

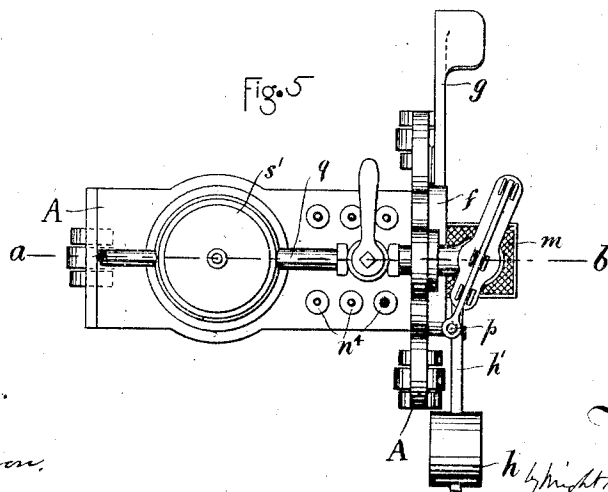
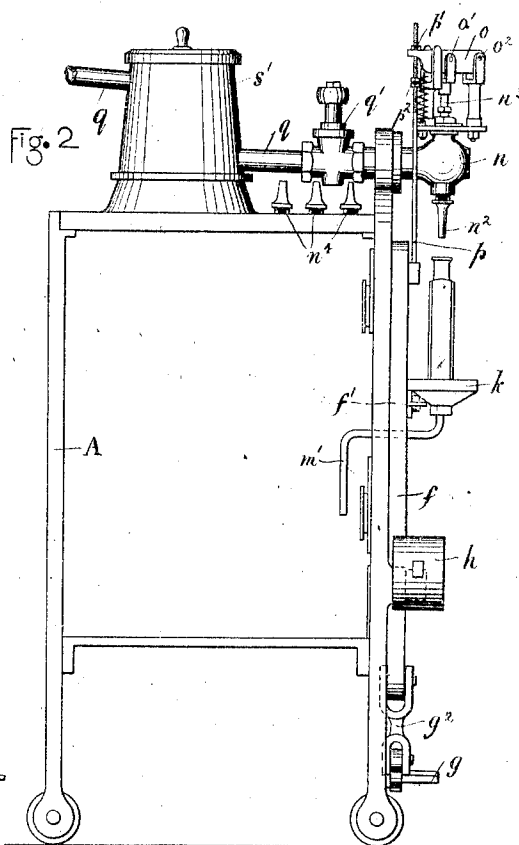
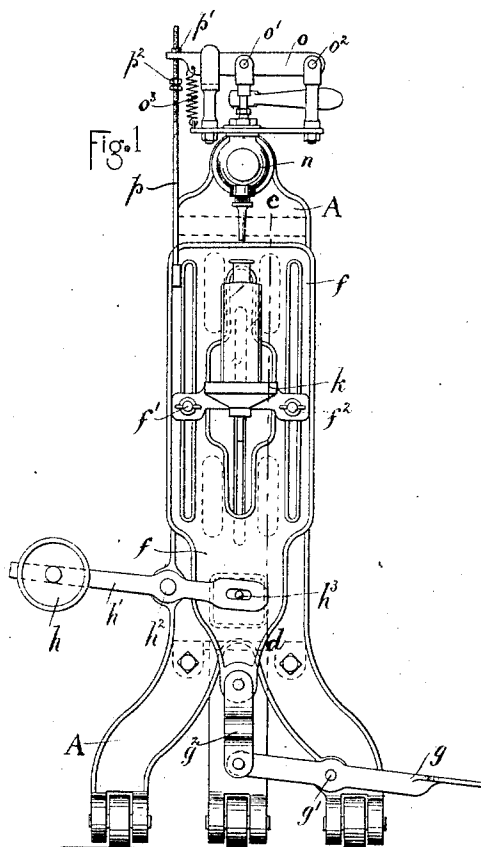
(No Model.)

4 Sheets—Sheet 1.

T. ROBERTS.
BOTTLE FILLING MACHINE.

No. 586,747.

Patented July 20, 1897.



Witnesses
A. D. Harrison,
P. W. Dwyer.

Inventor
T. Roberts
by *Wright & Brown*
Attorneys

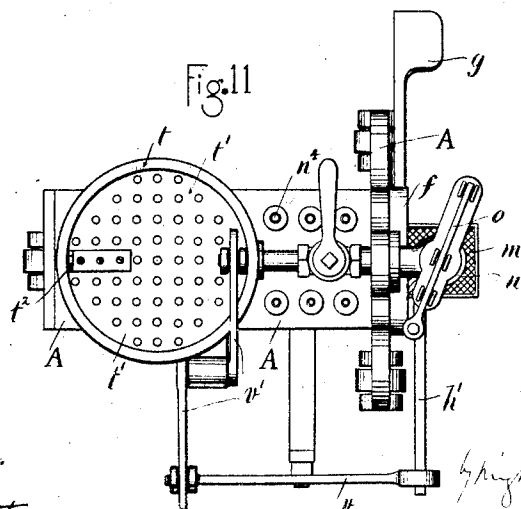
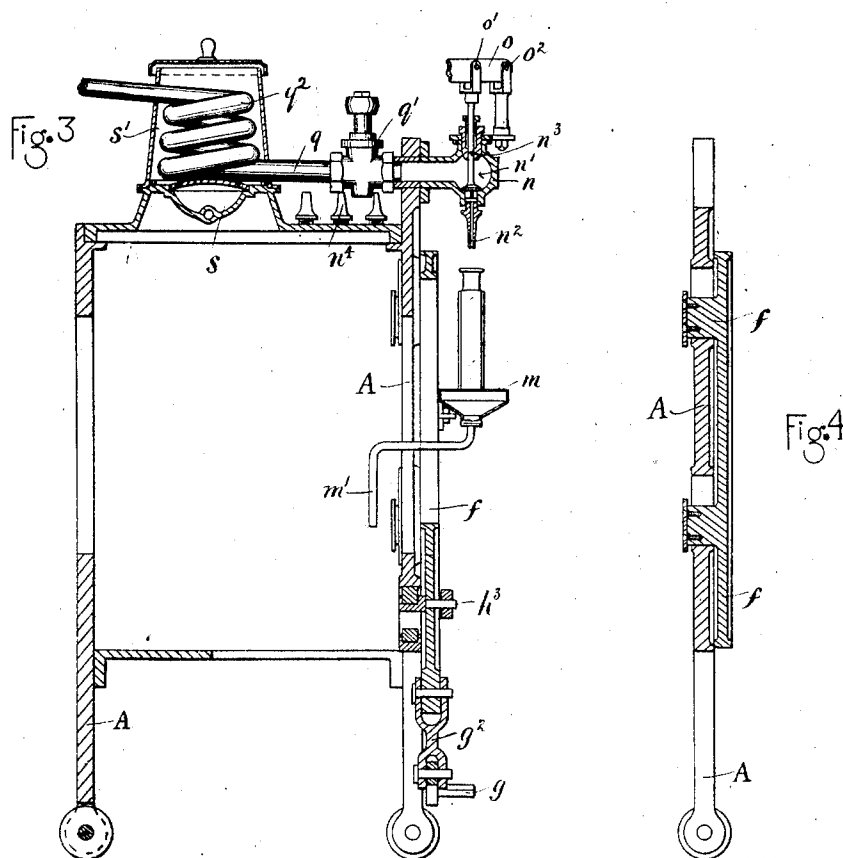
(No Model.)

4 Sheets—Sheet 2.

T. ROBERTS.
BOTTLE FILLING MACHINE.

No. 586,747.

Patented July 20, 1897.



Witnesses
A. D. Harrison.
P. W. Pyzdek.

Inventor
T. Roberts
by *Wright, Brown & Lundy*
Attorneys

(No Model.)

4 Sheets—Sheet 3.

T. ROBERTS.
BOTTLE FILLING MACHINE.

No. 586,747.

Patented July 20, 1897.

Fig. 6

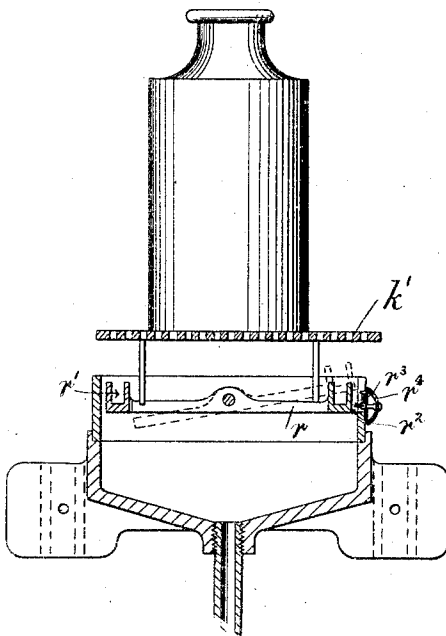


Fig. 7

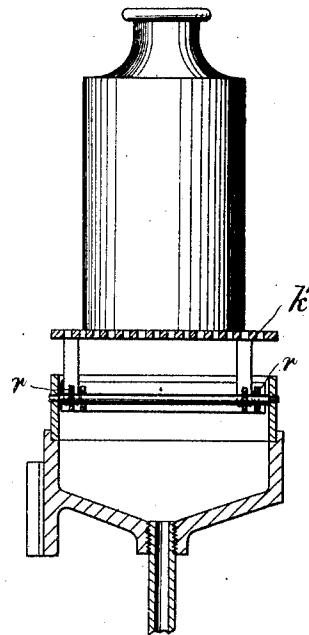
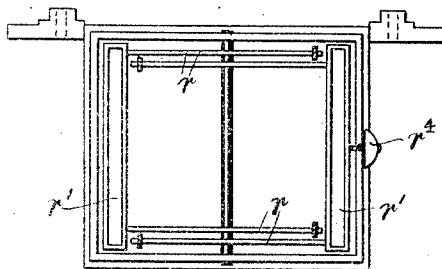


Fig. 8



Witnesses
A. D. Harrison,
P. W. Pappas.

Inventor
T. Roberts
by *Wright Brown & Quincy*
Attorneys

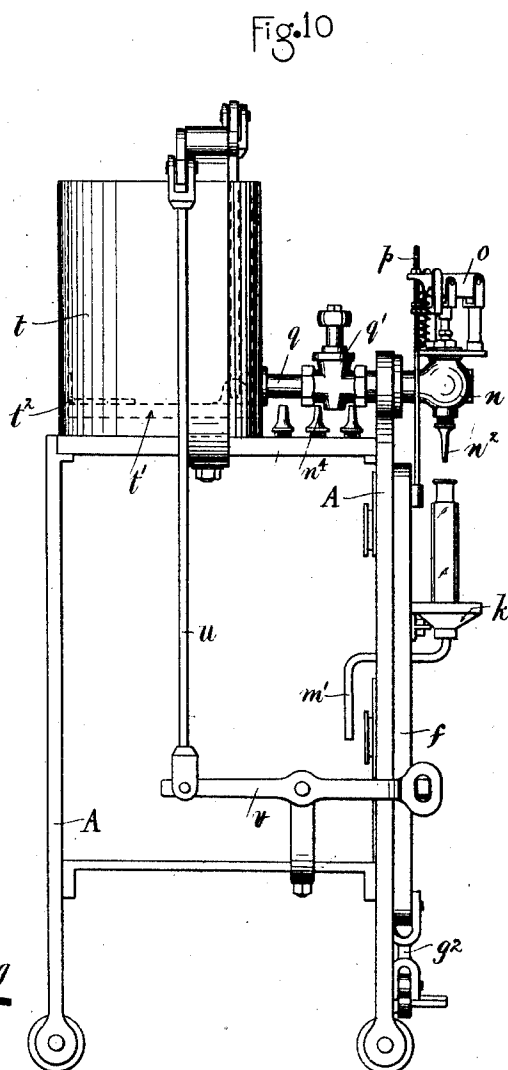
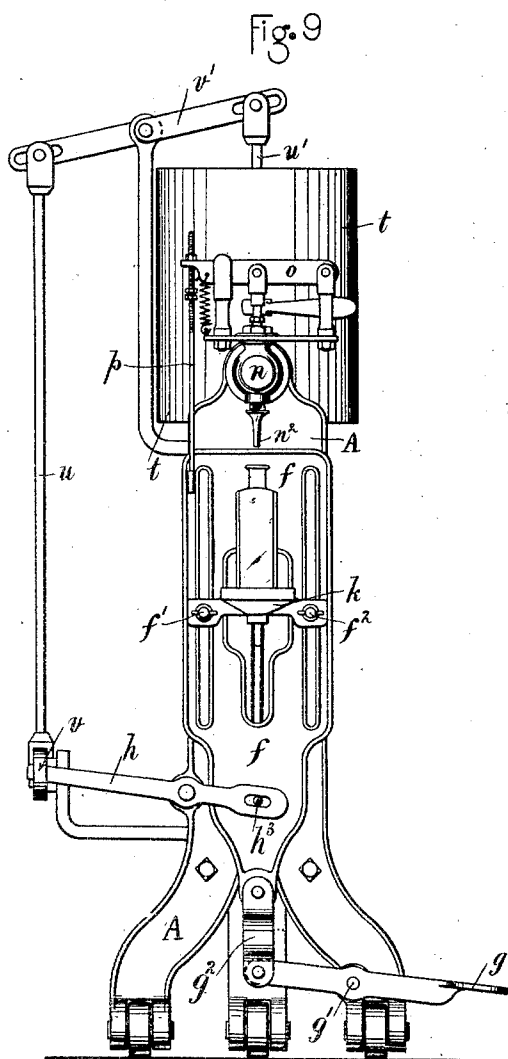
(No Model.)

4 Sheets—Sheet 4

T. ROBERTS.
BOTTLE FILLING MACHINE.

No. 586,747.

Patented July 20, 1897.



Witnesses
A. S. Harrison.
P. W. Fitzgerald

Inventor
T. Roberts
by Knight, Brown & Dumbley
Attorneys

UNITED STATES PATENT OFFICE.

THOMAS ROBERTS, OF BOLTON, ENGLAND.

BOTTLE-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 586,747, dated July 20, 1897.

Application filed October 7, 1896. Serial No. 608,108. (No model.) Patented in England June 23, 1894, No. 12,191.

To all whom it may concern:

Be it known that I, THOMAS ROBERTS, a subject of the Queen of Great Britain, residing at Gibbon Street, Bolton, in the county of Lancaster, England, have invented a new and useful Bottle-Filling Machine, (for which I have obtained Letters Patent in England, bearing date June 23, 1894, and numbered 12,191,) of which the following is a specification.

This invention relates to improved mechanism which is designed with the view of providing suitable means for filling bottles with liquids, as castor-oil, glycerin, medicinal compounds, sauce, or other liquids which are not bottled under pressure; and the object of the invention is to produce machinery that may be regulated so that it may be operated entirely by the feet of the user, whose hands are thus at liberty to supply empty bottles thereto and to take them away when they are filled; the said machinery being further arranged to operate with equal advantage on liquids more or less viscid as on those of greater fluidity. To attain this object, I produce mechanism illustrated in the accompanying sheets of drawings, in which—

Figures 1 and 2 are front and side elevations, respectively, of a complete machine. Fig. 3 is a sectional elevation on line *a b* of Fig. 5. Fig. 4 is a sectional elevation of a portion of the machine on line *c d* of Fig. 1. Fig. 5 is a view of the machine as seen from above. Figs. 6 and 7 are part sectional elevations showing modifications of bearings for supporting bottles to be filled. Fig. 8 is a view of parts shown by Fig. 6, as seen from above. Figs. 9, 10, and 11 are similar views to Figs. 1, 2, and 5, respectively, but are illustrative of a modification hereinafter described.

A indicates the framework of the machine. On the front of this framework is mounted the sliding part *f*, which is arranged so that it may be moved vertically on the operator placing his foot on the pedal *g*, pivoted at *g'* and connected thereto by the link *g''*, the operator being assisted in the moving of this sliding part *f* by means of the counterbalancing-weight *h*, secured to the lever *h'*, which is pivoted to the framework A at *h''* and pivotally secured to the sliding part *f* by the pin *h'''*. On the front or outer surface of

the sliding part *f* is secured a table or stand *k*, upon which the bottles are placed and rest while they are being filled. This stand *k* is secured by adjustable bolts *f'* *f''* in the sliding part *f*, so that its position at a higher or lower distance from the top of said plate may be regulated to meet the requirements of smaller or larger bottles that are to be filled, as will be well understood. This table *k* is provided with a perforated drip-tray *m* to collect any of the liquid which may run over or be spilled, so that by a waste-pipe *m'*, passing through to the back of the framework A, such liquid as is caught by the said drip-tray *m* may be conducted thereby to any suitable receptacle.

At the upper part of the framework A, I arrange an appropriately-formed delivery or cut-off valve *n*, through which the liquid to be bottled has to pass. The valve *n* I preferably construct with a chamber *n'* and a discharge-nozzle *n''* in the bottom, so that the stem or spindle *n'''* of the valve *n* may pass through the top, so that it may be operated by the lever *o*, to which it is attached at *o'*, and which lever is pivoted at *o''*. The movements of this lever *o* are obtained either by a separate pedal arrangement or, as herein shown, by the rod *p* coupling same to the sliding part *f*, such rod *p* carrying adjustable nuts *p'* and *p''*, the said nuts *p''* being preferably adjusted so that the vertical movement of the sliding part *f* is nearly completed before these nuts come in contact with the lever *o* to raise it, by which means the entrance or approach of the nozzle *n''* into or near the bottle being filled is secured before the valve is operated to allow the liquid to flow there-through, while on the downward movement of the sliding part *f* the valve is first shut through the action of the spring *o'''*, by which means the bottle may not be removed until the flow of liquid is absolutely shut off.

The discharge-nozzle *n''* is screwed into or otherwise removably attached to the valve-chamber *n'*, so that it may readily be displaced for the fixing of one of larger or smaller size, as may be required for use in connection with small or large bottles or for meeting the requirements of the fluidity of the liquid being bottled. A series of these nozzles *n''* may be carried by the framework of

the machine, as shown at n^1 , to enable these interchanges to be carried out.

The supply pipe or tube g for conducting the liquid to be filled into the bottles from the receptacle where it is contained in bulk is connected to the delivery cut-off valve n and is provided with a stop-cock g' , which may be used for entirely shutting off the flow of the liquid whenever desired.

The modified form of table k' for supporting the bottle shown by Figs. 6, 7, and 8 is adapted for filling opaque bottles in which the height of the liquid cannot be observed as it is being filled in. This table k' is mounted upon pivoted levers r , which carry at one end boxes r' , into which weights may be placed in order to adjust or counterbalance the table k' and anything placed thereon, so that when the desired quantity has been filled into the bottles on this table k' the weight thereof is regulated to exceed the weights in the boxes r' , by which means the other ends of the levers are depressed and moved so that a projection r^2 strikes the hammer r^3 of the alarm-bell n^4 . Thus the operator is warned or informed at the proper time to enable him to release the pedal and close the valve and to stop the supply of liquid to the bottle.

When the mechanism is intended for bottling heavy oils or other liquids which are rendered less dense by heat, the supply-pipe g is formed with a coil q^2 , under which a gas-burner s or a jet or lamp (or this might be displaced by a lamp or other heater) can be placed and covered with an asbestos-lined cover s' , by which means the oils or other liquids are heated to facilitate their flow through the valve n .

When liquids containing substances that require agitating, so that the ingredients are more thoroughly mixed together, are to be bottled, the coiled part q' of the supply-pipe is displaced by a receptacle t , in which a perforated piston or agitator t' is hinged at t^2 , this being operated by being coupled to the slide f , through the medium of the rods $u u'$ and levers $t v'$ and h' , so that at each movement of said slide this agitator is operated to effect the desired results.

In operating the machine the bottle is placed upon the table k . The pedal g is actuated by the foot, raising the sliding part f with the

bottle until the nozzle n^2 of the delivery-valve n enters or nearly approaches the mouth of the bottle. This upward movement of the sliding part f opens the valve n through the medium of the rod p , lever o , and spindle n^3 , as before described, and allows the liquid to flow into the bottle, which, when the bottle is full, the pedal g is released and the sliding part f and table k fall, thus shutting the valve and lowering said bottle, which may then be removed and an empty one put in its place.

Such being the nature and object of my invention,

What I claim is—

1. In mechanism for filling bottles the combination of a vertically-moving slide, pedal-and-lever mechanism for operating said slide, an adjustable table for supporting the bottle to be filled secured to said slide, a cut-off valve for regulating the flow of liquid, the lever o connected with the stem of the valve, and the rod p connecting the slide with said lever and having adjustable nuts $p' p^2$ to operate on opposite sides of one end of the lever, substantially as herein specified.

2. In mechanism for filling bottles, the combination of a vertically-movable slide, pedal-and-lever mechanism for operating said slide, a table for supporting the bottle to be filled and adjustably connected with the slide, a supply-nozzle, a valve for controlling the flow through the nozzle, the lever o connected with the stem of the valve, a spring o^3 for moving said lever downward, and the rod p connecting the slide with said lever and having the adjustable nuts $p' p^2$ to operate on opposite sides of the lever, substantially as described.

3. In mechanism for filling bottles, the combination of a vertically-moving slide, pedal-and-lever mechanism for operating said slide, an adjustable table supporting the bottle to be filled attached thereto, a cut-off valve for regulating the flow of said liquid, means for operating said cut-off valve and means for receiving and agitating the liquid to be filled into said bottles the liquid-agitator being connected with said slide.

THOMAS ROBERTS.

Witnesses:

JOHN WHITEHEAD,
FRED BENTLEY.