

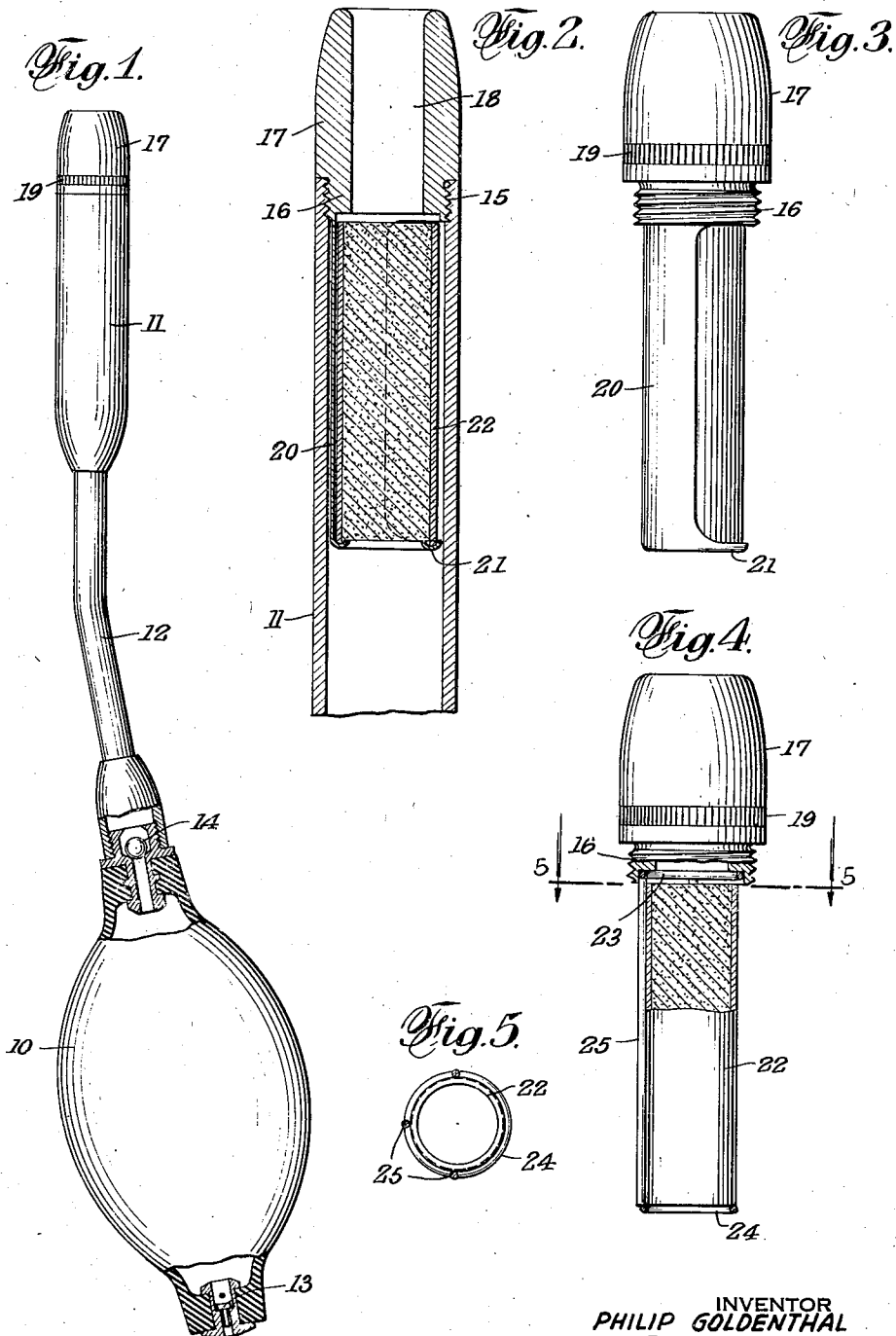
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POWDER INSUFFLATOR

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POWDER INSUFFLATOR

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5 Claims. (Cl. 128—266)

This invention relates to powder insufflators particularly adapted for discharging medicinal powder into certain cavities of the human body.

The invention seeks to provide a simplified and improved device for holding and applying a charge of powder in position for proper insufflation into a cavity.

The invention further contemplates the provision of an insufflator having improved means for receiving and holding a powder charged tube or cartridge, said powder being adapted for injection into a body cavity as by means of insufflation afforded through the medium of a bulb.

More specifically, the invention contemplates an insufflator having a removable tip portion with which is carried a cartridge-supporting cradle for rendering simpler and easier the positioning of a powder cartridge in the insufflator and the removal of an emptied cartridge after discharge of the powder therefrom.

The foregoing objects and features of the invention and others which will be later apparent, are realized in the preferred embodiments of the invention as illustrated in the accompanying drawing and which are described in detail in the following specification.

In the drawing:

Figure 1 is a side elevational view of an insufflator of preferred construction, parts being shown in sectional detail.

Figure 2 is an enlarged longitudinal section view of the nozzle end of the insufflator in one form of its embodiment.

Figure 3 is an elevational side view of the combined nozzle tip and cartridge-holding cradle.

Figure 4 is a similar view, partly in section, of a combined nozzle tip and cartridge-holding cradle of modified construction.

Figure 5 is a cross-sectional view as taken along the line 5—5 of Figure 4.

Referring to the drawing in greater detail, the insufflator comprises a bulb 10 and a nozzle 11 connected as by means of a preferably bent tube 12.

In its preferred design the bulb is provided with an air inlet valve 13 which also acts to check egress of air from the bulb at the end to which this valve is applied. The end of the bulb connecting with the tube 12 is also provided with a check valve 14 past which air from the bulb may be forced through the tube 12 and thus through the nozzle 11.

The foregoing structure is of quite conventional design and may be varied in many ways.

As contemplated in the present invention, the

end of the nozzle 11 is internally threaded at 15 to receive the threaded reduced portion 16 of a nozzle tip 17 forming a continuation of the nozzle. The mentioned tip is provided with a longitudinal bore 18 of somewhat smaller diameter than the passage in the nozzle. For convenience in applying and removing the tip, the surface thereof is provided with a roughened or knurled portion 19.

In the form of the invention shown in Figs. 2 and 3, the tip 17 is integrally formed with a substantially semi-circular cradle portion 20 having a ring-shaped end 21 at the end remote from the tip 17. The mentioned cradle is adapted to be disposed within the nozzle 11 and to loosely fit therein.

The cradle thus formed provides a cavity into which a cartridge 22 containing tightly packed powder, may be inserted. In this manner, the powder is positioned in the path of a puff or blast of air directed through the nozzle from the bulb 11 whereby said powder is blown through the bore 18 in the tip 17.

As shown in Figs. 4 and 5, the cradle may be formed of a wire ring 23 soldered, brazed, or welded to the tip, a wire ring 24 commensurate to the ring-shaped portion 21, and several longitudinally disposed wire members 25 arranged, as shown, to form a cradle for the support of a powder-filled cartridge 22.

From the foregoing, it is apparent that a charge of powder may be inserted in the insufflator in a quick and easy manner as follows:

The tip 17 is unscrewed from the nozzle to expose the cradle cavity, a cartridge, with its ends removed, is placed into said cavity, and the tip replaced. The insufflator is now ready for use. Removal of the empty cartridge tube is as readily accomplished.

It will be noted that the insufflator parts are arranged for easy cleaning and sterilizing and for this purpose the nozzle 11 and tube 12 may be unscrewed as at 26 from the bulb 10.

While the invention is quite simple in its construction, it is apparent that skilled persons may vary the design and arrangement within the spirit and scope of the invention as claimed. For this reason, the prior art rather than the instant disclosure should form the basis of interpretation of the scope of the invention.

What is claimed as new and desired to be obtained by Letters Patent, is:

1. In an insufflator, a hollow nozzle, a tip for said nozzle having threaded engagement therewith, and a separate cartridge receiving portion

formed with said tip and wholly disposed within the hollow of said nozzle.

5 2. In an insufflator, a nozzle tip having a longitudinal bore, and a cradle forming part of said tip for receiving a powder-filled cartridge for coaxial arrangement with said bore, said cradle comprising a semicylindrical portion having a ring-shaped end adapted to engage one end of said cartridge.

10 3. In an insufflator, a nozzle tip for attachment to a nozzle and having a longitudinal bore, and a cradle forming part of said tip for receiving a powder-filled cartridge for coaxial arrangement with said bore, said cradle comprising a plurality of longitudinally disposed members terminating in a ring-shaped end adapted to engage one end of said cartridge, and wholly insertable in said nozzle.

15 4. In an insufflator, a nozzle comprising a barrel

having an open end, and a nozzle tip having a longitudinal bore, a cradle forming part of said tip for receiving a powder-filled cartridge for coaxial arrangement with said bore, said cradle being wholly receivable in said barrel and said barrel and tip being threadably engageable to retain the cradle and cartridge within said barrel. 5

5. A powder insufflator comprising a tube for attachment to a bulb, and a nozzle attached to said tube, said nozzle comprising a barrel for containing a powder-filled cartridge, and having an open end, a removable tip threadably engageable on the open end of said barrel and having a discharge opening, said tip having integrally formed therewith, a cradle for supporting therein the cartridge for conveying it into and out of said barrel, said cradle and cartridge being slidably receivable in said barrel. 10 15

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