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E. R. HOLMES

ADJUSTABLE LOOM REED

Filed Oct. 18, 1927

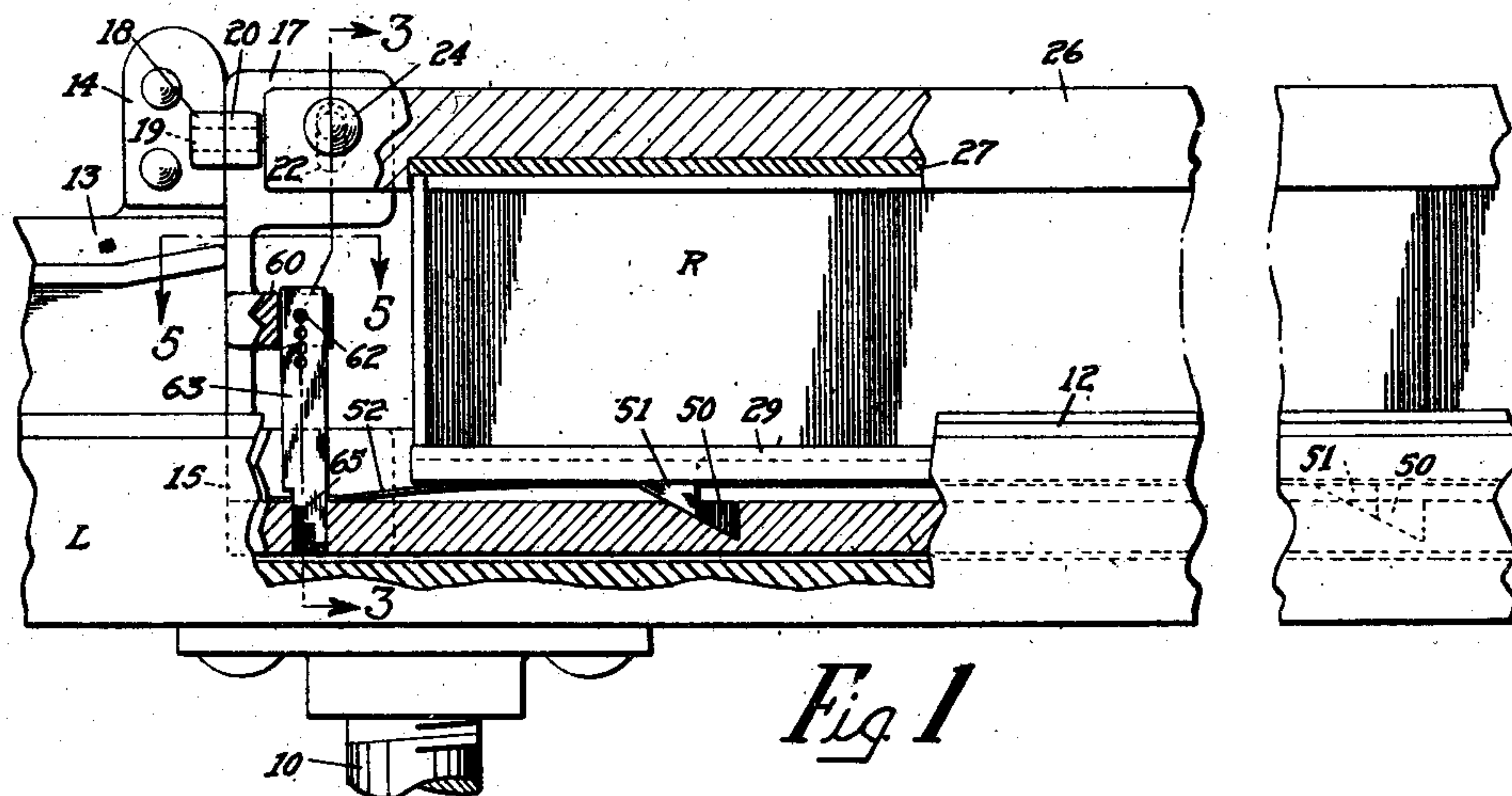


Fig 1

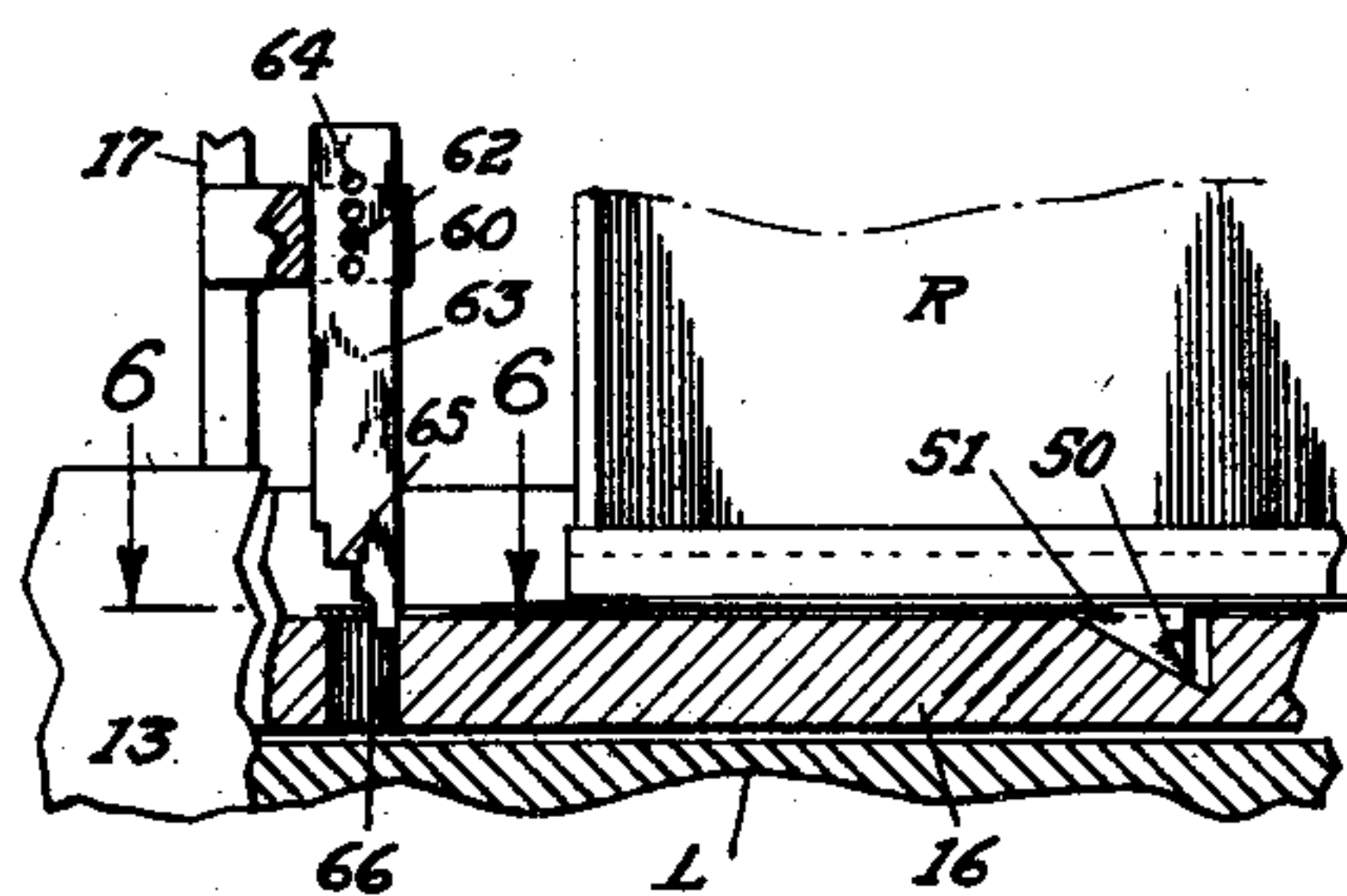


Fig 2

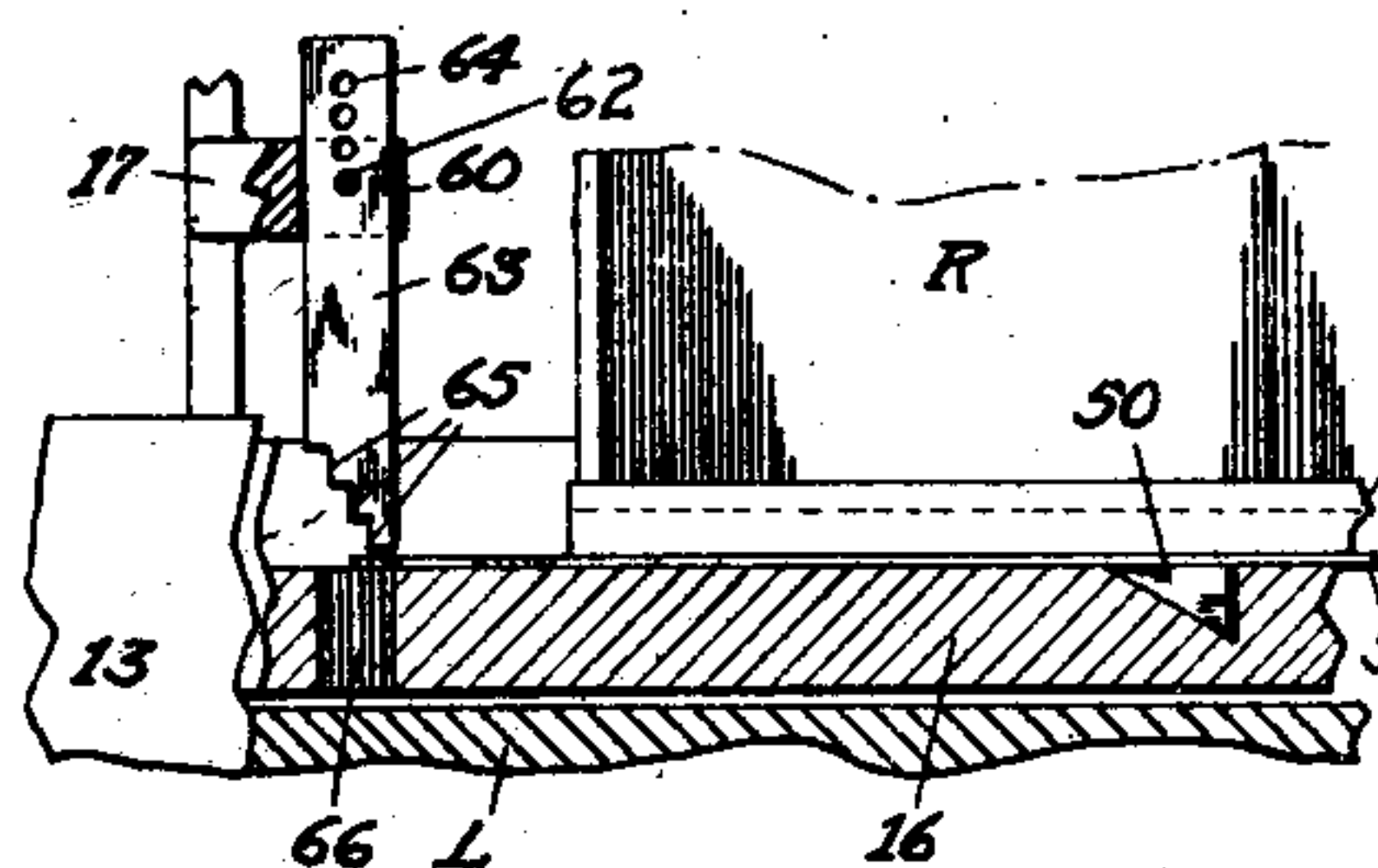


Fig 3

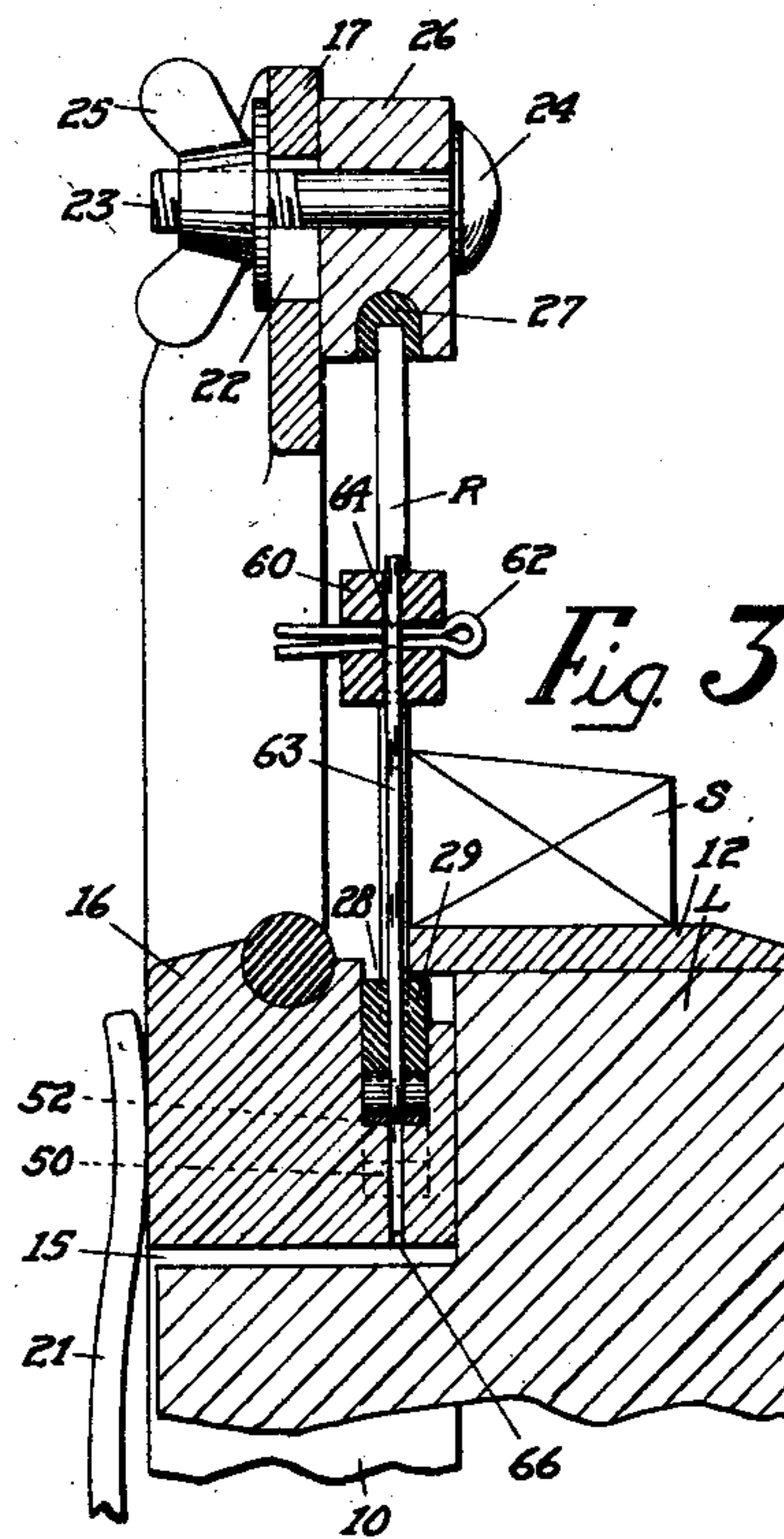


Fig 4

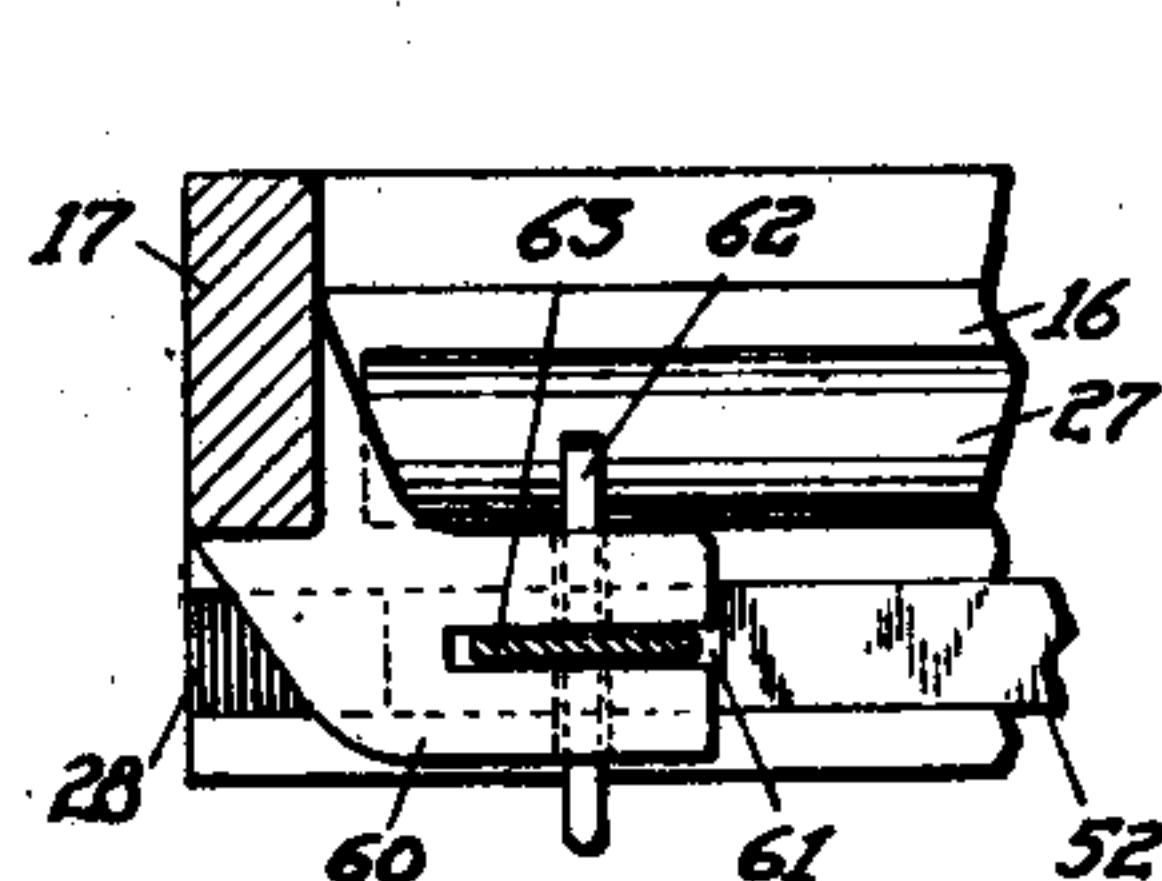


Fig 5

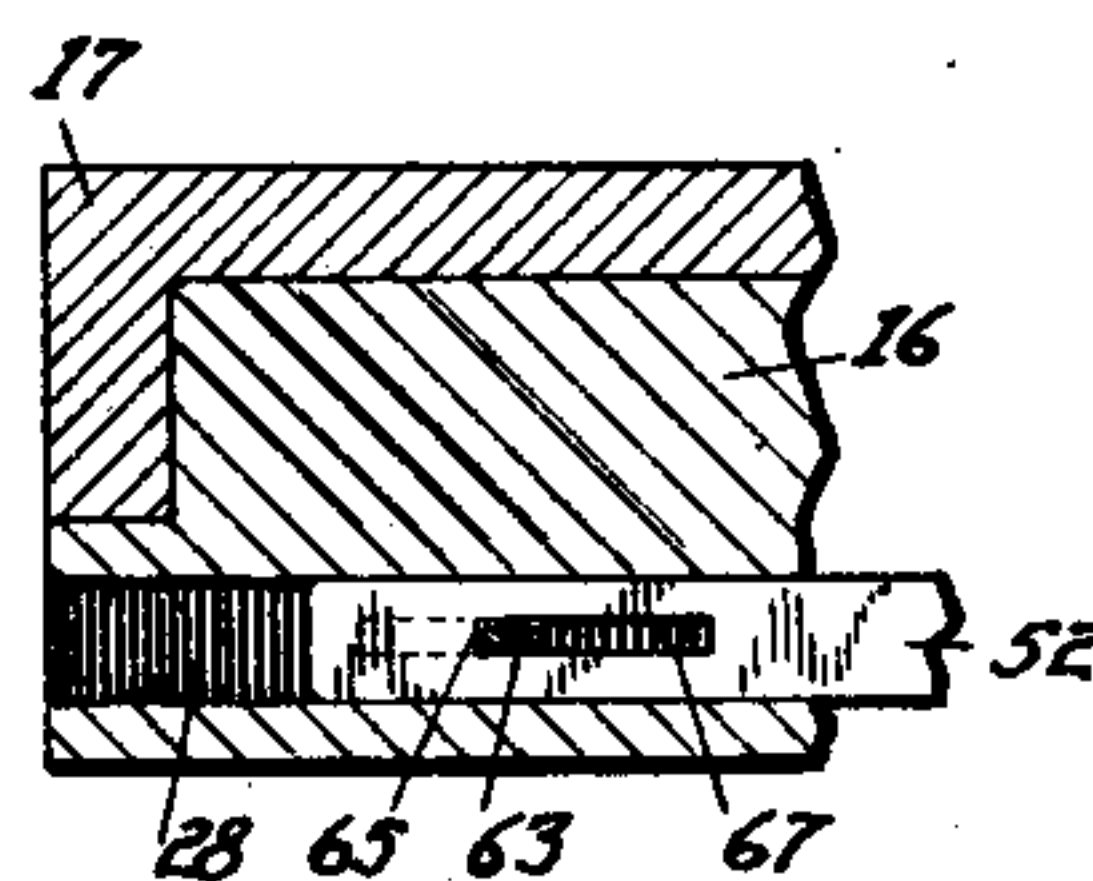


Fig 6

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ADJUSTABLE LOOM REED.

Application filed October 18, 1927. Serial No. 227,018.

This invention relates to improvements in adjustments for loom reeds and it is the principal object of the invention to provide a readily accessible adjustment whereby the reed may be given several different vertical positions.

In the weaving of certain fabrics, such for instance as silk, it is found that the flat wires on the reed are subject to wear at the point where the filling is beaten into the fell of the cloth. In order to distribute this wear it has been proposed heretofore to provide not only automatic but also manually regulated adjustments whereby the reed is given a plurality of settings with respect to the fell of the cloth. The automatic devices necessarily introduce a multiplicity of parts and the hand adjustment has heretofore been possible only by a partial disassembly of the lay or at least by a movement of the reed and its holder to a position abnormal with respect to the lay. It is an important object of my present invention to provide a quickly adjusted element readily accessible without requiring disassembly of the lay parts or relative movement of the reed holder and the lay.

Silk looms are customarily provided with a yielding reed which is mounted on a carrier adapted for slight pivotal movement about centers fixed on the lay, the reed being held in the carrier in its normal position by pressure of a large leaf spring carried on the lay and acting at the time of protection to permit the reed to move rearwardly and thus prevent a warp smash. It is a further object of my invention to provide an adjustment contained entirely on the pivoted reed carrier and having a portion thereof extending into an open space defined between the reed and its carrier.

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 I have shown one embodiment of my invention,

Fig. 1 is a front elevation of one end of a lay having my invention applied thereto,

certain parts being shown in section for the sake of clearness and the reed being shown in its highest position,

Fig. 2 is a detailed view similar to a portion of Fig. 1 and showing the reed in an intermediate position,

Fig. 3 is an enlarged vertical section on line 3—3 of Fig. 1,

Fig. 4 is a view similar to Fig. 2 but with the reed in its lowest position and out of control of the stepped member,

Fig. 5 is a detailed horizontal section on an enlarged scale on line 5—5 of Fig. 1, and

Fig. 6 is an enlarged horizontal detailed section on line 6—6 of Fig. 2.

Referring particularly to Figs. 1 and 3 it will be seen that I have provided a lay L mounted on swords, one of which is indicated at 10, and have provided said lay with a race plate 12. The lay is provided at each end thereof with a lay end 13 which has an upwardly projecting arm 14. The rear of the lay is rabbeted as at 15 to receive a back stay 16 which extends across the loom and at each end thereof is provided with an upwardly projecting suspension member 17. Each arm 14 is provided with a lug 18 which registers with a lug 19 formed on the adjacent suspension member 17 and one of said lugs has secured therein a pin 20 which extends into and has pivotal connection with the other lug. In this way pivotal connection for the back stay with respect to the lay is provided. A heavy spring 21, the upper end of which is indicated in Fig. 3, ordinarily bears against the rear of each end of the back stay to hold the latter in the normal position shown in Fig. 3.

The suspension member is provided with a vertical slot 22 through which extends a bolt 23 having a button head 24 at the forward end thereof and having a winged nut 25 on the rear end thereof. Said bolt extends through a hand rail 26 and the slot 22 permits vertical adjustment of said rail, the winged nut affording ready means for clamping the hand rail in adjusted position. The under side of said hand rail is grooved to receive a reed cap 27 into which fits the upper longitudinal edge of a reed R. The back stay is provided with a slot 28 in which

is located a lower reed holder 29. Said holder fits snugly in the slot 28 and together with the reed cap 27 holds the reed.

In the operation of the mechanism thus far described the lay is moved toward and from the fell of the cloth, and if the shuttle S fails to be properly boxed the back stay will move rearwardly or to the left as viewed in Fig. 3, against the action of spring 21 and around the pin 20 as a pivot. It is to be understood that both ends of the lay are the same so that the reed will move rearwardly with an even and uniform motion when required to do so. The matter thus far described is of common construction for the lays, reeds and reed holders for silk looms and forms no part of my present invention.

In the present instance I employ a construction somewhat similar to that shown in my Patent No. 1,612,439, said construction comprising a series of notches with inclined surfaces 50 in the back stay 16, said notches opening upwardly toward the reed holder 29. A plurality of wedges 51, one for each of the notches 50, are secured to a flexible strap 52 preferably made of sheet steel. The relation between the notches, wedges and strap, is such that when the strap is moved longitudinally of the lay, in this instance to the left, the wedges will be moved upwardly along the inclined surfaces 50 to lift the reed. In my aforesaid patent the device whereby the strap is given endwise motion, comprises a screw which is normally inaccessible with the back stay in the position shown in Fig. 3, and as previously stated, it is an important object of my present invention to provide a simple and readily accessible device attached to or having operative relation with the strap 52 whereby longitudinal movement may be imparted thereto to cause relative movement between the wedges and their inclined notches.

Accordingly, I provide the suspension member 17 with a small boss 60, as shown in Fig. 5, and provide the same with a vertical slot 61 across which extends a cotter pin 62. A thin bar 63 lies in the slot 61 and is provided with a plurality of transverse openings or holes 64, each proportioned to receive the cotter pin. The lower end of said bar is stepped to provide a number of vertical surfaces 65 which are located at different distances from the notches 50. The back stay is provided with a narrow vertical slot 66 in alignment with the slot 61 and proportioned to receive the lower stepped end of the bar 63. The strap 52 has cut therein a narrow longitudinal slot 67 through which the lower end of the bar 63 may extend.

Under normal conditions the parts will be as shown in Fig. 1, with the bar 63 in lowest position and with the strap 52, therefore, moved to the left to raise the wedges and

thus lift the reed. Hand rail 26 will be properly adjusted so as to hold the reed in its position against objectionable loose play. After a predetermined length of time the operator will remove cotter pin 62 and lift the bar 63 a distance equal to the distance between adjacent holes 64 and will insert the cotter pin into the next hole or the one next to the top, as shown in the drawings. This brings the next vertical surface 65 into engagement with the left end of the slot 67, thus permitting the strap 52 to move to the right. The winged nuts 25 will then be loosened and the hand rail adjusted downwardly as far as possible to lower the reed to a new position, after which the hand rail is tightened in place. This operation is repeated until the bar 63 is in its highest position, at which time the strap 52 will have moved to its extreme right position and the reed R will be in its lowest position. It will be noted that the adjustments described are facilitated by reason of the fact that the lug 60 and bar 63 extend into an opening defined between the end of the reed R and the suspension member 17 and that the readiness of adjustment is not interfered with by reason of the fact that connection between the strap 52 and the lower end of the bar 63 is at the bottom of notch 28.

From the foregoing it will be seen that I have provided a very small and readily accessible means for varying the vertical position of the reed. It will further be seen that the adjustable connections move with the reed and its holder about the pivotal connection for the reed so that the various parts which enter into the reed adjustment move as a unit with the reed holder. It will further be seen that by a mere vertical movement of the bar 63 the operator is able to effect the change in the relative position of the lower end of said bar with the strap 52. It will also be seen that the lower end of said bar 63 is supported by the right hand end of the slot 66 as viewed in Fig. 1, and that for this reason the strain imposed by the weight of the reed is communicated to the back stay at a point closely adjacent to the strap 52. Again, the cotter pin is easily reached, being in the space defined between the end of the reed and the suspension member 17.

Having thus described my invention it will be apparent 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 having a lay end and a reed, in combination, a flexible member underlying said reed and having a plurality of wedges formed thereon, a suspension member pivotally connected to said lay end, a back stay

secured to said suspension member and receiving the lower end of said reed, said suspension member having recesses with inclined surfaces to receive said wedges on said flexible member, a projection extending from the suspension member and lying over an auxiliary recess lying thereunder in the back stay, and a positioning member attached to the projection and extending downwardly and into the auxiliary recess and having the lower end thereof stepped to cooperate with the flexible member, the latter to engage any one of the steps to vary the longitudinal position of the flexible member and wedges relatively to the inclined surfaces of the back stay.

2. In a loom having a lay end and a reed, in combination, a flexible member underlying said reed and having a plurality of wedges formed thereon, a suspension member pivotally connected to said lay end, a back stay secured to said suspension member and receiving the lower end of said reed, said suspension member having recesses with inclined surfaces to receive said wedges on said flexible member, a projection extending from the suspension member into a space lying between said member and the adjacent end of the reed, a positioning device, means to hold the positioning device to the projection in a plurality of vertical positions, and means defining steps on the lower end of the device to cooperate with the flexible member to give the latter a plurality of longitudinal positions with respect to the back stay, the lower end of said device extending into an auxiliary opening located in the back stay

under the projection and the flexible member extending transversely of the positioning member.

3. In a loom having a lay end and a reed, in combination, a flexible member underlying said reed and having a plurality of wedges formed thereon, a suspension member pivotally connected to said lay end, a back stay secured to said suspension member and receiving the lower end of said reed, said suspension member having recesses with inclined surfaces to receive said wedges on said flexible member, a projection extending into the space between the suspension member, and the adjacent end of the reed, a vertically disposed positioning device having a plurality of vertically spaced openings, holding means extending between the projection and adapted for reception by any one of the openings in the positioning device to vary the vertical location of said positioning device, means on the lower end of the device defining steps which are arranged in a downward course and inwardly toward the reed, the smaller end of the stepped portion of the device being at the bottom of the latter and extending into an auxiliary recess located at the back stay, the lower end of said device extending through an opening in the flexible member so that vertical and longitudinal movement of that portion of the flexible member through which the positioning device passes is limited.

In testimony whereof I have hereunto affixed my signature.

ELBRIDGE R. HOLMES.