H. D. NAUM.

BOTTLE FILLING AND CAPPING APPARATUS.

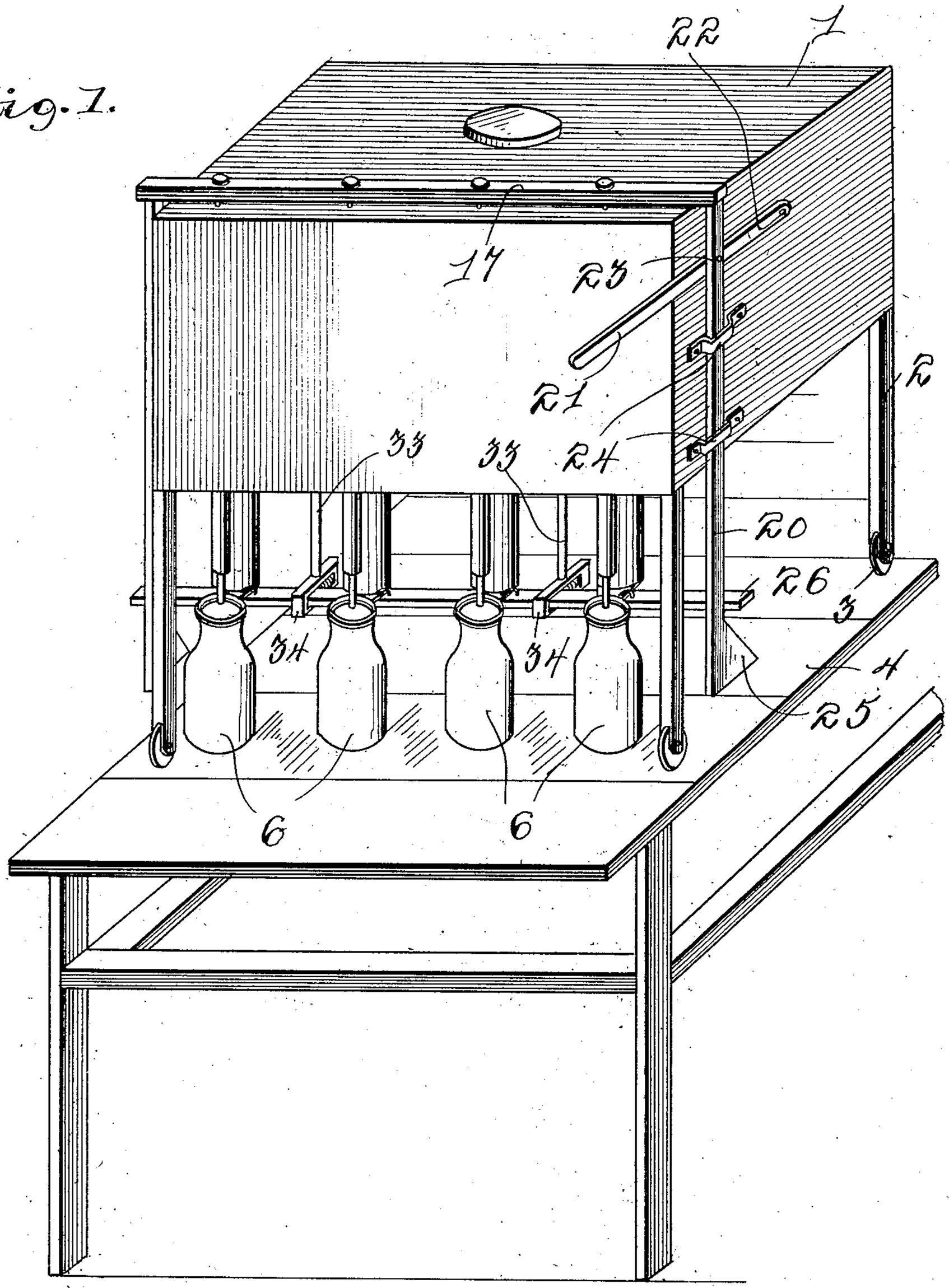
APPLICATION FILED SEPT. 25, 1909.

969,391.

Patented Sept. 6, 1910.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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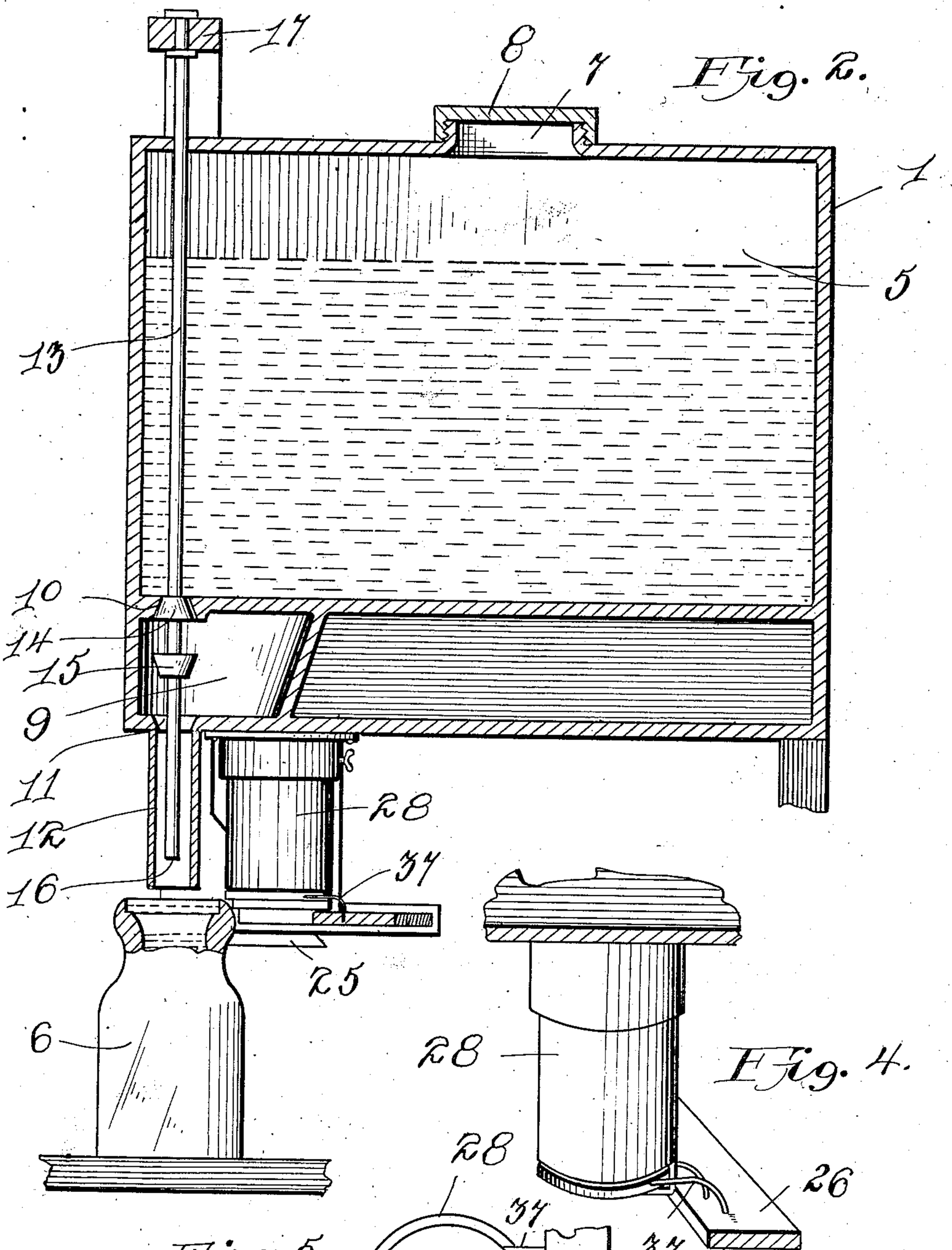

Fig. 2.

Fig. 4.

Fig. 5.

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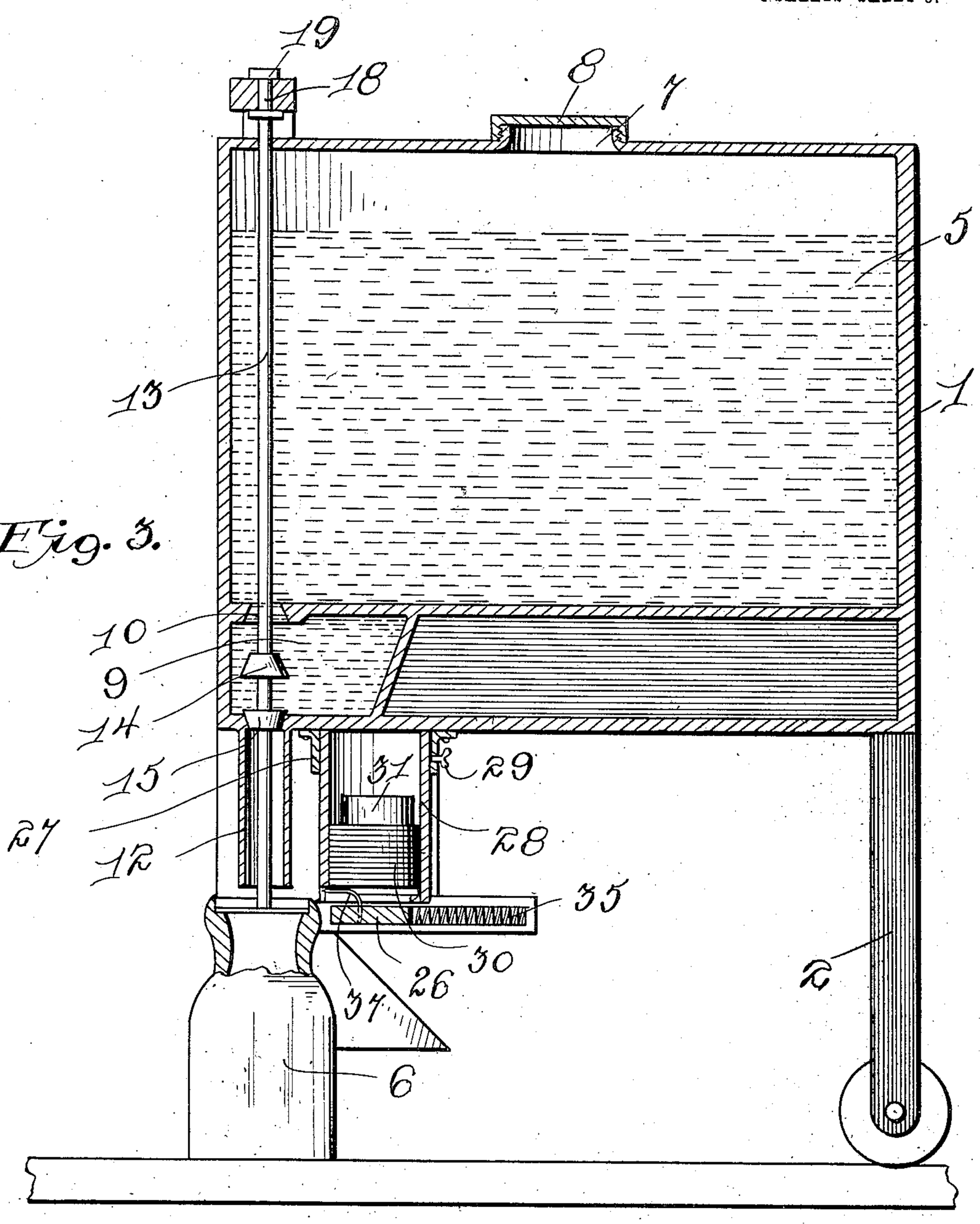

Fig. 3.

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UNITED STATES PATENT OFFICE.

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BOTTLE FILLING AND CAPPING APPARATUS.

969,391. Specification of Letters Patent. Patented Sept. 6, 1910.

Application filed September 25, 1909. Serial No. 519,515.

To all whom it may concern:

Be it known that I, HARRY D. NAUM, a citizen of the United States, residing at Newburgh, in the county of Orange and State of New York, have invented certain new and useful Improvements in Bottle Filling and Capping Apparatus; of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to bottle filling and capping machines, and has for its object the provision of means for facilitating the filling and capping of milk or other bottles.

Another object of this invention is the production of a bottle filling and capping machine which is provided with a plurality of auxiliary tanks adapted to hold a certain quantity of liquid, according to the capacity of the bottle to be filled.

With these and other objects in view, this invention consists of certain novel constructions, combinations, and arrangements of parts as will be hereinafter fully described and claimed.

In the drawings Figure 1 is a perspective view of the device; Fig. 2 is a vertical section of the tank showing the auxiliary receptacle empty; Fig. 3 is a vertical section of the same showing the auxiliary chamber or receptacle filled with liquid; Fig. 4 is a perspective view of the magazine adapted to carry the caps for the bottles; Fig. 5 is a bottom plan view of the same.

Referring to the drawings by numerals 1 designates a tank which is supported by means of legs 2. The legs 2 carry at their lower ends roller 3, which rest upon a table or supporting means 4. If it is so desired, the legs can be fixedly secured to the support 4, and thereby prevent the tank 1 from moving upon the support.

The tank 1 comprises a main receptacle 5 which contains the liquid to be furnished to the bottles 6, shown in Fig. 1. The tank 5 is also provided with an opening 7 formed in the top thereof for allowing the liquid to be poured into the receptacle 5. A cap 8 is adapted to be threaded over said opening 7 and thereby close the same. A plurality of auxiliary receptacles 9 are formed below the main receptacle 5 and are adapted to receive a certain quantity of liquid according to the capacity of the jar or bottle 6 which is adapted to receive the same. An opening 10 forms a communication between the main receptacle 5 and the auxiliary receptacle 9 and thereby allows the receptacle 9 to be filled when said opening is unobstructed. The receptacle 9 is also provided upon the bottom thereof with an opening 11 which tapers toward the outer edge thereof and communicates with a discharge spout 12 which spout is formed integral or otherwise connected to the bottom of the tank 1.

A plurality of plunger rods 13 are carried by the tank 1 and upon rods 13 are positioned valve members 14 and 15. The valve member 14 is adapted to close the opening 10 between the main receptacle 5 and the auxiliary receptacle 9, and cut off the flow through the opening 10 when it is desired to fill the bottle 6 shown directly below the discharge spout 12. When the rod 13 is in a position so as to have the valve 14 close the opening 10 the liquid will then flow out through the opening 11 down through the discharge spout 12 into the bottle which is adapted to be positioned directly below the discharge spout. As soon as the receptacle 9 is emptied of its contents the plunger rod 13 can be so operated as to have the valve 15 close the opening 11 and thereby allow the liquid to flow through the opening 10 and refill the receptacle 9. In the meantime the lower end 16 of the plunger rod 13 will engage one of the caps hereinafter described, and force the same into the neck of the bottle.

A connecting member 17 is secured to the upper ends 18 of the plunger rods 13 and the upper ends 18 of the plunger rods 13 are provided with collar portions 19 which are positioned upon each side of the connecting member 17 thereby fixedly securing the rods to the connecting member. Vertical members 20 are secured at their upper ends to the outer ends of the connecting member 17 and a lever member 21 is pivotally connected to one side of the tank 1 at 22 and is also connected to one side of the side members 20 as at 23. It will be obvious that through the medium of the lever 21 the plunger rods 13 can be readily re-

ciprocated by raising or lowering the lever 21. Brackets 24 are carried by the side of tank 1 and in these brackets 24 work the side members 20 and are thereby held against displacement. The lower ends of the side members 20 are provided with cam or inclined ends 25 which are adapted to engage the cap feeding member 26 as hereinafter described.

Collars 27 are secured to the bottom of the tank 1 and the magazine 28 is held in engagement with the collar by means of the thumb screw 29. The magazine 28 is adapted to carry a number of caps 30 which are held in stack relation and feed down by means of a weight 31 which is placed upon the top of the stack. The magazine 28 is provided upon the bottom thereof with a tongue portion 32 which is formed integral with the magazine device and prevents the caps from falling out through the bottom thereof.

The cap feeding member 26 is supported by means of bracket members 33 which are secured to the bottom of the tank 1, and the brackets 33 carry at their lower ends substantially oblong rack members 34. The rack members 34 are slotted longitudinally, and carry at one end of the slot a coil spring 35 which engages the cap feeding member 26 and normally exerts a forward pressure thereon. Cap engaging pins 37 are carried by the cap feeding member 26 and are adapted to engage the edges of a cap as shown in Fig. 5 and force the same forward so as to engage the neck of the bottle as shown more clearly in Fig. 3 of the drawings.

It will be obvious that when the outer end of the lever 21 is raised upwardly the inclined or cam end 25 of the member 20 will cause the cap feeding member to move backwardly and thereby compress the spring 35 and a cap will immediately drop to the bottom of the magazine and rest upon the tongue portion 32. This operation will also cause the valve member 14 to close the opening 10 and will also cause the valve 15 to withdraw from the aperture 11 and allow the auxiliary tank or receptacle to be emptied and the bottle 6 which is placed below the discharge valve 12 to be filled. When the auxiliary receptacles 9 are emptied the lever 21 can be released and through the force of the springs 35 the cap will be forced over the neck of the bottle and the valve 15 will immediately close the opening 11 and the lower end 16 of the plunger rod 13 will engage the cap and force the same upon the neck of the bottle. The bottles can then be removed and empty ones replaced therefor and the same operation can take place and fill the empty bottles.

In the foregoing description it will be readily obvious that I have provided a simple and efficient means for filling and capping bottles.

What I claim is:—

1. In a device of the class described, the combination of a tank provided with a plurality of outlet openings, discharge spouts communicating with said openings and adapted to discharge liquid therefrom into receptacles, plunger rods adapted to work in said spouts, valve means carried by said plunger rods and adapted to alternately open and close said discharge openings, cap magazines carried by said tank, a link rod connecting all of said plunger rods, means cooperating with said link rod and the said cap magazines for forcing caps over said receptacles when the outlet openings of the tank are closed, said plunger rods adapted to engage said caps for forcing the same upon said receptacles.

2. In a device of the class described, the combination with a tank provided with a plurality of outlet openings, discharge spouts carried by said tank and communicating with said outlet openings, a plurality of plunger rods carried by said tank and working in said discharge spouts, a link member connecting all of said plunger rods, side members engaging said link member, said side members provided with cam or beveled lower ends, cap magazines carried by said tank, cap feeding means carried by said tank, said cap feeding means adapted to normally hold the caps, in said magazines, in an inoperative position, said cap feeding means adapted to be engaged by said cam or inclined lower ends of said side members for forcing the same out of engagement with the caps, said cap feeding means adapted to engage one of said caps in each magazine and force the same forward so as to engage the tops of the bottles when released from said side members and said plunger rods adapted to engage said caps and force the same upon the necks of the bottles or receptacles.

3. In a device of the class described, the combination of magazines adapted to carry a plurality of caps in stacked relation, cap feeding means carried by said tank comprising a bracket member carrying at its lower end a substantially oblong rack member, said rack member provided with a longitudinally extending slot, a coil spring carried within said slot, a cap feeding member adapted to be positioned within said slot of said rack member, and said spring adapted to exert a forward pressure upon said cap feeding member, cap engaging pins carried by said cap feeding member, and adapted to engage the bottle caps and force the same

forward when the cap feeding member is released.

4. In a bottle filling and capping apparatus comprising a tank provided with a plurality of discharge spouts plungers carrying valves working within said discharge spouts, means for operating said plungers carried by said tank, bottle cap magazines carried by said tank, and means carried by said tank and adapted to feed bottle caps over bottles positioned below said discharge spouts, and said plungers adapted to engage said caps for forcing the same upon the bottles.

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

HARRY D. NAUM.

Witnesses:

MICHAEL MCMAHON,

FRANK L. HALL.