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W. H. BAKER ET AL

SHUTTLE CHECKING DEVICE FOR LOOMS

Filed July 28, 1926

Fig. 1.

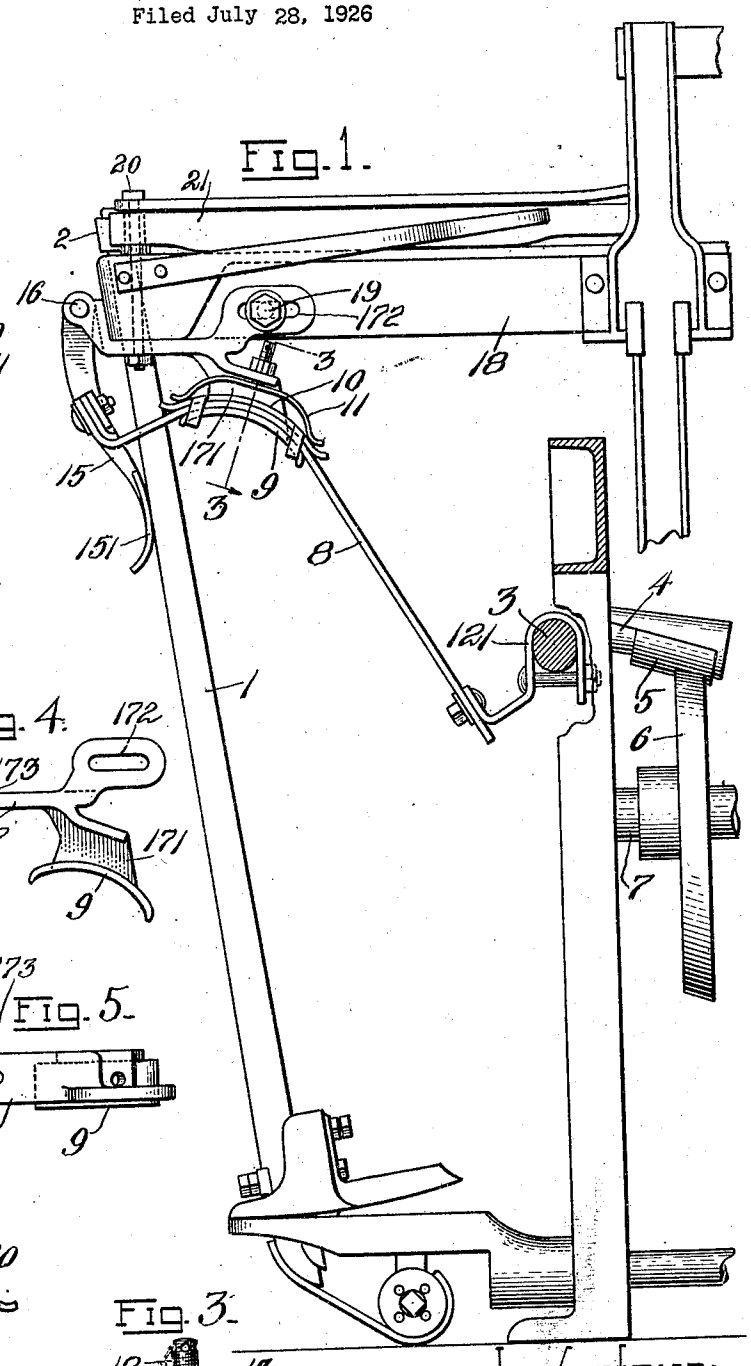


Fig. 2.

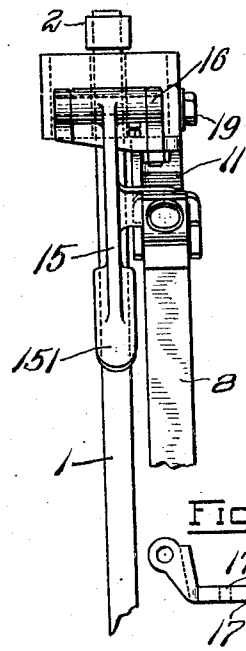


Fig. 4.

Fig. 5.

Fig. 6.

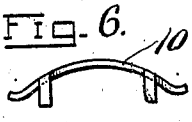


Fig. 3.

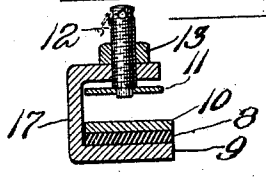
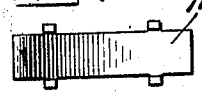


Fig. 7.



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UNITED STATES PATENT OFFICE.

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SHUTTLE-CHECKING DEVICE FOR LOOMS.

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The invention comprises improved devices designed to effect, through cooperation with a picker-stick of a loom, the final checking of the shuttle as the latter completes its movement home into the corresponding shuttle-box at the end of a flight across the loom from the opposite side of the loom. The said devices include a movable frictionally-restrained picker-stick engaging element, and means for drawing the said element inward to enable it to arrest the picker-stick, as the latter swings outward after throwing the shuttle to the opposite side of the loom, in shuttle-checking position at a short distance inward from the outer end of the shuttle-box aforesaid.

The specific character and construction, etc., of devices embodying the features of the invention may vary in practice. In the preferred form of embodiment the picker-stick engaging element is a lever that is mounted pivotally in connection with the outer end of the loom-lay; the means for frictionally restraining the said element is a strip or strap having associated with it means for frictionally retarding its movements; and the means for drawing the said element inward into shuttle-checking position is a connection between the strip or strap and the adjacent loom pick-shaft. The devices are combined, etc., to cause the turning movement of the pick-shaft, when the shuttle is picked across the loom to the opposite side to act through the strip or strap to pull the lever inward into a position in which it will arrest the picker-stick in a partially-advanced shuttle-checking position when the picker-stick swings outward again after throwing the shuttle; and to cause the momentum of the shuttle, as it re-enters the shuttle-box in its return flight, to be absorbed by the frictional resistance which opposes outward movement of the strap, lever, and picker-stick under the impact of the shuttle as the latter completes its movement home within said shuttle-box.

The drawings show an illustrative embodiment of the invention which is the preferred working form thereof.

In the drawings,—

Fig. 1 is a partly sectional rear elevation of parts at one side of a loom, including the said embodiment.

Fig. 2 is an elevation of certain of the said parts, looking from left to right in Fig. 1.

Fig. 3 is a view in cross-section on line 3, 3, of Fig. 1.

Fig. 4 is a rear elevation, and Fig. 5 is a plan view, of the supporting bracket to which reference is made hereinafter.

Fig. 6 is an edge view, and Fig. 7 a plan, of the spring to which reference is made hereinafter.

The picker-stick 1 carrying the picker 2 is actuated in the usual way through its connection by means of a lug strap (not shown) with an arm (not shown) extending downward from the so-called pick-shaft or picking rockshaft 3, the latter having a second arm 4 carrying a roll 5 which is engaged by a picking tappet 6 on the cam-shaft 7 of the loom in which the devices are employed.

In this instance the strip or strap 8 which is employed is a flexible strap, and the means for applying friction to the said strap to resist the movement thereof comprises friction-plates carried by a bracket 17 mounted upon the outer end of lay-beam 18. The friction-plates in this instance are a fixed plate 9 against which one surface of the strap rests, and a movable plate 10 which is in contact with the other surface. The strap is confined between the two plates as illustrated in Figs. 1 and 3, so that there is frictional contact between the two surfaces of the strap and the proximate surfaces of the two plates, and so that in consequence movement of the strap longitudinally between the plates is impeded through the frictional engagement between the plates and strap. Pressure exerted by the movable plate, whereby the strap is more or less compressed, may be brought about by gravity alone, or through a fixed adjustment of the movable plate, but preferably is brought about through the employment of a spring, 11, with which means of adjustment is provided, in this instance a screw 12 working in a threaded hole in a flange 174 of bracket 17 and provided with a lock-nut 13, the said means of adjustment enabling the degree of frictional resistance to the movement of the strap between the plates to be regulated as may be required. Spring 11 is a curved leaf-spring which bears by its ends upon the back of the movable plate 10 near the opposite ends of the latter, the end-portions of

the spring having downturned lugs, as shown, which fit down alongside the edges of the plates 9, 10, so as to prevent displacement of the said movable plate.

Although the connection between the strap and the picker-stick may be effected in various ways, I preferably employ a swinging arm or lever 15 having one end of the strap bolted to the same intermediate its supporting pivot 16 and the portion, 151, of said arm or lever which is designed for engagement with the outer edge of the picker-stick. The pivotal mounting of the said arm or lever is provided in connection with the bracket 17 aforesaid, applied as aforesaid to the outer end portion of the lay-beam 18 of a loom, such bracket having a downward extension 171 of which the fixed plate 9 forms part. A slot 172 in the casting, for the reception of one, 19, of the bolts which attach the casting to the lay-beam, provides for variation in the position of the said bolt in case of existing looms which have had the well-known Mooney check applied in connection therewith. A second bolt-hole, 173, in the outer portion of the casting is designed to receive the lower portion of the usual bolt, 20, passing vertically through the lay-beam, serving to fasten in place the usual sleeve serving as a fulcrum for the shuttle-binder 21.

Movement of the picker-stick engaging end of the arm or lever 15 inward, to place the same in position to arrest the picker-stick and picker in shuttle-checking position in their return movement after throwing the shuttle, is provided for through connection of the inner end of the strap 8 with the pick-shaft 3, so that during the last portion of the picking stroke the strap 8 and lever 15 are pulled inward far enough for the purpose indicated. In this instance the inner end of the strap is connected with a clip or clamp 121 that is mounted upon the pick-shaft. The connection of the strap with the pick-shaft may be effected in a variety of other ways.

The described combination of parts is adapted for use in looms of certain types in the case of which it is impossible to employ the old English check-strap arrangement having the checking devices at one side of the loom connected with those at the other side of the loom to cause the devices to operate reciprocally to arrest the picker-sticks alternately.

The friction-plates 9 and 10 are curved so as to provide for gradual change of direction of the strap to compensate for the fact that the point of connection of the outer end of the strap with the lever 15 is some distance above the point of connection of the inner end of the strap with the clip or clamp 121 on the pick-shaft 3.

What is claimed as the invention is,—

1. The combination with a lay of a loom, and a pivotal mounting at the outer end thereof, of shuttle-checking devices comprising essentially a picker-stick engaging lever engaged with said mounting, a connector connected with the said lever, friction-surfaces between which the connector is confined and by which movement thereof endwise is retarded frictionally, and means acting through the connector itself to draw the said lever inwardly to provide for temporarily locating the picker-stick in shuttle-checking position.

2. Shuttle-checking devices comprising essentially a picker-stick engaging lever, a connector connected with said lever, friction-surfaces between which the connector is confined and by which movement thereof endwise is retarded frictionally, and means combining the connector with the loom pick-shaft to operate in the final portion of the picking-stroke to draw the lever inward into position to hold the picker-stick in shuttle-checking position.

3. Shuttle-checking devices comprising essentially a picker-stick check which is unconnected, normally, with the picker-stick, and means whereby said check is combined operatively with the loom pick-shaft through which the picker-stick is actuated so as to be given through the action of the latter in the picking operation a partially advanced shuttle-checking position.

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