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Misner et al.

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[54] HAIRPIN LACE LOOM

[76] Inventors: **James P. Misner; Evelyn K. Misner,** both of 8930 Sheridan Drive, Clarence, N.Y. 18031

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[52] **U.S. Cl.** ..... **66/1 A**

[51] **Int. Cl.** **D04b 3/00**

[58] **Field of Search** ..... 66/1 A, 1 R, 4

[56] **References Cited**

UNITED STATES PATENTS

2,778,210	1/1957	Reizman et al.	66/1 A
2,540,383	2/1951	Tillert et al.	66/1 A
2,210,173	8/1940	Langbart	66/1 A
2,722,814	11/1955	Ferlazzo	66/1 A

FOREIGN PATENTS OR APPLICATIONS

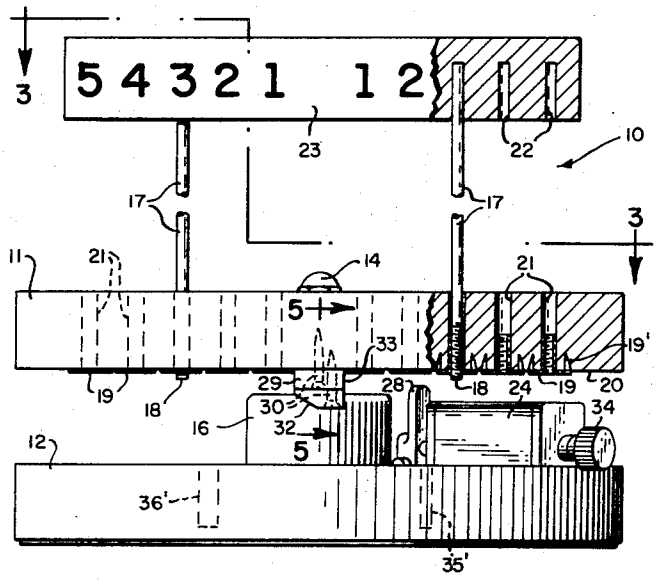
859,224	2/1958	Great Britain	66/1
386,437	1/1933	Great Britain	66/1

Primary Examiner—Wm. Carter Reynolds
Attorney—Sommer, Weber & Gastel

[57] **ABSTRACT**

A hairpin lace loom for fabricating hairpin lace including a stationary base adapted to be placed on the lap of the user or on a table, a rotatable base mounted on the stationary base, a plurality of elongated yarn-receiving rods extending upwardly from the rotatable base, a number of apertures spaced along a diameter on the rotatable base for receiving the rods in different spaced positions to permit the fabrication of loops of different width, a brace mounted at the top of the rods to rigidize them and hold them parallel, a counter mounted relative to the rotatable base for recording the number of revolutions thereof, thereby to obviate the counting of the loops, said brace being removable so that the hairpin lace can be slipped off the top of the rods, and aligned apertures in the rotatable and stationary bases for receiving a crochet hook which functions as a pin to lock the rotatable base relative to the stationary base when the loom is not being used.

9 Claims, 8 Drawing Figures



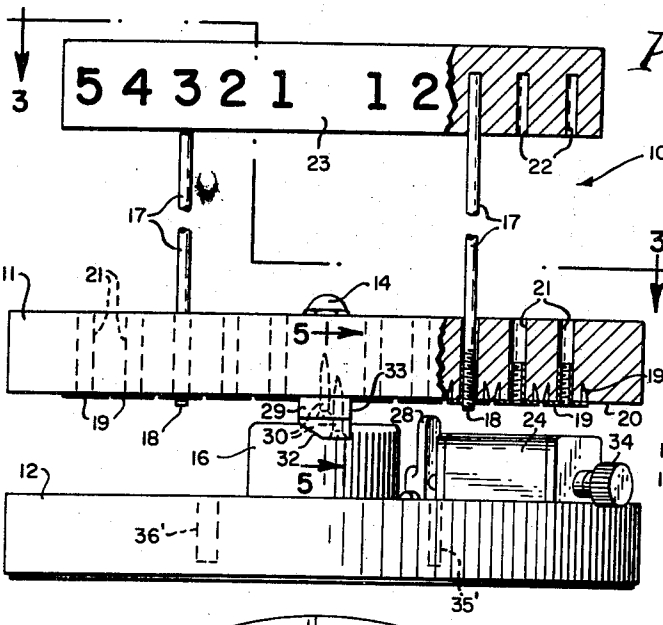


Fig. 2

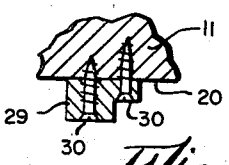


Fig. 5.

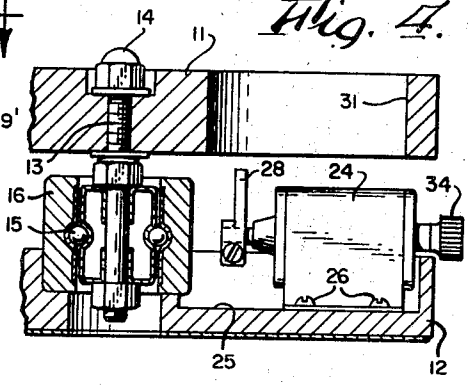


Fig. 4.

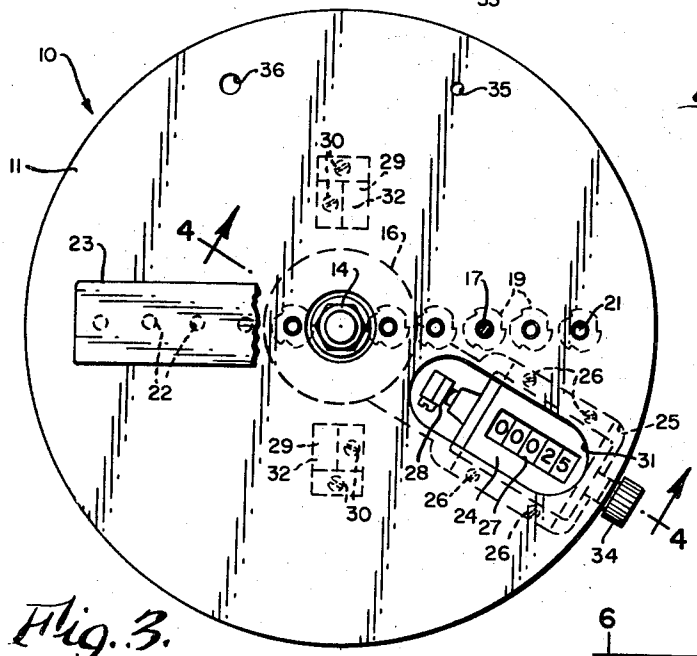


Fig. 3.

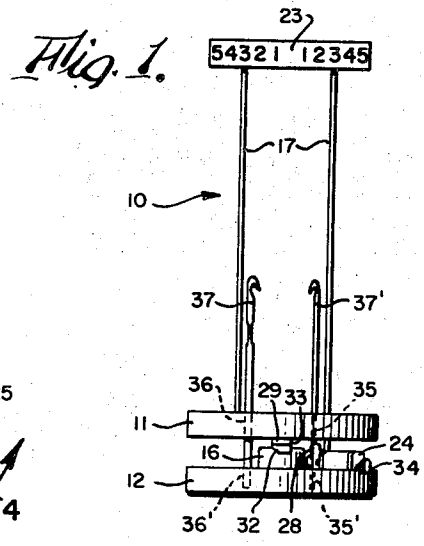


Fig. 1.

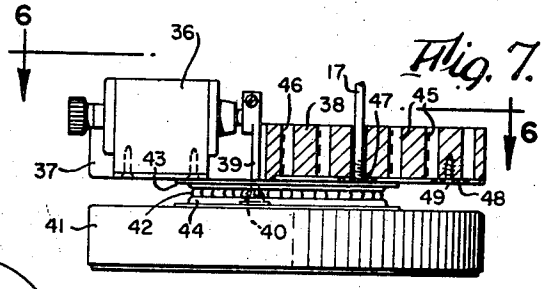


Fig. 7.

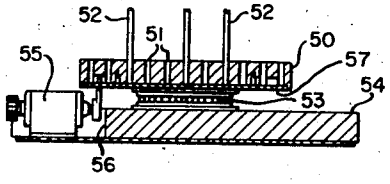


Fig. 8.

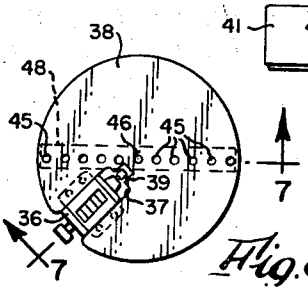


Fig. 6.

INVENTORS
James P. Misner
Evelyn K. Misner
BY Sommer Weber & Dastel
ATTORNEYS

HAIRPIN LACE LOOM

The present invention relates to an improved loom for fabricating hairpin lace.

By way of background, hairpin lace is a type of needlework which is fabricated by forming loops of tied yarn longitudinally on spaced substantially parallel rods. In the past various types of devices were used. Many of these types comprised spaced parallel rods on a handle which was held in one hand while the needlework was performed with the other hand. This type of device had the shortcoming that both hands were not free to do the work, and further the hand holding the device in midair became tired and required periodic resting. Another type of hairpin lace loom included a base on which non-adjustable spaced rods were mounted. However, this other type had the shortcoming that the yarn could be caught between the rod and the base incidental to turning the rods during the crocheting process. Furthermore, none of the prior types had any means for automatic counting, and, considering that as many as 700 loops might be made along the spaced rods, the counting constituted a tedious process which diminished the enjoyment and speed of the work. It is with overcoming the foregoing deficiencies of prior hairpin lace looms that the present invention is concerned.

It is accordingly one object of the present invention to provide a hairpin lace loom which is much easier and much quicker to use than prior looms.

Another object is to provide a hairpin lace loom with a substantial base which has an elegant appearance, and when not in use, may be mounted on normal room furniture to provide a decorative accent piece, especially when loops of colorful yarn are located thereon.

Still another object of the present invention is to provide an improved hairpin lace loom which includes a counter for automatically counting the number of loops which are formed incidental to the turning of the hairpin lace loom during operation.

A further object of the present invention is to provide an improved hairpin lace loom which is extremely convenient to use in that it includes a base which rests on the lap of the user, or on a table, thereby freeing both of user's hands for the actual looming operation.

Yet another object of the present invention is to provide an improved hairpin lace loom which can mount more than two yarn-receiving rods in a highly convenient manner so that off-center types of lace weaves can be fabricated.

A still further object of the present invention is to provide an improved hairpin lace loom which is relatively sturdy in that both ends of the rods are supported in a highly efficient manner to keep the rods parallel, thereby lending rigidity to the structure.

Another object of the present invention is to provide an improved hairpin lace loom in which the setting of the spacing between the rods can be adjusted quickly and easily without requiring any calculations on the part of the user.

Still another object of the present invention is to provide an improved hairpin lace loom in which the rods are so mounted that in the looming position they are always spaced an equal distance from the operator, thereby permitting the operator to develop a rhythm which expedites the actual looming process.

A still further object of the present invention is to provide an improved hairpin lace loom in which the spaced rods are so mounted on a rotatable base that entanglement of the twine on the member on which the rotating base is mounted is virtually impossible. Other objects and attendant advantages of the present invention will readily be perceived hereafter.

The improved hairpin lace loom of the present invention includes a stationary base of a shape to be conveniently placed on the lap of a user or on a conveniently placed table, a rotatable base mounted on the stationary base, a plurality of elongated rod means extending upwardly from the rotatable base for receiving loops of yarn, a counter arrangement mounted relative to the rotatable base to count the number of revolutions thereof and thus count the loops which are formed, a plurality of apertures for receiving the rods in various spaced orientations on the rotatable base for fabricating yarn into different sizes of loops, and a removable brace for securing the upper ends of the rods relative to each other to stabilize them during use.

The various aspects of the present invention will be more fully understood when the following portions of the specification are read in conjunction with the accompanying drawings wherein:

FIG. 1 is a side elevational view of one form of the invention;

FIG. 2 is a fragmentary enlarged side elevational view, partially in cross section of the embodiment of the invention shown in FIG. 1;

FIG. 3 is a view taken substantially along line 3—3 of FIG. 2;

FIG. 4 is a fragmentary cross sectional view taken substantially along line 4—4 of FIG. 3;

FIG. 5 is a fragmentary cross sectional view of the dog for the counter taken substantially along line 5—5 of FIG. 2;

FIG. 6 is a plan view of the rotatable top of the embodiment of the invention of FIG. 7 taken substantially along line 6—6 of FIG. 7;

FIG. 7 is a view, partially in cross section taken substantially along line 7—7 of FIG. 6; and

FIG. 8 is a fragmentary cross sectional view of another embodiment of the present invention.

One embodiment of the improved hairpin lace loom 10 is shown in FIGS. 1–5. This embodiment includes a stationary base 12 and a rotatable base 11 which is secured to shaft 13 by nut 14, shaft 13 being rotatably mounted in bearing 15 mounted in block 16 which is pressed into base 12. A pair of spaced needle-like rods 17, which may be made of any suitable material such as metal, plastic, or wood, have their lower ends 18 threadably received in tapped fittings 19 which are staked into the underside 20 of rotatable base 11 by means of stakes 19' formed integrally therewith. Fittings 19 are in alignment with apertures 21 which extend downwardly through base 11 parallel to the axis of rotation thereof, said apertures being located on the line which is a diameter of the base. While a threaded connection has been shown between the lower ends of rod 17 and rotatable base 11 it will be appreciated that any other suitable connections can be used, such as clips or a friction-fit. Bases 11 and 12 can be made of wood, plastic or other suitable material. The bottom of base 12 is covered with felt or other cushioned material

to prevent it from sliding off the lap and to prevent it from marring any surface it may be set on.

The upper ends of rods 17 are received by a friction fit in suitable blind bores 22 in a wood spacer bar or brace 23. Apertures 22 are spaced at the same intervals as apertures 21 in rotatable base 11. Numerals are printed across the face of the brace 23 to indicate the spacing of the rods received therein. More specifically, if both rods 17 are received in the apertures 22, corresponding to the numeral 1, the rods are 1 inch apart, if they are received in the apertures corresponding to the numeral 2, they are 2 inches apart, and so on. Thus, the operator of the loom can visually set the spacing between rods 17, to thus predetermine the width of the loops fabricated thereon. Because the rods 17, which are only approximately one-eighth of an inch thick, are anchored at their lower ends by base 11 and at their upper ends by brace 23, they are relatively stable notwithstanding that the distance between the upper surface of base 11 and the lower surface of brace 23 is approximately 12 inches. It will be appreciated that rods 17 can be of any length and of any thickness within reason. Generally, the rods 17 are located on a diameter of and equidistantly from the center of the rotatable base, thus they will remain equidistant from the operator after the base 11 has been rotated, which permits a rhythm to be established to produce the work more quickly. It is also to be noted that the rotatable base 11 extends laterally outwardly beyond rods 17 in all positions thereof, thereby obviating the possibility that yarn could become entwined about shaft 13.

In use, the loom operator places the stationary base on her lap or on a conveniently placed table with the rods 17 extending generally vertically, and she intermittently rotates the movable base by grasping rods 17 or base 11. Because the loom rests on the operator's lap both of her hands are free to do the actual needlework.

As can be seen from the drawings, a counter 24 is secured in a recess 25 by means of screws 26. Counter 24 is of the type which has a window 27 therein which displays various digits in sequence as arm 28 is tripped by each of the two dogs 29 which are secured by screws 30 to the undersurface 20 of rotatable base 11. The reading on counter 24 can be taken when window 31 in base 11 overlies the counter, as shown in FIG. 3. Since there are two dogs 29, the counter 24 will be tripped every half revolution to indicate the number of loops which are placed on the rods. This greatly facilitates the looming process as well as making it more enjoyable by eliminating the tedious chore of counting the loops, considering that up to 700 rows of loops can be placed on rods 17.

As can best be seen from FIG. 2, each dog 29 has a front cam surface 32 which engages counter arm 28 to actuate it, and each dog 29 has a straight rear surface 33 which cannot actuate arm 28. Since the arm 28 cannot rotate into the plane of the drawing in FIGS. 2 and 4 because of the inherent construction of the counter, arm 28, when engaged by surface 33 of dog 29, will not permit rotatable base 11 to rotate in a counterclockwise direction in FIG. 3. In other words, rotatable base 11 can rotate only in a clockwise direction in FIG. 3. This feature prevents the confusion which may result from the turning of base 11 in a wrong direction. Counter 24 includes a knob 34 which permits it to be reset to zero after the required number of loops are placed on rod 17.

It is to be noted that there are a plurality of apertures 35 and 36 in rotatable base 11 and there are corresponding aligned bores 36' and 35' in stationary base 12. These are for the purpose of receiving the blunt ends of crochet hooks 37 and 37' which lock the rotatable base to the stationary base when the loom is not being used. The apertures 35 and 36 are of different sizes to receive different sizes of crochet hooks. Furthermore, the ball of yarn can be impaled on the protruding end of the crochet hook. While two crochet hooks are shown it will be appreciated that only the hook used for current work is mounted on the base. When the crochet hook locks the upper base to the lower base, the window 31 will be in alignment with counter 24 so that a reading of the number of stitches can be made without handling the loom. In lieu of using two sets of holes 35-35' and 36-36', a single set of enlarged holes with flat friction springs in the holes could be used to hold a plurality of different sizes of crochet hooks.

A modified embodiment of the present invention is shown in FIGS. 6 and 7. This embodiment differs from the embodiment of FIGS. 1–5 only in that the counter 36 is mounted in a radial slot 37 in rotatable base 38. Counter arm 39 is selectively engaged by a dog 40 secured to stationary base 41, dog 40 being nothing more than a protuberance in the nature of the head of a screw. The upper rotatable base 38 is rotatably secured to the stationary base 41 by means of a ball bearing assembly 42 of the lazy Susan type with the upper bearing housing 43 being secured to the underside of rotatable base 38 and the lower bearing housing 44 being secured to the upper side of stationary base 41.

Because a lazy Susan type of bearing 42 is used rather than the bearing shown in FIG. 2, the rotatable base 38 may be closer to the stationary base 41, and further since bearing 42 does not have a central shaft, the diametral row of apertures 45 may include an aperture 46 which is at the exact center of the upper base 38 and this can receive a rod such as 17 in the event that three rods are to be used with one of the rods being at the exact center of the upper base, which is desired when certain types of off-center work is to be performed. In other words, a rod, such as 17, can be placed in aperture 46 and two other rods can be placed in any of the other apertures 45.

Furthermore, in the embodiments of FIGS. 6 and 7, instead of using threaded clips such as 19 of FIG. 2, the rods 17 are received in suitably threaded apertures 47 in a diametrically extending plate 48 which is attached to the undersurface of rotatable plate 38 by means of spaced screws 49.

A still further embodiment of the present invention is shown in FIG. 8. This embodiment is similar to the embodiment of FIGS. 6 and 7 in that the upper circular rotatable base 50 includes apertures 51 for receiving spaced rods 52 which may be identical to rods 17 of FIG. 1. The apertures 51 extend across a diameter of base 50 and include an aperture at the exact center of base 50 inasmuch as a lazy Susan type of bearing 53 is used to attach rotatable base 50 to stationary base 54. In this particular embodiment base 54 is of oval shape, for decorative purposes as well as for permitting

counter 55, which is secured in a slot 56 in base 54, to be almost completely exposed to view at all times regardless of the position of rotatable base 50. Slot 56 is located on a major axis of the oval, but may be located at any other suitable position. Plate 57, which is threaded to receive the bottom threaded ends of rods 52, may be identical to plate 48 of FIGS. 6 and 7, and may be attached to base 50 in the same manner.

What is claimed is:

1. A hairpin lace loom comprising a stationary base, a plurality of spaced elongated rod means, means rotatably mounting said elongated rod means in substantially parallel relationship for rotation as a unit on said stationary base, counter means mounted relative to said elongated rod means for recording the number of revolutions of said rod means, said means for mounting said elongated rod means comprising a rotatable base, said rod means comprising at least two spaced rods which extend substantially in the direction of the axis of rotation of said rotatable base, brace means for securing said rods at the tops thereof remote from said rotatable base in the same spaced relationship as on said rotatable base, and aligned aperture means in said stationary base and said rotatable base for receiving a pin member for locking said rotatable base against rotation on said stationary base.

2. A hairpin lace loom comprising a stationary base, a plurality of spaced elongated rod means, means rotatably mounting said elongated rod means in substantially parallel relationship for rotation as a unit on said stationary base, counter means mounted relative to said rod means for recording the number of revolutions of said rod means, said means for mounting said elongated rod comprising a rotatable base, said rod means comprising at least two spaced rods which extend substantially in the direction of the axis of rotation of said rotatable base, and means for permitting rotation of said rotatable base only in a single direction.

3. A hairpin lace loom comprising a stationary base, a rotatable base, means rotatably mounting said rotatable base on said stationary base, a plurality of substantially parallel rods, means mounting said rods on said rotatable base with their axes extending generally in the direction of the axis of rotation of said rotatable base, means for adjustably mounting said rods relative to each other, brace means for securing to the end portions of said rods remote from said rotatable base in all adjusted positions thereof, and aligned aperture means in said rotatable and stationary bases for receiving a pin for locking said rotatable base to said stationary base.

4. A hairpin lace loom comprising a stationary base, a rotatable base, means rotatably mounting said rotatable base on said stationary base, a plurality of substantially parallel rods, means mounting said rods on said rotatable base with their axes extending generally in the direction of the axis of rotation of said rotatable base, means for adjustably mounting said rods relative to each other, brace means for securing to the end portions of said rods remote from said rotatable base in all adjusted positions thereof, and means for permitting rotation of said rotatable base only in a single direction.

5. A hairpin lace loom comprising a base, a plurality of substantially parallel elongated rod means, mounting means including pivot means for mounting said plurality of elongated rod means for rotation on said base about an axis extending substantially perpendicularly to said base, means extending outwardly away from said pivot means beyond said elongated rod means to prevent lace on said rod means from dropping below said rod means and into engagement with said pivot means, said mounting means comprising a rotatable base mounted on said pivot means for supporting said elongated rod means for rotation, said means extending outwardly comprising the peripheral portion of said rotatable base, said rotatable base comprising a disc-like member spaced in substantially parallel relationship to said base, and counter means mounted between said base and said disc-like member for selective actuation incidental to relative rotation between said bases, said counter being essentially located within the periphery of said disc-like member.

6. A hairpin lace loom as set forth in claim 5 including means for adjustably mounting said rods relative to each other on said rotatable base.

7. A hairpin lace loom as set forth in claim 6 including brace means for securing to the end portions of said rods remote from said rotatable base in all adjusted positions thereof.

8. A hairpin lace loom as set forth in claim 7 wherein said means for adjustably mounting said rods relative to each other comprises a plurality of apertures in said rotatable base extending substantially along a line extending substantially through the center of rotation of said rotatable base.

9. A hairpin lace loom as set forth in claim 6 wherein said adjusting means comprise screw threaded connections between said rods and said rotatable base.

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