

No. 657,931.

Patented Sept. 18, 1900.

G. W. FIELD.

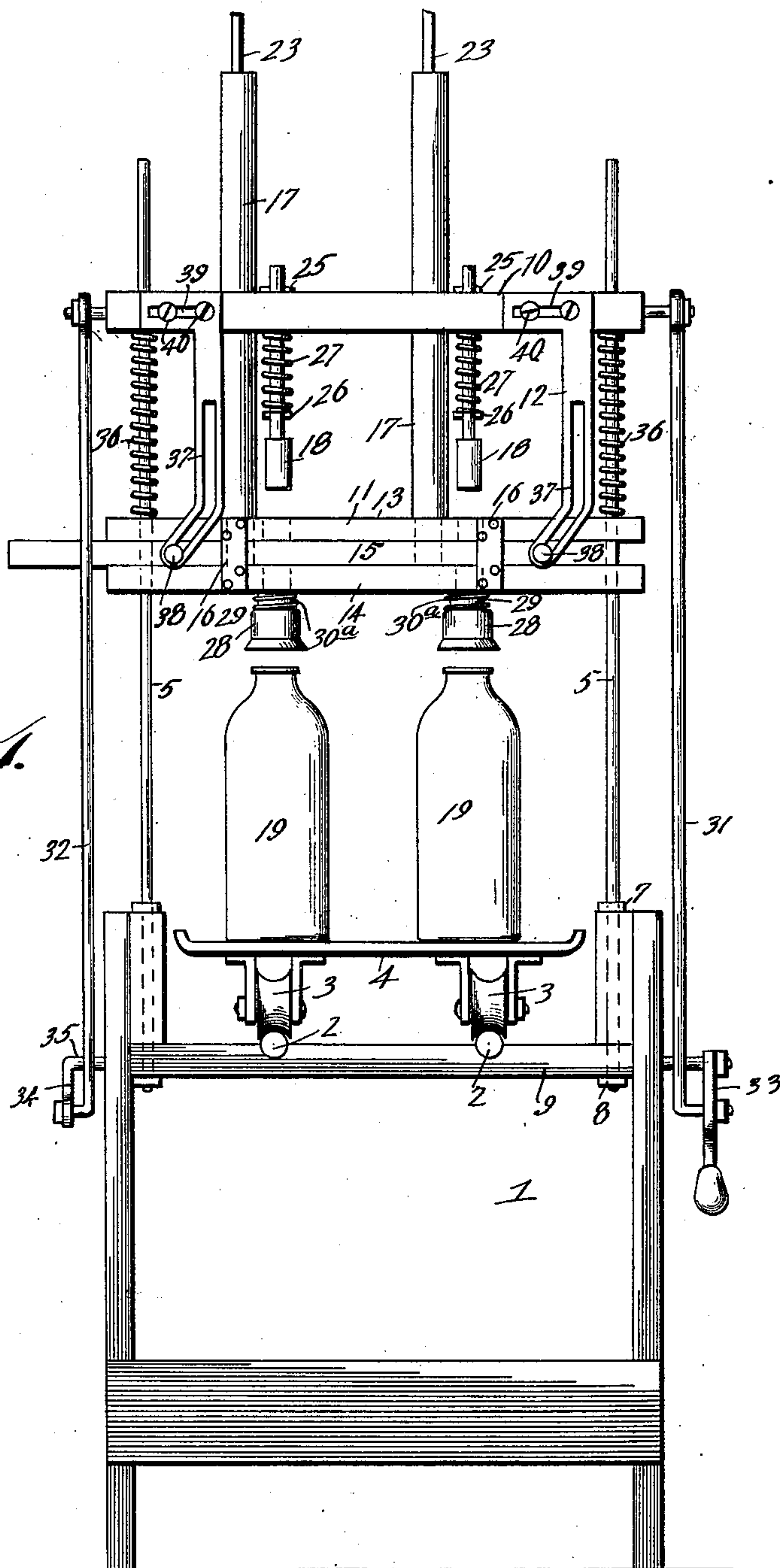
CORKING ATTACHMENT FOR BOTTLE FILLING MACHINES.

(Application filed May 18, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses

E. H. Walker
J. J. Riley

G. W. Field Inventor

by *C. A. Snow & Co.*
Attorneys

No. 657,931.

Patented Sept. 18, 1900.

G. W. FIELD.

CORKING ATTACHMENT FOR BOTTLE FILLING MACHINES.

(Application filed May 18, 1900.)

(No Model.)

2 Sheets—Sheet 2.

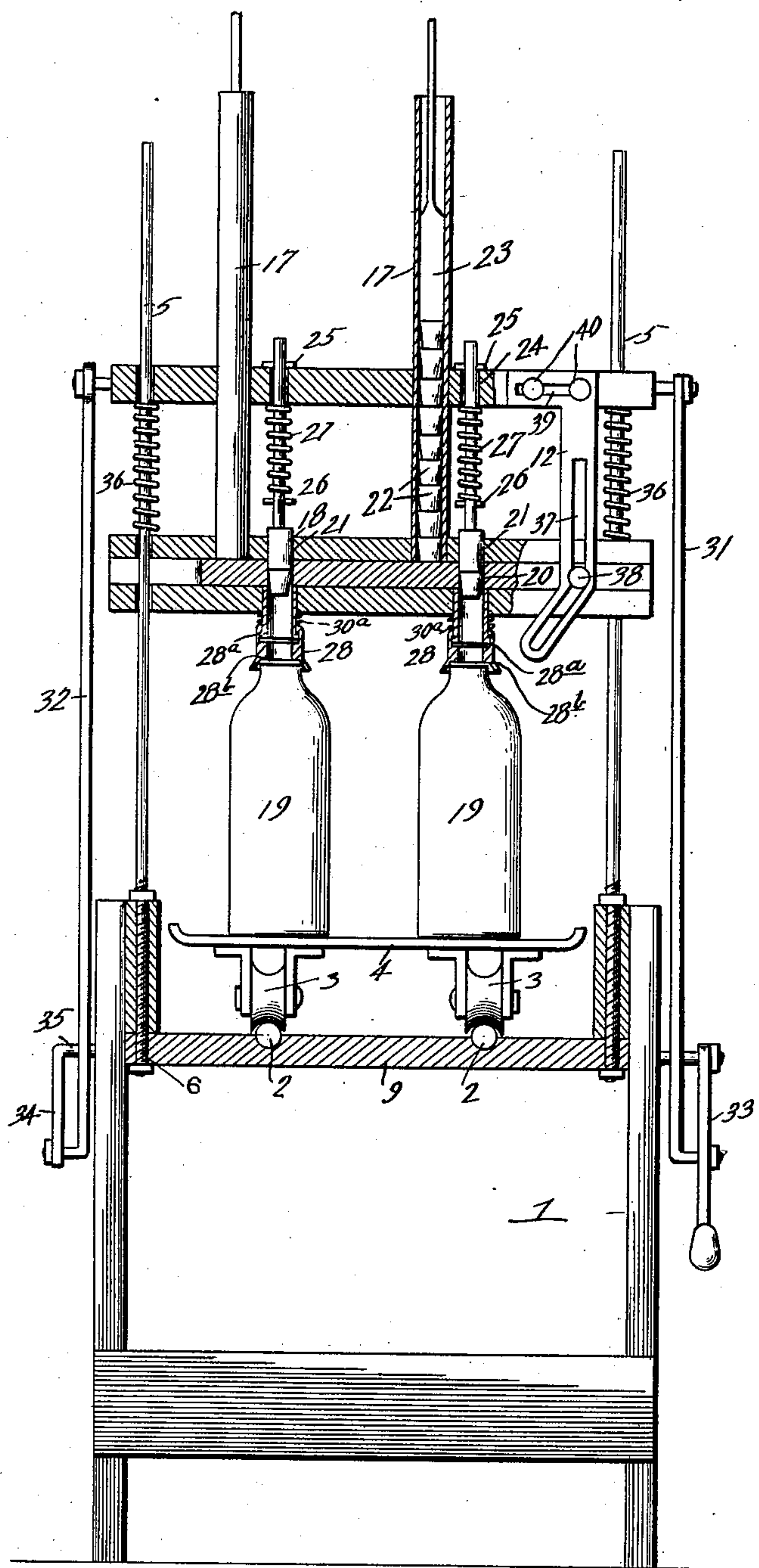
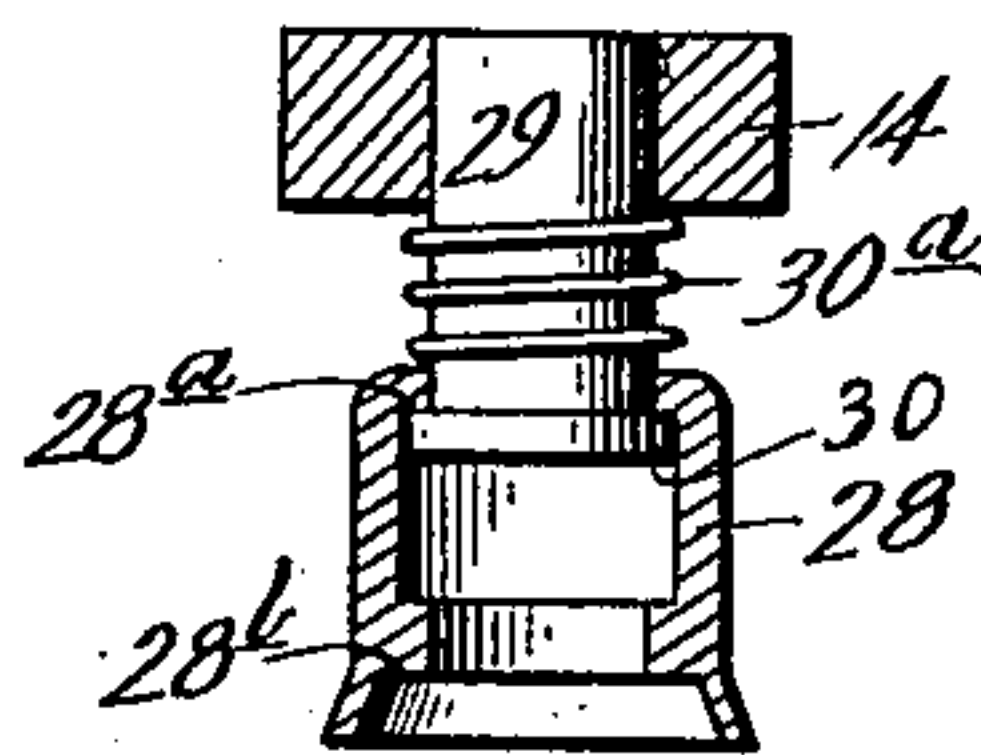


Fig. 2.

Fig. 3.



Witnesses
E. H. Walker
J. J. Riley

G. W. Field. Inventor
by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE W. FIELD, OF NORTH BRANCH, NEW JERSEY.

CORKING ATTACHMENT FOR BOTTLE-FILLING MACHINES.

SPECIFICATION forming part of Letters Patent No. 657,931, dated September 18, 1900.

Application filed May 18, 1900. Serial No. 17,153. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. FIELD, a citizen of the United States, residing at North Branch, in the county of Somerset and State of New Jersey, have invented a new and useful Corking Attachment for Bottle-Filling Machines, of which the following is a specification.

The invention relates to improvements in corking attachments for bottle-filling machines.

The object of the present invention is to improve the construction of corking devices and to provide a simple and comparatively inexpensive one designed to be used in connection with a bottle-filling machine and capable of being readily operated to insert corks or stoppers into the necks of bottles or other receptacles and to feed such corks or stoppers automatically to the plungers which drive them into the receptacles.

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 an elevation of a bottle-corking machine constructed in accordance with this invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is an enlarged detail sectional view illustrating the manner of yieldingly mounting the caps for the bottles or other receptacles.

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

1 designates a supporting-frame provided with rails 2, adapted to receive wheels 3 of a carriage 4, which is designed to convey the bottles or other receptacles from the filling mechanism to the corking mechanism, so that the receptacles may be corked as soon as their contents have been supplied to them. The rails are preferably round, and the wheels 3 are grooved to fit the rails; but any other desired construction may be employed for this purpose. Rising from the sides of the supporting-frame are vertical guides 5, consisting of rods having their lower portions 6 threaded for the reception of nuts 7 and 8, which are arranged at the upper edges of the sides of the supporting-frame and at the

lower face of the cross-bar 9, whereby the guides are secured to the frame. The guides receive upper and lower transverse cross-heads 10 and 11, which are provided with vertically-alined perforations for the reception of the said guides. The lower cross-head 11, which is connected with the upper cross-head by guiding-arms 12, is composed of upper and lower bars or members 13 and 14, spaced apart to provide a way for a stopper-carrying slide 15 and connected by plates or straps 16, arranged at the front and rear edges of the upper and lower bars or members 14 and 15; but the lower cross-head may be constructed in any other suitable manner to provide a way for the horizontally-reciprocating slide, which is adapted to carry corks or stoppers from hopper-tubes 17 to points beneath plungers 18, whereby when the upper cross-head 10, which carries the plungers 18, is depressed the corks or stoppers will be in position beneath the plungers, so that they may be driven by the latter into the bottles 19 or other receptacles.

The hopper-tubes 17, which receive the corks or stoppers and which may be of any desired number, are mounted upon the upper bar 13 of the lower cross-head 11 in openings or perforations of the same, and the reciprocating slide, which is provided with cork-receiving apertures 20, has the apertures 20 normally arranged beneath the lower ends of the hopper-tubes in position to receive the lowermost corks or stoppers, and when the slide is reciprocated by the means hereinafter described it carries the corks or stoppers to openings or passages 21, through which the plungers 18 are adapted to pass. The openings or passages 21 are formed in the upper or lower bars or members 13 and 14 of the lower cross-head, and the apertures of the slide register with the said openings or passages 21 when the parts are arranged as illustrated in Fig. 2 of the accompanying drawings. This movement of the slide to the right also closes the lower ends of the hopper-tubes and retains the corks or stoppers 22 therein. In order to assist in feeding the corks or stoppers 22 to the slide, the hopper-tubes are preferably provided with weighted rods or plungers 23, loosely resting upon the uppermost corks, as clearly shown in Fig. 2. The weights upon the corks cause them to drop and fill

the apertures of the slide as soon as the latter is reciprocated to the left at the completion of the corking operation.

The plungers 21 consist of rods or stems 5 loosely arranged in openings 24 of the upper cross-head and provided at their lower ends with cork-engaging heads. The rods or stems of the plungers 21 are provided with upper and lower stops 25 and 26 and have coiled 10 springs 27 disposed on them and interposed between the lower stops and the lower face of the upper cross-head. The said stops may consist of pins, and the upper one is arranged at the upper face of the upper cross-head. 15 When the upper cross-head is moved downward by the means hereinafter described, the springs 27 are compressed and the plungers yieldingly engage the corks or stoppers and force the same into the necks of the bottles 20 or other receptacles.

In order to compensate for any inequality in the size or height of the bottles or other receptacles, the lower cross-head is provided with a series of yieldingly-mounted spring- 25 pressed caps 28, suspended from short depending tubes 29, which are provided at their lower ends with stops 30, and the said caps 28, which are arranged on the depending tubes, are provided with interior stops 28^a 30 and 28^b and are engaged by springs 30^a, interposed between the caps and the lower face of the lower cross-bar.

The upper cross-head is connected by side rods 31 and 32 with a lever 33 and with an 35 arm 34 of a rock-shaft 35, disposed transversely of the frame and journaled in suitable bearings thereof. The lever 33 may be formed integral with the rock-shaft, if desired, or it may be constructed separate there- 40 from, and it is provided at its outer end with a suitable handle or grip. Coiled springs 36 are disposed in the guide-rods 5 and interposed between the upper and lower cross-heads to produce the proper separation of 45 the latter and to return positively the lower cross-head to the position shown in Fig. 1 after the upper cross-head has been compressed and to prevent the upper cross-head from lifting the lower cross-head when the 50 former is raised by the operating mechanism, which may be of any desired construction instead of that shown in the drawings.

The guide-arms which depend from the upper cross-head are adjustably secured to 55 the same and are provided with longitudinal slots 37, forming ways for the reception of projections 38 of the reciprocating slide and provided with inclined lower portions which are adapted to reciprocate the said slide. 60 When the upper cross-head is depressed by the action of the operating mechanism, the lower inclined portions of the ways or slots of the arms 12 reciprocate the slide to the right and carry the corks or stoppers from 65 the hopper-tubes to the vertical passages or ways beneath the plungers 18, and the upper vertical portions of the guides or slots hold

the slide in proper position, with its apertures in register with the passages or openings 21, so that the corks will be in proper position 70 to be driven into the necks of the receptacles by the plungers, which are carried into engagement with the same by the further downward movement of the upper cross-head. As the upper cross-head is lifted the plungers 75 are withdrawn and the slide is then returned to its normal position to receive a fresh supply of corks or stoppers. The guiding-arms 12, which connect the upper and lower cross-heads, are provided at their tops with hori- 80 zontal cross-heads having horizontal slots 39 for the reception of clamping-screws 40, which engage the heads or upper portions of the arms 12, whereby the latter are firmly secured at the proper adjustment. 85

It will be seen that the corking-machine is exceedingly simple and inexpensive in construction, that it is positive, reliable, and automatic in its operation of feeding the corks or stoppers to the plungers, and that it may 90 be readily operated in connection with a bottle-filling machine, so that the bottles or other receptacles as soon as they are filled may be readily conveyed by the carriage and the track from the filling mechanism to the cork- 95 ing-machine.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sac- 100 rificing any of the advantages of this invention.

What is claimed is—

1. In a machine of the class described, the combination of a frame provided with suit- 105 able guides, an upper cross-head or support mounted on the guides and provided with plungers, a lower cross-head provided with hoppers, a reciprocating slide or carrier arranged to convey corks or stoppers from the 110 hoppers to points beneath the plungers, said slide or carrier being connected with the upper support or cross-head and adapted to be reciprocated by the same, and means for operating the upper cross-head or support, sub- 115 stantially as described.

2. In a machine of the class described, the combination of upper and lower cross-heads or supports, plungers mounted on the upper cross-head, hoppers carried by the lower 120 cross-head, and a reciprocating slide or carrier operated by the upper cross-head and adapted to convey corks or stoppers from the hoppers to points beneath the plungers, sub- 125 stantially as described.

3. In a machine of the class described, the combination of upper and lower cross-heads, plungers mounted on the upper cross-head, a reciprocating slide arranged on the lower cross-head and adapted to convey corks or 130 stoppers to points beneath the plungers, and a guide mounted on the upper cross-head and connected with the slide, substantially as described.

4. In a machine of the class described, the combination of upper and lower cross-heads, a reciprocating slide mounted on the lower cross-head and adapted to carry corks or stoppers, plungers mounted on the upper cross-head, and an arm secured to the upper cross-head and provided with a guide or way engaged by the slide and having an inclined portion adapted to reciprocate the said slide, substantially as described.

5. In a machine of the class described, the combination of upper and lower cross-heads, plungers mounted on the upper cross-head, a transversely-reciprocating carrier extending beneath each of the plungers and arranged to carry corks or stoppers to points beneath the same, and means for connecting the upper cross-head with the movable carrier, substantially as described.

6. In a machine of the class described, the combination of the upper and lower cross-heads, plungers mounted on the upper cross-head, hopper-tubes carried by the lower cross-head, a transversely-reciprocating carrier extending beneath all of the plungers and hoppers and arranged to convey corks or stoppers from the hoppers to the plungers, and means for operating the carrier, substantially as described.

7. In a machine of the class described, the combination of upper and lower cross-heads, springs interposed between the cross-heads,

plungers mounted on the upper cross-head, a carrier for conveying corks beneath the plungers, said carrier being operatively connected to the upper cross-head, and operating mechanism connected with one of the cross-heads, substantially as described.

8. In a machine of the class described, the combination of a frame provided with vertical guides, upper and lower cross-heads mounted thereon, a reciprocating slide mounted in a suitable way of the lower cross-head and connected with the upper cross-head, springs interposed between the cross-heads, hoppers mounted on the lower cross-heads and adapted to receive the corks or stoppers, plungers carried by the upper cross-head, and operating mechanism connected with one of the cross-heads, substantially as described.

9. In a machine of the class described, the combination of a support, a depending tube provided at its lower end with an outwardly-extending stop, a cap arranged on the tube and provided with interior stops, and means for yieldingly engaging the cap, 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.

GEORGE W. FIELD.

Witnesses:

CORA HOAGLAND,
FREDK. A. POPE.