

G. H. L. PARSONS.

DEVICE FOR FILLING BOTTLES OR OTHER RECEPTACLES WITH LIQUIDS.

APPLICATION FILED AUG. 16, 1910.

1,052,748.

Patented Feb. 11, 1913.

3 SHEETS-SHEET 1.

Fig. 3

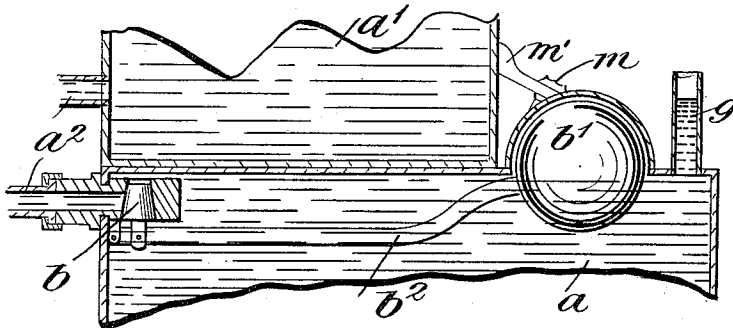
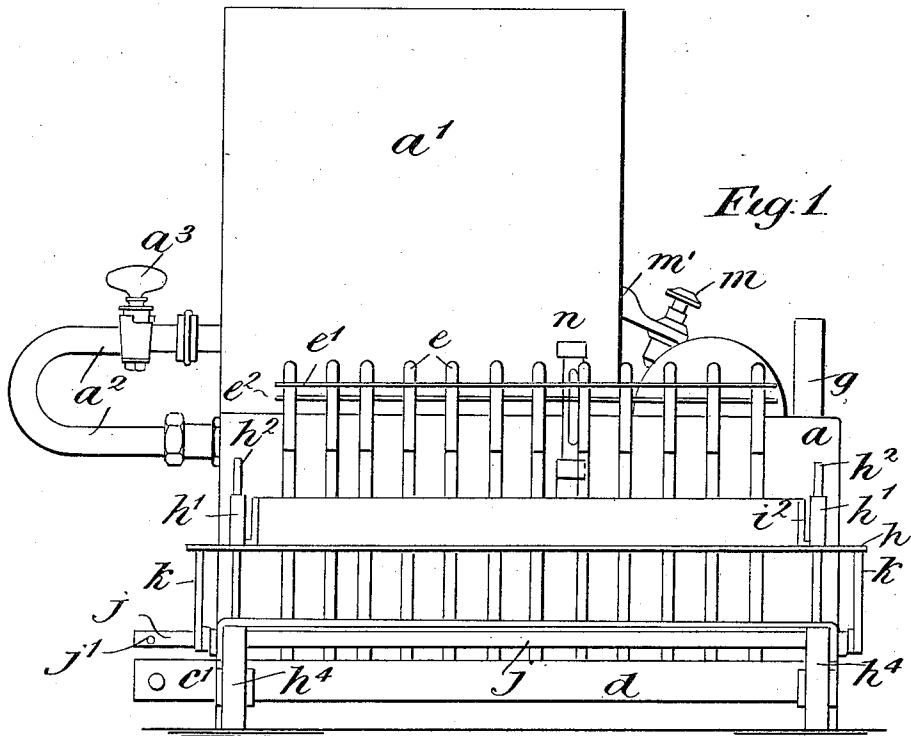


Fig. 1



Witnesses:

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Lustar Drews

Inventor;

George H. L. Parsons,

By his Attorney, F. H. Richards

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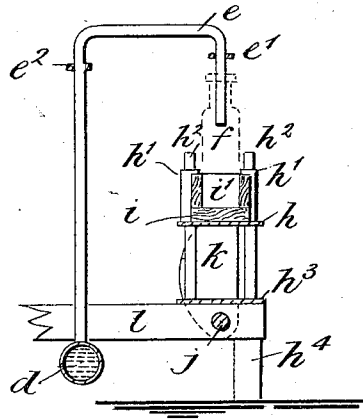


Fig. 5.

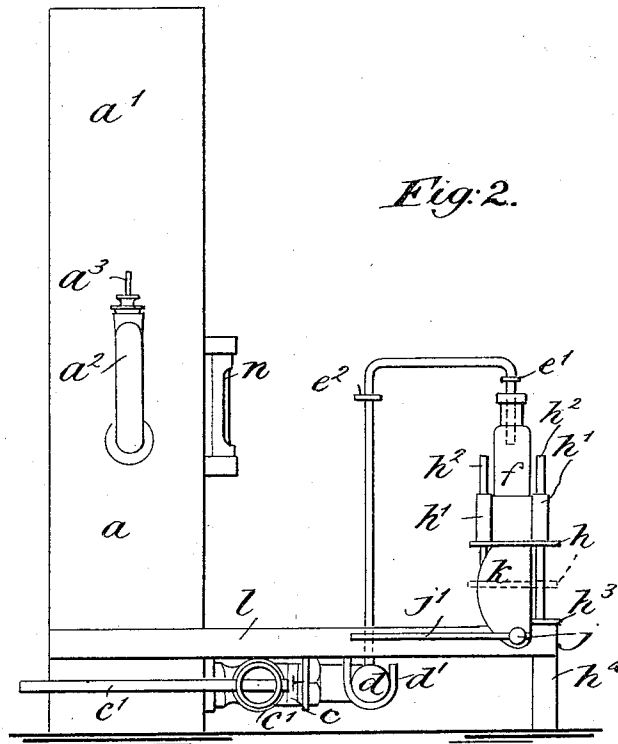


Fig. 2.

Witnesses:

H. D. Penney
Gustav Drews

Inventor:

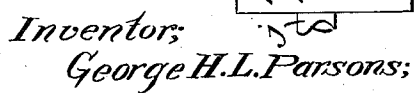
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3 SHEETS—SHEET 3.



By his Attorney, *J. H. Richard.*

UNITED STATES PATENT OFFICE.

GEORGE HENRY LEWIS PARSONS, OF LONDON, ENGLAND.

DEVICE FOR FILLING BOTTLES OR OTHER RECEPTACLES WITH LIQUIDS.

1,052,748.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed August 16, 1910. Serial No. 577,408.

To all whom it may concern:

Be it known that I, GEORGE HENRY LEWIS PARSONS, a subject of the King of Great Britain, residing in London, England, have
5 invented certain new and useful Improvements in Devices for Filling Bottles or other Receptacles with Liquids, of which the following is a specification.

This invention relates to an improved device for filling bottles or other receptacles with liquids, and it has for its object to provide a simple and efficient device for the purpose specified which may be employed
10 for the said filling of the said bottles or receptacles to a predetermined distance of the mouth or opening irrespective of the diameter or thickness of the glass or other material of which the bottle is formed, and of the fact that the bottles may already have
15 been wholly or partly filled. A device constructed in accordance with the present invention moreover provides for the automatic withdrawal of any surplus liquid should the receptacles from any cause receive more than
20 the desired quantity.

The invention consists essentially in the combination with a source of supply of a nozzle or a number of nozzles or tubes designed to supply liquid to the receptacles to
30 be filled, the arrangement of the said supply and the nozzles being such that advantage may be taken of the fact that fluids rise to the same level throughout a system of communicating vessels. The filling nozzles are
35 moreover arranged to act as siphons so that although they are of necessity at one portion of their length higher than the level to which it is desired that the bottles shall be filled, they remain full when the flow of
40 liquid is stopped so that the flow commences immediately the communication with the supply is reestablished.

In order that the invention may be the better understood, drawings are appended
45 in which:—

Figure 1. is a front elevation of a simple form of apparatus embodying the present invention. Fig. 2. is an end view. Fig. 3. is a section showing the arrangement of the
50 supply tank and the valve regulating the flow of liquid thereto. Fig. 4. is a plan to an enlarged scale. Fig. 5. is a sectional view

showing one of the filling nozzles and the support for the said bottles.

Referring to the accompanying drawings 55 a indicates a closed supply tank which is kept filled with liquid from a suitable source such for instance as a tank a^1 mounted thereon and which may be readily filled from time to time as occasion requires. A
60 communication is established between the tanks by means of the pipe a^2 , and the quantity of liquid passing through the pipe may be controlled by means of a valve a^3 . The admission of the liquid to the tank a is controlled by means of a valve b which is operated by means of a ball float b^1 attached to a lever b^2 connected at one end to the plug
65 of the aforesaid valve b . The tank a is kept full of liquid and in order to permit 70 of the efficient action of the valve, I may provide a dome in the top of the said tank a adapted to receive the float. The top of the tank a is level with the level which it is desired to secure within the receptacles to be
75 filled, and the liquid passes from said tank to the vessels through the valve c communicating with the lower part of the tank a and operated to control the supply by means of
80 the handle c^1 secured to the plug of the said valve. The valve c upon the opposite side is in communication with a tube d with which communicate a number of tubes e
85 held together by means of the plates e^1 , e^2 and which are bent upward and over as shown in Figs. 2 and 5, and which tubes form the filling nozzles through which the liquid passes to the bottles f shown in full
90 in Fig. 2. and in dotted lines in Fig. 5. The lower ends of the nozzles dip well into the bottles and the upper horizontal portion of the tubes e are well above the level of the liquid in the tank a . Secured to the top of the tank a is an open tube g , the area and height of which are such that the tube when
95 filled to a suitable height will contain sufficient liquid to fill such portions of the tubes e as are above the level of the liquid in the tank a . The purpose of this arrangement is to enable the tubes e to be completely filled
100 when apparatus is first used, so that the said tubes, when once filled, will act as siphons, the liquid continuing to flow into the bottles so long as the tank a remains full of liquid.

Moreover by this means as the tubes are always full of liquid, it will commence to flow immediately the communication with tank *a* is opened through the valve *c* aforesaid.

In order that the bottles may be conveniently presented to the filling nozzles and readily removed when full, I provide a support *h* upon which may be placed a box-like receptacle *i* divided by partitions *i*¹ into a number of chambers each adapted to contain one bottle. The correct positioning of the bottles with regard to the filling nozzles may thus be insured. Stops *i*², *i*² are provided to insure the correct positioning of the receptacle *i*. In order to raise and lower the support *h* for the receptacle *i*, the said support is provided with tubular guides *h*¹ through which pass the vertical pins *h*² secured at their lower ends to the plate *h*³ supported at its ends by the legs *h*⁴.

j indicates a spindle disposed beneath the plate *h*³ and provided at each end with cams *k*. The ends of support *h* rest upon the cams, and the said cams are of such outline that when the spindle *j* is rotated in one direction, the support *h* is lifted and the bottles are raised so that the nozzles enter therein as shown. To facilitate the rotation of spindle *j*, one end thereof is extended and a lever *j*¹ is secured thereto. The spindle is supported at each end by the turned down portions of plate *h*³ to which is also secured the ends of the side bars *l* which in addition to connecting the bottle support with the tanks, also serves to support the ends of the tube *d* by means of the stirrup *d*¹ connected to the said side bars. The valve *b* aforesaid does not permit of the passage of any more liquid when the tank *a* is filled, and in order to secure the filling of the tube *g* so as to provide for the filling of the upper ends of tubes *d* in the manner before described, I provide a valve *m* which controls a communication *m*¹ between the main tank *a*¹ and the tank *a*. By means of this valve it is possible to admit a further supply of liquid after the tank *a* is filled so that the aforesaid tube *g* is filled or partly filled. In use the two tanks *a* *a*¹ are first filled, the communication with the filling nozzles being closed. The valve *m* is then opened and a further supply of liquid is admitted to fill, or partly fill, the tube *g*. The receptacle containing the bottles is next placed upon the support *h* and the said support raised to bring the bottles under the nozzles. When this has been accomplished, the valve *c* is opened and the tube *e* filling up the liquid commences to flow into the bottles which are filled until the liquid reaches the level of the top of tank *a*. As the tank *a* is kept constantly filled, it is obvious that so long as there is any liquid in the main tank *a*¹ the filling of the bottles may be proceeded with.

When the bottles are filled the valve *c* is closed when the bottles can be removed and a fresh batch substituted. A gage glass *n* may be provided to enable the height of the contents of the lower tank to be readily ascertained.

Should the bottles from any cause not be raised to the desired level, as for instance through the carelessness or inattention of the operator when lifting the bottle carrier into its final position, the said bottles will receive a greater quantity of liquid than that which it is desired they shall contain. As soon however as the bottles are raised into the proper position, the surplus liquid, the level of which is higher than that of the main body of liquid within the tank *a*, will flow back through the tubes *e* into the said tank *a* and the bottles will contain only the desired quantity. Thus for example if one or more bottles containing a greater quantity than the amount of liquid required be placed in the tray together with a number of empty bottles and presented to the filling nozzles, they will not overflow, but on the contrary the extra liquid would be withdrawn during the time the other bottles are filling. Thus when all the bottles are filled to the proper height, they will not overflow even if left unattended. Obviously before the bottles can be removed, the valve controlling the supply to the nozzles must be closed. The cut off of the supply to the tubes *e* may be effected if desired by a suitable arrangement operated upon turning the lever for the raising and lowering the bottle support.

Obviously the capacity, arrangement and construction of a device embodying the invention is not limited to that herein described and illustrated by the appended drawings which as aforesaid is only given by way of illustration.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

A bottle filling apparatus comprising a supply reservoir, a closed supply tank, a pipe connecting the reservoir with the tank, a cock in such pipe, a pipe extending up from the top of the said tank with the upper end open, a valve at the admission from the said pipe into the tank, a float arranged to control the latter valve to maintain the tank filled with the water at a certain predetermined level in the said open pipe, a filling device comprising a support for bottles, an outlet pipe for the tank, a hand controlled valve for the outlet pipe, a set of siphon tubes connecting with the outlet pipe beyond the valve, said siphon pipes extending upward above the top of said tank and having depending end portions arranged to enter a series of bottles on the said support, where-

by the water from the tank upon said hand valve being opened will pass through the siphons into the bottles and fill the bottles at its said open end pipe, and a second
5 pipe connecting the reservoir with the tank with a valve in said pipe.

In witness whereof I have hereunto set

my hand in the presence of the undersigned witnesses.

GEORGE HENRY LEWIS PARSONS.

Witnesses:

NORMAN PARSONS,

HAROLD E. S. PARSONS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
