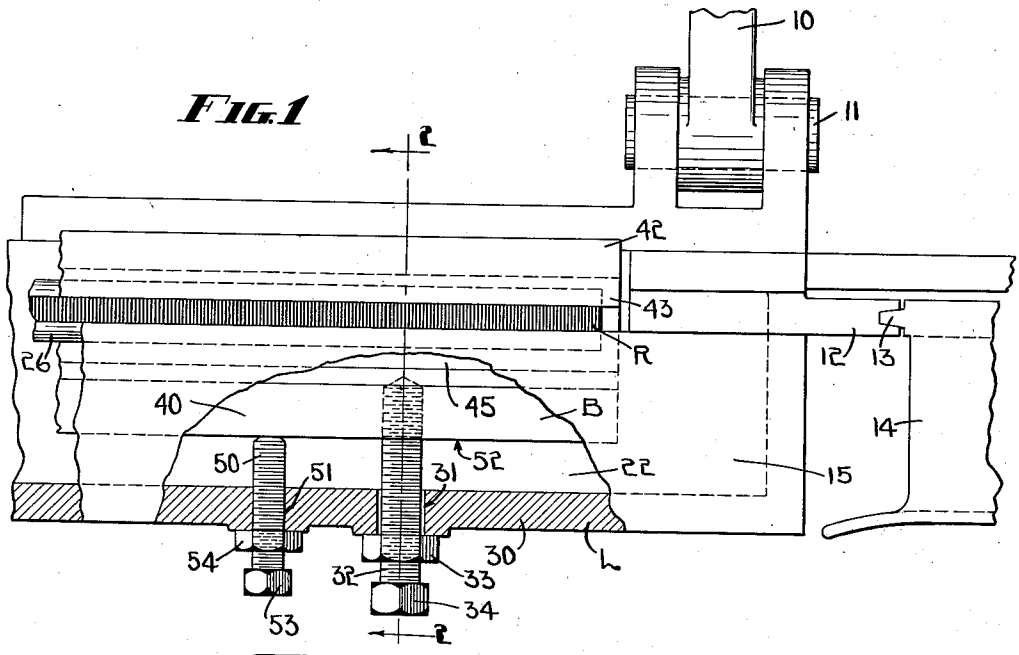
June 13, 1939. W. M. WATTIE 2,161,787

BACKSTAY FOR LOOM REEDS

Filed April 18, 1938

FIG. 1



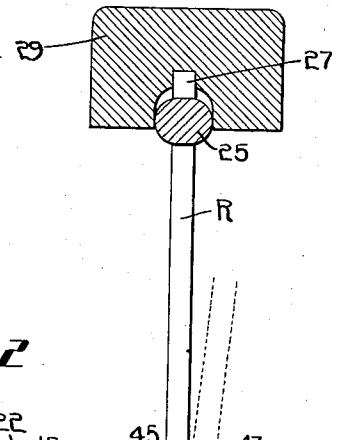
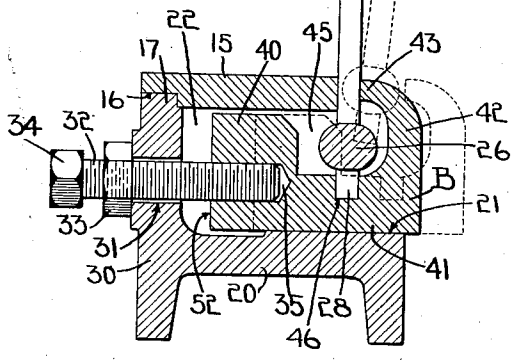




FIG. 2




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## BACKSTAY FOR LOOM REEDS

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6 Claims. (Cl. 139—188)

This invention relates to improvements in backstays for loom reeds and it is the general object of the invention to provide such a construction which shall be easily manipulated when it is desired to remove the reed from the loom.

The top of a loom reed is generally held by the hand rail while the lower part is received by a so-called backstay located behind the reed where it is comparatively inaccessible. It is an important object of my present invention to provide securing means for the backstay accessible from the front of the lay and capable of both loosening and tightening the backstay and adjusting it relatively to the lay.

In heavy looms of the type to which my present invention more particularly relates the backstays as heretofore constructed have been comparatively long and of thin section, and because of the difficulty of handling them they frequently drop out of the operator's hands and are broken. It is another object of my present invention to provide holding means for the backstay which will keep the latter always attached to the lay even when released sufficiently to permit removal of the reed.

In certain types of reeds it is customary to have the reed wires extend below the lower rail and it is another object of my present invention to provide the backstay with a narrow slot into which the extended lower ends of the reed wires may fit snugly. By this construction the backstay can be used to give positive backward and forward motions to the reed.

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

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

Fig. 1 is a top plan view of a portion of a loom lay made according to my invention, parts being in section, and

Fig. 2 is a vertical section on line 2—2 of Fig. 1.

Referring to the drawing, the lay indicated generally at L is in the present instance formed of an angular casting as set forth particularly in Fig. 2 and is reciprocated by connectors 10 one of which is shown in Fig. 1 as connected to the lay by a pivot pin 11. The lay may be provided with a box guide 12 to receive the tongue 13 of a shifting shuttle box 14 and there may extend across the lay a shuttle race 15. The forward edge of the race may be notched as at 16 to be received by an upwardly extending ledge 17 formed as part of the lay. The lay is provided with a horizontal web 20 in the lower portion thereof, the rear part of which may be planed or otherwise finished as at 21. Lying between the web 20 and the shuttle race 15 is a backstay receiving compartment 22.

The reed R has top and bottom rails 25 and 26, respectively, above and below which are reed wire extensions 27 and 28, respectively. A hand rail 29 receives the top rail 25 in the usual manner.

Except as adapted for parts to be described hereinafter the foregoing may be of common construction and of itself forms no part of my present invention.

Referring particularly to Fig. 2, it will be seen that the front vertical wall 30 of the lay is provided with a clear hole 31 through which extends an adjusting screw 32. A lock nut 33 is provided to hold the setting of the screw and the head 34 is employed for turning the screw which is normally threaded tightly into a taped bore 35 in the backstay B.

The backstay has a front wall 40 which is comparatively thick and from the lower end of which extends rearwardly a horizontal shelf 41. Rising from the rear of section 41 is a horn 42 the upper part of which is curved forwardly as at 43 to have engagement with the rear of the reed above the bottom rail 26. The horn preferably exerts its pressure on the reed in horizontal alignment with the shuttle race 15. Extending between the wall 40 and the horn 42 is a rail compartment 45 which receives the lower rail 26, and the shelf 41 is provided with an upwardly facing comparatively narrow longitudinal groove 46 which receives the lower extensions 28 of the reed wires. The latter substantially fill the slot so that back and forth motion of the backstay will move the lower end of the reed positively.

By referring to Fig. 1 it will be seen that I have provided a positioning screw 50 threaded into a tapped hole 51 in the front wall 30 of the lay and extended rearwardly to abut the front face 52 of wall 40. The screw 50 is turned by means of head 53 and the adjusted setting thereof is held by lock nut 54.

In normal operation the parts will be as shown in full lines in Fig. 2, the horn 43 pressing the reed against the shuttle race because of the fact that lock nut 33 has been turned to draw the screw 32 forwardly as far as it will go, and the screw is threaded deeply into hole 35. The screw 50 has been turned back against the face 52 so that the wall 40 and therefore the entire backstay is held rigidly in position by the pulling and pushing actions of screws 32 and 50, respectively.

When it is desired to remove the reed due to wear or for any other purpose the lock nut **33** is turned forwardly toward the head **34**, or to the left as viewed in Fig. 2. The screw **32** is then turned in a direction to move it out of the threaded bore **35** sufficiently to allow the backstay to move to the dotted line position of Fig. 2, where it will be seen that the distance between the upper forward part of the horn **43** and the rear edge of the shuttle race is slightly more than the diameter or horizontal transverse dimension of the bottom rail **26**. Previous slackening and raising of the hand rail **29** will permit the reed to be moved upwardly and out of the backstay, as indicated in dotted lines in Fig. 2. When the new reed is inserted the screw **32** will be turned to draw the wall **40** and the reed forwardly until the face **52** again engages the positioning screws **50**, after which the lock nuts **33** are tightened.

It will be observed from Fig. 1 that screws **32** and **50** are close together and it is to be understood that the backstay may be made as long as desired, and that several pairs of adjusting and positioning screws will be employed, the number depending upon the length of the lay.

In the removal of the reed from the backstay it is necessary to be able first to raise the reed out of the slot **46** and then move the same forwardly with respect to horn **43**. In order to make the removal possible the depth of the slot **46** is slightly less than the distance between the top of the rail **26** and the bottom of the horn **43** when the parts are assembled as shown in Fig. 2, and furthermore the rail receiving compartment **45** is sufficiently wide in front of the rail so that the latter may be moved forwardly to a position where the rearmost part of the rail **26** will be slightly in front of the horn **43**. When the parts sustain the relations just described the rail can be removed without difficulty when the backstay has been moved rearwardly as suggested by the dotted lines in Fig. 2.

From the foregoing it will be seen that I have provided a simple mounting for the backstay which permits the same to be drawn forwardly by one screw against another or positioning screw to determine the backstay position. It will also be seen that the shelf **41** of the backstay is provided with a slot **46** into which the lower ends **28** of the reed wires extend so that the reed is moved positively in both backward and forward directions by corresponding motions of the backstay. If the backstay should become tight and need to be loosened in its setting this can be accomplished by turning the screw **50** rearwardly a slight amount, after which backward pressure on the reed **50** by the operator will be sufficient to move the parts to the dotted line position of Fig. 2. It will further be seen that the length of the screw between the lock nut **32** and the head **34** plus the length thereof which is tapped into the bore **35** is greater than the rearward motion of the reed necessary to permit removal of the lower rail from the compartment **45**. By this construction it is possible to keep a part of the screw **35** tapped into the backstay at all times so that the latter will not be able to fall off the lay. While I have shown screw **32** as provided with a head **34**, yet I have found that this particular type of screw is not essential, other forms being usable so long as they are of a length to permit the relationships described.

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 having a front wall and a longitudinal recess behind the wall, a backstay located in the recess, a reed held by the backstay, means extending through the front wall and threaded into the backstay to draw the same forwardly, other means threaded through the front wall of the lay end engaging the backstay to limit forward motion of the latter, and a bottom rail for the reed below a portion of the backstay, the first named means being of sufficient length to be partially unthreaded from the backstay and permit the latter to move far enough to the rear to allow the reed rail to be raised above said portion of the backstay.

2. In a loom, a lay having a front wall and a longitudinal recess behind the wall, a backstay located in the recess, a shuttle race in front of the reed about said recess, a reed extending into said recess, a bottom rail on the reed in said recess, a portion of the backstay having engagement with the rear of the reed in substantially horizontal alignment with the shuttle race, and threaded means extending through the front wall and threaded into the backstay, the length of the threaded means which is threaded into the backstay being great enough to permit a partial unthreading only of said means from the backstay to permit rearward motion of the backstay to a position such that the distance between the shuttle race and said portion of the backstay is slightly greater than the horizontal transverse dimension of the rail.

3. In a loom, a lay having a front wall and a longitudinal recess behind the wall, a shuttle race over the recess, a backstay in the recess having a portion extending upwardly, a reed located between the shuttle race and said portion and extending into the recess, a reed rail located below the shuttle race and said portion, threaded means extending through the front wall of the lay and threaded into the backstay to draw the latter forwardly to cause engagement between said portion and the reed, the distance said threaded portion is threaded into the backstay being greater than the rearward motion of the backstay relatively to the lay necessary to space said portion behind the shuttle race by a distance slightly greater than the maximum transverse dimension of said rail.

4. In a loom, a lay having a front wall and a longitudinal recess behind the wall, a backstay located in the recess and having an upwardly opening longitudinal groove, a reed having a reed rail in said recess and below which extends a portion of the reed to fit into said groove, threaded means extending through the wall and threaded into the backstay to draw the latter forwardly, and other threaded means threaded through the wall of the lay and engaging the backstay to force the latter rearwardly, the reed being movable positively in opposite directions by said means.

5. In a loom, a lay having a front wall and a longitudinal recess behind the wall, a backstay located in the recess and having a longitudinal upwardly opening groove therein of a given depth, a reed the lower end of which fits into said groove, a reed rail located above the groove, said backstay having an upwardly extending portion projecting over a part of the rail and positioned to engage the reed, and means to position the backstay transversely with respect to the lay, the vertical

distance between the top of the rail and the bottom of said portion of the backstay being slightly greater than said given depth of the slot in the backstay, whereby when the reed is raised the lower part thereof moves out of the slot before the rail engages said portion.

6. In a loom, a lay having a front wall and a longitudinal recess behind the wall, a backstay located in the recess and having a reed rail receiving compartment opening outwardly, a rear wall on the backstay defining the rear limit of the reed rail compartment, the backstay having an upwardly opening slot communicating with said compartment, a reed the lower part of which extends into said slot, a rail for the reed located in said compartment and having a part thereof extending under said wall of the backstay and located below said wall by a distance greater than the depth of said slot, said compartment extending a distance in front of the rail greater than the distance by which said rail extends under said wall of the backstay.

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