by the central gear-wheel *N'* to revolve around their axes. The top ends of the axles *O O* project above the cover *L*² and carry the bottle-supports *O*³ *O*³, Fig. 6, on which the bottle-holders *P P* are placed. As is shown in Fig. 6, the bottle-holders *P P* are each provided with pins *P' P'*, engaging into holes of the bottle-supports *O*³ *O*³. The holders *P P* and the supports *O*³ *O*³ are secured to the axles *O O* by means of the nuts *O*² *O*². The latter are shown to be countersunk, so as to allow of bottles *Q Q* with flat bottoms being introduced. Each bottle-holder *P* is so formed that a ring *P*², of india-rubber or another elastic material, can be fixed therein for the purpose of holding the bottle *Q* without injuring the same.

On the studs *L*³ *L*³ the loose collars *L*⁴ *L*⁴ are adjusted by means of the thumb-screws *L*⁵ *L*⁵. On these collars *L*⁴ *L*⁴ rests the disk *R*, which, for the sake of lightness may be made, of timber and strengthened by the iron or steel band *R*³. Its holes through which the studs *L*³ *L*³ pass are made somewhat wider, so that the disk *R* can be lifted with the hand on one side only—i. e., brought into a slanting position. On the disk *R* the eight tunnels *R' R'* are fastened, the bottom ends of which reach into the mouths of the bottles *Q Q*, so that these revolve around them when the machine is driven.

On the outside of the casing *L L*² there is a cord-rim *L'* provided, around which the cord *K* is slung. The latter goes around the cord-pulley *I*, which is moved from the shaft *E* by means of the bevel-wheels *F* and *G*. On the driving-shaft *E* either a crank (indicated by the letter *D*) is mounted, if the machine is to be driven by hand, or a pulley or a gear-wheel, or some other means, is put on if the machine is to be driven by power. In order to stretch the cord *K*, the driving-shaft *E* and the axle *H* are pivoted in the adjustable plate *B*, so that on shifting the latter the driving-shaft *E*, the bevel-wheels *F G*, and the cord-pulley *I* are at the same time moved. The adjustable plate *B* is secured by the bolts *B' B'* to the ground-plate *A*, and there are lengthy holes for these bolts, to allow of the plate being

shifted. The ground-plate A has a recess A', to allow free space for the bevel-wheel F and the bearing for the axle H. On the ground-plate A the two noses A² A² are provided for receiving the set-screws C C, while on the adjustable plate B similar noses B² B² are provided. The heads of the set-screws C C butt against the noses B² B², so that on turning the set-screws C C they will shift the adjustable plate B accordingly.

To protect the bottle-supporting frame against shaking during its revolution and to insure a smooth and steady running of the machine the three casters M M are provided, on which the bottom edge of the casing L L² is supported and made to run. The casters M M revolve around the adjustable pins M' M', secured to the ground-plate A.

To the ground-plate A the three columns S S are secured for the purpose of holding the fluid-box T. On the columns S S the loose collars S' S', having each two pins S³ S³, are adjusted by means of the thumb-screws S² S². The fluid-box T has projections or arms T' T', the hook-shaped ends T² T² of which rest on the said pins S³ S³ at the loose collars S' S'. Obviously it is very easy to raise or lower the fluid-box T at pleasure by loosening, shifting, and readjusting the three loose collars S' S' one after the other.

The fluid-box T is provided at its bottom with discharge-nozzles T⁵ T⁵ above and corresponding to the tunnels R' R'. In these nozzles T⁵ T⁵ the stoppers U U are filled, the pins S³ or rods of which are lengthened downward, so as to prevent the stoppers U U from getting out of their seats and to guide them. In the walls of the fluid-box T at T⁴ T⁴ the levers V V are pivoted, the outer ends of which are linked to the stoppers U U by means of the rods U' U'. In the nave T³ of the fluid-box T the vertical central rod W is secured, on which the knob X and the sleeve X' are made to slide. These two parts are provided with recesses in which the inner ends of the levers V V are allowed to slide when the knob X and the sleeve X' are moved up and down on the central rod W. The spiral spring W' surrounding the central rod W serves for pressing both the sleeve X' and the knob X upward, so that through the levers V V the stoppers U U are at the same time lowered and pressed into their seats. When the knob X is pressed down with the hand, it will raise, by the levers V V and the rods U' U', all the stoppers U U. In this moment the fluid contained in the box T will flow through the tunnels R' R' into all the bottles Q Q at the same time. To limit the stroke of the knob X downward, the tube W², inclosing the spiral spring W', is provided.

Into the tunnels R' R' the furrows R² R², Fig. 5, are made, which reach over the disk R and allow the air in the bottles Q Q to escape while the latter are being filled.

The machine can be used for all sizes of bottles. When another size of bottles is to

be washed, the bottle-holders P P are replaced by other ones, or the elastic rings P² P² may be taken out of the holders P P, and other rings or disks having larger or smaller openings are introduced in their places. For this purpose the bottle-holders P P are provided with cuts P³ P³, (see Fig. 7,) in order to be better able to take hold of the rings or disks P² P². After changing the bottle-holders P P or the rings P² P² the loose collars L⁴ L⁴ are so adjusted on the studs L³ L³ that the bottom ends of the tunnels R' R' just fit into the mouths of the bottles Q Q when the disk R rests on the loose collars L⁴ L⁴.

The bottles Q Q can be put in or taken out one after the other very easily, the disk R being lifted with the hand at the edge to allow of the tunnels R' R' gliding into the mouths of the bottles Q Q or getting out of them.

The fluid—i. e., the washing-water, or the wine to be bottled, and so on—may be led to the machine by means of some piping and allowed to flow into the fluid-box T through some cock or valve.

For the purpose of washing the bottles Q Q the chains Z Z', of unequal lengths, (Fig. 1,) are introduced through the tunnels R' R' into the bottles Q Q and made to hang on the top of the tunnels by some means—for example, by the crook Y. (Shown in Fig. 1.) During the running of the machine these chains will be pressed by their own centrifugal force against the constantly-revolving inner wall-faces of the bottles and rub them.

The machine shown on the drawings is arranged for eight bottles, but it may be constructed for any other number of bottles.

The disk R may be made of any other material and be constructed otherwise—for example, in the shape of a ring.

Having fully described my invention, I declare that what I claim, and desire to secure by Letters Patent, is—

1. In a bottle washing and filling machine, the combination, with a fluid tank having a discharge outlet, of a stopper arranged in the discharge outlet, a lever connected to said stopper, a fixed rod, a sleeve movable on the rod and connected to the lever, and means tending to hold the sleeve so as to keep the stopper in the discharge outlet, substantially as set forth.

2. In a bottle washing and filling machine, the combination with a fluid tank having a discharge outlet, of a stopper arranged in the discharge outlet, a lever connected to said stopper, a fixed rod, a sleeve movable on the rod and connected to the lever, and a spring pressing against the sleeve, substantially as set forth.

3. In a bottle washing and filling machine, the combination, with a fluid tank having a series of discharge outlets, of a stopper for each outlet, a series of radially-arranged levers, each connected to its respective stopper, a centrally-arranged rod, a sleeve movable thereon and connected to the ends of the le-

vers, and a spring pressing against said sleeve, substantially as set forth.

4. In a bottle washing and filling machine, the combination, with a fluid tank having a series of concentric discharge outlets, of a series of stoppers adapted to close the outlets, a series of radially-arranged levers connected to their respective stoppers, a centrally-arranged rod, a sleeve movable on said rod, a knob above the sleeve and provided with a circumferential groove into which the ends of the levers enter, means for limiting the movement of the sleeve and knob, and a spring bearing against the sleeve, substantially as set forth.

5. In a bottle washing and filling machine, the combination, with an annular fluid tank having a series of concentrically-arranged discharge outlets, of a series of stoppers arranged to close said outlets, a series of radially-arranged levers fulcrumed on the inner wall of the tank, a rod fixed at the axis of the annular tank, a sleeve movable on said rod, a spring beneath the sleeve and tending to force it outward, and a knob above the sleeve and provided with a groove into which the ends of the levers enter, substantially as set forth.

6. In a bottle washing and filling machine, the combination, with a revoluble frame, a gear wheel fixed at the axis of said frame, a series of revoluble gear wheels carried by the frame and meshing into the fixed gear wheel, a bottle holder operated by each revoluble gear wheel, means for revolving the frame, a tunnel-supporting device carried by the frame, and a tunnel over each bottle holder and carried by the tunnel-supporting device, substantially as set forth.

7. In a bottle-washing and filling machine, the combination with a fixed vertical central axle, of a bottle-supporting-frame, adapted to revolve around said axle and having on the top a plurality of fixed tunnels reaching into the mouths of the bottles, the bottom part of said frame being formed as a casing and containing a plurality of vertical axles pivoted therein and carrying each a gear-wheel and connected at the projecting top-ends with disks for holding the bottles, also a central gear-wheel fastened on said central axle and working into said gear-wheels, means for driving said bottle-supporting frame, a fluid box supported above said bottle-supporting-frame and having a plurality of discharge-nozzles corresponding to said tunnels, stoppers fitting into said discharge-nozzles, and means for raising and lowering simultaneously said stoppers, substantially as set forth.

8. In a bottle-washing and filling machine, the combination with a ground plate A, of a vertical central axle N fixed thereon, a bottle-supporting-frame, adapted to revolve around said axle N and having on the outside a cord-rim L' for the driving cord K, also a plurality of fixed tunnels R' on the top reaching into the mouths of the bottles Q, a cord-pul-

ley I, made adjustable on said ground plate A for driving said cord-rim L' by means of said cord K, and means for imparting motion to said cord-pulley I, the bottom part of said bottle-supporting-frame being formed as a casing L L² and containing a plurality of vertical axles O pivoted therein and carrying each a gear-wheel O' and provided at the projecting top-ends with bottle-holders P, also a central gear-wheel N' fastened on said central axle N and working into said gear-wheels O', substantially as set forth.

9. In a bottle-washing and filling machine, the combination with a ground-plate A, of a vertical central axle N fixed thereon, casters M pivoted at said ground-plate A, and a bottle-supporting-frame, adapted to revolve around said central axle N and to run on said casters M, the said bottle-supporting-frame to consist in a casing L L² at the bottom, revolving on said central axle N and provided on the outside with a cord-rim L', a plurality of vertical axles O pivoted in said casing L L², carrying each a gear-wheel O' and provided at the projecting top-ends with bottle-holders P, a central gear-wheel N' fastened on said central axle N and working into said gear-wheels O', vertical studs L³ erected on said casing L L² and provided with adjustable loose collars L⁴, a disk R having holes for said studs L³ and resting on said loose collars L⁴, and a plurality of tunnels R' fastened on said disk R and adapted at the lower ends to enter the mouths of the bottles and to serve as pivots for same, substantially as set forth.

10. In a bottle-washing and filling machine, the combination with a vertical axle O in the bottle-supporting-frame, of a bottle-support O³, a bottle-holder P arranged to be put on said bottle-support O³ and thereto coupled by means of pins P', a nut O² for fastening said bottle-holder P and said bottle-support O³ on the top-end of said axle O, and an elastic ring P², secured in said bottle-holder P for receiving the bottle Q, substantially as set forth.

11. In a bottle-washing and filling machine, the combination with a ground-plate A, of a vertical central axle N fixed thereon, a bottle-supporting-frame, adapted to revolve around said axle N and having on the top a plurality of fixed tunnels R' reaching into the mouths of the bottles Q, three vertical columns S secured to said ground-plate A, a fluid-box T carried above said bottle-supporting-frame by said columns S and having a plurality of discharge-nozzles T⁵ corresponding to said tunnels R', means for adjusting said fluid-box T on said columns S, stoppers U fitting into said discharge-nozzles T⁵, and means for raising and lowering simultaneously said stoppers U, substantially as set forth.

12. In a bottle-washing and filling machine, the combination with a ground-plate A, of a vertical central axle N fixed thereon, a bottle-supporting-frame, adapted to revolve around said axle N and having on the top a plurality of fixed tunnels R' reaching into the mouths

of the bottles Q, a fluid-box T above said bottle-supporting-frame and having a plurality of discharge-nozzles T⁵ corresponding to said tunnels R', three vertical columns S secured to said ground-plate A for carrying said fluid-box T, adjustable loose collars S' on said columns S, having each two pins S³, the said fluid-box T being provided with arms T' and hook-shaped ends T² for resting on said pins S³, stoppers U fitting into said discharge-nozzles T⁵, and means for raising and lowering simultaneously said stoppers U, substantially as set forth.

13. In a bottle-washing and filling machine, the combination with a fluid-box T having at the bottom a plurality of discharge-nozzles T⁵, of stoppers U fitting into said discharge-nozzles T⁵, a plurality of levers V pivoted in said fluid-box T, rods U' connecting the outer ends of said levers V with said stoppers U, a vertical central rod W secured at its bottom-end to said fluid-box T, a knob X and a sleeve X', adapted to slide on said central rod W and having recesses for the inner ends of said levers V, a spiral-spring W² surrounding said central rod W and pressing said sleeve X' and said knob X upward, so as to lower and put all of said stoppers U into said discharge-nozzles T⁵, while on pressing said knob X downward the levers V will raise all of said stoppers U simultaneously, substantially as set forth.

14. In a bottle-washing and filling machine, the combination with a ground-plate A having a recess A', of an adjustable plate B above

said recess A', a vertical central axle N fixed on said ground-plate A, a bottle-supporting-frame, adapted to revolve around said axle N and provided on the outside with a cord-rim L', a cord-pulley I pivoted in said adjustable plate B and driving said cord-rim L' by means of a cord K, means for shifting said adjustable plate B so as to stretch said cord K, and means for driving said cord-pulley I, substantially as set forth.

15. In a bottle-washing and filling machine, the combination with the ground-plate A having a recess A', of an adjustable plate B above said recess A', noses A² fixed on said ground-plate A, set-screws C threaded into said noses A² and butting against said adjustable plate B for the purpose of shifting the latter, a vertical central axle N fixed on said ground-plate A, a bottle-supporting-frame, adapted to revolve around said axle N and provided on the outside with a cord-rim L', a cord-pulley I pivoted in said adjustable plate B and driving said cord-rim L' by means of a cord K, a driving shaft E pivoted in said adjustable plate, and bevel wheels F and G for imparting the motion from said driving shaft E to said cord-pulley I, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JEAN JACQUES FRANÇOIS PENNIX.

Witnesses:

BENJAMIN SIMON SACKSIEONIE,
AUGUST SIEGFRIED DOCE.