Dec. 28, 1926. 1,612,112

A. A. GORDON

PICKING SHOE FOR LOOMS

Filed April 29, 1926

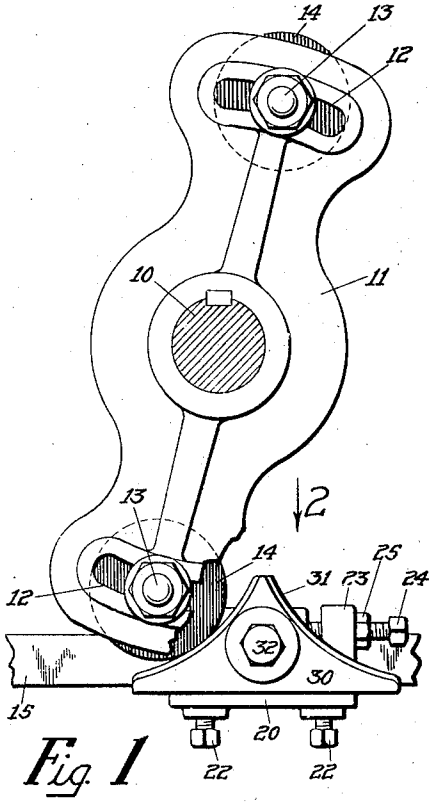


Fig. 1

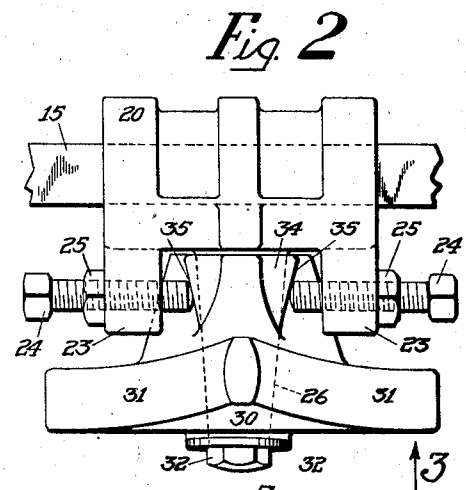


Fig. 2

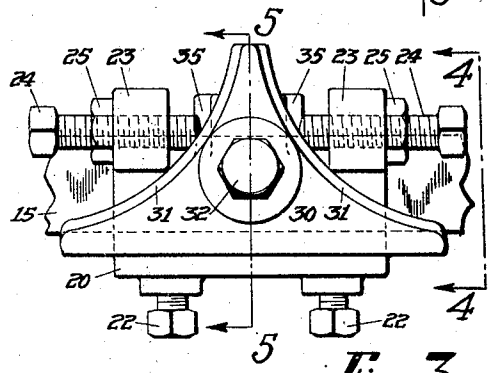


Fig. 3

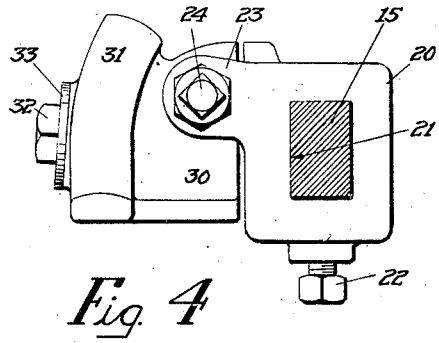


Fig. 4

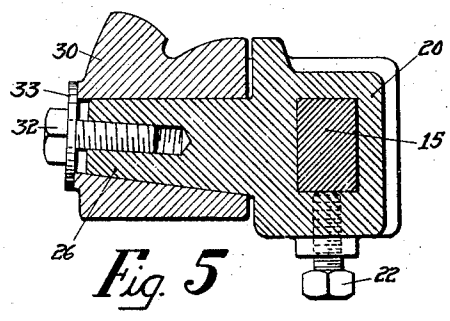


Fig. 5

Inventor

Albert A. Gordon

Courtright Fay & Hawley

Attorneys

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UNITED STATES PATENT OFFICE.

ALBERT A. GORDON, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

PICKING SHOE FOR LOOMS.

Application filed April 29, 1923. Serial No. 105,592.

This invention relates to improvements in picking shoes for looms and it is the general object of the invention to provide a two-part picking shoe having a removable cam portion which can be chilled and a supporting part to which the cam portion is secured.

In the picking shoe shown in co-pending application Ser. No. 65,473 there is provided a support having a cone formed therewith on which the cam member of the shoe is mounted for angular adjustment. As set forth therein the cone slants downwardly away from the picking ball and I find that because of this construction there is a tendency of the cam member to slide off the cone when struck by the picking ball. It is a further object of my invention to locate the cone in such a way that the portions thereof which are adjacent the picking ball shall be substantially perpendicular to the line of thrust so that no force will be brought to bear to move the cam member along the cone.

It is a still further object of my invention to prevent slipping of the cam member along the cone by providing the support with a wedge-shaped lug the walls of which are inclined in the same general direction as the elements of the cone and by further providing adjusting screws which are held tightly to the oppositely inclined faces of the lug to prevent movement of the cam member toward the retaining screw which is threaded into the end of the cone. By these constructions I relieve the retaining screw of the strain to which it is subject in the construction set forth in the aforesaid application.

With these and other objects in view which will appear as the description proceeds, my invention resides in the combination and arrangement of parts hereinafter described and set forth in the claims.

In the accompanying drawings wherein I have shown a convenient embodiment of my invention,

Fig. 1 is a vertical section across the bottom shaft of a loom showing the picking arm as associated with my improved picking shoe.

Fig. 2 is an enlarged top plan view looking in the direction of arrow 2, Fig. 1,

Fig. 3 is a side elevation of the picking shoe looking in the direction of arrow 3, Fig. 2,

Fig. 4 is a section on line 4—4 of Fig. 3, and

Fig. 5 is a vertical section on line 5—5 of Fig. 3.

Referring to the drawings it will be seen that I have provided the usual bottom shaft 10 to which is keyed a picking arm 11 having formed in the opposite ends thereof arcuate slots 12 which receive bolts 13 on which are rotatably mounted picking balls 14. Extending transversely of and under the bottom shaft 10 is the usual picking shaft 15 preferably rectangular in cross-section and operatively connected by means not shown to the picking mechanism of the loom. It is to be understood that the bottom shaft may be rotated once every second pick of the loom and as the picking balls approach the lower extremity of their movement they are operatively connected by means of my improved shoe with the picking shaft 15 to cause picking of the shuttle.

In carrying out my invention I provide the picking shoe with a body or support 20 having a rectangular opening 21 therethrough proportioned to receive the picking shaft 15 and held to the latter by set screws 22. Said body or support 20 has laterally extending therefrom arms 23 through which extend adjusting screws 24 retained in adjusted position by means of lock nuts 25. Extending laterally from the body and under and preferably intermediate the arms 23 is a cone 26 integral with the body and formed as shown in Fig. 5 with the axis thereof oblique with respect to a horizontal line and with the upper element thereof substantially horizontal. The picking balls move in a substantially vertical plane, hence, the initial thrust of the balls against the cams is in a direction perpendicular to the adjacent part of the cone, and for this reason no force is acting to move the cam along the cone.

The picking ball engaging cam member 30 of the shoe has a pair of oppositely and similarly disposed ball engaging chilled cam faces 31 which are located in the plane of action of the picking balls 14. The cam portion 30 is provided with a conical bore similar in taper to the cone 26 and in order to secure the cam member to the body I thread

into the cone a screw 32 which holds washer 33 against the outer surface of the cam member to prevent relative movement of the cam and body. The cam member is further provided with a wedge-shaped lug 34 having inclined walls 35 which are tapered in the same general direction as the cone, converging outwardly and so positioned as to receive the thrust of the adjusting screws 24. In the assembly of the shoe the cam 30 will be slipped onto the cone 26 with the adjusting screws 24 withdrawn and the screw 32 removed. The screws 24 may then be tightened and the screw 32 put in place as indicated in Fig. 5. By means of the screws 24 the cam may be adjusted angularly with respect to the body 20 to vary the pick of the loom.

From the foregoing it will be seen that I have provided an improved picking shoe formed of two parts, one of which has a cone to receive the conical bore of the other, that portion of the cone which is nearest the picking ball being substantially perpendicular to the line of thrust so as to minimize the tendency of the cam member to move along the cone under the action of the picking ball. It will also be noted that the lug 34 is wedge-shaped and cooperates with the screws 24 not only to provide angular adjustment of the cam but also to assist in preventing lateral movement of the cam away from the picking shaft 15.

Having thus described my invention, it will be apparent that changes and modifications may be made therein by those skilled in the art without departing from the spirit and scope of the invention, and I do not wish to be limited to the details herein disclosed but what I claim is:

1. In a picking mechanism for a loom having a picking ball moving in a plane of action and a picker shaft, a support secured to the shaft, a conical projection extending laterally from the support and having the upper portion thereof substantially perpendicular to the plane of action of the picking ball, and a cam member mounted on the cone and movable to afford slight angular adjustment thereon and located in the plane of action of the picking ball.

2. In a picking mechanism for looms having a picking ball moving in a plane of action and a picker shaft, a support mounted on the picker shaft, a conical projection extending laterally from the support, a cam member mounted on the conical projection, a wedge-shaped lug on the cam member the taper of which extends in the same general direction as the taper of the cone, and means carried by the support and engaging the wedge to prevent movement of the cam member along the conical projection when the cam member is acted upon by the picking ball.

3. A picking shoe for looms having a supporting member, a cam member by which the shoe may be actuated, a conical projection formed on one of said members and extending into the other member, a wedge-shaped lug formed on one of the members and having a taper extending in the same general direction as the taper of the conical projection, and means carried by the other member to engage the wedge to prevent separation of said members.

4. A picking shoe for looms comprising a supporting member and a cam member by which the shoe may be actuated, a conical projection formed with one of the members and extending into and engaging conical surfaces on the other member, additional means formed on one of said members presenting surfaces inclined in the same general direction as the taper of the conical projection, and connections between said inclined surfaces and the other member to prevent relative displacement of the projection and the part into which it extends.

5. A picking shoe for looms comprising a supporting member and a cam member by which the shoe may be actuated, a conical projection formed with one of the members and extending into and engaging conical surfaces on the other member, additional means formed on one of said members presenting inclined surfaces, and connections between said inclined surfaces and the other member movable relatively to said other member to afford adjustment, said connections acting to prevent relative displacement of the projection and the part into which it extends, the surfaces of the means and the surface of the projection being tapered in the same general direction.

In testimony whereof I have hereunto affixed my signature.

ALBERT A. GORDON.