(No Model.)

G. F. HUTCHINS.

LAY MOTION FOR LOOMS.

No. 453,717 Patented June 9, 1891.

Fig. 1

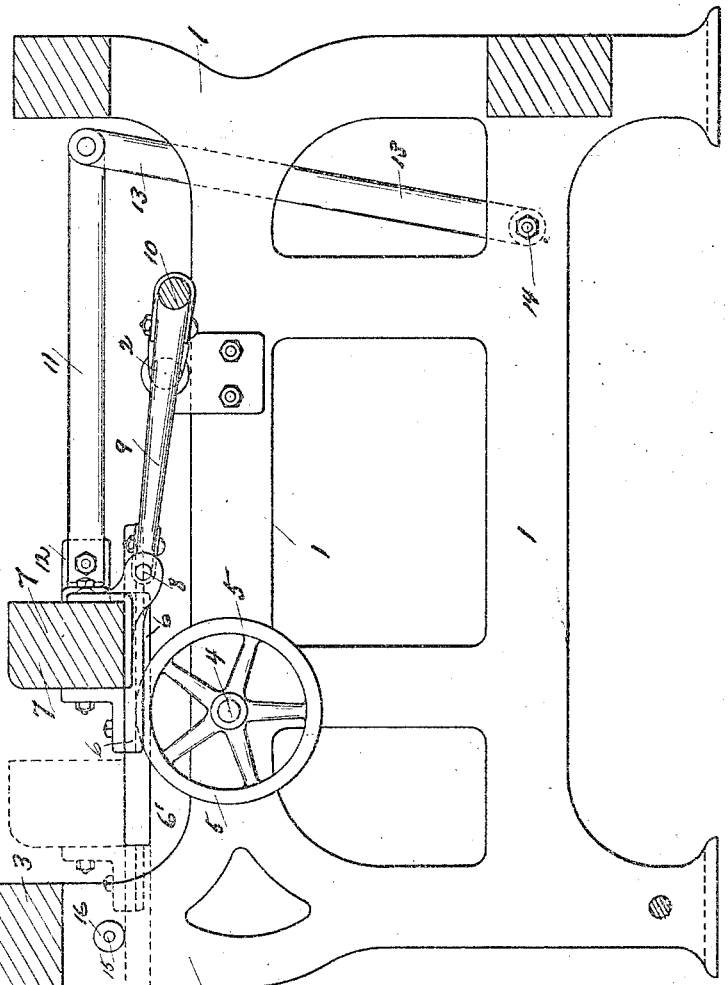
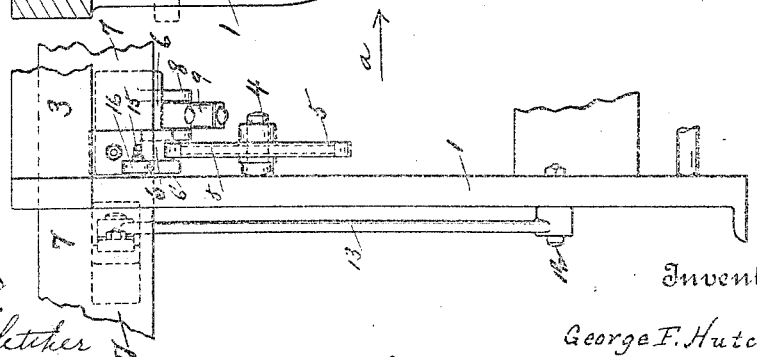


Fig. 2



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UNITED STATES PATENT OFFICE.

GEORGE F. HUTCHINS, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO THE KNOWLES LOOM WORKS, OF SAME PLACE.

LAY-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 453,717, dated June 9, 1891.

Application filed November 7, 1890. Serial No. 370,613. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. HUTCHINS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Lay-Motions for Looms; and I do hereby declare that the following is a full, clear, and exact description thereof, which, in connection with the drawings making a part of this specification, will enable others skilled in the art to which my invention belongs to make and use the same.

My invention relates to looms, and more particularly to the lay-motion of a loom.

The object of my invention is to make a loom in which the lay shall have a substantially horizontal motion instead of a circular motion ordinarily given to the lay of a loom.

My invention consists in certain novel features of construction and operation of the lay of a loom, as will be hereinafter fully described.

Referring to the drawings, Figure 1 is a sectional side elevation of portions of a loom with my improvements applied thereto, and Fig. 2 is a partial front elevation looking in the direction of arrow *a*, Fig. 1.

In the accompanying drawings, 1 is the loom side, 2 the crank-shaft, and 3 the breast-beam, all as ordinarily constructed. On the stud 4 on the loom side is supported a wheel or sheave 5, which turns loosely thereon. On said sheave rests the shoe 6, secured to the under side of the lay 7. From the pin 8, in the rear part of the shoe 6, extends the connecting-rod 9 to the crank 10 on the shaft 2. An arm 11 is rigidly secured to a stand 12 on the rear side of the lay 7. The opposite end of the arm 11 is pivoted to the swinging arm 13, which is pivoted at its lower end on a stud 14, secured to the loom side.

The purpose of the arm 11, connected with the swinging arm 13 and rigidly attached to the lay 7, is to steady the lay (which simply rests on the sheave 5) and retain it in its upright position as the lay carrying the reed (not shown) beats up the filling. The length of the arm 11 (rigidly attached at one end to the lay) is such that the tilting motion given to the lay by the arm 11 and swinging arm 13 is very slight and scarcely perceptible.

On a stud 15 under the breast-beam 3 is supported a roll 16, under which passes the projecting end 6′ of the shoe 6 when the lay 7 is moved into its forward position.

The operation of my improvements will be readily understood by those skilled in the art from the above description, in connection with the drawings, and is as follows: It will be understood that there is a series of sheaves 5, on which the lay 7 is supported by the shoes 6. The lay 7 is moved back and forth by the crank 10 through the connecting-rod 9, and is retained in its upright position by the arm 11, connected with the swinging arm 13. When the lay 7 is in its extreme forward position, (see dotted lines, Fig. 1,) the arm 6′ of the shoe 6 is under the roll 16, and the shoe 6, secured to the under side of the lay, is held firmly between the roll 16 and the sheave 5, thus holding the lay firmly at the forward extremity of its stroke.

It will be understood that the details of construction of my improvements may be varied somewhat from what is shown, if desired.

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

1. In a loom, the combination, with the lay, having a substantially horizontal motion, and a swinging arm, of an arm rigidly attached at one end to said lay and at the other end to said swinging arm, for the purpose stated, substantially as set forth.

2. In a loom, the combination, with the lay provided with supporting-shoes upon its under surface, and wheels or sheaves upon which said shoes rest and move, and a swinging arm, of an arm rigidly attached at one end to said swinging arm and at the other end to said lay, and a crank-connector to a crank-arm on the crank-shaft, and said crank-arm and crank-shaft, substantially as set forth.

3. In a loom, the combination, with the lay, having a substantially horizontal motion and provided with supporting-shoes upon its under surface, and wheels or sheaves upon which said shoes rest and move, of a roll under the breast-beam, under which the forward ends of the shoes are adapted to extend to hold the lay firmly at the forward extremity of its stroke, and means for operating said lay, substantially as set forth.

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