

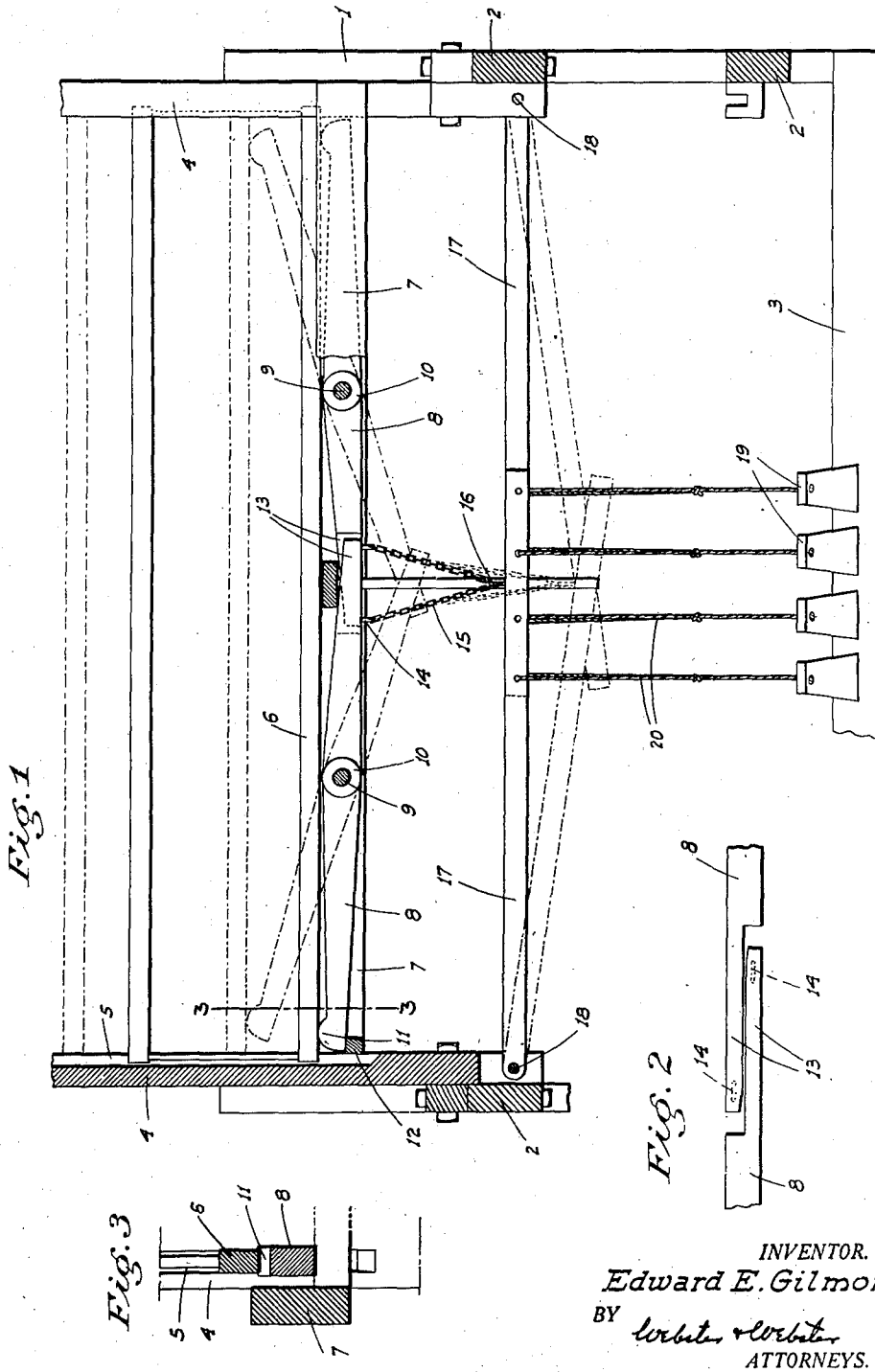
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LOOM HARNESS CONTROL

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LOOM HARNESS CONTROL

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This invention relates in general to loom harness operating mechanism, and in particular is directed to improvements over the structure disclosed in my United States Letters Patent No. 1,911,822, issued May 30, 1933, on Loom harness operating mechanism.

In the previous structure, as will appear by a perusal of the above identified patent, the longitudinally opposed pairs of jacks were disposed in adjacent end to end relation and chain loops were connected at their ends and in relatively close relation on the adjacent ends of the jacks; said loops depending therefrom and each passing through a centrally aligned eye on the corresponding lam. When the lams were moved downward by the foot pedals, the adjacent ends of the corresponding jacks moved apart as they lowered and thus the upper ends of the corresponding chain loops likewise moved apart. With continued downward movement of adjacent ends of the jacks and resulting separation or increasing divergence of the reaches of the chain loops, more force was required on the foot pedals to properly actuate the jacks and raise the harness frames.

It is therefore the principal object of this invention to provide an improved jack and lam assembly for looms of the type described, and an assembly which can be operated from a foot pedal with a minimum of exertion.

Another object of the invention is to provide an improved feature of construction whereby the previously employed end guides for the jacks are eliminated and the jacks arranged to properly support and raise the harness frames without possibility of said jacks escaping from therebeneath due to possible lateral play in said jacks.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawing similar characters of reference indicate corresponding parts in the several views: Figure 1 is a longitudinal sectional elevation of the loom with certain parts removed and looking toward the front.

Figure 2 is a fragmentary top plan view of the adjacent and overlapping ends of one pair of jacks.

Figure 3 is a fragmentary cross-section taken on line 3—3 of Fig. 1.

Referring now more particularly to the characters of reference on the drawing, the loom in general arrangement is substantially the same as shown in the above identified patent and includes corner posts 1 connected by vertically spaced beams 2; there being a cross member 3 connecting the front posts adjacent their lower ends. The cloth brace and warp beams are not shown here, but are supported by corresponding pairs of posts.

Uprights 4 are mounted on the upper beams 2 and the adjacent or inner faces of said uprights are each formed with a series of vertical, closely spaced grooves 5. Harness frames, such as the one shown at 6, are disposed in a vertical position with their ends slidably engaged in grooves 5.

Horizontal and parallel bars 7 extend between and are secured on the uprights 4 slightly below the lowermost plane of the lower edges of the harness frames; such bars being disposed beyond the outermost ones of the harness frames.

Longitudinally aligned pairs of normally horizontal jacks, such as those indicated at 8, extend between the uprights below the harness frames and are rotatably mounted intermediate their ends on common pivot pins 9 mounted between bars 7; proper spacing of the jacks on each pin being accomplished by means of spacing washers 10. Opposite ends of the pairs of jacks terminate adjacent but short of uprights 4 and do not enter the grooves, nor are special guides provided as previously; said ends of the jacks having upwardly rounded end portions 11 which engage the undersides or bottom edges of the corresponding harness frames. In order to assure that the jacks will not escape from the harness frames, said jacks are of substantially greater thickness than the harness frames, as clearly shown in Fig. 3, and further this feature assures a proper and non-rocking face to face engagement between the jacks and the harness frames. Stops 12 mounted transversely on the uprights limit downward movement of the outer ends of the jacks.

At their adjacent ends each pair of jacks is formed with extensions 13 of reduced thickness and offset relative to each other; said extensions overlapping each other for a substantial distance as shown in Fig. 2. Screw eyes 14 are secured into the lower edge of said extensions at the outer ends thereof, and a chain loop 15 is connected at its ends with said screw eyes 14, this loop depending therefrom and passing through a screw eye 16 upstanding, in a vertical plane centrally between vertical planes through screw eyes 14, from a normally horizontal lam 17 disposed be-

neath the jacks and in alinement therewith. There are a number of these lams corresponding to the number of pairs of jacks, and said lams project in alternate relation from common pivots 18 mounted on the uprights 4 at their lower ends. Treadles 19 are hinged on and slope upwardly from cross member 3, and there is a treadle for each lam. Corresponding treadles and lams are connected together in operative relation by flexible cords 20.

In operation, when one of the pedals is depressed, the corresponding lam is swung downward about its pivot resulting in the corresponding pair of jacks swinging about their pivots and raising the engaged harness frame. As the reaches of the chain loop 15 extend upwardly in diverging relation from screw eye 16 and as the upper ends of said reaches are connected with screw eyes 14 on the outer ends of overlapped extensions 13, actuation of the jacks is accomplished with ease. This is due to the fact that screw eyes 14 and the corresponding ends of the extensions move in a direction approaching each other as the lam moves downward and as distinguished from the prior device wherein the eyes on the jacks moved away from each other. The leverage now obtained on the jacks through chain loop 15 is much greater and thus effects the desired ease of actuation.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. In a loom, a movable harness frame, a pair of substantially longitudinally alined jack levers disposed under the harness frame and pivoted intermediate their ends for vertical swinging movement, opposite ends of said levers engaging and raising the harness frame, overlapping extensions on adjacent ends of said jack levers, a lam

mounted beneath said jack levers, means mounting said lam for vertical movement, and connection means between the outer ends of said extensions and a common point on said lam.

2. In a loom, a movable harness frame, a pair of substantially longitudinally alined jack levers disposed under the harness frame and pivoted intermediate their ends for vertical swinging movement, opposite ends of said levers engaging and raising the harness frame, overlapping extensions on adjacent ends of said jack levers, a lam mounted beneath said jack levers, means mounting said lam for vertical movement, and connection elements between said extensions adjacent their outer ends and a common point on the lam; said point being disposed in a plane centrally of said outer ends of the extensions.

3. In a loom, a movable harness frame, a pair of substantially longitudinally alined jack levers disposed under the harness frame and pivoted intermediate their ends for vertical swinging movement, opposite ends of said levers engaging and raising the harness frame, overlapping extensions on adjacent ends of said jack levers, a lam mounted beneath said jack levers, means mounting said lam for vertical movement, and connection elements secured at one end on the lam at a common point and thence extending upwardly in diverging relation, the upper ends of said elements being secured on said extensions beyond the plane of the central line of overlap thereof.

4. In a loom, a movable harness frame, a pair of substantially longitudinally alined jack levers disposed under the harness frame and pivoted intermediate their ends for vertical swinging movement, opposite ends of said levers engaging and raising the harness frame, overlapping extensions on adjacent ends of said jack levers, a lam mounted beneath said jack levers, means mounting said lam for vertical movement, an eye mounted on the lam in the plane of the central line of overlap of said extensions, and a flexible element disposed through said eye and thence extending upwardly in diverging relation, the upper ends of said element being connected on said extensions a substantial distance beyond said plane.

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