

(No Model.)

H. GRAICHEN.

SHUTTLE LOCKING MECHANISM FOR LOOMS.

No. 462,701.

Patented Nov. 10, 1891.

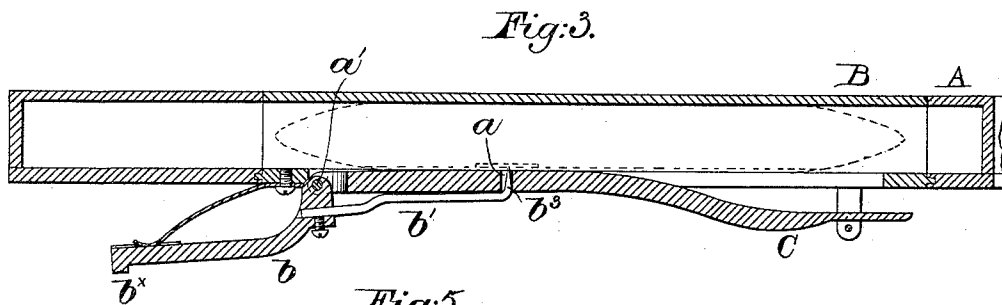
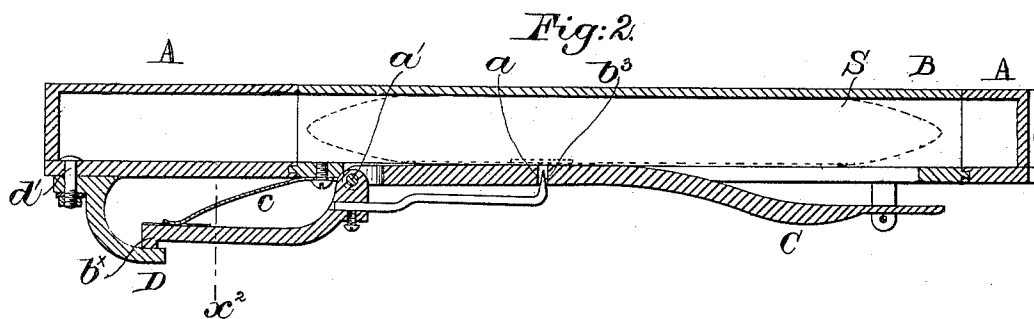
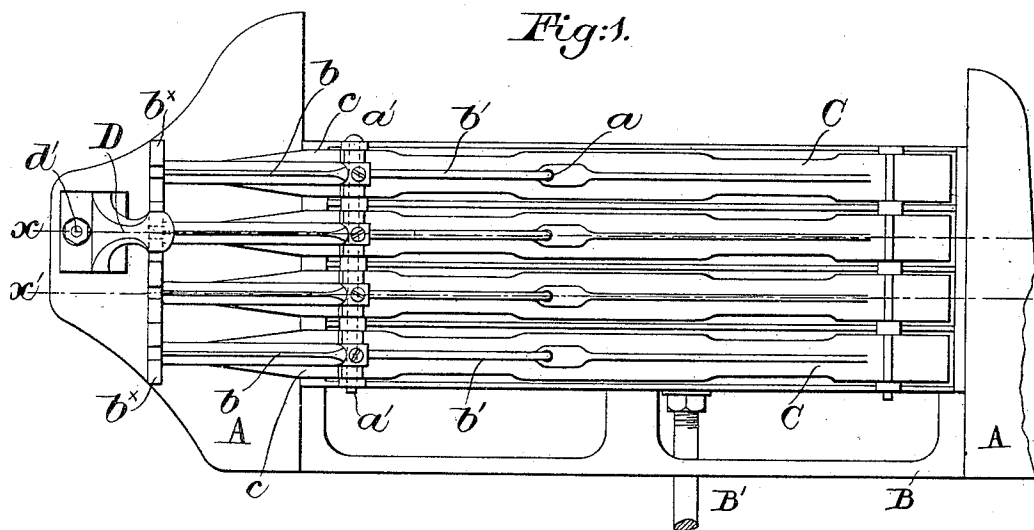
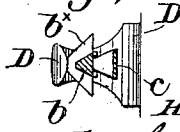


Fig. 5.



Fig. 4.



Inventor.

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Witnesses.

Edward F. Allen.

Fred S. Greenleaf.

UNITED STATES PATENT OFFICE.

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SHUTTLE-LOCKING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 462,701, dated November 10, 1891.

Application filed March 3, 1891. Serial No. 383,576. (No model.)

To all whom it may concern:

Be it known that I, HERMAN GRAICHEN, of Lawrence, county of Essex, State of Massachusetts, have invented an Improvement in Shuttle-Locking Mechanisms for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention in looms has for its object to provide means whereby those shuttles contained in a shifting shuttle-box, which shuttles are not directly at the level of the race of the lay in operative position will be locked, so that they cannot slip out of place and do injury.

In usual looms the binder of the shuttle-box is supposed to prevent the shuttle from longitudinal motion, except when impelled by the usual picker-stick; but in accordance with my invention I have provided each binder with a co-operating shuttle-locking device, which bears on or engages the shuttle-body or enters a groove therein.

Figure 1 represents a rear side view of a shifting shuttle-box and part of the lay end in which the said shuttle-boxes rise and fall in usual manner; Fig. 2, a section in the line x through the shuttle-box, which is supposed to be opposite the usual raceway of the lay; Fig. 3, a section in the lining x' . Fig. 4 is a detail to the left of the line x^2 , Fig. 2; Fig. 5, a sectional view of a shuttle to show the groove therein.

The lay A, shaped to receive the shifting-shuttle-box frame B, having, as represented, four cells, the shuttle-box rod B', and the binders C, are and may be of usual construction. Ordinarily each binder is acted upon by a flat spring to normally keep the binder pressed against the shuttle in the shuttle-box cell with which the binder co-operates. I have provided each binder with a hole or slot a , and upon the usual pin a' , which serves as a pivot for the binder, I have mounted a shuttle-locking device, herein shown as a lever b , having a finger b' , provided with a point b^3 to enter a narrow longitudinal groove 2 in the side wall of the shuttle S, or to enter the wood of the shuttle, as shown in Fig. 3, at all times, except when the shuttle is directly at the level

of the raceway of the lay or in operative position to be shot through the shed, at which time the particular lever b , co-operating with the binder of the shuttle-cell containing the shuttle to be thrown, comes against the releasing device D, which acts to throw the lever b in against the action of the spring c , withdrawing the locking device (see Fig. 2) from contact with the shuttle. The releasing device D is fixed by screw d' to part of the lay.

Prior to my invention I am not aware that the shuttle in a shuttle-box has ever been acted upon by a locking device adapted to engage the side of and lock a shuttle in a shifting shuttle-box, thus supplementing the action of the usual binder, and hence this invention is not to be limited to the exact form of locking device shown, as the shape of the said locking device and the means for moving it into and out from engagement with the shuttle might be modified in various ways and yet be within the scope of my invention.

The outer end of each lever b has a cam-shaped projection b^x to contact with the releasing device D.

I claim—

1. A lay and a shifting shuttle-box provided with binders, combined with locking devices independent of said binders to engage and lock in its own proper cell each shuttle not in the shuttle-box cell opposite the raceway of the lay, and a releasing device in the path of movement of and to co-operate with each locking device to release one shuttle at a time, as and for the purpose set forth.

2. A lay, its shifting shuttle-box, a series of binders, and a series of locking devices having points and pivoted as described, combined with a releasing device or stop against which a part of the said locking device contacts when the shuttle-box containing the shuttle next to be thrown is at the level of the raceway, substantially as described.

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

HERMAN GRAICHEN.

Witnesses:

MOSES H. AMES,
CHAS. T. EMERSON.