Sept. 15, 1942. Y. H. KURKJIAN 2,295,904

AUTOMATIC PICKUP HEAD ADJUSTING DEVICE

Filed Feb. 14, 1941

Fig. 1.

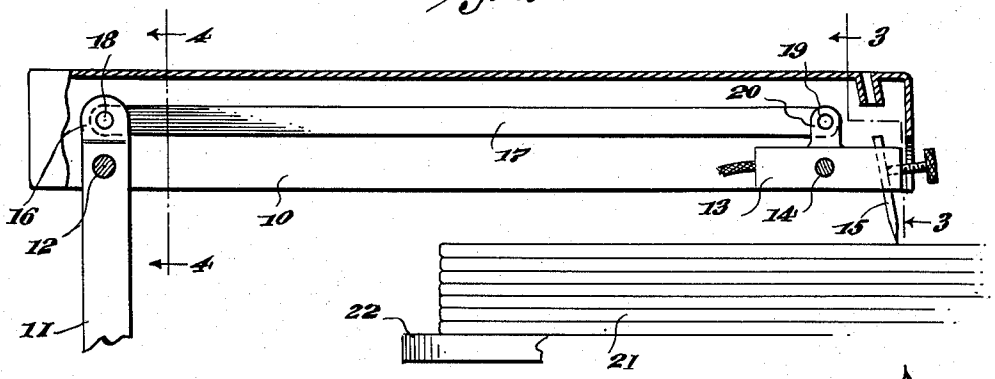


Fig. 2.

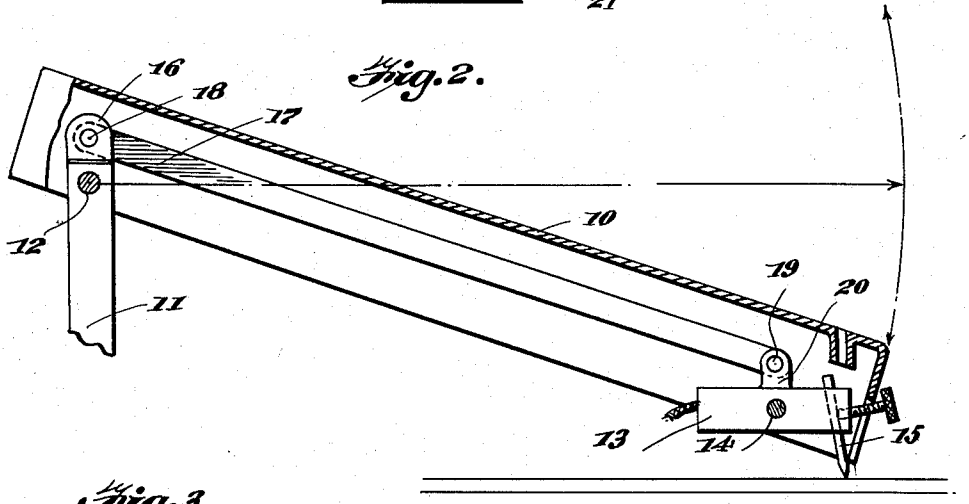


Fig. 3.

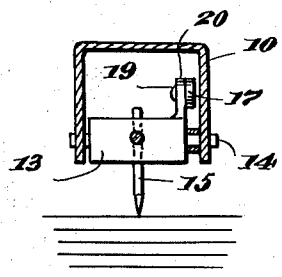
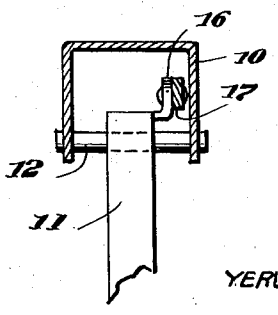


Fig. 4.



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AUTOMATIC PICKUP HEAD ADJUSTING DEVICE

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Application February 14, 1941, Serial No. 378,997

2 Claims. (Cl. 274—1)

This invention relates to an automatic pick-up head adjusting device for automatic phonographs and has for one of its objects the production of a simple and efficient means for holding the pick-up head in a proper horizontal plane in a manner whereby the needle will be held at all times at a proper angle irrespective of the angle of elevation of the phonograph arm.

A further object of this invention is the production of a simple and efficient means for swinging the pick-up head relative to the swing of the supporting pick-up arm, so as to retain the head in a proper horizontal plane whether the needle carried by the head engages the top record of a stack or only a single record placed upon a record turntable.

Other objects and advantages of the present invention will appear throughout the following specification and claims.

In the drawing:

Figure 1 is a longitudinal sectional view of a phonograph pick-up arm in one position, certain parts being shown in elevation;

Figure 2 is a view similar to Figure 1 with the parts in a second position;

Figure 3 is a vertical sectional view taken on line 3—3 of Figure 1;

Figure 4 is a vertical sectional view taken on line 4—4 of Figure 1.

By referring to the drawing, it will be seen that 10 designates a phonograph arm such as a pick-up arm, which arm is pivotally supported upon a standard 11 on a horizontal transverse pivot 12, for vertical swinging movement. A pick-up head 13 is pivotally supported at the outer end of the arm 10 on a horizontal transversely extending pivot 14. A conventional needle 15 is carried by the outer end of the pick-up head 13, beyond the pivot 14, as shown in Figures 1 and 2.

The standard 11 is provided with an upwardly projecting laterally off-set extension 16 and a link 17 is pivotally connected at one end to the extension 16 by a pivot 18, as shown. This link 17 is connected at its forward end to the pivot 19 of the upstanding ear 20 carried by the head 13. The ear 20 is located just above the pivot 14 and in vertical alignment therewith. The pivot 18 is spaced from the pivot 12 the same distance that the pivot 19 is spaced from the pivot 14. Consequently, as the outer end of the arm 10 is swung downwardly upon the pivot 12, the link 17 will retain the head 13 in a horizontal plane due to the fact that the head is pivoted at 14 and the link 17 is pivotally connected to the ear 20 at 19, and to the standard 11, at 18. The ear 20 is carried at one side of the head 13 and the link 17 engages the outer face of the ear 20 and also engages the outer face of the extension 16 to permit the parts to freely swing and to avoid conflict with other parts which may be carried by the arm 10. The link 17 is adapted to extend longitudinally of and close to the inner face of one of the side walls of the arm 10, as shown in Figures 3 and 4.

From the foregoing description, it will be seen that a very simple and efficient means has been produced for properly maintaining the pick-up head 13 in a horizontal plane irrespective of the angle of the arm 10 and its vertical position with respect to the records 21. In connection with automatic record-playing machines, it is the custom to support a stack of records such as the records 21 upon a turntable 22, the records being automatically changed from time to time or manually changed. As the heighth of the pile of records is reduced or lowered naturally the tone arm may be bodily moved vertically on a standard or swung to an angular position. By means of the structure illustrated it is possible to pivotally support the arm 10 on a standard 11 fixed against vertical movement and the arm 10 may be swung upwardly and downwardly at its outer end and due to the link connection 17, the head 13 will at all times be held in a proper horizontal plane to support the needle 15 at a proper playing angle to obtain a maximum tonal quality as well as a proper volume of tone.

It should be understood that certain detail changes in the construction of the present invention may be employed without departing from the spirit of the invention, so long as such changes fall within the scope of the appended claims.

Having described the invention, what I claim is:

1. A device of the class described comprising a supporting standard, an arm pivotally supported upon the standard, a pick-up head pivotally supported upon said arm on a horizontal pivot and adapted to be retained in a substantially horizontal position as the arm is raised and lowered, a link pivoted upon a horizontal pivot to the standard at a point in a vertical plane with the point where the arm is pivotally supported upon said standard, a horizontal pivot connecting the opposite end of said link to said pick-up head at a point in a vertical plane with and above the horizontal pivot of the pick-up head and adapted to retain the pick-up head in a substantially

horizontal plane at all times when said arm is raised and lowered.

2. A device of the class described comprising a supporting standard, an arm pivotally supported upon the standard, a pick-up head pivotally supported upon said arm on a horizontal pivot and adapted to be retained in a substantially horizontal position as the arm is raised and lowered, a link pivoted upon a horizontal pivot to the standard at a point in a vertical plane with the point where the arm is pivotally supported upon said standard, a horizontal pivot connecting the opposite end of said link at one side of said pick-up head at a point in a vertical plane with the horizontal pivot of the pick-up head and adapted to retain the pick-up head in a substantially horizontal plane at all times and also adapted to permit the link to swing to the side of the pick-up head when said arm is raised.

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