Dec. 31, 1935. E. O. WHITE 2,026,369

ATOMIZER

Filed Sept. 4, 1934

Fig. 1

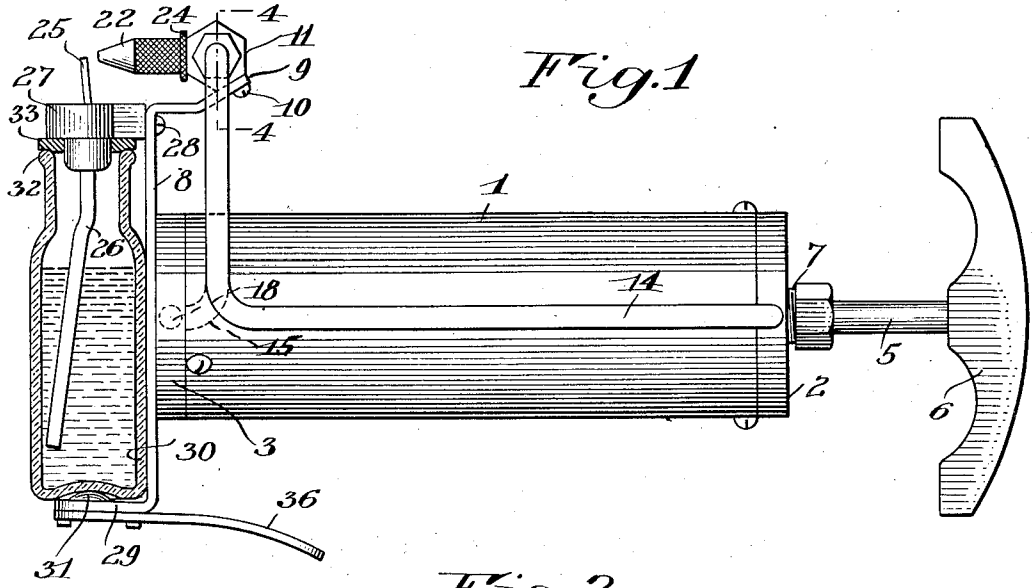


Fig. 2

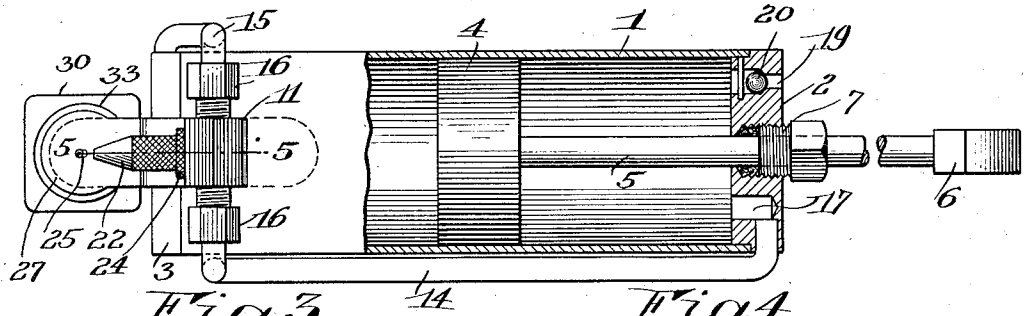


Fig. 3

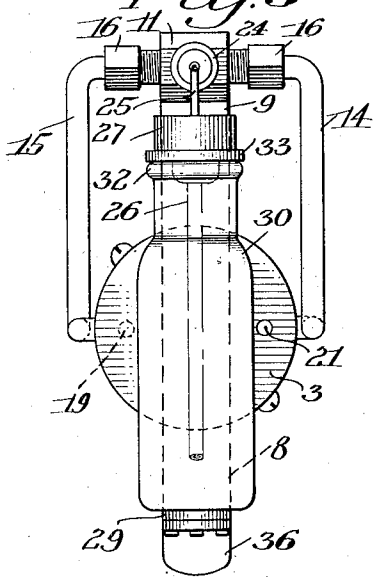


Fig. 4

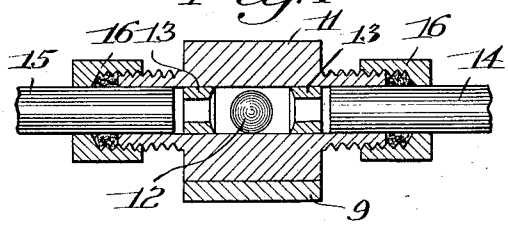
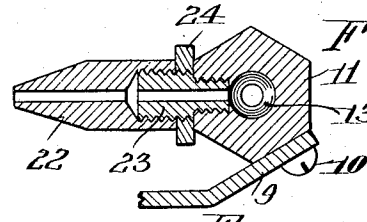


Fig. 5



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ATOMIZER

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Application September 4, 1934, Serial No. 742,542

7 Claims. (Cl. 299—88)

My present invention relates to atomizers for the dispensing of liquids and more particularly to hand manipulatable devices of this kind, and it has for its object to provide a simple, convenient and efficient apparatus of this character of a sturdy type that will be particularly available and adapted for the use of morticians in applying cosmetics to corpses. The improvements are directed in part toward features of a double acting compressor for supplying air to the atomizing nozzle and toward the means for detachably supporting a bottle or reservoir in proper relationship thereto. To these and other ends, the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of this specification.

In the drawing:

Fig. 1 is a side elevation of an atomizer constructed in accordance with and illustrating one embodiment of my invention, the detachable liquid reservoir being shown in vertical central section;

Fig. 2 is a top plan view thereof, partly broken away and with a portion of the compressor cylinder shown in horizontal central section;

Fig. 3 is a front view;

Fig. 4 is an enlarged detail section through the atomizer head taken substantially on the line 4—4 of Fig. 1, and

Fig. 5 is an enlarged detail section taken through the head and nozzle substantially on the line 5—5 of Fig. 2.

Similar reference numerals throughout the several views indicate the same parts.

Referring more particularly to the drawing, 1 indicates a compressor cylinder having a rear head 2 and a front head 3 provided with a piston 4 and piston rod 5, the latter projecting to terminate in an operating handle 6 and operating through a gland 7 in head 2, all generally as usual. Secured to the front head 3 is a bracket strap 8 having at its top a rearwardly turned portion 9 to which is secured by screws 10 a transverse valve head 11. In this head is a double acting ball valve 12 adapted to reverse its position between two seats 13 through which communication is had from two pipes 14 and 15 that enter the valve casing through glands 16. Pipe 14 communicates with a reverse compression port 17 with reference to the movement of piston 4, while pipe 15 communicates with a port 18 in advance of the piston. An intake 19 provided with a check valve 20 admits air for the in-stroke of the piston, these being located in the rear head 2, while an intake 21 in head 3 provided with a similar check valve (not shown) admits air to the cylinder on the out-stroke of the piston. It is obvious from the foregoing that, the valve 12 controlling both discharges, a continuous stream of air will be supplied to valve casing 11.

This issues through a nozzle 22 connected to the valve casing 11 and the valve chamber thereof. Such connection consists, in the present instance, of a threaded nipple 23 having an enlarged portion taking into the nozzle 22 and a reduced portion taking into the valve head 11. Between the two is a lock nut 24 by means of which the nozzle may be fixed in a relatively projected or retracted position from the casing to bring it into proper operative relationship with the cooperating liquid tube about to be described.

The discharge portion of the said liquid tube is indicated at 25 and is a continuation of the main body of the tube, indicated at 26, which is fixed to and extends through a head 27 secured by screws 28 to the bracket strap 8. The latter extends downwardly and thence forwardly below cylinder 1 to provide a support for a liquid reservoir, said support being indicated at 29 and the reservoir at 30. The latter consists, in the present instance, of a small vial or bottle having a reentrant bottom centered on a projection 31 on the support and the mouth 32 of which is adapted to rest in an air and liquid-tight engagement with a gasket 33 on the underside of the head 27. The idea is that these bottles of liquid to be sprayed may be inserted on the support, their contents removed by the atomizing action and the bottle detached and replaced by a full one or the same bottle refilled. This substitution is made easy and the air-tight connection of the mouth of the bottle with the gasket 35 of the head 27 is made secure by the fact that the bracket foot or support 29 is resilient. It has a spring action developing upward pressure against the bottle which is relieved for the insertion and removal of the bottles by a rearwardly extending finger piece 36. It will be seen that upward pressure on this finger piece will tilt the supporting foot 29 downwardly, accomplishing the results aforesaid.

The body 26 of the liquid tube within the bottle or reservoir is inclined forwardly as shown, so that the bottle may be removed by slipping its bottom portion forwardly and then drawing it downwardly so that its mouth disengages from the gasket 33.

I have thus produced a sturdy double action

atomizer designed for the morticianal purposes first mentioned and which can be used with speed and certainty in such work, but it is obvious that my invention has other application and can be put to more general use as an atomizer.

I claim as my invention:

1. In an atomizer, the combination with a cylinder and a piston therein, the cylinder being provided with intake ports on opposite sides of the piston and with exhaust ports at opposite ends, of air pipes separate from the cylinder leading from the exhaust ports, a valve head also separate from the cylinder bridging the latter at one side in connection with the pipes, provided with a nozzle and a two-way valve in the head, a reservoir support on the cylinder and an atomizing tube cooperating with the nozzle and with the support in a manner that will cause it to be submerged within a reservoir on the support.

2. An atomizer in accordance with claim 1 in which the reservoir support consists of a strap bracket secured to the end of the cylinder and rigidly connected to the valve head.

3. An atomizer in accordance with claim 1 in which there is provided a strap bracket secured to the end of the cylinder and rigidly connected to the valve head and the lower end of the strap bracket is formed to constitute the said reservoir support.

4. An atomizer in accordance with claim 1 in which there is provided a strap bracket secured to the end of the cylinder and rigidly connected to the valve head and the lower end of the strap bracket is formed to constitute the support for a detachable reservoir and in which an atomizer head carries the tube and is secured to the bracket near the top thereof for cooperation with such reservoir in the manner of a stopper.

5. In an atomizer, the combination with an air compressor embodying a cylinder and an atomizing nozzle mounted thereon, of a strap bracket extending transversely across an end face of the cylinder and an atomizing head including a tube secured to the bracket near the top thereof in cooperation with the nozzle, the lower end of the bracket being resilient and extending forwardly as a support to engage the bottom of a detachable reservoir and press its mouth against the atomizer head.

6. An atomizer in accordance with claim 5 in which there is further provided an arm on the reservoir support furnishing a leverage by which it may be sprung to release the reservoir.

7. In an atomizer, the combination with an air compressor embodying a cylinder and an atomizing nozzle mounted thereon near its outer end, of a detachable bottle-like elongated reservoir on the end face of the cylinder extending transversely thereof, and a support for the reservoir embodying an outwardly projecting element at the bottom and a similarly projecting atomizer head at the top in the nature of a stopper sealing the mouth of the reservoir, one of said supporting elements being resilient, and an atomizer tube carried by the head with one end in the reservoir and the other end in cooperation with the nozzle.

EUGENE O. WHITE.