

(No Model.)

H. PALMER.
INHALER.

No. 384,589.

Patented June 12, 1888.

Fig. 1.

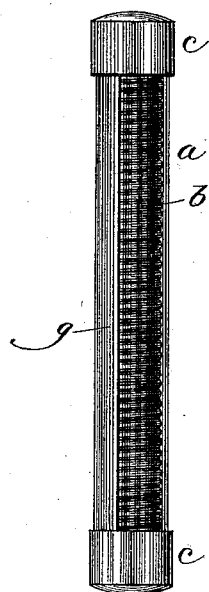


Fig. 2.

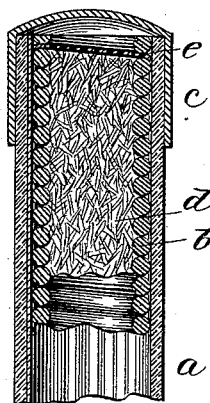


Fig. 3.



Fig. 4.

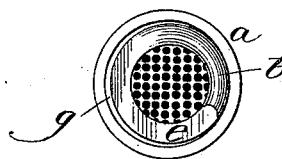
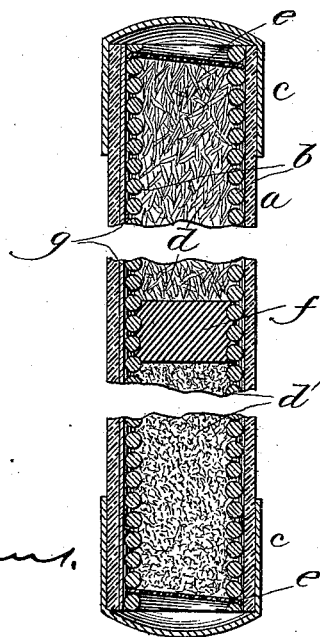


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY PALMER, OF EVANSTON, ILLINOIS.

INHALER.

SPECIFICATION forming part of Letters Patent No. 384,589, dated June 12, 1888.

Application filed July 8, 1887. Serial No. 243,792. (No model.)

To all whom it may concern:

Be it known that I, HENRY PALMER, residing at Evanston, in the county of Cook and State of Illinois, and a citizen of the United States, have invented certain new and useful Improvements in Inhalers, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a full-sized elevation; Fig. 2, an enlarged longitudinal section of one end; Fig. 3, a cross-section; Fig. 4, an end view with the cap removed; Fig. 5, a broken longitudinal section arranged for two kinds of medicaments.

The object of this invention is to provide an inhaler which may be readily filled or refilled, is simple in its construction and durable in use; and its nature consists in the improvements hereinafter described and claimed as new.

In the drawings, *a* indicates the shell or casing, which is usually of glass; *b*, the metal tube; *c*, caps; *d* *d'*, medicaments; *e*, perforated end plates or disks; *f*, stop or plug; *g*, fastening-strip.

The tube *b* is made of steel wire coiled in the form shown, and by preference it is nickel-plated after being formed. The coils are so nearly in contact that the contained medicaments do not escape, and in the form shown in Fig. 1 they are held in the tube by the perforated end disks, *e*.

In the form shown in Fig. 5 there is a plug or stop, *f*, inserted, which is located at or near the middle, so that two kinds of medicaments may be used, that represented at *d* being crystals of menthol and that at *d'* eucalyptine, or sponge or blotting-paper saturated with eucalyptol. Other medicaments suitable for inhalers may be used in place of these.

The perforated disks *e* are preferably made of paper saturated with paraffine, but may be made of metal, if desired, and they are inserted between the end coils of the tube *b*, as shown, and the exterior cylinder, *a*, is usually provided with an interior piece of paper, *g*, which will fill the space between the metal and the glass or outer case with sufficient tight-

ness to prevent the wire tube from slipping out when the caps *c* are removed. This strip of paper may have printed matter thereon or not, as desired, and in the form shown at Fig. 5 it will be preferable to use a single strip passing entirely around at the plug *f*, or two narrow strips in place of a single wider one, as, owing to the presence of the plug *f*, air cannot pass from one perforated plate to the other, but must pass in between the coils of the wire. It is therefore desirable that some slight space should be left between the wire tube and the outer casing for the passage of air down between the two and into the wire tube *b*, although with glass, metal, or hard rubber for an outer casing the air can pass between the glass and the tube by following the spiral space between the coils forming the tube, so that it is not absolutely essential to leave an extra space for the passage of air.

By making the tube of coiled wire it is flexible and can be used without any outer casing at all, and the inhaler is not destroyed by reason of any accidental breaking of the case *a*; and by making it of steel wire and when nickel-plated it does not corrode.

If desired, the tube *b* may be permanently magnetized.

What I claim as new, and desire to secure by Letters Patent, is—

1. The flexible tube *b*, formed as described, in combination with the perforated end plates, *e*, and the stop *f*, substantially as set forth.

2. The combination of the tube *b*, formed of coiled wire and adapted to contain medicament, the perforated plates *e*, secured in the ends of the coiled-wire tube, and an exterior cylinder, *a*, substantially as specified.

3. The combination of the tube *b*, formed as described, having the perforated plates *e* and stop *f*, with the outer casing, *a*, and an air-space between the tube and case, substantially as described.

HENRY PALMER.

Witnesses:

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HARRY T. JONES.