

(No Model.)

3 Sheets—Sheet 1.

A. WADDINGTON.
SHUTTLE GUARD FOR LOOMS.

No. 529,763.

Patented Nov. 27, 1894.

Fig. 1.

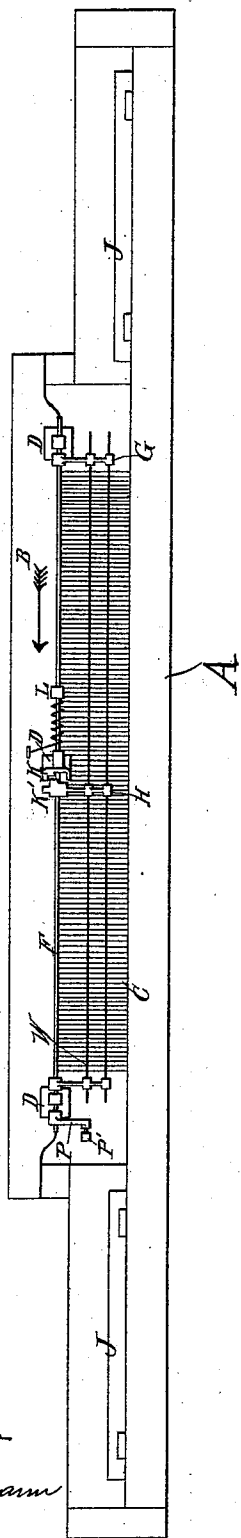
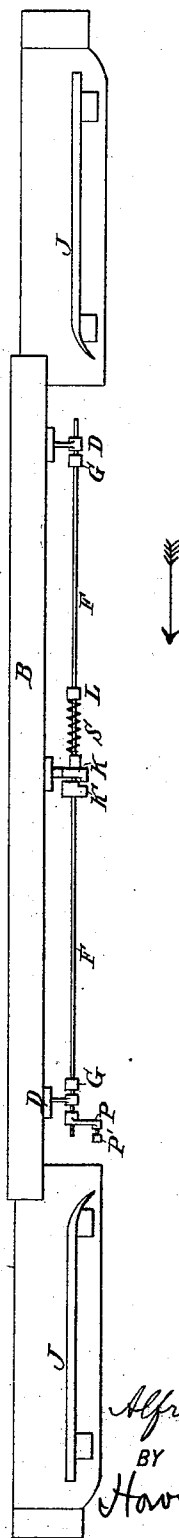


Fig. 2.



WITNESSES:
Maud Keller
George Baumann

INVENTOR
Alfred Waddington
BY
Howard and Howard
his ATTORNEYS.

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FIG. 6.

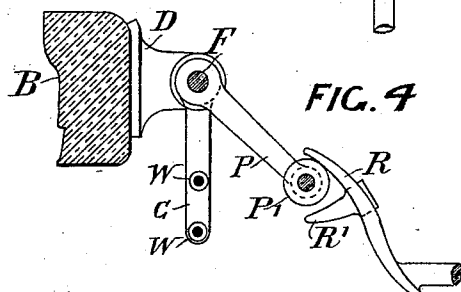
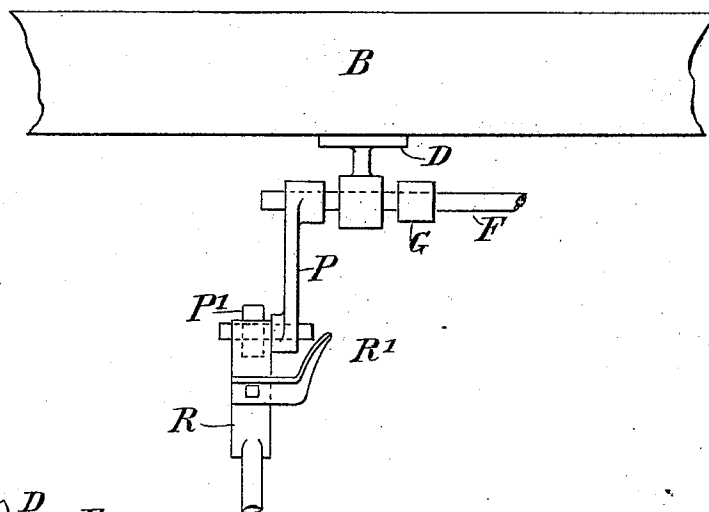


FIG. 4

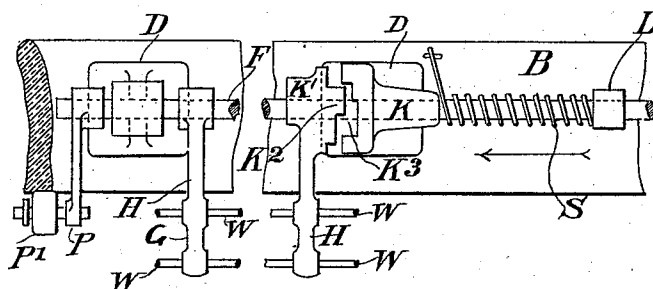


FIG. 3.

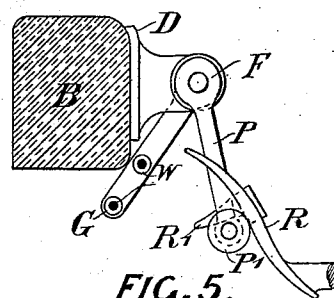


FIG. 5.

Witnesses

George Baumann

Edith J. Ginnell

Inventor
Alfred Waddington
By his Attorneys

Horsman and H. W. H.

(No Model.)

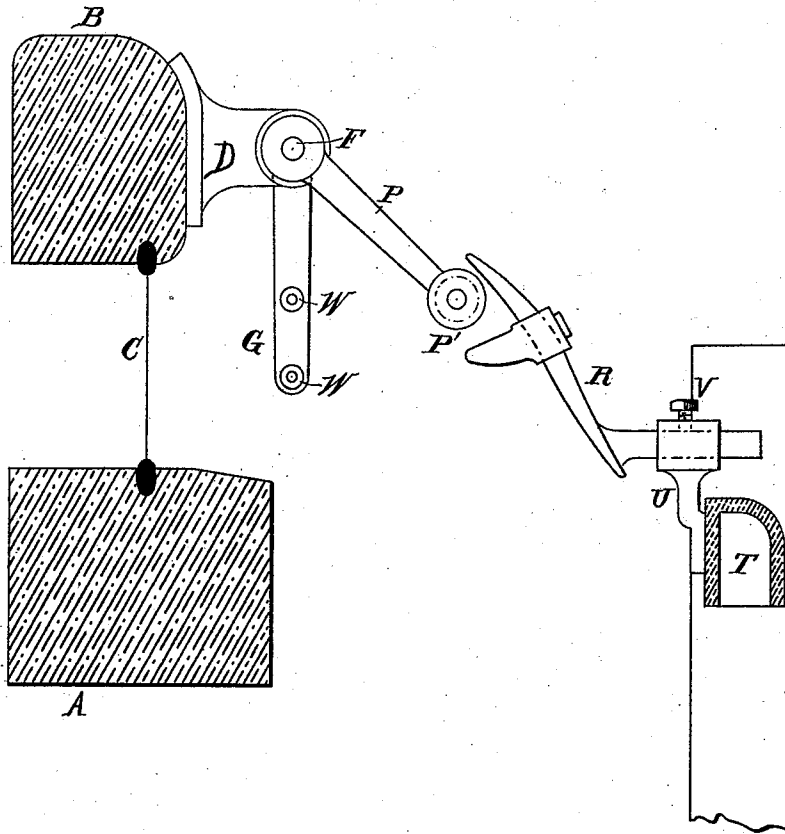
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FIG. 7.



Witnesses:

George Baumann
S. C. Baum

Inventor
Alfred Waddington
by his Attorneys
Howson and Howson

UNITED STATES PATENT OFFICE.

ALFRED WADDINGTON, OF BRADFORD, ENGLAND, ASSIGNOR TO THE S. BOTTOMLEY & BROTHERS, LIMITED, OF SAME PLACE.

SHUTTLE-GUARD FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 529,763, dated November 27, 1894.

Application filed May 2, 1893. Serial No. 472,740. (No model.) Patented in Germany March 5, 1892, No. 64,600; in Belgium March 10, 1892, No. 98,739; in France March 11, 1892, No. 220,053, and in England May 18, 1892, No. 9,420.

To all whom it may concern:

Be it known that I, ALFRED WADDINGTON, a subject of the Queen of Great Britain and Ireland, residing at Bradford, in the county of York, England, have invented certain Improvements in Shuttle-Guards for Looms, (for which I have obtained Letters Patent in Great Britain, No. 9,420, dated May 18, 1892; in France, No. 220,053, dated March 11, 1892; in Belgium, No. 98,739, dated March 10, 1892, and in Germany, No. 64,600, dated March 5, 1892,) of which the following is a specification.

The object of this invention is to so construct shuttle guards, that the same may be secured to the hand rail of the lathe of the loom, in such a manner that the guard is automatically placed in such a position that, should the shuttle by any means be diverted from its usual straight course across the ways, it is prevented leaving the loom, thereby securing the personal safety of the attendant and others near the loom. The apparatus is so arranged that the guard will yield to some extent during the beat up of the weft, and that the reed space, "shed" of the warp, course of the shuttle and cloth will be exposed during the process of weaving to such an extent that the weaver can examine the operations during the process of weaving, and when the loom is stopped the guard is capable of being easily moved into such position that the weaver has free access to the cloth and warp threads.

In the accompanying drawings, Figure 1 represents an elevation of the lathe of a loom constructed and operated in the ordinary manner and to which is attached my improved shuttle guard. Fig. 2 is a plan of the same. Fig. 3 is a detailed view of a portion of the apparatus. Fig. 4 is a transverse sectional view taken near one end of the guard, and showing the position of the guard immediately below the beat-up of the weft. Fig. 5 is a similar view, showing the guard against the hand rail in the position for liberation as hereinafter described, and Fig. 6 is a plan of Fig. 4. Fig. 7 is a detail view.

The lathe A of the loom, hand rail B and reed C are constructed and reciprocated in the manner as hitherto.

To the hand rail B are secured a number of brackets D three being shown in the present instance, and on the brackets is mounted a shaft F to which are secured the arms G and H through which pass or are otherwise attached, one or more light bars W. Two are shown in the drawings, both of which extend the full width of the reed C, thereby forming a guard between the shuttle picking boxes J above and in front of the shuttle path.

On the end of the shaft F is secured a lever P having by preference a small pulley P' mounted near the end of same. On the center bracket D is formed or secured one half of a clutch box K, the other half K' of the clutch box forming a part of the arm H, and is kept engaged with that on the bracket by means of a spiral spring S placed around the shaft F, one end of the spring being attached to the adjustable collar L, and the other to the hand rail B. The collar L before being secured on the shaft F, is turned thereon some distance in the direction opposite to the coiling of the spiral spring S, which puts a certain amount of tension upon the spring to keep the shaft F and guard in the position for protecting the shuttle.

When the shuttle guard is used on looms fitted with what is known as bar or roller temples, that is, with a temple extending across the cloth, and mounted near the fell of the cloth for keeping the latter at its proper width, the bottom portion of the guard will come in contact with the same if not relieved, and in order that the guard may automatically recede the distance required, the pulley P' comes in contact with an adjustable bar R (Figs. 4 to 7) in each forward movement of the lathe A, thus causing the said pulley and arms of the guard to move some distance toward the reed C, sufficient to clear the temple, the spiral spring S, causing the arms of the guard to return to their normal position on the retreat of the lathe A, and before the next pick of the shuttle.

Referring to Fig. 7, the bar R is adjustably fixed by a screw V, in a bracket U carried by a portion T of the loom frame but the bar is not connected to the guard.

On stopping the loom, the arm H may be disengaged from the clutch box K by the attendant pressing one of the arms G or H in the direction of the arrow, and backward toward the reed C, thus turning the shaft F in its bearings and bringing the bottom portion of the arms and guard bars W back against the hand rail B, somewhat as shown by Fig. 5, thus giving free access and an uninterrupted view of the cloth, reed C, and warp threads passing through same. The guard is held in this position by the claw K² engaging in the deep recess K³ in the clutch box K.

On starting the loom, the guard is positively and automatically brought back to the position for protecting the shuttle, by the arm P which comes in contact with the inclined surface of projection R' (see Fig. 6) at each forward movement of the lathe. This causes the shaft F and arms attached thereto to slide such a distance that the claw K² is disengaged from the deep recess K³ in clutch box K, thus allowing the partly uncoiled spring S to turn the shaft F, and the claw K² to engage with another recess in the box K, as shown by Fig. 3, thus protecting the course of the shuttle.

I claim as my invention—

1. In a loom, the combination of the lathe, a shuttle guard and a clutch box, one half of which is carried by the guard and the other half by the lathe, the said clutch box adapted to lock the guard in either its raised or protecting position, with means for automatically placing the guard in its protecting position at the starting of the loom, substantially as set forth.

2. In a loom, the combination of the lathe, a shuttle guard, a clutch box, one half of which is carried by the guard and the other half by the lathe, and a two-way spring tension, the tension in one way tending to close the clutch box to lock the guard in either its raised or protecting position, and the other way tending to move the guard into its protecting position, with means for automatically

placing the guard in its protecting position at the starting of the loom, substantially as set forth.

3. In a loom, the combination of the lathe, a movable shuttle guard, and a spring to normally hold the guard in its protecting position with an adjustable bar carried by a stationary part of the loom and disconnected from but adapted to act upon the said guard to press it toward the lathe at each beat up, substantially as and for the purpose set forth.

4. In a loom, the combination of the lathe, a shuttle guard, a clutch box, one half of which is carried by the guard and the other half by the lathe, and a two-way spring tension, the tension in one way tending to close the clutch box to lock the guard in either its raised or protecting position, and in the other way tending to move the guard into its protecting position with an inclined projection carried by a stationary part of the loom and adapted to act on the said guard to unlock the clutch box, all substantially as and for the purposes set forth.

5. A shuttle guard comprising a rotatable and longitudinally moving shaft F provided with arms G, H and P, wires W carried by the arms G and H, a clutch box one half of which is carried by the arm H and the other half adapted to be secured to the loom, a spring constantly tending to close the clutch box to place the guard in its protecting position, in combination with an adjustable bar R carried by a stationary part of the loom, and an inclined projection R' the said arm R and projection R' adapted to act upon the arm P of the guard, substantially as and for the purposes set forth.

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

ALFRED WADDINGTON.

Witnesses:

JNO. GILL,

S. GRAY RHODES.