United States Patent [19]

Triplett

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[54] **SPRAY APPLICATOR**

[76] Inventor: **Frank Lewis Triplett,** 227 Upshur St., N.W., Washington, D.C. 20011

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[52] **U.S. Cl.**..... **128/172,** 128/225, 128/345, 239/337, 239/579, 222/402.1, 424/47, 424/61

[51] **Int. Cl. A61m 35/00,** A61m 11/00, B05b 17/00

[58] **Field of Search**..... 239/337, 579, 288, 239/11, 1, 104; 222/402.1, 402.11, 402.12; 128/81 R, 172, 225, 244, 345; 424/47, 61

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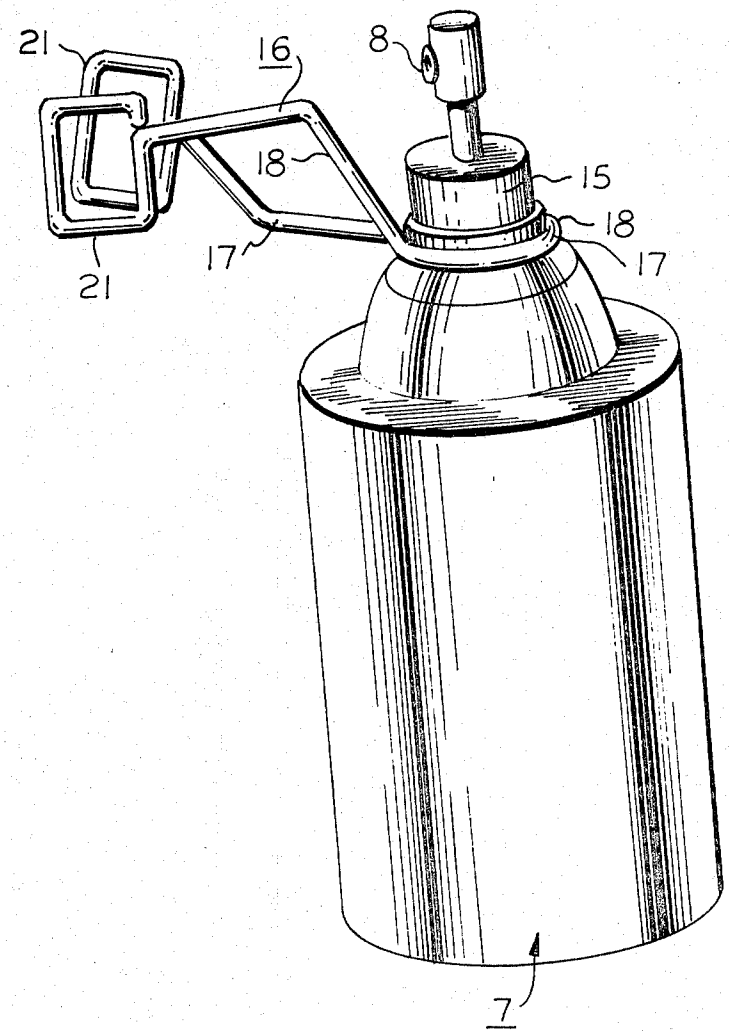
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Primary Examiner—Robert S. Ward, Jr.
Attorney—Laurence R. Brown

[57] **ABSTRACT**

An applicator for liquid spray to the crotch between two toes comprises in one embodiment a spray can and a spring instrument for holding the toes apart to concentrate the spray in and confine it to the crotch region. The spring instrument may be attached to the spray can near the spray spout, thus establishing the desired distance for confining the spray to the crotch region.

7 Claims, 5 Drawing Figures



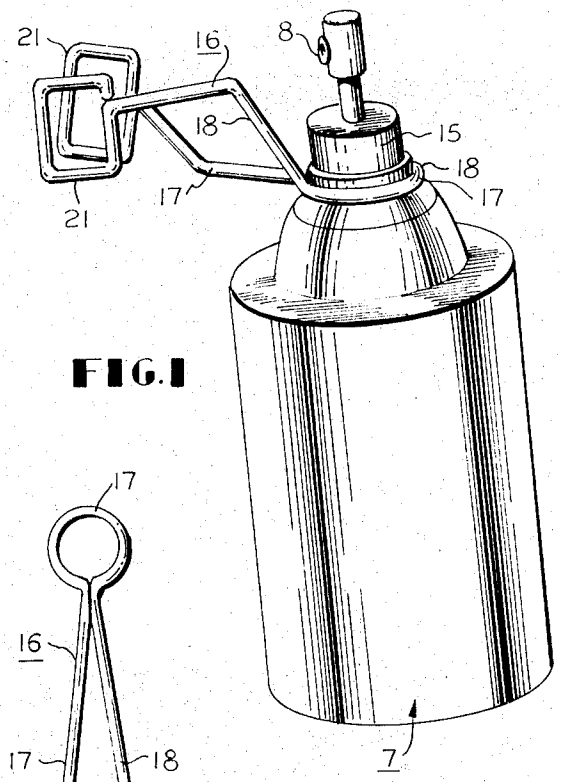


FIG. 1

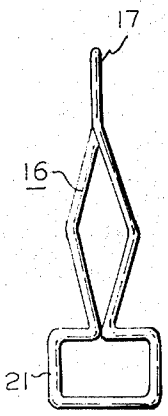


FIG. 2

FIG. 3

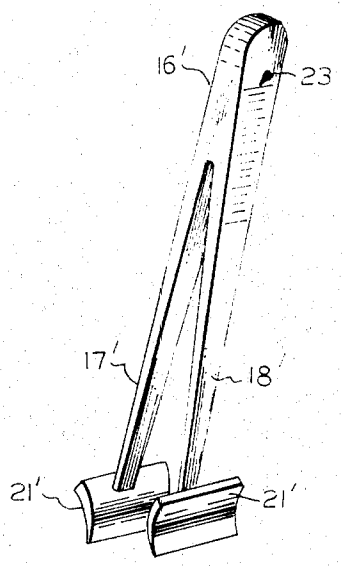


FIG. 6

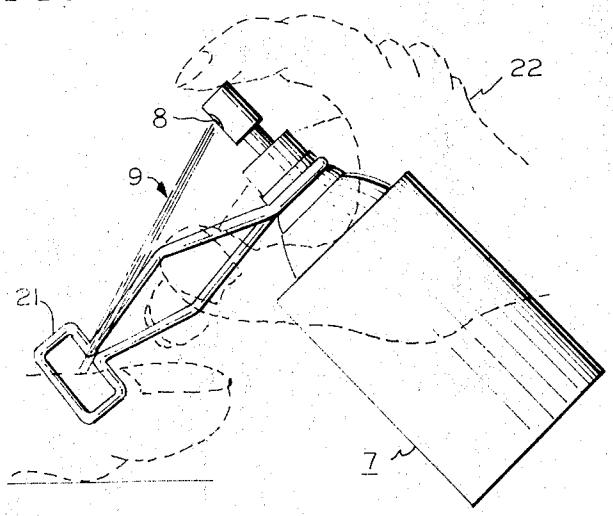


FIG. 4

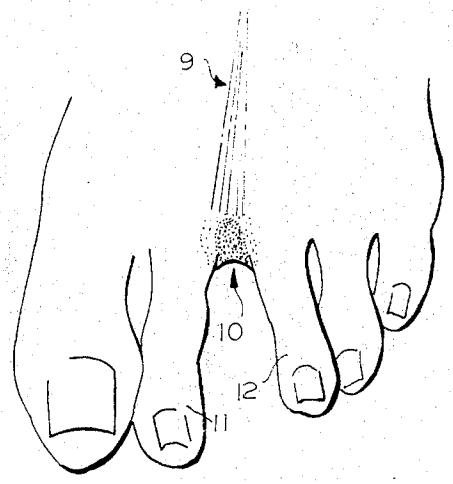


FIG. 5

SPRAY APPLICATOR

This invention relates to spray applicator means and methods for application of liquid spray to the crotch region between two toes, and more particularly it relates to spray cans with an instrumentality thereon for spreading the toes.

It has become customary in the treatment of toes for athletes foot for example to apply balm, antiseptic, or medicine to the toes by means of a liquid spray, such as an aerosol can, which may have a spray spout extending from a liquid reservoir on a necklike portion of the can.

However, the use of a spray can has heretofore resulted in inefficiency by waste of the liquid which gets on places that do not need treatment, and the soiling of furniture, fingers or clothes near the treatment area, thereby substantially reducing the convenience and desirability of using the liquids in spray can form. These problems are particularly acute when the solution contains a dye or a strong odor.

It is therefore an object of this invention to correct the foregoing deficiencies of the prior art.

It is a primary object of the invention to provide efficient and neat apparatus for treatment of toes with liquid sprays.

Another object of the invention is to provide an instrumentality for holding the toes apart during treatment and for concentrating liquid spray in the crotch region between two toes.

The foregoing objectives of the invention are attained by means of a compressible spring instrument for inserting between the toes to reside there and spread them apart a predetermined distance to expose the crotch while releasing a spray jet. The spray jet is fashioned to dispense the liquid spray over a predeterimined area at a predetermined concentration when spaced a known distance from the crotch such as three inches. The jet is so positioned by means on the instrument that gages the distance, such as when the instrument is affixed to a spray can to hold the spray jet in a known position relative to the crotch as the toes are spread.

Further objects, features and advantages of the invention will be found throughout the following description of preferred embodiments of the invention, as shown on the accompanying drawing, wherein:

FIG. **1** shows in elevation perspective a spray can applicator constructed in accordance with the teachings of this invention;

FIGS. **2** and **3** show fragmental elevation side and top views of the instrumentality for spreading toes removed from the can;

FIG. **4** shows partly in phantom an elevation side view of the spray applicator in manual use;

FIG. **5** shows in plan fragmental view the front of a foot receiving a liquid spray treatment as taught by this invention; and

FIG. **6** shows in perspective view an alternative embodiment of the invention.

Reference is now made to the drawing where a spray can **7** is shown, which may typically be an aerosol can with a liquid antiseptic solution therein adapted to be sprayed through spout **8** in a spray pattern **9** covering a limited area with a known amount of solution. Other containers or reservoirs of solution such as glass bottles with manual pump sprays could also be used in a similar manner. The spray pattern **9** from the spray device should be such that the spray is confined to a region such as one square centimeter adjacent the crotch **10** between two toes **11,12** when sprayed from a known distance, such as 3 inches, away from the treatment zone.

The spout **8** extends from a necklike portion **15** of the spray can **7,** about which is located an instrumentality **16** for spreading apart adjacent toes to expose the crotch region while the solution is being sprayed.

In this embodiment of the invention the instrumentality **16** comprises a spring device formed of spring wire to have a compression spring coil **17** which frictionally clamps in a groove below ridge **18** about the neck **15** of the spray can **7.** The arms **19,20** extending from the coil **17** each have a toe engaging projection **21** formed at the end. The arms **19,20** may be spread apart against the spring tension to mount the instrumentality **16** in place about the groove on the neck **15** of can **7,** where the spring tension of coil **17** when arms **19,20** are released hold it in place so that the arms and projections **21** are aligned with the spray spout **8.**

To spread the toes (FIG. **4**) the projections **21** are forced together manually against the spring tension and inserted between two toes. In released position they hold the toes apart as shown in FIG. **5,** with the spout at the proper distance and in the proper disposition to direct the spray stream **9** into the crotch area **11** to cover only the desired treatment region. Thus the projections **21** hold the toes apart while spacing the spout the proper distance to focus the spray jet **9** into the crotch area **10.**

The can **7** can be held and spray spout **8** depressed by a single hand **22,** leaving free a second hand to squeeze together and position projections **21** and release the spring arms **17,18.**

While it is preferable to have a unitary can arrangement as described, it is also feasible to use a spring member as shown in FIG. **6** with projecting members **21'** held normally in open position. Thus, the instrumentality **16** may be manually squeezed with one hand and then released in position between two toes and left in place to free a hand from the vicinity of the spray jet **9** so that it does not intercept the spray or become soiled by it. Gage indicia or markings **23** may be placed on the instrumentality **16'** to show the proper position for placing and using a corresponding device providing a jet spray **9** to cover a pattern of the size and concentration desired to treat the crotch region **10** without wasting solution or soiling areas beyond the crotch.

The projections **21'** are formed as semicylindrically cup-shaped members to hold the toes they engage in a matrix arrangement and permit the instrumentality **16'** to be left in place where it is frictionally held by spring bias pressure. If desired the arms **17',** **18'** may extend at an angle that from the projections **21'** which points out or facilitates directing the spray jet toward the crotch region **10.** It is important to have a normally open spring or indexed member to hold the toes apart and not require manual pressure to overcome the spring while spraying, or else the hand is not freed and may intercept the jet spray pattern **9** or become soiled with the spray solution.

The spray jet **9** can readily be designed with known techniques to dispense the desired concentration of solution into the toe crotch at the distance from jet spout to toe crotch specified by the instrumentality of this invention.

Accordingly, the present invention has improved the state of the art by facilitating and improving treatment of toe crotch regions to prevent contamination of undesired areas by liquid sprays, avoiding waste of medicines or other treatment liquids, and confining desired concentrations of fluid spray solutions in the area requiring treatment.

What is claimed is:

1. Apparatus for applying liquid spray to the crotch between two toes comprising in combination, an instrument for spreading two toes a predetermined distance to expose the crotch therebetween, a spray device having a predetermined spray pattern, and means on said instrument identifying a position for locating said spray device relative to said crotch to confine the spray pattern to the region adjacent said crotch.

2. Apparatus as defined in claim **1,** wherein said instrument is affixed to said spray device thereby establishing said position.

3. Apparatus as defined in claim **2,** wherein said spray device constitutes a reservoir body with a spray spout extending on a necklike portion therefrom having said instrument affixed to said necklike portion.

4. Apparatus as defined in claim **3,** wherein said instrument comprises a bent wire spring member defining with a portion thereof a spring clamp for frictionally engaging said necklike portion.

5. Apparatus as defined in claim **1,** wherein said instrument comprises a manually compressible spring device with two toe engaging projections spring biased in a normally open spread position spaced to hold the toes said predetermined distance apart.

6. Apparatus as defined in claim **5,** wherein the projections on said instrument comprise two substantially cylindrically arc shaped members to fit between and engage respectively said two toes in a matrix arrangement.

7. Apparatus as defined in claim **1,** wherein said instrumentality comprises a spring member with two projecting members normally attaining an open position at the desired toe-spread distance, whereby the spring member may be compressed to insert between the toes and is left in place when released to said normally open position to free a hand from the vicinity of the spray jet.

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