(No Model.) 2 Sheets—Sheet 1.

# H. W. SIMMS.

## BOTTLING APPARATUS.

No. 496,141. Patented Apr. 25, 1893.

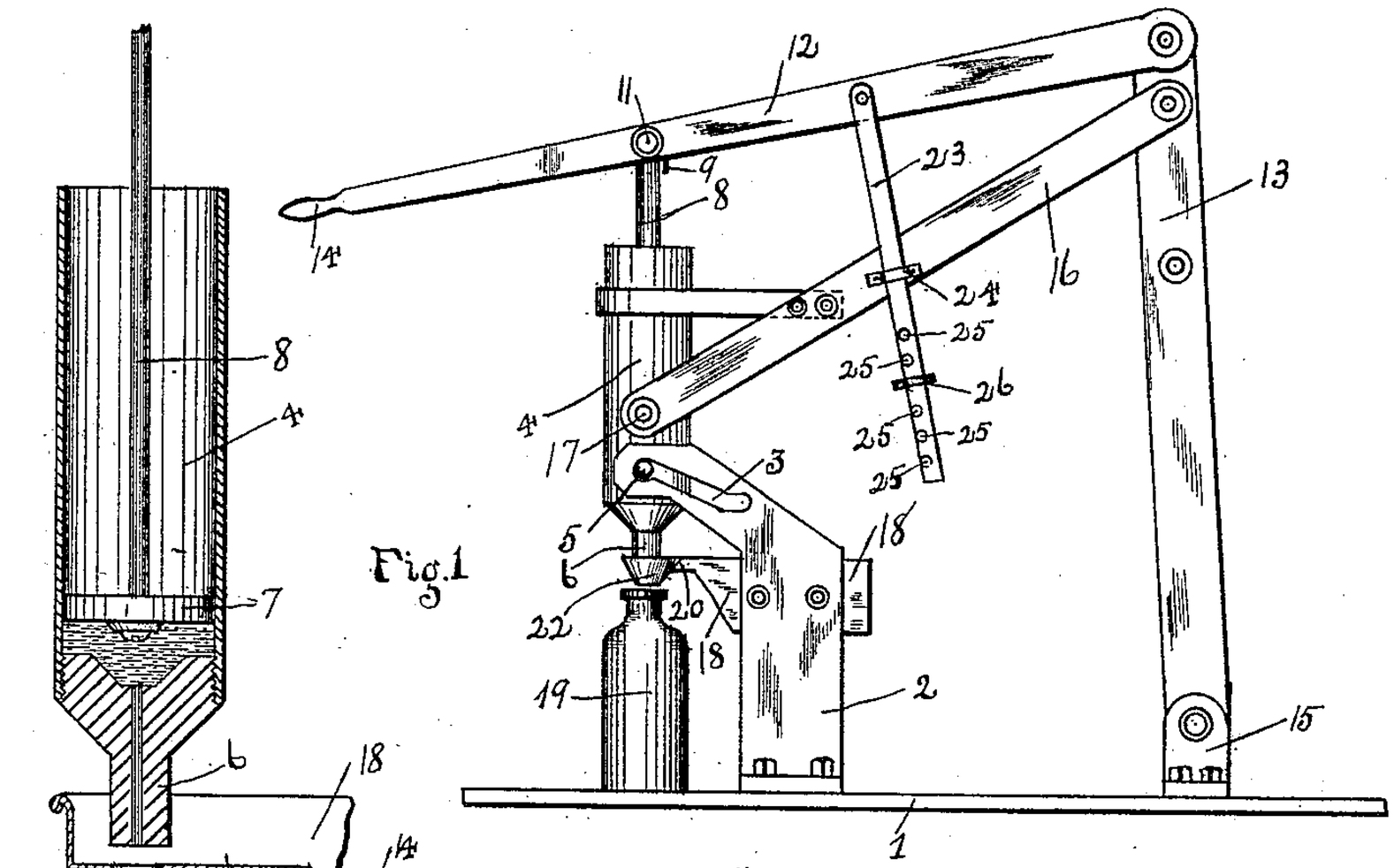


Fig. 1




Fig. 3.




Fig. 2.

Attest:
G. P. Thomas.
H. H. Power

Inventor:
Henry W. Simms.
By Jas. E. Thomas
Atty.

(No Model.) 2 Sheets—Sheet 2.

# H. W. SIMMS.

## BOTTLING APPARATUS.

No. 496,141. Patented Apr. 25, 1893.

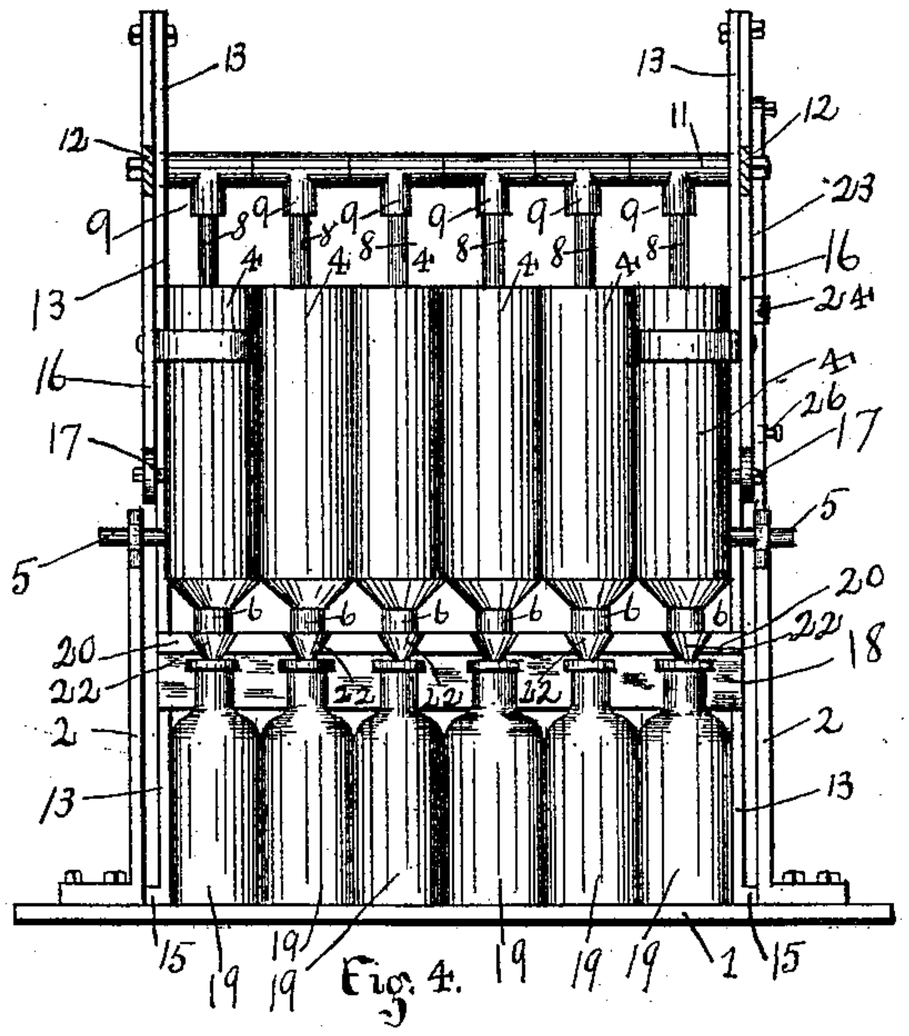


Fig. 4.

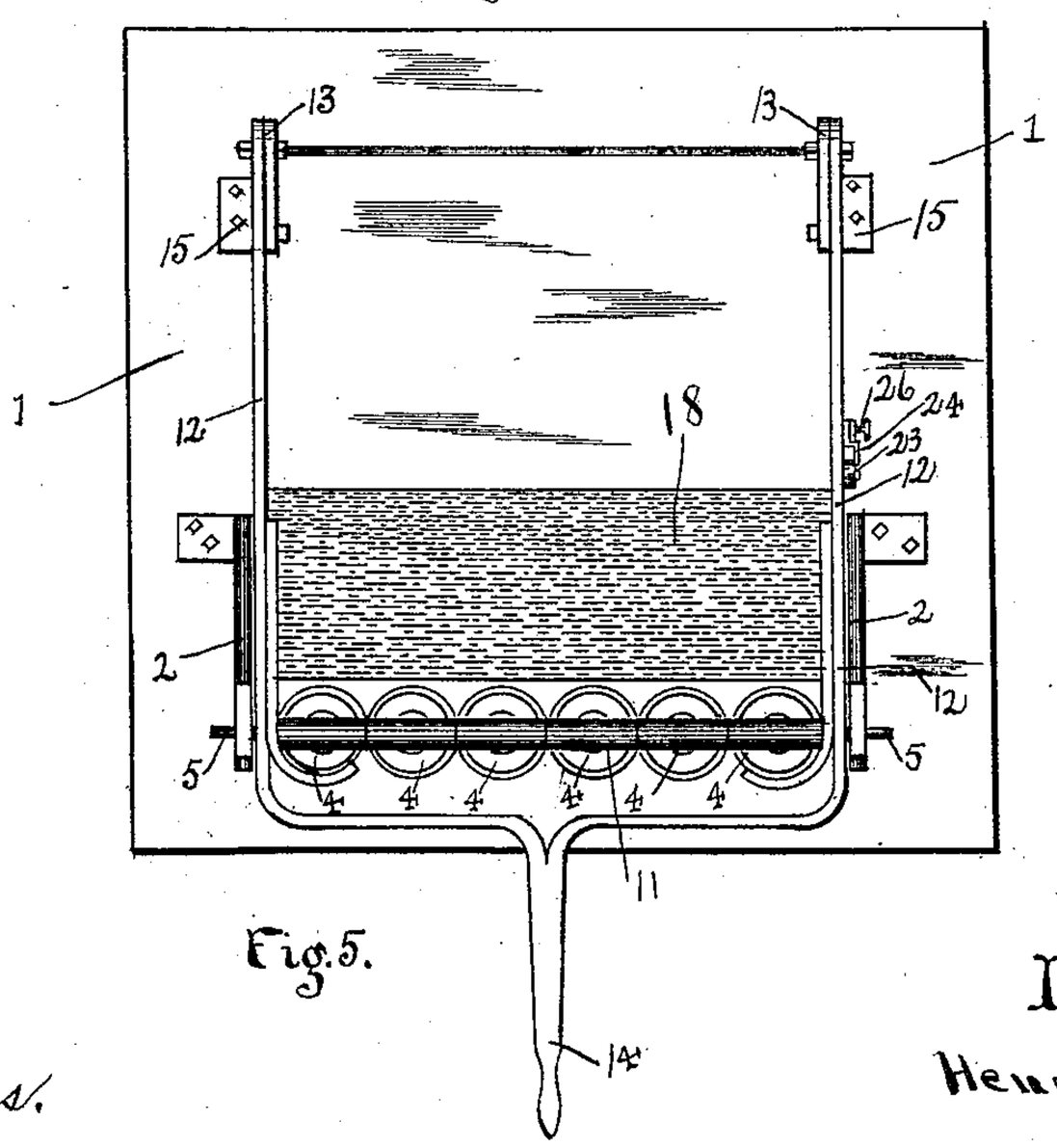


Fig. 5.

Attest:
G. P. Thomas.
W. H. Power.

Inventor:
Henry W. Simms
By Jas E. Thomas
Atty.

# UNITED STATES PATENT OFFICE.

HENRY W. SIMMS, OF BAY CITY, MICHIGAN.

## BOTTLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 496,141, dated April 25, 1893.

Application filed July 2, 1892. Serial No. 438,790. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY W. SIMMS, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Bottling Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in bottle filling machines, and the chief objects of the invention are to provide a means whereby a series of bottles may be filled with a liquid at the same time.

Another object is to provide a machine whereby an exact desired amount of liquid may be placed in a series of bottles whereby the liability of the liquid overflowing the bottles, and otherwise wasting the stock is avoided and the outer surfaces of the bottles are kept free from contact with the liquid.

My invention consists in the combination and arrangement of the parts and in the construction and operation of the same, as I shall hereinafter more fully describe, and which will also be specifically pointed out in the claims of this specification.

The invention is illustrated in the accompanying drawings in which the same figures of reference are used for indicating the same parts throughout the several views.

Figure 1, represents a side view in elevation of my improved apparatus with the parts in position after the bottle is filled. Fig. 2, is the same showing the position of the mechanism when the cylinders or measuring devices are charged for filling the bottles. Fig. 3, is an enlarged vertical central section of one of the cylinders with part of the drip section and tank. Fig. 4, is a front view of Fig. 1, partly sectional. Fig. 5, is a plan view of the same.

1, represents a platform or base, and 2, are upwardly projecting guide pieces secured to the lateral sides of the front portion of the base plate, and these guide pieces are each provided with the horizontally inclined slots 3. Between the guide pieces 2, are located a series of vertically arranged cylinders 4, each end cylinder of the series being provided with a laterally projecting lug 5, which extend into the slots 3, into which they are loosely fitted so as to slide easily to and fro. The lower end of each cylinder is provided with a nozzle 6, of any desired suitable form, and within each cylinder is arranged a piston 7, with a piston rod 8, projecting upwardly therefrom beyond the upper open end of the cylinder. The upper ends of the series of piston rods 8, are passed into the downwardly extending sockets 9, where they are secured by transverse pins, passed through the sockets, and these sockets are pivotally secured to a transverse rod 11, the ends of the rod being passed through the rearwardly extending levers 12, which have their ends pivoted to the upper ends of the vertical supports 13, and have their forward ends extended toward each other in front of the sockets and secured to a handle 14, common to both. The lower ends of the supports 13, are pivoted to lugs 15, projecting upwardly from the base plate 1, and 16, are brace pieces pivoted by their rear ends to the supports 13, and extending forward have their opposite ends secured by pivots 17, or otherwise, to the outer sides of the outer cylinders of the series, for retaining the cylinders in proper vertical position in relation to the pistons and their operating mechanism.

18, is a tank or receptacle for the liquid to be transferred therefrom to the bottles, and this tank is of any convenient size or form, and is supported upon the base plate between the guide pieces 2, with its front edge somewhat in rear of the forward ends of the slots 3, so that a series of bottles 19, may be arranged to stand directly in front of the receptacle, and to the front edge of this tank is secured a forwardly extending drip section 20, provided in its front portion with a series of openings 21, located beneath and arranged to be in proper alignment with the nozzle 6, and beneath these openings are provided a series of short tubular sections 22, which are arranged to stand directly over the open mouths of the bottles 19, and are preferably arranged with a suitable downward taper for properly directing the liquid into the bottles in a suitable manner.

Upon the sides of the levers 12, are pivoted the upper ends of gage pieces 23, and these pieces extending downwardly are passed through a guide 24, through which they move freely and the lower portions of these gage pieces are provided with a series of openings 25, into any desired one of which below the gage pieces is passed a pin 26, which, on the levers being moved upwardly, comes in contact with the guide piece and arrests the movement of the levers.

In practice the liquid to be transferred into bottles, is placed in the tank 18, and the pistons are forced to the bottom of the cylinders 4, by operating the handle 14, downwardly, and the handle 14, is then pushed backward and the lugs 5, then move rearwardly to the rear ends of the slots 3, and carry the cylinders to the rear and downward until the nozzles 6, dip into the liquid; the handle 14, is then raised and the pistons are lifted within the cylinders until the stop pins come in contact with the guides. The handle is then drawn forward and thereby the cylinders are moved forward until the nozzles are directly over the openings 21, and the handle is then operated to move the pistons downwardly to eject the contents of the cylinders through the nozzles 4, and the tubes 22, into the bottles 19, which are previously placed in position beneath the tubes. After the discharge of the contents from the cylinders the handle is again operated to move the cylinders to the rear and the operation is repeated as before, a new series of bottles being placed to receive another discharge from the cylinders. It will be seen that by moving the pins 26, to different openings 25, the movement of the plungers is regulated to allow just the required quantity of fluid to fill one of the bottles, to be drawn into each cylinder, so that when the pistons are moved for ejecting the liquid, only the exact amount to fill the bottle is forced out, and thereby all dripping and overflow are avoided, and the outer surfaces and the mouths of the bottles are kept free from liability of being soiled and wet, and all waste of the liquid is avoided. It will also be noticed however that these gage pieces can be differently arranged and located, and may also be modified in form and attain the same result as it is only necessary to provide some means of stopping the upward movement of the pistons at any desired point, in order to regulate the exact quantity of liquid necessary to fill the bottle, and therefore I do not limit my invention entirely to the precise arrangement and construction of these devices.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a bottle filling apparatus, the combination of the base provided with upwardly projecting guide pieces 2, having slots 3, with a series of vertical cylinders arranged between the guide pieces and carrying pistons and piston rods, and provided on their lateral sides with lugs extending into said slots 3, and with nozzles 6, on their lower ends, means for moving the pistons within the cylinders and devices for actuating the lugs to and fro in said slots, substantially as and for the purpose set forth.

2. In a bottle filling machine, the combination with the base plate, with the upwardly projecting guide pieces 2, secured to the base plate and provided with horizontally inclined slots 3, the series of vertical cylinders arranged between the guide pieces and provided on their lateral sides with lugs 5, projecting into said slots, and with nozzles 6, on their lower ends, the pistons within the cylinders and provided with piston rods projecting beyond the upper ends of the cylinders, a transverse rod 11, pivotally secured to the upper ends of said piston rods, the levers 12, carrying said rod 11, by their middle portions, the support 13, pivotally secured to the rear ends of the levers by one end and to the base plate by their opposite ends, and the handle 14, secured to the front ends of the levers substantially as described.

3. In a bottle filling apparatus the combination of the base provided with upwardly projecting guide pieces 2, having slots 3, a series of vertical cylinders arranged between the guide pieces and carrying pistons and piston rods, and provided on their lateral sides with lugs projecting into said slots 3, and with nozzles 6, on their lower ends, devices for moving the lugs to and fro within the slots, and for actuating the pistons as described, with the tank 18, for containing the liquid and provided on its front edge with the drip section 20, having openings 21, and drip tubes 22, substantially as described.

4. In a bottling apparatus the combination of the series of cylinders 4, provided with nozzles 6, and carrying pistons 7, and piston rods 8, and provided on their lateral sides with lugs 5, with the guide pieces 2, on the lateral sides of said series and provided with inclined slots 3, for carrying the lugs 5, a tank 18, between the guide pieces and arranged to receive the said nozzles 6, when the lugs are within the lower rear portion of the slots, and provided on its front edge with a drip section 20, having openings 21, in alignment with said nozzles when the lugs are resting in the front ends of said slots, and means for moving the lugs to and fro in the slots and for actuating the pistons, substantially as set forth.

5. In a bottling apparatus the combination of the base provided with upwardly projecting guide pieces 2, having the slots 3, the series of cylinders 4, provided with nozzles 6, and carrying pistons 7, and piston rods 8, and having on the lateral sides of the series the lugs 5, projecting into said slots for supporting the cylinders, the transverse rod 11, pivotally secured to the upper ends of said piston rods, the levers 12, having their middle

portions secured to the lateral ends of said rod, and provided on their front ends with a handle, the supports 13, pivoted to the rear ends of the levers by one end and with their opposite ends pivotally secured to the base, and the gage pieces 23, pivoted to the levers 12, and extending through the permanently fixed guide pieces 24, and the pins 26, passed through the gage pieces, substantially as set forth.

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

HENRY W. SIMMS.

Witnesses:
JAS. E. THOMAS,
T. FLUES.