

May 30, 1933.

E. E. GILMORE

1,911,822

LOOM HARNESS OPERATING MECHANISM

Filed April 20, 1932

2 Sheets-Sheet 1

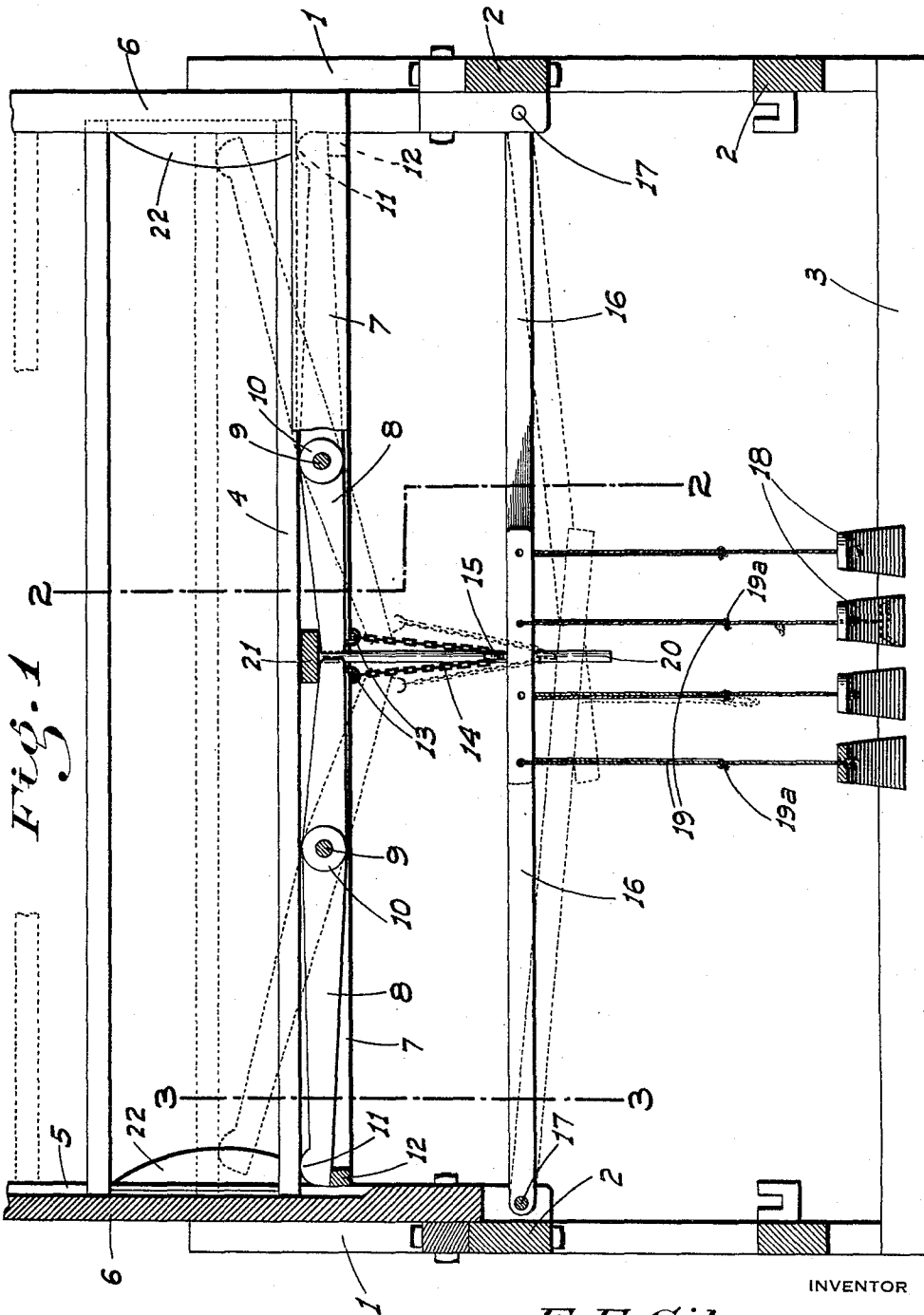


Fig. 1

INVENTOR

E. E. Gilmore

BY

Permy. [Signature]

ATTORNEY

May 30, 1933.

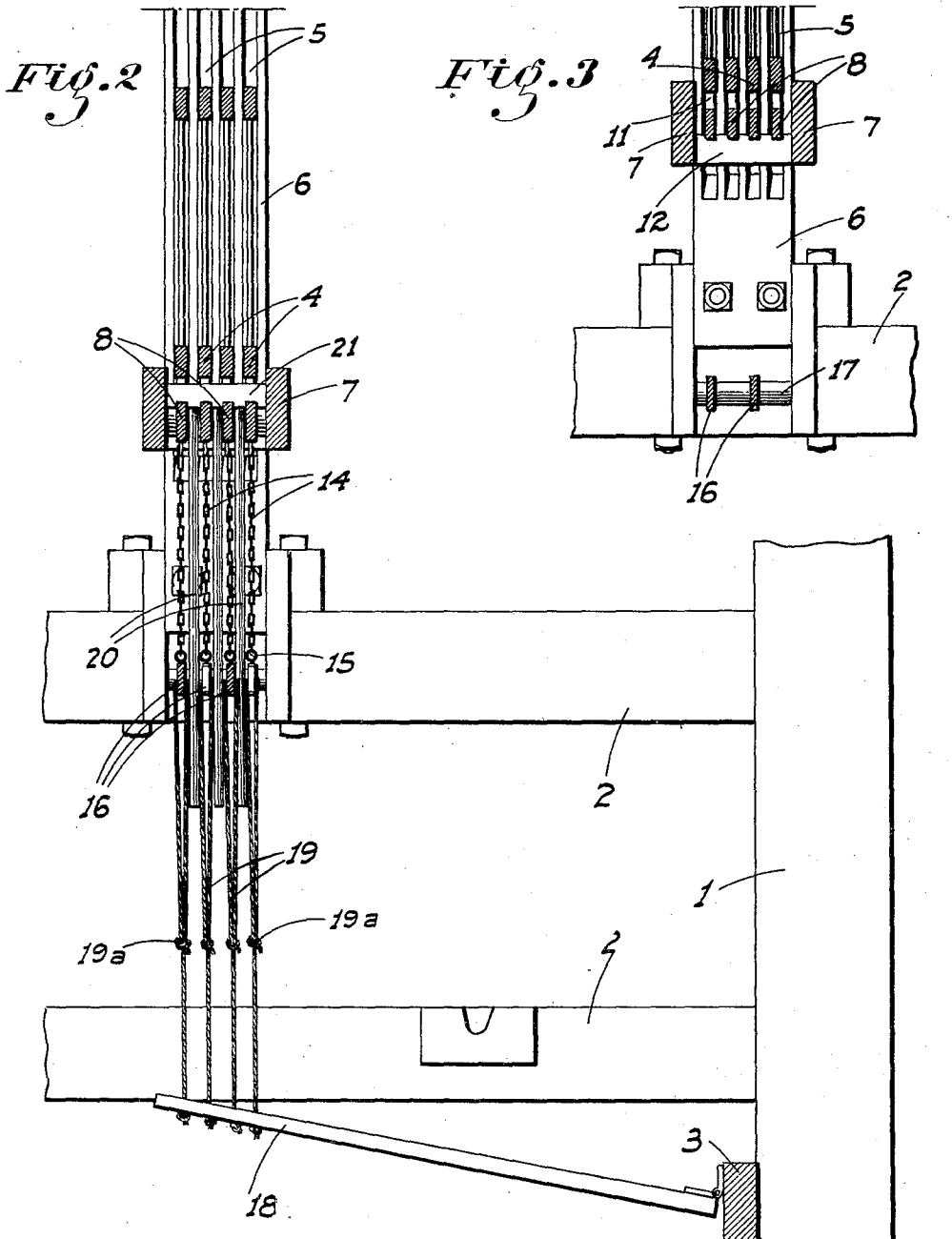
E. E. GILMORE

1,911,822

LOOM HARNESS OPERATING MECHANISM

Filed April 20, 1932

2 Sheets-Sheet 2



INVENTOR

E. E. Gilmore

BY *Samuel W. ...*
ATTORNEY

UNITED STATES PATENT OFFICE

EVERETT E. GILMORE, OF STOCKTON, CALIFORNIA

LOOM-HARNESS OPERATING MECHANISM

Application filed April 20, 1932. Serial No. 606,371.

This invention relates to looms and particularly to one of a portable manually operated type such as are used in homes for weaving mats, draperies etc. The invention also particularly relates to the mechanism for operating the harness of the loom.

In all looms of this type which are now made, as far as I am aware the vertically moving harness frames are actuated from above and the connections between the actuating means and the control treadles below are frequently in the way of and are apt to chafe some of the threads being woven. Also such looms on account of this feature of construction alone are somewhat complicated excessively high and heavy, and are thus hardly suitable for home use.

The principal object of my invention is to avoid the above objectionable feature by arranging the harness operating mechanism in such a manner that it is entirely disposed below the harness, so that there is no interference with the threads of the article being woven at any time and the height of the loom is kept down to a minimum. Also my improved mechanism, while very effective, is simple and light and easy to manipulate, besides being of a very inexpensive nature.

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 drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a longitudinal section of a loom with certain parts removed and looking toward the front.

Fig. 2 is a transverse section on the line 2-2 of Fig. 1.

Fig. 3 is a fragmentary transverse section on the line 3-3 of Fig. 1.

Referring now more particularly to the characters of reference on the drawings, the frame of the loom comprises corner posts 1 connected by vertically spaced beams 2. A bar 3 connects the front posts at the bottom; the corresponding pairs of posts supporting the cloth brace and warp beam (not shown) in the usual manner, while the har-

ness frames 4 are mounted in connection with the upper beams 2 between the posts.

The ends of the harness frames of which there may be any desired number slidably project into vertical grooves 5 formed in somewhat closely spaced relation in uprights 6 secured to and upstanding from said upper beams 2. Horizontal bars 7 extend between and are secured against the opposite sides of the uprights adjacent the plane of the lowermost position of the harness.

Normally disposed between the bars 7 in transverse alinement with the harness frames are jacks 8 arranged in longitudinally opposed pairs, there being one pair for each such frame. The jacks of each set are turnable independently of each other on a common pivot pin 9 supported by the bars 7, with spacer disks 10 about the pin between the jacks to hold the same in properly separated relationship. The opposite ends of the jacks extend to adjacent the uprights 6 and the ends of the harness frames, and are formed with rounded noses 11 on top which engage the underside of the corresponding harness frames.

At said ends the jacks are normally supported on rests 12 secured to the bars 7, thus also limiting the downward movement of the harness frames which are supported by the jacks. When the harness and jacks are thus disposed the jacks are horizontal and are completely concealed between the bars 7.

The jacks at their adjacent ends nearly meet each other and have hooks depending therefrom. Chain loops 14 depend from the hooks of the corresponding pairs of jacks and pass through eyes 15 secured on and upstanding from the upper edges of the individual lams 16. There are as many lams as there are harness frames and they are disposed in alternating relation in transverse alinement with the jacks and harness. Alternate ones of the lams are pivoted in common in connection with the lower ends of the uprights 6 as shown at 17.

Hinged on the bar 3 and extending rearwardly therefrom are treadles 18 of suitable

design there being as many treadles as there are lams. The treadles all extend under the lams and each one is detachably connected to any desired pair of lams by flexible elements such as cords 19, and the treadles are of course normally disposed with an upward slant toward their free end so that they can be depressed by the feet a certain distance. The lams are somewhat thin and light, and to prevent their free ends engaging against adjacent lams when they are depressed and are angularly disposed, I provide separating fingers 20 which depend from a block 21 supported between the bars 7 above the jacks in the plane of their adjacent ends.

In operation therefore it will be seen that when any treadle is depressed whatever pair of lams is connected thereto will be depressed likewise pulling down on the adjacent ends of the corresponding pairs of jacks. The opposite ends of the jacks will be lifted, raising the corresponding harness frames at both ends simultaneously so that such raising takes place evenly and without any bending of the frames in their grooves. As said ends of the jacks are raised they move away from the bars 7 and I therefore provide guides 22 secured to the uprights 6 and which are designed to retain said jack ends enclosed in all positions of the same.

The cords 19 are provided with adjustable slip-knots 19a so that adjustment in their length may be made to compensate for the difference in distance from the pins 9 to the points of attachment of the different cords with the lams, and for the difference in distance from the treadle hinges to the points of attachment of the cords with the treadles. In this manner, both the lams connected to any one treadle will be depressed the same distance with a depression of the corresponding treadle.

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 plurality of transversely spaced harness frames, jack levers for the different frames under and engaging the lower edges of the same, pivotally mounted lams under and individually connected to the levers, treadles under the lams and equal in number to the number of frames, and

flexible pull connections between each treadle and a predetermined pair of the lams.

2. In a loom, a plurality of transversely spaced harness frames, pairs of jack levers for the different frames under and engaging the lower edges of the same, treadles extending transversely of and under the levers and frames spaced apart lengthwise thereof, pivotally mounted lams disposed between the levers and treadles and extending lengthwise of the levers, the lams being the same in number as the harness frames, a connection between each lam and the corresponding pair of levers, and a flexible pull element interchangeably connected to each treadle and a predetermined pair of the lams.

3. In a loom, a plurality of transversely spaced harness frames, jack levers for the different frames under and engaging the lower edges of the same, treadles extending transversely of and under the levers and frames and spaced apart lengthwise thereof, pivotally mounted lams to the same number as the harness frames disposed between the levers and treadles and extending lengthwise of the former, connections between the lams and the corresponding levers, the lams overlapping each other so that each lam overlies all the treadles, and flexible pull elements connecting the treadles and predetermined pairs of lams.

4. A structure as in claim 3, with spacer elements depending between the lams at their overlapping portions.

5. In a loom, a harness frame, a pair of jack levers for said frame under and engaging the lower edge of the same, a pivoted lam under one lever and projecting beyond the adjacent end of the other lever, connection means between said lam and both levers, a treadle under the lam, and a pull connection between said treadle and the lam.

In testimony whereof I affix my signature.
EVERETT E. GILMORE.