May 16, 1933. F. B. COONEY 1,909,096

APPLICATOR

Filed March 4, 1932

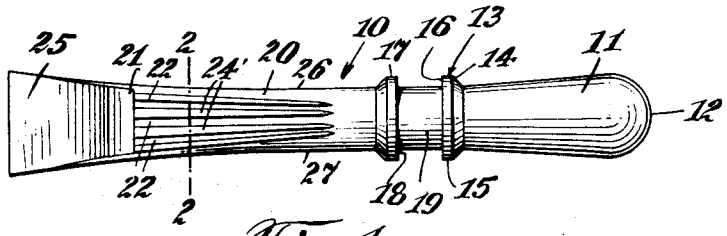


Fig. 1.

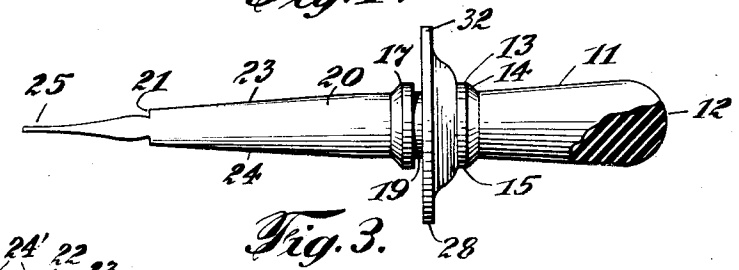


Fig. 3.

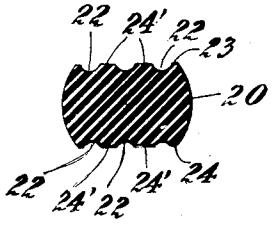


Fig. 2.



Fig. 4.

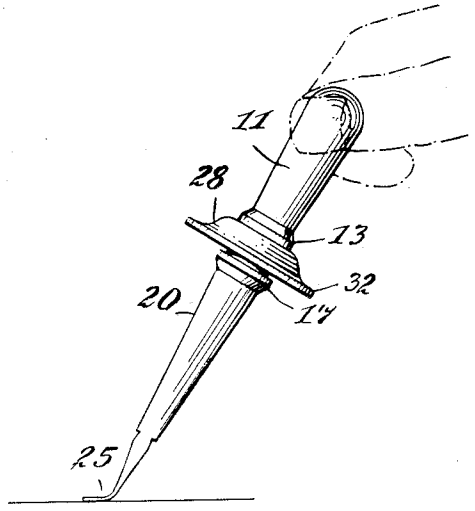


Fig. 5.

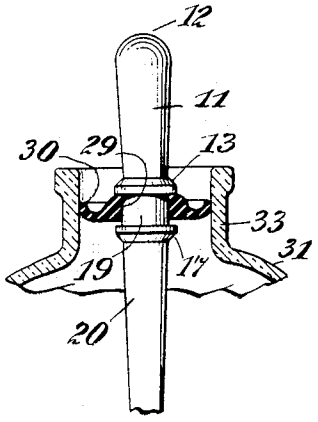


Fig. 6.

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UNITED STATES PATENT OFFICE

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APPLICATOR

Application filed March 4, 1932. Serial No. 596,705.

This invention relates to an adhesive applicator. More particularly it relates to a unitary non-corrodible, non-metallic, flexible brush for applying glue, mucilage, paste or other adhesive material on paper surfaces and the like.

In the sale of mucilage or paste, the bottle or receptacle containing the same has a cap onto which is attached a bristle brush. Generally such brushes have a hollow stem at the end of which the bristles are fastened by pressing. When using the contents, the brush is inserted through the cap and its major portion is retained by the adhesive in the bottle. After some use of such type of brush, the bristles become loosened from the tubular stem, as when applying the adhesive on the surface of the paper, and pull away from the handle, are spread along with the adhesive, and form an uneven surface. The adhesive also may contain materials injurious to the brush thereby affecting the quality of the bristles and rendering the same unfit for use.

It is an object of this invention, therefore, to provide a simple, economical and integrally made adhesive distributor or applicator obviating the above defects.

Another object of the invention is to provide a unitary, non-corrodible, solid rubber applicator and flexibly adjustable means in connection therewith for covering the neck of the adhesive container.

One further and more particular object of this invention is to provide an integral applicator having a relatively rigid handle and shank, an extending flexible end or tongue portion, and a washer intermediate the handle and shank portion.

With the above and other objects and features in view, the invention in its preferred embodiment consists in the details of construction and the arrangement of the several parts which hereinafter will be more fully described, and set forth in the appended claims.

Referring to the drawing which shows a preferred embodiment of the invention:—

Figure 1 is a front face view of the embodiment showing a circumferential groove;

Fig. 2 is a cross section taken on the line 2—2 of Fig. 1, showing the rib-like structure of the shank portion of the embodiment;

Fig. 3 is a side view of the embodiment having the washer engaged in the circumferential groove;

Fig. 4 is a sectional view of the washer portion used in the circumferential groove between the handle and shank of the applicator;

Fig. 5 is a view showing the applicator used for spreading adhesive along the surface of a sheet of paper; and

Fig. 6 is a sectional fragmentary view showing the insertion of the applicator into the neck of a bottle and the accommodation of the washer in the neck of said bottle.

Similar reference characters designate similar parts throughout the several views.

Referring in detail to the drawing which, for the sake of illustration and clarity, show a preferred embodiment of the invention, the applicator 10 is a solid structure made preferably of rubber or of some other similar material which is inert to the deleterious effects of any chemicals or other injurious ingredients in the adhesive, and/or which will not become warped on standing in the adhesive. The applicator includes a handle 11 of substantially conical tapering outline with an outwardly rounded end portion 12 and a peripheral shoulder flange 13. The rounded end portion 12 is of larger diameter, while at the flange 13 there is an outwardly inclined extending portion 14 and a depending straight side 15. The depending side 15 has the plane of its undersurface 16 perpendicular to the longitudinal axis of the handle 11. The structure of the handle 11 and of the shoulder flange 13 permits grasping of the handle by the index finger and thumb of the user, the fingers resting against the incline portion 14 when the applicator is being used.

Adjacent the shoulder flange 13 and oppositely disposed thereto is another shoulder flange 17. The shape of this flange corresponds with flange 13 but is set so that the underface 18 is directly opposite face 16. Both shoulder flanges 13 and 17 are in

spaced relation to provide a circumferential groove 19. The part within the groove 19 is part of the handle 11 and is also of gradually tapering section. Extending from the peripheral flanges 13 and 17 is the shank 20 of gradually tapering section, as shown in Fig. 3, which is continued from the handle 11 and the part within groove 19. As shown by the face view of Fig. 1, the shank 20 progressively and gradually broadens or is widened toward the end 21 thereof to provide a relatively rigid resistance to thrust or forward movement by the user on the applicator when spreading adhesive. The shank portion is also provided with a plurality of diverging grooves 22 in each face 23 and 24 thereof to form a rib-like structure as shown in Fig. 2. Each groove gradually tapers toward the left end portion of the shank, as shown in Fig. 1, to form relatively more rigid ribs 24′ and also to permit easy flow of the adhesive towards the end 21 of the shank. By such rib formation in the shank there is relatively little or no bending of the same, while the handle portion 11 is relatively rigid.

The end of the shank 20 has a flexible tongue-like extension or spreader 25 which, as seen from the side view in Fig. 3, is set inwardly at one end from the faces 23 and 24 of shank 20. The spreader 25 is in alignment with the axial longitudinal plane of the shank and can be tilted to either side of the face portion of the shank. The spreader, furthermore, as is seen from Fig. 3, gradually diminishes in thickness to the end thereof so as to permit very easy bending of said end for the adhesive. Also, it will be noted from Fig. 1 that the spreader spreads continuously outward from the sides 26 and 27 of the shank 20. The spreader 25 when used for applying adhesive may be drawn so that the major portion of either of its faces is in contact with the surface to be coated. If less pressure is to be exerted when using the applicator, the shank and handle may be tilted as shown in Fig. 5 so that practically only a small part of the spreader is in contact with the paper or surface to be coated.

The rubber comprising handle 11 and shank 18 is of a stiffer stock to give relative rigidity to the same, than the tongue or spreader 25 which is made of another stock to render the same flexible and pliant upon the distribution of any adhesive material.

During the application of adhesive, some of it may creep toward the handle 11, smearing the same. This is particularly so if the shank portion when not in use were kept in the bottle of mucilage or adhesive. In order to obviate this disadvantage and defect, a washer 28 is provided and retained within the circumferential groove 19. The washer has a central expandible opening 29 which is adapted to pass over the enlarged portion 12 of handle 11 and also over either of the shoulders 13 or 17 for insertion into groove 19. Furthermore, the washer is prevented from moving beyond the groove because of the larger diameter of shoulder flanges 13 and 17. The inner peripheral portion 30 of the washer is thickened as shown in Fig. 4 so as to act as a cushion against the shoulder flanges 13 and 17, respectively, and also to prevent undue sliding or slipping over them.

The rubber material comprising the washer is also flexible particularly at the outer parallel portion so that the washer is easily accommodated in the neck portion of the container 31. Upon insertion of the applicator into bottle 31 containing glue or adhesive material, the outer periphery 32 of the washer is bent upwardly as shown in Fig. 6 due to the contact action against the inner wall of neck 33, thus preventing any mucilage or adhesive from escaping or pouring from the bottle. Upon removing the applicator from the bottle, all that is necessary is to pull by the handle whereupon the upwardly bent periphery 32 of the washer will follow the line of traction and be bent downwardly of the bottle neck to thereby maintain a clean surface therein. It is apparent that the washer being of rubber is pliable and can partly enter the neck of the bottle or container when the applicator is placed in the container. Furthermore, it may also be used as a washer between the metal cap (not shown) and the bottle, thus preventing any contact of the cap with the glue. The metal cap generally has an opening in the center, permitting passage therethrough of the handle 11 so that every time the applicator is used the washer also carries the cap.

From the foregoing description taken in connection with the accompanying drawing, it will be noted that there is provided an integral, unitary, non-corrodible and inert applicator for adhesive and the like. In molding the applicator preferably two grades of rubber are used, one grade of which is used for the handle and shank to render the same relatively rigid, while the other grade is used for the tongue or spreader to render the same relatively flexible and pliant. However, I may make the applicator from rubber of the same stock to obtain the desired results of flexibility at one end and relative rigidity at the other end of the applicator. Also the embodiment herein disclosed is superior to the bristle brushes now commonly used and sold with mucilage bottles. The bristles of such brushes eventually become loosened and are spread along with the adhesive, thereby rendering the surface of the paper or material to be covered uneven and rough. The applicator herein described can

be used as a brush for adhesive by moving the same with the spreader back and forth across the paper or the adhesive, the spreader being almost parallel with the face receiving the adhesive. Also, the washer may be used as a cover for the adhesive or for carrying the cap of the bottle. Said washer is set in a groove between the handle and shank of the applicator and is held in position by means of oppositely disposed flanges integral with the shank and handle respectively. The grooves formed in the shank portion of the applicator permit easy flowing of the mucilage down toward the spreader and the rib structure of the shank also renders the same relatively rigid.

While I have described my invention as used in connection with mucilage, paste, and the like, it is to be understood that the applicator described herein may be utilized for spreading oils, paints, water colors, and the like. In general it may be used for any material which is to be spread on a surface to be coated.

While one preferred embodiment of the invention has been given in the foregoing description, taken in connection with the accompanying drawing, it will be noted that various changes and modifications may be made as to material, form, size, and shape without departing from the spirit and scope of the claims herein appended.

I claim:

1. A one piece, solid, rubber adhesive spreader or distributor having a handle, shank, and lip integral therewith, said handle being rounded and of tapering outline and having a shouldered portion with two flanges also integral therewith and forming a groove therebetween, the shank tapering from the groove portion having marginal edges of gradually increasing thickness and opposite faces of progressively increasing width and the lip extending from the longitudinal end of the shank, and a washer having a central opening adapted to expand over either shoulder for engagement within the groove and flaring outwardly to provide a closure with a bottle whereby to make contact with the peripheral wall of said neck portion, the faces of said shank having a plurality of longitudinally extending ribs integral therewith and on oppositely disposed sides thereof.

2. An adhesive applicator, made of rubber for use in a bottle, comprising an integral shank member having a handle at one end and cut-out portions at the other end forming a pliable lip, the lip increasing in width and decreasing in thickness from said cut-outs to the free edge of the lip, the lower end of the lip being of such thinness as to readily bend near its free edge only upon applied pressure, spaced annular shoulders adjacent the inner part of the handle and forming an annular groove therebetween, and a centrally open, expandible washer having its portion around the opening of a thickness equal to the width between the shoulders and decreasing in thickness radially toward the outer periphery of the washer forming a flexible peripheral lip portion, said washer being adapted upon insertion into a bottle neck of smaller diameter to permit bending of the peripheral lip portion thereof against the wall of the bottle neck, while the thicker portion of the washer between the shoulder prevents the washer from bending except at the peripheral portions thereof.

3. An integral applicator for adhesive and the like, comprising a shank with a relatively stiff handle at one end, a flexible cut-out lip portion at the other end of said shank with a progressively wide portion towards the end of the lip, said portion becoming thinner towards its free end, the faces of said lip being adapted to spread adhesive across a surface, and an intermediate longitudinally corrugated portion with tapering faces meeting those of the lip portion, the longitudinal edges of the intermediate and lip portions diverging from the handle towards the free end of said lip, a pair of spaced annular shoulders between the handle and intermediate portion forming an annular groove therebetween, and a centrally open washer mountable on said groove having a thickened portion surrounding the central opening thereof, and a relatively thin circumferential portion contacting with the edge of the neck of the container for the adhesive and like material.

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

FRANK B. COONEY.