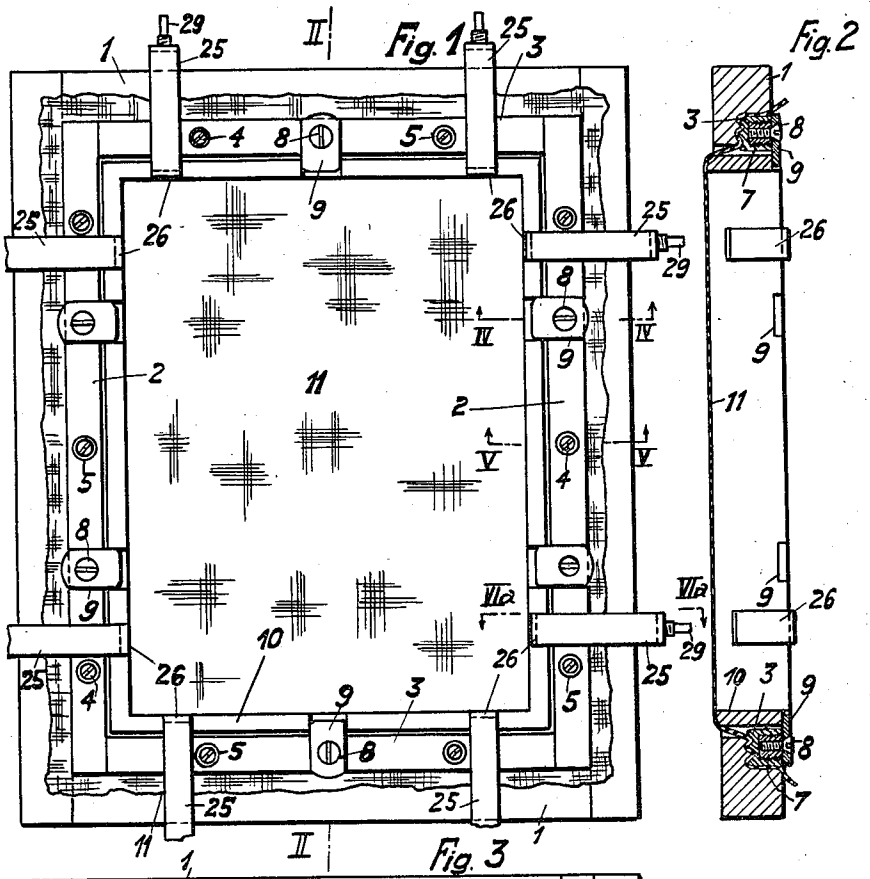
Sept. 10, 1935. H. C. ULRICH 2,013,772

DEVICE FOR REPRODUCING SIGNS AND LETTERING

Filed Dec. 26, 1933 2 Sheets-Sheet 1



Inventor
Hans Caspar Ulrich
By B. Singer, atty.

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Fig. 7

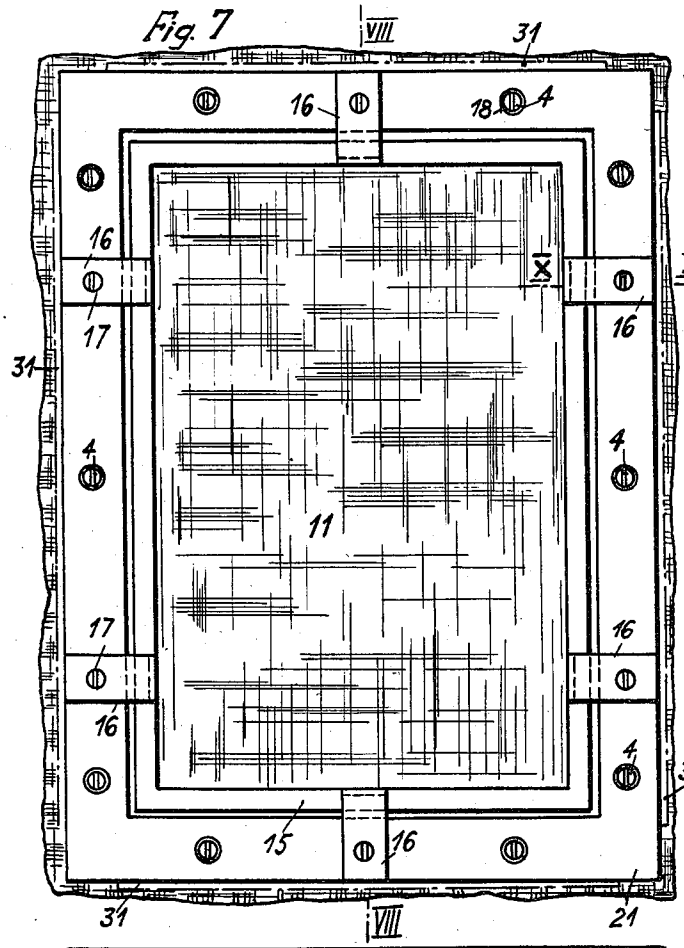


Fig. 8

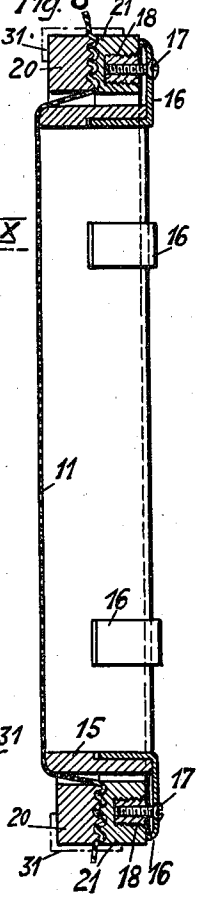


Fig. 9

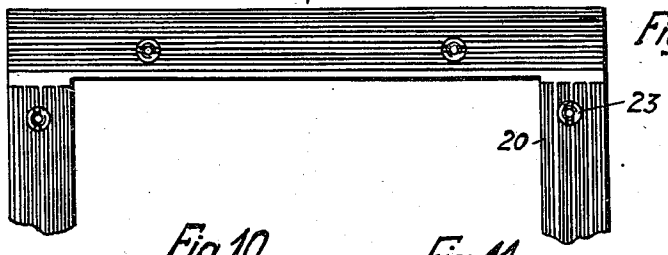


Fig. 10

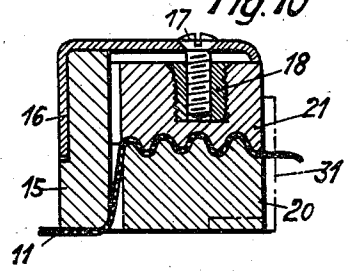
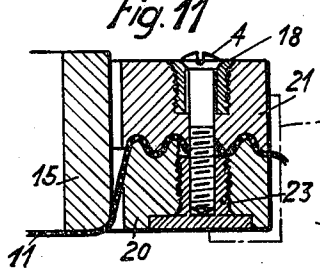


Fig. 11



Inventor
Hans Caspar Ulrich
By B. Singer, atty.

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DEVICE FOR REPRODUCING SIGNS AND LETTERING

Hans Caspar Ulrich, Zurich, Switzerland

Application December 26, 1933, Serial No. 703,990
In Switzerland June 1, 1933

2 Claims. (Cl. 101—126)

The present invention relates to a new and improved device for reproducing signs and lettering by means of the so-called silk screen method.

The said method is well known in the art. It consists in painting or blocking the design or the lettering on the meshed surface of silk or of any other suitable fabric, leaving the copy or design to be reproduced open in the meshes. Paint or colour is pressed through the open meshes of the meshed surface or screen on the blank surface, upon which the copy is to be reproduced.

The main object of the invention is to provide an improved frame by means of which the fabric may be stretched in a more convenient and more rapid way than with the known devices.

A further object of the invention is to provide means which allow the fabric to be taken off and to be secured again on the frame without damaging the frame or tearing the fabric.

A still further object of the invention is to provide means by which the fabric is held by a separate floating frame, adapted to be adjusted with reference to the main frame. The fabric may be inserted in the main frame and finally stretched and adjusted by the floating frame.

In the accompanying drawings two preferred modes of construction are shown by way of examples:

Fig. 1 shows the frame in elevation.

Fig. 2 is a cross-section on line II—II of Fig. 1.

Fig. 3 shows part of the frame in top view.

Figs. 4 and 5 are sections respectively on lines IV—IV, V—V of Fig. 1.

Fig. 6 shows in a perspective view a clamp piece.

Fig. 6*a* is a section on line VII—VII of Fig. 1.

Fig. 7 shows a modified construction of the frame in a top view.

Fig. 8 is a cross-section on line VIII—VIII of Fig. 7.

Fig. 9 shows part of the main frame in a top view.

Fig. 10 is a section on line X—X of Fig. 7.

Fig. 11 shows a modified construction of the fastening means.

The device shown in Figs. 1–6 comprises a main frame 1 of rectangular or other suitable shape. The frame 1 has at its inner wall a rabbet adapted to receive an inner frame; the latter comprising parts 2 and 3. Adjacent faces of the inner frame 2, 3 and of the outer frame 1 are grooved and said parts engage each other in such a manner, that the fabric 11 may be firmly secured between the frames 1, 2. To connect the frames 1, 2 screws 4 are provided which pass through the bore of metallic sleeves 5 of the inner frame 2 and which engage nuts 6 fixed in the outer frame 1 (Fig. 5). The screws 4 secure the parts 1, 2 in their position in which they clamp the fabric 11. Within the inner frame 2, 3 a floating frame 10 is arranged, which is slightly smaller than the frame 2, 3. To retain the floating frame 10 in its position and to press the same on to the fabric held by the frames 1, 2 clamp plates 9 are arranged. The plates 9 are arranged in notches in the upper face of the floating frame 10; they are pressed on the frame 10 by screws 8 screwed into nuts 7 let into the frame 2 (Fig. 4). To form a screen the fabric 11 is inserted between the frames 1 and 2 and the edges of the fabric protruding over the outer face of the frames 1, 2, in such a manner that the fabric may be drawn taut by hand. The screws 4 are driven in and the fabric is retained in its stretched position by the frames 1, 2. The floating frame 10 is now inserted and pressed down on the fabric 10 by the plates 9 and the screws 8. The fabric receives now an additional stretching according to the kind of the fabric, which is preferably silk bolting cloth.

To adjust the inner frame 10 a number of U-shaped hooks 25 are arranged on the frame 1, 2. One member 26 of each hook engages a recess in the inner face of the frame 10; it is flush with said inner face. In the other member 26 a screw 28 is arranged having a handle 29 and a plate 30, bearing on the frame 1. By loosening the screws 28 on the one side of the frame and by tightening the screws on the opposite side the screen may be made to register exactly with a design previously painted.

The clamping plate 9 may be shaped as shown in Fig. 6. The plate is provided with an angular flange 9*a* which may be placed on the frame 2, 3 or on the frame 10 so that the latter may be acted upon even if the frame is reduced in size owing to wear, etc.

As shown in Figs. 7 to 10, the frame 1 may be made smaller by giving the ledges a substantially rectangular cross-section. The floating frame 15 is held by angular clamp pieces 16 which are secured in their position by screws 17 passing through elongated holes of the pieces 16. The latter may be screwed into screw threaded bushes 18 of the top frame 21. The frames 20 and 21 are of the same outside measures, they are arranged one above the other. They are grooved to grip the fabric as shown in Figs. 10, 11. The nut 22 to receive the screw 4 may be provided with a head 23, the said head being flush with the lower surface of the frame 20. Ample play

is provided which permits the inner floating frame 15 to be moved with reference to the outer frames 20, 21.

The fabric may be removed without being torn and may be used over again, the frames are not hurt by changing the fabric.

The frame wholly or partly may be made of metal for instance of a suitable aluminium alloy.

In the construction shown in Figs. 7 to 11 a metallic angle-plate 31 may be attached to the lower part 29 as shown in broken lines in Fig. 10. The said angle-plate 31 projects over the upper face and forms a guide for placing the upper frame in position.

I wish it clearly understood that I do not limit my invention to the particular construction as shown and described with reference to the drawings as various changes may be made without departing from the spirit of my invention.

What I wish to secure by U. S. Letters Patent is:—

1. Apparatus of the class described, comprising a frame consisting of a pair of members, means to detachably clamp said members together to secure the edge portions of a fabric therebetween, a floating frame arranged in the first named frame, bearing on the fabric and movable transversely with respect to the plane of the first named frame to thereby stretch the fabric and means to so move said floating frame and comprising members bearing on the first named frame and the floating frame and adjusting screws connecting said members to the first named frame.

2. Apparatus of the class described, comprising a frame having means to secure the edges of a fabric thereto, a floating frame loosely arranged in the first named frame and bearing on the fabric, and means to move the floating frame transversely with respect to the plane of the first named frame to stretch the fabric, said floating frame being of less longitudinal and transverse dimensions than the corresponding dimensions of the inner side of the first named frame, and means to move the floating frame longitudinally or transversely with respect to the first named frame to effect registration.

HANS C. ULRICH.