

(No Model.)

H. C. REES.
ATOMIZER.

No. 526,741.

Patented Oct. 2, 1894.

Fig. 1

Fig. 2

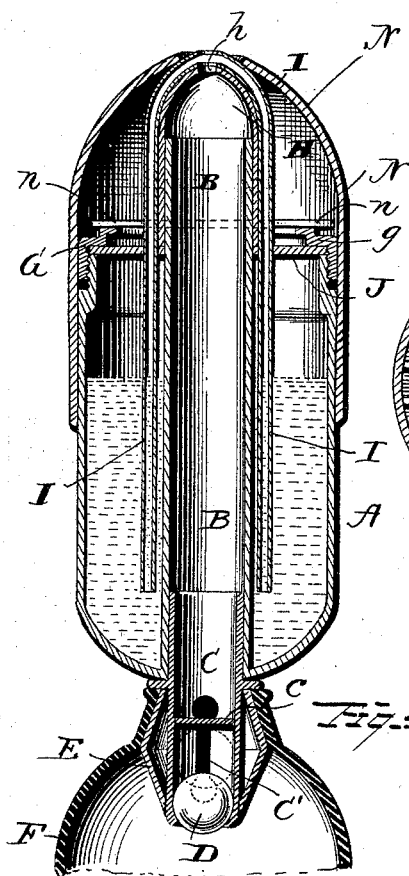


Fig. 3

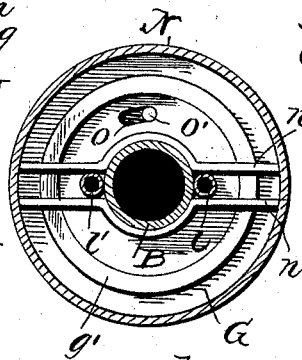
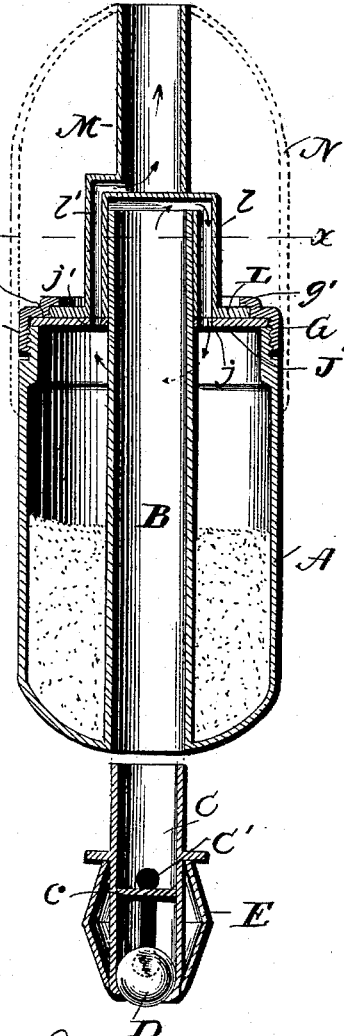
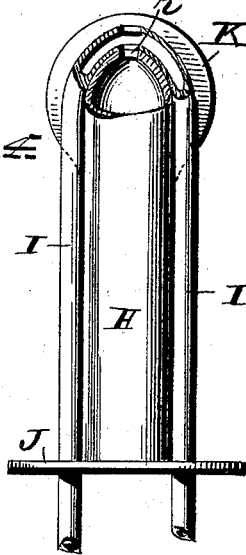


Fig. 4



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UNITED STATES PATENT OFFICE.

H. CLAY REES, OF WACO, TEXAS.

ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 526,741, dated October 2, 1894.

Application filed December 15, 1893. Serial No. 493,725. (No model.)

To all whom it may concern:

Be it known that I, H. CLAY REES, a citizen of the United States, residing at Waco, in the county of McLennan and State of Texas, have
5 invented certain new and useful Improvements in Atomizers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this
10 specification, and to the letters of reference marked thereon.

The present invention relates to atomizers or instruments for distributing liquids, powders, and vapors, and has for its object, among
15 others, the provision of a device of this character of such construction as to admit of ready change of parts to adapt it to different uses and of perfect access for cleaning, non-liability to get out of order and withal efficient in
20 operation, and to these ends said invention consists in the device having the construction and combination of parts hereinafter specified and claimed.

In the drawings, Figure 1 is a vertical section
25 of my invention arranged to spray or atomize liquids; Fig. 2, a like view when arranged for blowing powder, but with the air valve shown as detached and with the upper body portion or cap shown in dotted lines; Fig. 3, a horizontal section on line *x-x* of Fig. 2; Fig. 4,
30 a detail of a different form of atomizing tube from that shown in Fig. 1.

In the drawings, A designates the body or box of the device which is cylindrical in general shape and has its lower end closed with
35 the exception of its central portion from which rises a pipe or tube B whose upper end is carried to a point somewhat above the top of the body A. Secured within the tube B at its lower
40 end is the upper portion of a short tube C whose lower end is normally closed by a ball D resting on a seat formed by turning the edge of the tube inward. Above the ball a distance equal to about its own diameter is a partition *c* in the tube C and in the side of the
45 latter is a slot or slots *C'* extending partially, above and below the partition, while encircling the slotted portion of said tube is a shell E whose sides from its center toward both
50 ends incline inward where they engage the tube C and thus form around the latter a space which through the slot *C'* establishes com-

munication between the portions of the tube above and below the partition *c*. To the upper portion of the double tapered shell E is
55 attached the neck of a bulb or air compressor F in conjunction with which the valve mechanism just described is to operate. When said bulb is compressed the ball D rises high enough to uncover the lower end of the slot
60 *C'* and thus air is permitted to pass into the tube B, while when pressure is relaxed on the bulb the ball immediately seats itself and prevents back suction into the bulb. The tube C is detachably connected to the tube B and
65 preferably the connection is simply a frictional one, although they may be united by screw thread.

The upper portion of the body A is reduced in diameter and threaded externally to receive
70 a threaded cap G that serves to secure the proper part to the body according to the use to which the device is to be put. In Fig. 1 the arrangement is for atomizing a liquid, there being provided for this purpose a tube H that
75 closely fits around the upper end of the tube B and has its end above the latter contracted or tapered inward and perforated with a small opening *h* and an inverted U-shaped tube I that is perforated in line with the opening *h*
80 and has its legs extending well down into the receptacle or box A. The tubes H and I are both attached to a plate J that is clamped at its outer edge between the top of the body A and the flange *g* of the cap G, and thus closes
85 the upper end of the box or body A around the tube B. A blast of air through the openings in the tubes H and I will draw the liquid through the tube I and atomize the same at its opening and eject the spray from the in-
90 strument.

Instead of the short tubes H and I shown in Fig. 1 longer ones may be employed to reach parts inaccessible to the short ones and they may be curved or straight according to the
95 necessities of the case. For use in the mouth and throat, I provide at the end of the tubes a flat plate K as shown in Fig. 4 for use as a tongue depressor.

For distributing powder or vapor the tubes
100 H and I and their plate J are removed and for the latter a plate J' is substituted and clamped in the same way as the former, which has two openings *j, j'*, corresponding in position to

those in the plate J through which the legs of the tube I pass. Upon said plate J' is placed another plate L from which rise two tubes *l, l'* that by the rotation of the plate L are adapted to be placed in or out of alignment or registration with the openings *j, j'*. Said plate is held so as to be capable of rotation by having its edge engaged by an inwardly projecting flange *g'* on the cap G. The tube *l* is in communication at its upper end with the upper end of the tube B, while the tube *l'* communicates at its upper end with a discharge pipe M, the air thus being compelled to pass through the upper end of the body or box, A.

When the tubes *l, l'*, and openings *j, j'*, are out of registration it will be seen that the box A is closed and there can be no escape or deterioration of its contents by the admission of air.

I preferably place over the upper end of the body A a cap or cover N that is hollow and is perforated at its upper end which is rounded to correspond with lower end of the body, to give a symmetrical shape to the instrument; and as well form a nasal plug. Said cap may be screwed to the body A or simply held in place by friction. By providing the cap with transverse rods *n, n* to engage the tubes *l, l'* on opposite sides, said cap may be employed as a means to rotate said tubes into and out of line with the openings *j, j'*. The motion of the plate L may be limited by providing it with a short slot O, to co-operate with a pin O' on the plate J'.

By dispensing with the bulb, which can be readily detached, my instrument can be used as an inhaler, or simply as a receptacle for fluids, powders, &c., which can be kept therein safely and without impairment.

Instead of using the rods *n, n*, a diaphragm may be employed perforated so as to pass over

the tubes B and *l* and *l'* and operating in precisely the same way as said rods. The perforation will correspond in outline to a cross section of the tubes.

What I claim is—

1. In combination with the body or box having a valved inlet for the admission of air, a cap at its upper end, a plate resting upon the upper edge of the box, and having openings communicating with the interior of the box, a flange *g* on the cap engaging said plate, and a second flange *g'* thereon, substantially as specified.

2. In combination with the body or box, having an upwardly extending valved air tube, the U-shaped air tube whose legs extend into the box on either side of the latter, a plate to which the U-shaped tube is attached resting on the upper edge of the box, and the threaded flanged cap engaging said plate, substantially as shown.

3. In combination, the body or box, the tube rising from the bottom thereof, the partitioned tube secured to the lower end of the latter, and having a slot extending above and below the partition the shell inclosing the slotted portion, and the ball in the tube below the partition, substantially as specified.

4. In combination the partitioned tube having a slot extending above and below the partition, the ball below the latter, and the shell inclosing the slotted portion of the tube, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

H. CLAY REES.

Witnesses:

J. H. BARTON,
WM. DAVIS.