June 19, 1923.

1,459,478

W. A. PAGE

INHALING TUBE

Filed Dec. 4, 1919

FIG. 1.

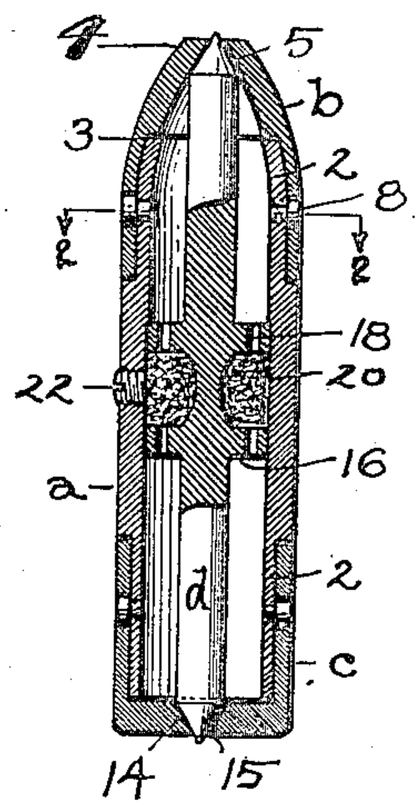


FIG. 2.

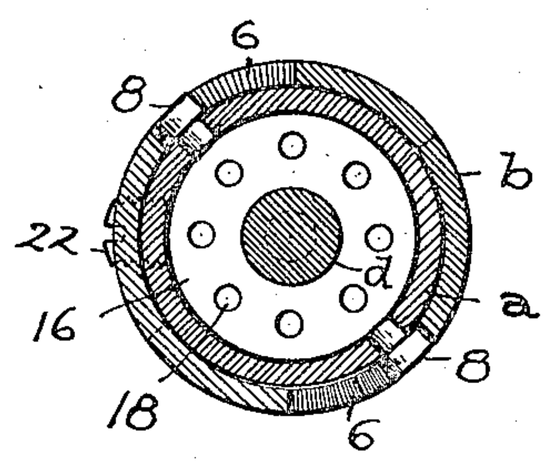


FIG. 3.

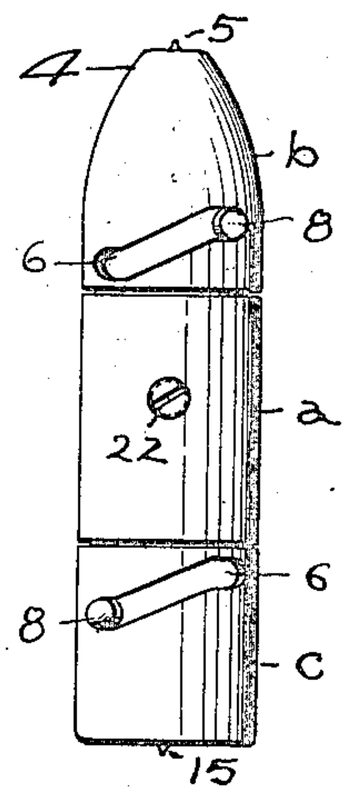
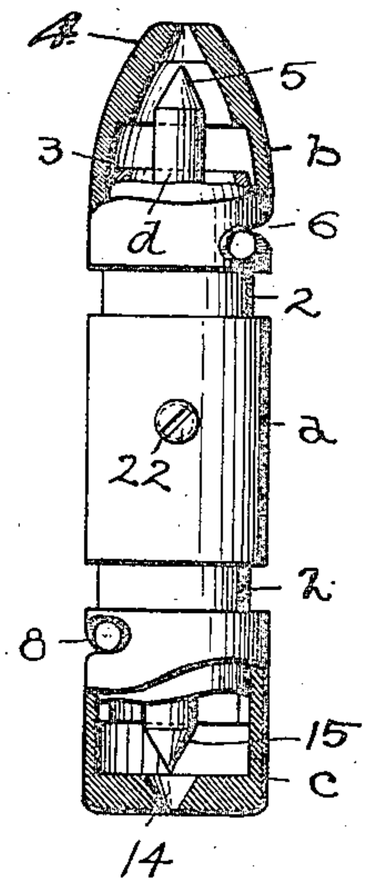


FIG. 4.



Inventor

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Patented June 19, 1923. 1,459,478

UNITED STATES PATENT OFFICE.

WILLIAM A. PAGE, OF CLEVELAND, OHIO.

INHALING TUBE.

Application filed December 4, 1919. Serial No. 342,396.

To all whom it may concern:

Be it known that I, WILLIAM A. PAGE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in an Inhaling Tube, of which the following is a specification.

This invention consists in an inhaling tube adapted to be utilized at one end for inhalation through the nostrils and at the other end through the mouth, with the important provision of opening both ends for inhalation through either and to afford suction through the medicated absorbent at the middle of the tube, all substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Fig. 1 is a central sectional elevation lengthwise of the tube, and Fig. 2 is a cross section on line 2—2, Fig. 1.

Fig. 3 is a plain elevation of the tube closed, and Fig. 4 is an elevation thereof with the ends sectioned and shown as open, as in use.

The article as thus shown is of comparatively small size for convenience in carrying on the person, as in a gentleman's vest pocket or in a ladies pocket or hand-bag, and in addition to being small is also light in weight and of simple construction for convenience in use. Thus, the body *a* may be of hard rubber, or its equivalent, and also the end caps *b* and *c* as well as the spindle *d*, and all the said parts have special features for mutual adaptation as will now appear. For example, the body *a* is tubular and has annularly reduced ends 2 shouldered about their base, and the end which is adapted to receive the cap *b* is slightly contracted toward its extremity to receive the inwardly tapered cap *b*, which is enlarged internally to sleeve over the reduced end 2 and against the shoulder 3. The oversleeving portion of this cap is reduced in thickness up to its shoulder 3 so as to bring its external surface flush with the surface of body *a*, and the extremity 4 thereof is tapered externally and internally to substantially conical shape, leaving a relatively small end opening with a tapered seat adapted to receive the cone-shaped extremity 5 of the spindle and which practically constitutes a valve for the perfect closure of the said opening. The opening and closing of the said valve is effected by rotating the said cap *b* within the limits of the inclined cam slots 6 oppositely in the said cap, and headed pins 8, having their reduced ends permanently fixed in the end 2 of body *a* and their heads occupying said slot and flush on the outside serve as stops in said slots. Pins are used instead of screws to avoid possible tampering with the device by removing the caps, as might occur if screws were used, and the pins are made a permanent fixture. Then as the cap is rotated to closed position, the parts sustain the relation seen in Figs. 1 and 3, and when rotated to open position they sustain the relation shown in Fig. 4, and the heads of the pins rest in the straight terminals of said slots.

The same principle of construction and operation obtains at the opposite end of the tube *a*, except that at this end the cap *c* and the reduced end 2 of the tube are of the same size or cross section between their ends and a conical or tapered hole 14 in the end of the cap is adapted to receive the conical extremity or valve 15 on the end of the spindle. Cam slots 6 and pins 8 are used in this cap like those at the other end and the two caps are independently rotatable.

The spindle *d* has a body portion 16 at its middle which fits somewhat snugly in the body of the tube and has an annular channel or groove about its middle nearly the full depth thereof and a series of bores or holes 18 axially through the standing portion of said body on both sides of said channel open to the interior of the tube *a* at both ends, and the said channel is of a size and depth sufficient to receive a suitable fibrous absorbent 20, which may be packed therein more or less densely and as will be most effective in retaining or holding a medicating solution. The said packing is introduced at the assembling of the parts, and the medication is accomplished through the hole for the screw plug 22 as may be needed.

The advisability of having both caps rotatable to open position is seen not only in the dual use they afford for medication by inhaling through the nostrils, or through the mouth, or either at pleasure, but whichever end is used the other end is opened also to provide for circulation and impregnating the air with the medicament by suction or draft through the same, and more or less opening of either cap is possible by the

present construction, the comparatively close fit of all the parts making provision for such use. Of course both the body *a* and the spindle *d* remain in the relation shown, and neither is movable in respect to the other and all adjustments are in the end caps *b* and *c*, and these within the limits of their respective slots 6, which have the same inclination. When not in use both caps are closed and the tube is thus sealed against the escape of any odor from the inside and the medicament is protected against evaporation, which is important in an article of this kind.

What I claim is:

1. An inhaling tube having annularly reduced end portions provided with pins, caps seated over said end portions and having inclined grooves in their sides engaged on said pins and provided with axial openings, a spindle fixed in said tube having a bored hub engaged in said tube and its ends constructed to close said openings, and an absorbent belt about said hub and exposed to the bore therein.

2. An inhaling tube adapted to have air drawn through the same, a spindle fixed therein having tapered ends and a body portion at its middle with a channel about the same and a series of holes through the walls of said channel, a belt of absorbent material fitting said channel and caps rotatably engaged on the ends of said tube having axial holes opposite the ends of said spindle.

3. As a new article of manufacture, an inhaling tube having a tubular body, a cap rotatably mounted on each end of said body and provided with an axial opening, a spindle stationary in said body constructed at its ends to close said openings by the rotation of said caps and provided with a hub between its ends engaging the wall of said body and provided with axial openings through the same and an annular channel about the hub communicating with said openings, and absorbent material occupying said channel.

Signed at Cleveland, in the county of Cuyahoga, and State of Ohio, this 26th day of November, 1919.

WILLIAM A. PAGE.