

No. 661,313.

Patented Nov. 6, 1900.

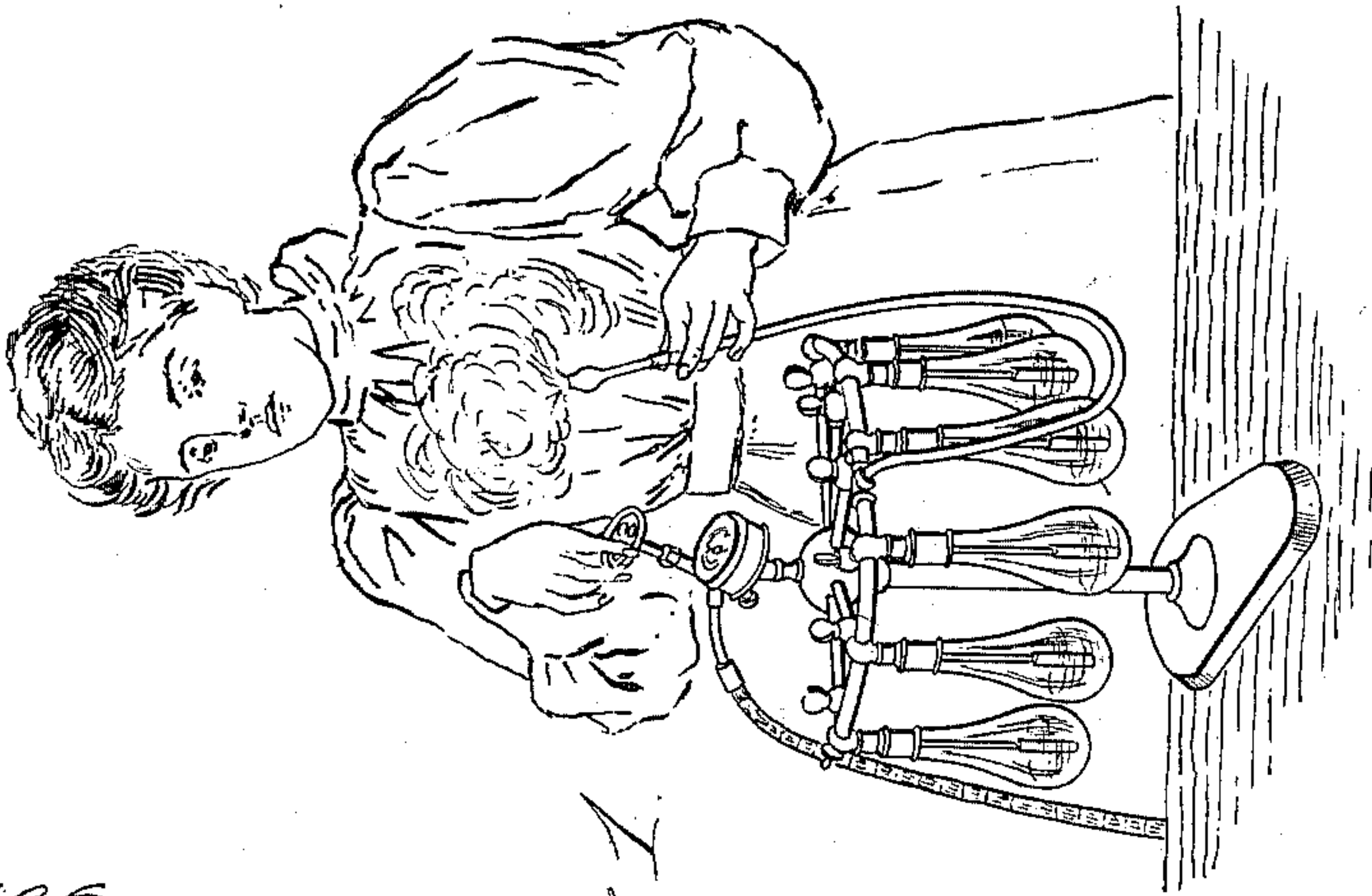
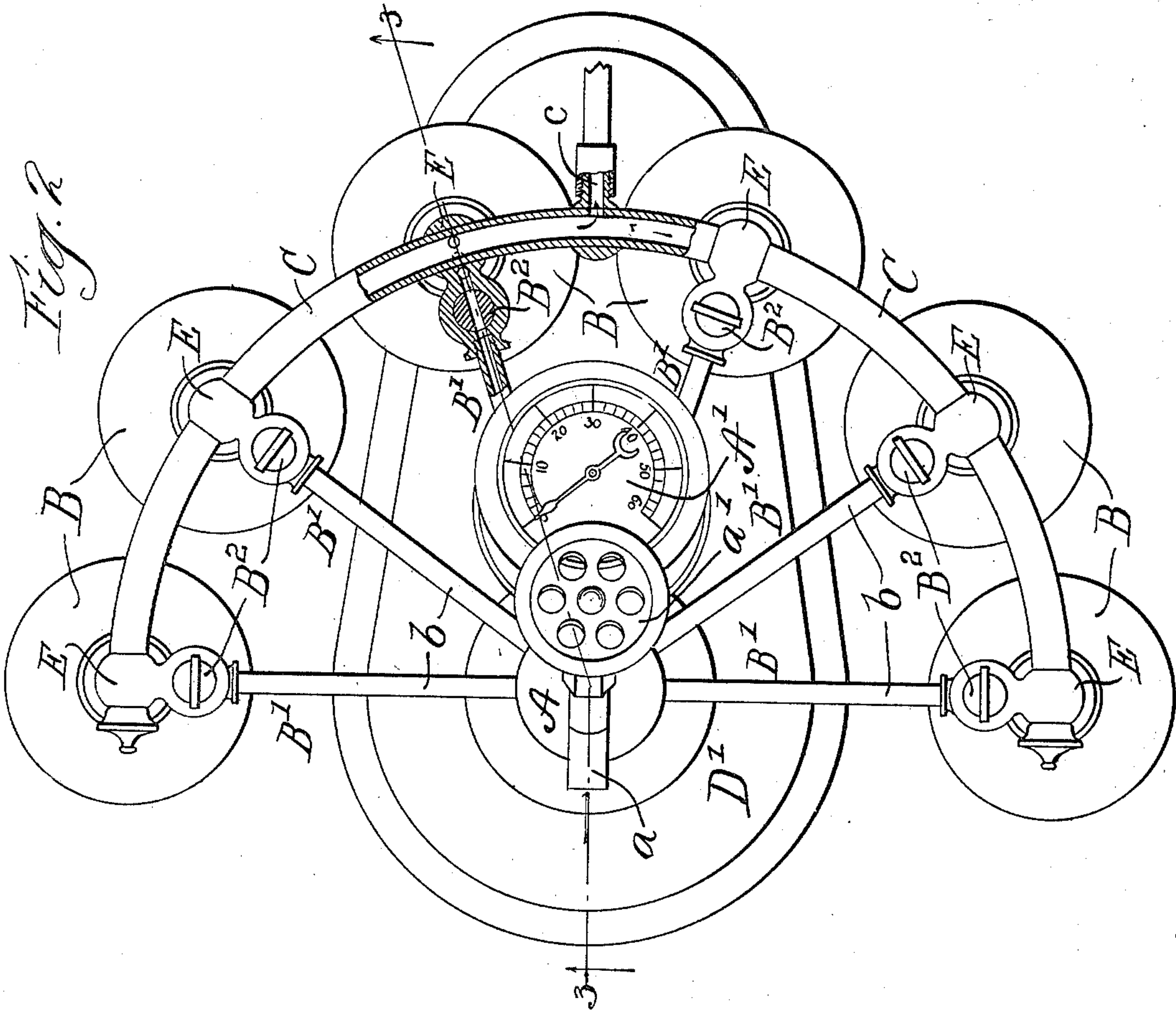
O. Q. HOLMAN.

ATOMIZER.

(Application filed June 28, 1897.)

(No Model.)

2 Sheets—Sheet 1.



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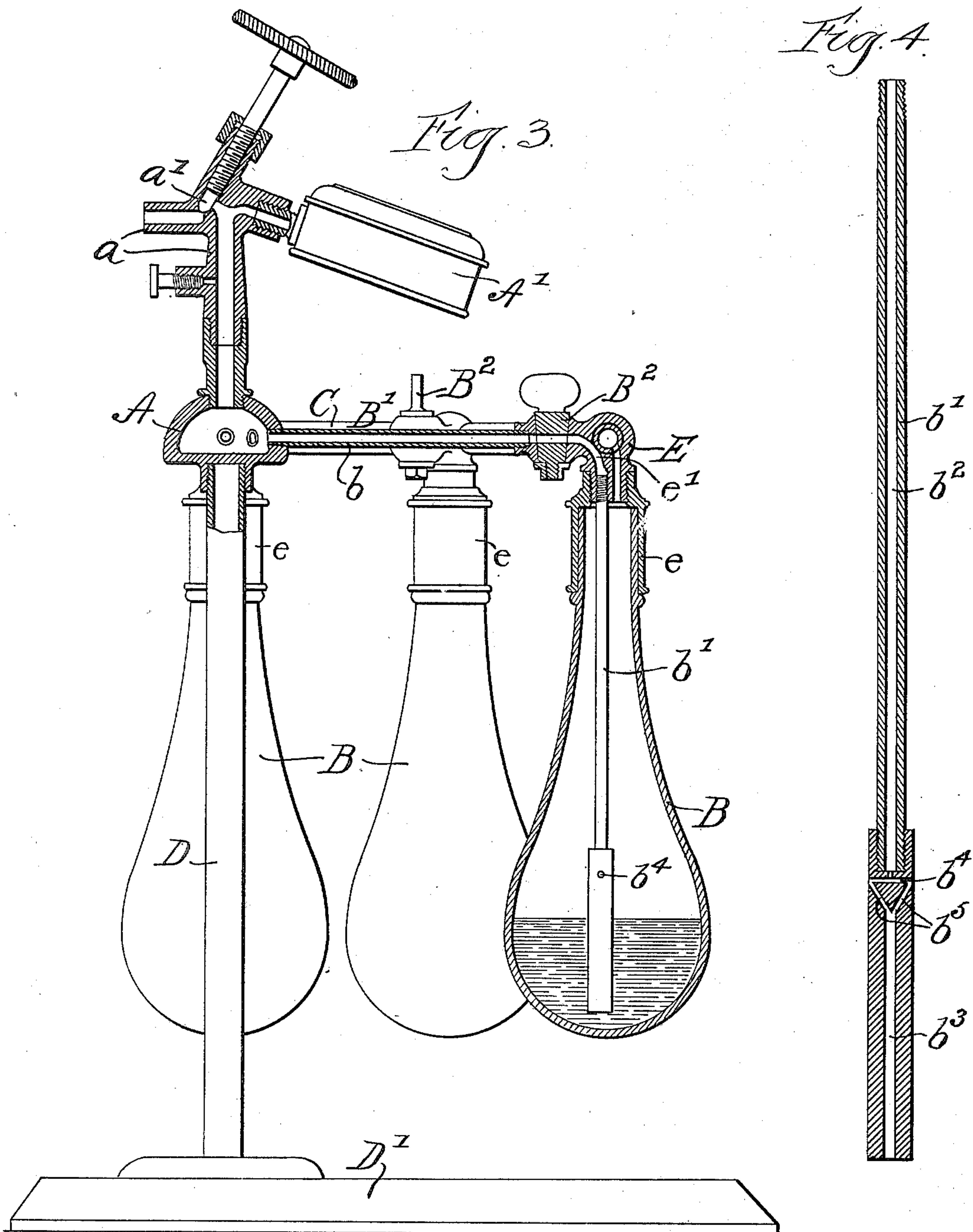
**O. Q. HOLMAN.**

## ATOMIZER.

(Application filed June 28, 1897.)

(No Model.)

**2 Sheets—Sheet 2.**



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# UNITED STATES PATENT OFFICE.

OLIN Q. HOLMAN, OF LA GRANGE, ILLINOIS.

## ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 661,313, dated November 6, 1900.

Application filed June 28, 1897. Serial No. 642,664. (No model.)

*To all whom it may concern:*

Be it known that I, OLIN Q. HOLMAN, a citizen of the United States, and a resident of La Grange, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Atomizers, of which the following is a specification.

This invention relates to improvements in atomizers, and relates particularly to atomizers of the type comprising a plurality of bottles or flasks in controlled communication with an air-compressor or other atomizing medium and connection between said bottles or flasks whereby the contents of any two or more of said bottles or flasks in a vaporous state may be thoroughly mixed or intermingled before being discharged from the apparatus.

The object of my invention is to provide an atomizer of this type which shall be efficient in its operation and of simple construction.

To this end the invention consists of the various features, combinations of features, and details of construction hereinafter described and then pointed out in the claims.

In the accompanying drawings an atomizer embodying my invention is fully illustrated.

Figure 1 is a perspective view of my improved atomizer, illustrating the method of operating the same. Fig. 2 is a top plan view thereof, partly in section. Fig. 3 is a vertical sectional view thereof on the line 3 3 of Fig. 2, and Fig. 4 is a sectional view of a preferred form of atomizing-tube.

An atomizer embodying my invention comprises a chamber A, the interior of which communicates with an air-compressor (not shown) by a pipe or tube *a*. The chamber A is preferably provided with a pressure-gage A', adapted to indicate the pressure in said chamber, and the pipe or tube *a* is controlled by a valve *a'*, which affords convenient means for regulating the pressure in the chamber A. Both the gage A' and the valve *a'* may be of any desired or approved construction.

My improved atomizer also comprises a series of bottles or flasks B, adapted and designed to contain medicines in liquid form, the interiors of which are connected with the interior of the chamber A by tubes B', which comprise sections *b b'*, of which the sections

*b* extend to the mouths of the bottles or flasks B, and the sections *b'*, which are preferably made detachable, extend into the bottles or flasks B and below the surface of the medicine contained therein and are adapted to atomize or vaporize the contents of said bottles or flasks when air under pressure is discharged therethrough. Each of the tubes B' is controlled by a suitable valve or stop-cock B<sup>2</sup>. For purposes of convenient reference the tubes B' will hereinafter be designated as "atomizing-tubes." The sections *b'* of said tubes B' may be of any usual or approved construction to effect the reduction of the liquid contents of the bottles or flasks B to vaporous form. In the preferable construction shown, however, longitudinal holes or openings *b<sup>2</sup> b<sup>3</sup>*, Fig. 4 of the drawings, are formed in the upper and lower ends of said sections *b'*, respectively, of which the holes or openings *b<sup>2</sup>* communicate with transverse holes or openings *b<sup>4</sup>*, and the holes or openings *b<sup>3</sup>* communicate with diagonal holes or openings *b<sup>5</sup>*, which connect the holes or openings *b<sup>3</sup>* with the transverse holes or openings *b<sup>4</sup>* on opposite sides of the holes or openings *b<sup>2</sup>*. As shown, the discharge-openings of the transverse holes or openings *b<sup>4</sup>* and of the diagonal holes or openings *b<sup>5</sup>* coincide with each other. In the preferable construction shown also the holes or openings *b<sup>2</sup>* are materially larger than the transverse holes or openings *b<sup>4</sup>*, and the discharge ends of said holes or openings *b<sup>2</sup>* are contracted to about the size of said transverse holes or openings *b<sup>4</sup>*.

To facilitate the construction of the sections *b'*, they are made in two parts, the upper part being secured in a suitable socket formed in the lower part by engaging screw-threads. The holes or openings *b<sup>2</sup>* are formed in the upper parts of said sections *b'*, extending entirely through the same and being of uniform diameter throughout, and the holes or openings *b<sup>3</sup>, b<sup>4</sup>, and b<sup>5</sup>* are formed in the lower parts of said sections *b'*. The contraction of the holes or openings *b<sup>2</sup>* is effected by partially closing the inner ends of the sockets in the lower parts of said sections *b'*, leaving holes or openings of desired size therein which connect said holes or openings *b<sup>2</sup>* with the holes or openings *b<sup>4</sup>*.

An atomizer embodying my invention also



comprises a discharge-tube C, the interior of which is in direct and open communication with the interiors of all of the bottles or flasks B. The ends of the tube C are closed, and  
5 said tube is provided with a discharge-opening *c*.

In the preferable construction shown the elements of the atomizer are supported upon a standard D, which is secured in upright  
10 position in a foot or base D'. The chamber A is supported directly upon said standard, while the bottles or flasks B are supported upon suitable arms which project laterally from said standard D. As shown, said arms  
15 are tubular and form the sections *b* of the atomizing-tubes B'. As preferably constructed also my improved atomizer comprises heads E, secured to the ends of the sections *b* of the tubes B'. On the under sides of said heads  
20 are formed sockets *e'*, in which the bottles or flasks B are secured, preferably by means of engaging screw-threads, and secured in said heads, so that they will extend into the said bottles or flasks, are the atomizing-sections  
25 *b'* of the tubes B'. Formed in said heads E are transverse openings in which the discharge-tube C is supported, said heads being soldered or sweated upon said tube to insure a tight joint. Passage-ways *e'* are also formed  
30 in said heads E, which connect the adjacent ends of the sections *b b'* of the atomizing-tubes B'. Preferably, also, the seats for the stop-cocks B<sup>2</sup>, which control the passage through the tube B', are formed in said heads  
35 E, as clearly shown in the drawings.

The operation of my improved atomizer will be readily understood without a detailed description thereof.

I claim—

40 1. In an atomizer, the combination with a plurality of medicine flasks or bottles, an air-chamber provided with an air-supply opening, atomizing-tubes which connect said air-chamber with said flasks or bottles, valves  
45 which control said atomizing-tubes and a discharge-tube from said flasks or bottles, of a standard upon which the elements of said atomizer are supported, the air-chamber being formed in said standard and the flasks or  
50 bottles and the discharge-tube being supported on tubular arms secured in the walls of said air-chamber, said tubular arms forming sections of the atomizing-tubes, substantially as described.

55 2. In an atomizer, the combination with a plurality of medicine flasks or bottles, an air-chamber provided with an air-supply opening, atomizing-tubes which connect said air-

chamber with said flasks or bottles, valves which control said atomizing-tubes, and a dis- 60  
charge-tube from said flasks or bottles, of a standard upon which the elements of the atomizer are supported, the air-chamber being supported directly upon said standard and the flasks or bottles and the discharge-tube 65  
on tubular arms secured in the walls of said air-chamber, said tubular arms forming sections of the atomizing-tubes, substantially as described.

3. In an atomizer, the combination with a 70  
plurality of medicine flasks or bottles, an air-chamber provided with an air-supply opening, atomizing-tubes which connect said air-chamber with said flasks or bottles, valves which control said atomizing-tubes, a pres- 75  
sure-regulating valve and a pressure-gage applied to said air-chamber and a discharge-tube, which communicates directly with said flasks or bottles, of a standard upon which said elements are supported, the air-chamber 80  
being supported directly upon said standard and the flasks or bottles and the discharge-tube on tubular arms secured in the walls of said air-chamber, and radiating therefrom, said tubular arms forming sections of the at- 85  
omizing-tubes, substantially as described.

4. A spray-tube provided with an air-pas-  
sage extending downward from the upper end, a liquid-passage extending upward from the lower end, an intervening partition and fine 90  
outlets from the proximate ends of these two passages converging to a spray-hole, the said hole and converging outlets being all within the outer surface of the external cylindrical wall of the said tube and obviating the need 95  
of a lateral nozzle or other projection or projections, from the side of the said tube, substantially as set forth.

5. A spray-tube provided with an air-pas-  
sage extending downward from the upper end, 100  
a liquid-passage extending upward from the lower end, an intervening partition and fine outlets from the proximate ends of these two passages, converging to a spray-hole, the liq- 105  
uid-outlet being inclined upward and the air-outlet approximately horizontal in order that the liquid may be blown upward obliquely in the act of vaporization and finely divided, substantially as set forth.

In testimony that I claim the foregoing as 110  
my invention I have hereunto set my hand this 25th day of June, 1897.

OLIN Q. HOLMAN.

Witnesses:

CLARA CRIM,  
BYRON B. CARTER.