

July 2, 1935.

E. R. HOLMES
REED MOTION FOR LOOMS
Filed Feb. 16, 1934

2,007,120

2 Sheets—Sheet 1

FIG. 2

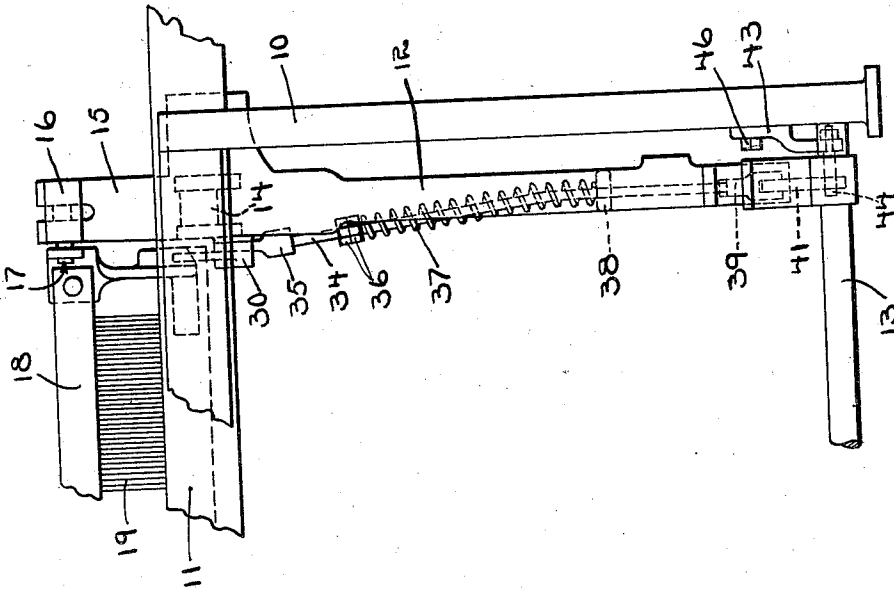
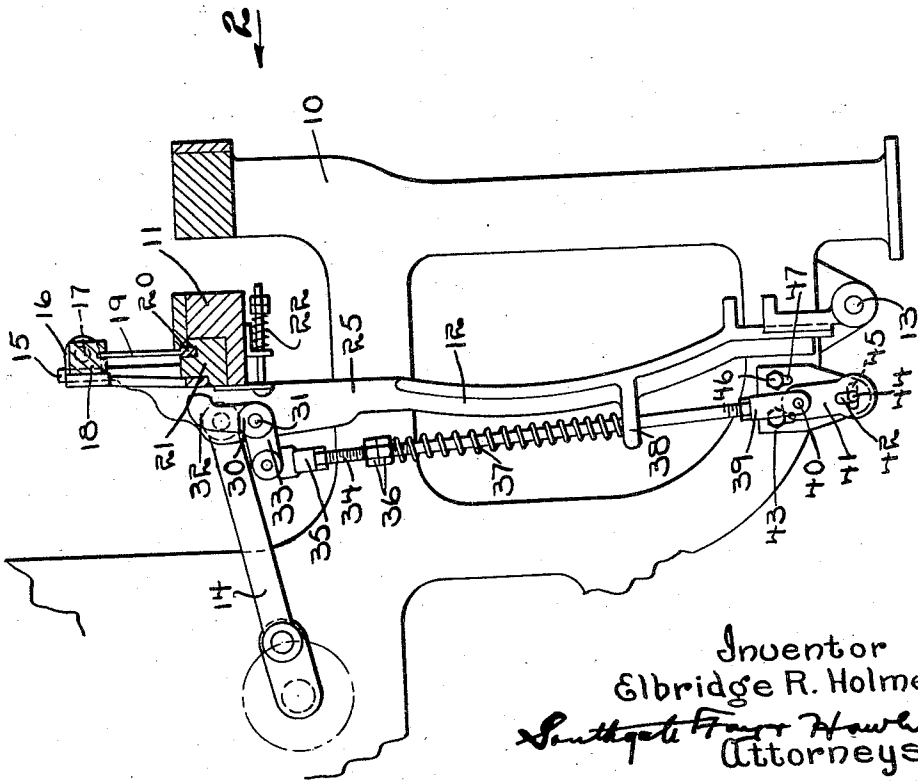


FIG. 1



Inventor
Elbridge R. Holmes
Southgate Frazee Howley
Attorneys

July 2, 1935.

E. R. HOLMES
REED MOTION FOR LOOMS
Filed Feb. 16, 1934

2,007,120

2 Sheets-Sheet 2

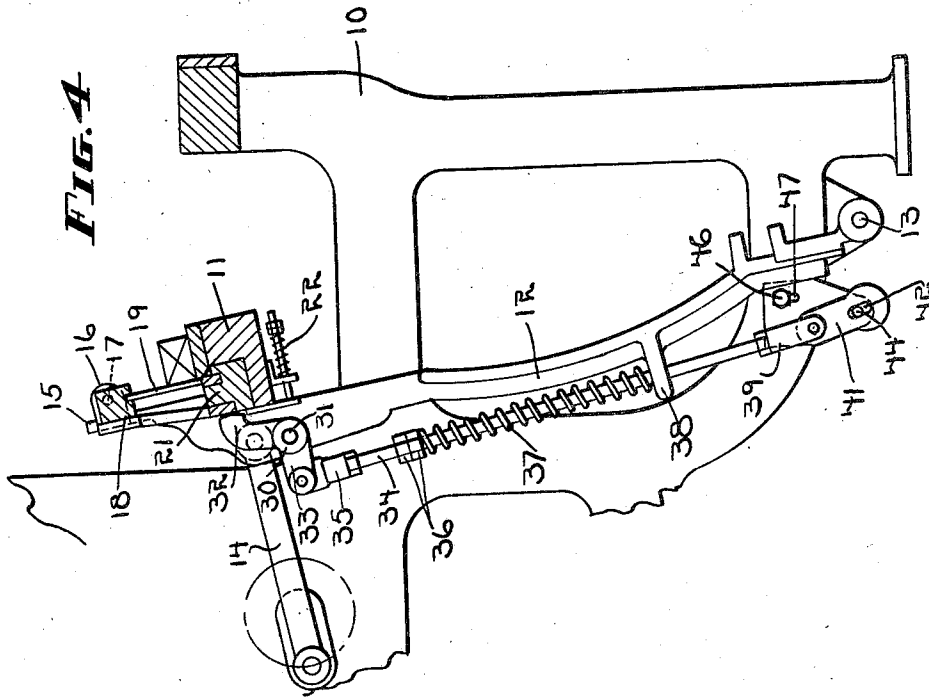


FIG. 4

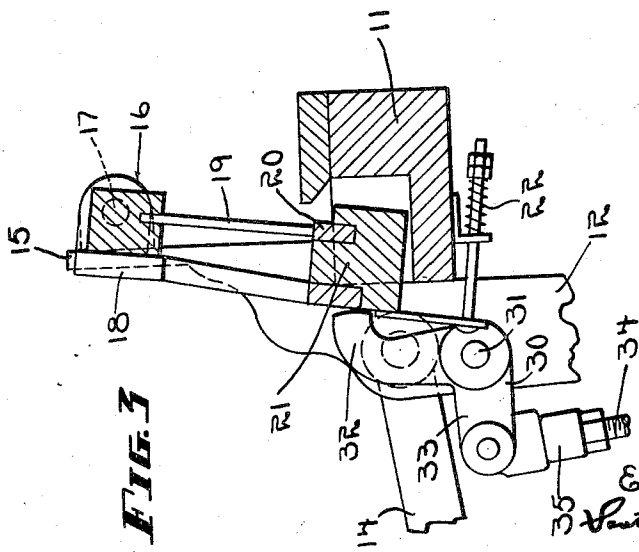


FIG. 3

Inventor
Elbridge R. Holmes
Southgate Fay & Howley
Attorneys

UNITED STATES PATENT OFFICE

2,007,120

REED MOTION FOR LOOMS

Elbridge R. Holmes, Worcester, Mass., assignor
to Crompton & Knowles Loom Works, Worcester,
Mass., a corporation of Massachusetts

Application February 16, 1934, Serial No. 711,534

5 Claims. (Cl. 139-188)

This invention relates to improvements in loose reeds for looms and it is the general object of the invention to provide a loom wherein the reed is subjected to but light pressure at the time of beat-up but is braced so as to provide a proper guide for the shuttle when the lay is in rear position.

In the weaving of certain fabrics it is desirable to give the weft a light beat to accommodate any change in position of the fell which may have resulted from uneven feeding of the warp or slipping of the cloth on the take-up roll. It is an important object of my present invention to accomplish this result by mechanism carried in large part by the lay and including a rod or the like which is guided by the lay and has associated therewith a spring effective to exert substantially uniform pressure on the reed when the lay is in rear position but so controlled as to relieve the reed when the lay is in forward position.

The reed is released by causing the rod to pull against a fixed stop, but since the rod is guided by the lay, a slight differential motion between the rod and the stop is likely to result. In order that this differential motion and the strains which it produces may be relieved I provide a floating connection between the rod and the stop.

With these and other objects in view which will appear as the description proceeds, my invention resides in the combination and arrangement of parts hereinafter described and set forth in the claims.

In the accompanying drawings, wherein a convenient embodiment of my invention is set forth,

Fig. 1 is a side elevation of a loom made according to my present invention, parts being in section,

Fig. 2 is a front elevation taken in the direction of arrow 2, Fig. 1,

Fig. 3 is a detailed view of the upper portion of Fig. 1 with the reed swung to back position, and

Fig. 4 is a view similar to Fig. 1, but with the lay shown in rear position.

Referring to the drawings, the loom frame 10 has a lay 11 mounted on swords 12 one of which is shown in Fig. 1. The swords swing about a rocker pin 13 by means of a crank connector 14. The upper extension 15 of the lay has vertically adjusted bearings 16 with pins 17 which form pivotal supports for the upper end of a reed structure 18. The latter carries a reed 19 with a bottom rail 20 which as shown herein may be operatively associated with a back stay 21. The back stay is received in a longitudinal notch in the back

of the lay and if desired the rail and backstay may be held in the normal position shown in Fig. 1 by light springs 22 which position the reed normally at the time of beat-up but yield under relatively light pressure. So far as certain aspects of my invention are concerned these light springs are not essential and may be replaced by any other structure which will offer but light resistance to the reed at beat-up.

The matter thus far described may be of common construction and except for the manner of controlling the swinging of the reed as set forth hereinafter may operate in the usual manner.

In carrying my invention into effect I provide a control lever 30 pivoted as at 31 to some part of the lay, such as the lay sword 25, and provide the upper end of this lever with a finger 32 which bears against the backstay as shown herein, although it is sufficient for the purposes of the present invention if this finger has operative connection with the reed by any other connection effective to hold the reed forwardly by a force derived from this finger 32. A description will be given of one lever 30 and its control parts, but it is to be understood that more than one of these levers can be employed if desired.

A rearwardly extending arm 33 of the lever is connected pivotally to the upper end of a rod 34 by means of an adjustable rod head 35. Adjustable nuts 36 on the rod receive the upward thrust of a compression spring 37 which surrounds the rod. The rod passes freely through a guide boss 38 on the lay sword, and the downward pressure of the spring 37 is exerted on this boss. The lower end of the rod has an adjustable forked rod head 39 pivotally connected as at 40 to a link 41, having a vertical slot 42 therein.

A stand 43 secured to the loom frame carries a stop stud 44 adjustable backwardly and forwardly in a slot 45 in the stand. The latter may be adjusted vertically by means of bolts 46 which pass through vertical slots 47 in the stand. Provision is therefore made to adjust the stud 44 vertically and horizontally. As shown in Fig. 1 the axis 13 of the lay is forward of the stop stud 44 and the normal relation of the parts is such that the axis of the rod is substantially coincident with the line joining pivot 40 and the stop stud 44.

In operation, when the lay is in rear position as shown in Fig. 4, the rod is down relatively to the stop stud 44 and the link 41 is in low position. The spring 37 is therefore free to act through the nuts 36 and rod 34 to hold the lever 30 firmly against the backstay, thereby holding the reed in normal shuttle guiding position.

As the lay moves forward the link 41 is raised due to the angular motion of the lay and at some predetermined point before the lay reaches front center the bottom of the slot 42 will reach the stop stud 44 after which further upward movement of the link and the bottom of the rod will be prevented. Continued forward movement of the lay with arm 33 held against upward movement will result in a counter-clockwise movement of lever 30 as viewed in Fig. 1, resulting in movement of the finger 32 rearwardly with respect to the backstay, thereby freeing the latter to permit the reed to strike the fell with a force unaffected by the pressure of spring 37. The adjustability of the rod heads 35 and 39 and the stand 43 affords means for varying the point at which the reed can be freed from control of springs 37 during the forward motion of the lay.

Since the boss 38 guides the rod 24 the lower end of the latter will have an angular motion around axis 13 tending to move the rod 24 out of line with the stop stud. The link 41 accommodates this motion and avoids straining of the parts.

From the foregoing it will be seen that I have provided a simple means for supporting the reed when the lay is in rear position so as to guide the shuttle and to relieve the reed as the lay approaches front center to effect a light beat-up. It will further be seen that the compression spring is carried by the lay and exerts a uniform pressure on the reed when the lay is in rear position, so that excessive wear and pressures are thereby avoided.

Having thus described my invention it will be seen that changes and modifications may be made therein by those skilled in the art without departing from the spirit and scope of the invention and I do not wish to be limited to the details herein disclosed, but what I claim is:

1. In a loom, a lay, a reed supported by and capable of movement relatively to the lay, a member to be operatively related to the reed, a rod carried by the lay and operatively related to the member, a spring surrounding the rod and supported by the lay and effective normally by a force transmitted through the rod to hold the member operatively related to the reed to cause the latter to be firm relatively to the lay, and means to engage the rod and prevent free movement thereof with the lay as the latter approaches forward position, thereby freeing the reed from any force derived from the spring.

2. In a loom, a lay, a reed supported by and capable of movement relatively to the lay, a member to be operatively related to the reed, a rod pivoted to the member and guided by the

lay, a spring carried by the lay to urge the rod toward the member and normally effective to hold the reed firm relatively to the lay by a force transmitted through the rod, and a stop on the loom independent of the lay to be operatively related to the rod as the lay moves forwardly to arrest free motion of the rod with the lay and effective to move the member to a position where the latter is ineffective to transmit the force of the spring to the reed.

3. In a loom, a lay movable backwardly and forwardly, a reed supported by and capable of movement relatively to the lay, a lever pivoted to the lay and movable into operative relation with the reed to hold the latter firm relatively to the lay and movable out of operative relation with the reed to render said reed movable relatively to the lay without restraint on the part of the lever, a rod pivoted to the lever and guided by the lay, a spring surrounding the rod and effective normally to hold the lever in operative position relatively to the reed, and a stop to arrest free movement of the rod as the lay moves forwardly and effective to move the lever out of operative relation with respect to the reed.

4. In a loom, a lay movable backwardly and forwardly, a reed supported by and capable of movement relatively to the lay, a lever pivoted to the lay and movable into operative relation with the reed to hold the latter firm relatively to the lay and movable out of operative relation with the reed to render said reed movable relatively to the lay without restraint on the part of the lever, a rod pivoted to the lever and guided by the lay, a spring surrounding the rod and effective normally to hold the lever in operative position relatively to the reed, a stop to arrest free movement of the rod as the lay moves forwardly and effective to move the lever out of operative relation with respect to the reed, and a link between the rod and stop movable relatively to the stop and rod.

5. In a loom operating with a shuttle, a lay to occupy front and rear positions, a reed loosely mounted on the lay, a member to be operatively related to the reed to hold the latter in shuttle guiding position when the lay is in rear position, a rod connected to the member, a spring acting through the rod tending to move the member toward the reed, a guide for the rod movable with the lay and engaging one end of the spring, a stop, and a link interposed between the rod and stop, said stop effective when the lay approaches front position to resist motion of the rod and thereby move the member relatively to the lay out of operative relation with the reed.

ELBRIDGE R. HOLMES.