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2,607,979

HAND LOOM

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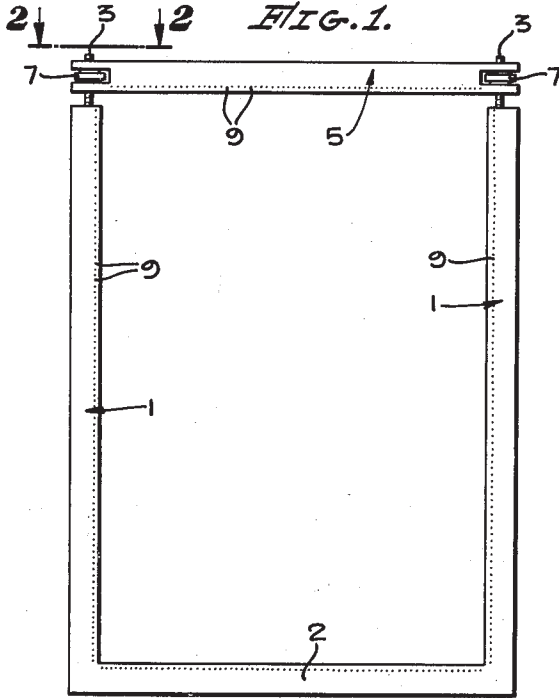


FIG. 1.

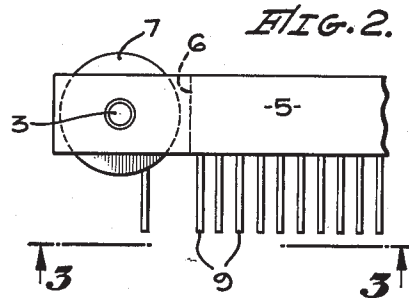


FIG. 2.

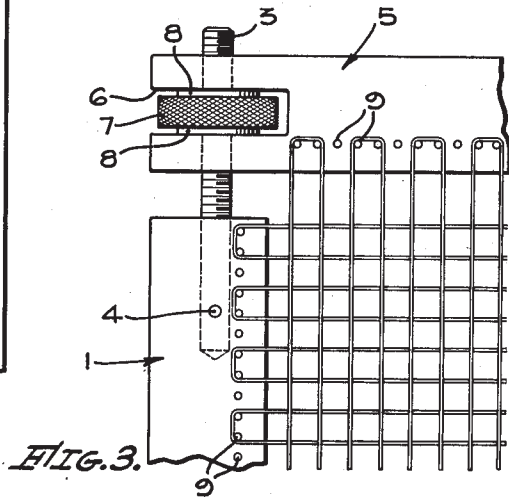


FIG. 3.

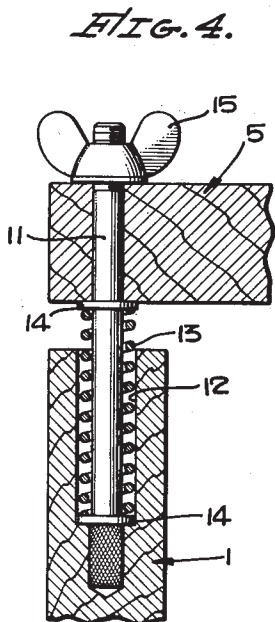


FIG. 4.

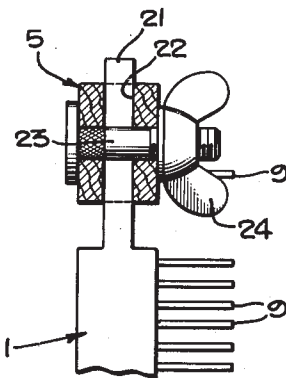


FIG. 6.

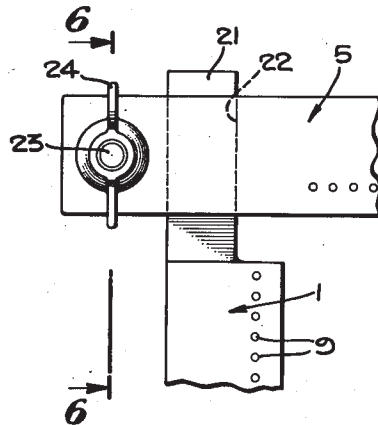


FIG. 5.

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UNITED STATES PATENT OFFICE

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HAND LOOM

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6 Claims. (Cl. 28—15)

1 My invention relates to hand looms, more particularly to hand looms of the type involving a square or rectangular frame, having on each side a row of pins or pegs, around which yarn is wound to form a grid through which weaving is done to produce a fabric unit. Heretofore, such hand looms have been limited in size to only a few inches because the effective length of the yarn strands shortens as weaving progresses. Such shortening is cumulative, that is, it becomes worse as the size of the loom is increased.

An object of the present invention is to provide a hand loom which may be substantially larger in area than has heretofore been feasible.

A further object is, to provide a hand loom which in so far as its use is concerned, or the type and form of weaving accomplished, is similar to that produced on previous smaller hand looms.

Further, to provide a hand loom which is particularly simple of construction and easily operated even by a novice.

With the above and other objects in view as may appear hereinafter, reference is made to the accompanying drawings, in which:

Figure 1 is a plan view of a hand loom incorporating my invention.

Figure 2 is an enlarged fragmentary end view thereof, taken through 2—2 of Figure 1.

Figure 3 is a fragmentary top view thereof, taken from the plan 3—3 of Figure 2 and indicating the gridwork of the yarn as applied to the pins of the loom.

Figure 4 is a fragmentary sectional view showing one corner of a loom incorporating a modified form of my invention.

Figure 5 is a fragmentary elevational view showing one corner of a loom incorporating another form of my invention.

Figure 6 is a sectional view thereof, taken through 6—6 of Figure 5.

Reference is first directed to the construction shown in Figures 1, 2 and 3. My hand loom comprises side rails 1 and a bottom rail or cross piece 2, which define the two sides and bottom of a rectangular or square frame. These members are preferably formed of wood and are joined rigidly at their corners and thus define a U-shaped structure. Secured in the extremity of each side rail is a stud bolt 3. Each stud bolt may be prevented from rotation by a locking pin 4. A top rail or cross member 5 is transversely pierced near its extremities to fit over the stud bolts 3. End slots 6 are provided in the top rail so as to bifurcate the ends thereof. A screw

2 collar 7 is threaded on each stud bolt and fits in a corresponding end slot 6. Washers 8 may be provided on opposite sides of the screw collar. By rotation of the screw collars 7, the top rail may be moved toward or away from the side rails 1, to decrease or increase the distance between the top rail and the bottom rail; that is, to vary the length of the axis of said frame which traverses the top and bottom rails.

The side, top, and bottom rails, define a coplanar surface and are provided near their inner margins, with a row of pins 9, around which yarn is threaded. For example, in the manner shown fragmentarily in Figure 3. The yarn shown in Figure 3 represents the grid pattern through which additional yarn is woven. In the course of weaving, which is usually from side to side, the longitudinal strands, that is, the strands between the top and bottom rails, tend to shorten. By adjusting the top rail by means of the screw collars 7, the top rail may be moved to compensate for shortening of the yarn strands. As a result, it becomes feasible to weave a section of cloth which may be substantially in excess of a foot in width and in length. Previously, the maximum limit for a hand loom involving a frame bordered by rows of pins, has been limited to a size between six and eight inches.

Reference is now directed to Figure 4. In this construction studs 11 are secured in the ends of the side rails 1. The side rails are counter-bored as indicated by 12, so as to receive a spring 13. Washers 14 are provided at opposite side ends of the spring 13. In this case, the stud bolts extend through the top rail and receive wing nuts 15. Or if desired, the head or abutment thus formed may be a permanent part of the studs. With this arrangement, the top rail is drawn downwardly against the urge of the springs 13 as the yarn strands are shortened in the course of weaving. This arrangement does not require manual adjustment of the cross member, but is, by reason of the springs, fully automatic.

Reference is now directed to Figures 5 and 6. In this construction, each side rail is provided with a tongue 21 which fits in an end slot 22 provided in the cross rail. The top or cross rail projects laterally beyond the tongues 21 and receives a transversely disposed bolt 23 and wing nut 24, which operate to clamp the extremity of the top rail against the sides of the tongue 21. In this construction the adjustment is manual and made periodically as the weaving progresses, just as is done in the first described structure.

Having fully described my invention, it is to be

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understood that I do not wish to be limited to the details herein set forth, but my invention is of the full scope of the appended claims.

I claim:

1. A hand loom, involving: a U-shaped rigid frame; a crosspiece extending between the extremities of said frame; a surface of said crosspiece and frame being co-planar; projections on the extremities of said U-frame extending longitudinally thereof and being smaller in cross section than said extremities; means for adjusting the position of said crosspiece on said extremities; and a row of pins mounted in said co-planar surface along each side of said U-frame and along said crosspiece, said pins adapted to be wrapped gridwise with yarn through which weaving may proceed, said crossbar being adapted for adjustment toward the U-frame as the weaving progresses to compensate for change in the effective length of said yarn grid.

2. A hand loom comprising a U-shaped rigid frame, tongues integral with and extending longitudinally of the extremities of said U-frame, a crosspiece extending between said extremities and having bifurcated ends which mate with said tongues, bolts extending transversely through said bifurcated ends and said tongues and having nuts associated therewith to cause said ends to grip said tongues, a row of pins along each side of said U-frame and along said crosspiece, the surfaces in which said pins are mounted being coplanar, said crosspiece being adapted for adjustment toward the U-frame.

3. A hand loom comprising a U-shaped rigid frame, tongues integral with the extremities of said U-frame, a crosspiece extending between said extremities and having bifurcated ends adapted to mate with said tongues, bolts extending transversely through said bifurcated ends and having nuts associated therewith to cause said ends to grip said tongues, a row of pins along each side of said U-frame and along said crosspiece, said pins adapted to be wrapped gridwise

with yarn through which weaving may proceed, said crosspiece being adapted for adjustment toward the U-frame as the weaving progresses to compensate for change in the effective length of said yarn grid.

4. A hand loom as set forth in claim 1, wherein: said projections are in the form of stud bolts, said adjusting means are threaded collars on said bolts, and said crosspiece is provided with holes for said bolts and slots crosswise to said holes for said collars.

5. A hand loom as set forth in claim 1, wherein: said projections are bolts anchored in the extremities of said U-frame, said crosspiece is provided with holes to receive said bolts, and said adjusting means include springs urging said crosspiece away from said U-frame, and threaded members are provided to draw said crosspiece toward said U-frame.

6. A hand loom as set forth in claim 1, wherein: said projections are tongues integral with the extremities of said U-frame, said crosspiece includes bifurcated ends to receive said tongues, and said adjusting means are bolts and nuts extending transversely through said bifurcated ends to cause said ends to grip said tongues.

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