

June 18, 1968

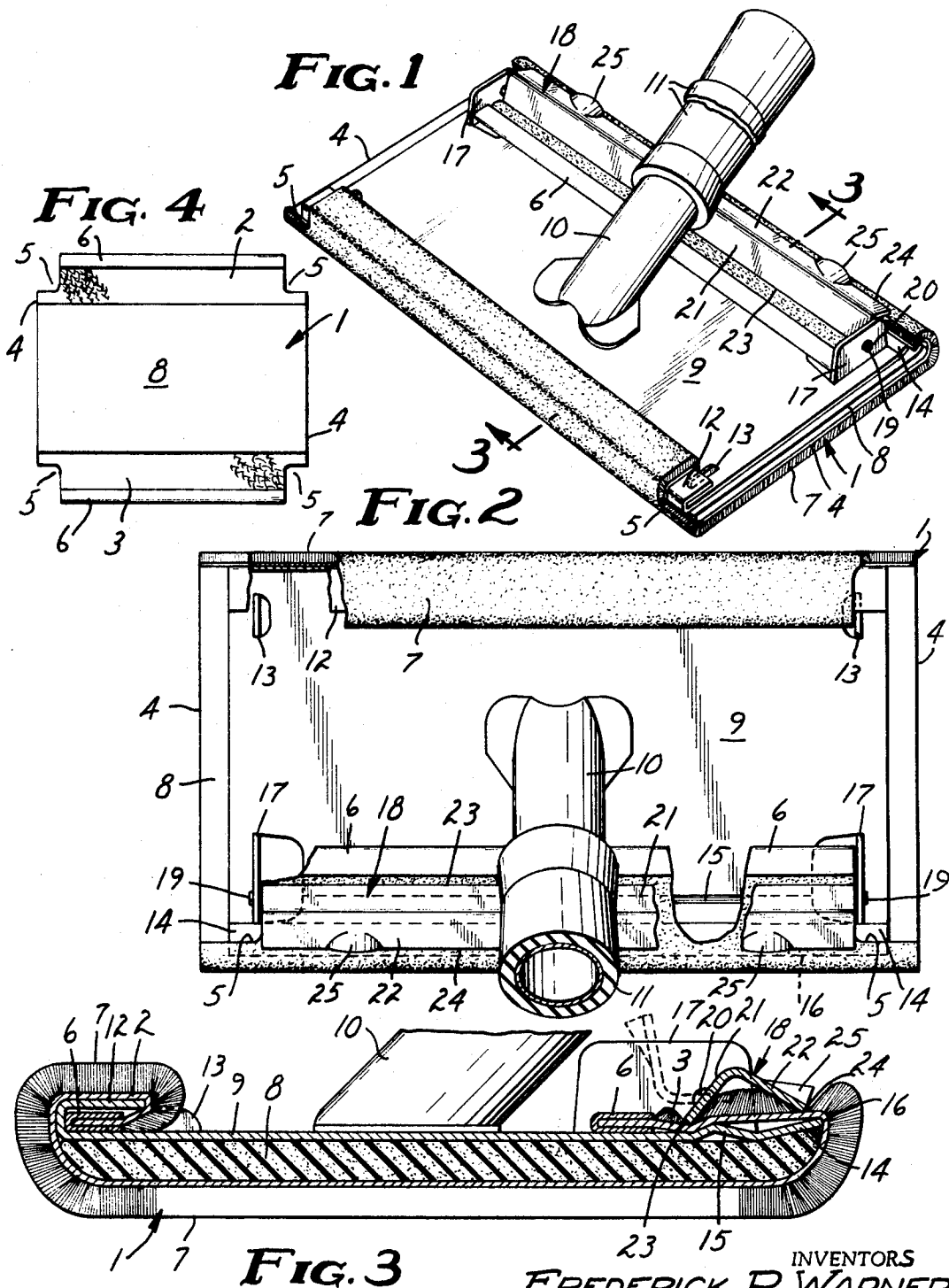
F. P. WARNER ET AL

3,388,415

APPLICATOR FOR PAINT AND THE LIKE

Filed June 2, 1967

2 Sheets-Sheet 1



INVENTORS
FREDERICK P. WARNER
YOSHIMI MATSUURA
BY *Merchant & Gould*
ATTORNEYS

June 18, 1968

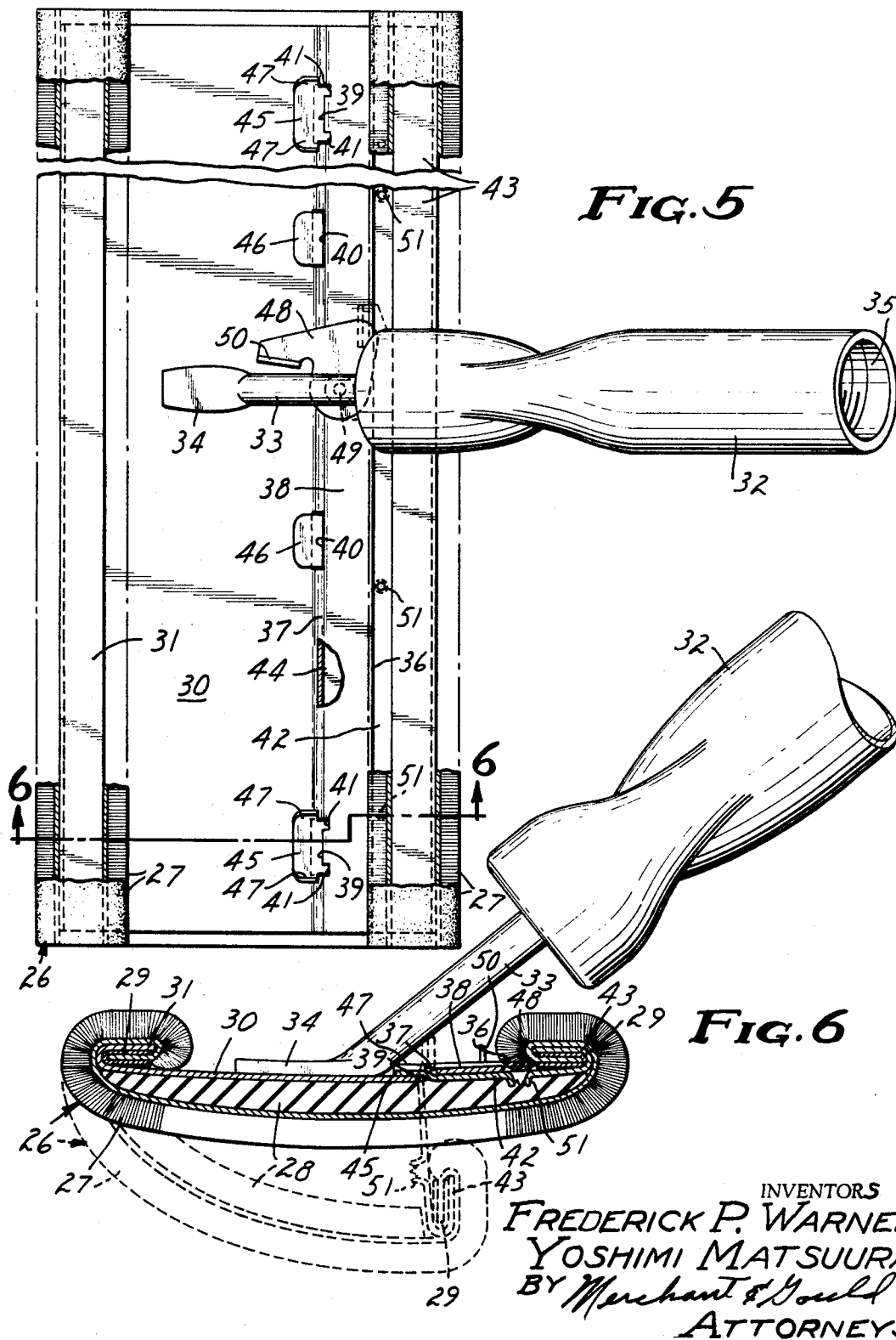
F. P. WARNER ET AL

3,388,415

APPLICATOR FOR PAINT AND THE LIKE

Filed June 2, 1967

2 Sheets-Sheet 2



INVENTORS
FREDERICK P. WARNER
YOSHIMI MATSUURA
 BY *Merchant & Gould*
 ATTORNEYS

1

3,388,415

APPLICATOR FOR PAINT AND THE LIKE

Frederick P. Warner and Yoshimi Matsuura, Minneapolis, Minn., assignors to Warner Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota

Filed June 2, 1967, Ser. No. 643,264

14 Claims. (Cl. 15—233)

ABSTRACT OF THE DISCLOSURE

An applicator for paint, varnish and the like, utilizing an applicator sheet of fabric having a work surface engaging carpet-like pile of upstanding filaments or threads, a resilient cushion backing on the fabric sheet, a holder for the sheet, and means on the holder for removably anchoring the applicator sheet and cushion on the holder.

Background of the invention

Heretofore, applicators generally of the above-mentioned variety, have utilized cement for permanently mounting the applicator sheet on a holder. After use, such applicators, with their handle-equipped mountings are discarded, resulting in a waste of materials. An example of this type of applicator is disclosed in United States Patent No. 2,156,270. Other similar applicators utilize means for releasably mounting applicator elements on a holder, such being shown in United States Patents Nos. 2,810,148 and 2,975,453. In the former, the applicator is slidably mounted on a holder, no means being provided for holding the applicator sheet against sliding movement relative to the holder. In the latter, one modification utilizes the holder as a clamp engaging the cushion pad of the applicator, necessitating a cushion of considerable thickness.

Summary of the invention

The device of this invention utilizes a releasable holding arrangement for the applicator sheet, by means of which the applicator sheet may be quickly and easily mounted on the holder in a taut or stretched condition, and as quickly and easily removed therefrom for cleaning or replacement and, when mounted on the holder, is securely held against movement relative to the holder. To this end, we provide, a generally rectangular flexible applicator sheet including a backing and filament pile on one side of the backing, a normally flat resilient cushion on the other side of the backing and rigid stiffening strips on opposite longitudinal side edges of the sheet and extending longitudinally thereof. The holder for the sheet comprises a plate having a handle thereon and defining a stiffening strip engaging channel at one longitudinal side edge thereof, an applicator sheet-engaging and tightening member pivotally connected to the plate adjacent opposite longitudinal side thereof, and means for releasably locking the member in a sheet tightened position of its pivotal movement. Means is further provided for holding the applicator sheet against movement in directions longitudinally of the plate.

Referring to the accompanying drawings, which illustrate the invention, and in which like reference characters indicate like parts throughout the several views:

FIG. 1 is a view in perspective of an applicator for paint and the like produced in accordance with this invention;

FIG. 2 is an enlarged view in top plan, some parts being broken away and some parts being shown in section;

FIG. 3 is an enlarged fragmentary transverse section, taken substantially on the line 3—3 of FIG. 1;

FIG. 4 is a view in top plan of the applicator sheet and cushion, on a reduced scale;

2

FIG. 5 is a fragmentary view in top plan of a modified form of the invention; and

FIG. 6 is an enlarged transverse section, taken on the line 6—6 of FIG. 5, some parts being broken away.

In the embodiment of the invention illustrated in FIGS. 1—4, the numeral 1 indicates, in its entirety, an applicator sheet of flexible material, such as woven fabric, the applicator sheet 1 being generally rectangular in form, having laterally spaced side edge portions 2 and 3, and longitudinally spaced parallel ends 4. The corners of the sheet 1 are cut away to provide generally rectangular notches 5, and the side portions 2 and 3 are provided with cross sectionally U-shaped reinforcing or stiffening strips 6, preferably made from sheet metal or the like, the strips 6 and adjacent side edge portions 2 and 3 having a shorter longitudinal dimension than the maximum longitudinal dimension of the applicator sheet 1. The outer or working surface of the applicator sheet 1 comprises a pile or nap 7 of the filaments or threads for holding paint or the like to be applied to a work surface. A rectangular cushion or pad 8 of sponge rubber or foam plastic material is adhered to the inner surface of the applicator sheet 1 intermediate the side edge portions 2 and 3 thereof, see FIG. 4.

A holder for the applicator sheet 1 comprises a generally rectangular plate 9 having an angularly disposed stem or shank 10 welded thereto, and a tubular handle member 11 mounted on the shank 10. One longitudinal side edge portion of the plate 9 is bent upwardly and laterally inwardly to provide a flange 12 disposed in overlying spaced parallel relationship to the underlying top surface portion of the plate 9, and cooperates with said underlying portion to define a laterally inwardly opening recess or channel for reception of one of the stiffening strips 6 and the adjacent side edge portion 2 or 3 of the applicator sheet 1. The plate 9 is pierced and formed to provide a pair of upstanding ears 13, portions of which underlie and support the inturned flange 12 at opposite end portions thereof. The ears 13 are spaced apart longitudinally of the plate 9 a distance substantially equal to the longitudinal dimension of either of the stiffening strips 6, whereby to limit movement of the strips 6 and adjacent side edge portion of the sheet 1 received therebetween, longitudinally of the plate 9.

The longitudinal side edge portion of the plate 9, opposite the inturned flange 12, is formed to provide a longitudinally extending lip 14 which slopes upwardly and laterally outwardly with respect to the plane of the plate 9. Laterally inwardly of the lip 14, the plate 9 is further formed to provide an inverted cross-sectionally generally V-shaped ridge 15 that extends longitudinally of the plate 9, parallel to the side edge 16 of the lip 14. The plate 9 is pierced and formed to provide a pair of upwardly projecting bearing lugs 17 that are spaced apart longitudinally of the plate 9 a distance equal to the spacing of the ears 13, the lugs 17 being substantially aligned with the ears 13, for reception of the opposite stiffening strip 6 and adjacent side edge portion 2 or 3 of the applicator sheet 1. An elongated sheet engaging and stretching member 18 extends longitudinally of the plate 9, and is provided at its opposite ends with longitudinally projecting shaft portions 19 that project through axially aligned apertures 20 in the bearing lugs 17. The apertures 20 are disposed in overlying spaced relationship to the apex of the ridge 15. Preferably, the member 18 is made from sheet metal, folded along its longitudinal axis to provide a pair of angularly displaced side or wing portions 21 and 22, the shaft portions 19 projecting longitudinally from the side portion 21. The side portion 21 has longitudinally extending sheet-engaging edge 23 parallel to the apex of the ridge 15 and top surface of the plate 9, the edge 23 moving laterally over the ridge 15 during swinging movements

of the member 18 about the axis of the shaft portions 19. The apex of the ridge 15 is normally disposed in the path of movement of the edge 23, the top plate 9 having sufficient resilience adjacent the ridge 15, so that the apex of the ridge is deflected by the edge 23 to permit movement of the edge 23 over the apex of the ridge 15 under forced swinging movement of the member 18. The side or wing portion 22 of the member 18 is forced along its outer edge 24 to provide a pair of raised arcuate portions 25 that define finger-receiving notches for facilitating movement of the member 18 in one direction.

Mounting of the applicator sheet 1 on the holder is quickly and easily accomplished by first inserting one of the stiffening strips 6 with its adjacent side edge portion 2 or 3 into the recess or channel defined by the flange 12, underlying portion of the top plate 9, and ears 13, with the pile or nap 7 facing downwardly toward the top surface of the plate 9. The applicator sheet 1 is then wrapped around the top surface of the flange 12, and adjacent side edge of the plate 9, and moved into underlying relationship with the plate 9, wherein the cushion 8 will engage the bottom surface of the plate 9. The opposite or free edge portion of the applicator sheet 1, with its stiffening strips, is then wrapped around the side edge 16 of the lip 14, and inserted laterally inwardly between the ridge 15 and the overlying sheet-engaging and stretching member 18, the member 18 being disposed in its dotted line position of FIG. 3. The member 18 is then rotated in a clockwise direction with respect to FIG. 3, to its full line position thereof, the sheet-engaging edge 23 moving beyond a dead center relationship with the apex of the ridge 15 while engaging the adjacent side edge portion of the applicator sheet, pulling the sheet to a taut or stretched condition and securing locking said edge portion therebetween and the ridge 15. The outer edge 24 of the member side portion 22 presses downwardly against the underlying portion of the applicator sheet 1 to further clamp the same against movement relative to the top plate 9. The ears 13 and bearing lugs 17 positively hold the applicator sheet 1 against movement longitudinally of the plate 9. When it is desired to remove the applicator sheet 1 from the holder, the operator inserts the ends of two fingers into the recesses formed by the arcuate member portions 25 and rotates the member 18 in a counterclockwise direction with respect to FIG. 3, to its dotted line position of FIG. 3, whereupon the adjacent portion of the applicator sheet may be withdrawn, and the same removed from the holder. It will be noted that the edge 23 is disposed relative to the apex of the ridge 15, that when the member 18 is rotated from its inoperative applicator sheet-receiving dotted line position of FIG. 3 to its operative full line locking position thereof, the engaged portion of the applicator sheet is squeezed very tightly between the edge 23 and apex of the ridge 15. When the member 18 is in its fully operative locking position, this squeezing action is slightly relieved, but the member 18 continues to exert sufficient clamping pressure upon the engaged portion of the applicator sheet 1 to effectively anchor the same against accidental movement.

The modified form of the invention illustrated in FIGS. 5 and 6 includes an applicator sheet 26 that is identical to the applicator sheet 1 except that the applicator sheet 26 is devoid of corner notches, such as the notches 5 of the applicator sheet 1. Like the applicator sheet 1, the sheet 26 is provided with pile filaments 27, a resilient rubber-like backing cushion 28, and longitudinally extended cross sectionally generally U-shaped stiffening member 29 at the opposite side edges of the sheet 26. The applicator sheet folder of FIGS. 5 and 6 comprises an elongated generally rectangular plate 30 having one longitudinal side edge portion bent upwardly and laterally inwardly to provide a flange 31 similar to the flange 12. As shown in FIG. 6, the plate 30 is cross sectionally arcuate but may, if desired, be made in flat form in the manner of the plate 9. A tubular handle 32 is provided with a shank 33 having an angularly displaced portion 34 that

is spot welded or otherwise rigidly anchored to the central portion of the plate 30, whereby the tubular handle 32 projects angularly upwardly and laterally of the plate 30. As shown in FIG. 5, the outer end of the tubular handle 32 is provided with internal threads 35 for screw threaded reception of a handle extension, not shown.

Intermediate the flange 31 and the opposite longitudinal side edge 36, the plate 30 is formed to provide a longitudinally extending angularly displaced portion 37 and a generally upwardly offset longitudinal side edge portion 38. The angularly displaced portion 37 is pierced to provide a pair of longitudinally spaced outer slots 39 adjacent opposite end portions of the plate 30 and a pair of longitudinally spaced inner slots 40 intermediate the outer slots 39. The outer slots 39 are shaped to provide lateral extension portions 41, see FIG. 5.

An elongated plate-like applicator sheet engaging and tightening member 42 is bent upwardly and laterally inwardly along one longitudinally side edge portion to provide a laterally inwardly projecting flange 43 similar to the flange 31, and cooperating with the underlying portion of the member 42 to define a laterally inwardly opening longitudinally extending recess for reception of the stiffening member 29 opposite that received in the channel formed by the flange 31 and underlying portion of the plate 30. The member 42 has a longitudinal inner edge 44 which lies along the under surface of the angularly displaced portion 37, the member 42 being formed to provide a pair of longitudinally outer tabs 45 each projecting through a respective one of the outer slots 39, and a pair of longitudinally spaced inner tabs 46, each of which projects through a respective one of the inner slots 40. The tabs 45 are provided at their opposite longitudinal ends with ears 47 that are initially disposed at substantially right angles to the plane of the plate 42 and tabs 45, whereby to permit the tabs 45 and 46 to be inserted through their respective slots 39 and 40, the ears 47 moving through the lateral slot extensions 41. When the tabs 45 and 46 are moved through their respective slots, to their positions shown in FIGS. 5 and 6, the ears 47 are bent outwardly and downwardly toward the plane of the plate 30. As shown in FIG. 6, the member 42 thus becomes mounted on the plate 30 for swinging movement between a depending applicator sheet loading and unloading position, shown by dotted lines in FIG. 6, and an applicator sheet tightening position in the arcuate plane of the plate 30 against the undersurface of the offset edge portion 38. The edge portion 38 is upwardly offset from the main body portion of the plate 30 a distance substantially equal to the thickness of the member 42, so that the member 42 becomes substantially an extension of the plate 30 when in its operative sheet-tightening position in which the channel defined by the flange 43 opens slightly above the plane of the plate 30 and in opposed relationship to the channel defined by the flange 31.

Means for releasably locking the member 42 in its applicator sheet tightening and stretching position comprises a rotary latch 48 pivotally mounted on the offset edge portion 38, as indicated at 49, for movements into and out of the channel defined by the flange 43 and underlying portion of the member 42. The latch 48 is formed to provide an upwardly projecting handle portion 50 by means of which rotary movement may be imparted to the latch 48.

The member 42 is punched or otherwise formed to provide a plurality of longitudinally spaced downwardly projecting hollow teeth 51 that become embedded in the cushion 28 of the applicator sheet 26, when the member 42 is moved to its full line sheet tightening position of FIG. 6, whereby to securely anchor the applicator sheet 26 against movement longitudinally of the plate 30.

While we have shown and described a commercial embodiment of our improved applicator, and one modification thereof, it will be understood that the same is capable

of further modification without departure from the spirit and scope of the invention, as defined in the claims.

What is claimed is:

1. An applicator for paint and the like comprising:

- (a) a generally rectangular flexible applicator sheet including a backing and a filament pile on one side of said backing,
- (b) a normally flat rectangular resilient cushion on the opposite side of said backing and secured thereto,
- (c) a rigid stiffening strip at one side edge of said applicator sheet and extending longitudinally thereof,
- (d) and a holder for said sheet and including,
 - (1) a generally rectangular plate having laterally spaced longitudinal side edges, a cushion-engaging bottom surface, a top surface, and handle means connected to the top surface,
 - (2) stiffening strip securing means adjacent one side edge of said plate,
 - (3) a sheet engaging and tightening member,
 - (4) means mounting said member on said plate adjacent the opposite side edge thereof for swinging movements on an axis parallel to the side edges of said plate and in one direction to stretch said sheet in a direction transversely of said plate,
 - (5) and means for releasably holding said member against swinging movement in the opposite direction.

2. The applicator defined in claim 1 in which said stiffening strip securing means comprises an edge portion of said plate folded into overlying spaced relationship with said sheet and cooperating therewith to provide a laterally inwardly opening channel for reception for said stiffening strip.

3. The applicator defined in claim 2 in which said sheet engaging and stretching member defines a clamping edge parallel to the top surface and to the adjacent side edge of said plate and movable toward and away from said top surface.

4. The applicator defined in claim 3 in which said means mounting the sheet engaging member comprises a pair of bearing lugs projecting upwardly from said plate and journalling opposite ends of said member for rotation on an axis parallel to said clamping edge.

5. The applicator defined in claim 4 in which said plate is formed to provide a pair of up-standing ears adjacent opposite ends of said channel, said ears engaging said folded-over edge portion to maintain a predetermined spaced relationship between said folded over edge portion and the underlying plate.

6. The applicator defined in claim 5 characterized by a second stiffening strip on the side edge of said sheet opposite said first-mentioned stiffening strip, said strips and the adjacent side edge portions of said sheet being of a length to be received between said upstanding ears and bearing lugs respectively, said ears and lugs limiting movement of said sheet relative to said plate in directions longitudinally of said stiffening strips.

7. The applicator defined in claim 2 in which the side edge portion of said plate opposite said channel is bent to slope upwardly and laterally outwardly with respect to the plane of said plate.

8. The applicator defined in claim 7, in which said means for releasably holding said member comprises a sheet engaging ridge projecting upwardly from said top surface of the plate and extending in a direction parallel to the adjacent side edge of the plate, said member having a longitudinal sheet engaging edge parallel to said ridge and movable laterally thereover responsive to swinging movement of the member, said ridge having its apex normally disposed in the path of movement of said sheet-engaging edge, said plate having sufficient resiliency adjacent said ridge so that the ridge is deflected by said edge during forced movement thereof over said apex.

9. The applicator defined in claim 1, characterized by cushion engaging elements anchoring said applicator sheet against movement longitudinally of said top plate.

10. The applicator defined in claim 1, in which said sheet-engaging and stretching member is disposed for swinging movement between an applicator sheet release position angularly displaced below the plane of the bottom surface of said plate, and a sheet stretching position substantially in the plane of said plate, said plate having a member engaging stop portion adjacent said opposite side edge limiting swinging movement of said member in a sheet stretching direction.

11. The applicator defined in claim 10, in which said sheet engaging and stretching member has a longitudinal edge portion folded laterally to define an applicator sheet receiving channel extending longitudinally of said plate, characterized by a second stiffening strip at the other side edge of said applicator sheet receivable in said channel, said channel opening laterally inwardly toward said one side edge of the plate above the top surface of the plate when said member is in engagement with said stop portion.

12. The applicator defined in claim 11, in which said means for releasably holding said member comprises a latch pivotally mounted on one of said plate and member for latching engagement with the other of said plate and member.

13. The applicator defined in claim 11, in which said means for releasably holding said member comprises a latch pivotally mounted on said plate for movements into and out of said channel.

14. The applicator defined in claim 10, characterized by sheet-engaging tooth means on said member operatively engaging said cushion when said member is moved to its sheet stretching position to positively hold the sheet against movement longitudinally of said member and plate.

References Cited

UNITED STATES PATENTS

402,570	5/1889	Davis	15—231
556,652	3/1896	Waddel	15—233
1,140,001	5/1915	Runge.	
1,173,692	2/1916	Watkins	15—233
1,858,899	5/1932	Montbriand	51—371
2,402,069	6/1946	Minnick et al.	51—392 XR
2,419,748	4/1947	Weber et al.	15—233 XR
2,809,476	10/1957	Bourdunis	51—392 XR

DANIEL BLUM, *Primary Examiner.*