

Feb. 22, 1938.

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2,109,444

LOOM REED ADJUSTING MEANS

Filed Jan. 8, 1937

Fig. 1.

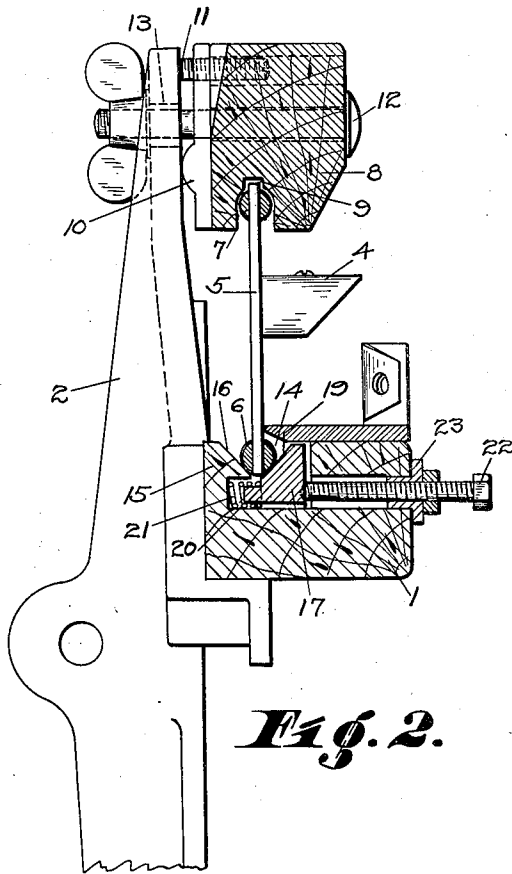
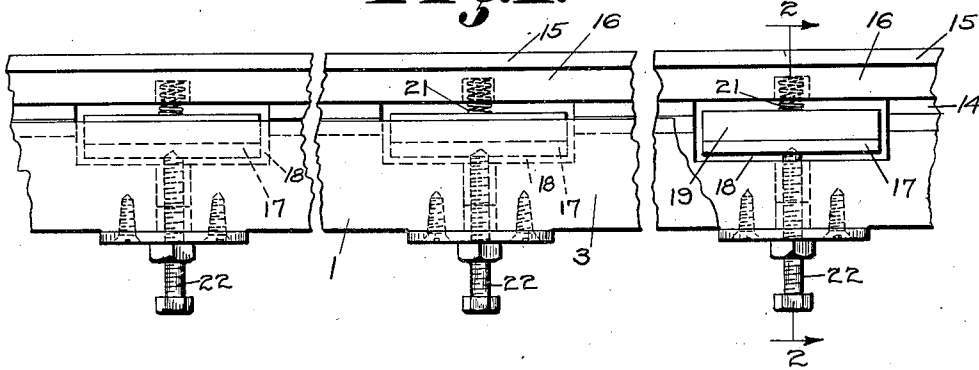


Fig. 2.

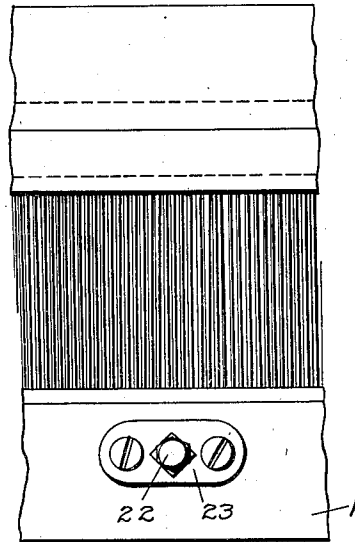


Fig. 3.

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2,109,444

LOOM REED ADJUSTING MEANS

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Application January 8, 1937, Serial No. 119,648

5 Claims. (Cl. 139—188)

The present invention pertains to looms of the type having a lay and a reed, and has more particular reference to means for supporting and adjusting the reed on the lay.

In looms of the fixed reed type as constructed prior to the present invention, proper alignment of the shuttle guiding surface of the back box plate with the reed was effected by adjusting the back box plate. It has also been proposed to provide means for adjusting the bottom or the top of a fixed reed to square the reed with the race plate of the lay, but such adjusting means as heretofore proposed have not been satisfactory and have not been used commercially.

A principal object of the present invention is to provide, in a fixed-reed loom having a lay and a reed, means for adjusting the lower reed rib forwardly and rearwardly on an inclined wall at the back of a groove in the lay, and adjustable means for supporting the top of the reed, whereby the reed may be conveniently adjusted into alignment with the back box plate and may be firmly held in adjusted position.

The foregoing and other objects of the invention are accomplished in the construction illustrated on the accompanying drawing, of which:

Fig. 1 is a plan view of a portion of a loom lay, with the reed removed, showing the preferred embodiment of the lower reed adjusting means;

Fig. 2 is a view showing the lay of Fig. 1, and certain other parts, in section on line 2—2 of Fig. 1; and

Fig. 3 is a fragmentary view of the same in front elevation.

The drawing shows part of a lay beam 1 (hereinafter called a lay) which is fixed to swords, as 2, and is thereby reciprocable toward and from the front of the loom. The lay extends widthwise of the loom, as is well-known in the art, and is provided on its top surface with a race plate 3 along which the shuttle (not shown) travels as it is picked from side to side of the loom. The lay has at each end a shuttle box which may include a back box plate 4 having a shuttle guiding surface.

A reed 5 is fixedly mounted on the lay in a manner to be hereinafter described. The reed may be of any suitable usual construction, but as shown it comprises parallel vertical dents which are supported in a rounded lower rib 6 and a rounded upper rib 7. The top reed rib is supported in a hand rail 8 which is carried by the lay swords and the lower rib is positioned in a groove which is formed in the top surface of the lay and extends longitudinally thereof. The front

side of the reed dents, which is toward the right on Fig. 2, must be accurately aligned with the shuttle guiding surface of the back box plate, and the reed must be firmly and rigidly supported in order that it may properly beat in the picks of filling and may not become worn from being loosely held.

In accordance with the present invention, alignment of the reed and back box plate is effected by adjusting the reed, and the adjustment is accomplished by means which provides the desired ease and accuracy of adjustment while still holding the reed firmly in adjusted position. To this end, I have provided a novel means for adjusting the lower reed rib 6 in the lay and adjustable means for supporting the hand rail.

In the embodiment shown on the drawing, the hand rail 8 is provided in its lower face with a longitudinal groove 9 which has arcuate portions resting on the rounded upper surface of the reed rib 7, and a recessed portion to provide clearance for the upper ends of the reed dents. A plate on the back of the hand rail has a projection 10 which bears against the sword 2. A set screw 11 is threaded into this plate above the projection 10 and bears against the front face of the sword. A bolt 12 passes through the hand rail and plate and through a vertical slot 13 in the sword. It will be apparent that the hand rail may be moved up or down to cause the arcuate surfaces of the groove 9 to press firmly on the reed rib 7 and the hand rail may also be so adjusted by screw 11 as to move the reed rib slightly forwardly or rearwardly.

In the said embodiment, the lay 1 is provided with a reed cut, so-called, which consists of a groove 14 formed in the upper surface of the lay and extending longitudinally thereof for receiving the lower reed rib 6. This reed cut is positioned slightly forwardly from the back edge of the lay, being directly below the reed cut 9 in the hand rail. The ridge-like projection 15 forming the back wall 16 of the reed cut 14 is integral with the lay 1. The wall 16 is inclined downwardly and forwardly and the lower reed rib 6 rests on this inclined wall. Adjustment of the lower reed rib is accomplished by means which move the same forwardly or rearwardly on the inclined wall.

The preferred adjusting means for the lower reed rib includes a plurality of members 17, 17 positioned in recesses 18, 18 in the lay. The recesses 18 are spaced apart longitudinally of the lay and extend forwardly from the reed cut 14 beneath the race plate 3, the latter being broken away at the right hand side of Fig. 1 to expose

the underlying recess. One of the members 17 is positioned in each of the recesses 18. These members are in the form of blocks, preferably of metal, each having a downwardly and rearwardly inclined wall 19 which engages the front side of the lower reed rib. Each of the blocks 17 is provided with a rearwardly extending projection 20 and a coiled compression spring 21 is positioned on this projection. The spring 21 is compressed between the lay and its block 17 and yieldingly urges the latter forwardly. The surfaces 19 are in alignment longitudinally of the lay.

The position of each block 17 in its recess is determined by a set-screw 22 which is threaded into a bushing 23 fixed to the front of the lay. Each screw 22 extends rearwardly through the lay and engages the front side of a block 17. It will be apparent that by turning the set-screws 22 the lower reed rib 6 may be moved forwardly or rearwardly on the inclined wall 16.

When a reed is to be installed in a loom, the lower reed rib is inserted into the reed cut 14 and the hand rail 8 is installed with the reed cut 9 loosely engaging the upper reed rib merely to prevent the reed from falling. Then the set-screws 22 are manipulated to bring the bottom reed rib into proper position on the inclined wall 16. Then the hand rail is pushed firmly down onto the reed and the set-screws 11 and bolts 12 manipulated to bring the upper reed rib 7 into its proper position.

Alignment of the reed and the shuttle guiding surfaces of the back box plate is quickly and easily accomplished by adjusting the reed as above described. An essential feature of the construction provided by the present invention is that the lower reed rib rests on and is adjusted on an inclined wall such as the wall 16. Due to the inclination of the wall, the reed may be firmly wedged in position, thereby preventing the cloth imperfections and the wearing of the reed which would result if the reed were but loosely supported. Such inclination of the wall also facilitates the accurate adjustment of the reed which is of importance in view of the fact that misalignment of the reed by only a few thousandths of an inch may result in very rapid wearing of the shuttle.

Having fully disclosed the preferred embodiment of my invention, I claim:

1. The combination of a loom lay having a longitudinal reed cut in its upper surface for receiving a reed rib, the back wall of said reed cut being inclined from the top thereof downwardly and forwardly, a reed having a rounded lower rib positioned in said reed cut and resting on said inclined wall, movable members positioned in recesses in the lay in front of said reed rib, the rear surface of each of said members being inclined downwardly and rearwardly and engaging the front side of said reed rib, means for adjusting said members forwardly and rearwardly to thereby move said reed rib forwardly and rearwardly on said wall, and means for supporting the top of the reed.

2. The combination of a loom lay having a longitudinal reed cut in its upper surface for re-

ceiving a reed rib, the back wall of said reed cut being formed integrally with the lay and being inclined downwardly and forwardly, a reed having a rounded lower rib positioned in said reed cut and resting on said inclined wall, movable members positioned in recesses in the lay in front of said reed rib, said members engaging the front side of said rib, means for adjusting said members forwardly and rearwardly to thereby move said reed rib forwardly and rearwardly on said wall, and vertically adjustable means for supporting the top of the reed.

3. The combination of a loom lay having a longitudinal reed cut in its upper surface for receiving a reed rib, the back wall of said reed cut being formed integrally with the lay and being inclined from the top thereof downwardly and forwardly, a reed having a rounded lower rib positioned in said reed cut and resting on said inclined wall, movable members positioned in recesses in the lay in front of said reed rib, the rear surfaces of said members being in alignment longitudinally of the lay and being in engagement with the front side of said reed rib, means for adjusting said members forwardly and rearwardly to thereby move said reed rib forwardly and rearwardly on said inclined wall, and vertically adjustable means for supporting the top of the reed.

4. The combination of a loom lay having a longitudinal reed cut in its upper surface for receiving a reed rib, the back wall of said reed cut being inclined downwardly and forwardly, a reed having a rounded lower rib positioned in said reed cut and resting on said inclined wall, adjustable means for supporting the top of said reed, and means for adjusting said reed rib forwardly and rearwardly on said wall; the last said means comprising a block positioned in a recess in the lay in front of said reed rib, a coiled spring compressed between the lay and said block and urging the latter forwardly, and an adjusting screw engaging said block for moving the same rearwardly, the rear surface of said block being inclined downwardly and rearwardly and being in engagement with the front side of said reed rib.

5. The combination of a loom lay having a longitudinal reed cut in its upper surface for receiving a reed rib, the back wall of said reed cut being formed integrally with the lay and being inclined from the top thereof downwardly and forwardly, a reed having a rounded lower rib positioned in said reed cut and resting on said inclined wall, adjustable means for supporting the top of said reed, and means for adjusting said reed rib forwardly and rearwardly on said inclined wall; the last said means comprising a plurality of blocks positioned in recesses in the lay in front of said rib, a plurality of coiled springs each of which bears between the lay and one of said blocks to urge the latter forwardly, and adjusting screws engaging said blocks for moving the same against the action of said springs, the rear surface of each of said blocks being inclined downwardly and rearwardly and being in engagement with the front side of said reed rib.

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