

(No Model.)

J. G. GARLAND.
ATOMIZER.

No. 466,978.

Patented Jan. 12, 1892.

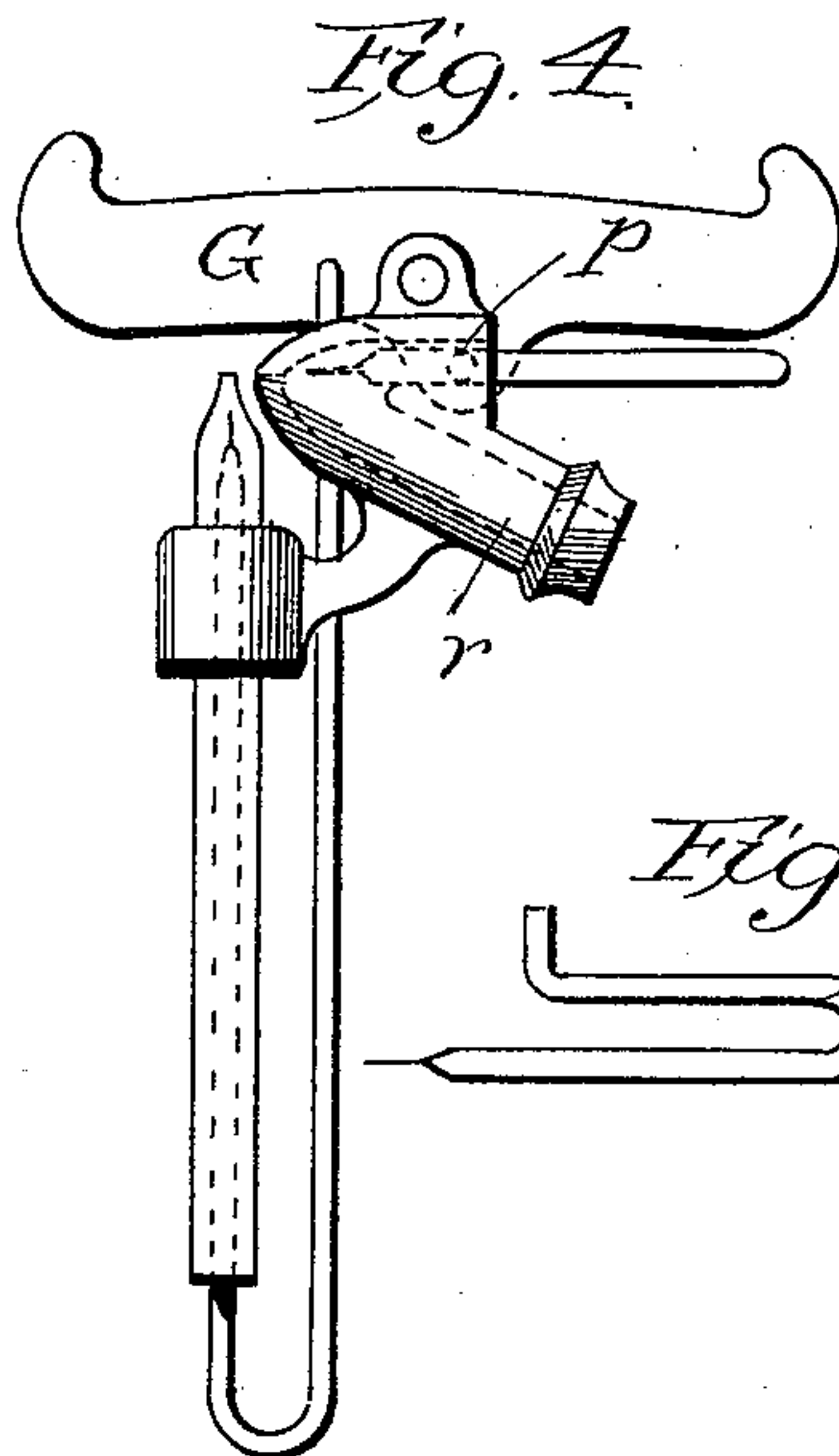
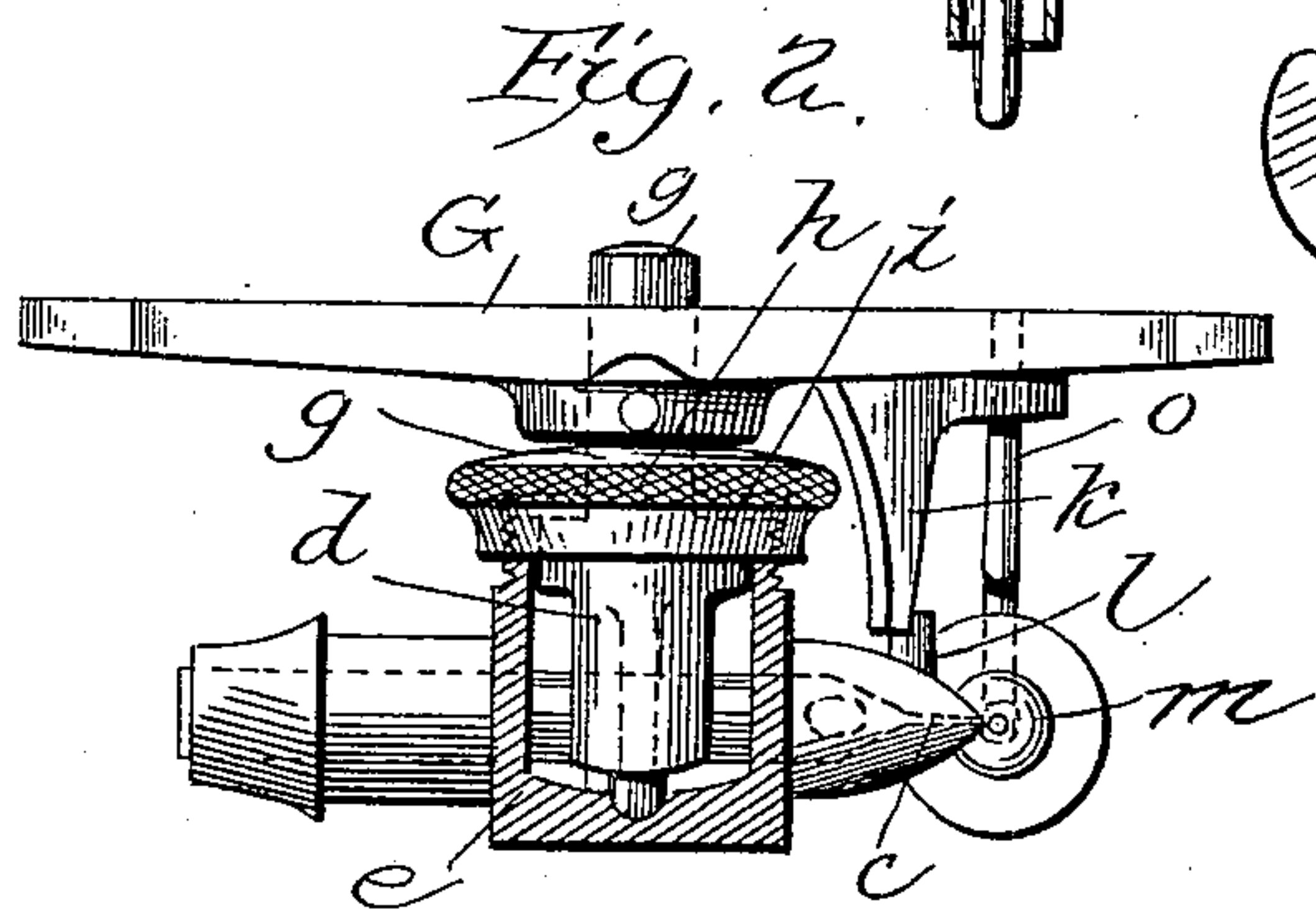
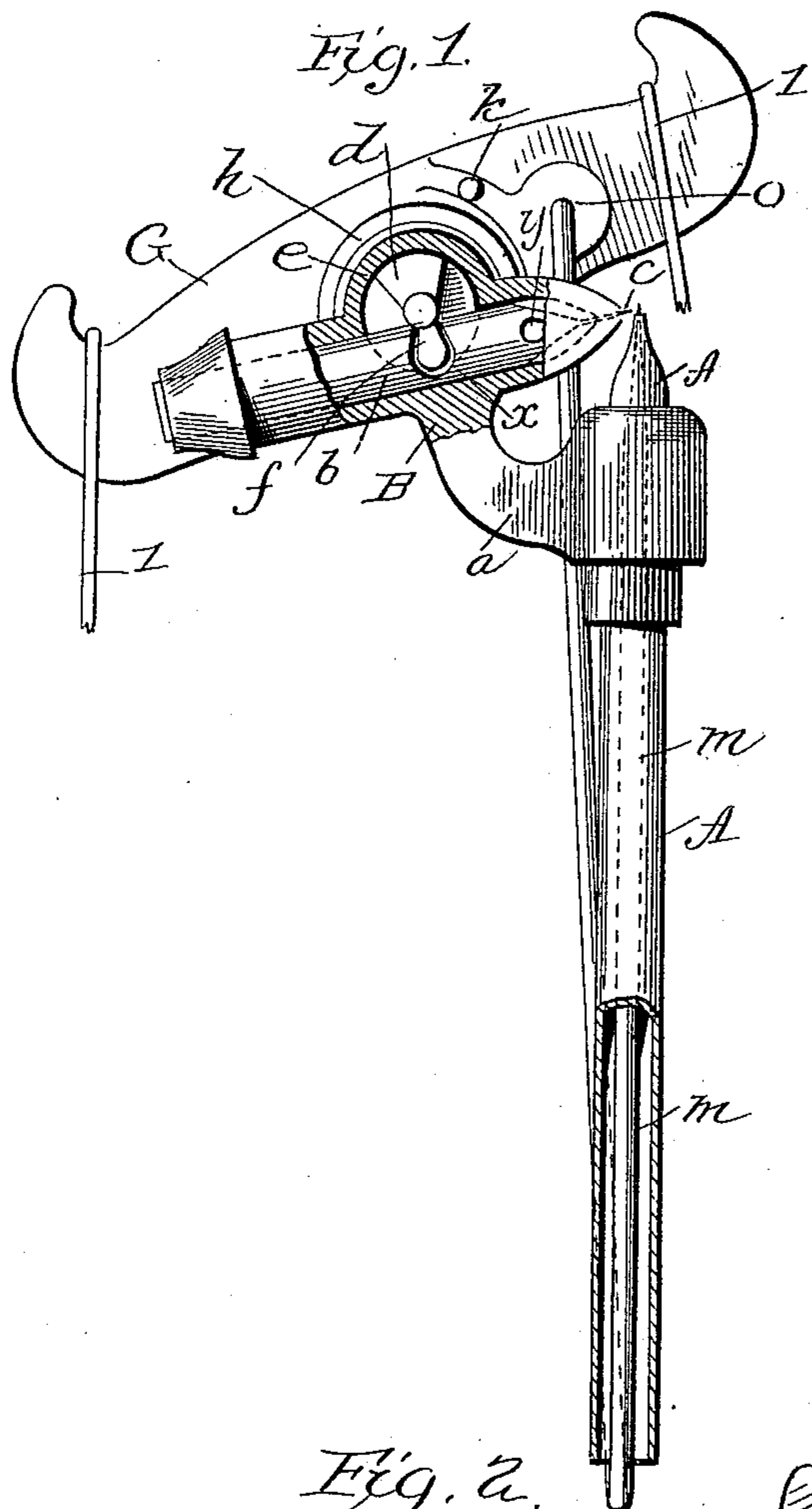
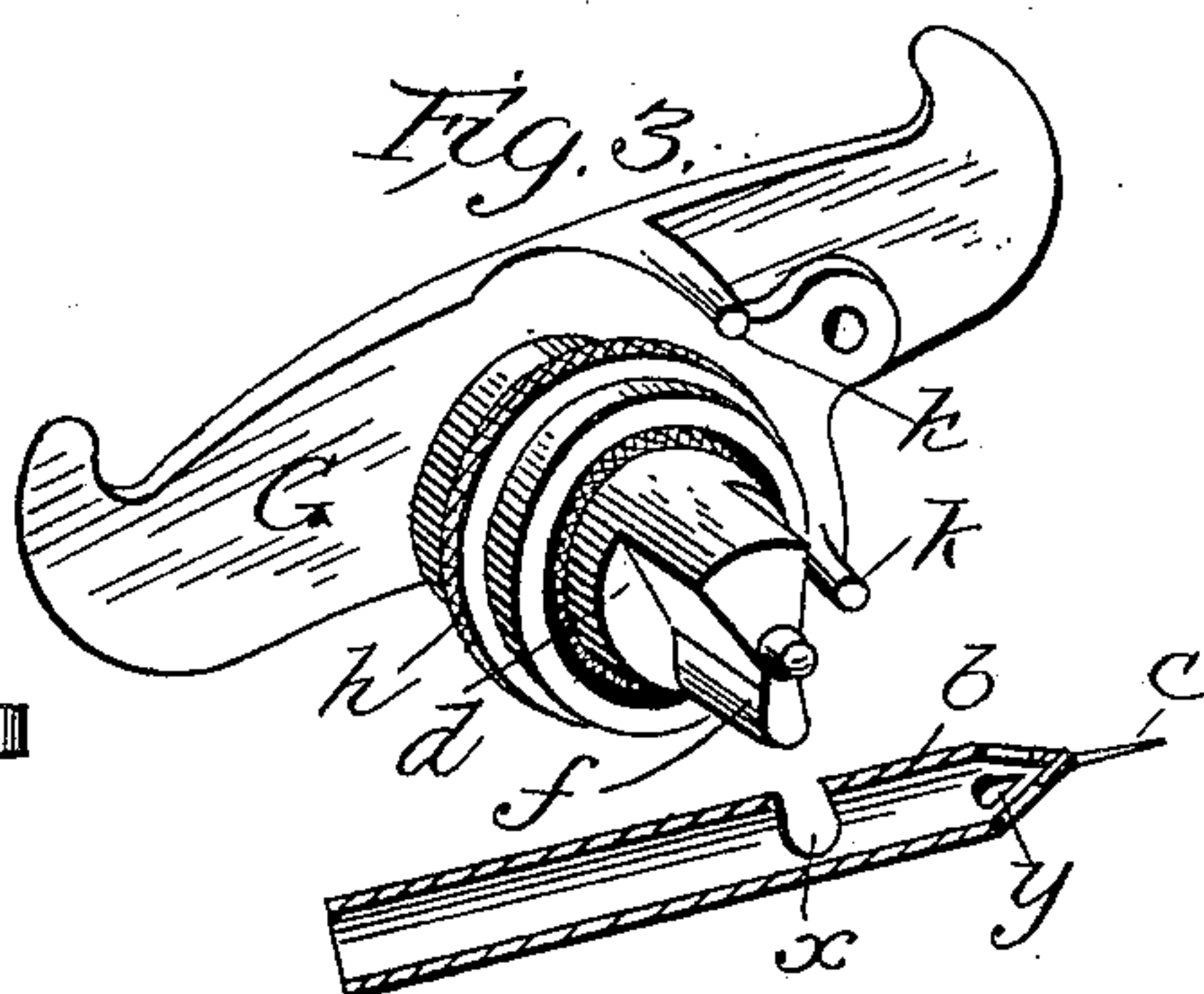


Fig. 5.



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UNITED STATES PATENT OFFICE.

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ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 466,978, dated January 12, 1892.

Application filed November 4, 1891. Serial No. 410,835. (No model.)

To all whom it may concern:

Be it known that I, JAMES GRAY GARLAND, a citizen of the United States of America, residing at Biddeford, in the county of York and State of Maine, have invented certain new and useful Improvements in Atomizers, of which the following is a specification.

My said invention is shown herein as adapted to remove the clogging of atomizer-tubes of that class of atomizers in which the orifice of one tube is directed across that of another—such, for example, as that shown in Letters Patent of the United States granted to me on the 22d day of July, 1884, No. 302,477. The small outlets of these atomizing-tubes often become clogged, and thus are rendered useless, and when these tubes are located in the upper part of a room, above the reach of a person standing upon the floor, or at points especially difficult of access, as over machinery or goods in a factory or store-room, the removal of the obstruction involves no inconsiderable care and labor and is liable to be neglected.

The object of my invention is to provide means readily accessible, easily worked, and certain of operation by which the obstructions may at any time be removed. The application is shown in the accompanying drawings, in which—

Figure 1 represents the apparatus in side elevation, partly in section. Fig. 2 is a plan view, partly in section. Fig. 3 is a perspective view showing detail parts, the plunger being in section. Fig. 4 is a side view of a modification. Fig. 5 is a detail view of one of the plungers.

In the drawings, A represents the liquid-leg of an atomizer. As a convenient form of construction, it is shown as a tube held in a socket on an arm *a* of the casting B, in which is the power-leg of the atomizer, the orifice of which is directed across the line of the discharge-orifice of the liquid-leg. The particular form of these legs is not material. The passages in them back of the small exit-orifices are enlarged, and in them are located the plungers of the clearing-needles.

In the power-leg B is a needle-bearing tube-plunger *b*, which has free longitudinal play sufficient to allow the needle *c* on its forward

end to advance through the orifice or to be withdrawn therefrom, so as to leave the exit-opening free. It is not intended that the needle remain in fixed relation to the opening to regulate the flow of fluid therethrough, but only that it be reciprocated freely to be projected through and withdrawn from the opening in order to clean the same. The air or other forcing agent may be allowed to pass the plunger by grooves therein or by making the cross-section of the plunger different from that of the opening in which it moves. The plunger may be moved in various ways. In Fig. 1 I have shown a hub *d* arranged to turn in a barrel *e*, the latter being formed, preferably, on the power-leg. The hub has on its inner end a cog *f*, which engages with a notch *x* in the plunger. This serves as a convenient connection between the hub and the plunger; but this connection may be made by a pin or in many other ways well known to skilled workmen. The outer end of the hub is reduced, and over the reduced end *g* is placed a screw-packing cap *h*, which presses the packing *i* upon the end of the barrel and hub, and thus hermetically closes the leg. Upon the reduced end *g* is fixed a lever G, which has spurs *k*, that engage with a stud *l* on the leg and limit the movement of the lever. The adjustment of the parts is such that when the lever is moved one way to its limit the needle is forced through the orifice of the leg and when moved the other way the needle is withdrawn from said orifice. When the apparatus is located at an elevation requiring such extensions, wires or cords may be attached, as shown at *l*, to the ends of the lever G, these depending within reach of the hand. The lower end of the liquid-leg, as will be understood, is immersed in water. The needle-plunger for that leg consists of a wire or rod doubled and having one prong *m* extending up within the liquid-leg with its needle-pointed end adapted to enter the discharge-orifice of the leg. The other prong extends up outside of leg and the end thereof is bent to form a wrist-pin *o*, which enters a hole in the side of the lever. The prongs are long enough to permit the necessary amount of longitudinal movement of the needle in and out of the orifice. The prong in the leg

is of less diameter than the interior diameter of the bore and leaves space for the passage of the liquid. The same movement of the lever which operates the needle in the power-leg also simultaneously operates this needle in the liquid-leg. The power-leg may be provided with a shank similar to that last described, instead of the form shown in Fig. 1. This is shown in Figs. 4 and 5. In these figures a separate passage *p* is made for the shank *q*, suitable packing being provided therein. The end of the air-passage *r* opens into the shank and needle passage leading to the orifice.

The plunger *b* is shown as being hollow, with openings *y* at its forward end for the escape of the air; but, as before stated, the air may be allowed to pass the plunger by grooving its sides or in other obvious ways.

I claim as my invention—

1. In combination with the leg of an atomizer, a freely-reciprocating cleaning-needle therein adapted to be projected entirely through and withdrawn from the opening, a lever connected to said cleaning-needle, and an operating connection extending from the lever, substantially as described.

2. In combination, the power-leg of an atomizer, the liquid-leg, a cleaning-needle in each, operating means for reciprocating the needles common to both, and a connection

from said means to both of the needles, substantially as described.

3. In combination, the leg of an atomizer, the cleaning-needle, the shank therefor formed hollow, with openings at its front end about the needle, and means for operating said shank, substantially as described.

4. In combination with the liquid and power legs of an atomizer, needle-carrying shanks arranged to reciprocate therein, and an operating-lever, with connections between said shanks and the lever, whereby the shanks are reciprocated simultaneously, substantially as described.

5. In combination with the power-leg of an atomizer, a needle-carrying shank arranged to reciprocate in the said leg, a barrel on said leg, and a hub therein, said hub having a cog or pin connection with the said shank, all substantially as described.

6. In combination with the liquid-leg of an atomizer, a needle-carrying shank arranged therein, having an outside prong, said outside prong being connected to a lever, substantially as described.

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

JAMES GRAY GARLAND.

Witnesses:

J. E. ETHELLES,

ELIZABETH L. P. GARLAND.