Jan. 1, 1952 C. NICOLLE 2,580,580

POWDER-SPRINKLING APPARATUS

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Fig.1

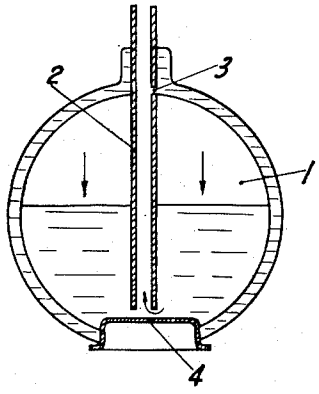


Fig.2

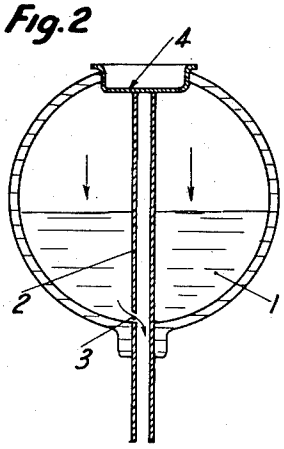


Fig.3

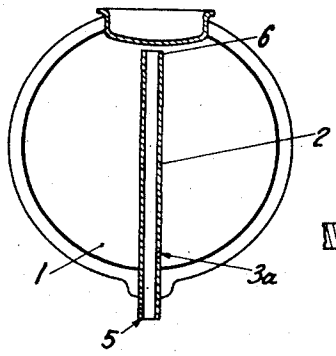


Fig.4

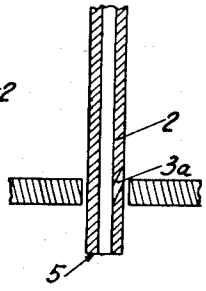


Fig.5

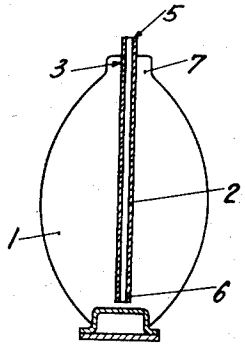


Fig.6

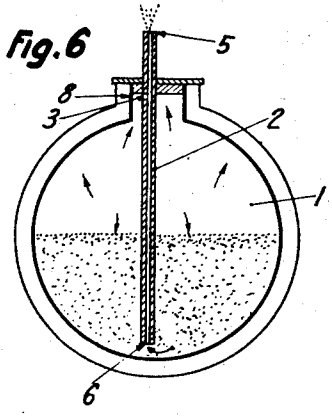
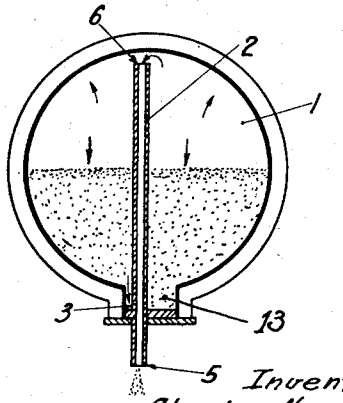


Fig.7



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Fig. 8

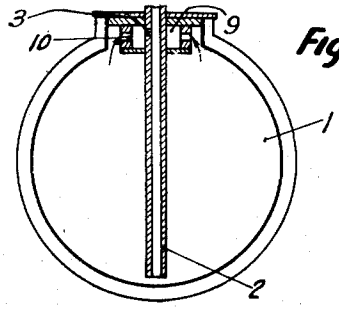


Fig. 13

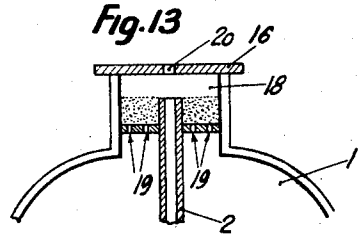


Fig. 9

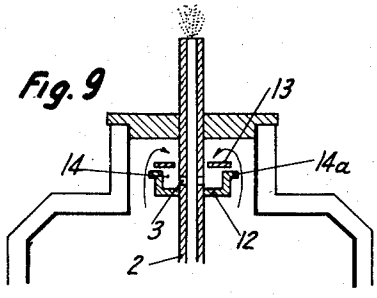


Fig. 14

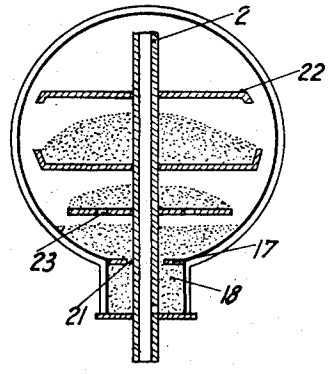


Fig. 10

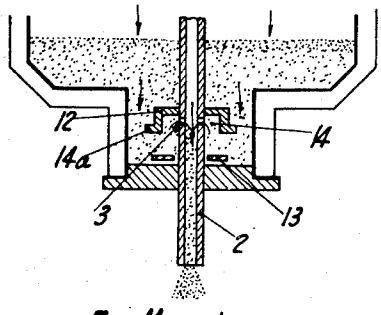


Fig. 11

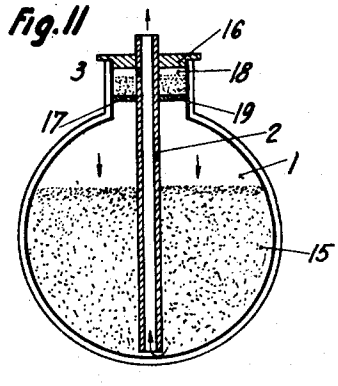
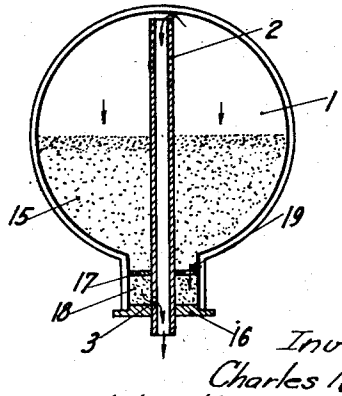


Fig. 12



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FIG. 15

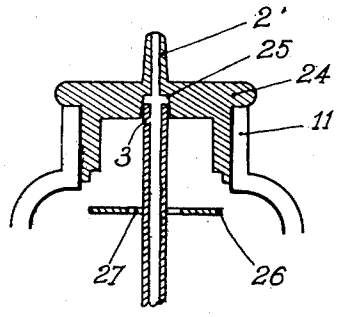


FIG. 16

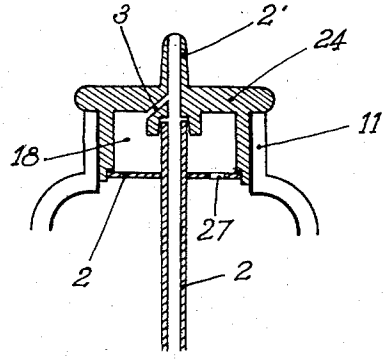
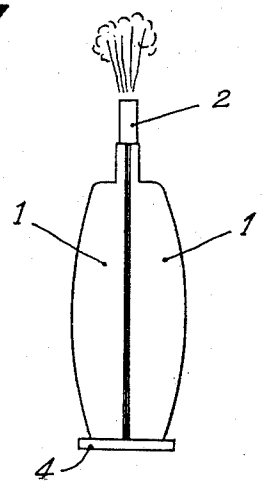


FIG. 17



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Patented Jan. 1, 1952 2,580,580

UNITED STATES PATENT OFFICE

2,580,580

POWDER-SPRINKLING APPARATUS

Charles Nicolle, Gentilly, France

Application May 9, 1946, Serial No. 668,559
In France May 24, 1943

Section 1, Public Law 690, August 8, 1946
Patent expires May 24, 1963

12 Claims. (Cl. 222—193)

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My invention deals with an apparatus for sprinkling powders of the type that works by pressing on the sides. Sprinklers of this kind have been turned out already by cementing together sections of plastic material of suitable thickness through their edges or flat parts, and then shaping them into containers by a process of stamping or molding. The base of the container is flat or slightly circular in form in such a way that the effect of sharp pressure on the side of the receptacle thus formed causes the increase of internal pressure for the ejection of the enclosed powders. In this kind of apparatus each individual sharp pressure on the sides makes a spray, and the air returns through the exit tubes in such a way as to control the next spraying of powder.

The invention has for its object an apparatus of this type capable of working as well for the sprinkling upwards, as for downward sprinkling of the powder enclosed in the flask, that is, moreover, of simpler construction than any previous apparatus, and its use is easier in practice.

Heretofore, in fact, apparatuses of this type had two parallel tubes, one short and one long, that were opened or closed alternatively in order to give an upward sprinkling by means of the long tube or a downward sprinkling by means of the short tube.

My invention aims at improving and simplifying at the same time the handling of powder-sprinklers of this kind, and to give to their users greater ease in operation. For example, a popular application of these small contrivances is for talc-sprinklers for the toilette, and especially for the baby. In this case, it is certainly a great convenience for the lady at her toilette, who often has only one hand free, to be able to use the sprinkler in various positions of the flask without having to worry about any operations such as closing and shutting of tubes or openings. When it is required to spray pharmaceutical or antiseptic powders, it is certainly very handy to be able to powder in several directions without having any special manipulation to carry out. Finally, these vessels are, as a general rule, to be discarded when empty, so their simplicity and lightness are points in their favour, and they are manufactured very cheaply.

According to the essential characteristic of the invention, a single tube is used open at each end and in the wall of which has been cut a perforation for communicating with the interior of the receptacle. This tube acts as well for the upward as for the downward sprinkling of the powder. Thanks to this arrangement, it is possible to work the apparatus more easily without the operator having to worry about which tube must be opened and which shut in order to work the flask in the direction wanted. There is evident

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too a distinct simplicity in the manufacture of this article.

As a further characteristic of the invention, the abovementioned orifice cut in the wall of the single exit tube is situated close to where the tube meets the body of the receptacle or the base of the cork when this latter holds the tube.

In a first form of execution of the invention, the single tube with its perforation can slide with slight friction in relation to the receptacle in such a way as to shut and open alternately the communicating perforation or opening.

In a different form of the invention, this tube is fixed or stays in a fixed position, but the perforation, that is of lesser importance, is situated for preference in a narrow or restricted part of the apparatus.

In accordance with a further form of the invention, the tube is always fixed and a small chamber is formed around the opening cut in the wall of this tube. The chamber itself has one or several openings communicating with the interior of the receptacle, and these openings are situated very near to the wall of one part of the receptacle, the neck for example.

In order to avoid the choking of the opening mentioned above, this can be made in accordance with another feature of the invention, in a sloping direction in relation to the wall of the single tube, the slope of this opening being headed towards the exit end of the tube.

In another form of execution, a small chamber is formed around the orifice or orifices, cut in the wall of the single exit tube, by means of a cup closed by a movable light cover capable of sliding on the tube, and of which the size is such that it does not extend beyond the chamber or cup in question. This cover rests either on the edge of the cup opening or on a ledge provided for this purpose, or again on an internal narrow part of the cup.

Thanks to this arrangement, when pressure is exerted in the interior of the apparatus, the pressure does not lift the cover but, on the contrary, forces it on the cup, seals the chamber and thus prevents any loss of pressure by the opening or openings cut in the wall of the tube.

Another essential characteristic of my invention lies in the fact that the exit tube for the powder opens, either by its end, or by one or several openings cut in this tube into a chamber of small capacity, that is itself in communication, through one or several openings, with the interior of the receptacle in which the powder is contained.

Other features and advantages of my invention will appear throughout the description that follows, and by the examination of the attached drawings in which have been shown, as examples

only, different possible forms of execution of my invention.

In said drawings:

Figs. 1 and 2 show in section a powder-sprinkling apparatus made according to the invention, and in its two positions, one corresponding to upward sprinkling and the other to downward sprinkling of the powder.

Fig. 3 shows a vertical section of a sprinkler of which the single tube is furnished with an improved exit opening.

Fig. 4 is a section, on a larger scale, of a portion of the tube shown in Fig. 3.

Fig. 5 is a section showing a different form of sprinkler.

Figs. 6 and 7 are vertical sections similar to that of Fig. 3, of another different form of execution shown respectively in two positions, upright and inverted.

Fig. 8 is a vertical section on similar lines to that of Fig. 6 but in relation to another form of execution of the invention.

Figs. 9 and 10 are vertical sections, showing respectively the positions upright and inverted, of a portion of the sprinkler designed in accordance with another form of execution of the invention.

Figs. 11 and 12 are vertical sections showing another form of execution of the receptacle in its two positions, upright and inverted.

Figs. 13 and 14 show two further different forms.

Figs. 15 and 16 are vertical sections of portions of the flask based on two other alternative forms of the invention.

Fig. 17 finally is a profile view of a sprinkler in accordance with the invention.

As Figs. 1, 2, 3 and 17 of the attached drawings show, the device for sprinkling in accordance with the invention is obtained by means of two shaped sections of cellulose acetate or of an equally pliable plastic; the resulting containers are flat in shape or preferably slightly circular (see Fig. 17) so that the sides of the vessel can be given sharp pressure in order to realize a sudden increase of pressure in the interior of the flask. These two shaped sections **1** are cemented together at their edges (see Fig. 17). In the flat flask thus formed is placed a tube **2** in plastic, or metal, or glass, or any other suitable material.

In accordance with one of the important points of the invention, this tube is the only one to be used, as will be apparent later, at the same time for upward and downward sprinkling (in place of the two parallel tubes that were hitherto employed in this type of apparatus).

Another feature peculiar to the invention is that the tube **2** has an opening **3** by means of which connection can be made between the interior of the vessel and the outside; this perforation is cut always in the wall of the tube, as shown in the drawing, very close to where the tube meets the body of the apparatus.

As shown in Figs. 1 and 2, the tube **2** can slide in the apparatus **1** in such a way that, if the tube is moved slightly (by pulling or pushing it), the opening **3** may be closed or open depending on whether the requirement is an upward sprinkling (the upright position as shown in Fig. 1) or a downward sprinkling (the inverted position as shown in Fig. 2). The lower end of the tube **2**, in this latter case, can be made to bear with advantage on the base of the flask **1**, for example on the flat cork or plug **4** that is located here,

and that can serve at the same time as the base of the apparatus.

The tube **2** evidently can have, if desired, in place of one opening **3**, several outlets with the same diameter or of different diameters, at the same level or at different levels.

The working of the apparatus is as follows:

In order to perform upward sprinkling (Fig. 1), the tube **2** slides so as to block the opening **3** and to leave a slight space between the lower end of the tube **2** and the plug **4**. Under these conditions, if a sudden pressure is exerted on the walls of the flask, then an upward sprinkling results as the powder enters the base of the tube **2** following the direction of the arrow in the shape of an immediate spray. On release of the pressure on the sides of the flask, the air is drawn to the inside through the same tube **2**; the apparatus is then set to give a new spray by pressing again on the sides and so on.

If a downward sprinkling is wanted, the apparatus is merely inverted (Fig. 2) and the end of the tube is pushed against the cork **4**; this plugs the end of the tube and at the same time uncovers the outlet opening **3**. So, if pressure is made on the sides, the powder is forced out through the opening **3** and a downward sprinkling results.

In this way a perfectly simple working apparatus is made available, requiring only a single operation to enable it to turn from one method of sprinkling to the other, namely the sliding of the tube through an extremely small distance (in the range of 1 or 2 mm. for example), without the necessity of using corks that have to be placed and lifted in order to transfer from one kind of sprinkling to the other and there is no risk besides of any mistake in this handling especially when the various types of users of this apparatus are considered.

Figs. 3 and 4 show an apparatus akin to the previous one but in which arrangements have been made to prevent a plugging or choking of the outlet opening **3**; this is liable to occur in the case of sticky powders or those likely to form lumps (hygroscopic powders for instance) or with the presence of some foreign body in the powder.

For this purpose, in accordance with the features shown in Figs. 3 and 4 the outlet opening for the powder is cut on the slant, as is done for the opening **3***a* of the tube and the slope is towards the exit end **5** of the tube **2**; this sloping effect helps the powder to slide through the opening **3***a*; besides when dealing with a sticky powder or one likely to pick up moisture that tends to block the opening, especially if the apparatus has been some time unused, it is generally enough, with the sloping arrangement of the opening **3***a*, to shake slightly the apparatus (a natural tendency) so as to loosen the cake of powder that falls easily through the outlet **5** of the tube **2** when the flask is in the inverted position as shown in Figs. 3 and 4.

In Figs. 5, 7 and 6 is shown a method still simpler; with the view of cutting out all handling of the tube **2**, said tube can be fixed in the apparatus. A simple reversal of position is enough to transfer from one manner of sprinkling to the other, without any concern as to the positioning of the tube.

In this form of operation, it is possible to obtain, by inverting the apparatus (position of Fig. 7) a downward sprinkling effect although the internal end of the tube **6** is exposed. The sharp pressure on the sides of the apparatus causes a sudden increase of pressure in the in-

terior and this sudden pressure works on the powder and forces it through the opening 3 and out of the tube 2; the loss of air that escapes through the tube itself due to the gap between the end 6 of the tube 2 and the wall of the receptacle, is insufficient to allow the instantaneous ejection of all the air suddenly compressed, so that the pressure remains actually sufficient within the apparatus (so much the more since it is affected by gravity in this inverted position) to force the extrusion of the powder through the opening 3 and the exit end 5 of the tube 2. Naturally, in such apparatuses the internal diameter of the tube is reduced, but that is not an objection to their use, since on the contrary for certain powders and for certain conditions the object sought for is to get a light small sprinkling at each puff; a small discharge like this becomes a definite advantage in the apparatus pictured here.

But in the normal position shown in Figs. 5 and 6 and for the purpose of ensuring an upward jet, sufficient force has to be exercised to push the powder in the tube 2 into which it enters by the end 6, and a certain brisk force must be applied to throw it upwards to the outlet of the tube 2 through its end 5.

It is as well in this case to limit the loss of air through the opening 3, that is open, since the tube 2 is fast with the casing. With this object in view the opening 3 is given a relatively small diameter; the instantaneous increase of pressure, that occurs in the interior of the apparatus when sudden pressure is made on the sides, is enough, in spite of the partial loss of compressed air through the opening 3, to cause the powder to rise in the form of an upward sprinkling; this loss merely reduces the quantity and the strength of the action, which is not a disadvantage as already explained.

However, in order to improve further the working of the apparatus described above, as an upward sprinkler, it is possible in line with the arrangement shown in Fig. 5 to locate the opening 3 in a very narrow neck 7 so as to cause a retardation of the discharge of air through the opening 3.

When the apparatus has a shape other than that shown in Fig. 5 and does not carry a neck, the tube 2 is set towards one wall of the receptacle to obtain the desired effect.

In the modification shown in Figs. 6 and 7 the retarding effect is secured by having the tube eccentric with the vertical axis of the apparatus, and locating the opening 3 in the side of the internal wall 8 nearest to the neck 13.

In the apparatus of Figs. 5 to 7, it is possible of course in certain cases to make the necessary adjustment for sliding the tube 2 that will allow these appliances to work in the same way as those featured in Figs. 1, 2 and 3. At the same time because of the small internal diameters of the tube 2 and of the opening 3, the discharge remains light, but the force of the spray is on the other hand substantially increased when compared to that obtainable with the apparatus of Figs. 5 to 7.

Thus it will be seen in Fig. 8 that, instead of the previous location of the single tube in a narrow part or of its eccentric position near the wall of the neck or of the receptacle, it is possible, always with the same aim of retarding the discharge of compressed air through the opening made in the tube, to construct around this tube at the level of the opening 3 a small chamber 9 with one or several openings 10 that communicate with the inside of the receptacle; these openings 10 are thus located very close to the wall corresponding to the neck 11. There is thus a combined retarding affect, as described previously, caused by the close proximity of the opening 10 to one wall, and an extra effect that is due in some way to the part of an airlock played by the chamber 9.

Under the effect of the pressure suddenly applied on the sides of the apparatus, this chamber acts as a dam that slows up the discharge of air through the opening 3 of the tube, and the force of this effect is increased with its nearness to the openings 10 of the wall of the neck 11; before the compressed air in this chamber has escaped completely through the opening 3 of the tube, the upward sprinkling action has already taken place.

This arrangement allows the provision in the single tube 2 of an opening that is more extensive than in the arrangements previously described, and this ensures a sprinkling effect of greater energy, while at the same time the risk of choking the opening is less since it is of larger dimension.

Taking the position for downward sprinkling, the powder enters the chamber 9 and then goes into the tube from which it is discharged as a result of the pressure applied to the sides of the apparatus.

In the arrangement of Figs. 9 and 10, the single tube 2 is fixed while a certain gap is left between the lower part of this and the base of the receptacle 1, so as to allow upward discharge of powder in the normal position of the apparatus. At the same time a cup 12 is set on the fixed tube 2 inwardly of the opening 3, and this cup can be closed by a cover 13 whose dimensions are such that it does not project beyond the edges of the cup 12.

The cup 12 has a ledge 14a on which the cover 13 can rest; in this kind of operation it is preferable to cut several openings 3, since they supply a large flow while working by a simple inversion of the apparatus.

The pressure exerted serves to force the cover 13 on the cup 12 in order to close the chamber 14 and since the cover does not have any overlapping parts it may be made of very light material, that would not be suitable if the cover extended beyond the cup, for in such a case the inside pressure would be liable to lift the cover 13 and consequently to expose the opening 3; this possibility would have to be corrected by increasing the weight of the cover 13. On the contrary advantage is taken of this pressure and of the movement of the air inside to ensure the maximum airtight closing of the device. The sliding cover 13 consists of a thin sheet of plastic that does not react with the powder and is preferable to any heavier piece of metal that might be affected by the powder.

The arrangements of Figs. 9 and 10 offer another advantage. In the inverted position (see especially Fig. 10), the cup 12 forms a barrier against the effect of heaping of the powder around the port or ports 3. Without this cup, the successive pressures continue to pile the powder towards the base and this powder becomes sufficiently dense to disturb the normal working of the powder ejection when the apparatus works for a long period in the inverted position. Thanks to the arrangement adopted, when in inverted position, the packing effect in the interior of the

chamber is hardly noticeable, for the powder, as seen in Fig. 10, is not directly affected by the pressure or by gravity and its density remains nearly normal.

With the arrangement considered, gravity is not an active agent for the expulsion of the powder, and it is the air current that traverses the tube from top to bottom in the inverted position of the apparatus that is liable to cause a drop in pressure in the chamber 14 around the opening 3; a suction effect takes place in the powder there and the powder is drawn towards the interior of the tube, from where the air jet gathers it and ejects it. This emptying of the chamber after each pressing action thus prevents any packing within the chamber. In addition, the base of the cup 12 forms a kind of baffling arrangement that resists as well any tendency for the powder to pack.

In the example shown in Figs. 11 and 12 the receptacle 1 that holds the powder 15 carries naturally a single outlet tube 2 that is open to the outside, and whose lower end does not contact the base of the receptacle. This single tube has a hole 3 arranged in such a way that when the apparatus is put together this hole is located in the interior below the inside face of the cork 16 to which the tube is fixed. If the tube were not to pass through the cork, this hole would be located for preference just below the point where the tube contacts the body of the receptacle.

In this arrangement there is provided, around the tube by means of a ring 17 located nearly at the same height as the opening 3, a closed chamber 18 of small capacity that communicates with the interior of the apparatus enclosing the powder through an opening 19 of suitable size, that can be about equal to that cut in the wall of tube 2 which may correspond approximately to the inside diameter of the tube.

This arrangement allows either upward or downward action of the contained powder by a simple inversion. In fact, when a downward discharge is required, the apparatus is turned as shown in Fig. 12, with the outlet tube 2 pointing downwards. If successive pressures are made on the sides, the powder sinks from the inside of the apparatus through the opening 19 into the chamber 18 while the movement is assisted by gravity. The chamber 18 fills almost instantaneously and powder enters the tube through the opening 3 under the effect of the pressure applied in the interior of the apparatus, then the powder is discharged, being drawn by the air that is driven from the inside through the tube 2, and it escapes through the outer end of the tube.

When the apparatus is righted, the chamber 18 remains full of powder and as soon as pressure is developed in the interior of the apparatus, the powder in the receptacle 15 rises and leaves the tube as an ascending jet, while the powder that stays in the chamber 18 plays the part of a valve and prevents the actual discharge of the air through the opening 19 of the chamber.

The chamber 18 empties under the effect of repeated pressings in the upright position; when this occurs it is enough to turn over the apparatus to fill again said chamber 18.

Although the apparatus works by simple turning over of the tube 2, this tube can be movable so that it can be withdrawn either for the purpose of relieving a block in the tube or when it is desired to replace it by other tubes of different volumes; to this purpose, it can slide in the cork or the body of the apparatus, or it can be secured to the body or the cork by a screw thread.

As apparent in Fig. 13, the tube 2 instead of having its outlet outside the apparatus, can have its discharge end in the chamber 18 registering with an opening 20 for the outlet and sprinkling of the powder, in the cork 16 or in the wall of the receptacle if there is no cork at this particular spot of the receptacle.

In the method of execution of Fig. 14, the chamber 18 is formed by the neck itself of the flask and by a simple partition 17 in the centre of which is an opening with a larger diameter than the external diameter of the tube 2 so as to leave around the tube an annular passage 21 playing the part of the previous openings 19. At the same time are shown a series of holding trays 22 that are fixed to the tube 3 although they could just as well be fixed to the sides of the apparatus, and that can take the shape of cups if desired. These trays allow the retention of a portion of the mass of powder so that the pressure is only active on the remainder of the powder in the bottom of the apparatus; this makes the working easier, since this smaller mass is more movable and less liable to block. The trays 22 naturally let the powder more freely over their edges and through the holes 23.

In Fig. 15, another form of execution is shown for operating practically and in a handy manner, where the tube is used at the same time for upward and downward sprinkling. A molded piece 24 is taken, consisting of a plastic such as cellulose acetate and cast unitarily with an external tube 2' forming an internal recess substantially shaped as a truncated cone 25 which is fitted one end of the tube 2. This part 24 acts as a cork and its cylindrical periphery engages the neck 11 of the apparatus.

The truncated recess 25 has an average diameter that matches closely the external diameter of the tube 2, that has as previously an opening 3. Due to this frustoconical recess, it is easy to make up for the difference of a few tenths of millimeter that is unavoidable between the diameters of the different rough manufactured tubes.

If it is desired, it is possible to put a drop of acetone or other solvent or a suitable cement on the point of connection between the tube 2 and the molded piece 24; this will ensure a perfectly reliable fastening of the tube.

The assembly of the tube 2 and of the extension 2' that is part of the plug or cork 24 forms in effect a single tube that plays exactly the same part as the single tube of the preceding figures.

The port 3 is at its proper place as in the case of the apparatus of Fig. 8 for instance; its level varies at the outside by a few tenths of a mm., depending on how far the tube is forced into the frustoconical recess 28.

In the molded portion 24 that forms the cork, a shoulder 26 has been formed in the casting; against this shoulder is forced or stuck a ring 27 assumed not to be quite in its place on the drawing and furnished with a hole 30 for example in the center. This forms a device with a single tube or practically a single tube and with a chamber that is a modification of those shown, particularly in Figs. 8 to 14. In this case, the cork 24 can be either cemented to the neck 11 or not; in this latter case the apparatus can be used again after a fresh refill or it is possible to have access to the powder if desired.

In another different form of execution shown

in Fig. 16, an apparatus is featured very similar to that of Fig. 15, but in which the opening 3 instead of being cut in the tube 2 itself is part of the molded piece 24; in this alternative method moreover the opening in the ring 27 for communication between the chamber 18 and the inside of the apparatus is lateral instead of being centrally placed.

In the examples of execution illustrated in Figs. 1, 2, 3, 5 and 7, it should be remarked that the plug or stopper for closing the receiver serves also as a support base for the sprinkler whereby the latter may stand upright which is not the case of the other forms of execution.

Obviously the above described arrangements illustrated in accompanying drawings have been disclosed solely by way of example and may be modified as to their details of execution without altering thereby the gist of my invention as defined in the accompanying claims.

What I claim is:

1. An apparatus for sprinkling powder upwardly or downwardly at the option of the user which comprises a hollow container having flexible walls, and an outlet tube having a substantially constant internal cross-sectional area and extending from an inner end within said container adjacent one wall thereof substantially diametrically across the interior of the container and through the opposite wall to an outer end open to the atmosphere so that most of the tube is spaced from the compressible walls, said tube having a lateral passagway through its wall at a point adjacent said opposite container wall, said inner end serving as a powder outlet for said container when said container is compressed while said outer end extends upwardly, and said lateral passageway serving as a powder outlet for said container when said container is compressed while said outer end extends downwardly.

2. An apparatus as defined in claim 1, in which said lateral passageway is of uniform cross-section and is disposed at an oblique angle with relation to the longitudinal axis of the tube.

3. An apparatus as defined in claim 1, in which said tube is supported by said container walls with its inner end spaced from said one wall.

4. An apparatus as defined in claim 1, in which said tube is slidable in said opposite wall, so that said inner end may be closed by moving it against said one wall, and in which said lateral passageway is closed by said opposite wall when said inner end is opened by moving it away from said one wall.

5. An apparatus as defined in claim 1, in which said opposite wall is provided with a neck through which said tube passes, and in which the tube is eccentrically mounted in the neck with the lateral passagway opening toward the nearest wall of the neck.

6. An apparatus as defined in claim 1, including means forming a chamber within said container, said chamber having an aperture opening into the interior of the container, said lateral passageway opening into said chamber, and means effective when the outer tube end extends upwardly to at least partially block communication between the interior of the container and the lateral passageway.

7. An apparatus as defined in claim 1, including means forming a chamber within said container cooperating with said tube so that said lateral passageway opens into said chamber, said chamber having an end open to the interior of the container, said open end facing upwardly when the outer tube end extends upwardly, and a washer slidable on the tube between the chamber and said opposite wall, said washer being effective to close said chamber end when the outer tube end extends upwardly and to fall away from said chamber end when the outer tube end extends downwardly.

8. An apparatus as defined in claim 1, including powder in said container, means forming a chamber within said container cooperating with said tube so that said lateral passageway opens into said chamber, said chamber having an aperture opening into the interior of the container and being effective upon movement of the container from inverted to upright position to trap a quantity of said powder and thereby at least partially block communication between the interior of the container and said lateral passageway.

9. Apparatus for sprinkling powder upwardly or downwardly at the option of the user, comprising a hollow container having flexible walls, one wall of said container having a filler opening therein, a stopper for said filler opening, said stopper having an aperture extending therethrough, a tube attached to said stopper within said container and having one end communicating with said aperture, said tube and aperture together forming a continuous outlet conduit, said tube extending diametrically across the container from said stopper to its inner end adjacent but spaced from the wall of said container opposite said filler opening, said stopper having a lateral passagway providing communication between said aperture and the interior of the container, said inner end of the tube serving as a powder outlet for the container when said container is compressed while said one end of the tube extends upwardly, said lateral passageway serving as a powder outlet for the container when said container is compressed while said one end of the tube extends downwardly.

10. An apparatus as defined in claim 1 in which said tube is slidable longitudinally thereof in said opposite wall to a position in which said lateral passageway is closed by said opposite wall upon sliding movement of said tube in the direction to move said inner end thereof away from said one wall.

11. An apparatus as defined in claim 1 which comprises means supported for relative movement with respect to said tube into and out of position in relation to said tube to restrict communication through said lateral passageway between the interior of said tube and the interior of said container.

12. An apparatus as defined in claim 1 in which said tube is supported in fixed relation to said opposite wall and with its inner end adjacent and in spaced relation to said one wall.

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