

E. M. STEVENS.
Loom-Shuttle Guards.

No. 145,763.

Patented Dec. 23, 1873.

Fig. 2.

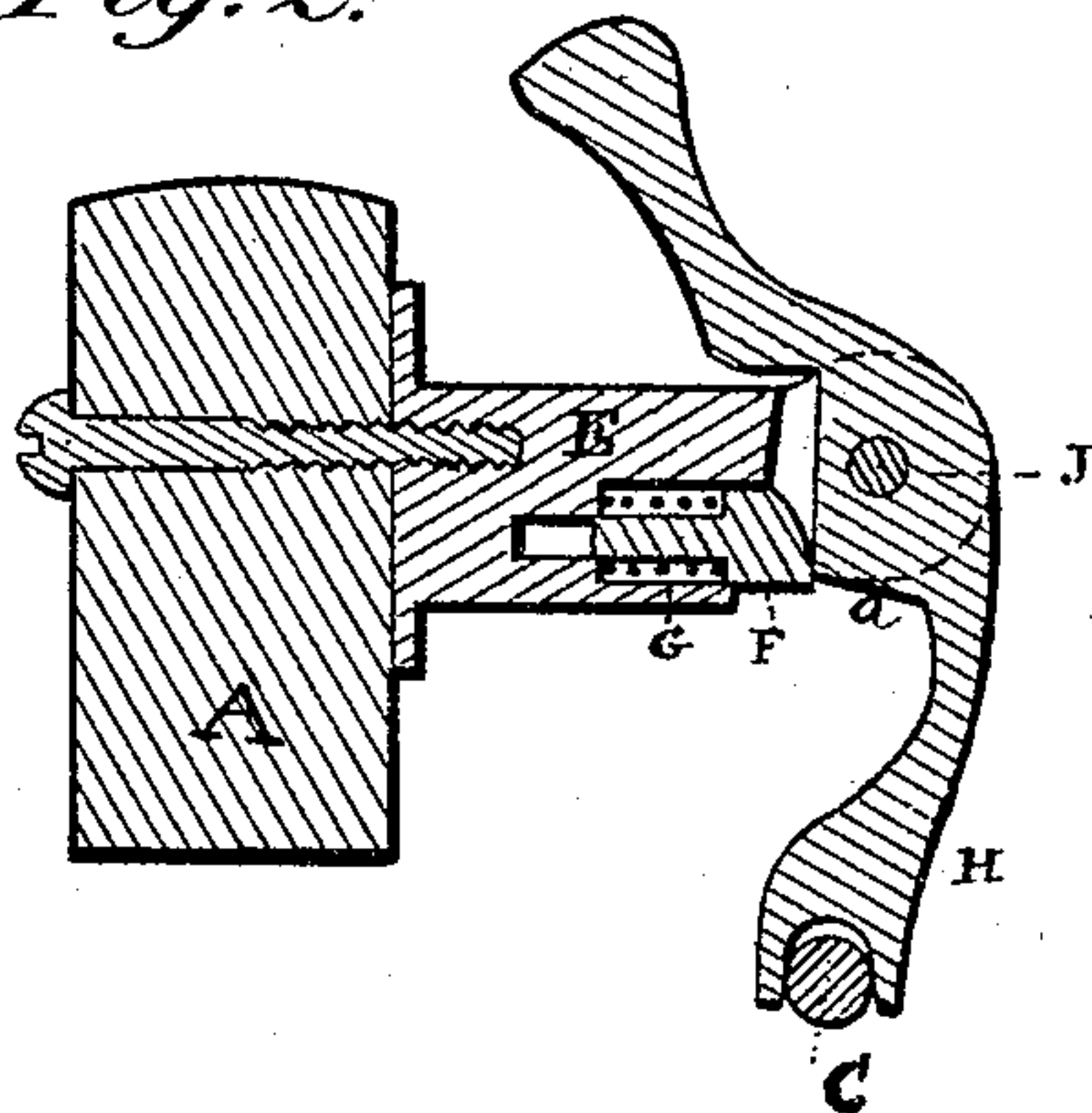
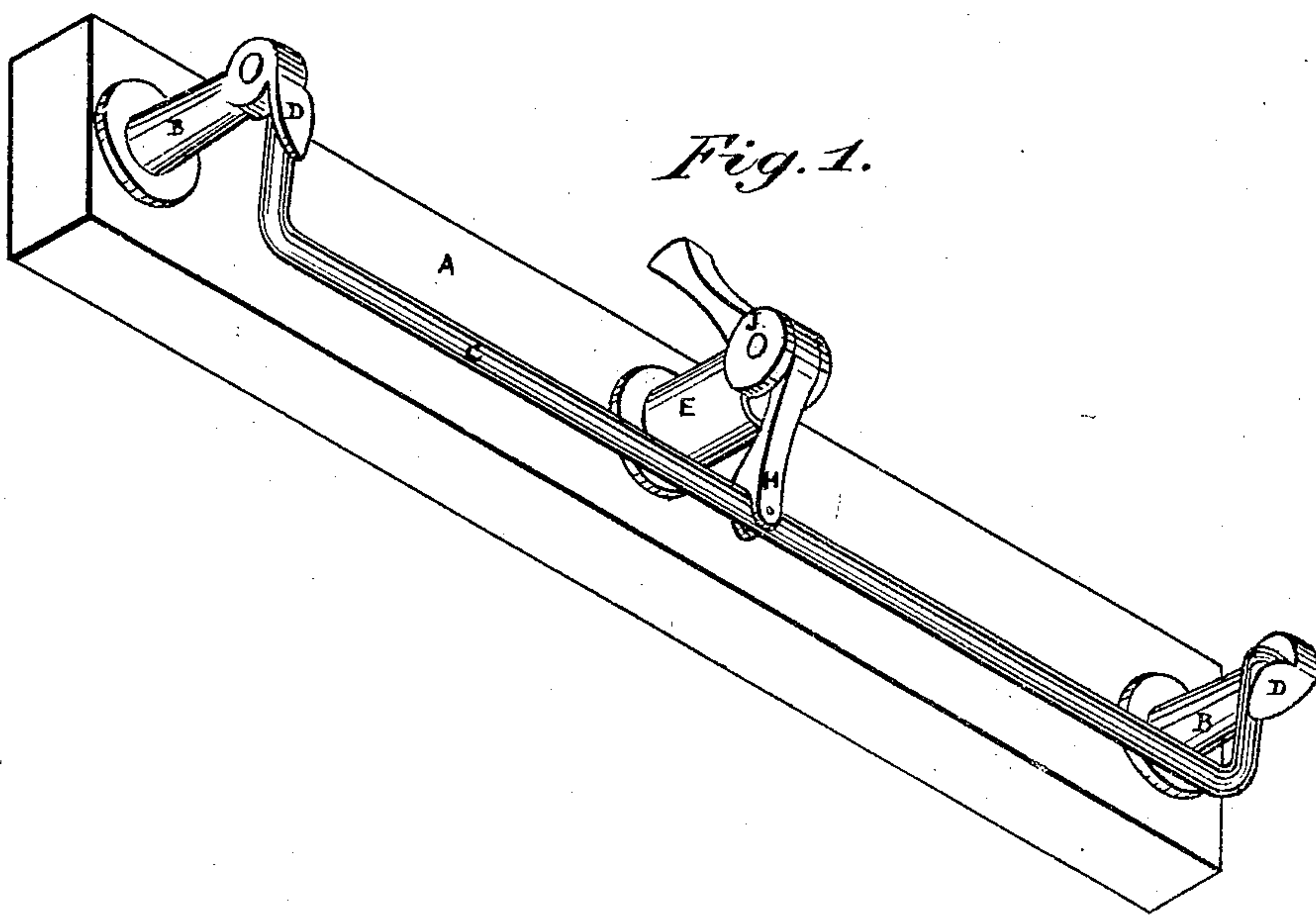


Fig. 1.



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EDGAR M. STEVENS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN LOOM-SHUTTLE GUARDS.

Specification forming part of Letters Patent No. **145,763**, dated December 23, 1873; application filed August 5, 1873.

To all whom it may concern:

Be it known that I, EDGAR M. STEVENS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Shuttle-Guards, of which the following is a specification:

My invention consists in a shuttle-guard composed of a stout wire fastened with its attachments to the front of and parallel with the lay top bar of a loom; and the object is to prevent the shuttle flying out of and away from the loom, while at the same time admitting adjustment of the guard for the purpose of mending threads or removing the shuttle, my present improvements having special regard to durability and readiness of adjustment of the said guard.

Figure 1 is a view, in perspective, of my shuttle-guard. Fig. 2 is a vertical section of a portion of it, hereinafter explained.

This invention is an improvement on a device patented by myself April 30, 1867, No. 64,261.

In the drawings, A, Figs. 1 and 2, is the lay top bar of a loom. B B, Fig. 1, are two projecting arms fastened to the front of the lay top bar, and projecting horizontally. They bear, by means of apertures in their ends, a metal rod, C, called the "guard-rod," passing in front of and parallel with the lay top bar at a distance above the race less than the thickness of the shuttle, and, when in operation, at a short distance above the upper threads of the warp. This guard-rod is bent at an angle at each end, as seen in Fig. 1, so that each end enters into the apertures, respectively, of the arms B B, and moves loosely in them. The arms B B are provided, respectively, with a projection, cast upon them, called the "end stops," at right angles to their axes, (seen in Fig. 1 at D D,) on the sides of the bent portion of the guard-rod, which portions, when in operation, lie against the inner sides of these projections. It is seen in Fig. 1 that the guard-rod hangs downward from the arms B B. E, Figs. 1 and 2, is an arm projecting from the front of the lay top bar, at or near the middle of which, horizontally, it is located. It bears in its lower half a perforation running parallel with its axis, (seen in Fig. 2,) which perforation carries a small bolt, F, which is pressed

forward by a spiral spring, G, which lies in the perforation. H, Figs. 1 and 2, is a bent metallic arm, called the "catch-arm," which is hinged, by pin J, to the end of arm E. The lower half of this catch-arm reaches down to the guard-rod C, and is forked, the prongs of the fork passing on each side of the guard-rod. I sometimes fasten this lower end of the catch-arm to the guard-rod. Just below the pin J the inner edge of the catch-arm is cut away to a right angle with the bolt F, Fig. 2, the end of which impinges upon that part of the catch-arm. Below this the catch-arm is cut away nearly horizontal, as shown at *a*, so that when the guard-rod is forced back against the bolt F and its spring the bolt impinges flatly upon the portion *a*.

It is often the case, in the operation of looms, that the shuttle, in its passage across the warp, will diverge from its straight course and fly out from the loom in consequence of the breaking of the thread or other causes, thus injuring the operative or breaking the warp, &c.; but with my improvement, when the guard-rod is in the position shown in Fig. 1, such accidents are effectually prevented, as the shuttle, being thicker than the space between the guard-rod and the shuttle-race, cannot pass through between them. When the shuttle is to be removed, or to be placed in position, or a warp-thread is to be mended, the operative presses the guard-rod back, and it swings in toward the reed and against the top bar out of the way. The catch-arm holding the center of the guard-rod in place, it cannot be bent outward, and thus be inefficient, as with some other shuttle-guards. I sometimes have more than one of these catch-arms.

The end stops, in case of the divergence of the shuttle from its proper course, and its hitting the guard-rod, prevent the rod from yielding to the blow.

In my previous patented device, hereinabove referred to, I used a spring-rod and thumb-piece, which were obliged to be withdrawn when the guard-rod was to be put into or removed from operation. By the peculiar arrangement shown, and hereinabove described, of the two plane surfaces at right angles with each other at the points in the inner edge of the catch-arm H where the bolt F impinges, this bolt,

being pressed forward by the spring against either plane surface alternately, holds the catch-arm in place both when the arm is drawn out and in operation and when it is pushed in to the lay top bar, (the rod being thus self-locking, by means of the spring and bolt, in both positions,) and thus it is not necessary to go to one side of the loom to work the catch-rod.

When my guard-rod is pushed back, on the starting of the loom again, I do not need to handle the guard-rod to draw it out away from the reed, as the first motion inward of the lay throws the rod into working position, and it thus sets itself automatically. This results from my guard-rod hanging downward from its hinge-supports on the arms B B, and arranged to swing inward against the lay top bar.

I claim—

1. In shuttle-guards, the combination and arrangement of the lay top bar A and its projections B B with their end stops D D and the

guard-rod, with one or more intermediate supports to the rod, when the guard-rod motion is at right angles to the lay-bar, all when constructed and arranged substantially as described.

2. The combination and arrangement of the swinging guard-rod C, the arms B B, the catch-arm H, and the arm E, placed on the lay top bar, and provided with the spring-bolt F, all arranged and fitted to operate substantially as set forth.

3. In shuttle-guards, the combination and arrangement of the lay top bar A, the arms B B, and the automatically-swinging guard-rod C, when the latter swings below the arms, with the catch-arm H and its immediate attachments, all substantially as shown and described.

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Witnesses:

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