O. J. J. WITT.

INHALER.

APPLICATION FILED NOV. 4, 1908.

1,063,406. Patented June 3, 1913.

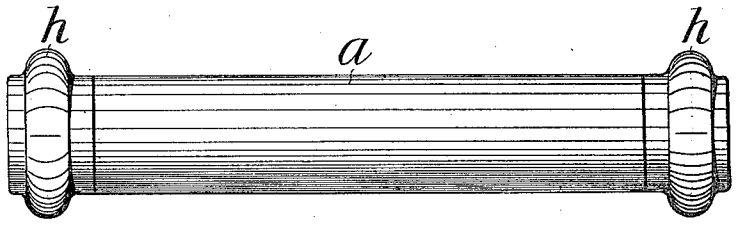

Fig. 1.

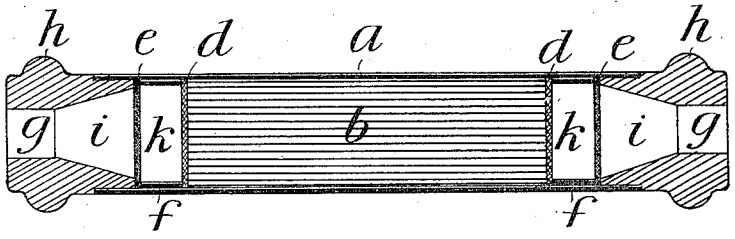

Fig. 2.

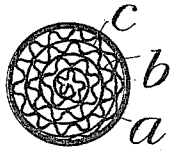

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

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INHALER.

1,063,406. Specification of Letters Patent. Patented June 3, 1913.

Application filed November 4, 1908. Serial No. 461,080.

To all whom it may concern:

Be it known that I, OTTO JOHANN JULIUS WITT, a citizen of Hamburg, and resident of No. 195 Wandsbecker Chaussee, Hamburg, in the Empire of Germany, have invented a new and useful Inhaler, of which the following is a specification.

The present invention relates to an improved inhaler.

More especially it refers to that class of inhalers, known as pocket inhalers, which consist of a cylindrical tube or casing fitted with or terminating at both ends in nipples for insertion or applicatioin to the mouth or nostrils; said cylindrical tube or casing holding a cartridge formed of an absorbent body, which is saturated with some suitable vaporizable medicinal substance, according to the disease for the cure or alleviation of which the inhaler is intended to be used. Hitherto, in this class of device it has been proposed to form the absorbent body wholly or partly of a series of separate tubes of blotting paper, but this arrangement is somewhat expensive and renders the insertion of the tubes into the inclosing casing, or the substitution of one charge for another, a somewhat difficult and tedious operation.

Special objects of the present invention are to simplify and cheapen the construction, and to render more efficient, serviceable and durable in operation, inhalers of the kind referred to.

With these ends in view the invention consists in the novel combination, arrangement and adaptation of parts, as will be more fully hereinafter described, shown in the accompanying drawings, and then specifically set out in the appended claim.

In the drawings Figure 1 represents an exterior view of the improved inhaler; Fig. 2 shows a longitudinal section through the inhaler; and Fig. 3 is a transverse section through the inhaler and the cartridge formed of an absorbent body of a special kind.

In the construction of pocket inhalers, special attention has to be paid to the formation of the cartridge, so as to insure an air passage sufficiently large for the absorption by inhalation of the vaporizable medicinal substance with which the cartridge is saturated.

According to my present invention a novel kind of material is employed in the formation and construction of the cartridge, thus offering special advantages, so far as the rational absorption by inhalation of the vaporizable medium is concerned.

The material of which the cartridge is formed according to my invention, when flattened out into a sheet, resembles the well known waved or corrugated cardboard commonly used as a packing material, and it consists of a suitable absorbent material, preferably a strip of purified blotting paper or the like. It is corrugated in any suitable known manner, and backed with a flat sheet preferably of the same material, to maintain the corrugations in form, as is also the usual arrangement in connection with the corrugated packing material previously referred to.

In the construction of the cartridge the aforesaid corrugated strip is spirally wound in the manner indicated in Fig. 3, so as to form a cylindrical body adapted to be pushed into the cylindrical tube or casing *a*. Owing to the corrugations and the application of the backing for securing the corrugations, natural air channels are produced as is clearly visible in Fig. 3.

The channeled cartridge is saturated with some suitable vaporizable medicinal substance, according to the disease for the cure or alleviation of which the inhaler is intended to be used. In thus saturating the cartridge, the air channels produced by the corrugations do not get clogged, but remain open without special provision being made for attaining that result.

In the drawing *a* indicates the cylindrical tube or casing, *b* shows the cartridge formed of a corrugated strip of absorbent material by spirally winding the latter, *c* indicates the backing of the corrugated strip employed in forming the cartridge.

At both ends of the cartridge, when inserted into the cylindrical tube or casing, are provided disks *d* of coarse silk gauze, said disks fitting tightly into the casing *a*. A short distance away from each of the two disks *d* is also provided a disk *e* of fine silk gauze likewise tightly fitting into the casing *a*. The disks *d* and *e* are maintained at the required distances apart preferably by distance rings *f* interposed between them.

Nipples *h* made of porcelain or like ma-

terial and each provided with a central bore *g* are fixed at both ends of the tube or casing *a*. In the example shown in the drawing, said nipples *h* fit tightly into the casing *a* so as to simultaneously secure the cartridge *b* and parts *d*, *e* and *f* therein. If desired the nipples *h* may be cemented or otherwise affixed to the casing.

It is advisable, but not absolutely necessary, to provide each of the nipples *h* with a conically shaped continuation *i* of the central hole *g*, widening toward the cartridge as indicated in Fig. 2 so as to subject all the spiral coils of the cartridge simultaneously to the absorption when inhaling.

The arrangement of the two disks *d* and *e* at each end of the cartridge provides a filter for regulating the passage of the vapors. The interposition of a spacing member *f* between each two disks *d* and *e* provides a chamber *k* at each end of the cartridge and offers the advantage, that the vapors from the cartridge, after passing the coarser disk *d* are interrupted in their exit by the finer disk *e* and in consequence thereof collect and intimately mix in the chamber *k* before they issue through the said finer disk *e* and the nipple *h* inserted into the nose or mouth.

What I do claim as my invention, and desire to secure by Letters Patent, is:

An inhaler comprising, in combination, a cylindrical tube or casing, a hollow nipple adapted to be inserted in the mouth or applied to the nostrils engaging the aforesaid casing at each end thereof and producing an annular shoulder therein, a medicine-holding plug formed of a blank of corrugated absorbent material wound up spirally to a cylindrical body inserted into the aforesaid casing, said plug terminating at a distance from both nipples, a disk of coarse gauze at each end of the plug, a disk of fine gauze at the internal annular shoulder of both nipples and a tubular member between the two gauze disks at each end of the plug, said tubular members of a length so as to firmly lock the plug between the two nipples, substantially as described and shown and for the purpose set forth.

In witness whereof I have hereunto signed my name this 24th day of October 1908, in the presence of two subscribing witnesses.

OTTO JOHANN JULIUS WITT.

Witnesses:

ERNEST H. L. MUMMENHOFF,

OTTO W. HELLMRICH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."