(No Model.)

R. LUND.

SHUTTLE BINDER FOR LOOMS.

No. 494,719. Patented Apr. 4, 1893.

Fig: 1.

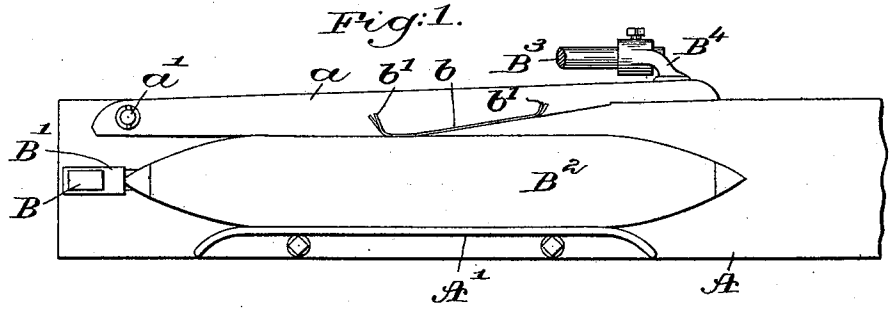


Fig: 2.

Fig: 3.

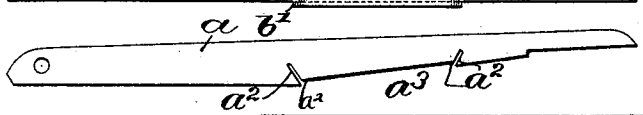


Fig: 4.

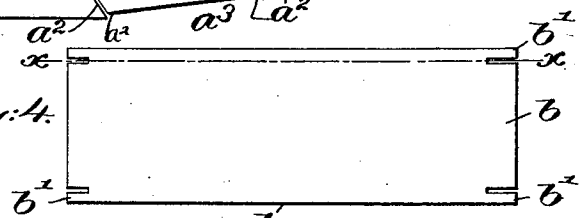


Fig: 5.

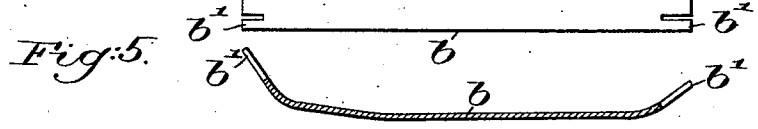


Fig: 6.

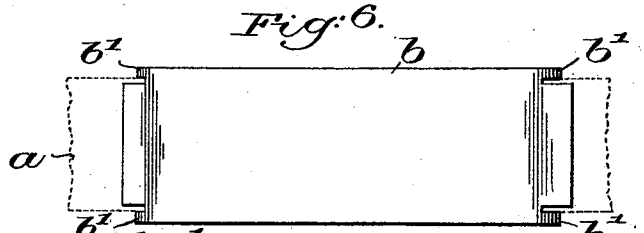
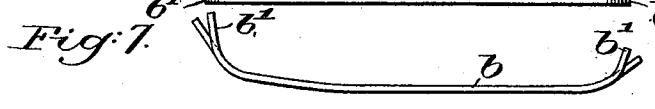


Fig: 7.



Witnesses.
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Louis N. Gould

Inventor:
Richard Lund,
by Crosby & Gregory Attys.

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UNITED STATES PATENT OFFICE.

RICHARD LUND, OF FALL RIVER, MASSACHUSETTS.

SHUTTLE-BINDER FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 494,719, dated April 4, 1893.

Application filed November 28, 1892. Serial No. 453,345. (No model.)

To all whom it may concern:

Be it known that I, RICHARD LUND, of Fall River, county of Bristol, State of Massachusetts, have invented an Improvement in Shuttle-Binders for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Shuttle binders employed in connection with shuttle boxes of looms, are a great majority of them composed of wood for the sake of securing lightness of the lay, and to reduce first cost. Binders have, however, been composed of cast metal, and also of wrought metal, and so also a metallic spring has been bolted at one end to a wooden binder, the other end of the spring being left free, and projecting near the binder face. A wooden binder is objectionable because it wears rapidly under the action of the shuttle. As the binder wears away, the extent of the rocking motion of the protector-rod is reduced, and consequently the vertical movement of the dagger; and the dagger therefore strikes and stops the loom. To overcome this defect, the stationary side of the shuttle-box has to be adjusted, requiring the time of a loom-fixer, and the work of the loom is lost. As the swell of the binder wears away, the weaver will frequently alter the picker stroke in such way as to get a more powerful blow, to thus carry the shuttle farther into the box, to thereby move the binder far enough to prevent the stopping of the loom, and it will be obvious that any increase of picking power is injurious to the loom and results in greater wear of its parts.

I have aimed to produce a binder having all the advantages due to the wooden binder, and at the same time, by obviating wear, keep the picking up to its maximum efficiency.

As a result of my experiments, I have produced a binder composed of a wooden body provided with a seat, into which I have secured a hard smooth shuttle-receiving plate preferably made as a thin metallic plate having its end or ends shaped to enter a slot in the binder, and preferably the ends of the said receiving-plate will have one or more fingers or prongs to overlap the body of the binder to thus aid in keeping the plate in place as against accidental vertical movement on or with relation to the binder, after the said face has been once applied.

Figure 1, in plan view, shows a sufficient part of the shuttle-box of a loom with my improved binder added, to enable my invention to be understood. Fig. 2 is an inner or face view of the binder detached from Fig. 1. Fig. 3 shows a top view of the binder body with the shuttle-receiving plate detached. Fig. 4, on an enlarged scale, shows the shuttle-receiving plate detached; Fig. 5, a section thereof in the line *x;* Fig. 6, a face view of the receiving plate bent as it will be when applied to the wooden body of the binder, a portion of the binder being shown by dotted lines; and Fig. 7, a top edge view of the receiving plate alone shown in Fig. 5.

The shuttle-box end A of the lay with its side piece A′, are and may be of usual construction. The picker-stick B having a picker B′, the shuttle B^2, the protecting shaft B^3 and the binder finger B^4, are and may also be all as usual, and the picker-stick may be actuated in any usual way. The wooden binder *a*, pivoted at *a′* at one side the shuttle-box, is represented as slotted inwardly from its inner face as at a^2, a^2, at the point where the shuttle will first contact with the binder as the shuttle enters the shuttle-box, and preferably the binder between these two slots will be cut away as at a^3 to leave a sunken seat in which enters the shuttle-receiving plate *b*, preferably a thin plate of metal, preferably the metal steel, the ends of the plate entering the slots a^2, as shown in the drawings. The plate should be restrained from vertical movement in or on the face of the binder, and to effect this in the best and cheapest manner known to me, I have slotted the ends of the plate to form prongs or fingers *b′* which when the plate is in place on the binder are bent over the binder or made to engage it preferably above and below its lower edge.

This invention is not, however, limited to the exact shape shown of the slots in the body of the wooden binder, or to the exact shape of the plate *b* or its prongs to secure the plate to the binder body.

A binder such as described, while of light

weight, is very durable and will constantly present a uniform surface to the action of the shuttle, and the power required to effect the picking is kept uniform, and the speed may be kept up to the maximum because the efficiency of the binder is constant.

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

1. A shuttle-binder composed of a non-metallic slotted body, and a receiving plate having both of its ends embedded in said slotted body, substantially as described.

2. A shuttle-binder composed of a non-metallic slotted body, and a receiving plate having its ends inturned to enter said slots, and having a suitable attaching prong or finger, to operate, substantially as described.

3. A shuttle-binder composed of a wooden body having a seat and slotted as shown, combined with a thin plate having its ends forced into said slots and crossing between its ends the said seat, and prongs to overlap the binder body, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RICHARD LUND.

Witnesses:
GEO. W. GREGORY,
EMMA J. BENNETT.