May 6, 1924. 1,493,366

A. MELLOR

TENSIONING DEVICE FOR LOOM SHUTTLES

Filed May 2, 1923

Fig. 1.

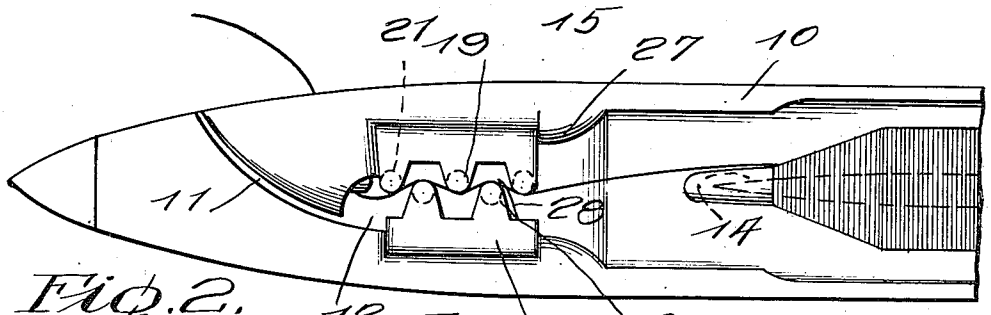


Fig. 2.

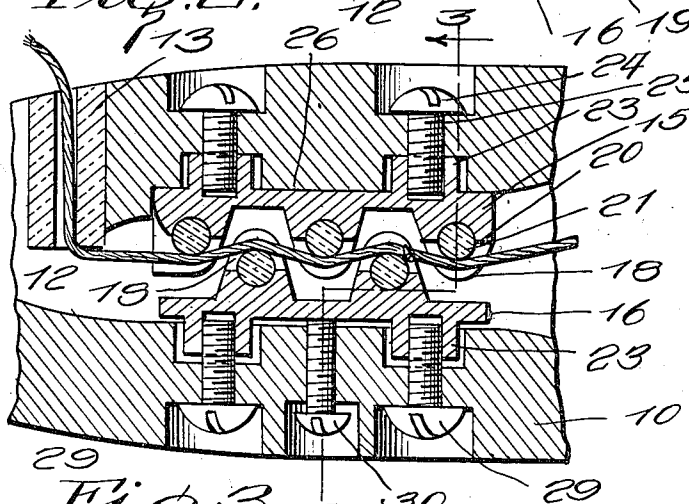


Fig. 4.

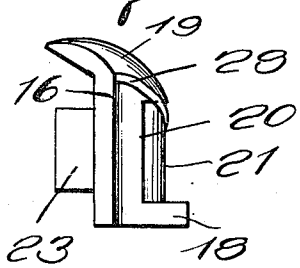
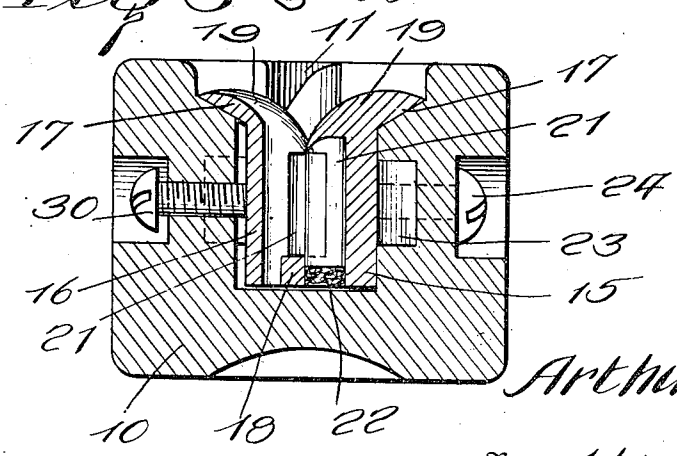


Fig. 3



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Patented May 6, 1924. 1,493,366

UNITED STATES PATENT OFFICE.

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TENSIONING DEVICE FOR LOOM SHUTTLES.

Application filed May 2, 1923. Serial No. 636,214.

To all whom it may concern:

Be it known that I, ARTHUR MELLOR, a citizen of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Tensioning Devices for Loom Shuttles, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to tensioning devices for loom shuttles, and particularly to that form of tensioning device which consists of opposed members having interior ribs or projections which more or less fit into each other and between which the thread passes.

One of the objects of the present invention is to provide a tensioning device of this character wherein the interfitting ribs or projections are formed of glass.

A further object is to provide a device of this character consisting of two opposed base members detachably supporting glass rods over which the thread passes.

A still further object is to provide a device of this character wherein the bases of the device are provided with means whereby these bases or glass rod carriers may be shifted toward or from each other to adapt the device to coarser or finer yarns.

Another object is to provide means which will prevent the whipping or ballooning of the thread as the shuttle is picked across the loom.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a fragmentary top plan view of a shuttle having my improved tensioning device mounted therein;

Figure 2 is a horizontal section through the shuttle;

Figure 3 is a section on the line 3—3 of Figure 2;

Figure 4 is an end view of the member 16.

Referring to these figures, 10 designates a shuttle of ordinary construction and having the usual kerf 11 which extends forwardly and transversely and connects with the horizontal kerf 12, which in turn communicates with a porcelain eye 13. The bobbin of the shuttle is mounted, of course, upon the longitudinally extending shaft 14. This construction is the standard construction and requires no further description.

Disposed within the shuttle and against each side wall thereof are the metal plates 15 and 16. The metal plate 15 at its upper end is outwardly curved to form a flange 17 and the front face of the plate is formed with three outwardly projecting flanges 18 formed upon their upper faces with sockets and the upper portion of the plate is formed with three outwardly projecting flanges 19, the under faces of which are formed with sockets. The upper sockets are joined to the lower sockets by longitudinally extending spaced ribs 20. The upper sockets and the lower sockets and the ribs 20 constitute a holder for a cylindrical rod 21 of glass. The lower sockets are open at the lower end to permit the insertion of these glass rods and then this space is filled with any suitable initially plastic filling material, designated 22.

There are preferably three of these rods 21 and three sets of corresponding sockets. The opposite face of the plate, that is the face which is disposed toward the wall of the shuttle, is formed with a pair of outwardly projecting screw-threaded bosses 23 for engagement by a pair of screws 24 which extend through apertures 25 in the wall of the shuttle, the apertures being countersunk so as to conceal the heads of the screws. Between the apertures the inner face of this wall is formed with a protuberant portion 26 having a depth equal to the depth of the bosses 23 and at the inner end of the space occupied by the plate 15 there is a boss 27 which is rearwardly beveled. The opposite wall of the shuttle is also formed with the bosses 26 and 27.

The plate 16 is exactly like the plate 15 except that in place of having three sockets 18 and 19 and three glass rods 21, there are only two pairs of sockets 18 and 19 and two glass rods 21 and the plates are so disposed that the two glass rods of the plate 16 fit into the spaces between the three glass rods of the plate 15, as illustrated most clearly in Figure 2, so that the yarn passing from the bobbin is obliged to take a more or less sinuous course in contact alternately with each glass rod until the thread passes out through the eye 25, so that the thread comes in contact with all five of these glass rods, which gives the proper tension upon the thread.

The plate 16 also differs from the plate 15, in that attached to the plate 15 adjacent its entrance end and beside the first cap or socket 19 there is disposed a downwardly and outwardly extending finger 28 (see Fig. 4). This finger is curved downward and laterally so that the extreme point of the finger is nearly opposite to the middle of the first glass rod 21, as shown in Figure 1. At the same time the point of the finger is slightly spaced from the face of the glass rod so as to permit the insertion of the yarn or thread between the glass rod and this finger or guide. This finger or hook 28 makes it almost impossible for the yarn to whip or balloon out of the device as the shuttle is picked across the loom. The plate 16 is held in place by two screws 29 which are like the screws 24 and engage the interiorly screw-threaded bosses 23 on the inner face of the plate 16, but in addition to the two screws 29 there is a third screw 30 which passes through the wall of the shuttle and bears against the inner face of the plate 16. By loosening this middle screw and tightening the two end screws, the plate 16 will be retracted toward the side wall of the shuttle, and by loosening the two end screws and tightening the middle screw the plate will be shifted toward the plate 15. Thus this device may be adjusted for the use of coarse yarn or for fine yarn.

I have found by actual practice that by allowing the yarn to pass through a tensioner having smooth glass elements that I secure a much evener and smoother tension of the yarn than where the yarn passes over metallic elements, and that the action of these glass surfaces is to stop all kinks in the yarn and secure finer cloth. If one of the rods is by any chance broken it can be easily replaced and thus the device will last almost indefinitely. The yarn at no time with my device touches any part of the metal and no matter what kind of yarn is used it will not cut into the metal and cause the yarn to break. The hook 28, as before stated, makes it almost impossible for the yarn to whip or balloon out of the shuttle as the shuttle is picked and, as before explained, the tensioning device is adjustable for coarser or finer yarns.

While the embodiment of my invention which I have illustrated has been found thoroughly effective in actual practice, I do not wish to be limited thereto as it is obvious that it might be varied in many ways without departing from the spirit of the invention.

I claim:—

1. In a shuttle, means for tensioning the yarn comprising oppositely disposed metallic plates, a plurality of glass rods mounted upon each plate and spaced from each other, the rods of one plate being disposed opposite the spaces between the rods of the other plate and the glass rods intersecting a common plane, said plates having means on their outer faces whereby they may be engaged with the wall of the shuttle.

2. In a shuttle, yarn tensioning means comprising oppositely disposed plates, each plate having on it a plurality of pairs of vertically disposed sockets, glass rods disposed in said sockets, the rods being spaced from each other and the rods of one plate being disposed opposite the spaces between the rods of the other plate and said rods intersecting a common plane, and means for adjusting said plates toward or from each other.

3. In a shuttle, means for tensioning yarn comprising opposed metallic plates, each plate being formed at its upper end with an upwardly and outwardly extending flange, each plate being formed adjacent its upper margin with a plurality of downwardly opening sockets and adjacent its lower margin with a pair of upwardly opening sockets, the lower sockets being open at the bottom, glass rods disposed in said sockets, screws passing through the walls of the shuttle and engaging said plates, means being provided whereby the screws may cause the adjustment of the plates toward or from each other, the rods of one plate being disposed opposite the spaces between the rods of the other plate and one of said plates at its entrance end being formed with a downwardly and inwardly extending curved finger, the point of which is approximated to the associated rod.

4. In a shuttle, yarn tensioning means comprising two opposed plates, each plate having an upwardly and outwardly extending flange at its upper margin, the face of each plate being formed with a plurality of upper sockets and a plurality of lower sockets confronting the upper sockets, glass rods disposed in said sockets, the rear face of the plate having interiorly screw-threaded bosses, the glass rods of one plate being disposed opposite to the spaces between the rods of the other plate, screws passing through the walls of the shuttle and engaging said screw-threaded bosses, and a screw passing through one wall of the shuttle and bearing against the rear face of one of said plates.

5. In a shuttle, yarn tensioning means comprising two opposed plates, each plate having an upwardly and outwardly extending flange at its upper margin, the face of each plate being formed with a plurality of upper sockets and a plurality of lower sockets confronting the upper sockets, glass rods disposed in said sockets, the rear face of the plate having interiorly screw-threaded bosses, the glass rods of one plate being disposed opposite to the spaces between the

rods of the other plate, screws passing through the walls of the shuttle and engaging said screw-threaded bosses, and a screw passing through one wall of the shuttle and bearing against the rear face of one of said plates, one of said plates having attached thereto a finger, the finger being disposed adjacent the first one of said upper sockets and extending downward and forward to a position in front of the corresponding rod but having its point spaced from the rod to permit the insertion of a thread.

6. In a shuttle, oppositely disposed yarn tensioning members having projecting portions alternated with each other and intersecting a common plane and between which the yarn passes, adjusting screws passing through the side walls of the shuttle and engaging said tensioning members and holding the tensioning members in adjusted position with relation to each other, the outside faces of the side walls of the shuttle being countersunk to receive the heads of said adjusting screws.

7. In a shuttle, oppositely disposed tensioning members having projecting portions alternated with each other and intersecting a common plane, means for supporting one of said tensioning members against the side wall of the shuttle, means for supporting the opposite tensioning member against the opposite side wall of the shuttle and including screws adapted to be turned to shift said tensioning member toward or from the other tensioning member, and means for holding the last named tensioning member in adjusted position comprising a screw passing through the last named wall of the shuttle and engaging against the outer face of the tensioning member.

In testimony whereof I hereunto affix my signature.

ARTHUR MELLOR.