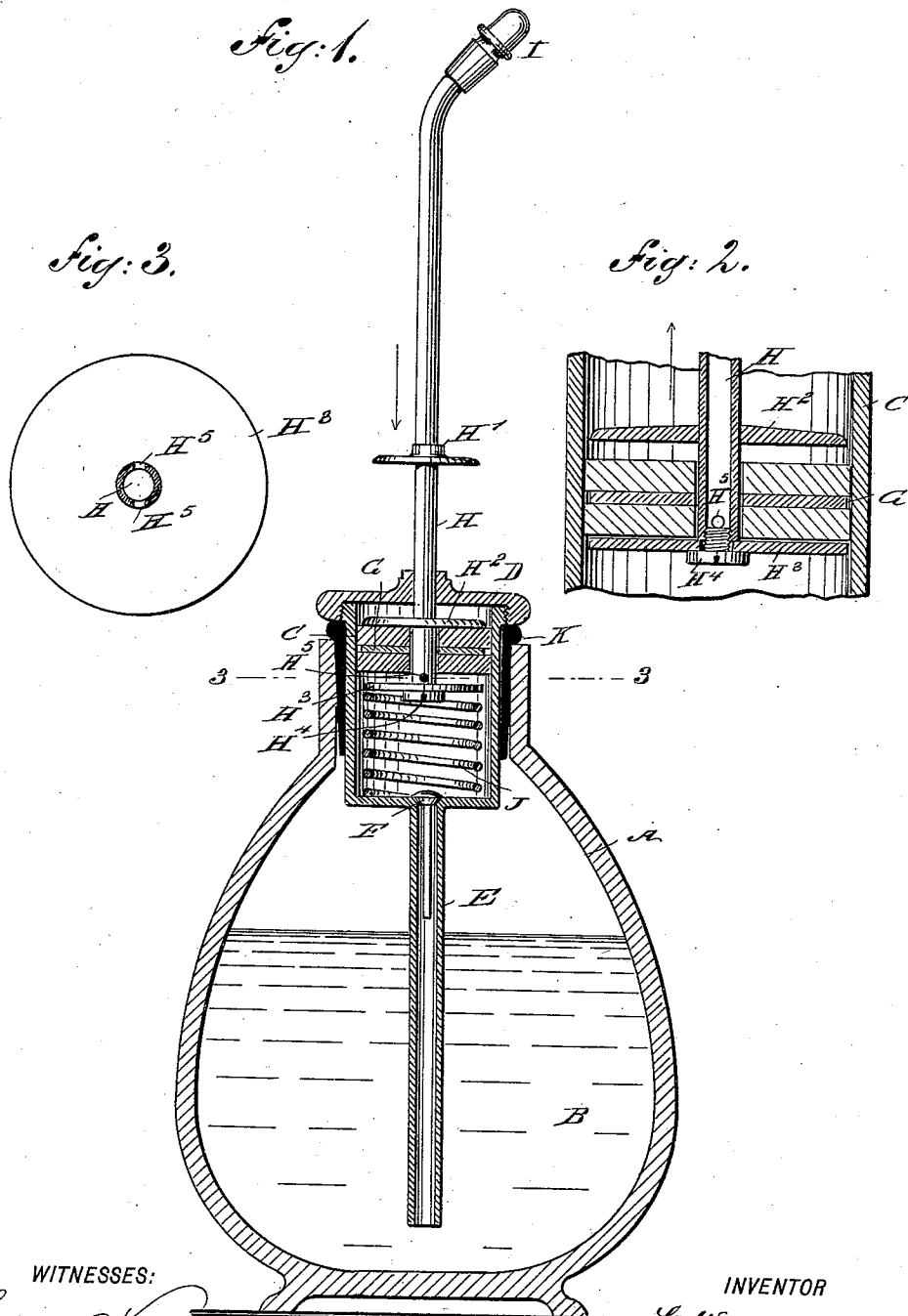


(No Model.)

C. WAGNER.
ATOMIZER.

No. 544,143.

Patented Aug. 6, 1895.



WITNESSES:

Chas. Kieck.
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CHARLES WAGNER, OF NEW YORK, N. Y.

ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 544,143, dated August 6, 1895.

Application filed October 29, 1894. Serial No. 527,210. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WAGNER, of New York city, in the county and State of New York, have invented a new and Improved Atomizer, of which the following is a full, clear, and exact description.

The invention consists principally of a cylinder provided with a valved suction-pipe and a spring-pressed piston in the said cylinder, and having its piston-rod forming the discharge-pipe for the liquid.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a broken sectional side elevation of the piston and its piston-rod, and Fig. 3 is a sectional plan view of the improvement on the line 3 3 of Fig. 1.

The vessel A containing the liquid B to be atomized is closed at its upper end by a stopper in the form of a cylinder C, closed at its outer end by a screw-cap D, as is plainly illustrated in Fig. 1. From the bottom of the cylinder C extends the suction-pipe E into the liquid B contained in the vessel A, and on the upper end of the said suction-pipe is arranged a suction-valve F, which permits entrance of the liquid from the suction-pipe to the cylinder, but prevents the liquid entering the cylinder from passing down the suction-pipe.

In the cylinder C is fitted to reciprocate the piston G, held on a piston-rod H, forming a discharge-pipe for the liquid from the cylinder, the said piston-rod H being fitted to slide in the cap D and carrying on its outer end an atomizer-nozzle I of any approved construction. On the piston-rod H, a suitable distance above the cap D, is arranged a disk H', adapted to be taken hold of by the operator's fingers to impart a downward sliding motion to the piston-rod H for the purpose hereinafter more fully described.

The piston G is mounted loosely on the piston-rod H and is free to slide thereon between the collars H² and H³, secured on the piston-rod above and below the top and bottom of

the piston G. The lower collar H³ is secured in place by a screw H⁴, which closes the bottom end of the piston-rod H, the said lower end being also provided with inlet ports or apertures H⁵, adapted to be closed by the piston G when the latter is on the up-stroke, as shown in Fig. 2, and adapted to be opened by the piston when the latter is on the down-stroke, the piston then resting against the collar H², as illustrated in Fig. 1.

A coil-spring J is set in the cylinder C and rests with its upper end on the collar H³, so as to hold the piston and its piston-rod normally in an uppermost position, as shown in Fig. 1. As the cylinder C is preferably made of metal, I prefer to use an elastic ring K, located between the cylinder C and the neck of the vessel, as indicated in Fig. 1.

The operation is as follows: When it is desired to atomize the liquid contained in the vessel A, then the operator places the vessel A in the palm of his hand and holds it with some of his fingers and at the same time places the forefinger and little finger on top of the disk H'. The operator then exerts with the forefinger and little finger a pressure on the disk H', so that the piston-rod H is moved downward, whereby the collar H² is moved against the top of the piston G and carries the latter downward in the cylinder C, and at the same time the spring J is compressed by the downward movement of the fixed collar H³. The air contained in the lower end of the cylinder C at this time escapes through the now open ports H⁵, the hollow piston-rod H, and nozzle I to the outer air. When the operator releases the pressure on the disk H', then the spring J forces the piston-rod H upward, whereby the piston G is finally engaged by the collar H³, so as to close the ports H⁵, and as the piston moves upward it draws in the liquid B from the vessel A, so as to fill the lower part of the cylinder C. On the next downward stroke exerted by the operator's fingers the piston G uncovers the ports H⁵, so that the liquid contained in the cylinder flows through the ports H⁵ into the hollow piston-rod H to be forcibly ejected through the atomizer-nozzle I. As soon as the operator releases the pressure on the disk H', the spring J returns the piston-rod and its piston into an uppermost position, it being understood,

however, that when this return movement begins the piston-rod H is first moved to cause the piston G to close the ports H⁵ before the piston starts on the return stroke or upward movement. Now by the repeated pressing and releasing of the disk H' jets of liquid are forcibly ejected through the nozzle I to the desired place.

I do not limit myself to any detail of construction shown and described, as it is evident that individual parts may be varied without departing from the spirit of my invention.

It will further be seen that the device may be amplified by the addition of an air-compressor to compress air, either on the piston G or an auxiliary piston on the rod H and to carry this compressed air through the nozzle I to thoroughly atomize the liquid ejected through the nozzle I.

Although I have described my invention as an atomizer, it is evident that the invention can be arranged for use as an oiler, or as a pump or other device for ejecting any desired substance from a vessel.

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

1. An atomizer, provided with a hollow piston rod having an inlet port in its side, and a piston having a limited sliding motion longitudinally of the said piston rod to cover or uncover the inlet port in the side thereof, substantially as described.

2. An atomizer comprising a cylinder, a piston fitted to slide in the cylinder, and a hollow piston rod likewise constructed to slide in the cylinder, the piston being slidable longitudinally of the piston rod, and the latter hav-

ing a port adapted to be opened and closed by the said piston, substantially as described.

3. An atomizer comprising a cylinder, a piston fitted to slide in the said cylinder, and a hollow piston rod mounted to slide in the cylinder and provided within the same with collars, between which the said piston slides on the piston rod, the latter being provided with ports adapted to be opened and closed by the said piston, substantially as shown and described.

4. An atomizer comprising a cylinder, a piston fitted to slide in the said cylinder, a hollow piston rod mounted to slide in the cylinder and provided within the same with collars, between which the said piston slides on the piston rod, the latter being provided with ports adapted to be opened and closed by the said piston, and a spring pressing on one of the collars on the said piston rod to return the piston rod, substantially as shown and described.

5. An atomizer comprising a cylinder, a valved suction pipe for the said cylinder, a hollow spring-pressed piston rod fitted to slide in the cylinder and forming the discharge pipe for the liquid from the cylinder, a piston in the said cylinder and actuating a projection, such as the disk, substantially as described, located on the piston rod between the cylinder and the outlet of the discharge pipe for moving the said piston rod in an inward direction, to compress the spring pressing on the piston, as set forth.

CHARLES WAGNER.

Witnesses:

THEO. G. HOSTER,

C. SEDGWICK.