

July 24, 1928.

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E. F. BALDWIN

STRAND SEVERING MECHANISM

Original Filed Dec. 12, 1921

2 Sheets-Sheet 1

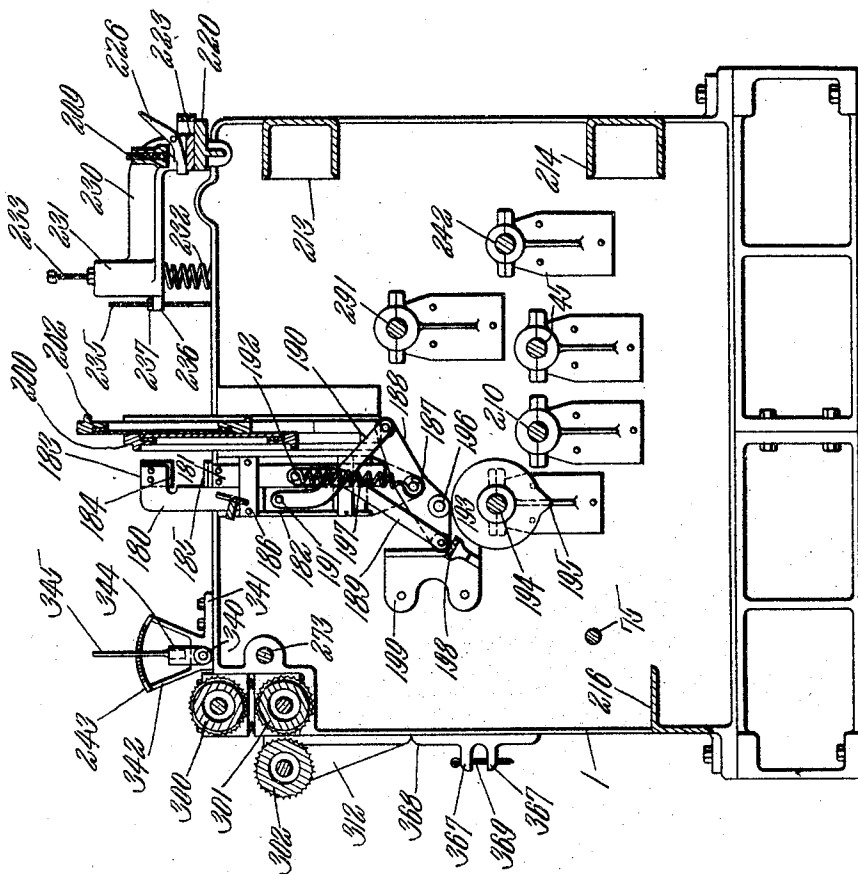


Fig. 1.

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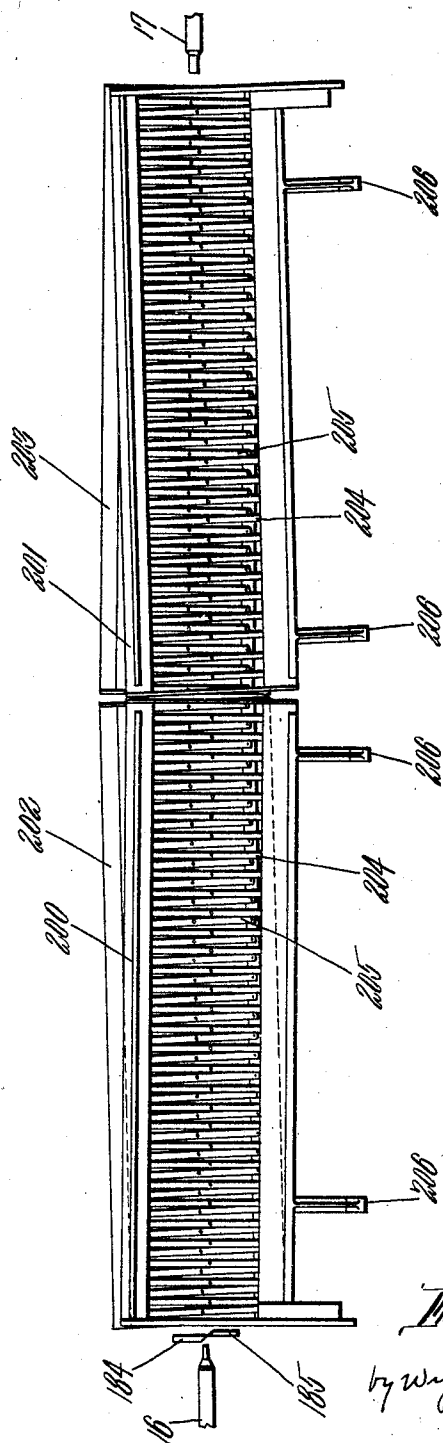


Fig. 2.

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UNITED STATES PATENT OFFICE.

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STRAND-SEVERING MECHANISM.

Original application filed December 12, 1921, Serial No. 521,624. Divided and this application filed May 28, 1927. Serial No. 194,866.

This invention relates to strand severing mechanism, more particularly for severing picks after they have been laid from the remainder of the filling strand material in the making of fabric, the present application covering subject matter divided out from my application Serial No. 521,624 filed December 12, 1921, for looms.

In the machine disclosed in that application, which was particularly intended for weaving strands of relatively stiff material such as those made from strips of paper formed into a twine, means are provided for gripping the end portion of the filling strand and carrying it across the shed, whereupon the strand is cut off at the entering end of the shed and the cut section beaten into place, whereupon the same cycle is repeated. The strand is cut off by a pair of cutting jaws between which the pick laying mechanism extends during a portion of the cycle of operations of the machine and they are brought to gether for the cutting operation in such a manner that the cut end of the strand is not deflected from position to be properly presented to a strand gripping mechanism at the opposite side of the machine on the next cycle of operations.

For a more complete understanding of this invention, reference may be had to the accompanying drawings in which

Figure 1 is a transverse section of a loom adjacent to one of the end frames.

Figure 2 is a detail elevation showing a harness mechanism in relation to the pick laying devices and the cutting mechanism.

Referring to Figure 2, the end of the strand is grasped and carried by the pick laying member or needle 16 into the shed forwardly of the harness frames 200, 201 and 202, 203, which, as shown, are arranged in pairs. As more fully disclosed and described in the parent application hereinbefore referred to, a somewhat similar needle or pick laying member 17 takes the strand end from the member 16 midway of the shed and completes the drawing of the strand through the shed while the member 16 retracts to the position shown in Figure 2, whereupon the strand is cut, leaving sufficient projecting from the end of the member 16 to be grasped by the cooperating pick laying member or needle 17 on

the succeeding pick laying cycle. It is important that the cutting mechanism shall not deflect this cut end laterally, as this might cause the cooperating member 17 to fail to grasp it to complete the pick laying operation, after the member 16 has carried it approximately half way across the shed, and as it acts directly in the path of the member 16 it is important that it be so constructed as to pass the member 16 between its mating cutting edges. This cutting off mechanism, therefore, comprises a pair of bars 180 and 181 which are slidable side by side in a vertical guide 182 fixed to the inner face of the frame member 1. The upper end of the bar 180 has a lateral jaw extension 183 to which is made fast a knife 184 which is positioned directly above a corresponding cooperating knife 185 fixed to the upper end or jaw of the slide 181. The slides 180 and 181 are held in position in the guide 182 by retaining plates 186. The lower end of this guide has fulcrumed thereon at 187 a cam lever 188 and a pair of links 189 and 190 are pivoted at their lower ends to the ends of this cam lever and at their upper ends at 191 and 192 to the slides 180 and 181. By rocking of this cam lever it is therefore evident that the bars 180 and 181 may be reciprocated in opposite directions to cause the knives 184 and 185 to approach and recede from each other. These bars are so actuated by means of a cam 193 fixed to a shaft 194, this cam having a hump 195 thereon which is movable to engage a roller 196 journaled on the lever 188. This roller is urged downwardly toward the cam by means of a spring 197 engaging at its upper end over the pivot 192 and at its lower end over the pivot 187, this spring therefore tending to keep the bar 181 in its lowered position. In order to prevent wear of the parts, the cam lever 169 is held slightly above the surface of the cam 193 except when the hump 195 is active. For this purpose a stop 198 adjustably carried by a bracket 199 fixed to the inner face of the frame member 1 is positioned to be impinged by the lower outer end of the lever 188 to limit the downward motion of this arm. The hump 195 with the cam 193 is so positioned as to raise the roller 196 and actuate the cutters with a sudden movement

as the left hand member 16 is in its retracted position. The knives then part and the member 16 in its inward motion passes immediately therebetween.

5 The knives are thus given a vertical rectilinear movement in opposite phase so that there is no tendency exerted thereby to displace or bend the strand end which remains projecting from the pick laying needle 16.

10 Having thus described an embodiment of this invention it should be evident to those skilled in the art that various changes and modifications might be made therein without departing from its spirit or scope as defined by the appended claims.

I claim:

1. In a loom of the class described, in combination with the picking means, a pair of vertical slides having jaws extending at opposite sides of the line of action of said picking means, and means for intermittently reciprocating the slides in opposite phase.

2. In a loom of the class described, in combination with the picking means, a pair of vertical slides having jaws extending at opposite sides of the line of action of said picking means, a lever having oppositely extending arms secured to the slides, and means for intermittently oscillating the lever,

3. A cutter as described comprising a base having movable thereon a pair of slides, said slides having opposed jaws, a lever having oppositely extending arms secured to the slides, and means for oscillating the lever.

4. A cutter as described comprising a base having movable thereon a pair of slides set side by side and having laterally extending jaws opposing one another, oppositely extending arms on the slides, a lever having oppositely extending arms pivoted to the

arms of the slides, and means to oscillate the lever.

5. A cutter comprising a base, a pair of slides movable on said base and provided with opposed cutting jaws, a lever having oppositely extending arms secured to said jaws, a cam having a portion formed to actuate said lever, means for holding said lever toward said cam, and a stop for preventing contact of said lever with said cam except when said portion is in operative position.

6. In a loom of the class described, in combination with a reciprocating needle adapted to be projected into the shed and to carry the filling during one portion of its movement, cooperating means at the opposite side of the loom to hold the filling during another portion of the needle movement, means to sever the filling strand comprising jaws having a separated position permitting said needle to pass between them and closing substantially perpendicularly to the line of action of the needle and by rectilinear movement, and means for actuating said severing means.

7. In a loom of the class described, reciprocating means adapted to lay the filling strand through the shed, and means to sever the strand at the side of the shed at which the filling enters, comprising jaws having a separated position permitting said reciprocating means to pass therebetween and movable substantially equally in opposite directions by rectilinear movement to effect the severing of the filling strand, thereby avoiding imparting a lateral motion to the strand when it is being severed.

In testimony whereof I have affixed my signature.

EARL F. BALDWIN.