Nov. 16, 1943. S. HUDSON 2,334,675

LOOM SHUTTLE

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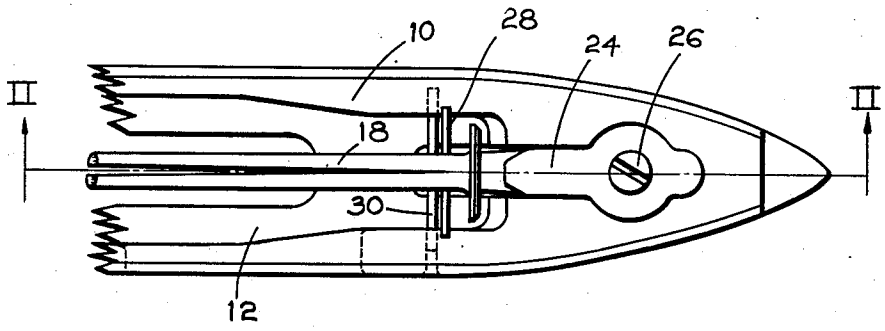


FIG. 1

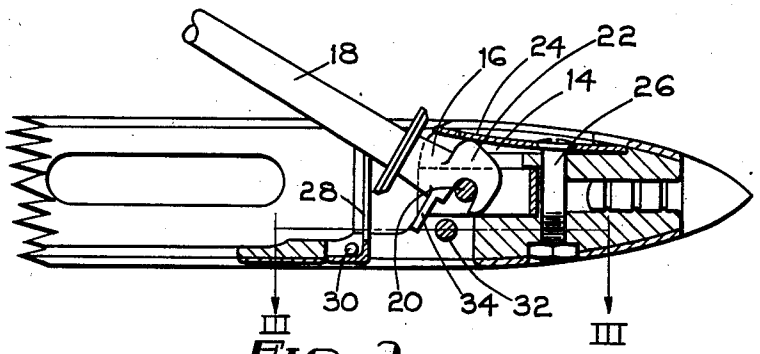


FIG. 2

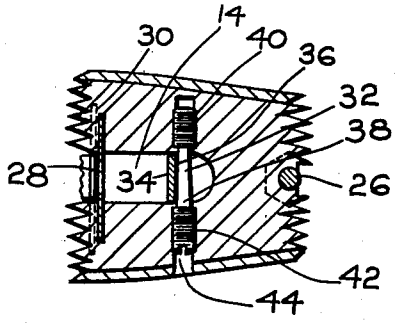


FIG. 3

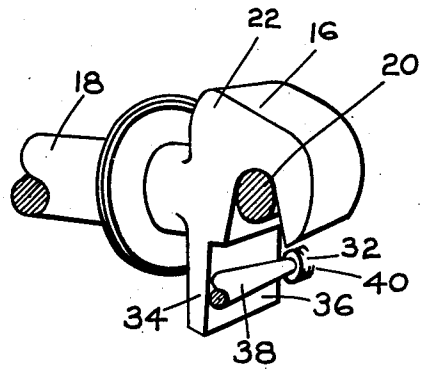


FIG. 4

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LOOM SHUTTLE

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7 Claims. (Cl. 139—208)

The present invention relates to shuttle for use in fly shuttle looms and as illustrated herein relates more particularly to shuttles of the type wherein a pivoted spindle supports a filling carrying bobbin or cop.

Pivoted spindles of the type above referred to must be accurately alined with the shuttle eye and such alinement must be maintained during operation of the loom if filling breakage is to be avoided. Various means for alining the spindle with the shuttle eye have heretofore been proposed. Some of these proposals have been embodied in constructions which were effective to maintain the desired alinement during operation of the loom but in most cases it was necessary to move the spindle out of running position to permit adjustment of a stop member. This was objectionable since it was difficult to adjust the stop member accurately to aline the spindle without making repeated adjustments.

One object of the present invention is to provide a shuttle with improved means for quickly and easily alining the shuttle supporting spindle in its proper operating position in the shuttle. To this end and as illustrated, the stop member is provided with a tapered portion engaging the bare portion of the spindle and which stop means can be adjusted from the outside of the shuttle while the spindle remains in operating position. By the use of this construction, alinement of the spindle is facilitated and a positive stop is provided which may not accidently be displaced from adjusted position.

With the above and other objects and features in view, the invention will now be described with particular reference to the accompanying drawing in which:

Fig. 1 is a plan view of the end of a shuttle embodying the present invention;

Fig. 2 is a view in section taken along the line II—II of Fig. 1;

Fig. 3 is a view in section taken along the line III—III of Fig. 2; and

Fig. 4 is a perspective view on a somewhat enlarged scale of the spindle and the adjusting means therefor.

The shuttle shown in the drawing comprises a shuttle body 10 having a recess 12 therein for receiving a filling carrier or bobbin. The shuttle body 10 is also provided with a cavity 14 in which the bare portion 16 of a bobbin supporting spindle 18 is mounted.

The bare portion 16 is pivotally supported on a bolt 20 in such a manner that the heel portion 22 of the spindle is engaged by one end of a spring plate 24 which maintains the spindle in either its operating position or in upturned position to receive a bobbin. The spring plate 24 is secured in place in the shuttle by a holding screw 26. The shuttle is also provided with a usual U shaped holder member 28 for holding the bobbin or cop against longitudinal movement when the bobbin supporting spindle 18 is in operating position. The holder member 28 is received in recesses formed in the walls of the shuttle and is held in position by a pin 30.

The parts of the shuttle described above are of usual construction. The present shuttle, however, is provided with an improved stop member 32 which is arranged to engage a tail or abutment 34 formed as a part of the bare portion 16 of the spindle 18. As shown most clearly in Figs. 2, 3 and 4, the tail 34 is formed as a downward extension of the bare portion 16 and is provided with an inclined surface 36 which is arranged to engage the stop member 32.

The stop member 32 is provided with a tapered portion 38 and threaded ends 40 and 42, the threaded end 42 being provided with a screw driver slot 44. The stop 32 is threaded into a hole formed in the shuttle body 10 and, as illustrated, is located below the pivot bolt 20. The inclined surface 36 on the tail 34 fits against the tapered portion 38 of the stop 32. Thus, the position of the spindle 18 can readily be adjusted by turning the stop member 32. As the tapered portion 38 is screwed further into the shuttle, the spindle 18 is rotated in a clockwise direction to aline it substantially with the axis of the shuttle body 10. It is apparent that by turning the stop 32 in the other direction, the spindle will rotate in a counterclockwise direction to aline the spindle. Since the tapered portion 38 of the stop engages the tail 34 over substantially its entire length, the portion 38 has a substantial bearing on the tail 34 and wear on both of these parts is reduced to a minimum.

The screw driver slot 44 is accessible from the outside of the shuttle and adjustment of the stop member 32 can be made when the spindle 18 is in operating position. Thus, the stop member 32 is turned until the spindle 18 is alined in the shuttle with the shuttle eye. The stop member 32 will remain in adjusted position without the use of any locking means and cannot readily be accidently displaced out of adjusted position.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. A shuttle for looms having, in combination,

a pivotally supported spindle, means for pivotally supporting said spindle in normal operating position within said shuttle, a spring member for maintaining said spindle in said operating position, an abutment member on said spindle adjacent to said pivot means, and a stop member engageable by said abutment when said spindle is in said operating position, one of said members having a cam surface arranged for adjustment in a direction parallel to the axis of said pivot means.

2. A shuttle for looms having, in combination, a pivotally supported spindle, means for pivotally supporting said spindle in normal operating position within said shuttle, a spring member for maintaining said spindle in said operating position, and cooperating stop members on said spindle and on said shuttle, one of said stop members being movable in a direction parallel to the pivotal axis of said spindle and having a cam surface thereon for controlling the normal operating position of said spindle.

3. A shuttle for looms having, in combination, a pivotally supported spindle, means for pivotally supporting said spindle in normal operating position within said shuttle, a spring member for maintaining said spindle in said operating position, and cooperating stop members on said spindle and on said shuttle, one of said stop members being movable in a direction parallel to the pivotal axis of said spindle and at an angle to the longitudinal axis of the spindle and having a cam surface thereon for controlling the normal operating position of said spindle.

4. A shuttle for looms having, in combination, a pivotally supported spindle, means for pivotally supporting said spindle in normal operating position within said shuttle, a spring member for maintaining said spindle in said operating position, an abutment on said spindle adjacent to said pivot, an inclined surface on said abutment, and a stop member mounted in said shuttle and having a cam surface arranged to engage said inclined surface on said abutment to control the normal operating position of said spindle, said stop member being screw threaded into said shuttle body and being movable in a path parallel to the axis about which said spindle is pivoted.

5. A shuttle for looms having, in combination, a pivotally supported spindle, means for pivotally supporting said spindle in normal operating position within said shuttle, a spring member for maintaining said spindle in said operating position, a depending abutment member on said spindle, an inclined surface on said abutment, a stop member mounted in said shuttle, and a tapered portion on said stop member cooperating with the inclined surface on said abutment to control the normal operating position of the spindle.

6. A shuttle for looms having, in combination, a pivotally supported spindle, means for pivotally supporting said spindle in normal operating position within said shuttle, a spring member for maintaining said spindle in said operating position, a depending abutment member on said spindle, an inclined surface on said abutment, a stop member mounted in said shuttle, a tapered portion on the stop member cooperating with the inclined surface on said abutment to control the normal operating position of the spindle, and screw threaded portion on said stop member threaded into said shuttle body for moving said stop member axially to adjust the relative positions of said inclined surface and said tapered portion.

7. A shuttle for looms having, in combination, a pivotally supported spindle, a bolt extending transversely of the shuttle for pivotally supporting the shuttle in normal operating position within the shuttle, a flat spring bearing against the base portion of said spindle for maintaining said spindle in normal operating position, an abutment on said spindle depending from said base portion, an inclined surface on said abutment extending generally transversely of said shuttle body, and a stop member extending transversely of said shuttle body and having its end portions screw threaded into said shuttle body, said stop member having an intermediate tapered portion arranged to engage the inclined surface on the abutment and to control the normal operating position of said spindle by turning said stop member and causing axial movement thereof transversely of the shuttle body.

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