

P. PALM.

SODA WATER BOTTLE FILLER AND SIRUP MEASURE COMBINED.

No. 360,901.

Patented Apr. 12, 1887.

Fig. 1.

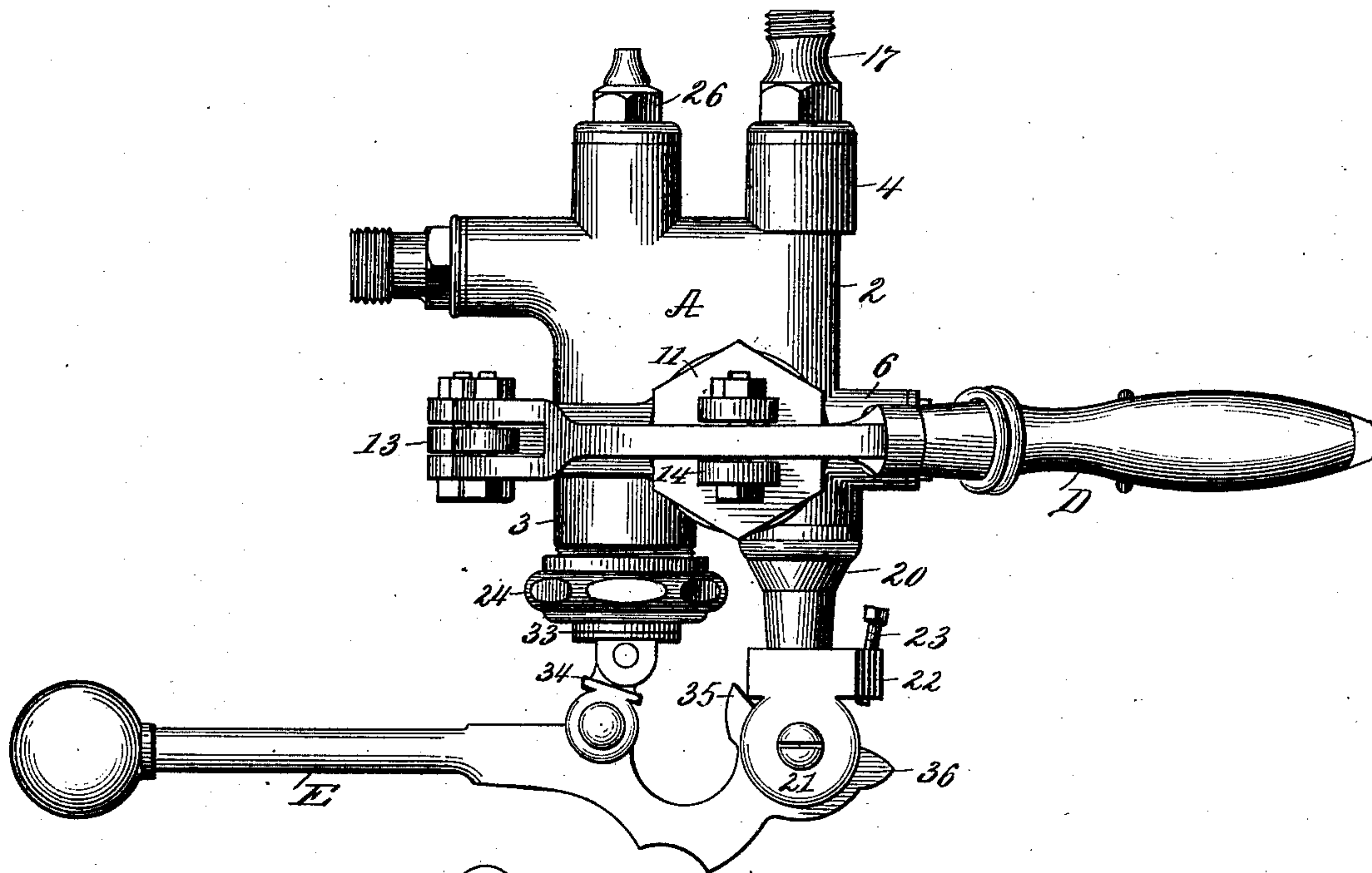
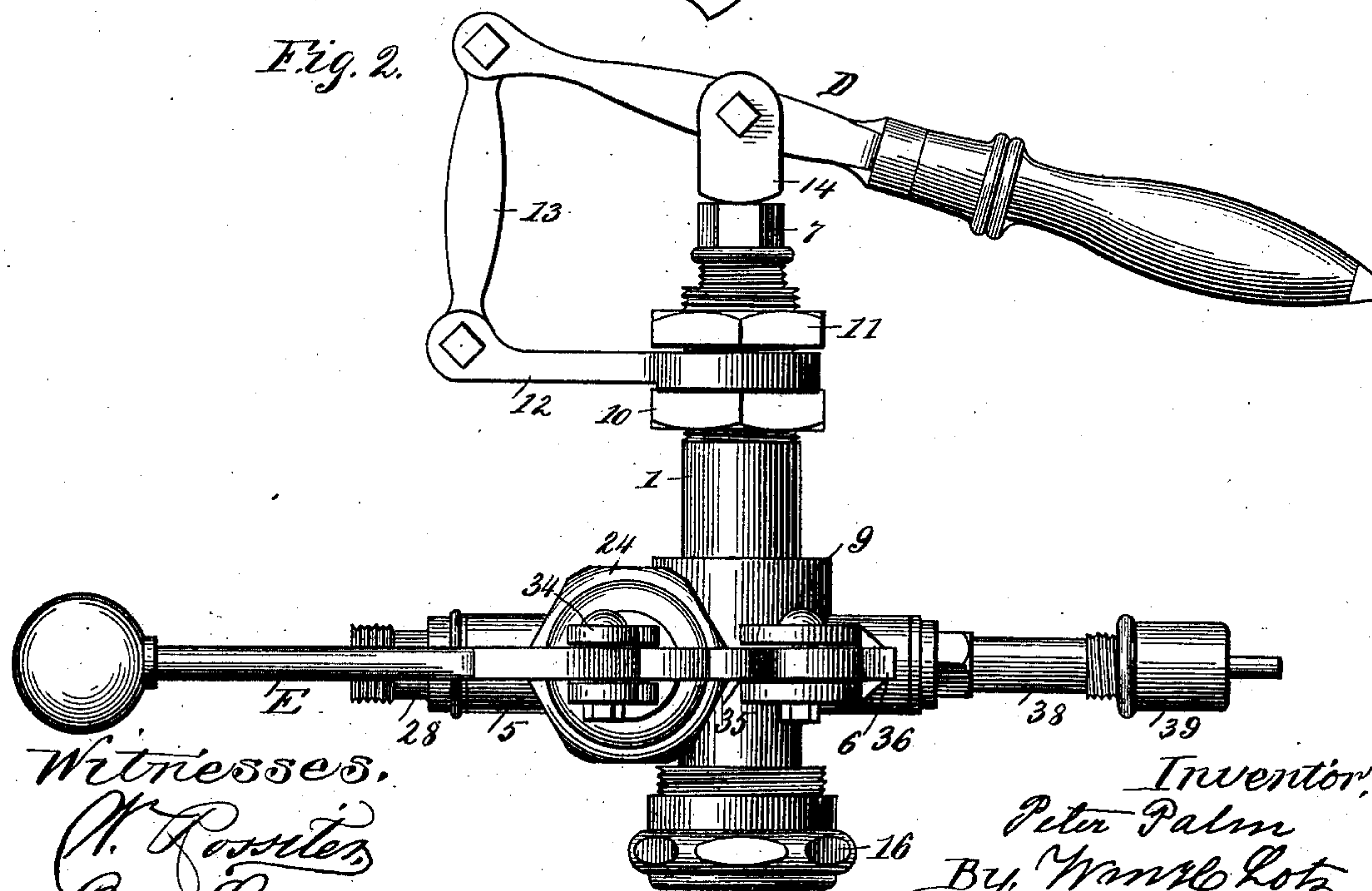


Fig. 2.



Witnesses.

N. Rossiter
Otto Lubbert

Inventor,

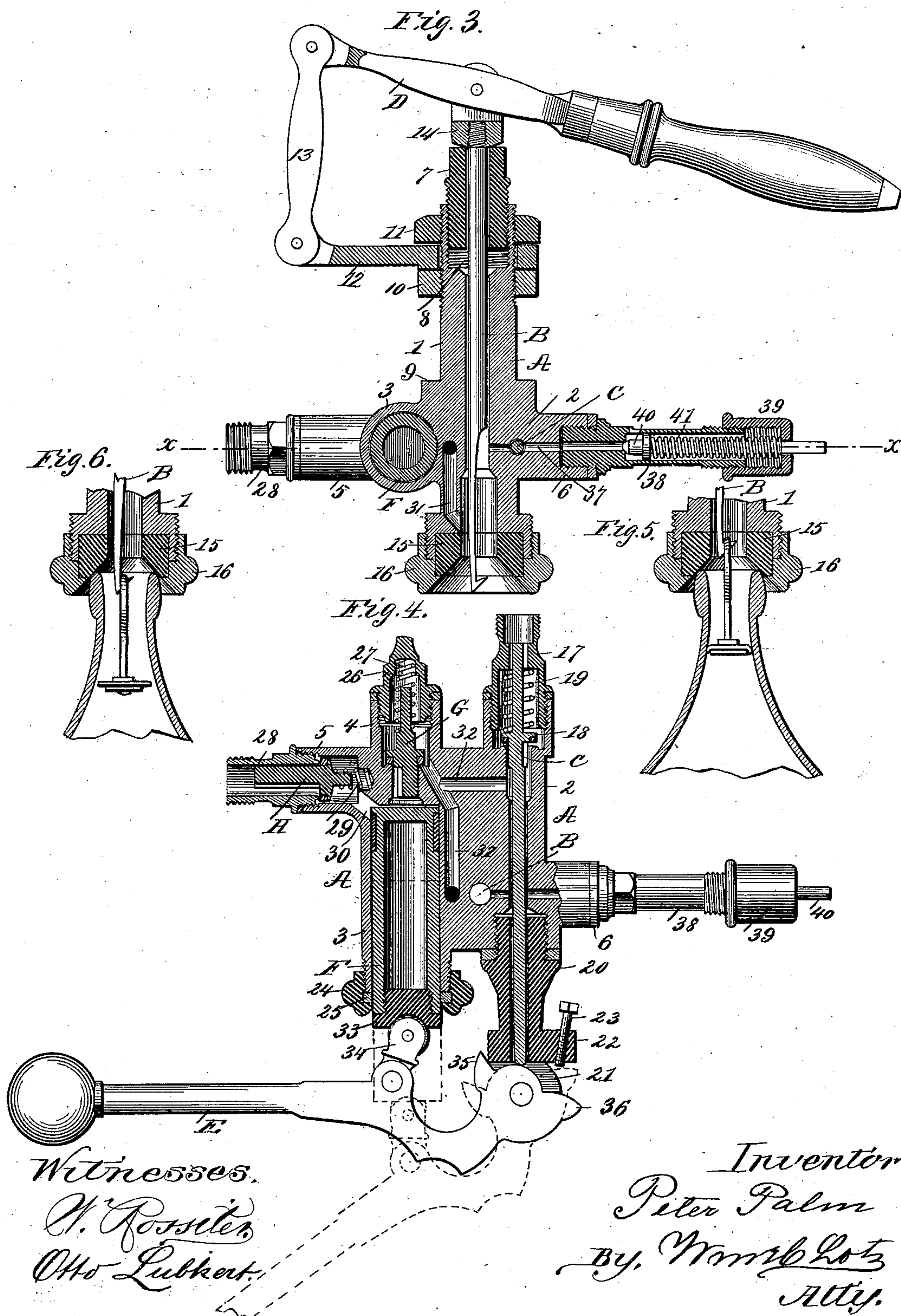
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By *Wank Lotz*
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UNITED STATES PATENT OFFICE.

PETER PALM, OF CHICAGO, ILLINOIS.

SODA-WATER-BOTTLE FILLER AND SIRUP-MEASURE COMBINED.

SPECIFICATION forming part of Letters Patent No. 360,901, dated April 12, 1887.

Application filed November 9, 1886. Serial No. 218,372. (No model.)

To all whom it may concern:

Be it known that I, PETER PALM, a subject of the Emperor of Germany, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Soda-Water-Bottle Fillers and Sirup-Measures Combined, of which the following is a specification, reference being had therein to the accompanying drawings.

The nature of my invention relates to an improvement in bottling-machines of that class more especially to be used in bottling mineral waters or other gaseous fluids under pressure. In these machines heretofore constructed the sirup-measure was an independent attachment within a separate casing connected with the bottle-filler by a pipe, whereby the whole machine was more cumbrous with less rigidity, and therefore it was less convenient to operate and more liable to get out of order than a machine of a more compact construction; and it has been my object to provide a machine that combines the sirup-measure with the bottle filler and closer, and in which the two former can be operated simultaneously by a single lever.

My invention therefore consists, principally, in the arrangement of the sirup-measure and bottle-filler, the funnel-shaped opening for receiving the bottle-mouth, and of the bottle-stopper-closing device, all within a common or single casing, and in the details of construction of the parts in combination with each other, all as will be more fully hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 represents a plan view, and Fig. 2 a front elevation, of the machine; Fig. 3, a longitudinal vertical section, and Fig. 4 a horizontal section, on line *xx* in Fig. 3; and Figs. 5 and 6, sections of the funnel and bottle-mouth with the stopper suspended to the hook before and after closing the bottle.

Similar reference-characters in the several figures of the drawings designate like parts.

A denotes the casing, consisting of vertical tube 1, bored out for the stopper hook-rod B, of the horizontal tube 2, bored out for the filling-valve rod C, of the sirup-measuring cylinder 3 on opposite side of tube 1 and parallel with tube 2, of valve-socket 4, being a continuation of cylinder 3, and of branch sockets 5 and 6.

The upper portion of tube 1 of casing A is

counterbored and internally screw-threaded for connecting therewith the screw-plug 7, also bored for the stopper hook-rod B, and forming the gland for tightening the packing 8, that forms an hermetic joint around such rod.

The upper portion of tube 1 being cylindrical, it is arranged to be passed through an eye or hub of a vertical frame or bracket and to be secured rigid therein against shoulder 9 by a nut, 10, fitted upon the upper screw-threaded portion of tube 1, and between this nut 10 and another nut, 11, is secured the end loop of a bracket, 12, the opposite or projecting end of which has a bifurcated eye for pivotally connecting the lower end of link 13, the upper end of which link is pivotally connected with the bifurcated eyed end of lever D, having a handle to its opposite end, and being pivotally connected with the bifurcated head 14, screwed upon the upper extremity of hook-rod B, all in a manner that the hook can be reciprocated by operating this lever D.

The tube 1 is counterbored from its bottom end, and to its lower extremity it has an enlargement providing a socket for the rubber ring 15, held in position by a ring-nut, 16, which is screwed upon such enlargement, and which, together with ring 15, forms a funnel-shaped mouth for engaging the mouth of the bottle, that when pressed therein will form an hermetic joint with such rubber ring, 15.

To the ends of tube 2 are formed internally-screw-threaded sockets, into one of which is screwed the thimble 17, the end of which again forms the nozzle for connecting the pipe that leads from the generator. The rod C carries valve 18, finding its seat against the shoulder end of tube 2, inside of the socket, and being pushed to its seat by a spiral spring, 19, that surrounds the tail end of the valve-rod, and is compressed between a shoulder in thimble 17 and the valve 18. Into the screw-socket of the opposite end of tube 2 is screwed an extension-tube, 20, through which also passes the valve-rod C, which extension 20 has formed to its end a flange, 22, tapped by set-screw 23, and also eye-lugs 21, for pivoting the end of a lever, E.

Cylinder 3 is bored out to receive hollow plunger F, and its end is provided with a gland-nut, 24, for compressing packing 25 to form an hermetic joint around such plunger F. At the opposite continuation of cylinder 3

is formed a socket that through a central hole communicates with the end of the cylinder-bore, and this socket is closed on its end by a thimble-plug, 26. A valve, G, seated against the bottom of the socket, and being pushed to such seat by a spiral spring 27, closes communication during the outward stroke of plunger F, but opens for dislodging liquid from such cylinder by the force of the plunger pushed into it, and thus it forms the discharge-valve.

Branch socket 5 has screwed into its end the thimble 28, forming the nozzle to which the pipe is to be coupled that provides communication with the sirup reservoir. The inward end of this thimble 28 forms the seat for valve H, pressed to such seat by a spiral spring, 29. This valve H will admit the liquid into the cylinder 3 while the plunger F is withdrawn from such cylinder, and will close against the escape of the liquid through the same opening when the plunger F is pushed into the cylinder, it thus forming the suction-valve. A port, 30, provides communication between socket 5 and the bore of cylinder 3. A port, 31, leading from behind the valve G, horizontally and then vertically into the counter-bore of tube 1, just above the funnel-mouth thereof, and another port, 32, leading from the bore of tube 2 into port 31, form the several communicating channels for the sirup and aerated water to be mixed and filled into the bottle.

The plunger F has a head, 33, screwed in its end, which head has eye-lugs for pivotally connecting one end of a link, 34, the other end of which is bifurcated and pivotally connected with lever E. The hub of lever E, pivoted between eye-lugs 21, is cam or eccentric shaped where it bears upon the butt-end of valve-rod C, whereby a swinging motion of such lever E in the direction of pushing the plunger F into its cylinder will push the valve 18 away from its seat, allowing aerated water to pass by such valve into and through the ports 32 and 31, and to opposite sides the hub of lever E has projecting lugs 35 and 36, for limiting the swinging movement of such lever in a manner that lug 35 in one direction will shoulder against the end of flange 22, and that in the other direction lug 36 will shoulder against the point of set-screw 23, by which set-screw the swinging distance of lever E can be adjusted for regulating the quantity of sirup to be filled into each bottle.

Through the axis of branch socket 6 is bored a small vent, 37, leading into the bore of tube 1, and into the socket 6 is screwed a tube, 38, having a screw-cap, 39. Into this tube 38 is placed a small valve, 40, seated upon the continuation of vent 37, and the stem of this valve 40 projects through cap 39, and is surrounded by a spring, 41, that holds the valve to its seat. This valve 40 will allow the air displaced from the bottle while being filled to escape. This apparatus being secured in its stand upon a bench that is provided with a

lifting-table operated by foot-pressure for pushing and holding the bottle-mouth in contact with the rubber funnel-ring 15, the stopper-loop is first suspended to the hook and then the bottle is elevated against the funnel-mouth, the lever E occupying the position as shown by dotted lines in Fig. 4, with the cylinder 3 filled with sirup by the suction from the previous return-stroke of the plunger. Now, by swinging the lever E, so as to push the plunger F into cylinder 3 as far as lug 35 will permit, the sirup in such cylinder is forced through port 31 into the bottle, while at the same time the valve 18 is opened to allow aerated water to escape through ports 32 and 31 also into the bottle until the latter is filled, when the lever E is swung back again, whereby the valve 18 is reclosed and the cylinder 3 is refilled with sirup for the next bottle. Next, by swinging the lever D upward the bottle-stopper is pulled to its seat in the bottle-neck.

In place of hook-rod B, operated by lever D, other devices for different kinds of bottle-stoppers, or for pushing into the bottle-neck the common cork stopper, may be provided.

What I claim is—

1. The combination, in a single structure, with the tubes 1, 2, and 3, formed integrally, and the stopper-rod, valve-rod, and plunger carried in said tubes, respectively, of valves connecting passages from the sirup-receptacle and water-cup, and means, substantially as described, for operating the hook, plunger, and valve-rod.

2. The combination, with the upright tube 1, and the tubes 2 and 3, set at right angles thereto, and all formed integral, of the stopper-rod operated in tube 1, valve-rod operated in tube 2, and plunger in tube 3 by the same lever and valved passages connecting the sirup-reservoir to the chamber or tube 3, and the soda-water supply through tube 2 to chamber or tube 3.

3. The combination, with an upright tube, 1, stopper-rod carried therein, and lever D, for operating it, of the tube 2, located on one side of tube 1 and extending at right angles thereto, the valve-rod C, operated in it, and the tube 3 on the opposite side of tube 1 and parallel with tube 2, and the plunger operated in it, said tubes 1, 2, and 3 being formed integrally.

4. The combination, with the tubes 1, 2, and 3, formed integrally, the stopper-rod operated in tube 1 by one lever, and the valve-rod operated in tube 2 and plunger in tube 3 by the same lever, of the vent-tube 38, having a bore, 37, connecting with both of the tubes 1 and 2 and provided with a spring-actuated valve, 40, all substantially as and for the purpose set forth.

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

PETER PALM.

Witnesses:

WM. H. LOTZ,
OTTO LUBKERT.