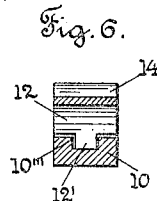
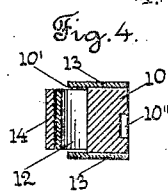
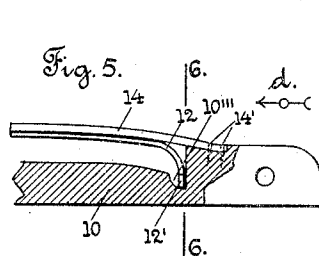
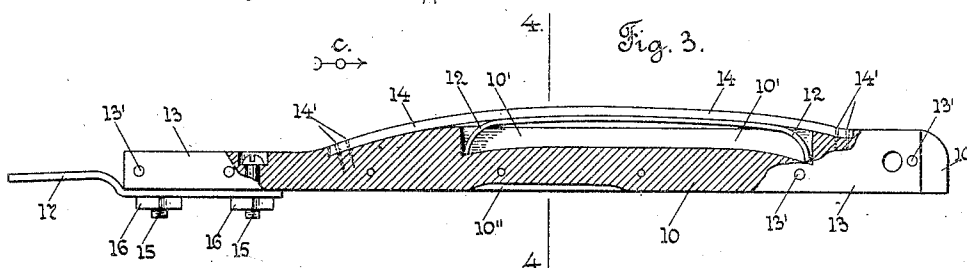
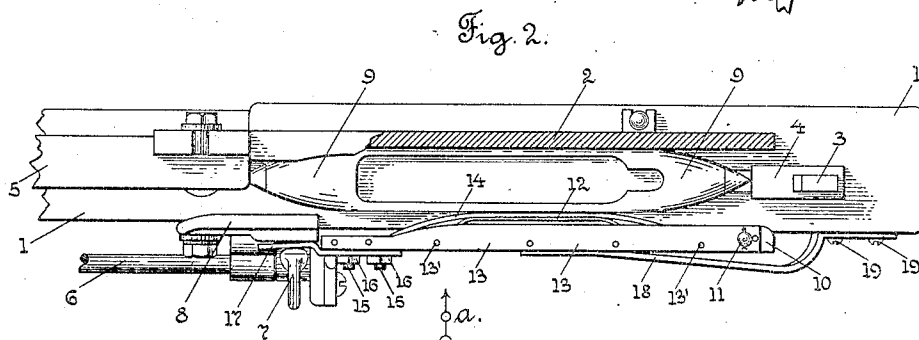
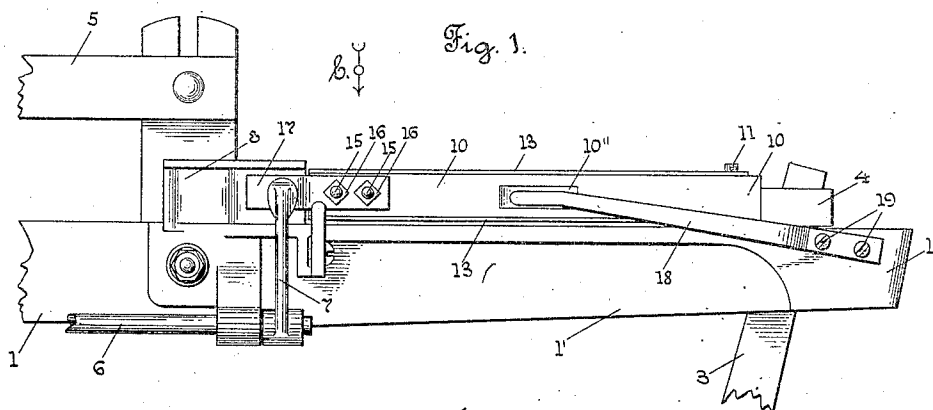


A. A. GORDON.
SHUTTLE BINDER FOR LOOMS.
APPLICATION FILED FEB. 13, 1908.

958,487.

Patented May 17, 1910.



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UNITED STATES PATENT OFFICE

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SHUTTLE-BINDER FOR LOOMS.

958,487.

Specification of Letters Patent. Patented May 17, 1910.

Application filed February 13, 1908. Serial No. 415,653.

To all whom it may concern:

Be it known that I, ALBERT A. GORDON, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Shuttle-Binders for Looms, of which the following is a specification.

My invention relates to a shuttle binder for a loom, and the object of my invention is to provide an improved shuttle binder for a loom.

My invention consists in certain novel features of construction of my shuttle binder as will be hereinafter fully described.

My improved shuttle binder consists of a bar of nonmetallic material, preferably wood, having a pivotal support near one end, and a recess or opening upon the inner side of the binder, and preferably reinforcing strips of thin metal on the upper and lower edge thereof, overlapping said opening and forming a recess for a convexed or outwardly curved flat metallic spring, which has its ends turned inward to contact with the ends of the recess, whereby both ends of said spring are held and prevented from spreading endwise as the shuttle enters the shuttle box, and when the side of the shuttle contacts with the spring at its inner end, its curved surface at that end will be pressed inward, causing the surface at the opposite end to curve outwardly, and acting to retard the entrance of the shuttle into the box, until the binder is moved outwardly and the shuttle passes fully into its outward position, when said spring will resume its normal curved shape. A flexible strip of leather, or other suitable material, may be used to extend over the spring, and be secured at each end to the bar forming the binder, to assist in retaining the spring in place, and to receive the friction of the shuttle as it passes into the box.

I have shown in the drawing one end of a lay, and a stationary shuttle box thereon, with my improved binder combined therewith.

Referring to the drawing:—Figure 1 is a front view of the end of the lay, looking in the direction of arrow *a*, Fig. 2, and of my binder combined therewith. Fig. 2 is a plan view of the parts shown in Fig. 1, looking in the direction of arrow *b*, same figure; the shuttle box is shown partially broken

away. Fig. 3 shows, on an enlarged scale, a top view and partial section of my improved shuttle binder. Fig. 4 is a section on line 4, 4, Fig. 3, looking in the direction of arrow *c*, same figure. Fig. 5 shows a modified construction of the binder shown at the right in Fig. 3, and, Fig. 6 is a section on line 6, 6, Fig. 5, looking in the direction of arrow *d*, same figure.

In the accompanying drawing, 1 is the lay, 1' is the lay end, 2 is the stationary shuttle box, 3 is the picker stick, 4 is the picker, 5 is the hand rail, 6 is the protector rod, 7 is the protector finger, 8 is the stationary guide or mouth-piece at the inner end of the shuttle box, 9 is the shuttle. All of the above mentioned parts may be of the usual and well known construction.

I will now describe my improvements in shuttle binder.

The shuttle binder 10 is of non-metallic material, and is preferably made of wood, and is pivotally supported, in this instance at its outer end at the front of the shuttle box, on a pin 11, secured to the lay end 1'. The binder 10 has an elongated recess or opening 10' therein upon its inner surface, of a width corresponding to the height of the binder, and in this opening extends a convexed or outwardly curved flat metallic spring 12; the ends of the spring 12 are adapted to engage the ends of the recess 10', and said spring extends out beyond the inner surface of the binder 10, see Fig. 3. Upon the upper and lower edge of the binder 10 is preferably secured a thin metallic strip 13, by screws or rivets 13'. The metallic strips 13 overlap the recess 10' on its upper and lower side, and serve to retain the spring 12 in said recess, and prevent sidewise motion of said spring. A strip 14 of flexible material, preferably leather, extends over the spring 12, and is secured at each end, in this instance by rivets 14' to the binder 10. The inner end of the binder abuts the inner edge of the guide or mouth-piece 8 of the shuttle, and when the binder is in alignment with the inner side of said guide or mouth piece, acts to guide the shuttle into the box. To the inner end of the binder 10 is attached, in this instance by two bolts 15 and nuts 16, one end of a thin metallic strip 17. The inner end of said strip is offset, and is adapted to bear against the outer side of the guide or mouth-piece 8, and extends

into the path of, and is engaged by the upper end of the protector finger 7, see Figs. 1, and 2. A spring 18 is attached, in this instance at its outer end, by two screws 19 to the lay end, and extends at its free end in the recessed portion 10'' on the outer side of the binder 10, and acts to yieldingly move inwardly said binder.

In Figs. 5 and 6 is shown a modified construction of the binder. In the construction shown in said figures, I do away with the reinforcing strips 13 to hold the spring 12 in the recess 10' and prevent sidewise movement of said spring, and I make a recess 10''' at the ends of the recess 10' on the inner surface of the binder 10 to receive the reduced end 12' on the metallic spring 12, see Fig. 6.

From the above description in connection with the drawing, the operation of my improved shuttle binder will be readily understood by those skilled in the art. As the shuttle enters the box, it engages the leather strip 14, which receives the friction of the shuttle, and compresses the inner part of

the spring 12, which forces out the outer part, and acts to retard the shuttle, before the binder 10 is forced outwardly, against the action of the spring 18.

It will be understood that the details of construction of my improved shuttle binder may be varied if desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

A shuttle binder for a loom, comprising a non-metallic bar pivotally supported near one end and having a recess upon its inner side, and reinforcing strips on its upper and lower edge overlapping said recess, a convex or outwardly curved flat spring in said recess with its ends abutting against the ends of said recess, and a strip of flexible material extending over said spring, and secured at each end to the binder.

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