

No. 709,413.

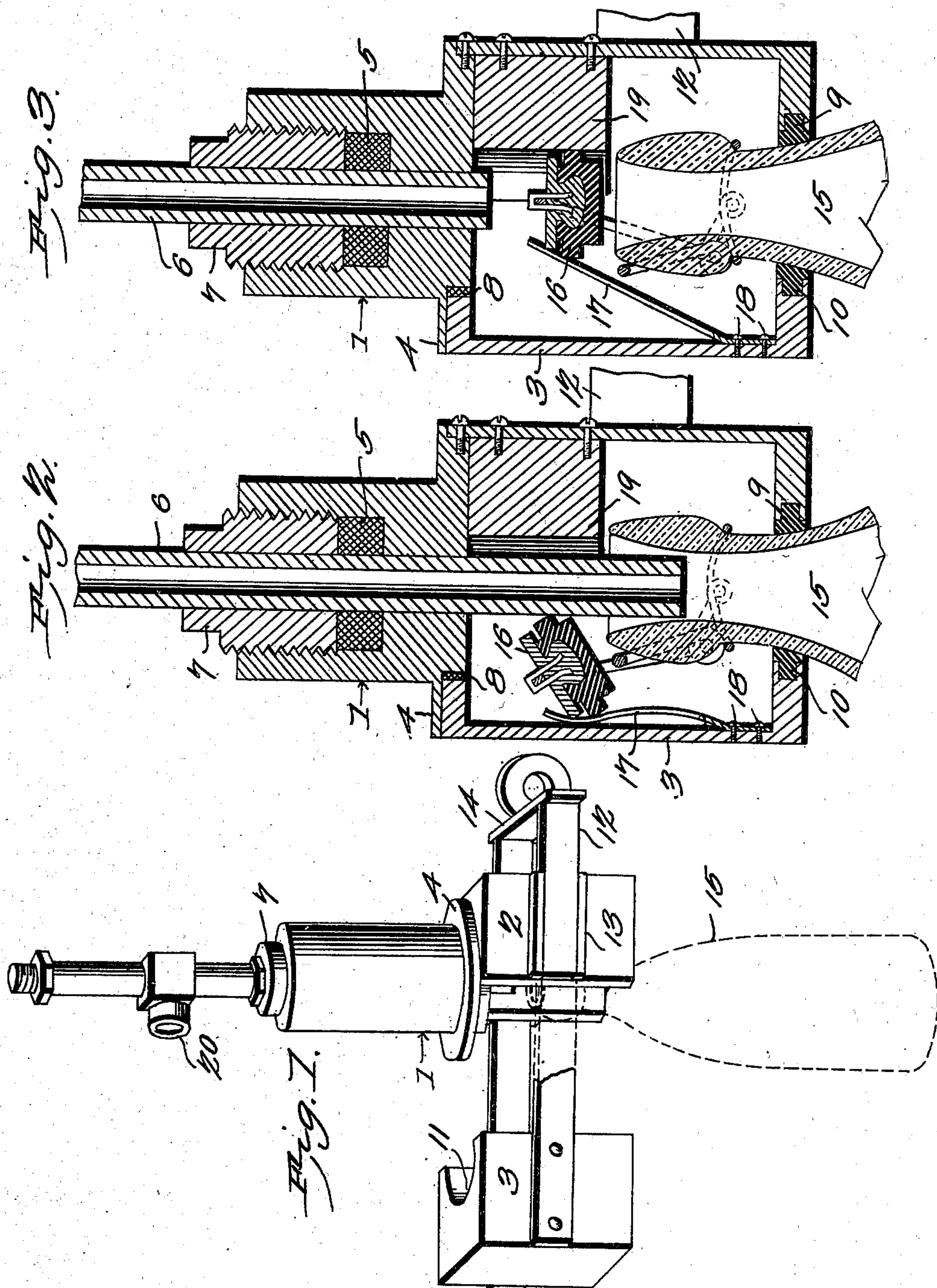
Patented Sept. 16, 1902.

W. B. LANGAN.
BOTTLE FILLING AND CORKING MACHINE.

(Application filed Mar. 22, 1902.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
E. H. Stewart
H. J. Riley

W. B. Langan, Inventor.
by *C. A. Snow & Co.*
Attorneys

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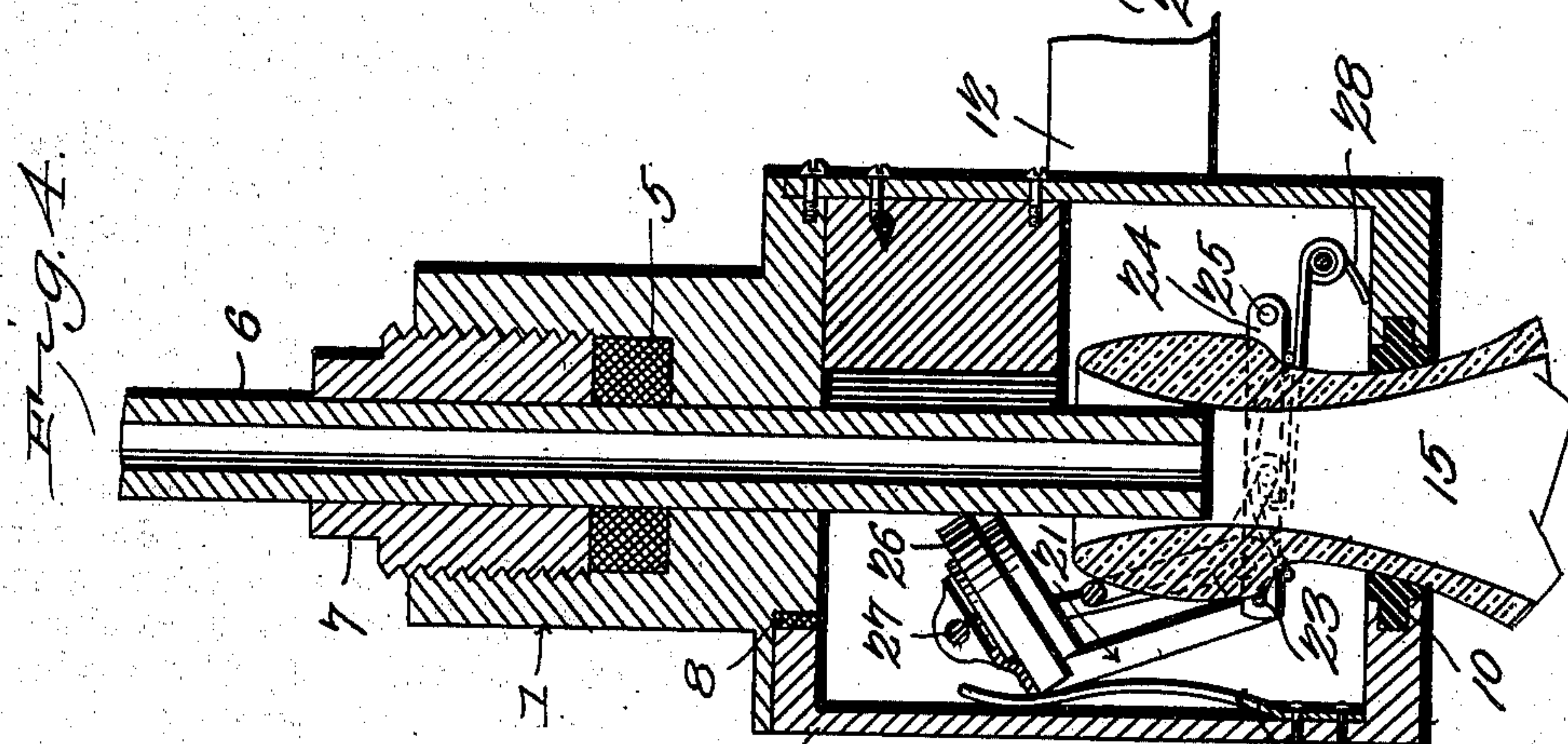
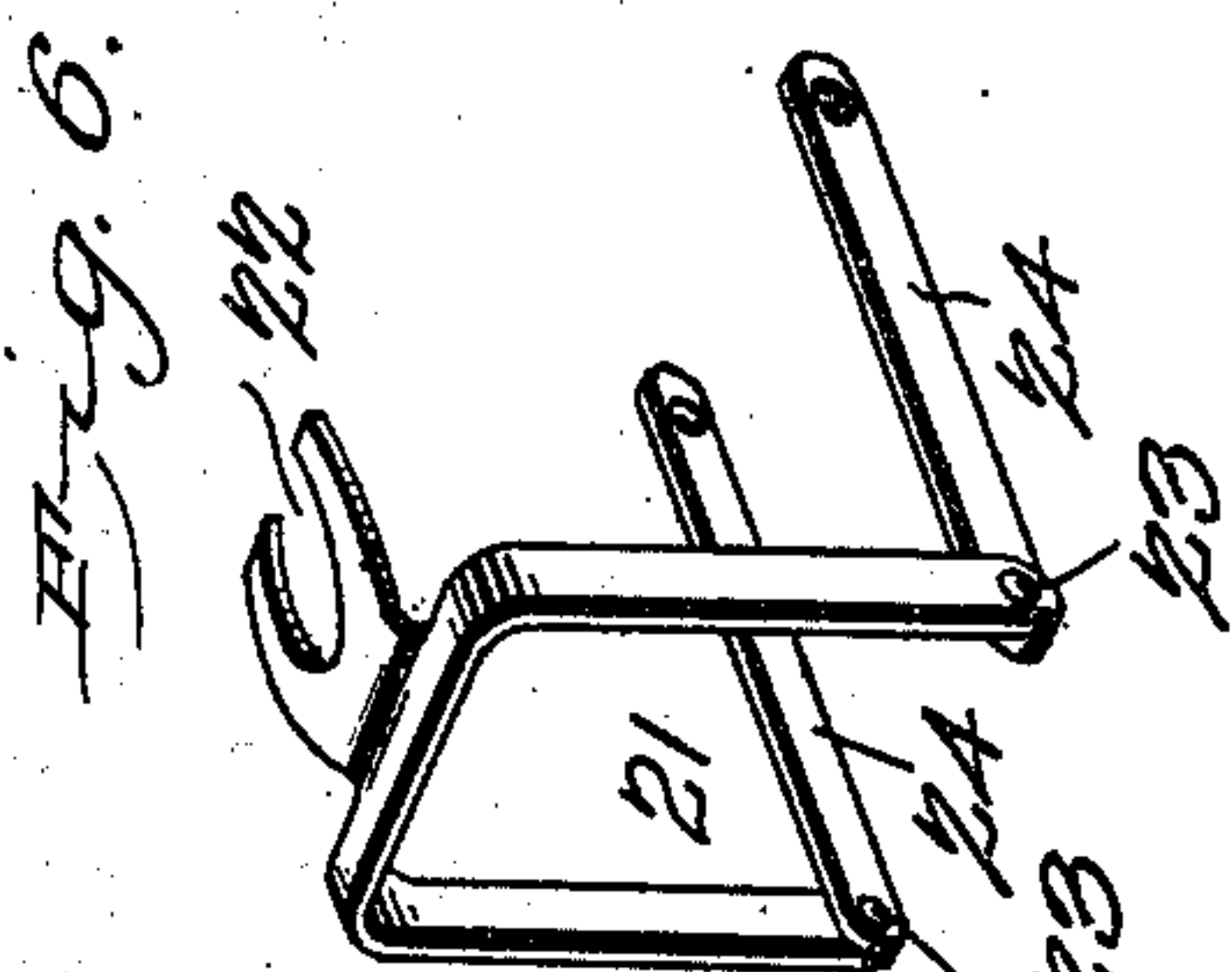
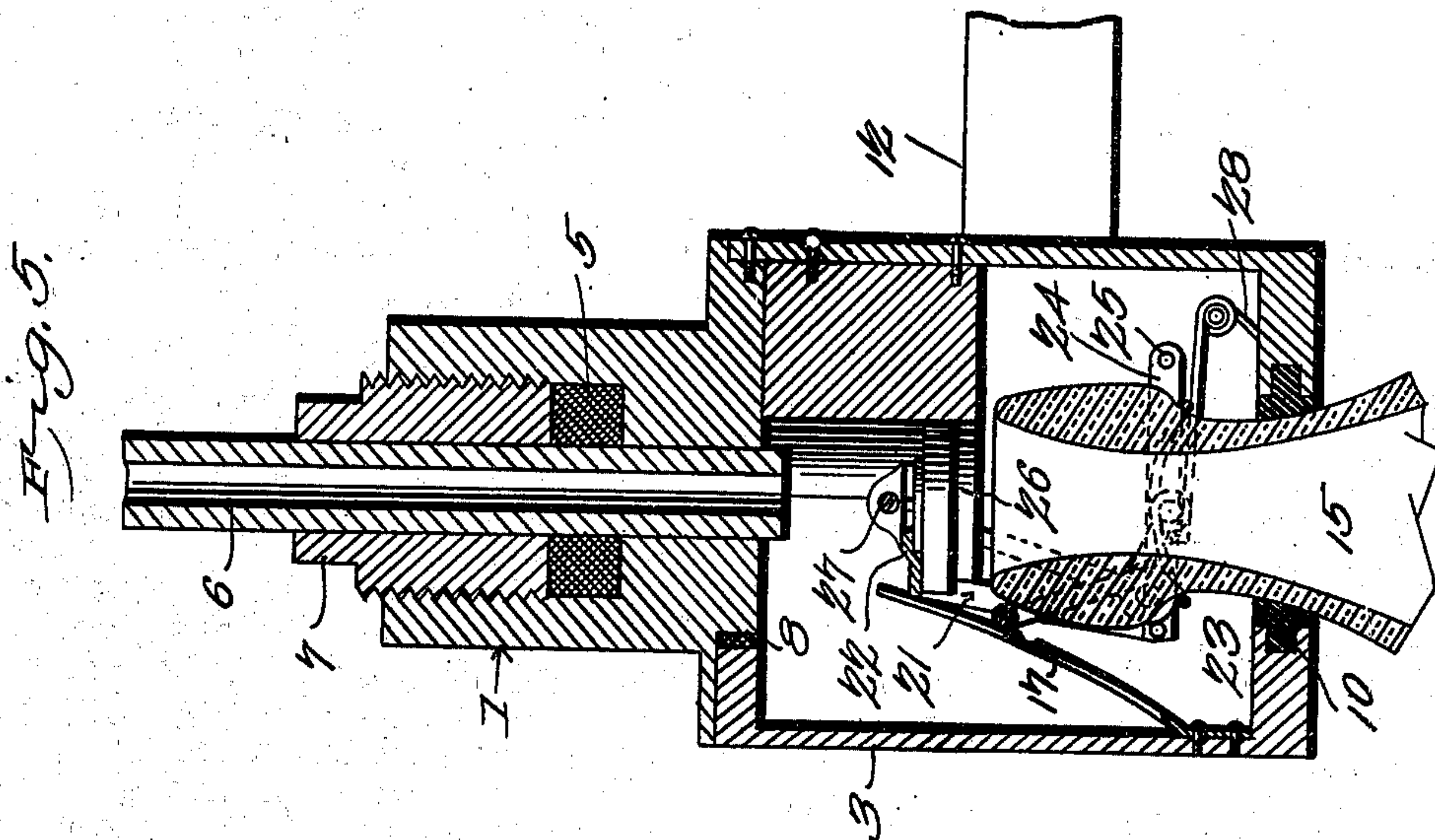
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 Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM B. LANGAN, OF HAWLEY, PENNSYLVANIA.

BOTTLE FILLING AND CORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 709,413, dated September 16, 1902.

Application filed March 22, 1902. Serial No. 99,468. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. LANGAN, a citizen of the United States, residing at Hawley, in the county of Wayne and State of Pennsylvania, have invented a new and useful Bottle Filling and Corking Machine, of which the following is a specification.

The invention relates to improvements in bottle filling and corking machines.

The object of the present invention is to improve the construction of bottle filling and corking machines and to provide a simple and comparatively inexpensive combined filling and corking head in which the filling-tube after supplying a bottle with its contents will be adapted to operate as a plunger for forcing a stopper onto the neck of the bottle and for holding the same in such position to prevent any escape of gas while the stopper is being fastened.

A further object of the invention is to provide a device of this character which when the filling tube or pipe is lifted out of the bottle preparatory to corking the same will be adapted to automatically swing the stopper of the bottle in proper position to be engaged by the filling-tube.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a combined bottling and corking head constructed in accordance with this invention and shown open for the introduction or removal of a bottle. Fig. 2 is a vertical sectional view of the same, the parts being in position for filling a bottle. Fig. 3 is a similar view, the parts being in position for corking the bottle. Figs. 4 and 5 are sectional views similar to Figs. 2 and 3, illustrating the arrangement of the stopper support and carrier. Fig. 6 is a detail view of the stopper support and carrier and the links which connect the same with the casing.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a combined filling and corking head consisting of an approximately cylindrical upper portion and an approximately

rectangular lower casing which is composed of a stationary section 2 and a movable section 3, which is adapted to be opened, as illustrated in Fig. 1 of the accompanying drawings, to permit the neck of a bottle to be introduced into the casing and to be removed therefrom. The cylindrical upper portion of the head 1 is provided at its base with an annular flange 4 and is designed to be secured to a suitable table or support, and it receives a packing 5, which is arranged around the vertically-movable filling-tube 6 and which is engaged by an adjusting-nut 7, which secures the necessary frictional engagement of the packing with the vertically-movable filling-tube.

The casing when closed around the neck of a bottle is air and gas tight and is provided at the adjacent upper and side edges of the sections 2 and 3 with a suitable elastic packing 8, and it has packing-strips 9 and 10 at the bottom, which form an elastic ring for engaging the neck of a bottle and which preferably consist of semicircular pieces of rubber or other suitable material having a tongue-and-groove connection with the bottoms of the sections of the casings, as clearly shown in Figs. 2 and 3. The bottoms of the sections have curved recesses at the packing-strips 9 and 10, and the movable section is provided at the top with a curved recess 11 to conform to the configuration of the bottom of the cylindrical upper portion of the corking and filling head. The movable section is connected with the stationary section by a frame 12, composed of parallel sides arranged in suitable ways 13 of the stationary section and connected by a suitable cross-piece 14, which is provided with a grip or handle to enable the movable section to be opened and closed, and any suitable means may be provided, if desired, for locking the movable section in its closed position.

The bottle 15 is placed in the casing with the stopper 16 arranged as illustrated in Fig. 1 of the accompanying drawings, and when the casing is closed the stopper is forced to the position illustrated in Fig. 2 by a spring and is held by the same against the filling-tube and is adapted to be thrown over to the position illustrated in Fig. 3 when the filling-tube is raised after the bottle has received its

contents. The stopper, which is rigid with the bail on which it is mounted in order to prevent it from getting out of position, is constructed in accordance with the invention described and claimed in an application for United States Letters Patent executed of even date herewith. The spring is secured at its lower end 18 to the inner face of the end wall of the movable section of the casing, and it is deflected or flexed by the closing of the casing, and when it is free to move it will swing the stopper over the neck of the bottle. The movement of the stopper is limited by a block or support 19, secured to the inner face of the end wall of the stationary section of the casing and arranged to receive the stopper, as clearly shown in Fig. 3. The filling-tube, which is vertically movable by any suitable means and which is connected with a suitable fountain or other source of supply, may be arranged, as indicated in Fig. 1 of the drawings, so as to form a stop for the stopper when the casing is closed, or the filling-tube may be lowered into the neck of the bottle before the casing is closed, as either arrangement will prevent the spring from swinging the stopper over the neck of a bottle when the casing is closed. After the stopper has been swung over to the position illustrated in Fig. 3 and is directly above the neck of the bottle the filling-tube is used as a plunger for forcing the stopper onto the neck of the bottle, and it will hold the stopper in such position to prevent the escape of gas while the casing is open to afford access to the lever to which the bail of the stopper is hinged to permit the said stopper to be locked in its closed position.

The filling-tube may be connected at its upper end to any suitable operating mechanism, and it is provided above the cylindrical portion of the head with an arm 20, designed to be connected with a suitable source of supply. The stationary section of the casing is provided at the top with a circular recess to receive the base of the cylindrical portion of the head, and it is secured to the same by suitable fastening devices, as clearly illustrated in Figs. 2 to 5, inclusive.

In Figs. 2 and 3 the machine is shown in connection with a portion of a bottle having an improved stopper, forming the subject-matter of an application executed of even date herewith; but when the machine is employed for corking bottles provided with an ordinary swinging stopper a carrier or stopper-support 21 is employed for holding the stopper in proper position over the mouth of a bottle while the plunger is descending for forcing the said stopper on the bottle. This stopper support or carrier consists of an approximately inverted-U-shaped frame provided at the top with a claw or stopper engaging portion 22 and having its sides pivoted by rivets 23 or other suitable fastening devices to a pair of links 24, which are pivotally mounted on the stationary section of the

casing by suitable fastening devices 25. The fastening devices 25 are arranged at one end of the links, and the other end of the links is connected to the combined stopper support and carrier. The stopper 26, which swings freely on the bail 27, is placed in the claw or engaging portion 22, which fits on the neck or connecting portion between the upper face of the stopper and the bail, and the said carrier and support is held in such engagement by means of springs 28, located at opposite sides of the stationary section of the casing and having arms which engage the lower edges of the links. The springs are provided with coils arranged on suitable supports, and they have terminals 28, which engage the bottom of the casing. When the casing is closed, as illustrated in Figs. 2 and 4, the stopper is held against the plunger by means of the spring 17, as before explained, and when the plunger is raised the spring swings the stopper over against the block or stop 19, whereby the stopper is supported in proper position over the neck of the bottle to be engaged by the plunger for corking the bottle. After the bottle has been corked and secured the combined carrier and support is readily disengaged from the stopper. The combined carrier and support is adapted to hold the stopper in proper position, and the stopper is readily engaged with and disengaged from the same.

It will be seen that the filling-tube is adapted to supply the bottle with its contents and that after the bottle has been filled and the filling-tube raised the stopper will be automatically swung in position over the neck of the bottle and held in proper position to be engaged by the filling-tube and that the latter is adapted to operate as a plunger and clamp for forcing the stopper against the neck of a bottle and for holding it in such position until the stopper is fastened. It will also be apparent that the pivotally-mounted oscillatory stopper carrier and support is adapted to swing backward and forward and is also capable of vertical movement to permit the plunger and the spring to operate as described.

What I claim is—

1. In a machine of the class described, the combination of a head adapted to receive the neck of a receptacle, a combined filling-tube and plunger extending into the head, one of the parts being movable, whereby the filling-tube is adapted to operate as a plunger, and means located within the head and mounted independently of the said tube for automatically swinging the stopper of a bottle over the neck when the tube is withdrawn from the bottle, substantially as described.

2. In a machine of the class described, the combination of a head having a casing adapted to receive the neck of a bottle, a filling-tube extending into the casing and capable of vertical movement and adapted to operate as a plunger, and means for automatically swinging the stopper of a bottle over the neck

when the filling-tube is raised, substantially as described.

3. In a machine of the class described, the combination of a head having a casing arranged to receive the neck of a bottle, a combined filling-tube and plunger extending into the casing and capable of vertical movement, and means for automatically swinging the stopper of a bottle over the neck when the tube is withdrawn from the bottle, substantially as described.

4. In a machine of the class described, the combination of a head adapted to receive the neck of a bottle, a vertical filling-tube extending into the head, one of the parts being vertically movable with relation to the other, whereby the filling-tube is adapted to operate as a plunger, and a spring carried by the head and arranged to swing a stopper automatically over the neck of a bottle when the tube is withdrawn from the latter, substantially as described.

5. In a machine of the class described, the combination of a head, a vertically-movable combined filling-tube and plunger, a spring arranged within the head and adapted to engage a stopper to swing the same over the neck of a bottle when the tube is withdrawn therefrom, and a support arranged to receive the stopper to limit the movement thereof, substantially as described.

6. In a machine of the class described, the combination of a head having a casing provided with a movable portion adapted to be opened to afford access to its interior, a vertically-movable combined filling-tube and plunger, and a spring arranged within the casing and adapted to automatically swing a stopper over the neck of a bottle when the tube is withdrawn from the latter, substantially as described.

7. In a machine of the class described, the combination of a head having a casing composed of stationary and movable sections, a frameslidably mounted on the stationary section and connected with the movable section, a vertically-movable combined filling-tube and plunger, and means arranged within the casing for automatically swinging the stopper of a bottle over the neck of the same when the tube is withdrawn therefrom, substantially as and for the purpose described.

8. In a machine of the class described, the combination of a head having a cylindrical upper portion and provided at its lower portion with a casing composed of stationary and movable sections, a block or support carried by the stationary section, a spring mounted on the movable section and arranged to engage a bottle-stopper, and a combined filling-tube and plunger, substantially as described.

9. In a machine of the class described, the combination of a head adapted to receive the neck of a receptacle, a vertically-movable combined filling-tube and plunger, and means for automatically swinging the stopper of the

receptacle over the neck thereof when the tube is withdrawn therefrom, substantially as and for the purpose described.

10. In a machine of the class described, the combination of a head having a casing, a vertically-movable combined filling-tube and plunger, and a movable stopper support and carrier mounted within the casing independently of the tube and arranged to swing the stopper of a bottle over the latter when the tube is withdrawn therefrom, substantially as described.

11. In a machine of the class described, the combination of a head having a casing, a vertically-movable combined filling-tube and plunger, a movable stopper support and carrier mounted on the casing and arranged within the same, and a spring arranged to swing the stopper automatically over the neck of a bottle when the tube is withdrawn therefrom, substantially as described.

12. In a machine of the class described, the combination of a head, a vertically-movable combined filling-tube and plunger, a vertically-movable pivotally-mounted stopper support and carrier, and a spring arranged to swing the stopper automatically over the neck of a bottle when the tube is withdrawn therefrom, substantially as described.

13. In a machine of the class described, the combination of a head having a casing, a combined filling-tube and plunger, a stopper support and carrier provided with an engaging portion and adapted to hold a movable stopper, a link pivotally connected to the support and carrier and to the casing, and a spring for automatically swinging the stopper support and carrier, substantially as described.

14. In a machine of the class described, the combination of a head, a combined filling-tube and plunger, a stopper support and carrier provided with a claw or engaging portion, a link pivotally connected with the stopper support and carrier and pivotally mounted, and springs for engaging the link and for swinging the stopper support and carrier, substantially as described.

15. In a machine of the class described, the combination of a head having a casing, a combined filling-tube and plunger, an approximately U-shaped stopper-supporting carrier provided at the top with a claw, links connecting the sides of the stopper support and carrier with the casing, and springs for engaging the stopper support and carrier for swinging a stopper over the neck of a bottle and for swinging the links upward, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM B. LANGAN.

Witnesses:

P. H. KEARNEY,
M. J. CARLON.