Oct. 7, 1958 G. O. LEIBENGUTH 2,854,922

SILK SCREEN PRINTING FRAME

Filed Aug. 18, 1955

Fig. 1.

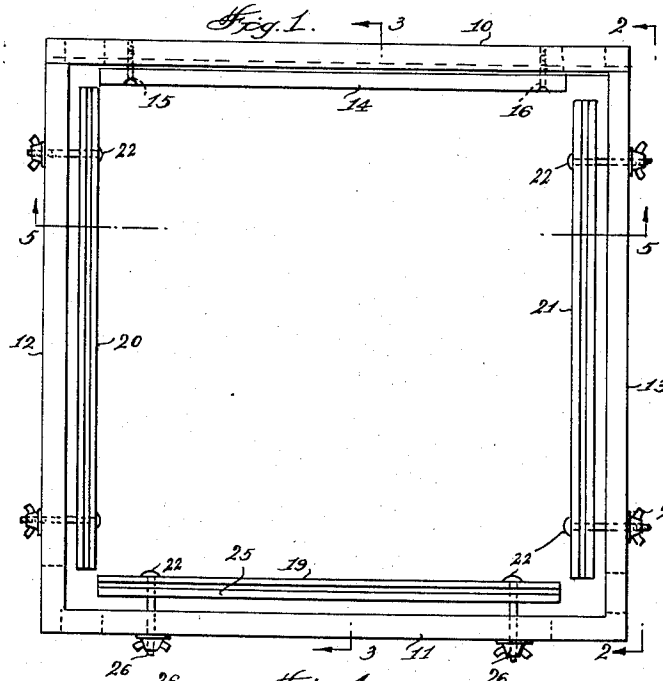


Fig. 2



Fig. 3.

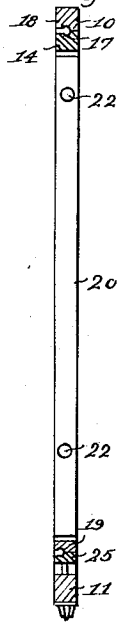


Fig. 4

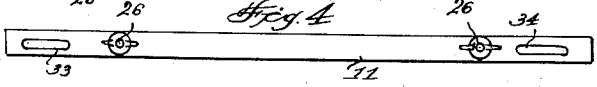
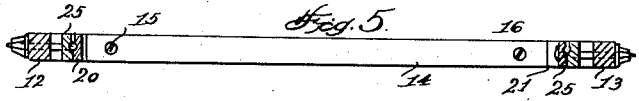


Fig. 5.



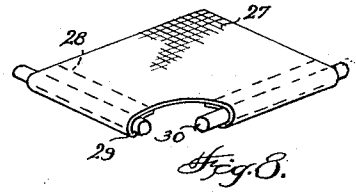


Fig. 8.

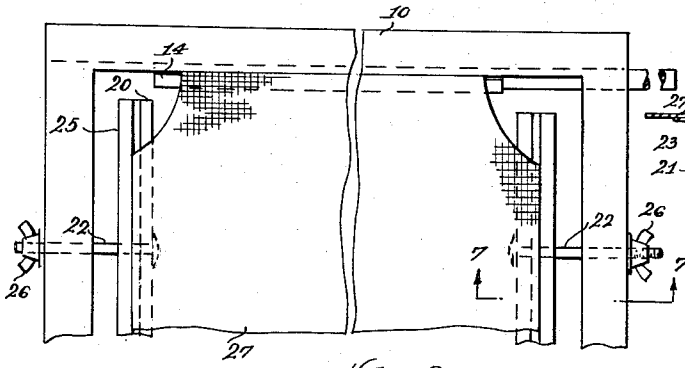


Fig. 6.

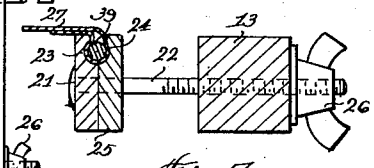


Fig. 7.

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SILK SCREEN PRINTING FRAME

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1 Claim. (Cl. 101—127.1)

This invention relates to silk screen printing and particularly a frame for retaining the stencil fabric in tension, and in particular, a rectangular shaped frame having a bar with a continuous slot therein anchored in one side with floating bars also having continuous slots therein adjustably held by screws with wing nuts thereon in the other sides whereby with tunnels on the edges of the fabric retained in the slots of the floating bars and between the anchored bar and the side of the frame by rods extended through the tunnels and slots tension in the fabric is adapted to be adjusted and the fabric may readily be removed and replaced as desired.

The purpose of this invention is to expedite changing of stencil designs in silk screen printing, reduce labor and storage costs, improve the quality of silk screen printing, and reduce the number of printing frames required in a shop.

In the conventional manner of retaining the fabric on a silk screen printing frame wherein the fabric is secured to the frame with tacks, the fabric is pulled over the frame and the tacks driven through the fabric into the frame. Other devices have been provided for retaining the fabric in tension and also for adjusting the tension in the fabric. In such devices the fabric is attached to the frame by cord, adhesive, cleats, and hinged devices and with such devices the fabric is damaged. With this thought in mind, this invention contemplates a frame in which edges of the fabric are secured in slots of anchored and floating bars whereby with positions of the bars adjusted by screws tension in the fabric may be adjusted and also relieved.

The object of this invention is, therefore, to provide means for forming a silk screen printing frame wherein a stencil fabric is secured in movable elements whereby tension in the fabric is adjustable and wherein the fabric may readily be removed and replaced.

Another object of the invention is to provide a speed frame for mounting stencil fabric of silk screen printing machines wherein the fabric is adapted to be positioned in the frame and removed therefrom without damaging the fabric.

Another important object of the invention is to provide a frame for holding the stencil fabric of silk screen printing machines wherein tension in the fabric is adapted to be adjusted to compensate for changing atmospheric conditions.

A further object of the invention is to provide an improved silk screen printing frame in which the frame is of a simple and economical construction.

With these and other objects and advantages in view, the invention embodies a rectangular shaped frame having side and end bars with a continuous bar having a groove in one side positioned to coact with a similar groove in a side bar of the frame anchored, by screws, to said side bar and with floating bars also having continuous slots therein adjustably mounted by screws and

wing nuts on the other side bar and also on the end bars of the frame.

Other features and advantages of the invention will appear from the following description, taken in connection with the drawing, wherein:

Figure 1 is a plan view of the frame showing the anchored bar positioned against one side bar of the frame and the floating bars positioned adjacent the other side and ends of the frame.

Figure 2 is an end elevational view of the frame taken on line 2—2 of Figure 1.

Figure 3 is a cross section through the frame taken on line 3—3 of Figure 1.

Figure 4 is a side elevational view of the frame.

Figure 5 is a cross section through the frame taken on line 5—5 of Figure 1.

Figure 6 is a plan view of one side of the frame with the parts as shown in Figure 1 and with the parts shown on an enlarged scale showing a stencil screen positioned with edges thereof secured in bars of the frame and with the lower part of the frame and parts of the screen broken away.

Figure 7 is a cross section through one end of the frame taken on line 7—7 of Figure 6 with the parts shown on a still further enlarged scale.

Figure 8 is a view showing a typical stencil screen with part of one corner broken away showing rods extended through tunnels on the edges of the screen.

Referring now to the drawing, wherein like reference characters denote corresponding parts, the improved silk screen printing frame of this invention includes side bars **10** and **11** connected, at the ends, to end bars **12** and **13**, an inner bar **14** anchored to the side bar **10** with screws **15** and **16** and having a continuous slot **17** in one side, the slot being positioned to coact with a similar slot **18** in the inner surface of the bar **10**. Floating bars **19**, **20** and **21** mounted on screws **22** extended through the bars **11**, **12** and **13** and having slots **23** in inner surfaces thereof positioned to coact with similar slots **24** in outer bars **25** which are of similar shape and complementary to the bars **11**, **12** and **13** and secured thereto by a suitable adhesive or any other suitable fastening means, or the bars **11**, **12** and **13** may also be made of a single piece of material having a slot extending through the center of one face, longitudinally thereof. The bars **11**, **12** and **13** in either instance are retained in position by wing nuts **26** threaded on the screws **22** and adapted to actuate the bars **19**, **20** and **21** to increase tension in a stencil screen, such as the screen **27** thereon, or to relieve tension in the screen so that the screen may be removed.

The edges of the screen **27** are folded over and secured by suitable fastening means, such as stitches **28**, whereby tunnels **29** are provided in the edges of the screen and with the tunnels inserted in the slots of the anchored and floating bars rods **30** are run through the tunnels and slots whereby edges of the screen are secured in the bars.

As illustrated in Figure 2, the end bars **12** and **13** are provided with elongated slots **31** and **32** through which the rods **30** are inserted so that with the tunnels or hems on the edges of the screen inserted in the slots between the bars **10** and **14** at one side and also between the bars **19** and **25** at the other side the rods **30** may be inserted through the slots **31** and **32** with the ends fastened into the tunnels **29** of the stencil screen whereby the edges of the screen are secured between the bars **10** and **14** at one side and also between the bars **19** and **25** at the other.

The bars **10** and **11** are also provided with elongated slots, as indicated by the numerals **33** and **34**, and with

the tunnels at the ends of the screen inserted in the slots of the bars **20** and **21** rods may be inserted through the slots **33** and **34** and passed through the tunnels at the ends of the screen.

As illustrated in Figure 7, the rods **30** are adapted to slide through the tunnels **29** with the tunnels positioned between the slots **23** and **24** of the floating bars and wherein the tunnels are adapted to be freely inserted in the slots before the bars **30** are positioned in the tunnels. With the bars **30** extended through the tunnels the edges of the screen are firmly secured in the bars or rails.

With the parts designed and assembled as shown and described, one side of the stencil fabric or screen is anchored by the bar **14** to the bar or rail **10** at one side of the frame and the other three sides are adjustably secured by the bars **19**, **20** and **21** to the side and end bars or rails of the frame and with the edges of the fabric retained in slots of the bars and between the bar and frame at one side the fabric is securely held without the use of adhesive, tacks, metal clamps, cleats, or other mechanical attaching elements. The frames may be provided in different shapes and designs and it will be understood that the stencil fabric may be secured or anchored to a side or end bar or rail in any other part of the frame as may be desired.

It will be understood that other modifications, within the scope of the appended claim, may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

In a silk screen printing frame, the combination which

comprises side and end rails joined at the corners, one of said side rails having a continuous slot in the inner surface, a bar having a continuous slot in one surface positioned against the side rail having the slot therein, means for anchoring the bar to said side rail with the slot of the bar in registering relation with the slot of the side rail, floating bars with slots in upper surfaces positioned adjacent the side rail on the opposite side of the frame and also adjacent the end rails of the frame, elongated slots in the ends of said side and end rails in alinement with the slots in said floating bars and the slot between said bar and said one of said side rails with said bar and said floating bars being of lesser length than the spacing between said elongated slots, screws extended through the floating bars and also through adjacent rails of the frame, wing nuts on extended ends of the screws for adjusting the positions of the bars, a stencil fabric having tunnels in the edges positioned with the tunnels of three edges thereof in the slots of the floating bars and with the tunnel of the opposite edge positioned between the bar anchored to the side rail of the frame and the side rail of the frame, and rods extended through the elongated slots in the side and end rails and the tunnels in the fabric with the tunnels positioned in said slots.

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