March 19, 1946. G. A. GILL ET AL 2,396,780

SHUTTLE GUARD

Filed Aug. 25, 1944

Fig. 1.

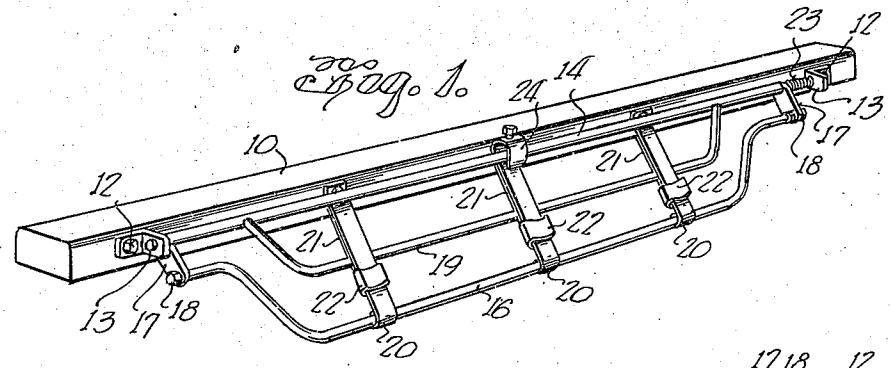


Fig. 2.

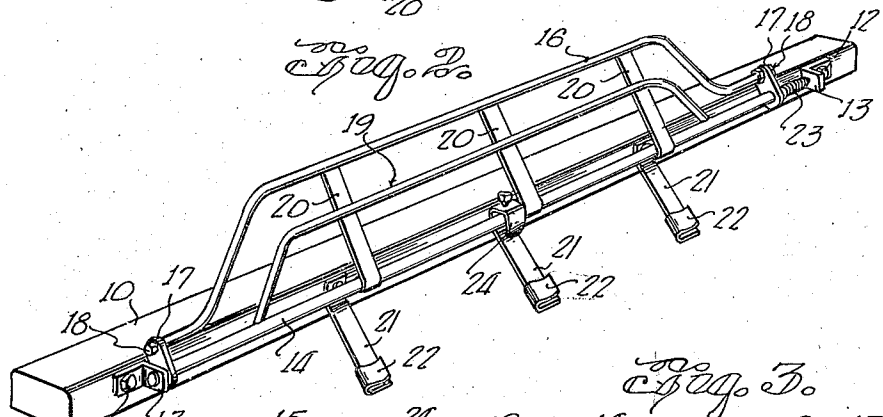


Fig. 3.

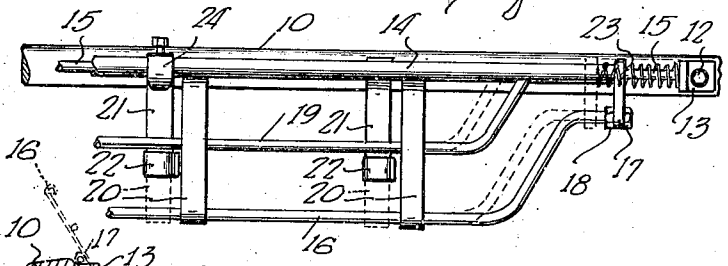
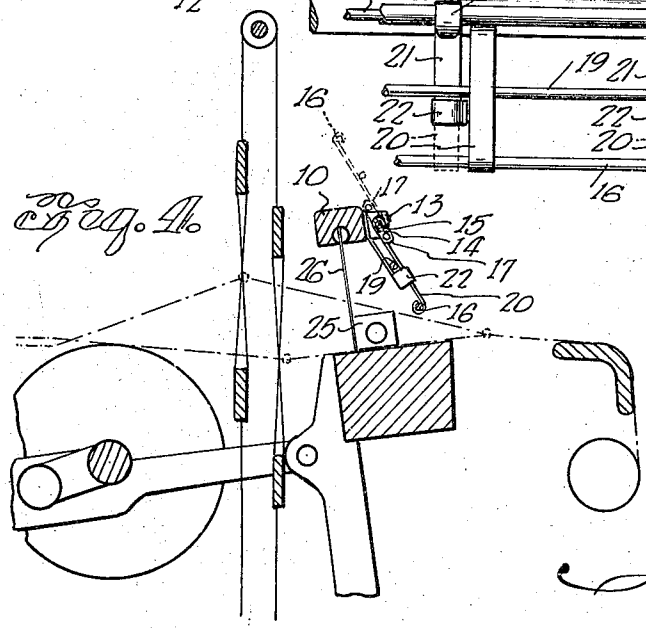


Fig. 4.



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SHUTTLE GUARD

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5 Claims. (Cl. 139—193)

This invention relates to weaving looms and it has particular reference to shuttle guards for such looms.

The principal object of the invention is to provide a shuttle guard adaptable to all types of looms and which consists of an open frame, hinged along one edge to the reed cap of a loom to overlie the sley and to hold the shuttle within restricted limits should it escape from the shuttle race, and to thereby minimize the likelihood of injury to an operator of the loom by a flying shuttle.

Another object of the invention is to provide a shuttle guard which is constructed to be raised so that it will not interfere with the drawing of threads through the reed and further, it will automatically return to operative position upon starting of the loom.

Still another object of the invention is to provide a shuttle guard for looms, having means for supporting the frame in operative position in relation to the shuttle race; means for latching the frame in such position; spring means for thrusting the frame into operative relationship with the latching means and means for limiting the displacement of the frame under the influence of said spring means.

With the foregoing objects as paramount, the invention has further reference to certain features of accomplishment which will become apparent as the description proceeds, taken in connection with the accompanying drawing wherein:

Figure 1 is a perspective view of a shuttle guard constructed according to the present invention, shown in operative position.

Figure 2 is a similar view showing the guard in raised or inoperative position.

Figure 3 is a fragmentary front elevational view of the guard exemplifying longitudinal displacement of the frame in the latching operation, and

Figure 4 is a view of the guard in vertical section, shown attached to the reed cap of a loom.

Continuing with a more detailed description of the drawing, reference numeral 10 denotes the reed cap of a conventional weaving loom, the latter being more or less diagrammatically shown in the fragmentary side elevational view in Figure 4. Affixed by screws 12 to the reed cap 10 is a pair of spaced apart L-shaped brackets 13, between which extends a tubular mounting 14 for the guard frame, to be presently described. A rod 15 extends axially through the member 14 and its ends protrude through apertures in the mounting brackets 13. It is of course immaterial whether the tubular member turns on the rod 15 or the latter turns in the brackets 13, so long as the frame is capable of hinging action in relation to the reed cap 10.

The guard frame is made up of an outer rod 16, whose ends are bent inwardly, thence outwardly in parallel relation to the body of the rod and are extended into apertures in relatively parallel straps 17, welded or otherwise secured to the ends of the tubular member 14. The ends of the outer rod 16 are threaded and nuts 18 applied thereto to hold the same in secure relation to the straps 17.

An intermediate rod 19 lies between and parallel to the outer rod 16 and tubular mounting 14 and has its ends turned inwardly and welded to the tubular mounting 14. Affixed to and disposed in transverse relation to the rods 15 and 19 and the tubular member 14 are reinforcing straps 20.

A plurality of guard supporting brackets 21 are mounted in spaced relationship along the outer face of the reed cap 10 behind the tubular frame mounting 14 and these brackets extend downwardly and outwardly at the required angle, as shown. On the lower end of each of these brackets there is formed or provided substantially U-shaped retainers or slip latches 22. It will be observed that these latches are situated between the outer and intermediate rods of the frame when the latter is operatively disposed on the brackets 21 and further, that the loops of the latches are elevated above the common plane of the straps 20 when the frame is in this position. In being so disposed, the latches 22 may receive the straps 20 when the frame is first lowered and then moved laterally towards the latches, as suggested in broken lines in Figure 3.

To move the frame laterally, as mentioned above, a compression spring 23 is mounted on the rod 15 at one end, between a strap 17 and a mounting bracket 13 so that a constant force will be applied thereby against one end of the tubular mounting member 14 to thrust the frame into latching position.

In order that the spring 23 will be operative to displace the frame only in the lowered position of the latter, a guide member 24 is provided on the intermediate frame supporting bracket 21 and consists simply of loop formed by turning an extended end of the bracket downwardly towards the body thereof. When the frame is in elevated position an edge of the intermediate strap 20 thereof will bear against an edge of the guide 24 to hold the frame against the action of the spring 23. However, since the lower part of the guide loop 24 is open, it will admit the intermediate strap 20 in the lowered position of the frame so that the latter may move to align the several

straps 20 with corresponding supports 21, in which position, the straps will be within their respective latches 22.

When the guard is in the position shown in solid lines in Figure 4, it presents a barrier against the shuttle 25, should it become dislodged from its race in operation and fly from the warp towards the operator. However, when a weaver is required to draw threads through the reed 26, it is simply necessary to shift the frame to the right to release it from the latches 22 and raise it to the position shown in dotted lines in Figure 4, in which position it remains until it is manually returned to operative position or if the operator neglects to perform this act before starting the loom, the action of the lay will automatically drop the guard, whereupon the spring 23 will thrust the same into latched position after the frame has passed out of the influence of the guide 24.

Manifestly, the construction as shown and described is capable of some modification and such modification as may be construed to fall within the scope and meaning of the appended claims is also considered to be within the spirit and intent of the invention.

What is claimed is:

1. A shuttle guard including in combination with the reed cap of a loom, an open frame coextensive with the reed of said loom, a tubular mounting member along one side of said frame, a rod extending through said member, pivotally suspended at its ends from said reed cap and on which said tubular mounting is capable of rotative and longitudinal movement, a series of supporting straps affixed to and depending from said reed cap, each having a latch on its lower end, means carried by said frame for engagement with said latches, spring means for urging said frame longitudinally to effect said engagement and means for limiting longitudinal movement of said frame in raised position thereof.

2. A shuttle guard for looms including in combination with the reed cap of a loom, an open frame adapted to operatively overlie the reed of said loom, a tubular mounting member, a hinge rod extending through said member having its ends connected to said reed cap a series of angular straps supporting said frame in lowered position, each having a latch on its lower end, spring means exerting continuous lateral pressure against said frame, means on the intermediate one of said straps resisting said pressure in raised position of said frame and releasing the latter upon lowering the same and means for locking said frame in said latter position.

3. A shuttle guard for looms including an open frame pivotally suspended from the reed cap of a loom, and capable of limited lateral movement, a series of angular supports therefor, each having a latch at its lower end at right angles to the axis thereof receiving a part of said frame in lowered position thereof, spring means imposing a continuous pressure on said frame in one direction, to effect engagement thereof with said latches and means carried by an intermediate support for holding said frame against lateral movement in raised position thereof.

4. A shuttle guard for looms comprising a frame rotatably suspended from and coextensive with the reed cap of a loom and capable of limited lateral displacement, a series of angular supports depending from said reed cap having latches on their lower ends at right angles to their axes and engageable with parts of said frame in lowered position of the latter and a loop carried by an intermediate supporting member for resisting the action of said spring means in raised position of said frame.

5. A shuttle guard for looms comprising an open frame hingedly connected to the reed cap of a loom and capable of limited lateral displacement, supporting straps for the lower edge of said frame having open latches at right angles to their axes for receiving parts of said frame, spring means urging said frame into operative relationship with said latches and a loop on an intermediate strap for resisting the action of said spring means in raised position of said frame but ineffective to prevent automatic lowering of said frame upon the starting of said loom.

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