

June 23, 1964

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3,137,880

QUICK-ACTING CLAMPING HANDLE FOR DISPOSABLE LIQUID APPLICATORS

Filed June 19, 1961

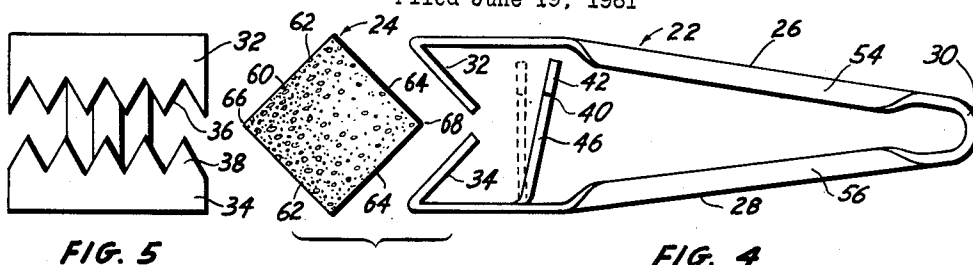


FIG. 5

FIG. 4

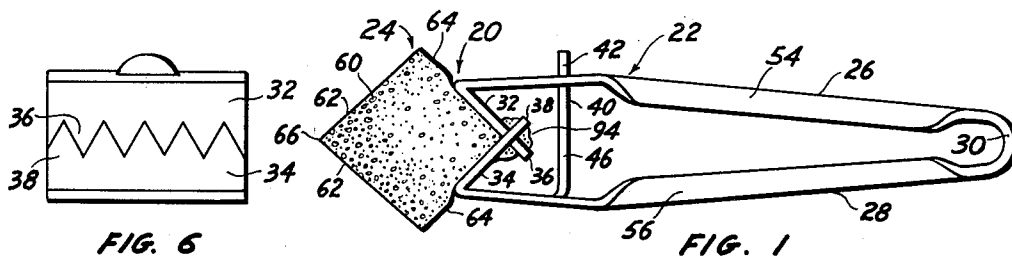


FIG. 6

FIG. 1

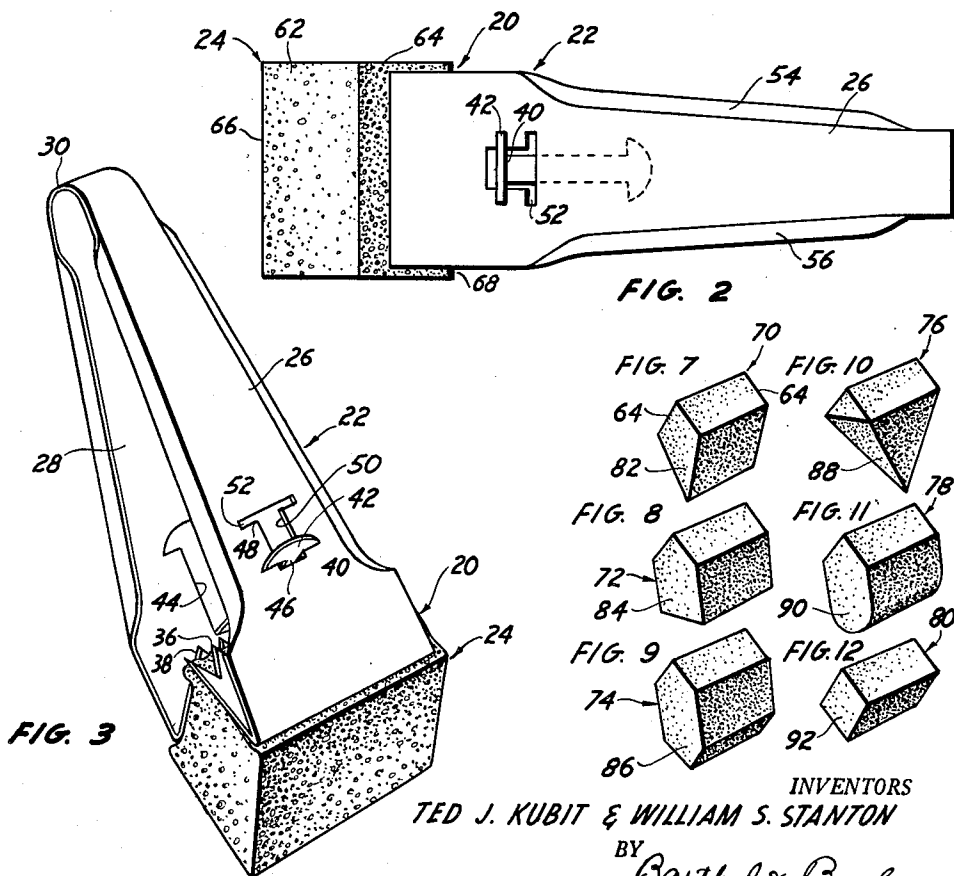
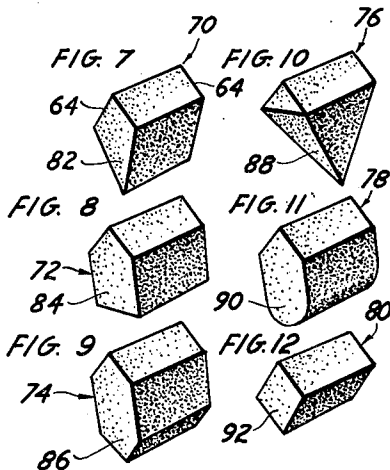


FIG. 2

FIG. 3



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QUICK-ACTING CLAMPING HANDLE FOR DISPOSABLE LIQUID APPLICATORS

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Filed June 19, 1961, Ser. No. 117,889

4 Claims. (Cl. 15-244)

This invention relates to liquid applying devices and, in particular, to disposable liquid applying devices, such as, for example, for the application of paint.

Hitherto, painting and other similar applications of viscous liquids to surfaces has been usually made by means of liquid applying devices, such as paint brushes including bristles attached to a handle. Such paint brushes are not only expensive to purchase, but also involve the nuisance of cleaning them after use, before the paint or other liquid hardens and stiffens their bristles or otherwise renders them unusable. Such brushes, moreover, are subject to the disadvantage of bristles becoming detached and embedding themselves in the layer of paint, requiring careful removal and repainting of the place from which the bristle was removed in order to eliminate the depression left by the detached bristle.

The present invention eliminates the disadvantages of bristle brushes by providing a handle for a disposable liquid applying element which element is inexpensive and therefore can be discarded after use.

Accordingly, one object of this invention is to provide a disposable liquid applying device wherein the liquid, such as paint, is applied by an applicator such as a block of resilient expanded or sponge material adapted to be removably clamped or otherwise held in a special handle which permits quick and easy release of the applicator after use.

Another object is to provide a device of the foregoing character wherein the handle is provided with jaws which grip and tightly hold the applicator during use, yet which can be quickly and easily disengaged from the applicator after use in order to dispose of the used applicator and replace it with an unused applicator.

Other objects and advantages of the invention will become apparent during the course of the following description of the accompanying drawing, wherein:

FIGURE 1 is a side elevation of a disposable liquid applying device, according to one form of the invention, with the disposable applicator gripped between the jaws of the handle;

FIGURE 2 is a top plan view of the disposable liquid applying device of FIGURE 1;

FIGURE 3 is a perspective view of the liquid applying device shown in FIGURES 1 and 2;

FIGURE 4 is an exploded side elevation of the liquid applying device of FIGURES 1, 2 and 3, with the handle jaws open and with the applicator released from their grip;

FIGURE 5 is a left-hand end elevation of the liquid applying device of FIGURE 4, with the jaws open;

FIGURE 6 is a left-hand end elevation of the liquid-applying device of FIGURE 1, with the jaws closed but with the applicator omitted; and

FIGURES 7 to 12 inclusive are perspective views of different shapes of applicators adapted for the coating of jobs of different characteristics.

Referring to the drawing in detail, FIGURES 1 to 4 inclusive show a disposable liquid applying device, generally designated 20, according to one form of the invention as including generally an applicator holder or gripping handle 22 and a disposable applicator 24 detachably held by the handle 22. The handle 22 is conveniently formed

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from bent sheet material with upper and lower arms 26 and 28 respectively interconnected by a bridge portion 30. The handle 22 is preferably formed from sheet material having some resilience which normally urges the arms 26 and 28 apart from one other. The upper and lower arms 26 and 28 at their free ends remote from the bridge portion 30 terminate in reversely-bent applicator gripping or clamping jaws 32 and 34 equipped with pointed interfitting teeth 36 and 38 respectively (FIGURE 5), adapted to grip the applicator 24, as described more fully below.

In order to lock the teeth 36 and 38 in their interfitted position (FIGURE 6), one of the arms 26 or 28, such as the lower arm 28, is provided with an upstanding T-shaped locking tongue 40 having an enlarged head 42 and struck up from the arm 28 so as to leave a correspondingly-shaped slot 44 (FIGURE 3). The locking tongue 40 has a shank 46 which is narrower than its head 42 but which is adapted to pass through a T-shaped slot 48 (FIGURE 3) in the upper arm 26 with the shank 46 passing through the narrow longitudinal portion 50 thereof and the head 42 passing through the wide transverse portion 52 thereof. The opposite edges of the arms 26 and 28 are preferably bent obliquely toward one another as at 54 and 56 respectively so as to prevent the edges from otherwise creasing the palm of the hand and causing discomfort during use.

The applicator 24, one form of which is best shown in FIGURE 4, is preferably made from a spongy material, such as the expanded plastic material known as expanded polyurethane plastic having open cells or pores 60 adapted to draw in the coating liquid, such as paint, from the can or other receptacle. It thereby carries a supply in its interior which is relatively free from rapid oxidation and hardening which paint undergoes when exposed to the air.

The applicator 24 is in the form of a rectangular block or prism preferably having approximately perpendicular forward and rearward surfaces 62 and 64 respectively meeting at sharp forward and rearward edges 66 and 68 respectively. The handle jaws 32 and 34 are preferably so inclined relatively to their respective handles 26 and 28 as to subtend approximately the same angles between them as the angles subtended by and between the rearward applicator surfaces 64.

The modified applicators 70, 72, 74, 76, 78 and 80 shown in FIGURES 7 to 12 inclusive are illustrative of the different shapes into which the applicator may be molded, cut or otherwise formed from the expanded or sponge material in order to adapt it to different types of jobs. The upper or rearward surfaces of these applicators are preferably of substantially the same shape and included angles as the applicator 24 and are therefore designated with the same reference numerals 64 so as to fit the jaws 32 and 34 when the latter are closed upon them, as explained below in connection with the operation of the invention. The forward surfaces of the modified applicators 70 to 80 inclusive are variously shaped to provide a thin or narrow sharp edge portion 82 (FIGURE 7), a rectangular block portion 84 (FIGURE 8), a flat-sided broadsharp wedge 86 (FIGURE 9), with flat sides, a pyramidal pointed forward portion 88 (FIGURE 10), a flat-sided semi-cylindrical forward portion 90 (FIGURE 11) or a perpendicular surfaced wedge portion 92 (FIGURE 12). The applicator 80 of FIGURE 12 is thus seen to be closely similar to the applicator 24 of FIGURES 1 to 4 inclusive and is included with FIGURES 7 to 11 inclusive for comparative purposes.

In the use of the invention, let it be assumed that an application, such as the applicator 24, has been selected as most suitable for the particular job. Let it also be assumed that the handle 22 has been manipulated so as to cause the arms 26 and 28 to be in their open position. To secure the applicator 24 to the handle 22 (FIGURE

4), the former is pushed into the space between the jaws 32 and 34 so that the rearward surfaces 64 engage the jaws 32 and 34 and the rearward edge 68 is pushed between the upper and lower teeth 36 and 38 and protrude rearwardly beyond it. The operator holds the applicator 24 in this deformed position in one hand while he holds the handle 22 in the other hand, and then squeezes the handle 22. This action pushes the upper and lower arms 26 and 28 and their jaws 32 and 34 toward one another, so that the upper and lower teeth 36 and 38 embed themselves in the rearwardly-projecting deformed portion 94 of the applicator 24 which has been pushed between them. At the same time, the operator by means of his index finger or thumb moves the head 42 of the locking tongue 40 into alignment with the slot portion 52 so as to pass therethrough, whereupon he releases it. The resilience of the tongue 40 then causes it to move forward into the position shown in FIGURES 1, 2 and 3 with its shank 46 passing through the narrow portion 50 of the T-slot 48 (FIGURE 3). In this manner, the operator locks the arms 26 and 28 and their jaws 32 and 34 in their closed positions shown in FIGURES 1, 2 and 3, firmly gripping the applicator 24 between them.

The operator then grasps the handle 22 in the manner of grasping the handle of a paint brush and employs it in a similar manner, applying the forward edge 66 against the surfaces to be painted, and employing a sweeping motion for covering those surfaces. To paint straight lines, such as in signs, the operator may conveniently rest one of the flat sides 62 or 64 of the applicator 24 against a straight edge. During the painting operation, the operator easily controls the flow of liquid, such as paint, by pressing slightly upon the applicator 24 in order to cause the liquid to flow out from the pores 60. The applicator 24, being free from fibers, does not show the brush strokes formed by the hairs or bristles of ordinary paint brushes and, of course, there are no such hairs or bristles to become detached and contaminate the paint itself.

As previously stated, the right-angled applicator 80 or the approximately right-angled applicator 24 are well adapted to painting in the angle between two mutually perpendicular surfaces, such as the side wall and ceiling or floor of a room, without contaminating the one with paint intended for the other. As also previously stated, the operator can select any one of the variously-shaped applicators 70 to 78 inclusive and mount it in the handle 22 in the manner described above, in order to facilitate the coating or painting of different types of shapes or surfaces. The pointed applicator 76 of FIGURE 10, for example, is conveniently used for stippling or for lettering or the like.

When the operator has finished the painting or other liquid-coating job, or has arrived at the end of a day's work, he detaches the applicator 24 or the applicator 70, 72, 74, 76, 78 or 80 being otherwise used, by moving the head 42 of the locking tongue 40 into alignment with the transverse slot 52, whereupon the jaws 32 and 34 of the arms 26 and 28 are permitted to spring apart into their open position of FIGURE 4. The applicator 24, being thus released from its gripped position of FIGURE 1, is dropped into a trash can or otherwise disposed of. When the work is resumed, or a new job is started, the operator inserts and grips a new applicator 24 or one of

the modified applicators of FIGURES 7 to 12 inclusive between the jaws 32 and 34 in the manner described above and proceeds as set forth herein.

What I claim is:

1. A quick-acting clamping handle for grasping a liquid applicator of porous resilient material having a tapered rearward mounting portion thereon, said handle comprising
 - a handle structure including a pair of relatively-movable arms having forward ends with relatively-movable applicator clamping jaws thereon bent reversely to and extending rearwardly from said forward ends of said arms at acute angles to said arms with the rearward ends of said jaws movable into and out of close proximity to one another remote from said forward ends of said arms and cooperatively providing a tapered applicator seat therebetween configured to substantially fit the tapered rearward portion of the applicator in the clamping position of said jaws,
 - gripping means on said jaws penetratingly engageable with the applicator for retaining the applicator in said seat,
 - and self-contained quick-acting means for releasably locking and unlocking said jaws in and out of clamping engagement with the mounting portion of the applicator.
2. A quick-acting clamping handle, according to claim 1, wherein said gripping means includes teeth on said rearward ends of both of said jaws engageable with the opposite sides of the applicator.
3. A quick-acting clamping handle, according to claim 2, wherein said teeth are disposed in overlapping relationship with one another in overlapping engageability with the rearward portion of said applicator.
4. A quick-acting clamping handle, according to claim 1, wherein said jaws are approximately flat and wherein said applicator seats between said jaws is of approximately V-shaped cross-section.

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