Nov. 18, 1924. 1,515,859

E. R. HOLMES

SHUTTLE BLOCK FOR NARROW WARE LOOMS

Filed Nov. 25, 1922

Fig.1

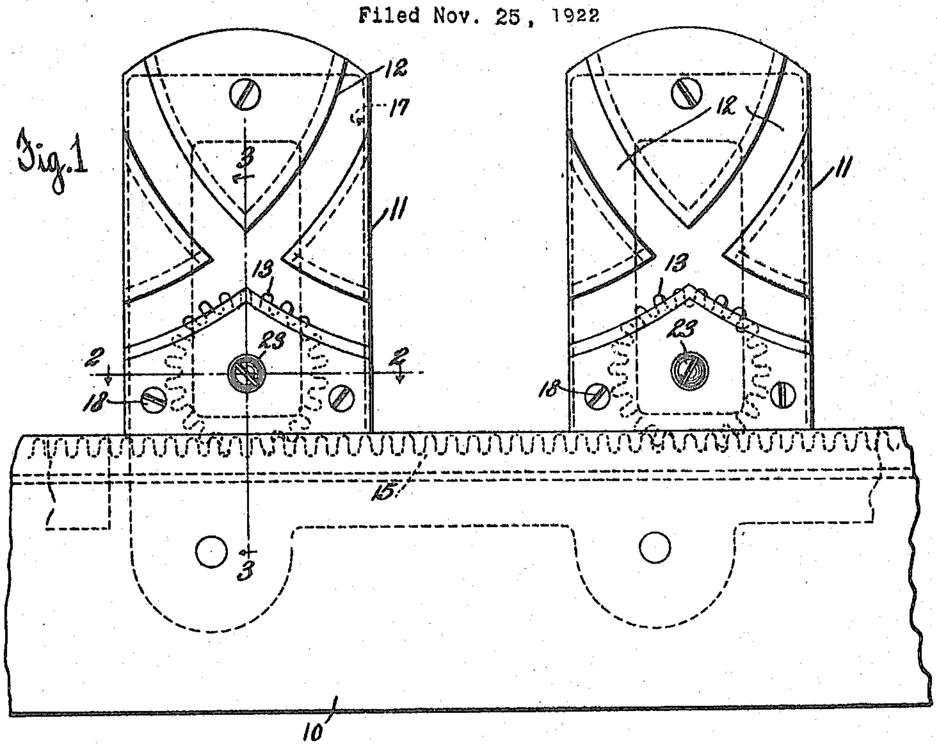


Fig.2

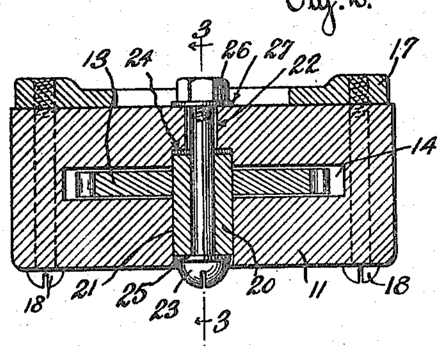
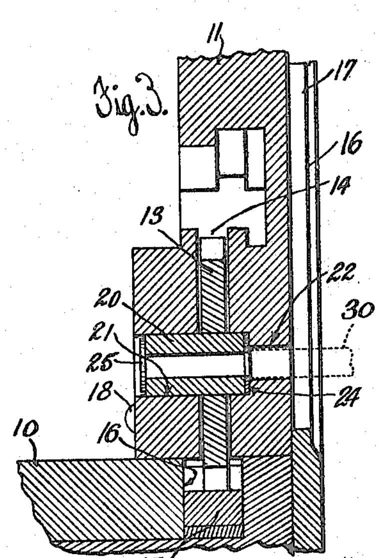


Fig.3



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Patented Nov. 18, 1924. 1,515,859

UNITED STATES PATENT OFFICE.

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SHUTTLE BLOCK FOR NARROW-WARE LOOMS.

Application filed November 25, 1922. Serial No. 603,353.

To all whom it may concern:

Be it known that I, Elbridge R. Holmes, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Shuttle Block for Narrow-Ware Looms, of which the following is a specification.

This invention relates to a shuttle block for narrow ware looms and particularly to an improved construction of bearing therein for the support of the shuttle actuating pinion.

It is the general object of my invention to provide a novel form of bearing so constructed that the shuttle block will not be distorted or caused to bind on the pinion by insertion or adjustment of the bearing bushing.

A further object is to provide a construction in which the bearing bushing may be removed without injury and may be reversed to present a fresh bearing surface when one portion thereof has become worn.

I also preferably provide a construction in which the bushing is firmly supported at both sides of the pinion bearings. Further details of my invention are hereinafter described and more particularly set forth in the appended claims.

A preferred form of the invention is shown in the drawings in which

Fig. 1 is a front elevation of portions of a narrow ware loom, including two shuttle blocks;

Fig. 2 is a sectional plan view, taken along the line 2—2 in Fig. 1; and

Fig. 3 is a vertical sectional view, taken along the line 3—3 in Figs. 1 and 2.

Referring to the drawings, I have shown portions of a narrow ware loom which are in general of the usual type and comprise a lay 10 upon which shuttle blocks 11 are mounted in spaced relation. The blocks are provided with the usual segmental grooves 12 which guide the shuttles as they are passed back and forth from one block 11 to the next adjacent block. The shuttles are commonly provided with curved rack teeth which are engaged by shuttle actuating pinions 13 mounted in recesses 14 in the shuttle blocks 11. These pinions are moved alternately in opposite directions by a rack 15 slidable in a groove or channel 16 formed in the lay 10. The blocks 11 are secured to the lay 10 by plates or brackets 17 bolted to the rear side of the lay and to which the blocks are secured by clamping screws 18.

The parts thus far described are of the usual type and in themselves form no part of my present invention which relates particularly to the bearings for the pinions 13. These bearings comprise bushings 20 which may be of specially treated wood or other suitable material and which are positioned in outer recesses or openings 21 which extend inward from the front faces of the shuttle blocks 11 and preferably beyond the recesses 14 in which the pinions 13 rotate.

A second or inner opening or passage 22 is aligned with each outer opening 21 and extends from the inner end thereof to the rear face of the block 11. A bolt 23 extends through the bushing 20 and also through the inner opening 22 which, however, is preferably of slightly larger diameter than the bolt 23.

Washers 24 and 25 are preferably provided at each end of each bushing 20, these washers fitting freely within the outer opening 21. A nut 26 and washer 27 constitute means for drawing the bolt 23 firmly against the washer 25 and bushing 20 and securely retaining the latter in the opening 21.

It will be noted that the washer 25 and also the head of the bolt 23 are both of less diameter than the opening 21 so that they may be drawn freely within the opening 21 without exerting pressure upon the front face of the block 11. There is thus no possibility of the front and rear portions of the block being drawn together to bind the pinion 13.

Whenever it is necessary to remove the bushing 20, the bolt 23 is first taken out and a tool 30 indicated in dotted lines in Fig. 3 may be then inserted through the opening 22 to engage the inner washer 24. The slightly larger diameter of the opening 22 permits the tool 30 to be made large enough to engage the washer 24 instead of passing through the center hole thereof. By use of the tool 30 the bushing may be easily driven out of the opening 21, the washer 24 protecting the inner end of the bushing from injury during removal.

The bushing 20 is preferably of such length that it may be reversed and reinserted, presenting a fresh bearing surface for the pinion 13 after one end of the bushing has become worn.

I also preferably extend the bushing across and beyond the recess 14, securing a support in the block 11 on both sides of the pinion bearing. This double support is very desirable.

Having thus described my invention and the advantages thereof, it will be seen that I have provided a bearing construction by which the useful life of the bearing may be doubled and with which the parts may be easily separated when desired. Furthermore, with this construction one may apply ample pressure to hold the bushing in place without the possiblity of binding the pinion 13.

As changes and modifications may be made, I do not wish to be limited to the details herein disclosed otherwise than as set forth in the claims, but what I claim is:—

1. In a narrow ware loom, in combination, a shuttle block having a relatively narrow recess within the body thereof, a rotatable member mounted in said recess, a bushing for said member, and holding means for said bushing, said block having a transverse outer opening for said bushing extending inwardly from the front of the block across said recess, and said holding means having a head of less diameter than said outer opening and received therein.

2. In a narrow ware loom, in combination, a shuttle block having a relatively narrow recess within the body thereof, a rotatable member mounted in said recess, a bushing for said member, and holding means for said bushing, said block having a transverse outer opening for said bushing extending inwardly from the front of the block across said recess, and having a smaller rear opening aligned with said outer opening and extending to the back of said block, and said holding device comprising a washer disposed against the outer end of said bushing within said outer opening and a bolt extending through both openings and having a head of less diameter than said outer opening.

3. In a narrow ware loom, in combination, a shuttle block having a relatively narrow recess within the body thereof, a rotatable member mounted in said recess, a bushing for said member, and holding means for said bushing, said block having a transverse outer opening for said bushing extending inwardly from the front of the block across said recess and having a smaller rear opening aligned with said outer opening and extending to the back of said block, and said holding device comprising a pair of washers disposed within said outer opening at both ends of said bushing, and a bolt extending through said washers, said bushing and both of said openings and having a head of less diameter than said outer opening.

4. In a narrow ware loom, in combination, a shuttle block having a relatively narrow recess within the body thereof, a rotatable member mounted in said recess, a bushing for said member, and holding means for said bushing, said block having a transverse outer opening for said bushing extending inwardly from the front of the block across said recess and having a smaller rear opening aligned with said outer opening and extending to the rear face of said block, and said holding means comprising a pair of washers disposed at the inner and outer ends of said bushing, said inner washer having an axial opening of less diameter than said inner opening, a fastening member extending through said washers, said bushing and said openings, and secured in position at the back of said block, the head of said fastening member being of less diameter than said outer opening.

In testimony whereof I have hereunto affixed my signature.

ELBRIDGE R. HOLMES.