(No Model.)

I. A. BLOOD.

LOOM SHUTTLE SPINDLE.

No. 369,683. Patented Sept. 13, 1887.

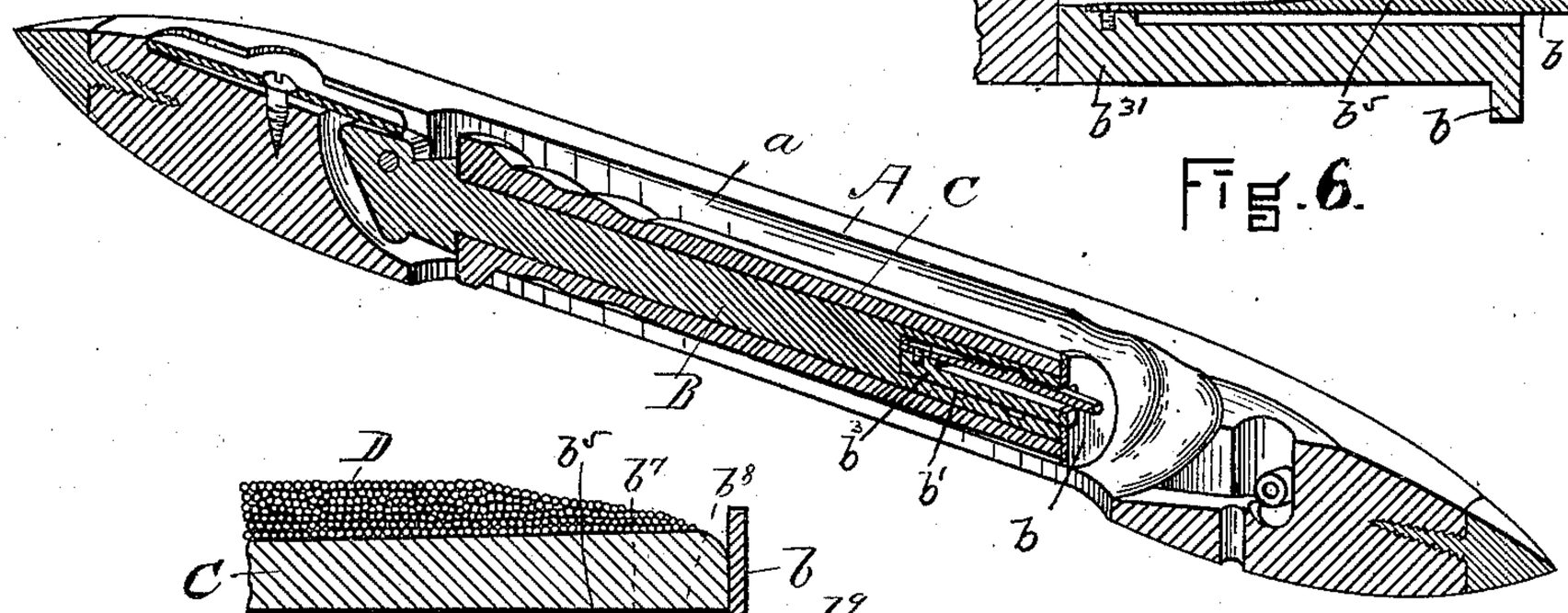

Fig. 1.

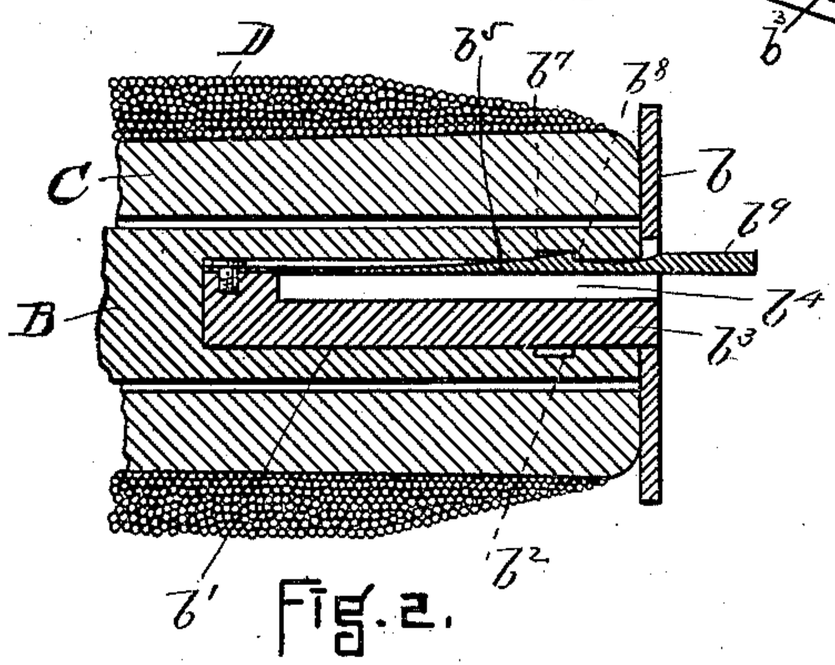

Fig. 2.

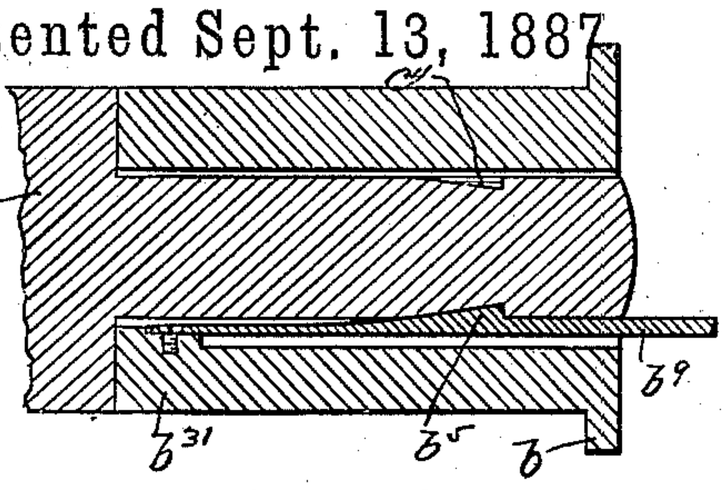

Fig. 6.

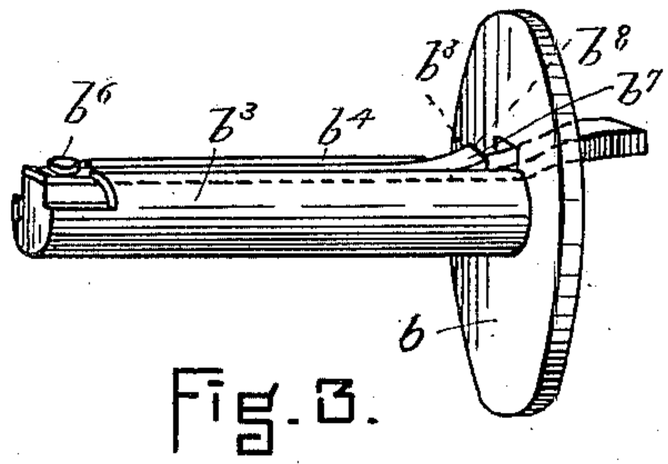

Fig. 3.

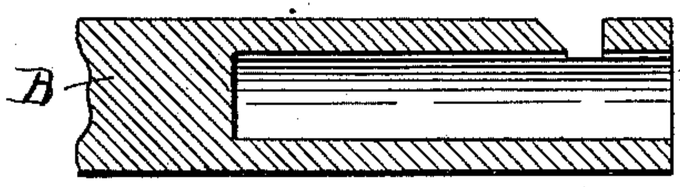

Fig. 4.

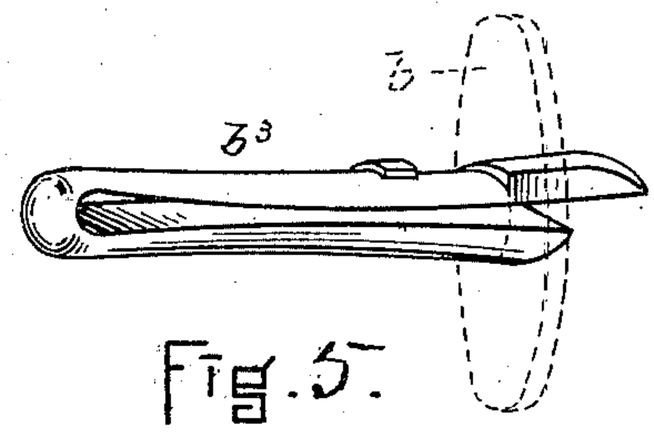

Fig. 5.

WITNESSES.

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INVENTOR.

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UNITED STATES PATENT OFFICE.

IRA A. BLOOD, OF METHUEN, MASSACHUSETTS.

LOOM-SHUTTLE SPINDLE.

SPECIFICATION forming part of Letters Patent No. 369,683, dated September 13, 1887.

Application filed December 20, 1886. Serial No. 222,046. (No model.)

To all whom it may concern:

Be it known that I, IRA A. BLOOD, of Methuen, in the county of Essex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Loom-Shuttle Spindles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

My invention relates more especially to loom-shuttle spindles for holding bobbins carrying worsted cops. Heretofore with such spindles the bobbins have in some instances been retained in place by removable disks or buttons, serving also to provide enlarged guiding-surfaces, over which the yarn is drawn from the cops; and my invention consists in certain improved means for securing such disks or buttons on the spindles and for providing for their ready removal.

In the drawings, Figure 1 is a view in vertical longitudinal section of a shuttle having the features of my invention. Fig. 2 is a vertical section of the end of the shuttle-spindle enlarged, also showing a section of the bobbin and of the cop. Fig. 3 is a view in perspective of the removable button or disk and its locking device. Figs. 4, 5, and 6 illustrate modified forms of the invention, to which reference will hereinafter be made.

I have illustrated in the drawings two ways of attaching the disk or button to the end of the spindle, which I consider to be mechanical equivalents so far as the generic part of the invention is concerned.

A is the shuttle-body. *a* is the shuttle-cavity. B is the shuttle-spindle. C is the bobbin, and D the yarn wound on the bobbin. The spindle B has at its outer end the button or disk *b*, and the spindle is represented in Figs. 1 and 2 as provided with a hole, *b'*, extending inward from its outer end, which hole is enlarged at b^2 to form a circular recess for the reception of a latch which holds the button or disk in place. The button or disk is secured by riveting or in any other desired way to the end of a short stud or stem, b^3, and this short stud has a longitudinal recess, b^4, which receives the spring-latch b^5, riveted at its inner end, b^6, to the stud, and shaped to provide an inclined surface, b^7, and the shoulder b^8, and extended beyond the outer surface of the disk or ring to furnish the thumb-piece b^9, by which the latching surface or section may be moved sufficiently to be disengaged from the latching-recess of the spindle.

It will be seen that the ring or disk is fastened or secured in place by causing the stud or stem to enter the hole in the end of the spindle and pressing it inward until the latch enters the recess or cavity, when it is held or locked in place. This position of the parts is represented in Fig. 2. As the latch recess or cavity is continuous, the latch always engages it, regardless of its position.

In use the button or disk is removed from the end of the spindle, the bobbin placed on the spindle, the button or disk returned or latched upon the end of the spindle, so that the disk or button bears against the end of the bobbin, and its edge extends beyond the same to furnish a guide, over which the yarn is drawn from the cop.

It will be observed that the latching device has an arm or section extending through the button or disk, so that after the bobbin is upon the spindle, and the disk or button is latched to the end of the spindle, its actuating arm or device shall still be in a position to be at once reached and operated for the purpose of easily and quickly detaching the disk or button from the end of the spindle.

In Fig. 4 I have shown the spindle end as provided with a shoulder for receiving a latch like that represented in Figs. 1, 2, and 3, the difference being that the shoulder is provided by forming a hole from the outside of the spindle into the cavity which receives the stud fastened to the disk or button.

In Fig. 5 I show the stud b^3 fastened to the disk or button as a spring-stud—that is, the spring and stud are in one piece. It is adapted to be used with the form of spindle shown in Figs. 2 and 4.

In Fig. 6 I show in enlarged section a form of construction which on some accounts I deem preferable to those already described. The button or disk *b* is therein represented as formed upon the end of a sleeve, b^{31}, which fits the end of the spindle B, which has been reduced in size, and provided with a notch,

c^4, to receive the latch b^5, which is fastened to the inner surface of the sleeve hole or cavity, and the end b^9 of which extends beyond the disk or button, so that it may readily be unlatched. This is a very simple, cheap, and desirable form of construction.

It will be seen that by the use of a disk or button of this character in weaving, the yarn is provided with an even tension as it bears upon the edge of the disk or button as it unwinds from the bobbin or cop; also, that as the ring or disk extends beyond the surface of the bobbin, cracked or split bobbins may be used.

I would further say that I do not confine the invention to its use in connection with worsted bobbins, but may use it for any other bobbin.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with the spindle B, provided near its outer end with an annular recess, of a stud or stem provided with a disk or button, *b*, and having also a spring-catch to engage the said recess to hold the said disk or button to the said spindle, substantially as set forth.

2. The combination, with the spindle B, provided near its outer end with a holding-recess, of a stud or stem provided with a disk or button, *b*, and with a spring-catch to engage said recess, said spring-catch having an extension or thumb-piece projecting beyond the said disk or button, substantially as set forth.

3. The combination of the spindle B, having the hole b' and latch recess or cavity b^2, with the button or disk *b*, having the stem or spindle b^3, and the spring-latch b^5, substantially as described.

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Witnesses:
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