Jan. 5, 1960 L. R. MOONEY 2,919,642

STENCIL APPLICATOR

Filed Aug. 20, 1957

Fig. 1

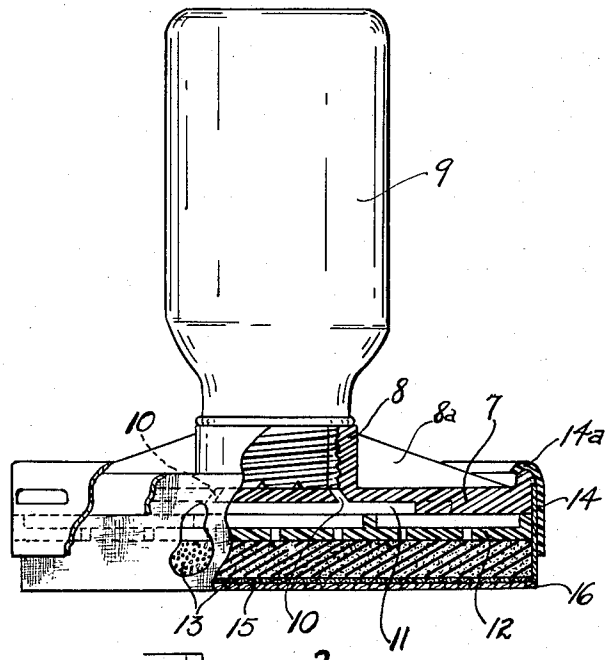


Fig. 2

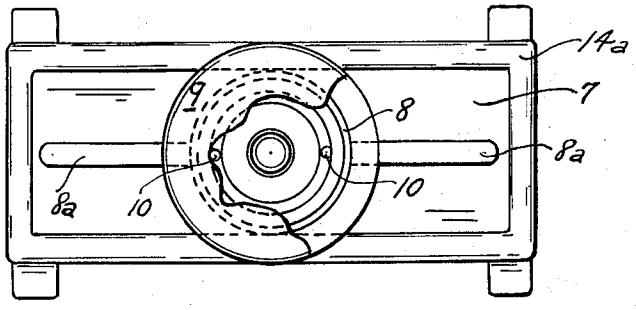
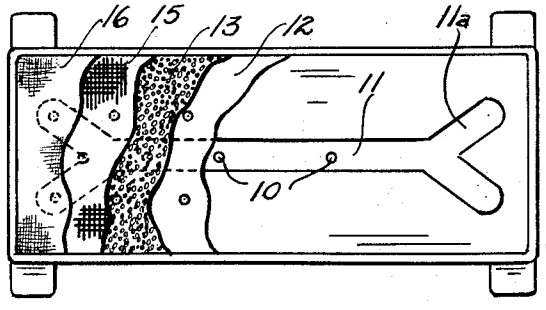


Fig. 3



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STENCIL APPLICATOR

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3 Claims. (Cl. 101—125)

This invention relates generally to applicators for stencils and particularly to an applicator designed for producing a relatively large number of impressions.

While the applicators disclosed in my previously filed co-pending applications for U.S. Letters Patent respectfully entitled, Ink Dispensing Applicator for Stencils, filed April 7, 1954, Serial No. 421,470, now abandoned, and Improved Stencil Applicator, filed November 26, 1954, Serial No. 471,338 have been relatively satisfactory, it has been a problem when producing a relatively large number of impressions to prevent the stencil from deteriorating. I have discovered that this deterioration is due to lack of backing support and in this invention have disclosed and claimed in combination with the resilient pad of the applicator a reinforcing backing screen which not only assists in the uniform distribution of the ink to the stencil but also provides a relatively stiff backing for the stencil and prevents the same from deteriorating due to repeated impressions.

It is an object of my present invention to provide an applicator which is particularly designed to permit a large number of impressions to be produced without deterioration of the stencil.

It is another object to provide an applicator wherein an ink supply shut-off is provided between the reservoir and the distribution chamber.

It is still a further object to provide an applicator having reinforcing frame surrounding the pad and flexible covering thereof to securely hold said covering in operative position and provide a retaining flange for said pad.

These and other objects and advantages of my invention will more fully appear from the following description, made in connection with the accompanying drawings, wherein like reference characters refer to the same or similar parts through the several views, and in which:

Fig. 1 is a side elevational of my new applicator with portions thereof broken away to show certain parts in vertical section;

Fig. 2 is a top plan view thereof with the reservoir removed; and

Fig. 3 is bottom plan view with portions broken away to show other parts in section.

As illustrated in the accompanying drawings I provide an upper body member 7 having a bottle receiving socket or sleeve 8 which is internally threaded to permit a reservoir bottle 9 to be threadably mounted therein. A suitable reinforcing web 8*a* is provided for reinforcing the socket or sleeve 8.

The threaded portion of the bottle 9 is sufficiently long to extend into said socket 8 the full length thereof and sealingly engage the lower end portion of said socket when fully threadably inserted thereinto. In the form shown, a pair of discharge passages 10 are provided through the bottom of the socket 8 adjacent the periphery of the threaded wall thereof and these passages 10 are open to receive ink from the reservoir 9 only when the bottle is threadably retracted from the bottom of the

socket. The discharge passages 10 communicate with a longitudinally disposed groove 11 extending substantially the full length of the body and having a pair of diverging groove elements 11*a* at each end thereof.

A perforated distribution plate 12 is secured to the bottom of the body and is spaced downwardly therefrom to form a distribution chamber 12*a* underlying said longitudinal groove 11. The number of perforations through the plate 12 will, of course, govern the amount of ink and the distribution thereof which is delivered to the top surface of a resilient, porous pad 13, having relatively small porous openings therein. The pad 13 is secured to the bottom of the plate 12 as by being glued thereto.

A flanged frame 14 surrounds the body and perforated plate 12 and extends downwardly a slight distance beyond the bottom of said plate 12 as best shown in Fig. 1. This forms a retaining skirt portion around the upper part of the pad 13 and a flange 14*a* limits the downward movement of the frame 14 on the body 7.

In order to prevent localized pressure from causing indentations in the highly yieldable, resilient pad 13 and thus stretching portions of a stencil applied thereto, I provide a relatively stiff screen element 15 mounted in face to face underlying relation to the bottom of the pad 13 as best shown in Fig. 1. A porous cover member such as the linen cloth 16 surrounds the pad 13 and screen 15 and the marginal edge portions thereof are extended upwardly between the outside of the body and the inside of the frame 14 and are securely anchored therebetween. The screen not only serves to distribute any localized pressure applied to the bottom of the pad 13 but also tends to produce a more even distribution of the ink through the pad by causing a uniform compression of all portions of the pad whenever pressure is applied thereto to form a uniform suction of ink into the pad from the entire top area thereof. The screen 15 prevents damage to the stencil caused by repeated indentations thereof produced by irregularities in the surface being printed and serves as a backer panel to uniformly support all areas of the stencil. The screen is freely mounted for movement with the bottom of the resilient pad 13 and is held in contact with the bottom of said pad solely by the cloth member 16.

It will be seen that I have provided an applicator for stencils capable of producing a large number of stencil impressions without stretching localized areas of the stencil and thus causing deterioration thereof. It should be noted that I have provided a relatively simple valve arrangement for shutting off the flow of ink from the reservoir bottle 9 into the distribution chamber 12*a*. The bottle 9 can, of course, be of any suitable design and construction but I have found that a polyethylene type "squeeze" bottle is thoroughly satisfactory. This frequently requires, however, that the passages 10 be closed even during operation of the applicator to prevent excessive inking of the pad. The linen cloth used with my present applicator has been found to be superior to the silk screen cloth previously used since the linen threads absorb considerably more ink than does the silk and thus produces a more uniform distribution of the ink on the surface of the cloth to which the stencil is applied in the manner set forth in my prior applications previously identified herein.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of my invention which consists of the matter shown and described herein and set forth in the appended claims.

What I claim is:

1. A stencil applicator comprising a body including means for attaching an ink reservoir thereto, said body defining a distribution chamber therewithin and includ-

ing means for delivering ink from said reservoir to said chamber, a resiliently compressible porous pressure pad mounted below said chamber with a perforated mounting plate interposed therebetween substantially coextensive with said distribution chamber, a floating reinforcing relatively stiff mesh flat screen underlying said resilient porous pressure pad supported solely by said pad but otherwise free to move with respect to said body in response to compression and expansion of said pad, a covering of porous flexible material surrounding said pressure pad and said screen with the edge portions thereof securely anchored to the side portions of said body to positively hold said screen against said pad while permitting ink to be evenly distributed through said pad, screen and porous covering,

2. The structure set forth in claim 1 and a circumferential clamping frame surrounding said body and positively clamping said flexible cover member thereto,

3. A stencil applicator comprising a body, a mounting socket internally threaded to receive a cooperatively, externally threaded reservoir bottle, the length of the socket being such that the open end of the bottle will sealingly seat itself at the bottom of the socket when fully threaded therein, said socket having discharge openings in the bottom thereof substantially adjacent the periphery to be closed off when the open end of the bottle is tightly sealed against the end of the socket, but being open for discharge when the bottle is threadably retracted from the socket, and a porous pressure pad having the upper surface thereof communicating with said discharge openings to receive ink from said reservoir when said openings are open.

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