No. 867,740. PATENTED OCT. 8, 1907.

F. A. MILLS.

LOOM SHUTTLE.

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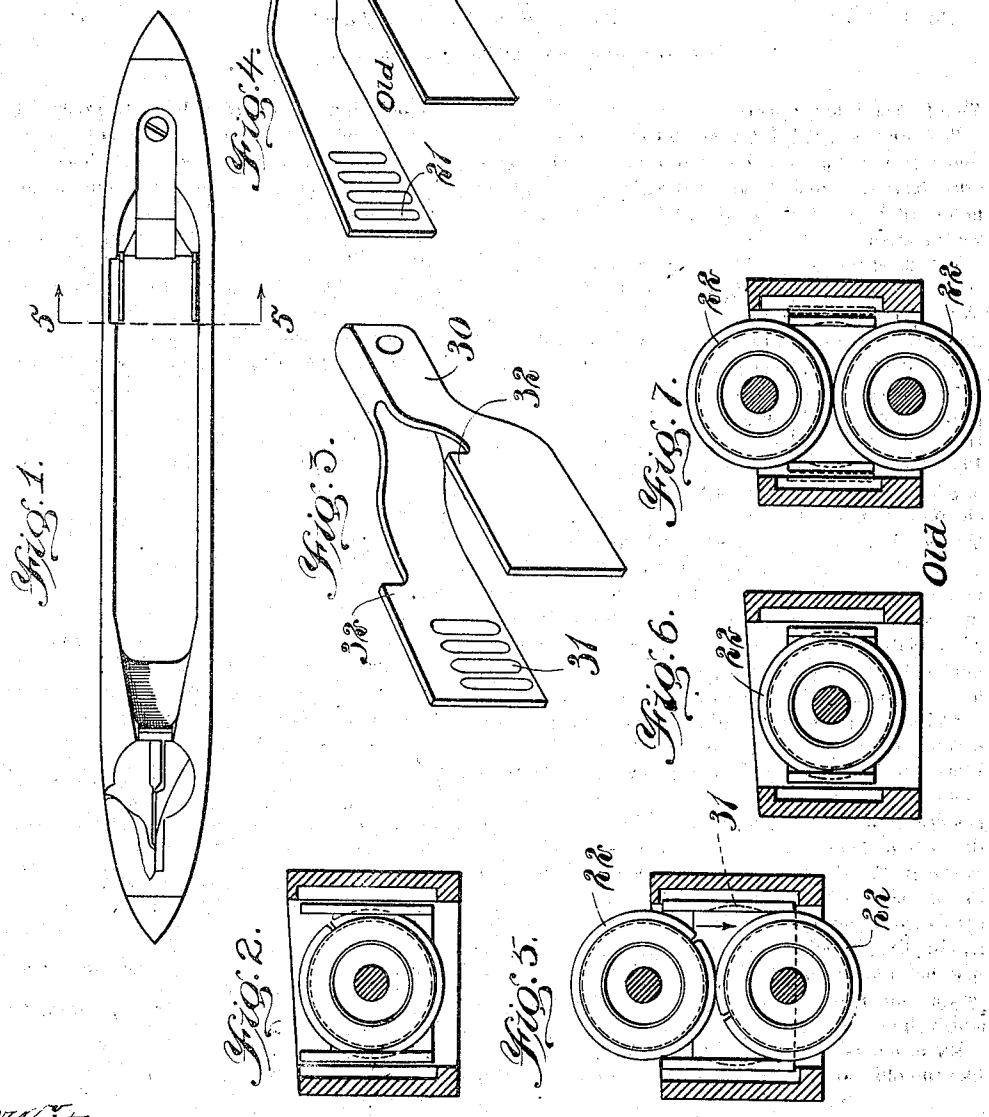

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UNITED STATES PATENT OFFICE.

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LOOM-SHUTTLE.

No. 867,740. Specification of Letters Patent. Patented Oct. 8, 1907.

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To all whom it may concern:

Be it known that I, FRANCIS ARTHUR MILLS, of Lawrence, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Loom-Shuttles, of which the following is a specification.

This machine relates to an improvement in looms.

Figure 1 is a top-plan view of the shuttle shown in Fig. 3. Fig. 2 is a section on the line 5 5, Fig. 1, looking in the direction of the arrow and showing the heel of the bobbin in engagement with the bobbin heel holder. Fig. 3 is a detail perspective view of my improved bobbin heel holder. Fig. 4 is a detail perspective view of the old form of the bobbin heel holder. Fig. 5 is a view similar to Fig. 2 showing the position of my improved bobbin heel holder at the time of the ejection of one bobbin and insertion of another. Fig. 6 is a view similar to Fig. 2 showing the shuttle equipped with the form of bobbin heel holder shown in Fig. 4. Fig. 7 is a view similar to Fig. 5 showing the arrangement of the parts of the bobbin heel holder with relation to the bobbin heels, when the form of holder shown in Fig. 4 is employed and when the bobbin is being ejected and a new one inserted.

20, Fig. 4, represents the ordinary, well-known spring-fork or bobbin heel holder carried by the shuttle. The legs of this fork are formed as leaf springs. The front inner end of each leg is provided with a series of grooves 21 to receive the corresponding flanges 22 of the bobbin heel. In the use of the form of device shown in Fig. 4, the action of the new bobbin ejects the old bobbin, but the legs of the fork are made so narrow that they return to their normal position after leaving the old bobbin and require opening before the new bobbin can enter. This infirmity and unnecessary action of the spring legs greatly reduces their life, and is the cause of frequent breakage.

My improved bobbin heel holder 30 is in principle like the old form of holder and the front end of each leg on its inner side is provided with grooves 31, whereas in the old form of holder the legs are substantially of equal width, in my improved form of holder I increase the width of the legs at the end above the grooves 31, as shown at 32, sufficiently as shown in Fig. 5 to permit the engagement of the forks in their open position with the incoming bobbin before these legs are released by the outgoing bobbin, as shown in Fig. 5. By this arrangement the incoming bobbin engaging the bobbin in the holder removes it from the grooves 31, thereby spreading the legs to the position shown in Fig. 5. The continued downward movement of the top or new bobbin brings the legs of the fork in their open or spread position into engagement with the new bobbin before the old bobbin releases its hold on the forks. By this arrangement the old bobbin is ejected and a new bobbin inserted by one spreading action of the fork, the latter returning to its normal position only after the ribs 22 of the new bobbin have entered the grooves 31.

Having thus explained the nature of my invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I desire to claim is:

1. A shuttle comprising a shuttle-frame formed with a bobbin-receiving receptacle, a spring arranged in said receptacle and adapted to engage the heel of the bobbin, a part on said spring arranged to be engaged by the bobbin to maintain said spring open during the ejectment of one bobbin and the insertion of another.

2. In a magazine loom, a magazine, a shuttle-box, a shuttle, a bobbin spring carried by the shuttle arranged to engage the heel of the bobbin and means whereby the spring is held open during the ejectment of one bobbin and the insertion of another.

In testimony whereof I have affixed my signature, in presence of two witnesses.

FRANCIS ARTHUR MILLS.

Witnesses:
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