Jan. 9, 1951 M. DE PASQUALE 2,537,306

SILK SCREEN STENCIL FRAME

Filed Aug. 11, 1948

FIG. 1

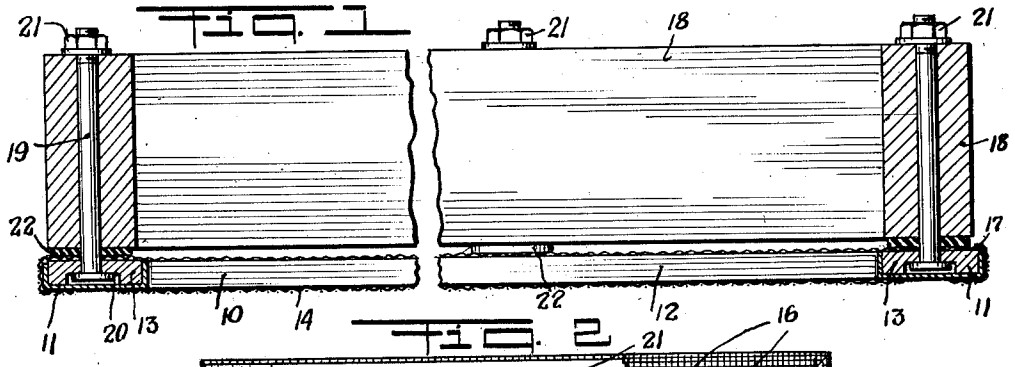


FIG. 2

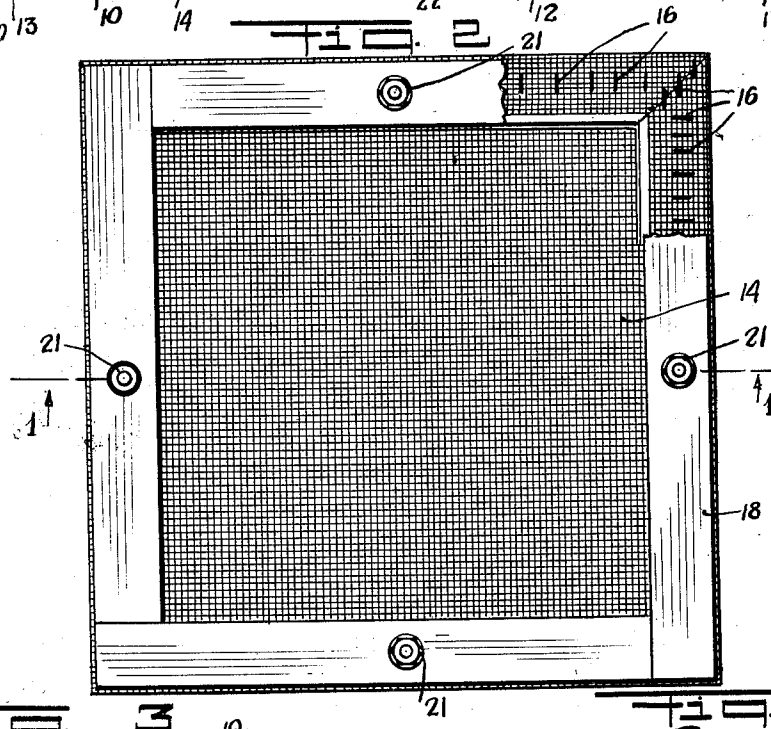


FIG. 3

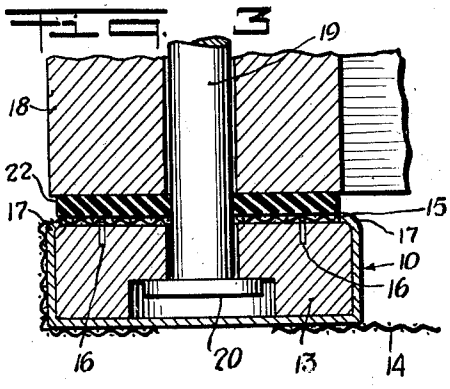
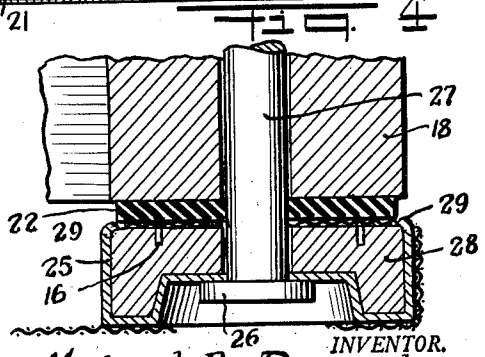


FIG. 4



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SILK SCREEN STENCIL FRAME

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6 Claims. (Cl. 101—127.1)

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This invention relates to screen stencil frames and, more especially, to frames for silk screens and the like, such as are employed in making printed designs and decorations on lamp shades, piece goods, and a great variety of other articles.

A primary object of the present invention is the provision of a frame or mounting for stencil screens which greatly facilitates attachment and tensioning of the screen and which prevents wrinkling and puckering of the screen by eliminating the possibility of warping of the frame. This object is achieved by providing a channel-shaped metal frame, preferably rectangular in shape, having inserts of wood or other suitable material received within and frictionally retained by the channels defined by said frame. The screen is attached to the frame by forming marginal, U-shaped bights around its edges and securing the free ends of the bights to the wood inserts by means of staples or in any other suitable manner, the remaining portion of the bights extending around the side and bottom of the channel-shaped metal frame. The disposition of the wooden inserts within the metal frame prevents warping and consequently eliminates wrinkling and buckling of the screen. The presence of the marginal, U-shaped bights in the screen minimizes sagging and facilitates tensioning of the screen.

Another object of the invention is the provision of a frame of the character indicated which allows detachment and convenient storage of the screen without injury. By the practice of the invention a large number of screens may be handled and stored in a minimum of space without deleterious effect and without requiring detachment of each screen from its supporting frame, the entire unit being mountable upon and readily dismountable from a main frame support.

The foregoing objects as well as additional objects and advantages of the invention will be readily apparent in the course of the following detailed description taken in connection with the accompanying drawing which illustrates preferred embodiments, and wherein:

Fig. 1 is a sectional view taken on line 1—1 of Fig. 2 showing a screen mounted on a frame embodying the features of the invention, the screen and frame sub-unit being secured to a main supporting frame;

Fig. 2 is a top plan view of the assembly of Fig. 1;

Fig. 3 is an enlarged sectional detail illustrating the construction of the channel-shaped frame member and insert and the manner of attachment of the stencil screen; and

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Fig. 4 is a view similar to Fig. 3 illustrating a modified form of frame member and insert.

Referring now to the drawing in greater detail, 10 designates a channel-shaped metal frame member which is preferably rectangular in shape having sides 11 and ends 12. Inserts 13 of wood, fiberboard or any other suitable material are received within the sides 11 and ends 12 of frame 10 and serve as a supporting means for the screen stencil 14. Screen 14 is attached to frame 10 by forming marginal, U-shaped bights therein and by extending said bights around the sides 11 and ends 12 of the frame, the free ends 15 of said bights being secured to the inserts 13 by means of staples 16 or in any other suitable manner. By providing the screen 14 with marginal, U-shaped bights proper tensioning of the screen is assured while minimizing any tendency of the screen to sag or distort. If desired, the upper edges of channel-shaped frame 10 may be turned inwardly to provide lips 17 securely retaining inserts 13.

The drawings illustrate the frame 10, carrying the screen 14 secured as a sub-unit to a main frame or support 18 which may be made of wood or metal and which is preferably of considerably greater depth than frame 10. If the sub-unit were to be permanently fixed to main frame 18 the large bulk of the assembly would require excessive storage space. Therefore frame 10 carrying screen 14 is detachably mounted on main frame 18 by means of bolts 19 or any other suitable fastening means. Where bolts are employed the frame 10 is provided with suitably disposed apertures and the inserts 13 are provided with countersunk recesses 20 to prevent projection of bolts 19 beyond the bottom surface of frame 10. As shown in Figs. 1 and 2, nuts 21 may be employed for fastening said bolts in position and clamping the sub-unit comprising frame 10 and screen 14 to the main frame 18.

In order to prevent the accumulation of ink between main frame 18 and channel frame 10, a sealing gasket 22 of rubber or other suitable material is interposed between said frames. This is of particular importance where multicolor impressions are to be made using a plurality of screens 14 secured in turn to the main frame 18. The presence of gasket 22 prevents ink from lodging between the main frame and the screen supporting frame.

Fig. 4 illustrates a modified form of stencil frame 25 which is channel-shaped and which has its bottom surface formed as a downwardly opening recess or channel 26. This formation serves not alone to strengthen the frame appreciably

but simultaneously serves to provide countersinking for the fastening bolts 27 which secure the stencil frame to the main frame 18. The inserts 28 are of course correspondingly shaped to fit within the sides and ends of frame 25 and the top edges of said frame are preferably inwardly turned to provide lips 29 serving to securely retain said inserts.

The construction and arrangement of the present invention provides a mounting frame to which a stencil screen may be readily attached and upon which it may be easily tensioned to form a sub-unit which may be detachably secured to a main supporting frame. The disposition of the inserts 13 or 28 within the rigid metal frame 10 or 25 respectively prevents warping of the inserts and consequently eliminates wrinkling and distortion of the stencil screen 14. The feature of detachability of the sub-unit, comprising the mounting frame and stencil screen, from the main frame allows individual stencil screens be conveniently stored in small compass thereby conserving storage space.

Since certain modifications may be made in the device of the invention without departing from the scope thereof, it is intended that all matter contained in the foregoing description and shown in the accompanying drawing be interpreted merely as illustrative and not in a limiting sense.

What is claimed is:

1. A stencil-screen printing device comprising a main frame and a mounting frame, said mounting frame comprising an outer, channel-shaped, rigid member and relatively yieldable insert members retained within said outer member, said mounting frame having a stencil screen stretched across the lower surface thereof, the ends of said stencil screen extending around the outer side and top of said frame and being fixedly secured to said insert members, said main frame and mounting frame having cooperating means for removably fastening said mounting frame to the bottom of said main frame in registering position therewith.

2. A stencil-screen printing device comprising a main frame and a mounting frame having the same plan size, and shape as said main frame, said mounting frame comprising an outer, channel-shaped, rigid member which is open at the top thereof, and relatively yieldable insert members retained within said outer member, said mounting frame having a stencil screen stretched across the lower surface thereof, the ends of said stencil screen extending around the outer sides and top of said frame to provide marginal U-shaped bights and being fixedly secured to said insert members, said main frame and mounting frame having cooperating means for removably fastening said mounting frame flat against the bottom of said main frame in registering position therewith.

3. A stencil screen printing device according to claim 2 in which the top edges of the channel-shaped member are inwardly turned to provide lips preventing removal of the insert members.

4. A stencil-screen printing device comprising a main frame and a mounting frame having the same plan size and shape as said main frame, said mounting frame comprising an outer, channel-shaped rigid member which is open at the top thereof, and relatively yieldable insert members retained within said outer member, said mounting frame having a stencil screen stretched across the lower surface thereof, the ends of said stencil screen extending around the outer sides and top of said frame to define marginal U-shaped bights and being fixedly secured to said insert members, said main frame being secured to said mounting frame by a plurality of bolts each of which extends through said main frame and said mounting frame, the ends of said bolts being countersunk in the bottom of said mounting frame.

5. A stencil-screen printing device according to claim 4 in which the bottom surfaces of said mounting frame are provided with central longitudinal channels in which the ends of said bolts are countersunk.

6. A stencil-screen printing device according to claim 4 in which a gasket member is interposed between said mounting frame and said main frame, said gasket member being rigidly held in position by the clamping force of said bolts.

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