April 28, 1942. N. J. MOLL 2,281,367

APPLICATOR

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Fig. 1

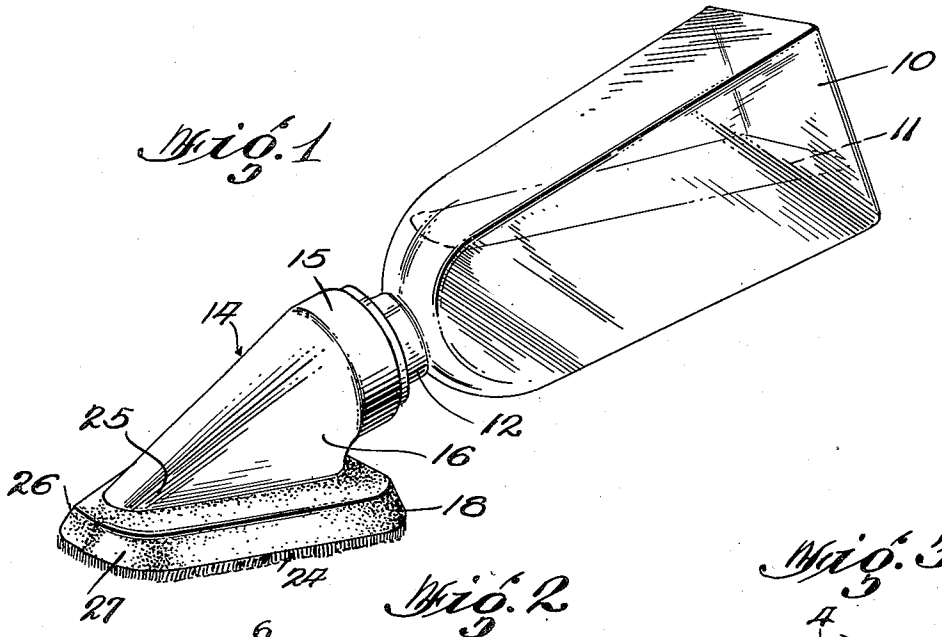


Fig. 2

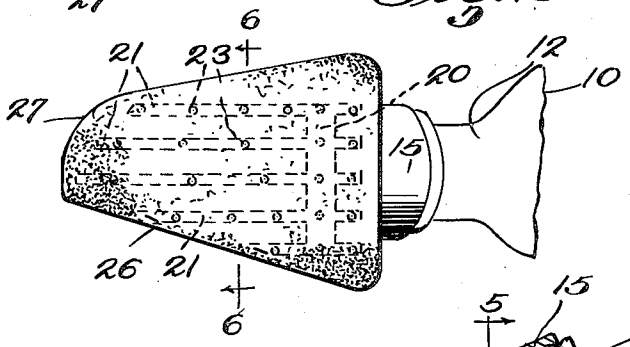


Fig. 3

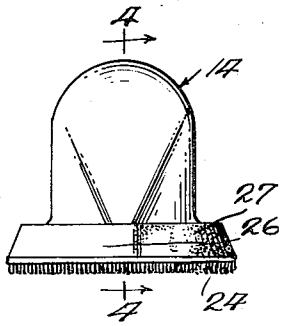
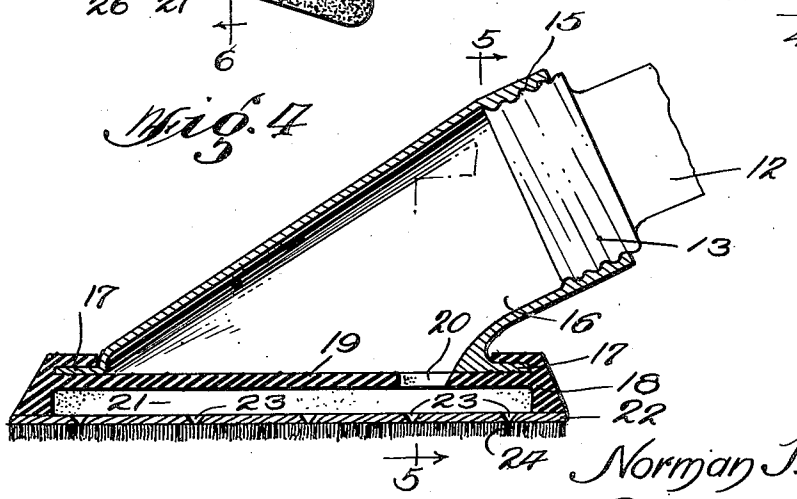


Fig. 4



Inventor

Norman J. Moll

By Robert C. Dennison

Attorney

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APPLICATOR

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Fig. 5

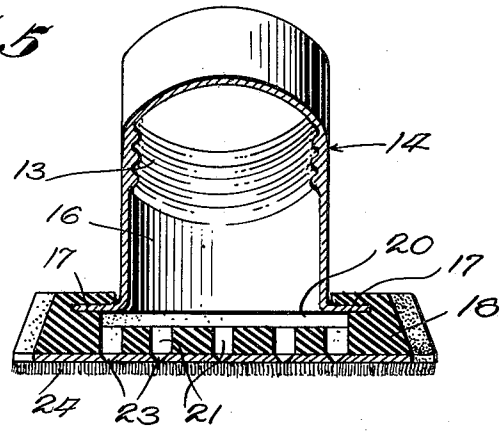


Fig. 6

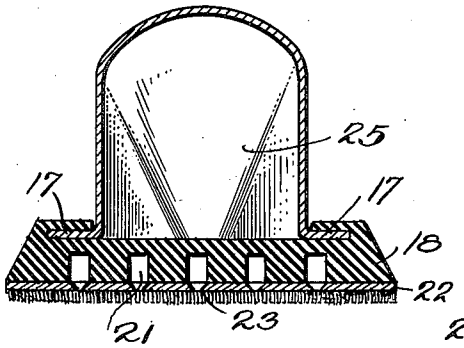


Fig. 7

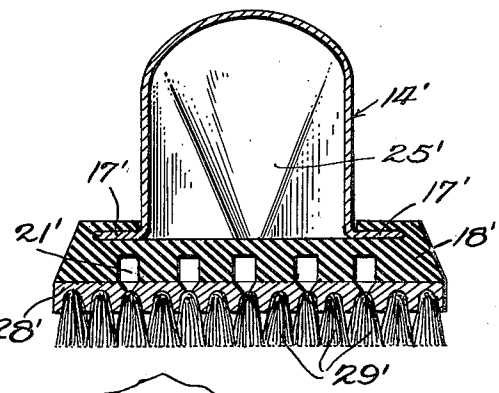
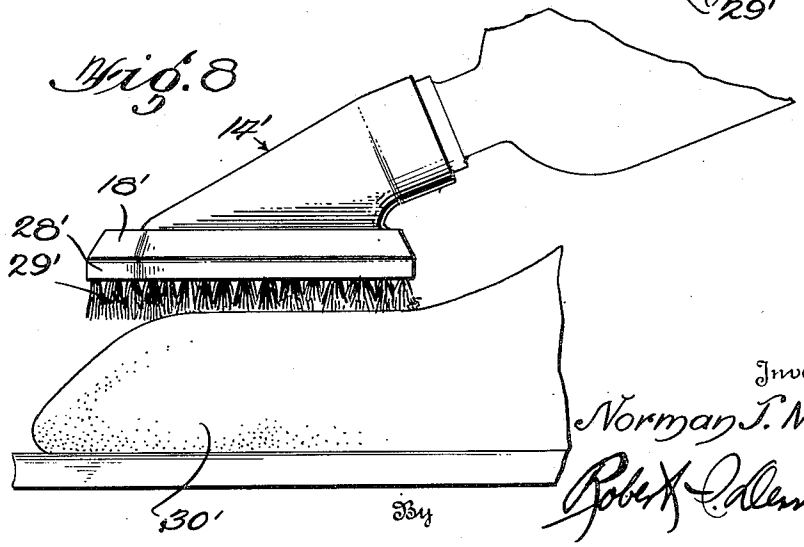


Fig. 8



Inventor
Norman J. Moll
By Robert L. Clemmicon
Attorney

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2,281,367

APPLICATOR

Norman J. Moll, Washington, D. C.

Application July 3, 1941, Serial No. 401,033

4 Claims. (Cl. 15—133)

This invention relates to an applicator and more particularly to that type generally known in the art as a fountain applicator.

Devices of this type are preferably of a character including a mounting connector by means of which they may be readily associated with the dispensing neck or flange of a container usually provided with a standard or universal preselected thread whereby they may be adapted to apply liquids, solutions, mixtures or emulsions, employed to clean or coat or both clean and coat articles which may require either or both.

While such devices may be employed for use on many or varied articles, the most general application finds its outlet in the cleaning and coating of shoes, purses and other similar articles of apparel of leather or like materials.

Applicators for such use should be of a character as require a minimum of effort in use, provide ready distribution of the dispensed liquid and require no special and technical instruction in their employment by the lay public.

Such devices, as are already known and available to the public, generally have one of these attributes, but lack all. If they are easily adapted to a container, they do not provide even distribution of the dispensed liquid so that an appreciable amount of effort is required in dispersing the liquid over the surface to which it is applied somewhat in the nature of a massaging effect. To aid in achieving this result, many employ a plurality of variously shaped distributing and smoothing heads requiring predetermined serial operations involving special instructions followed by time consuming effort. Others, having single dispensing heads, lack distribution qualities while some are awkward in design and cannot supply the liquid to portions of the above noted apparel where the surface configuration presents confining acute angles or curves.

In view of the foregoing, it is an object of the present invention to provide an applicator of a character attachable to and detachable from dispensing containers and of such a design and construction as to have its distributing face so disposed that the container may act as a convenient operating handle or handhold.

Another object resides in the provision of a structure such as to effect ready relatively wide distribution of liquid as it is dispensed with a minimum of effort on the part of the user.

A further object contemplates a dispensing and distributing structure so shaped as to provide a plurality of differently shaped applying portions capable of adaptation to sharp angular crevices or surface undulations of the article to which the liquid is being applied.

Another object is to provide a structure of the character hereinbefore noted which is substantial and durable and extremely efficient in service.

A further object embodies features directed to minimum effort in use, dispensing of even character with no attendant waste of the liquid while at the same time embodying a substantial, sturdy construction capable of fair pressure imposition if necessary or desirable.

Other and further objects will be readily apparent from the following detailed description of several preferred embodiments of the invention illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of a dispensing container having one form of its applicator embodying features of the present invention attached thereto and as it would be in position in use;

Figure 2 is an underside view of the applying face of the device with portions of the interior indicated in dotted lines and only a fragmentary portion of the container shown;

Figure 3 is a vertical front end elevation of the applicator;

Figure 4 is an enlarged vertical longitudinal section taken along the line 4—4 of Figure 3;

Figure 5 is an enlarged vertical section taken substantially along the line 5—5 of Figure 4;

Figure 6 is a similar enlarged section taken along the line 6—6 of Figure 2;

Figure 7 is a section similar to Figure 6 showing another form of applying device embodying coating and polishing bristles; and

Figure 8 is a fragmentary perspective view illustrating the form shown in Figure 7 in use upon a shoe.

Referring now more specifically to the drawings, there is illustrated a dispensing container 10 having a liquid 11 therein of any preferred or desired character. Container 10 may have a narrow dispensing neck 12 terminating at its outer end in a threaded flange 13. While the container is shown as being a bottle, it is apparent that it may be a metal or plastic container of any desirable shape or size. It is also evident that the dispensing end or mouth need not be screw-threaded since any variety of connections of a bayonet-type or style may be employed. Thus, any term or expression hereinafter employed with reference to the mounting connection is calculated to include any generally utilized type of connector.

One form of the applicator, generally indicated

at 14, embodies a connecting part 15 incorporating a complemental internal portion adapted to cooperate with the end 13 of the container. Extending from part 15 is a tubular portion 16 terminating in an angularly disposed peripheral flange 17. Thus, flange 17, preferably planar, is arranged at an angle with respect to the longitudinal axis of the tubular portion 16. This portion of the applicator has been shown as being of metal but it is obvious that it may be formed of a thermoplastic material or of any of the chemically derived plastics now in general use.

Flange 17 has moulded thereon or suitably vulcanized or annealed thereto a plastic shoe 18 preferably of resilient rubber so as to have some flexibility but not enough to be unduly distended or misshapen, thus having just sufficient rigidity to maintain its original shape but capable of some yield under excessive pressure.

Shoe 18 is formed with a baffle wall 19 thereacross which has a transverse slot or conduit 20 therein adjacent its rear portion providing the only communication between the interior of tube 16 and the underside of wall 19. The underside of shoe 18 is provided with a plurality of longitudinal grooves or channels 21, each having its rear end in communication with slot 20 and extending forwardly to a point near the peripheral edge of shoe 18 but sufficiently short thereof so as not to weaken the structure of the shoe thereat.

A liquid distributing plate 22 of a semi-rigid fabric is attached to the underside of shoe 18 by vulcanizing, moulding or annealing and it is preferable that this plate be so impregnated or coated as to be liquid-proof. Substantially along the median line of each channel or groove 21, plate 22 is provided with a plurality of apertures 23 preferably of conical shape with the larger part at the top surface and the narrower end at the bottom surface so as to provide a non-clogging dispensing orifice.

On the underside of plate 22 there is provided a fine brushing surface in the nature of a nap or pile 24 and this may be of such thickness as to provide for both liquid dispensing surface tension characteristics and polishing as may be desired.

To render the shoe and entire applicator head more adaptable to odd shaping of the object to which the liquid may be desired to be applied, the forward end of tube 16 preferably terminates in a taper 25 and shoe 18 is preferably straight edged at 26 for its entire length while the opposite edge is straight for a portion of its length but terminates at the forward narrow tip in a curve 27. Thus, the bottom of the applicator, although generally of triangular character, is irregularly so, with both a sharp tip at edge 26 and a rounded tip at 27, capable of entry into crevices normally inaccessible to, for example, a semi-spherical cylindrical or rectangular head. Obviously, the edges 26 and 27 may be reversely shaped, if desired.

In use, the applicator is held by the user grasping the container 10 and when positioned against the article to be cleaned, the fluid will flow through the open mouth of the bottle into the hood or tube 16 and from there through the slot 20 and into the distributing channels 21. The fluid then flows evenly out through the tapered openings 23 onto the napped surface 24. The napped surface when saturated is then evenly brushed across the surface of the article to apply the cleaning fluid thereto.

The ordinary pull of gravity is sufficient for the smooth operation of the applicator, but if a greater flow of fluid is required, a slight pressure of the applicator to the surface will bring forth a slightly larger quantity of the fluid.

Referring now to a modified form or adaptation of the invention more particularly illustrated in Figures 7 and 8, the upper portion of the structure shown is similar in all respects to that indicated in Figures 1–6, inclusive, down to and including the distributing shoe and for purposes of ready reference, like numerals are employed to indicate the like parts except for an added prime (') mark. Thus, portions 14', 17', 18', 21' and 25' are identical in character with the same parts in the first described modification. The balance of the structure differs with respect to the contact or wiping part which, in this case, is preferably a brush comprising a bristle-back 28' having rows of bristles 29' suitably set therein. A plurality of conical dispensing apertures 23' are provided in the bristle-back 28' to communicate with the grooves 21' to carry liquid in proper supply to the bristles 29' for uniform distribution to all of the bristles. In Figure 8, this form of the device is shown as it would be employed in actual use upon an article, in this case, a shoe 30'.

It will be readily apparent that the preferred embodiments of the invention hereinbefore described have all the essential desirable characteristics set forth in the foregoing general statement of the invention. Obviously, changes may be made therein without departing from the essence of the invention or the spirit and scope of the appended claims.

What is claimed and desired to be secured by Letters Patent is:

1. A liquid applying device comprising an open-mouthed main hollow liquid receiving body terminating in a supporting flange, an elongated solid rubber yieldable backing member secured to said flange and extending across the open-mouth of said body whereby the intermediate portion of said member is readily inwardly flexible, a plurality of liquid distributing conduits extending longitudinally of said member formed in the outer face thereof, the inner face of the backing member having a transverse slot providing communication between the hollow body and the rear portions of said distributing conduits, a contact applicator part coextensive with the outer face of said backing member including a supporting part and a wiping part, said supporting part having a plurality of openings providing communication between said conduits and said wiping part whereby liquid from said main body will be evenly dispensed to substantially the entire wiping part.

2. A liquid applying device comprising an open-mouthed main hollow liquid receiving body terminating in a supporting flange, an elongated solid rubber yieldable backing member secured to said flange and extending across the open-mouth of said body whereby the intermediate portion of said member is readily inwardly flexible, a plurality of liquid distributing conduits extending longitudinally of said member formed in the outer face thereof, the inner face of the backing member having a transverse slot providing communication between the hollow body and the rear portions of said distributing conduits, a contact applicator part coextensive with the outer face of said backing member including a supporting part

and a wiping part, said supporting part having a plurality of openings providing communication between said conduits and said wiping part whereby liquid from said main body will be evenly dispensed to substantially the entire wiping part, said openings being reduced in cross-section for a portion of their extent whereby liquid passage therethrough will be sufficiently restricted to yield such a quantity of liquid to said wiping part as is demanded in response to withdrawal requirements.

3. A detachable liquid applying device comprising a hollow body open at one side, a solid rubber supporting block secured to said body across said open side in liquid-tight relation, longitudinal distributing conduits formed in the outer face of the rubber block, the inner face of the rubber block being formed with a transverse slot providing communication between said hollow body and the distributing conduits adjacent one extremity of each of said conduits, a yieldable contact applicator part secured to the outer face of the rubber block and extending across the open sides of the distributing conduits, said applicator part having a plurality of openings arranged in alinement with the respective conduits to permit the discharge of the liquid onto the outer face of the applicator part, said applicator part being so associated with the rubber block as to yield therewith in response to pressure applied thereto to vary the liquid delivery to the outer face of the applicator part.

4. A detachable liquid applying device comprising a hollow body open at its bottom side, a solid rubber supporting block secured to said body across the open bottom side thereof in liquid-tight relation, longitudinal liquid distributing conduits formed in the bottom face of the rubber block, an integral horizontal baffle wall in the upper portion of the rubber block, said baffle wall being provided with a transverse slot providing communication between the hollow body and the distributing conduits adjacent the rear extremities of the latter, a yieldable contact applicator member secured to the bottom face of the rubber block across the open sides of the distributing conduits and having a plurality of openings arranged in alinement with the respective conduits, said member being so associated with the rubber block as to yield therewith in response to pressure applied thereto to vary the liquid delivery to the bottom face of the applicator member, the conduits and openings together being so shaped as to provide for predetermined flow of liquid therethrough but providing for increased flow in response to the aforementioned applied pressure.

NORMAN J. MOLL.