

No. 865,485.

PATENTED SEPT. 10, 1907.

A. O. FREEMAN.
HAND SPRAYER.

APPLICATION FILED FEB. 10, 1904

Fig. 1.

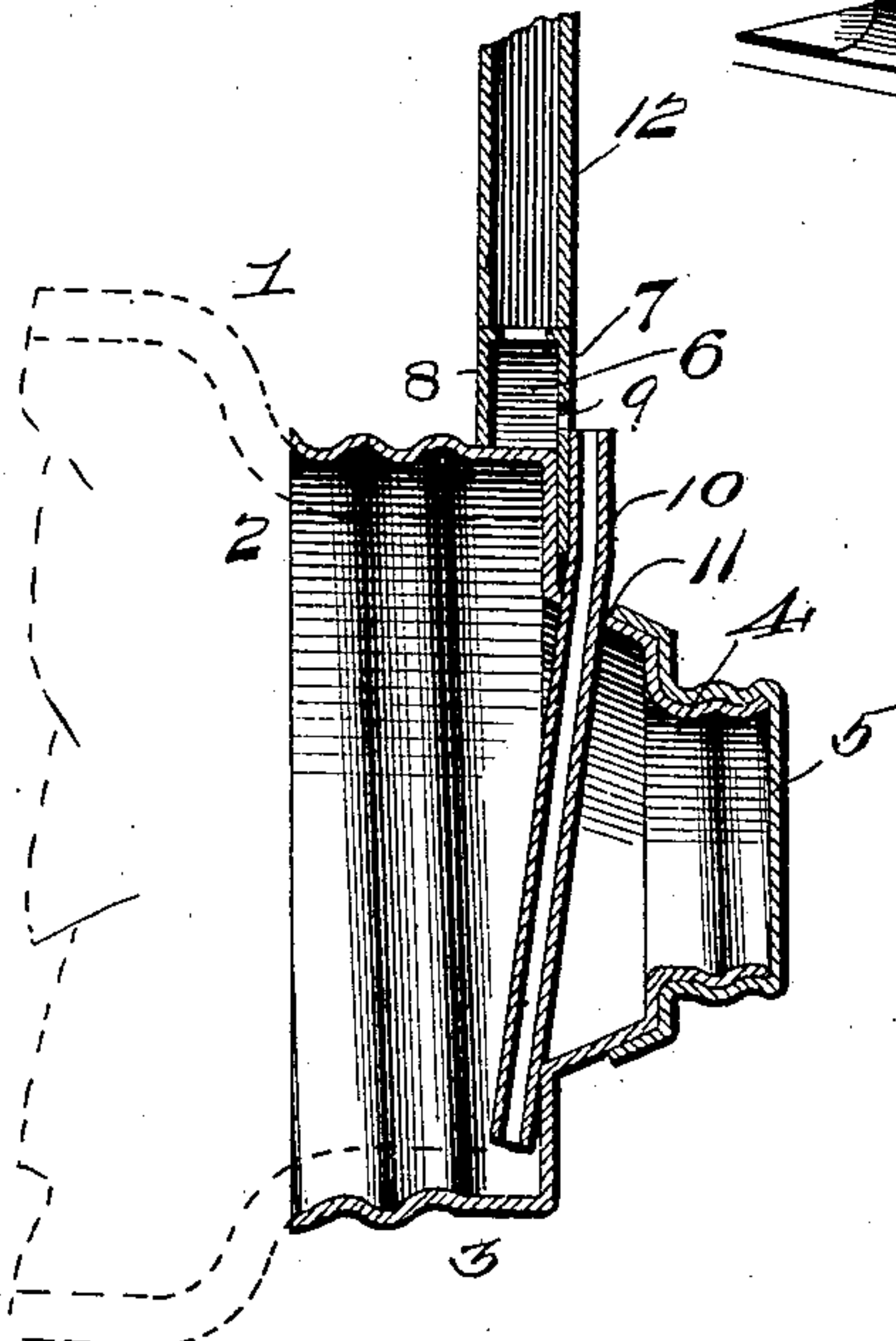
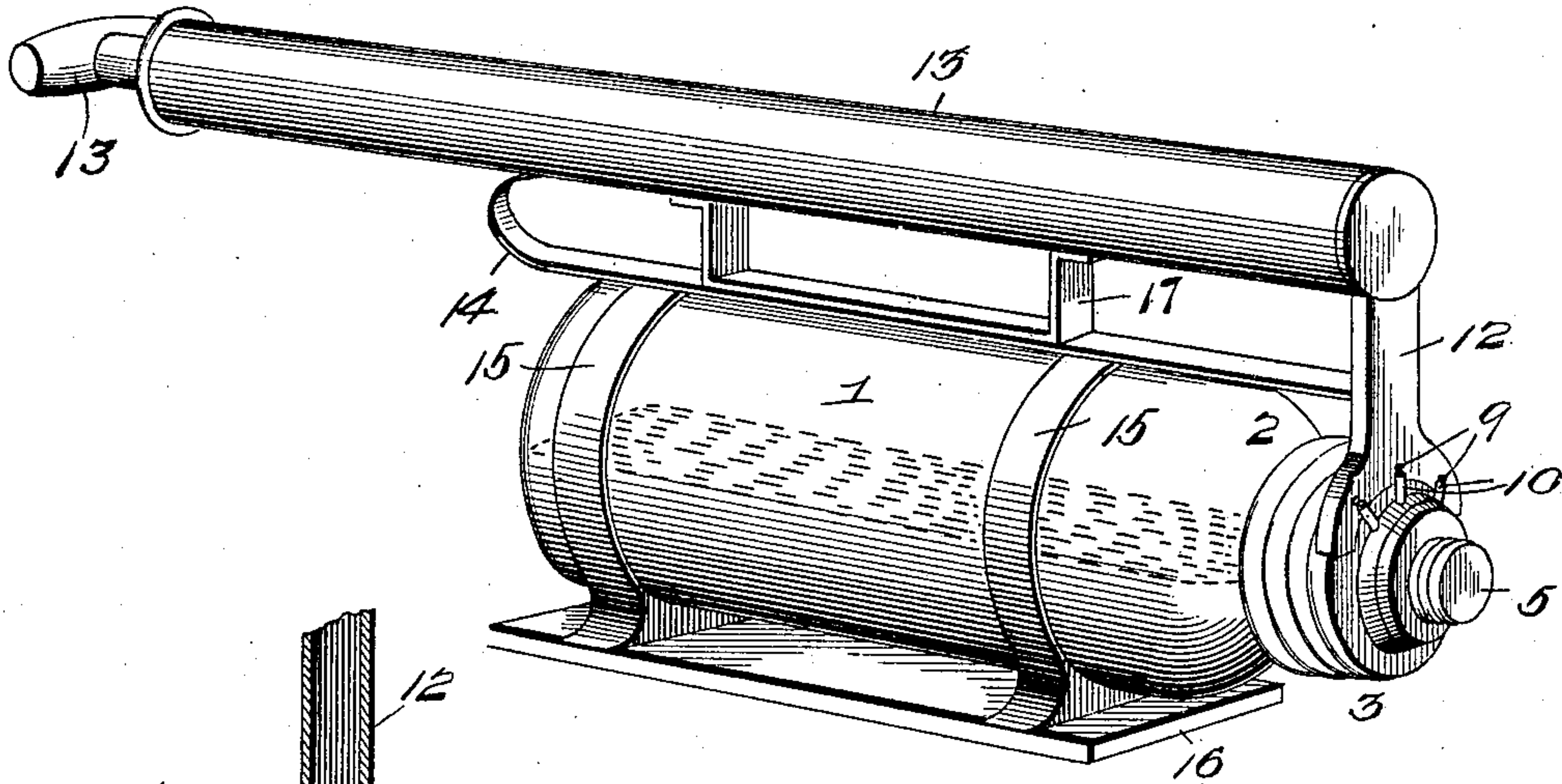


Fig. 2.

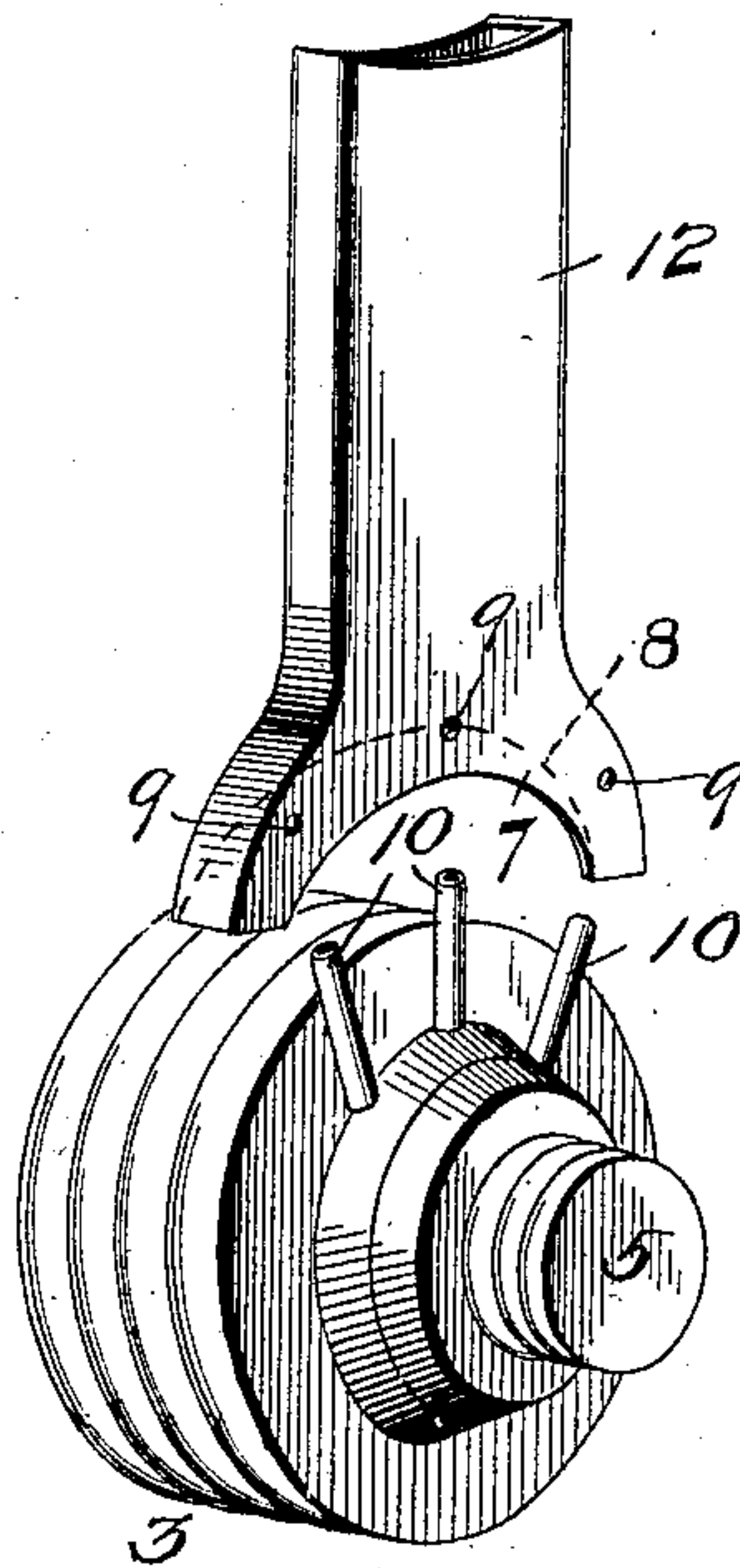


Fig. 3.

WITNESSES:

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HAND-SPRAYER.

No. 865,485.

Specification of Letters Patent.

Patented Sept. 10, 1907.

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To all whom it may concern:

Be it known that I, ALONZO O. FREEMAN, a citizen of the United States, residing at Ionia, in the county of Ionia and State of Michigan, have invented certain
5 new and useful Improvements in Hand-Sprayers, of which the following is a specification.

This invention relates to improvements in that type of spraying devices designed particularly for the purpose of spraying vines, shrubs, flowers, and for spraying
10 purposes generally where it is necessary to distribute insecticides and disinfectants in the form of a spray.

The improvements contemplated are especially designed to be embodied in a simple and practical form of hand sprayer which may be conveniently carried and
15 manipulated by the hands, while at the same time provide a thoroughly effective spray for the desired purpose.

A further object of the invention is to provide means whereby an ordinary form of screw cover or cap may be
20 utilized as a part of the atomizing fixture without substantial alteration or change therein.

With these and many other objects which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts which will
25 be hereinafter more fully described, illustrated and claimed.

The essential feature of the invention, involved in a construction for carrying out the objects indicated, is
30 necessarily susceptible to structural change without departing from the scope of the invention, but a preferred embodiment thereof is shown in the accompanying drawings, in which:

Figure 1 is a perspective view of a hand sprayer embodying the ordinary fruit-jar type of reservoir and equipped with the atomizing head contemplated by the present invention. Fig. 2 is an enlarged sectional
35 view of the atomizing head. Fig. 3 is a perspective view of the atomizing head showing the segmental or crescent shaped air chamber separated from the reservoir cover.

Like reference numerals designate corresponding parts in the several figures of the drawings.

In carrying out the invention any approved type of
45 reservoir and air supplying means may be employed as the invention is directed particularly to the metallic parts constituting the atomizing head affording the connection between the air supplying means and the fluid reservoir or receptacle. Hence, for illustrative
50 purposes, there is shown in the drawings a fluid reservoir or receptacle 1 which may consist of an ordinary glass fruit-jar, which, to be adapted to the present invention, only requires the fitting thereto of the improved atomizing head and the air supplying means
55 associated therewith.

As shown in the drawings the reservoir is provided with the usual threaded neck portion 2 upon which is tightly screwed a threaded metallic cover 3, which is ordinarily termed a "jar cap". This jar cover or cap 3
60 is of the conventional form, but is preferably made entirely of brass or equivalent material that will not be affected by the oxidating or disintegrating effect of fluid or chemicals, and to facilitate the refilling of the reservoir, the reservoir cover or cap 3 has offset from
65 the outer side thereof a threaded filling neck 4 adapted to be covered and uncovered by a small threaded filling cap 5 which is also preferably of the same material as the main cover or cap 3.

In adapting the improvements to the main cover or cap 3, no structural change is required in the latter, but
70 there is directly associated with the external periphery thereof, an exterior segmental or crescent shaped air chamber 6. This crescent shaped or segmental air chamber 6 is designed to be soldered or otherwise rigidly united directly to the periphery of the main cover
75 or cap 3 at an intermediate point. In this arrangement the peripheral surface of the main cover or cap forms the bottom or base of the said air chamber. The air chamber 6 by reason of its segmental or crescent
80 shaped form and also by reason of its attachment to the external periphery of the main cover or cap may be lengthened out to substantially the full diameter of the main cover or cap, thus giving a widened air-distributing chamber with the consequence of providing for an
85 extended or widened spray, as will presently appear.

In its construction, the air chamber is preferably made of brass or equivalent material and is provided with the outer and inner peripheral walls 7 and 8, respectively of different widths. The outer and wider
90 of said walls 7 overlaps the front face of the main cover or cap and is soldered directly to such face, while the curved edge of the inner and shorter wall 8 registers directly with the periphery of the main cover 3.

In its front wall the air chamber 6 is provided with a series of jet orifices 9, each of which is disposed directly
95 at and over the plane of the upper delivery end of a fluid tube 10, which end of the tube projects through and is disposed outside of the main cover or cap 3 at the front thereof. Each of said tubes 10 is soldered or otherwise
100 fastened in an opening 11 piercing the front portion of the main cover or cap 3 and extends downward into the said cover or cap to what might be properly termed the bottom portion thereof so as to lie submerged in the fluid when the sprayer is in either a horizontal or partly
105 canted position. Any desirable number of jet orifices 9 and fluid tubes 10 may be employed, and in the construction illustrated there are shown three of such tubes arranged in upwardly divergent relation.

The air chamber 6 is directly connected at its top with an air trunk or conduit 12 fastened directly to the
110

air chamber, and also preferably made of brass or equivalent non-corrodible material. The upper end of the air trunk or conduit is in direct communication with an ordinary air pump 13, which may conveniently have
5 fitted to the under side thereof a hand-grip 14 and holding straps or bands 15 within which the reservoir is held supported. It may also be found convenient in carrying out the invention to associate with the holding
10 a guard or rest for the sprayer when placed upon the ground or other support. When air is supplied from the pump 13 through the trunk or conduit 12 and discharged from the orifices 9 across the delivery ends of the fluid tubes 10 the usual atomizing or spraying ac-
15 tion takes place.

From the foregoing it is thought that the construction and many advantages of the herein described sprayer will be readily apparent without further description, and it will be understood that changes in the form, pro-
20 portion and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

Various expedients may be resorted to for assembling the various parts and also for strengthening the same,

and to this end I preferably associate with the hand grip 25 14 a supplemental inside brace 17. This brace 17 is preferably of a U-form with the leg portions thereof extending across the interval between the pump cylinder and the longitudinal straps of the hand grip 14, while the longitudinal portion of the brace abuts flat against the
30 said strap of the hand grip and thus materially stiffens the structure and secures a double bracing effect.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent, is:

In a sprayer, the combination with the reservoir and the 35 air supplying means, of a cover for the reservoir having a plurality of fluid tubes with their delivery ends disposed outside of the cover, a separate exterior crescent shaped air chamber mounted directly on the external periphery of the cover and having its outer wall overlapping
40 and fastened to the front face of the cover, the front wall of said air chamber being further provided with jet orifices disposed contiguous to the ends of said tubes, and an air trunk connection between said chamber and the air
45 supplying means.

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

ALONZO O. FREEMAN.

Witnesses:

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