

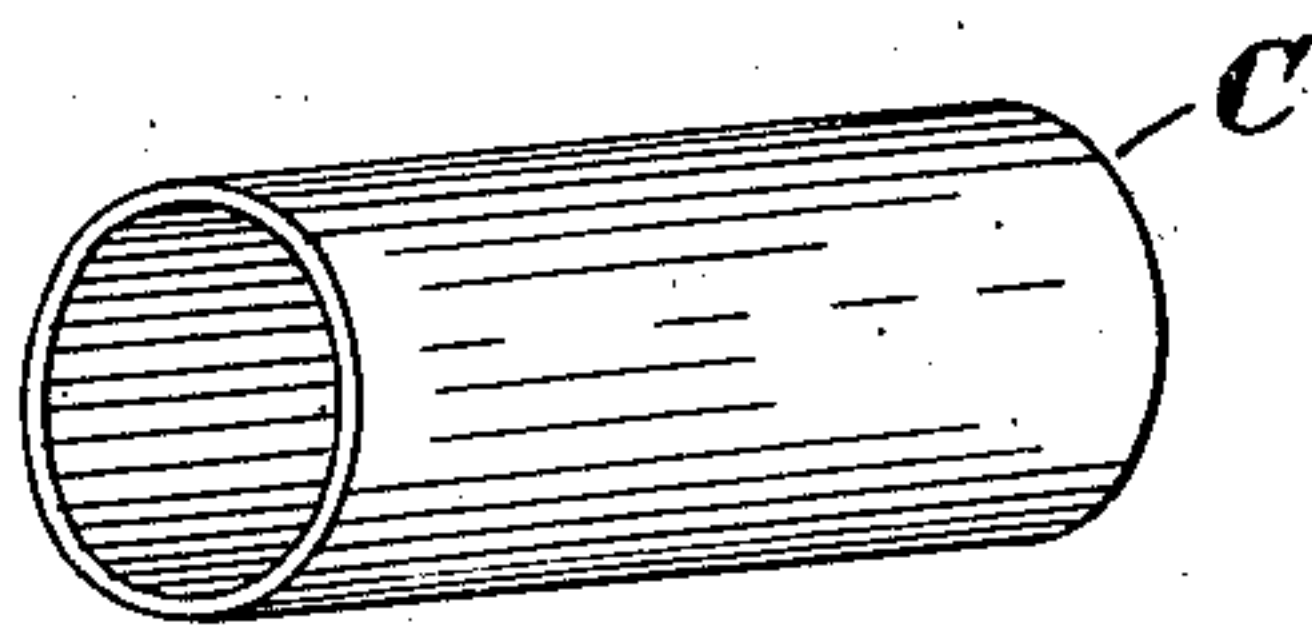
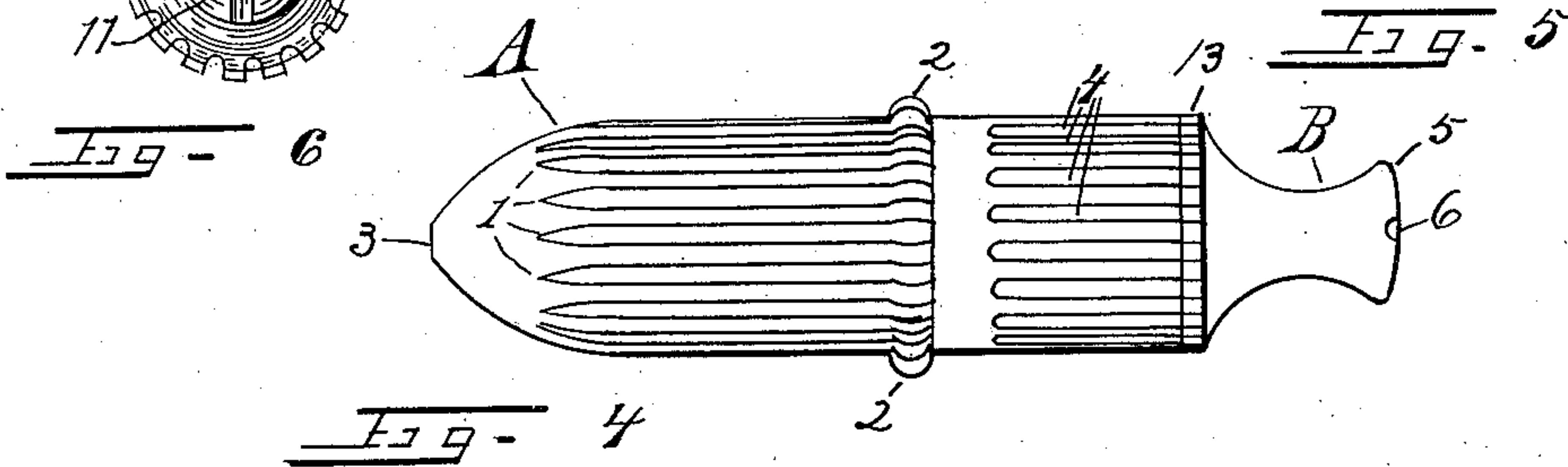
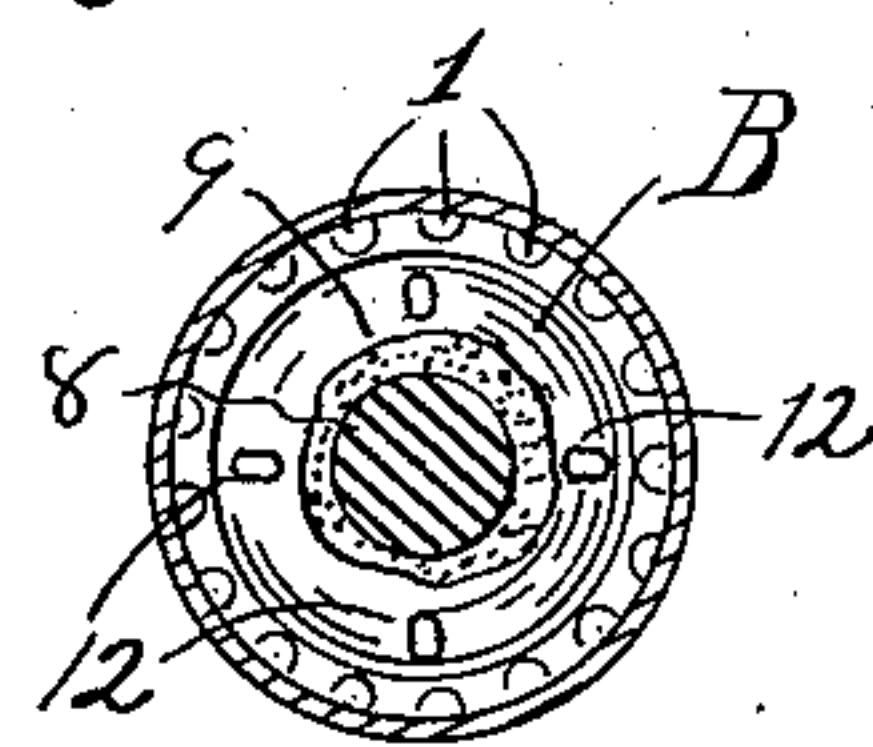
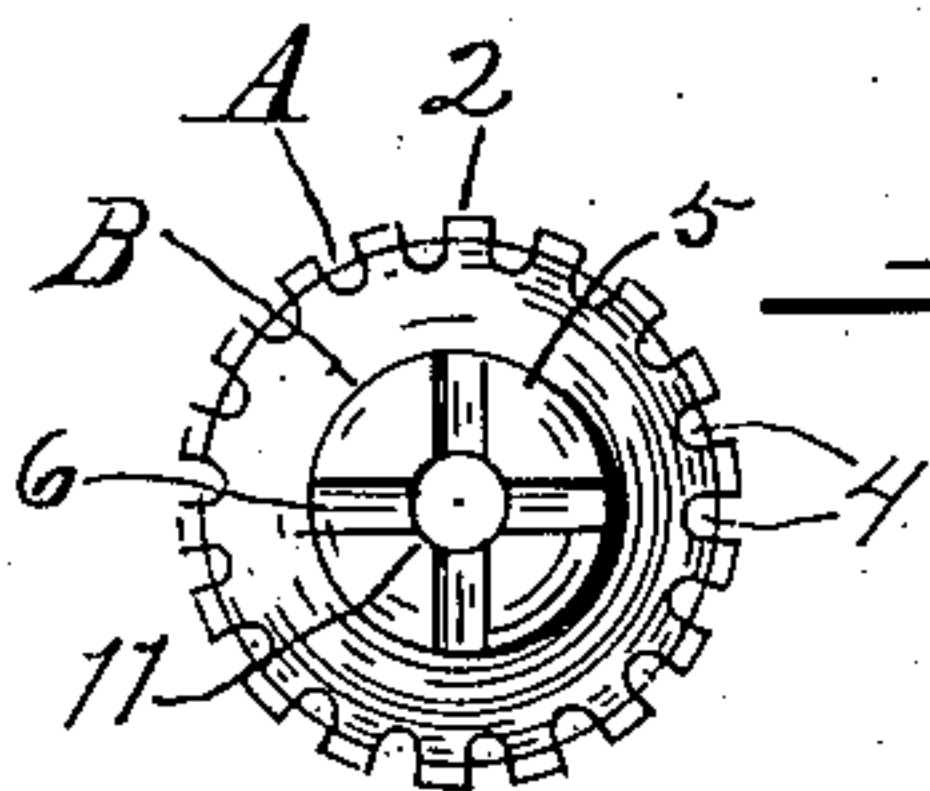
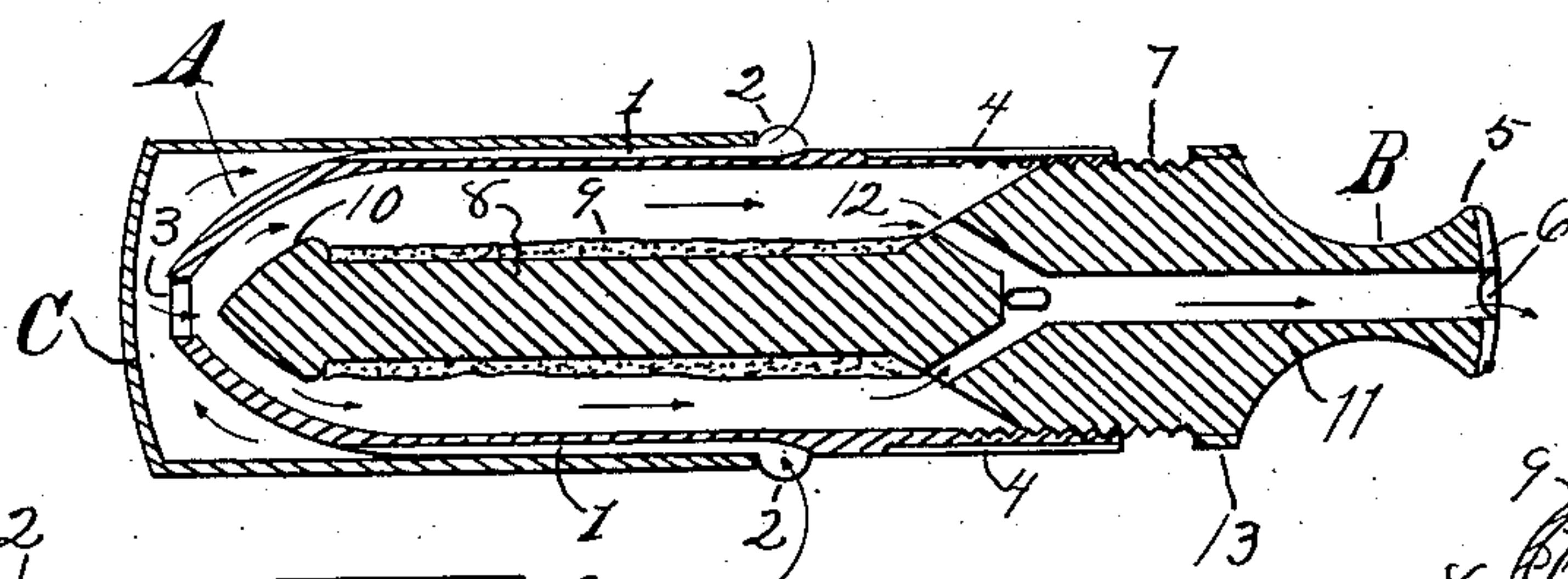
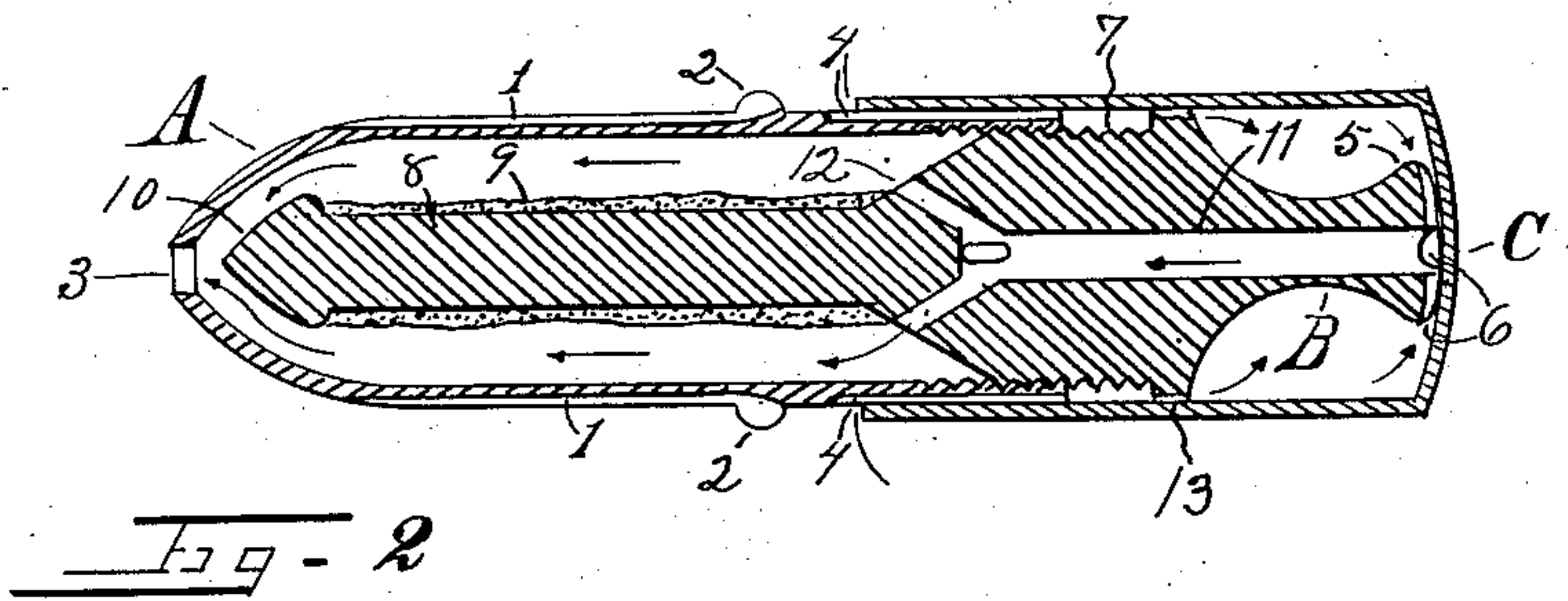
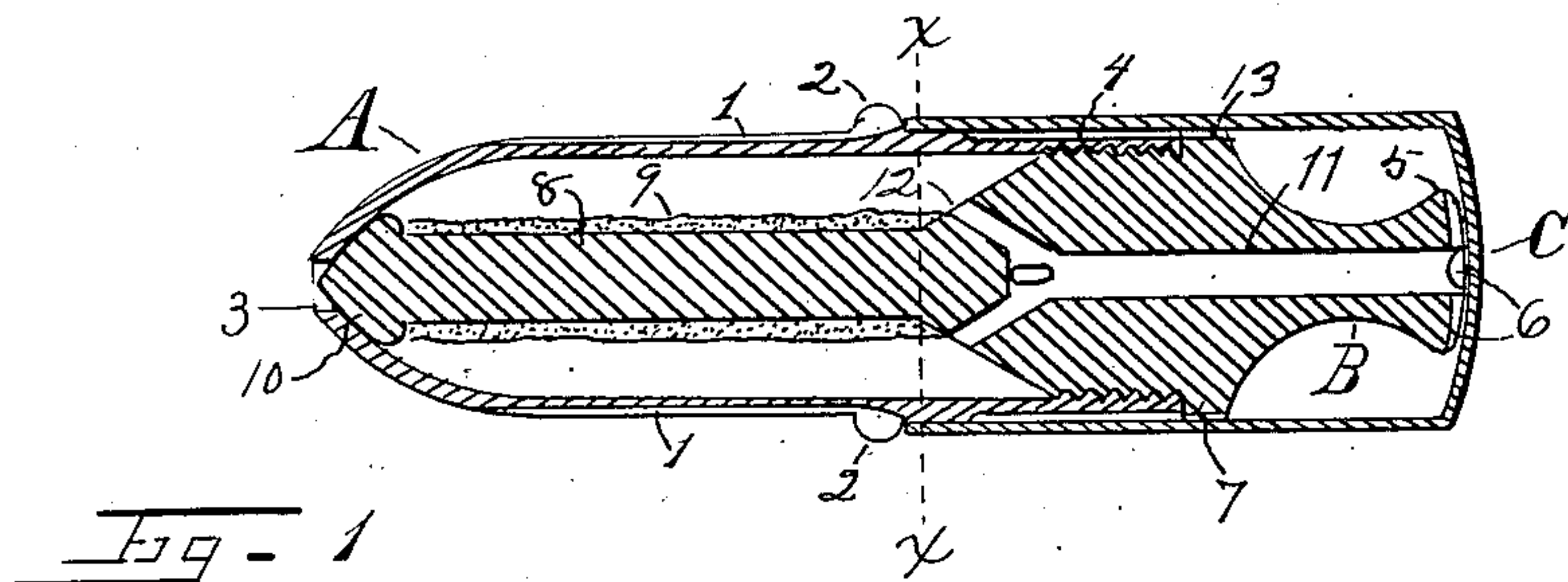
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INHALER.

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928,884.

Patented July 20, 1909.



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VICTOR E. RANDALL, OF BATTLE CREEK, MICHIGAN.

INHALER.

No. 928,884.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed September 4, 1906. Serial No. 333,034.

To all whom it may concern:

Be it known that I, VICTOR E. RANDALL, a citizen of the United States, residing at Battle Creek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Inhalers; and I do hereby declare the following to be a full, clear, and exact description thereof, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the following specification and drawings accompanying the same, which form a part thereof.

This invention relates to inhalers in which a stem is provided for the reception of absorbent cotton, or equivalent, upon which liquid medicines may be placed, and through evaporation of the same by ingeniously-arranged air-passages may be drawn through the breathing passages of the mouth and nostrils into the lungs for the alleviation and cure of nasal catarrh, colds in the head, hoarseness, sore throat, bronchitis and kindred affections of the lungs, bronchial tubes and head.

Among other objects, I provide an inhaler whereby the air currents may pass over the medicament from either end of the inhaler, thereby rendering the inhaler perfectly sanitary and cleanly for the treatment of both throat and nasal ailments without contaminating the mouth-piece with the nostril extremity, and vice versa, as is often resorted to with some inhalers; whereby the medicament will not evaporate when the inhaler is closed; whereby a metallic cap adapted to cover one end of the inhaler when closed, may be used on the inhaler when the same is open, without laying aside or misplacing said cap or cover; whereby the inhaler will be tasty in design, simple in construction, efficacious in operation and cheap and inexpensive to manufacture.

In the drawings forming a part of this specification, in which like marks of reference refer to corresponding parts throughout the different views, Figure 1 is a longitudinal sectional view of my improved inhaler, closed. Fig. 2 is a longitudinal sectional view with the nostril passage open. Fig. 3 is a longitudinal sectional view, with the metallic cap slipped over the nasal extremity and the mouth passage open. Fig. 4 is a longitudinal perspective, with the cap removed. Fig. 5 is a cross-section on the line *x, x*, of Fig. 1.

Fig. 6 is an end view of the inhaler from the mouth extremity, and Fig. 7 is a perspective view of the metallic cap or cover.

In the drawings the arrows indicate air passages.

The inhaler may be constructed from any desirable material, such as gutta percha or vulcanized rubber, the cap or cover being made from aluminum or other non-corrosive material. All told, the inhaler comprises but three parts, viz., the barrel or container, A, a plug, B, comprising a mouth-piece and a medicament retainer, and a cap or cover, C.

The barrel or container has longitudinally-arranged grooves, 1, intersecting an annular rib, 2, near the rear portion thereof, and is provided at the nostril extremity with a tapered portion having an air-passage, 3, the opposite end of the barrel having longitudinal grooves, 4, the same being interiorly threaded and adapted to receive the plug, B. This plug has an outer mouth extremity, 5, provided with cross-grooves, 6; a cylindrically-threaded portion, 7, adapted to screw into the barrel, A; an imperforate stem, 8, forming a spool upon which absorbent cotton, or equivalent material, 9, may be wound; a tapering inner end, 10, adapted to be seated within and close the air-passage, 3, of the tapered barrel portion when the inhaler is closed; an air-passage, 11, opening at the mouth extremity and bisected at its inner end by air-passages, 12, opening about the stem, 8, within the inhaler above the absorbent placed on said stem, as shown; the stock between the neck of the mouth-piece, 5, and the threaded portion, 7, forming an annular cross-grooved rib, 13, adapted to abut the barrel, A, when the inhaler is closed.

In operation, the plug, B, is unscrewed from the barrel, A, and liquid medicament is placed upon the absorbent material, 9; the plug, B, having the stem, 8, carrying said medicament, is thence reinserted and the plug, B, partially screwed therein so that the tapering end, 10, will not close the air-passage, 3, of the container. Should the user desire to employ the inhaler for the nasal passages, and retain the cap or cover, C, thereon, he will fit the cover over the mouth-piece, 5, as shown in Fig. 2; in this position, as air is drawn through the nostrils it will enter the inhaler at the intersection of the open end of the cap, C, and the grooves, 4, and pass through the grooves 6 of the mouth-

piece, into the passage 11, passages, 12, over the medicated absorbent, 9, and out through the air-passage, 3, into the nostrils.

Should the user desire to employ the mouth-piece for the treatment of throat or lung affections, or to exhale medicament through the head by the way of the mouth and nostrils and retain the cap or cover, C, he will fit the cover over the nostril or tapered extremity of the inhaler, as shown in Fig. 3; in this position as air is drawn into the mouth, it will enter the inhaler at the open end of the cover, C, through the grooves, 1, of the barrel and the rib, 2, pass along the barrel, A, and enter the inhaler through the passage 3, whence it will pass over the medicament placed on the absorbent, 9, into the passages, 12, to the passage 11, and out into the mouth. It will be obvious that the cap or cover, C, is non-essential to the operation of the inhaler, the provision of the grooves 1, 4 and 6, being merely to allow air to enter the inhaler at either end thereof upon which it may be placed when the inhaler is in operative position, to avoid laying the cover aside or misplacing the same.

When the inhaler is not in use, the parts A, and B are screwed together as shown in Fig. 1, by which means the plug, 10, will close the passage, 3, at the nostril extremity. The cap, C, is then placed over the mouth extremity and slid on to the inhaler to the rib, 2, by which means the open end of the mouth-piece will be closed and the blank portion, 14, of the barrel be covered, preventing the evaporation of the medicament escaping. The location of the rib 2 is such that when the cap C is placed on the tapered extremity of the inhaler it will not close the same, and that when placed over the mouth-piece, 5, it will hermetically seal the inhaler when the same is screwed shut, but withdraw from the rib and uncover the grooves, 4, at the open end of the barrel, A, when unscrewed to let air into the inhaler. In both opening and closing the inhaler the unscrewing of the parts, A and B, has no bearing whatever in the regulation of air passing to and from the inhaler at its jointed parts, as is often the case with inhalers, the unscrewing of the parts being to regulate the passage of air through the inhaler longitudinally thereof and not in any circumferentially-arranged aperture or opening.

Having, therefore, described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In an inhaler, in combination an opened barrel having one tapering end, of a closure for one end thereof comprising a mouth-piece having a central air passage and an imperforate stem terminating in a plug for the opposite end, and air passages leading from said central air passage to the circumference of said stem, as and for the purpose set forth.

2. In an inhaler, in combination an opened barrel or container having one tapered end, a plug comprising an outer portion forming a mouth-piece having a central air-passage, a centrally-enlarged portion adapted to fit within the larger end of said barrel and an inner reduced portion forming a spool adapted to receive medicated absorbent, air-passages leading from the circumference of said medicated absorbent through said enlarged portion to said central air-passage, the inner end of said spool forming a plug adapted to close the end of the tapered portion of said barrel when said plug is forced to a seat within said barrel, and a cover adapted to close the enlarged end of said barrel and inclose said mouth-piece and hermetically seal the air passage in said mouth-piece when said plug is forced to a seat and to open the air passage within said mouth-piece when said plug is removed from its seat, as and for the purpose set forth.

3. In an inhaler, in combination a barrel having a tapered open end and an opposite interiorly-threaded extremity, said barrel having an annular rib near its threaded extremity and longitudinal grooves extending from the tapered portion thereof and bisecting said rib, a plug comprising a mouth-piece having a central air-passage adapted to screw into the threaded end of said barrel, said plug carrying a medicament wholly encompassed by said barrel.

4. In an inhaler, in combination a barrel having an interiorly-threaded extremity and an opposite tapered open extremity, the end opposite the interiorly-threaded extremity of said barrel having an annular rib near its threaded extremity, and longitudinal grooves extending from the tapered portion thereof and bisecting said rib, a plug comprising a mouth-piece having a central air-passage, a centrally-enlarged threaded portion adapted to screw within said barrel, and an inner reduced portion comprising a spool adapted to receive absorbent material, and a plug, air-passages leading from the circumference of said absorbent material through said threaded portion to said central air-passage, said plug adapted to close said tapered portion of said barrel when said plug is at a seat, a cap or cover adapted to fit over the tapered portion of said barrel, said rib adapted to limit said cap from abutting said tapered portion, substantially as and for the purpose set forth.

5. In an inhaler, in combination a barrel or container having an interiorly-threaded extremity and an opposite tapered open extremity, an annular rib adjacent to the threaded extremity thereof, said threaded extremity being outwardly and longitudinally grooved adjacent to said rib, a plug comprising a mouth-piece having an air-passage, a centrally-enlarged threaded portion adapted to screw within said barrel, and an inner re-

duced portion comprising a spool adapted to receive absorbent material, and a plug, air-passages leading from the circumference of said absorbent material through said thread-
5 ed portion to said central air-passage, said plug adapted to close said tapered portion of said barrel when said plug is at a seat within said barrel, a cap or cover adapted to fit over said mouth-piece and slide upon said barrel
10 against said rib when said inhaler is screwed shut to close said mouth-piece, and to with-

draw from said rib and from said blank portion adjacent to said rib and uncover said longitudinally-arranged grooves and permit air to enter said mouth-piece when the inhaler is 15 partially unscrewed and suction is exerted at the nostril extremity, as and for the purpose described.

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