UNITED STATES PATENT OFFICE.

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EMBROIDERY-HOOP ADJUSTER.

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To all whom it may concern:

Be it known that I, CHARLOTTE WILDER, a citizen of the United States, residing at Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Embroidery-Hoop Adjusters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to fabric holding frames commonly known as embroidery hoops; and more especially to the means for contracting and expanding the outer of the two hoops usually employed.

For this purpose the outer hoop is split at one point and its ends are connected by a turn buckle, one feature of the invention being the particular means for connecting the turn buckle to the hoop so as to strengthen the latter rather than to weaken or split it and so as to avoid the catching of thread or embroidery in the device.

Another feature of the invention is the means which it embodies for holding the ends of the hoop alined, as well as for limiting their distention to such a degree as would permit the nut to run off the turn buckle.

While the invention is described and shown herein as applied to the ends of a split ring which forms one of the elements constituting an embroidery hoop, it will be clear that it is not limited to that use alone as it could be employed for tightening any other ring or loop or for drawing together any two members which were not the ends of a single element. Therefore the invention must be considered in the light of a pushing and pulling device, although I have hitherto found its greatest utility as is herein suggested.

Referring to the drawings:

Figure 1 is a longitudinal section with all parts in place an dthe ends of the split hoop separated as far as possible.

Fig. 2 is a perspective view of one of the brackets of the turn buckle turned to show how its studs are cupped to facilitate riveting.

Fig. 3 is a perspective view of the two parts of the guide slightly separated.

In the drawings the letters O and H designate the ends of an outer hoop, slightly separated as seen in Fig. 1, and the letter I designates a fragment of the inner hoop—these two elements collectively constituting what is known as an "embroidery hoop" wherein fabric is held while it is being embroidered, and such elements are usually of wood, sometimes covered with cloth so as to protect the finest fabric from injury. The usual custom is to spread the fabric over the inner hoop I and draw its edges tightly down over the same, and lay the outer hoop over the drawn down edges and push it onto the same so as to clamp them between two hoops and hold the center of the fabric taut. Obviously this manner of stretching and holding the fabric may be successfully carried out where the turned down edges of the fabric are clamped in the space between the two hoops, but if the latter are relatively of such size as to clamp thicker cloth, it is quite possible that they would not hold a thinner or lighter fabric reliably. Therefore occasions arise when it may be desired to decrease the size of the outer hoop a little, and my invention is particularly adapted for this purpose.

In Fig. 2 is shown a bracket having a substantially triangular body 1 from whose lower side depend two studs 2 and 3 cupped in their extremities as at 4. It may here be stated that these studs are to be passed through the hoop as shown in Fig. 1, and their extremities upset or riveted as there indicated, the edges of the cup being pressed or pounded into the wood at the inner side of the hoop so that it will be impossible for the fabric to catch upon them. From the body also projects a screw 5. The other element 6 in Fig. 1 is constructed in the same manner, but the threads of its screw 7 are reversed. The numeral 8 designates a nut whose bore is formed with threads 9 of opposite pitch at its opposite ends, and this nut engages the two screws 5 and 7 so that the three elements make up a turn buckle. The ends of the nut are beveled off or made conical as shown at 10, and the corners 11 and 12 of each bracket are rounded off, so that it is impossible for any yarn thread or embroidery to catch onto the structure.

In connection with the above described turn buckle I provide a guide consisting of

two members which are perhaps best seen in Fig. 3, each being stamped from sheet metal and made quite thin and rather narrow—preferably no wider than the bodies 1 of the two brackets. The male member has a flat outer end 20 notched in its extremity as at 21 and pierced with a hole 22; near the latter it is bent upward in a shoulder 23 and then carried straight inward in a flat stretch 24, then bent downward as at 25 into a head 26 which is notched in its edges as at 27. The female member has a flat body 30 notched in its outer end as at 31 and having a hole 32, and its inner end is provided with a rather long opening 36 which is of a size to slide across the narrow portion of the head 26, the strips 37 alongside the opening moving in the notches 27.

In the assembly of parts, as seen in Fig. 1, these two members of the guide are laid upon the ends O and H which are to be connected by the turn buckle, the studs 2 and 3 of the member 6 passing through the notch 21 and the hole 22 respectively, and through corresponding holes in the end O of the hoop and upset as above described, care being taken that the head 26 at this time closely overlies the extremity E of the element O. In similar manner the female member is laid upon the end or element H, and the studs 2 and 3 passed through the hole 32 and notch 31 and riveted or upset, care being taken that the inner end of the opening 36 is substantially flush with the extremity of the element H. The parts are applied by hooking the head 26 in the opening 36, then applying the nut 8 to the two screws 5 and 7, then passing the studs through the members of the guide and riveting them in the ends or elements O and H as explained, and finally turning the nut in the proper direction to tighten up the turn buckle. As the members 6 and 1 approach each other, the male and female guide members also approach each other, the head 26 sliding along the opening 36 and hanging into the space between the extremities of the elements O and H. Obviously the head will strike the inner end of the opening 4 before these extremities abut. On the other hand unscrewing of the nut causes the parts to move away from each other until the head strikes the outer end of the opening, which it should do at a time before the nut runs off either screw 5 or 7 and becomes lost. Therefore the sliding of the head 26 of the male member in the opening 36 of the female member guides the elements O and H and holds them strictly alined whether they are being drawn together or spread apart, and the abutting of said head against the inner end of the opening limits the movement of the turn buckle in one direction, while the abutting of such head against the outer end of the opening limits the movement of the turn buckle in the other direction and prevents the loss of the nut. Attention is invited to the fact that the members of this guide are housed beneath and well protected by the members of the turn buckle, and there is therefore little likelihood that any yarn or embroidery will become caught in them. With the outer hoop thus made, fabric will be laid over the inner and then the outer hoop applied to it, and tightened up last; or, as above suggested, this device is capable of use in other places.

What is claimed is:

1. The combination with an embroidery hoop whose outer ring is split, of a turn buckle comprising two brackets, each having studs depending from its lower face through one end of said split ring and a screw projecting from its upper portion, a nut connecting the screws, a guide composed of two metal strips, each mounted on the studs of one bracket between it and one ring-end and projecting thence toward and overlapping the other strip, and means on the overlapping ends for permitting them to slide longitudinally to a limited degree.

2. The combination with an embroidery hoop whose outer ring is split, of a turn buckle comprising two brackets each having studs depending from its lower face through one end of said split ring and a screw projecting from its upper portion, a nut connecting the screws, a guide composed of two metal strips, each mounted on the studs of one bracket between it and one ring-end and projecting thence toward and overlapping the other strip, the overlapping end of one strip having a longitudinal slot and that of the other being bent at right angles into a head and the head notched in its edges and slidably mounted in said slot, as described.

3. The combination with an embroidery hoop whose outer ring is split, of a turn buckle mechanism including members adapted to be connected respectively to the ends of said ring and having oppositely pitched screws projecting toward each other, a double-threaded nut engaging said screws, a guide composed of two members respectively carried by the members of the turn buckle and projecting beyond the extremities of said elements and lapping each other, and pin-and-slot connections between their lapping ends for limiting the distention of the members of the turn buckle so as to prevent the complete disconnection of its nut from its screws.

4. In an embroidery hoop whose outer ring is split, the combination with a turn buckle structure including brackets attached to the outer faces of the split ends of such outer ring and having screws directed toward each other, and a double-threaded nut engaging said screws; of sheet metal strips secured between the bases of said

brackets and the ends of the hoop and projecting thence past the extremities of said ends beneath the nut, and pin-and-slot connections between the inner ends of the strips for guiding the ends of the hoop in their movements and limiting their distention, as described.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLOTTE WILDER.

Witnesses:
C. R. DRAKE,
C. B. ATWATER.