

G. HULME & P. H. ROWLEY.
SHUTTLE.

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1,011,060.

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Fig. 1

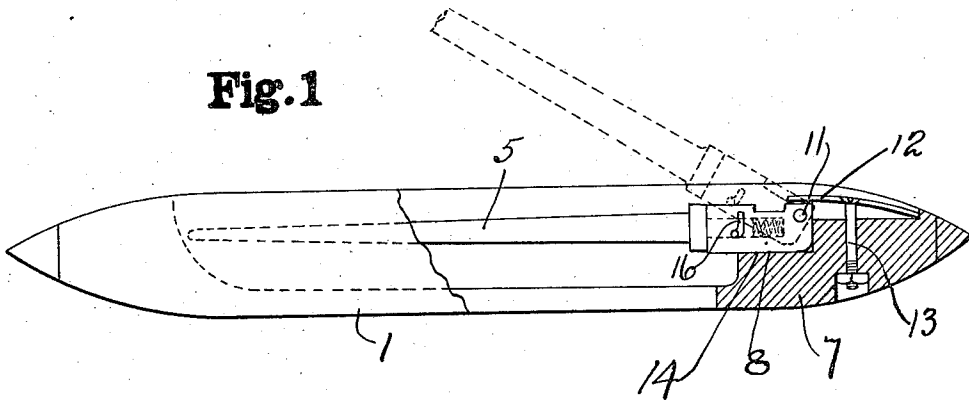


Fig. 6

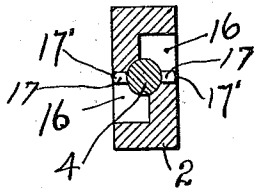


Fig. 2

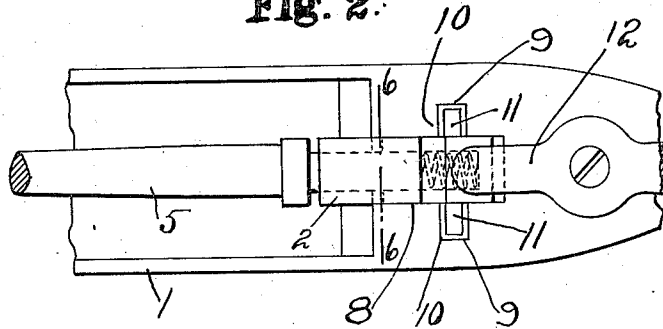


Fig. 3

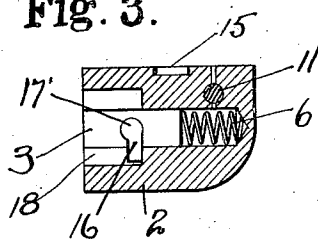


Fig. 4

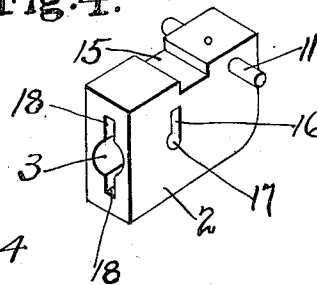
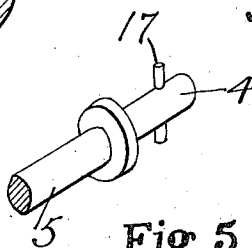


Fig. 5



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SHUTTLE.

1,011,060.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed September 9, 1910. Serial No. 581,304.

To all whom it may concern:

Be it known that we, GEORGE HULME and PATRICK H. ROWLEY, citizens of the United States, residing at the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Shuttles, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention has reference to loom shuttles its object being to provide a strong and durable socket member in which the shuttle spindle is mounted and locked, said socket member being pivotally held in the head of the shuttle in such a manner that there are no pins projecting through the shuttle walls which may loosen and extend out to catch and destroy any of the adjacent parts.

A further object of the invention is to provide simple and effective means whereby the spindle may be readily locked and retained in its socket even while the end is raised for doffing to permit the cops to be removed therefrom without liability of displacing the spindle.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claim.

In the accompanying drawings: Figure 1— is a side elevation, partly in section, of a shuttle showing my lock socket in which the spindle is retained. Fig. 2— is an enlarged plan view showing a portion of the shuttle and our locking socket member mounted therein. Fig. 3— is a sectional elevation of the locking socket member. Fig. 4— is a perspective view of our locking socket member. Fig. 5— is a perspective view showing the end of the spindle with its locking pin in position to enter the socket. Fig. 6— is a section on line 6—6 of Fig. 2 showing a sectional end view of the socket member with the spindle locked therein.

Having reference to the drawings, 1 designates the shuttle in the head of which our improved locking device is mounted, said device comprising a socket member 2 made in the form of a block centrally bored at 3 from one end, see Fig. 3, nearly through the block for the reception of the shank 4 of the spindle 5. This hole 3 is somewhat deeper than the length of the spindle shank and a

coil spring 6 is located therein against which the end of the spindle shank rests to cause a tension on the spindle as presently described.

The head portion 7 of this shuttle is provided with a recess 8 into which this block is designed to set and slots or recesses 9—9 are formed in the upper face of the shuttle head and bushed with a metal bushing 10, each open at its top for the purpose of receiving the pivot pin 11 on which the socket member is adapted to swing. It will be noted that this pivot pin is fixed in the socket member and extends out for a short distance on either side thereof but not long enough to pass through either side of the shuttle head. This socket member is retained in position in the shuttle head by means of a flat spring 12 which itself is retained in position by screw 13, one end of the spring being adapted to press upon the upper face of the socket member and hold the forward end of the same firmly down upon its seat 14 in the shuttle head. When it is desired to raise this spindle for doffing as illustrated by dotted lines in Fig. 1, the end of the spring passes over into the notch 15, presses on the edge thereof, and firmly retains the socket and spindle at the desired elevation.

In order to provide an extremely simple, inexpensive and yet very effective means for locking and retaining the shank of the spindle in this socket so that it may be quickly inserted and as readily withdrawn therefrom, at the same time remaining firmly locked therein when desired, we have drilled the shank of the socket laterally and forced therein a pin 17 which may project through either or both sides thereof and have also provided the bore of the socket with corresponding channels 18—18 to receive the pin; we have also provided laterally formed slots 16—16 through the side walls of the socket. One end of each slot is slightly enlarged as at 17' to form a recess or pocket for the side of pin 17 so that when the spindle is pressed forward by the action of the spring 6 the pin engages these recesses thereby locking the spindle from being turned backward without being first positively and intentionally pressed inward against the spring in order to release the pin from the recesses so that the spindle can be rotated in order to withdraw it from the socket.

In mounting our improved spindle locking device in the shuttle head it is only necessary to cut away a narrow slot in the upper face of the head for the reception of the socket member and also cut a narrow transverse slot in which the pivot pin may work. No holes are drilled through the side walls of the shuttle to weaken the same. A metal bushing 10 is forced into this transverse slot for the reception of the pivot pin 11 which bushing may pass around the end of the pivot to positively prevent it from working endwise and cutting or injuring the shuttle. In positioning this socket member in the shuttle it is only necessary to place the same in the slot adapted to receive it, screw the spring 12 into position over the same and the device is completed. When it is desired to use a cop spindle in the shuttle the same is locked in position within the socket by simply entering its shank therein and giving the spindle a quarter turn, which brings the ends of the pin opposite the pockets or recesses so that the spring 6 can act to shift the spindle slightly endwise to cause the ends of the pin to snap into the recesses. This forms a lock which firmly retains the spindle in position during the doffing when the socket member is swung outward, without any liability of accidentally withdrawing the spindle from the socket.

The device is also as well adapted for bobbin spindles, as the spindles may be readily removed from the socket and shuttle by simply being given a quarter turn by the hand of the operator.

It will be observed that in our improved construction the socket member itself may in turn be readily removed for inspection or repairs by simply loosening and swinging to one side the spring that retains it in position.

What we claim as new and desire to secure by Letters Patent, is:

A shuttle having a pivotally mounted spindle carrier the latter being provided with a spindle receiving socket, a spindle rotatably mounted in said socket, said spindle and carrier having cooperating interlocking members to prevent removal of the spindle from the socket until rotated to a predetermined position, and a spring movable with said carrier for assisting in holding said interlocking members in engagement.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE HULME.
PATRICK H. ROWLEY.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."