F. P. HUYCK.

EMBROIDERY HOOP.

APPLICATION FILED APR. 3, 1913.

1,098,442. Patented June 2, 1914.

Fig. 1.

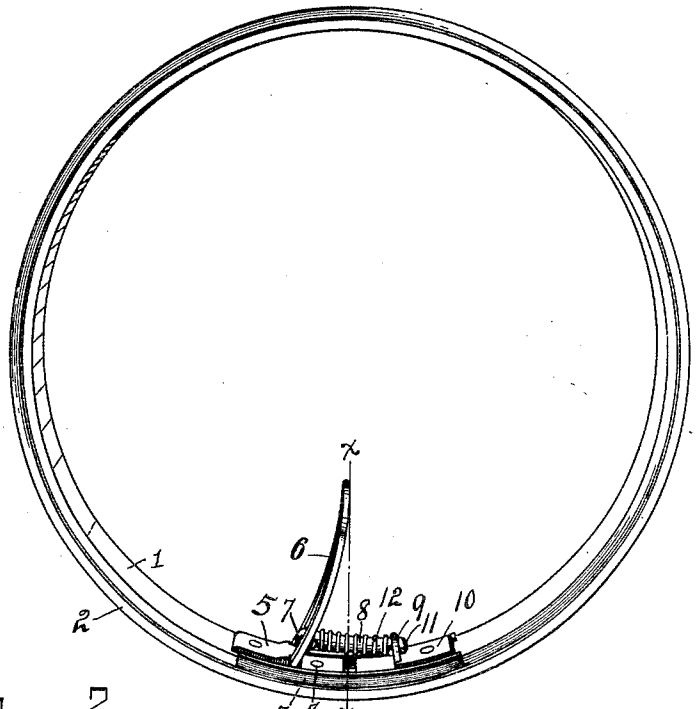
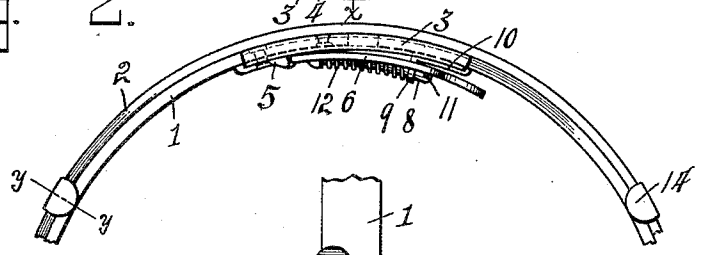


Fig. 2.



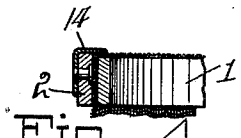


Fig. 4.

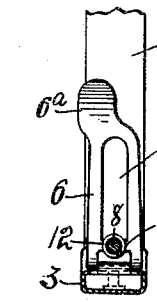


Fig. 3.

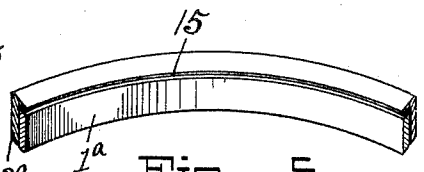


Fig. 5.

WITNESSES:

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EMBROIDERY-HOOP.

1,098,442. Specification of Letters Patent. Patented June 2, 1914.

Application filed April 3, 1913. Serial No. 758,703.

To all whom it may concern:

Be it known that I, FRANCIS P. HUYCK, a citizen of the United States, and a resident of Toledo, State of Ohio, have invented a certain new and useful Embroidery-Hoop; 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, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates particularly to embroidery hoops, but is not restricted to such use, as it may be used in any connection for which it may be adapted or appropriate.

The object of my invention is the provision, in combination with the expansible inner member of an embroidery hoop set, of simple and efficient means attached thereto and easily and quickly operable to effect an adjustable or yielding expansion of such inner member to suit the thickness of a piece or goods disposed between the hoops of the set, whereby to hold the goods firmly in position relative to the hoops without wrinkling or in any way injuring goods of the most delicate nature.

A further object of my invention is the provision of means of the character described which, in addition to being operable to effect a yielding expansion of the inner hoop of an embroidery set, is also operable to effect a positive contraction of such hoop to withdraw it from binding engagement with the outer hoop whereby to permit an easy removal of the inner hoop and the engaged work from the outer hoop.

A further object of my invention is the provision of simple, efficient and inexpensive means for limiting the relative telescoping movements of the hoops of a set, whereby to permit a true engaging action of the hoops.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is a perspective view of a set of telescoped embroidery hoops with the means embodying the invention associated therewith and in open position. Fig. 2 is a side elevation thereof with the expanding means in closed or hoop expanding position and with portions of the hoops broken away. Fig. 3 is a cross-section on the line x, x in Fig. 1. Fig. 4 is a cross-section on the line y, y in Fig. 2, and Fig. 5 is a perspective view of a portion of an engaged set of hoops with a modified form of the means limiting the telescoping movements thereof.

Referring to the drawings, 1 and 2 designate the inner and outer hoops, respectively, of a set embodying the invention, the outer hoop being of endless non-expansible form and the inner hoop being of the split expansible type. A segmental guide-member 3 spans the split portion of the hoop 1 and is preferably fixedly attached to one end of such hoop and has sliding engagement with the other end thereof to adapt it to guide the end portions of the hoop 1 during the relative contracting and expanding movements thereof. This member, in the present instance, is made of sheet-metal U-shape in cross-section to adapt it to extend around the outer side and edges of the hoop 1 and has its free edges turned in over the respective inner edges of the hoop to adapt it to form a suitable guide member for the end of the hoop which is mounted for longitudinal sliding movements therein. The guide-member 3 is shown, in the present instance, as being attached to one end of the hoop 1 by a rivet 4, or in any other suitable manner.

Fixed to one end of the hoop 1, preferably that which is fixed to the guide-member 3, is a plate 5, and pivoted to this for rocking movements in the plane of the hoop is a lever 6, which is provided a short distance from its pivoted end with a cross-pivot or pin 7 to which one end of a bar or plunger member 8 is pivoted. The bar 8 extends from the pivot 7 across the space between the two ends of the hoop and has its opposite end working freely through a registering opening in an ear or projecting part 9 extending inward from a plate 10 that is fixed to the inner side of the end portion of the hoop which is opposed to that to which the lever 6 is pivoted. A cross-pin 11 is carried by the free end of the bar 8 at the outer side of the part 9 and coacts with such part to prevent a complete withdrawal of the bar from engagement therewith. A coiled compression spring 12 is

carried by the bar 8 between its headed inner or pivoted end and the part 9 with its opposite ends thrust against said head and part whereby the hoop 1 is caused to have a yielding expanding action upon a lowering of the lever 6 over said bar and associated parts, as indicated in Fig. 2. The lever 6 is provided with a longitudinally extending opening 13 which registers with the bar 8, ear 9 and spring 12 to enable the lever to be pressed downward thereover in substantially flush relation to the inner side of the hoop, as shown in Fig. 2.

It will be noted that the inner end portion of the lever 6 and the bar 8 with the spring 12 mounted thereon act as a toggle connection betweeen the two ends of the hoop 1, and that when such parts stand in the closed or expanding position shown in Fig. 2 the pivot 7 and that of the lever 6 stand in register with the longitudinal thrust of the toggle members or in dead center position so that a manual movement of the lever 6 is necessary to move the lever to its open or hoop contracting position. The lever 6 is preferably provided at one side of its free end with a lateral extension 6^a which projects slightly beyond an edge of the hoop 1 to facilitate a gripping and moving of the lever from closed to open position.

In order to limit the telescoping movements of the hoops of a set when inserted one within the other, one of such hoops, the outer one in the present instance, is provided at intervals with tongues 14 which project inwardly across one side edge thereof and in position to coact with the adjacent edge of the inner hoop, when inserted within the outer hoop, for the purpose of limiting its movement therein or preventing it from passing entirely through the outer hoop, as best shown in Fig. 4. These tongues not only serve to limit the passage of one hoop through the other but render it easy to true up the edges of the hoops, as is apparent. In Fig. 5 I have shown a slightly different form of this stop means in that the outer hoop is shown as being provided entirely around one edge thereof with an inwardly projecting flange 15, which stands in the path of movement of the inner hoop 1^a when inserted within the outer hoop 2^a.

In the use of my invention the inner hoop 1, prior to being inserted within the outer hoop 2 for the purpose of securing a work piece therein, has its control lever 6 thrown to full open position to effect a drawing together of the ends of the hoop and a consequent contraction of the hoop to enable it to be easily inserted into the outer hoop within the goods or work piece. This having been done the lever 6 is thrown down to its closed position, as indicated in Fig. 2, thus effecting a straightening of the toggle connection between the hoop ends and a consequent expansion of the hoop 1 within the outer hoop to firmly hold the interposed work therein. As the expanding pressure of the toggle connection between the ends of the inner of expanding hoop is exerted through the spring 12 it will be readily understood that such spring will permit a yielding adjustment of the expanding action as the thickness of the work may require so that the work gripping or binding action of a set of hoops when the lever 6 is moved to its closed or toggle straightening position will be practically the same whether the goods or work-piece gripped thereby is of a thin or thick nature. The expanding of one hoop within the other tends to tighten or draw the portion of the goods which spans the hoop opening into firm form and at the same time prevents a wrinkling or otherwise injuring or twisting of the threads of the goods at the points where it is engaged or clamped between the two hoops.

It is evident with the construction of the contracting and expanding means shown, that the expanding thrust between the lever 6 and projecting part 9 on the other end portion of the inner hoop is through the spring or cushion member 12, and that the bar or plunger part 8 serves more particularly as a retractor or draft member for cooperating with the lever 6 and projecting part 9 to effect a contraction of the inner hoop.

I wish it understood that my invention is not limited to any specific construction or arrangement of the parts except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is,—

1. In a telescoping hoop set, an inner split hoop, a lever pivoted to one end portion of the hoop, and separate independently operable means connecting said lever and the other end of the hoop, one of said means being operable by a movement of the lever in one direction to effect a yielding expansion of the hoop and the other means being operable by a movement of the lever in the opposite direction to effect a contraction of the hoop.

2. In a telescoping hoop set, an inner split hoop, a lever pivoted thereto adjacent to one of its ends, an abutment projecting inward from the other hoop end, a coiled compression spring interposed between said lever and abutment for coöperating therewith to effect a yielding expansion of the hoop when the lever is moved on its pivot in one direction, and a draft member projecting through the spring and connecting said le-

ver and abutment for coöperating therewith to effect a contraction of the hoop when the lever is moved in the opposite direction.

3. In a telescoping hoop set, an inner split hoop, a lever pivoted to one end thereof, means connecting said lever and the other end of said hoop for free movements relative to the hoop end to which it is connected when the lever is moved in one direction and for effecting a contraction of the hoop when the lever is moved in the opposite direction, and connection between said lever and the other hoop end for effecting a yielding expansion of the hoop when the lever is moved in one direction.

4. In a telescoping hoop set, an inner split hoop, a lever pivoted to the inner hoop at the inner side thereof and adjacent to one of its ends, an apertured part projecting inwardly from the other end portion of the hoop, a bar pivoted to the lever intermediate its ends and working at its opposite end through said part and prevented from complete withdrawal therefrom, and yielding thrust means carried by said bar and having one end thrust against said part, said means being operable upon a movement of the lever in one direction to effect a yielding expansion of the inner hoop.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

FRANCIS P. HUYCK.

Witnesses:
C. W. OWEN,
C. H. BILLS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."