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C. W. YELM

2,259,413

PICKER

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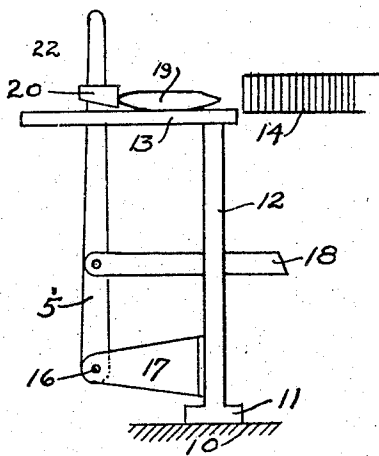


Fig. 1

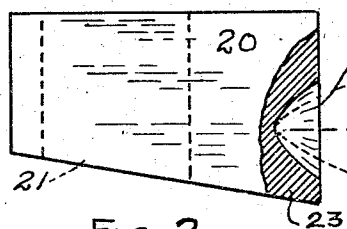


Fig. 2

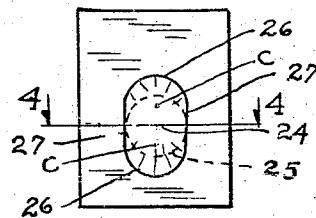


Fig. 3

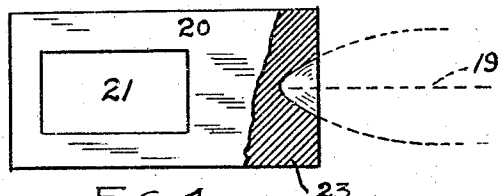


Fig. 4

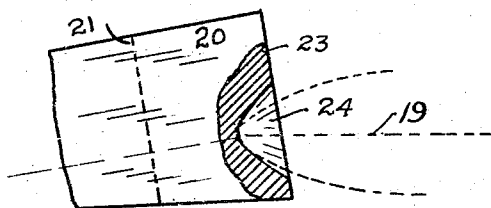


Fig. 5

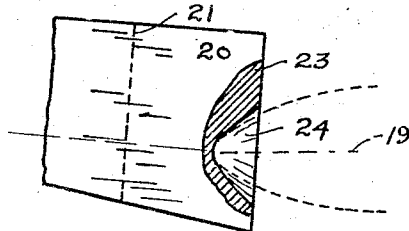


Fig. 6

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PICKER

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Application March 8, 1941, Serial No. 382,366

1 Claim. (Cl. 139—159)

This invention relates to improvements in pickers of the type employed with power operated looms.

In power operated looms the shuttle is driven back and forth through the shed by means comprising a picker staff that is pivoted at one end to the loom and operated by a suitable cam mechanism. The picker staffs are provided with pickers which are preferably formed from rubberized fabric and are provided on the leading sides with depressions in which the point of the shuttle is received. In the usual form of picker the depression for receiving the shuttle point is rounded and conical and of such size that it fits the end of the shuttle quite snugly. Since the picker staff oscillates about a pivot, the picker moves along the arc of a circle and since the shuttle rests on a support, it will tilt relative to the picker in the plane of the shuttle staff movement. The arcuate movement of the picker, while the shuttle is positioned in the depression, has a tendency to tilt the shuttle and to deleteriously affect its operation.

It is the object of this invention to produce a picker of such construction that it will impart to the shuttle a guiding action constraining it to move in a vertical plane connecting the oppositely positioned pickers and at the same time permit the shuttle to tilt relative to the picker in the direction of the plane of staff oscillation.

The above and any other objects that may become apparent as this description proceeds are attained by means of a construction that will now be described in detail and for this purpose reference will be had to the accompanying drawing in which the invention has been illustrated, and in which:

Figure 1 is a fragmentary view showing a portion of a power operated loom and showing the shuttle in operative engagement with the picker;

Figure 2 is a side view of a picker, to substantially full scale, portions being broken away to better disclose the shape of the depression in a plane parallel with the picker staff opening;

Figure 3 is an end elevation looking in the direction of arrow 3, in Figure 2;

Figure 4 is a top plan view of the picker shown in Figure 2 with parts broken away and shown in section on line 4—4, Figure 3;

Figure 5 is a fragmentary view similar to that shown in Figure 2 showing the relative tilting action of the picker and shuttle in one position; and

Figure 6 is a view similar to that shown in

Figure 5 and shows the other limit of the tilting action.

The relative angles of tilting as illustrated in Figures 5 and 6 have been somewhat exaggerated to more clearly disclose the operation.

In the drawing reference numeral 10 designates a floor or other base on which a power operated loom is supported. Reference numeral 11 designates the lower end of a loom member 12, while reference numeral 13 designates a shuttle receiving shelf one of which is positioned at each end of the shed 14. The picker staff has been designated by reference numeral 15 and has been shown as pivoted at 16 to a bracket 17 that extends outwardly from the loom frame. Numeral 18 designates a picker sweep which is controlled in its operation by a cam mechanism that has not been illustrated. The shuttle has been designated by reference numeral 19 and the picker by numeral 20. The picker has the shape shown in Figures 2, 3 and 4 from which it will be noted that it is provided with an opening 21 for the reception of the upper end 22 of the picker staff. The end of the picker designated by reference numeral 23 will be referred to as the front wall and this is provided with a vertically elongated conical depression 24. The approximate shape of the shuttle has been indicated by broken lines in Figures 2, 4, 5 and 6 and its cross-sectional shape by the dotted circle 25 in Figure 3.

It will be observed from Figures 2 and 4 that when the axis of the shuttle is substantially perpendicular to the axis of opening 21, the shuttle will be spaced a short distance from the upper and lower walls of the conical opening and at the same time the sides of the shuttle will contact the side walls of the elongated opening substantially as shown in Figure 4.

Referring now in particular to Figure 3, it will be observed that the trace of the end wall of the picker with the wall of the opening is a figure comprising the upper and lower arcuate lines 26 whose centers have been designated by C and the sides of the opening are formed by straight lines 27 which are tangent to the arcuate lines 26. It will be apparent from Figures 1, 2 and 3 that the shuttle can tilt relative to the picker in a vertical plane but cannot tilt relative thereto in a horizontal plane. As a result of the shape of the opening, the picker will impart a definite directional impulse to the shuttle, which determines its path in a horizontal direction and at the same time the relative tilting movement

will not tend to tilt the shuttle about the surface of the supporting table.

It has been found that when pickers have circular conical openings, the operation of the shuttle is deleteriously affected for some time after new pickers have been installed. With the present construction, the operation is as satisfactory with new pickers as with old and worn pickers having the conical depressions and as a result of this small change in shape of the opening, the disarrangement of the shuttle operation that would otherwise take place, is dispensed with.

Having described the invention what is claimed as new is:

A picker having its front wall provided with an elongated inwardly tapering opening, the trace of the front wall with the side of the opening forming a figure whose top and bottom are formed by substantially semi-circular arcs whose centers are positioned at spaced points on a vertical line, the arcs being joined by substantially straight lines parallel to the line joining the centers of curvature.

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