Oct. 17, 1933. F. REISER 1,931,297

EMBROIDERY FRAME

Filed July 14, 1933

Fig. 1.

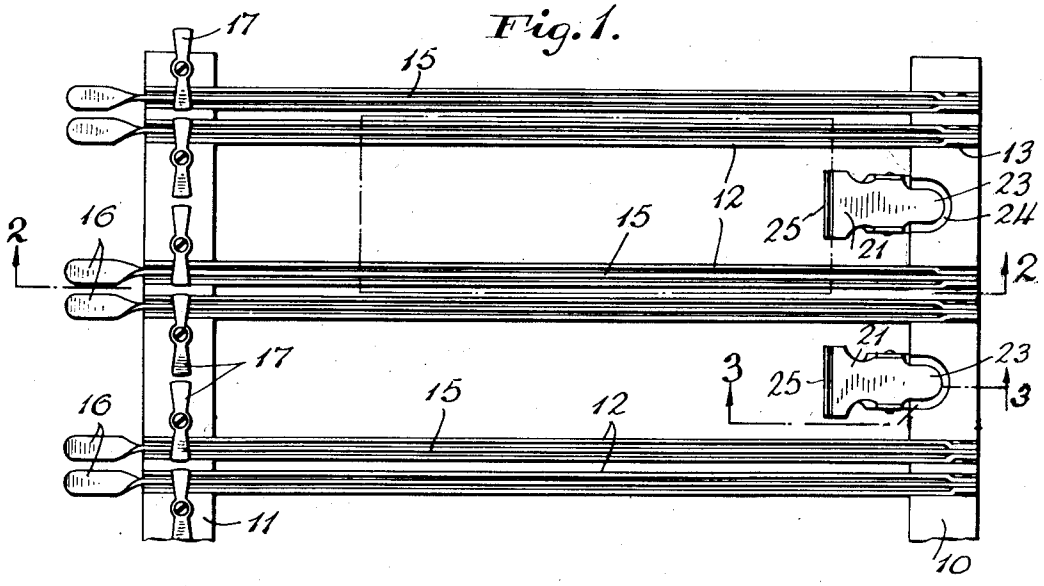


Fig. 2.

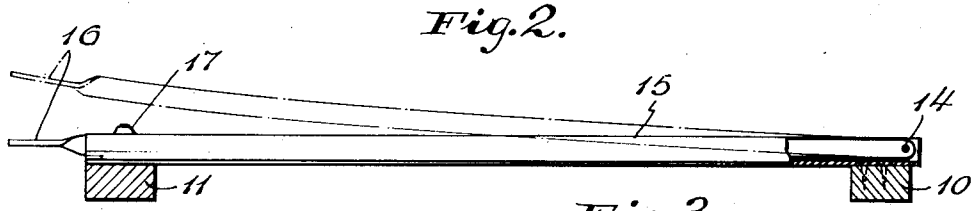


Fig. 3.

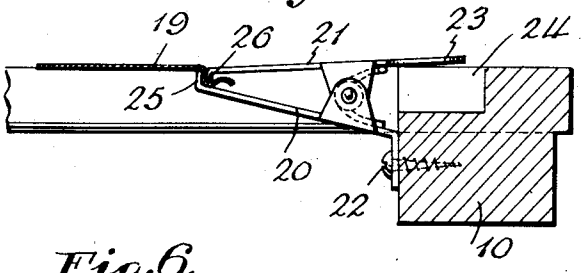


Fig. 4. Fig. 5.

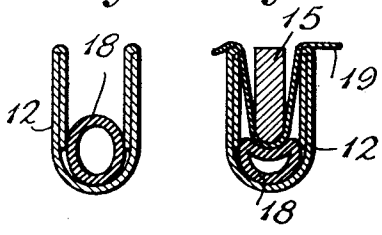
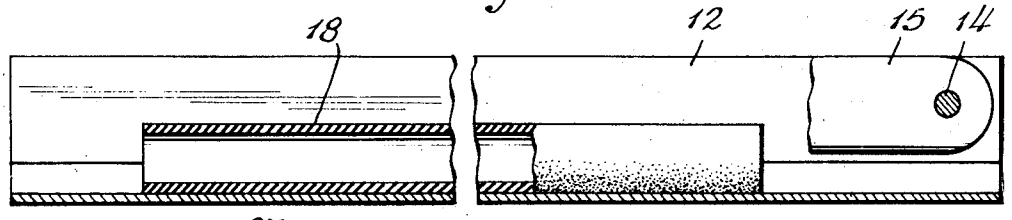


Fig. 6.



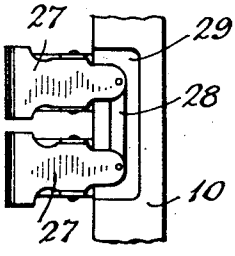


Fig. 7.

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EMBROIDERY FRAME

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Application July 14, 1933. Serial No. 680,341

5 Claims. (Cl. 45—24)

This invention relates to improvements in the embroidery art and has particular reference to a frame used especially to hold small articles, such as handkerchiefs and the like, while being embroidered with various ornamental designs.

With frames of this character, it has heretofore been the custom to provide the clamping bars with a covering of elastic material which is vulcanized onto the bars so as to firmly adhere thereto and which is designed to protect a fabric against abrasion or tearing when held in the frame. It has been found in practice that the gripping effect of the elastic covering, which is made of rubber, takes place on the sides of the bar and that with the finer quality of silk fabrics this gripping action has frequently caused a tearing of the fabric. Also, it has been noted that the rubber covering becomes sticky in high temperatures, causing the fabric to adhere to the rubber. Because of this it has been sometimes necessary to discard the frames in use and replace them with others, thus making the use of such frames a comparatively expensive proposition.

An object of the present invention is to simplify the construction of frames of the above character and thereby reduce cost of manufacture thereof, by utilizing a protective strip, preferably made of elastic material such as rubber, which is introduced into each channel bar of the frame and frictionally held therein by contact with the walls of said bar so that said strip may be readily removed and replaced when the same becomes ineffective to properly grip the fabric between the channel and clamping bars of the frame.

Another object is to securely clamp a fabric to one end of the frame by the provision of an improved form of clamping member which grips the fabric in such manner as to hold the gripped portion in the same plane with those portions which engage over the edges of the channel bars.

The above and other objects will appear more clearly from the following detailed description when taken in connection with the accompanying drawing which illustrates preferred embodiments of the inventive idea.

In the drawing:—

Figure 1 is a fragmentary plan view of the embroidery frame constructed in accordance with the invention.

Figure 2 is a longitudinal section on the line 2—2 of Figure 1.

Figure 3 is a similar section on the line 3—3 of Figure 1.

Figure 4 is a transverse section taken through one of the channel bars showing a protective strip therein, in its normal position.

Figure 5 is a transverse section illustrating the manner in which a fabric is clamped within one of the channel bars and between the protective strip and a clamping bar.

Figure 6 is an enlarged longitudinal section through one of the channel bars showing the protective strip and clamping bar in association therewith, and

Figure 7 is a plan view of a slightly modified form of clamping member such as illustrated in Figure 3.

Referring more particularly to the accompanying drawing, the numerals 10 and 11 illustrate two end frame pieces which are interconnected by a series of channel bars 12, preferably of U-shape in cross section having their ends recessed within the members 10 and 11 so that the free outer edges of said bars will be substantially flush with the outer surfaces of said members. The channel bars are arranged in pairs, as shown in Figure 1, with each bar of a pair disposed contiguous to a bar of the next adjacent pair. The end of each bar 12 which is disposed in the end member 11 has its channel constricted as indicated at 13 and within this portion of the channel there is pivoted at 14 one end of a clamping bar 15 which is slightly bowed longitudinally, as indicated in Figure 2, when the bar is in its normal or inoperative position. The other extremity of the bar 15 is twisted at right angles to form a gripping portion 16 and when the free extremity of said bar is depressed in the act of gripping an edge of a fabric within the channel bar, said clamping bar will flex sufficiently so that it will be positioned entirely within the confines of the channel of the bar 12 after which a rotative latch 17 carried by the end piece 11 may be turned to extend over the channel of the bar 12 and contact the outer edge of the bar 15 so as to prevent the latter from springing out of the channel.

In accordance with the present invention a protective means is provided for engagement by a fabric being clamped so that the fabric will come in contact with as little of the metal of the cooperating bars as possible and thus be protected against abrasion or possible tearing when the fabric is clamped in its tautened position in the frame. As distinguished from prior usage, in which this protective element has been vulcan-

ized to the clamping bar and thus permanently secured thereto, the present invention contemplates the provision of a strip 18, of elastic material having pliable and yieldable qualities, such as a rubber tubing. One of these strips is removably placed within each of the channel bars 12 so as to rest upon the bottom thereof and is of a diameter slightly greater than the width of the channel in said bar so that when the strip is inserted it will frictionally engage the side walls of the bar and thus be retained in position until such time when it is desired to remove the same for replacement purposes. At such times, the extraction of the strip or tubing from the channel bar may be expeditiously accomplished, thus providing a distinct improvement over the previously described device which has been used heretofore and which necessitates the discarding of the entire frame when the protective strips thereof have lost their efficiency.

After a portion of a fabric 19 to be clamped has been laid across one of the channel bars 12 with a strip 18 therein, the associated clamping bar 15 is brought down upon the said portion of the fabric with the inner edge of said bar forcing the fabric into contact with the strip 18, thus slightly compressing the latter as shown in Figure 5. With the fabric thus gripped between the inner edge of the bar 15 and the strip 18, and not against the side walls of the channel bar 12, there is a great deal less tendency for the gripping elements to tear or otherwise injure the fabric especially when finer quality of silks are used. When the clamping operation is completed and the bar 15 is entirely recessed within the channel in its associated bar 12, an adjacent latch 17 is rotated to engage the outer edge of the bar 15 and thus retain it in its operative position.

It is also desirable to clamp or grip the fabric to be embroidered at the end or portion thereof adjacent the end piece 10 and between the channel bars of each pair. To this end, the present invention contemplates the provision of a clamping member comprising a pair of pivotally connected and spring-pressed gripping jaws 20 and 21 the former of which has one end secured at 22 to the inner edge of the end piece 10 while the adjacent end 23 of the jaw 21 extends over the outer face of the piece 10 in alignment with the recess 24 therein, said recess enabling the end 23 to be depressed so as to spread apart the gripping ends of said piece preparatory to inserting a portion of the fabric 19 therebetween. The jaws 20 and 21 are provided with inturned and overlapping gripping flanges or portions 25 and 26, respectively, which are so positioned relative to each other as to securely clamp the fabric therebetween. In order that the fabric may have a smooth unbroken surface within the confines of the edges and ends thereof that are held by the bars 12 and 15 and the clamping members, the free edge of the portion 25 of the jaw 20 of the clamping member is in the same plane with the outer or free edges of the channel bars, and clearly indicated in Figure 3.

In Figure 1, there is shown a single clamping member disposed between the bars 12 of each pair, but where the space between said bars may be larger to accommodate a piece of fabric of greater width a clamping device such as shown in Figure 7 may be employed. In this modification, two clamping members, generally indicated by the numeral 27 and each constructed in the same manner as the similar clamping member above described, have the upper or outer clamping jaws interconnected by a strap or a yoke 28 so that when pressure is exerted upon either of the jaws or the strap the same will move into the recess 29 formed in the end piece 10 and the gripping ends of both clamping members 27 will be spread apart to receive the fabric therebetween.

What is claimed is:

1. In an embroidery frame, end frame pieces, channel bars connecting the same, clamping bars engageable in said channel bars, and a pliable protective strip in each channel bar between which and the associated clamping bar is held a portion of a fabric to be embroidered.

2. In a embroidery frame, end frame pieces, channel bars connecting the same, clamping bars engageable in said channel bars, and a yieldable protective strip in the bottom of each channel bar and cooperating with the associated clamping bar to hold a fabric therebetween.

3. In an embroidery frame, end frame pieces, channel bars connecting the same, clamping bars engageable in said channel bars, and an elastic protective strip detachably mounted in each channel bar and held therein by frictional contact with the walls thereof, said strip and the associated clamping bar cooperating to hold a fabric therebetween.

4. In an embroidery frame, end frame pieces, channel bars connecting the same, clamping bars engageable in said channel bars, and a strip of rubber tubing frictionally held between the walls of each channel bar.

5. In an embroidery frame, end frame pieces one of which is provided with a recess, cooperating channel and clamping bars carried by said frame, and a spring clamp comprising pivotally connected and spring pressed clamping jaws one of which is attached to the end piece having the recess therein and the other jaw having an end movable into said recess when said jaws are opened, the opposite ends of said jaws having overlapping gripping portions, the edge of one of which is disposed in the plane of the outer edges of said channel bar.

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