

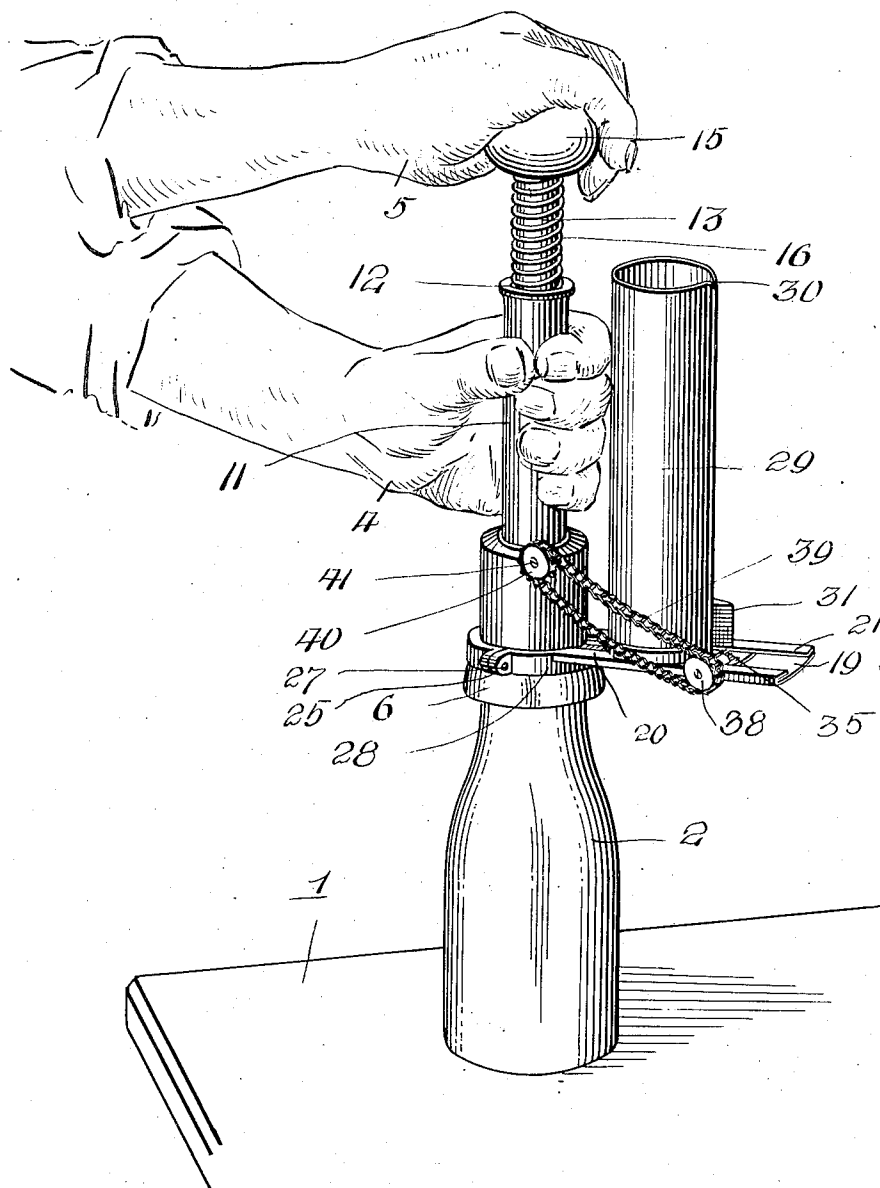
B. F. GREENE.
BOTTLE CAPPING MACHINE.
APPLICATION FILED OCT. 6, 1911.

1,057,235.

Patented Mar. 25, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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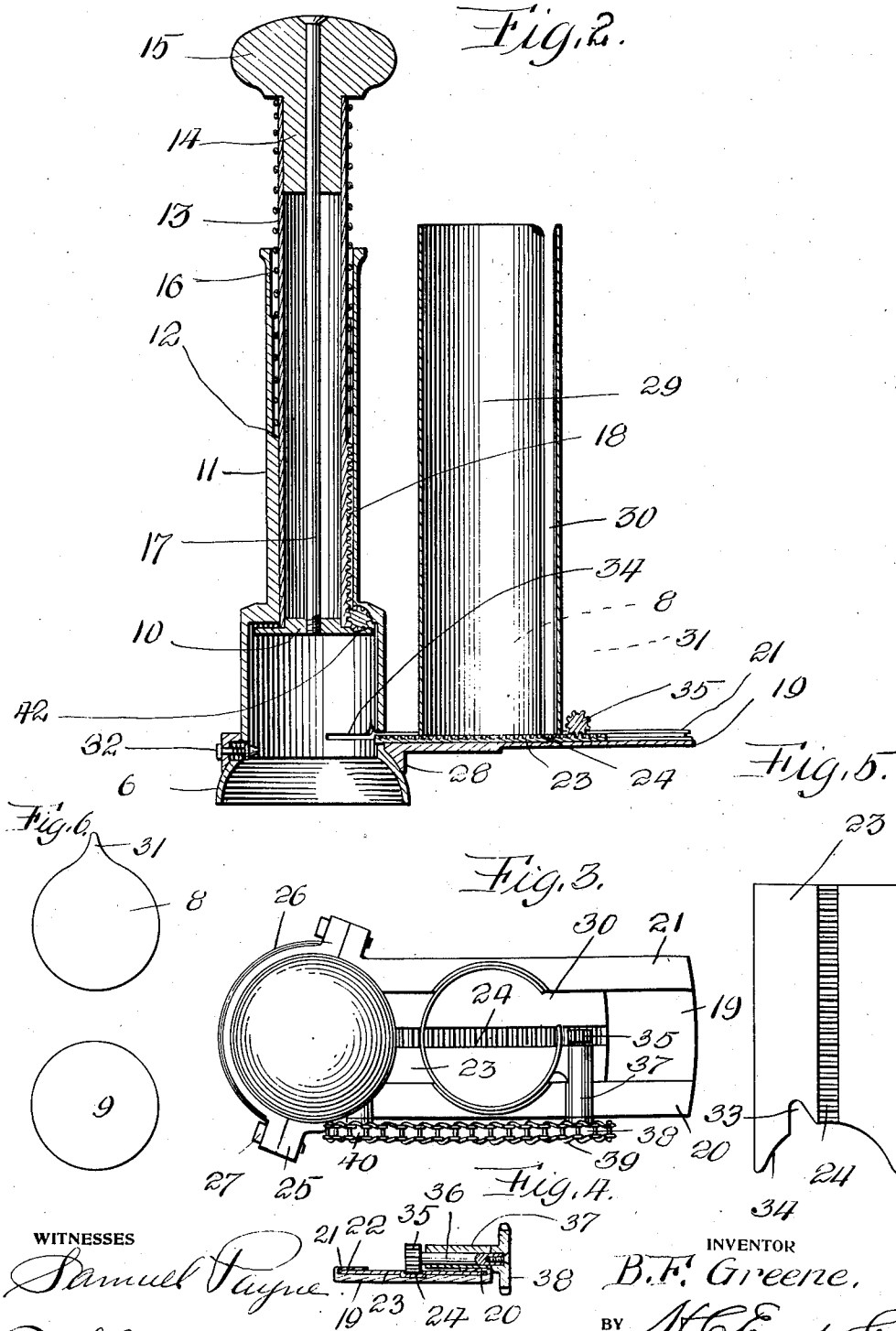
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UNITED STATES PATENT OFFICE.

BENJAMIN F. GREENE, OF SHERIDAN, PENNSYLVANIA.

BOTTLE-CAPPING MACHINE.

1,057,235.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed October 6, 1911. Serial No. 653,285.

To all whom it may concern:

Be it known that I, BENJAMIN F. GREENE, a citizen of the United States of America, residing at Sheridan, in the county of Lebanon and State of Pennsylvania, have invented certain new and useful Improvements in Bottle-Capping Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to bottle capping machines, and has for its object to provide a machine of such class in a manner as hereinafter set forth for conveniently capping bottles with paper or other caps, particularly milk bottles.

Although the machine is designed primarily for use for the manually capping of milk bottles, yet it is to be understood that the machine can be used for any purpose wherein it is found applicable.

Further objects of the invention are to provide a manually operated bottle capping machine, which is simple in its construction and arrangement, strong, durable, efficient and convenient in its use and inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications, can be resorted to, which come within the scope of the claim hereunto appended.

In describing the invention in detail, reference is had to the accompanying drawings wherein like characters of reference denote corresponding parts throughout the several views and in which:

Figure 1 is a perspective view of a bottle capping machine in accordance with this invention, showing the adaptation thereof in connection with the capping of a milk bottle, Fig. 2 is a vertical sectional view of a bottle capping machine in accordance with this invention, Fig. 3 is a top plan view, Fig. 4 is a sectional detail, Fig. 5 is a top plan view of a rack, and, Figs. 6 and 7 are views of caps which can be employed with the machine.

Referring to the drawings in detail, 1 denotes a support upon which is mounted the bottle 2 to be capped. The machine is

mounted upon the top of the bottle 2, the machine being referred to generally by the reference character 3. The operator with one hand as at 4 grasps a portion of the machine and with his other hand as at 5 forces inwardly the plunger element of the machine to cap the bottle. The foregoing construction and arrangement is shown in Fig. 1.

A bottle capping machine in accordance with this invention includes a cap-piece 6, adapted to be mounted upon and surround the top of the bottle 2. Formed integral with the upper portion of the cap-piece 6 is a vertically disposed cylindrical plunger chamber 7 into which a cap 8 or 9 is fed in a manner as hereinafter set forth. The cap, when fed to the chamber 7, is positioned at the lower portion thereof and in the path of a manually operated spring controlled plunger 10. Formed integral with and projecting from the upper portion of the cylindrical casing 7 which constitutes the plunger chamber is a sleeve 11 having an interiorly arranged angular shoulder 12 intermediate the ends thereof. Extending through the sleeve 11 and connected to the plunger head 10 is a hollow plunger rod 13 having mounted in its upper end the shank 14 of an enlarged handle 15. Surrounding the rod 13 and interposed between the handle 15 and the shoulder 12 is a coiled compression spring 16, the function of which is to return the plunger head to inoperative position when pressure is relieved from the handle 15. The plunger head 10 is coiled to the handle 15 by a tie bar 17, the latter having its upper end counter-sunk in the handle 15. The inner portion of the plunger rod 13 upon its outer face is formed with a rack 18, the function of which will be hereinafter referred to.

Extending at right angles with respect to the cap-piece 6 and casing 7 is a support 19 formed on its upper face with a longitudinally-extending pair of guides 20, 21 which are spaced from the body of the support 19 to form guide grooves 22 in which is arranged a feed-plate 23 having a centrally disposed longitudinally-extending rack 24. The support 19 at its inner end is formed with a pair of outwardly-extending flanges 25 to which is secured a clamping strap 26 through the medium of the hold fast devices 27. The support 19 is positioned against the casing 7 and also the cap-piece 6. A de-

pending flange 28 integral with the support 19 engages the cap-piece 6 as clearly shown in Fig. 2. The strap 26 engages the cap-piece 6 and also the casing 7.

5 Connected to the guides 20, 21 and having its lower end flush with the inner faces of said guides is a vertically disposed hollow storage member or reservoir in the form of a vertical tube 29. Within the member 29
10 is arranged a stack of caps. When the form of cap as indicated by the reference character 8 is employed, the member 29 is slotted as at 30 for the passage of the protuberance on finger piece 31. When the form
15 of cap as indicated by the reference character 9 is used, the member 29 is not slotted. The caps in the member 29 are fed upon the support 19 by gravity and in the path of the feed slide 23, which when moved to the
20 limit of its outward movement, allows the cap to fall upon the support 19 so that when the feed slide 23 moves in the opposite direction, it will engage the cap and carry it to a position in the casing 7 in the
25 path of the plunger head 10. The cap is maintained in a horizontal position within the casing 7 by a spring controlled support 32, which is readily moved to one side as the cap is forced downwardly by the plunger
30 head 10 to enter the mouth of the bottle 2. The inner end of the slide 23 conforms in contour to the edge of the cap and is also provided with a recess 33 for the reception of the protuberance 31 when the form of
35 cap as illustrated in Fig. 6 is employed. The casing 7 is formed with a slot 34 for the entrance of the cap and a portion of the slide 23, the inward movement of the slide being to such an extent that the inner edge
40 34 of the slide will be flush with the inner face of the casing 7.

The slide 23 is operated in one direction when the plunger rod 13 moves upwardly to position the cap in the path of a plunger
45 head 10 and said slide 23 is operated in the opposite direction to allow of a cap falling in the path of said slide when the plunger rod 13 moves downwardly. The means for shifting the slide 23 is operated by the
50 movement of the plunger rod and said means consists of a pinion 35 permanently meshing with the rack 24 and carried on the inner end of a shaft 36 which is mounted in a transversely-extending bearing 37
55 fixed to and extending inwardly from the guide 20. Carried upon the outer end of the shaft 36, is a small sprocket wheel 38, connected by a chain 39 to a small sprocket wheel 40 fixed to the outer end of a shaft 41,
60 journaled in the upper portion of the casing 7. The shaft 41 carries a pinion 42 which engages with the rack 18 so, that when the plunger rod 13 moves down-

wardly, the pinion 42 will be operated in one direction, actuating the shaft 41, im- 65 parting movement to the chain 39, driving the sprocket 38, rotating the shaft 36 and pinion 35, thereby shifting the slide 23 outwardly to such an extent, to allow of a cap falling upon the support 19 and in the path 70 of the inner end of the slide 23. When the plunger rod 18 moves upwardly due to the action of the spring 16, the pinion 42 is driven in an opposite direction, thereby operating the chain 39, sprocket 38, shaft 75 36 and pinions 35 in a direction to shift the slide 23 inwardly, so that the cap will be carried to a position in the casing 7 in the path of the plunger head 10, so when the latter moves downwardly, the cap will be 80 forced into the mouth of the bottle.

When using the machine, it is placed in the position as shown in Fig. 1, that is to say, with the cap-piece 6 mounted upon the top of the bottle, the operator grasps the 85 sleeve 11 with one hand and with his other hand operating the plunger rod 13 in one direction, the spring 13 operating the plunger in the opposite direction.

What I claim is:—

90 A bottle capping machine comprising a cap-piece for mounting upon the top of the bottle to be capped, a plunger head casing projecting upwardly from said cap-piece, a plunger rod casing projecting from said 95 plunger head casing, said plunger head casing having a slot, means disposed at right angles with respect to said plunger head casing and in alinement with said slot for positioning caps within said casing in the 100 path of a plunger head, a plunger head within said plunger head casing, a manually operated spring controlled plunger rod arranged within said plunger rod casing for reciprocating the plunger head to force the 105 cap in the mouth of a bottle, a combined guide and support projecting from said cap-piece for said means, said means including a longitudinal rack, a rack carried by the plunger rod, a shaft carried by the plun- 110 ger head casing and provided with a pinion engaging the rack on the plunger rod whereby said shaft is rotated when the rod is operated, a shaft carried by said support and provided with a pinion engaging with 115 the rack of said means for shifting the latter when the shaft is operated, and an operative connection between said shafts whereby they are simultaneously operated during the reciprocation of the plunger rod. 120

In testimony whereof I affix my signature in the presence of two witnesses.

BENJAMIN F. GREENE.

Witnesses:

MAX H. SROLOVITZ,
K. KALKES.