Jan. 9, 1940. M. J. BOYER ET AL 2,186,692

METHOD OF AND APPARATUS FOR HAND WEAVING

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Fig. 1

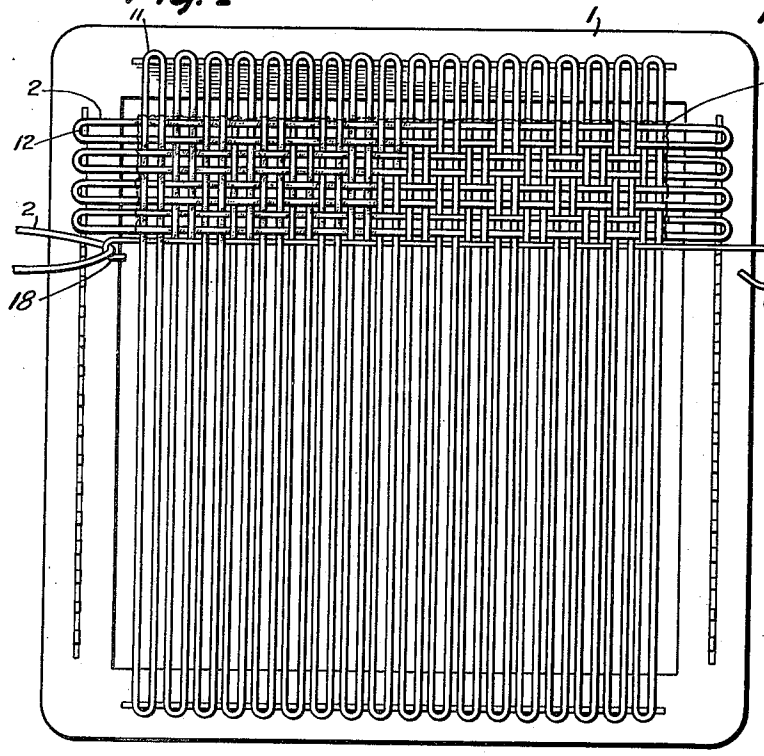


Fig. 2

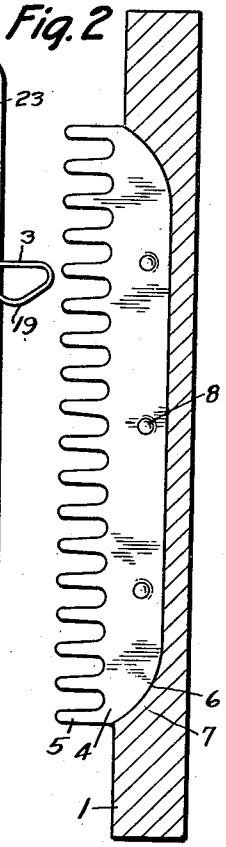


Fig. 3

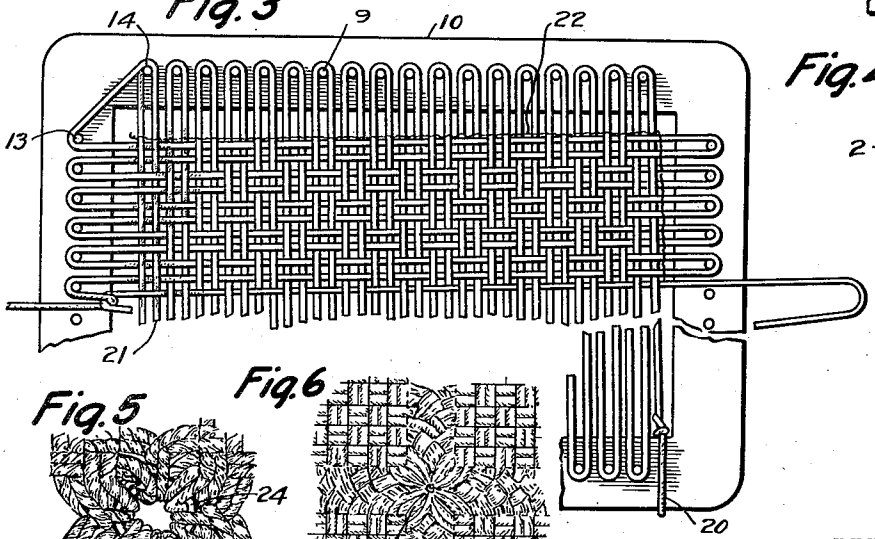


Fig. 4



Fig. 5

Fig. 6

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Fig. 8

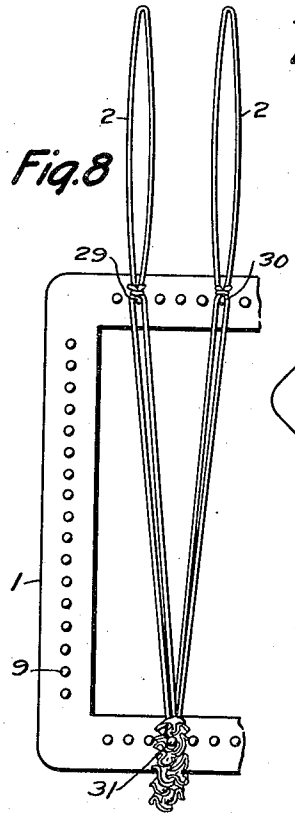


Fig. 7

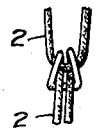


Fig. 9

Fig. 10

Fig. 12

Fig. 11

Fig. 13

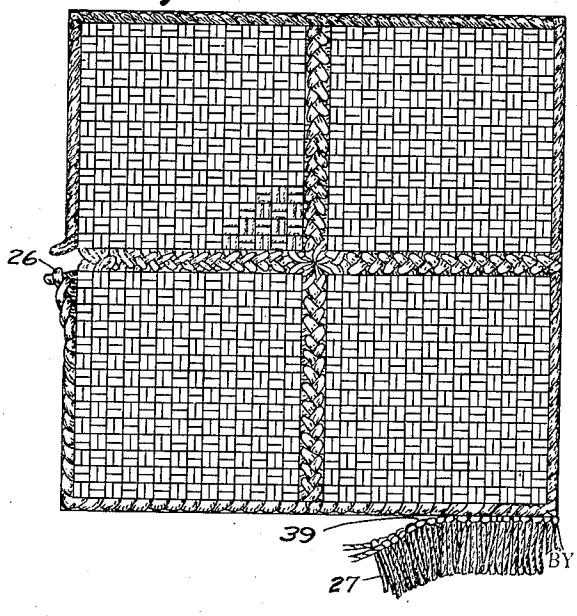


Fig. 14

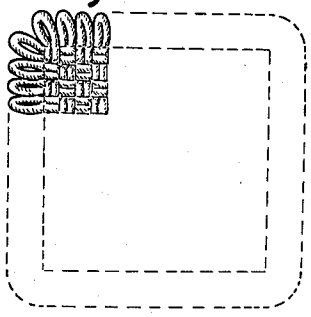
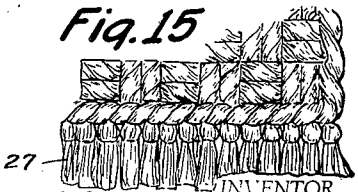


Fig. 15



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UNITED STATES PATENT OFFICE

2,186,692

METHOD OF AND APPARATUS FOR HAND WEAVING

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Application February 18, 1939, Serial No. 257,064

3 Claims. (Cl. 139—34)

The purpose of this invention is to provide improvements in apparatus and methods of hand weaving which will facilitate and simplify the weaving of various articles, such as mats, scarfs, rugs, bath mats, pot holders, hand bags, and the like, in which the various articles may be woven in rectangular shaped units, and these may readily be joined together to form a mat, scarf, rug, quilt, or the like, of any size or shape.

The invention is a relatively small hand frame adapted to be used as a loom and upon which devices may be woven by loops or strands, and in which the edges may be bound or fringed, or finished in any manner desired.

Weaving frames, looms, curtain stretchers, and various devices have been made of various shapes and designs, and substantially all of these comprise a frame generally of a rectangular shape with pins, hooks, or other thread, yarn, or other holding means at the sides; however, for hand weaving of this type, in which weaving is facilitated by providing the material in endless loops or by using double strands, it has been found desirable to provide a loom or frame of a particular type or size, and in which the pins or holding means are arranged in rows and spaced at the corners to provide angular shaped notches which make it possible to finish the corners to form a complete unit on the loom, or join the corners to form a rosette, and also in which the pins are arranged to form continuous rows of extending loops at the sides which may readily be laced together with joining units. It has also been found desirable, particularly for hand weaving looms, to provide means whereby a fringe or finish may readily be formed on the loom.

The object of this invention is, therefore, to provide a specific form of loom for hand weaving which is adapted to weave strands or loops to form individual units.

Another object is to provide a hand weaving loom in which means is provided for forming a fringe or border.

Another object is to provide a hand loom in which evenly spaced pins are required, in which the pins of each side are formed in separate sections and mounted upon the frame as a unit.

Another object is to provide a method of weaving in which loops, which are obtained by cutting tubular material transversely, and also yarn, are used, either of which may readily be interwoven, using the same material for warp and weft.

Another object is to provide means for connecting the edges of a unit formed of interwoven loops, thereby holding it secure.

Another object is to provide a method of lacing the edges of units formed of interwoven loops without using an additional strand of material.

Another object is to provide means for forming a rosette at the adjoining corners of a plurality of woven units.

A further object is to provide a method of forming a fringe on a hand loom for providing an edge or binding to articles formed on the loom.

And a still further object is to provide a unique hand loom and method of weaving thereon, in which articles may be produced in a relatively simple manner and at a relatively low cost.

With these ends in view the invention embodies a rectangular shaped frame having equally spaced pins arranged in rows in units on the opposite sides thereof, with similar units of rows of pins positioned directly opposite to the units providing means holding loops in perpendicular relation, and a method of weaving articles with loops or double strands, combining the edges and corners, and providing a finish or fringe.

Other features and advantages of the invention will appear from the following description, taken in connection with the drawings, wherein:

Figure 1 is a plan view of a frame or loom showing loops on one section thereof, and a few loops on the opposite section with a needle in the position of drawing a loop through the oppositely positioned loops.

Figure 2 is a cross section through the loom shown in Figure 1, showing the method of construction.

Figure 3 is a view showing a frame of an alternate design, in which the pins are provided independently and also in which single strands of material are woven on the frame, showing the strands laced to form the warp on one section and being drawn through to form the weft in the transverse direction, illustrating the method of weaving with a double strand even when using a single strand of material.

Figure 4 is a view illustrating a single loop of material as used in Figure 1.

Figure 5 is a detail showing a method of joining the loops at the corners after units have been formed on the frame shown in Figure 1.

Figure 6 is a detail showing a rosette formed after joining the loops as shown in Figure 5.

Figure 7 is a detail showing a method of joining loops to form a fringe on the loom.

Figure 8 is a view showing a plurality of loops joined as shown in Figure 7 to form strands, and

arranged on the loom shown in either Figures 1 or 3 to form a foundation for making fringe as shown in Figure 13.

Figure 9 is a view showing posts and a hook on the reverse side or back of the loom shown in Figures 1 and 3, illustrating an alternate method for forming a finishing fringe or binding.

Figure 10 is a detail showing one of the posts at the back of the loom.

Figure 11 is a similar detail showing a hook at the opposite corner of the loom.

Figure 12 is a detail showing a method of forming the fringe with a single strand of material.

Figure 13 is a view showing a plurality of units forming a mat with the loops being laced together, and with the fringe formed as shown in Figure 9 partly attached.

Figure 14 is a detail showing a unit with a portion of the loops at the ends shown on a larger scale to indicate a finished article.

Figure 15 is a detail showing a corner of the unit shown in Figure 14 having fringe attached thereto.

In the drawings the loom is shown and the method is illustrated as it may be used, wherein numeral 1 indicates a frame, numeral 2, loops adapted to be woven on the frame, and numeral 3, a needle adapted to be used for weaving the loops on the frame.

In the design shown in Figures 1 and 2, the frame 1 is formed of a rectangular shape, with the pins or holding means provided in the form of teeth of a comb 4 having teeth 5 and a back or flange 6 wedged into slots or grooves 7 in the four sides of the frame. The part 6 may be provided with small raised portions 8 formed by indentations in the opposite sides, so that the combs may be forced into the slots of the frame, thereby securing the combs in position. The teeth of the combs may be of any shape or design, and any means may be provided for securing the combs in the frame. The holding means may also be formed of pins 9 illustrated in Figure 3, in which the pins are placed directly in the frame 10; however it will be noted in both designs that the pins terminate at the points 11 and 12 shown in Figure 1, and 13 and 14 in Figure 3, providing open spaces at the corners in which triangular shaped areas are formed between the end loops as shown. The remaining pins are evenly spaced, and the pins in the opposite sections of the frame are positioned directly opposite, so that all of the strands on the loom passing in one direction will be parallel, and the transverse strands perpendicular. The loom, therefore, consists of a rectangular shaped frame having four sides and with a plurality of pins extending upward from each side, with the pins spaced from the ends providing open spaces at the corners, and with the pins of one side directly opposite those of the other.

The frame may also be provided with posts 15 and 16 extending outward from the opposite side, as shown in Figures 9 and 10, and a hook 17 as shown in Figures 9 and 11, so that fringe for the article formed on the loom may be made on the opposite side. The posts 15 and 16 may also be used as legs to elevate part of the loom to facilitate weaving.

The needle 3 used in weaving on the loom may be made as shown in Figures 1 and 3, with a relatively small hook 18 at one end, and a larger loop 19 at the other by which it may be held, and it will be noted that the hook may be laced through the strands, as illustrated in figures 1 and 3, and may then draw a double strand or loop back through the strands of the opposite side, and, after the loop or double strand is drawn through, it may be hooked over the pin on the frame, and, where loops are used, the opposite end is hooked over a pin directly opposite and on the opposite side of the frame.

When weaving with a single strand, as shown in Figure 3, one end of the strand may be tied to the frame, as shown at the point 20, and the strand may then be placed over the pins at the opposite sides with a backward and forward movement until all of the strands forming the warp are on the frame, and then the strand may be passed from the pin indicated by the numeral 14 to the pin indicated by the numeral 13, and then caught by the hook 18 which has been woven through the strands of the warp, and drawn through the strands indicated by the numeral 21, drawing a double strand across the warp strands, thereby forming the weft, substantially the same as shown in Figure 1, the ball of yarn remaining on the left hand side of the loom, and a double strand being drawn across each time. This action is continued until the entire unit is formed, and then the loops at the edges may be connected by a chain stitch or single crochet stitch, or any suitable means as indicated at the point 22. The loops in the design shown in Figure 1 may also be bound in a similar manner by a stitch or thread 23. After the loops at the edges are connected with a chain stitch or the like, the unit is removed from the frame and the loops of one unit may be laced with the loops of another, as shown in Figures 5 and 13, leaving two loops at each corner, particularly as shown in Figure 5, and the two loops of the adjoining corners of four units, with the adjoining laced or seam loop of each unit, are bound together by passing a thread 24 through all of the loops, as shown in Figure 5, drawing them together and tying the ends of the thread. This forms a rosette 25 as shown in Figure 6, however it will be understood that the corners may be joined in any other manner or by any means. The loops at the edges of the different units may be laced together as illustrated at the point 26 at the side of the article shown in Figure 13, or the loops at the sides of each unit may be laced together independently, as shown around the edge of the article shown in Figure 13, as they are removed from the loom, forming a finished edge and eliminating the chain stitch or other connecting means.

The frame may also be used to form a fringe 26, and this may be made by loops as shown in Figure 8, or single strands as shown in Figure 9, using the pins of the frame or friction holding posts on the back thereof. In the design shown in Figure 8, the fringe is formed by loops 2 with their ends held together by slip knots 27, as shown in Figures 7 and 8, and with the loops connected in this manner two of the knots 29 and 30 may be placed over two of the pins of the frame, with the opposite ends of the loops converging and placed over a pin at the opposite side of the frame, as indicated at the point 31, and the fringe may be made thereon by short pieces of yarn, as shown in Figure 9, or pieces of any suitable material, and these are placed across the two strands as shown at the point 32 in Figure 9, with the ends drawn upward between the strands, and then this is moved downward to the point 33 where, with the knot pulled tight, the two strands are secured together, and, as a plurality of short pieces are placed on the

strands, one against the other, the fringe is formed. In Figure 9, the fringe is formed of two strands 34 and 35, and these may be tied together at the ends or held by one of the slip knots, as shown at the point 33, and this end may be placed over the hook 17 with the strands placed in slots 36 in the upper ends of the posts 15 and 16, and, as the fringe is formed, the strands 34 and 35 may be drawn through the posts and the finished fringe moved downward on the hook.

It will also be understood that fringe may be formed on a single strand, as shown in Figure 12, in which a small strip of material 37 is looped around a strand 38. These sections of material may be made of yarn or any suitable material, and, although this fringe is illustrated as being particularly adapted for the edges of mats, it will also be understood that it may be curled, coiled, or laminated with the strands in layers and stitched together to form a mat, rug, or the like. In Figure 13, the fringe 26 is shown as being attached to the outer edge of the mat, as illustrated at the point 39, and it will also be understood that a fringe having either a single or double strand as a foundation may be used as a fringe for the mat or rug, or either may be used to form a rug. These strips of fringe may be attached together or to the edge of the mat by yarn, thread, or jersey of a suitable weight or thickness.

It will be understood that changes may be made in the construction without departing from the spirit of the invention. One of which changes may be in the shape or design of the frame which forms a loom, another may be in the use of a needle of any other type, another may be in the use of other means for removably mounting the pins or points on the frame, and still another may be in the use of the frame or loom for any other purpose.

The construction will be readily understood from the foregoing description. In use, individual frames are provided as shown and described, and, when weaving with the loops, the individual loops are placed across the frame as shown in Figure 1, with the ends held upon the pins, and the cross loops are woven through these loops by running the hook 18 of the needle through the loops from the right hand side, then hooking the end of another loop in the hook 18 and drawing the loop through the former loops, so that one end may be hooked over a pin on one side with the other over a pin on the opposite side, as illustrated by the loops in the upper part of the frame.

The same is true of the frame illustrated in Figure 3, except that the yarn is drawn backward and forward, with the corner formed as hereinbefore described on the pins 13 and 14, and the yarn is then drawn backward and forward through the double strands, drawing a double strand through with the needle, as described and illustrated. Larger devices may be made, as illustrated in Figure 13, by lacing the ends of the loops at the sides together and joining the corners to form rosettes, and the fringe may or may not be added as may be desired. The loops may also be laced together, as shown in Figure 13, to form a border instead of extending outward as shown in Figure 14, or these may be bound or arranged in any manner.

Having thus fully described the invention, what we claim as new, and desire to secure by Letters Patent, is:

1. A hand loom comprising a relatively small rectangularly shaped frame having slots in the upper surfaces of the side and end members, and combs with backs and outwardly extending teeth providing yarn holding pins positioned with the backs of the combs frictionally held in the slots and with the teeth extending outward from the face of the frame, the combs being shorter than the distance between opposite frame members and the end tooth of each comb being spaced inwardly from the inside surface of the adjoining frame member whereby fringe is formed on the margins of the fabric by strands extending between opposite combs.

2. A method of weaving on a hand loom with endless loops of material on a rigid rectangular frame forming a solid unit having equally spaced stationary straight projections on the upper faces of the four sides thereof, which comprises placing the said endless loops in parallel position continuously over each of the oppositely positioned projections on two opposite sides of the frame to form the warp of fabric formed thereon, and interweaving other endless loops of material, to form the weft, with the said former loops by first weaving a hooked member alternately up and down through the loops forming the warp and drawing, thereby, the said other endless loops of material therethrough, with the said other endless loops also placed over oppositely positioned projections on two other opposite sides of the frame, the weaving terminating a substantial distance from the sides of the frame whereby fringe is formed on the margins of the fabric by extending ends of the loops.

3. A method of weaving on a hand loom with yarn with a rectangular frame having spaced projections on the upper surface of the four sides thereof with projections at the corners or intersections of the said sides omitted, which comprises tying one end of the yarn around the frame adjacent one corner thereof, lacing the yarn in substantially parallel relation back and forth over the projections of two of the opposite sides of the frame, carrying the yarn from the last projection of one of the said opposite sides diagonally across and around the first projection of an adjacent side, lacing the yarn back and forth over the projections of the two remaining sides and, at the same time, drawing the yarn with a hook through the parallel strands thereof formerly laced on the two opposite sides, weaving the said strands through said opposite strands, under two strands and then over two strands; and characterized in that the yarn being woven through the parallel strands first placed on the two opposite sides is woven by drawing two strands at a time with the connecting end of the said two strands placed over one of the said projections after being woven through the strands, whereby a substantially continuous fringe of closed loops is formed around an article woven thereby.

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