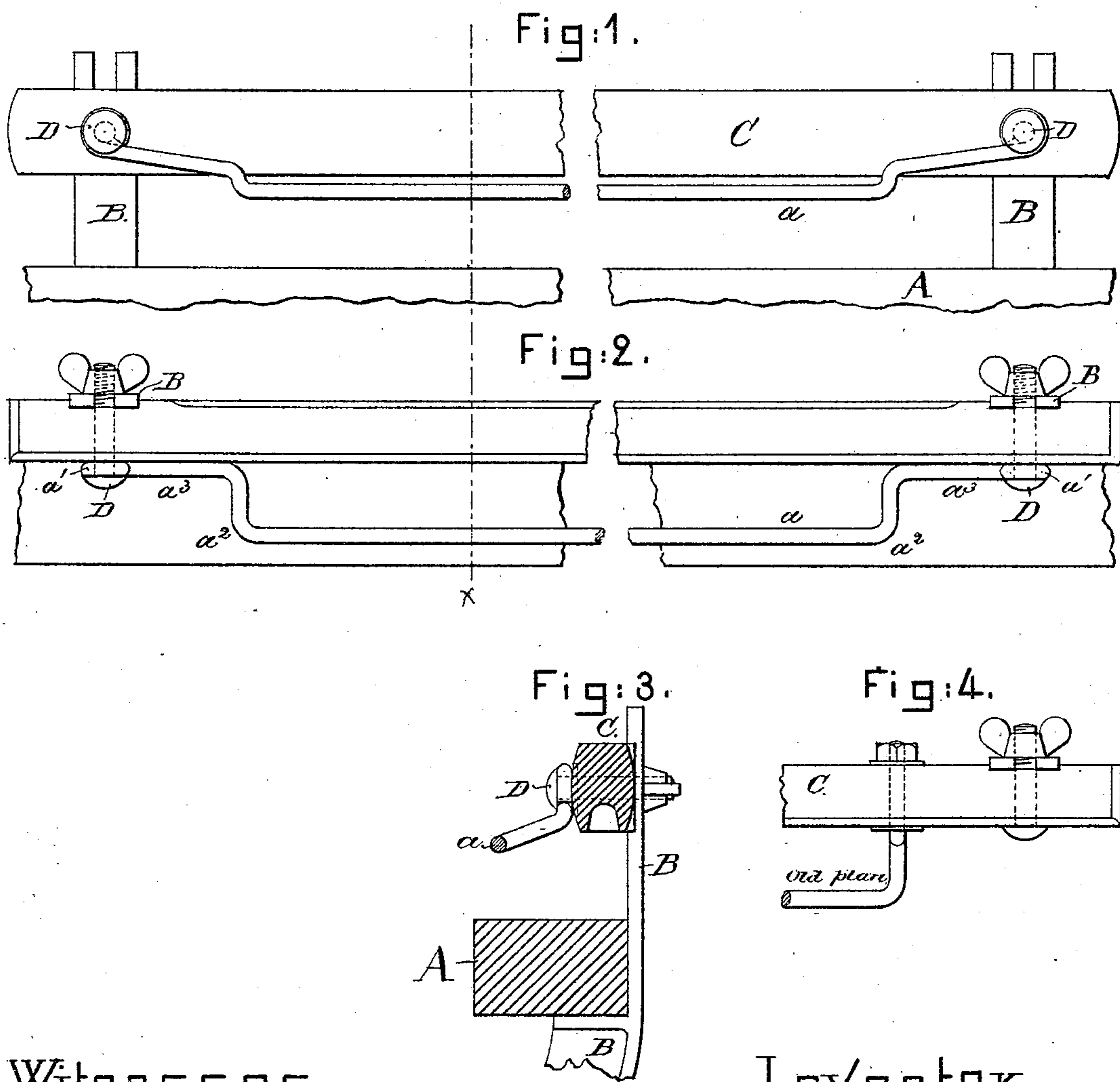


(No Model.)

J. SULLIVAN.  
SHUTTLE GUARD FOR LOOMS.

No. 355,797.

Patented Jan. 11, 1887.



Witnesses.

*Thos L. Emery*  
*John F. C. Pomeroy*

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*John Sullivan*  
*by Leroy & Gregory attys.*

# UNITED STATES PATENT OFFICE.

JOHN SULLIVAN, OF FALL RIVER, ASSIGNOR TO GEORGE DRAPER & SONS,  
OF HOPEDALE, MASSACHUSETTS.

## SHUTTLE-GUARD FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 355,797, dated January 11, 1887.

Application filed May 12, 1886. Serial No. 201,944. (No model.)

*To all whom it may concern:*

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

My invention consists, essentially, in the combination, with the upper ends of the lay-swords and hand-rail, of a shuttle-guard rod constructed substantially as hereinafter particularly set forth, and extended along the front of the hand-rail above the race of the lay, and provided with eyes, whereby the guard may be attached to the hand-rail by the bolt usually employed to secure the hand-rail to the lay-sword, as will be described.

Figure 1, in front elevation, represents a sufficient portion of a lay and attached shuttle-guard to enable my invention to be understood, the lay, hand-rail, and guard being broken out centrally; Fig. 2, a top or plan view of Fig. 1. Fig. 3 is a section of Fig. 2 in the dotted line  $x$  and Fig. 4 a detail to illustrate one common plan of attaching a shuttle-guard, the said figure showing a part of a hand-rail with one end of the shuttle-guard attached to it; also a piece of the upper end of the lay-sword to support the hand-rail.

The beam A of the lay, the lay-swords B and hand-rail C, and bolts D, to confine the hand-rail to the upper ends of the lay-swords, are and may be of usual construction.

The shuttle-guard is composed of a rod,  $a$ , having at its ends eyes or loops  $a'$ , the said rod being long enough to extend along the hand-rail from one to the other bolt D, so that the said bolts are utilized to bolt the shuttle-guard firmly in place, notwithstanding strain on the said guard.

In my invention the shuttle-guard may be quickly applied to any usual loom without boring the hand-rail, and my improved shuttle-guard may be applied to hand-rails condemned by reason of holes made therein by shuttle-guards attached to them at points between the lay-swords, the ends of the guards having been passed through the hand-rail, as usual, or as shown in Fig. 4.

My improved shuttle-guard is bent, substantially as shown in the drawings, to form rests  $a^3$ , which come against the front side of the hand-rail, and the ends of the said rod from its shoulders  $a^2$  to its loops or eyes  $a'$  are bent upwardly, so as to leave the central part of the rod a little below the under side of the hand-rail, while the eyes  $a'$  receive the usual bolts, D, at substantially the center line of the hand-rail, the rod being bent at the shoulders  $a^2$  in such form as to throw the central portion of the rod forward in front of the hand-rail, substantially to the front of the raceway of the lay, and so as to overhang the usual shuttle in its flight along the raceway of the lay.

I claim—

The shuttle-guard constructed with eyes  $a'$ , rests  $a^3$ , shoulders  $a^2$ , and a central portion standing off from and extending below the lower edge of the hand-rail, combined with the hand-rail, beam, swords, and bolts D, common as fastenings to both the guard and hand-rail, substantially as set forth.

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

JOHN SULLIVAN.

Witnesses:

THOMAS FORTUNE,  
DENNIS V. SULLIVAN.