June 9, 1931. J. T. KAUFMAN ET AL 1,809,710

STRINGED MUSICAL INSTRUMENT

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Fig. 1.

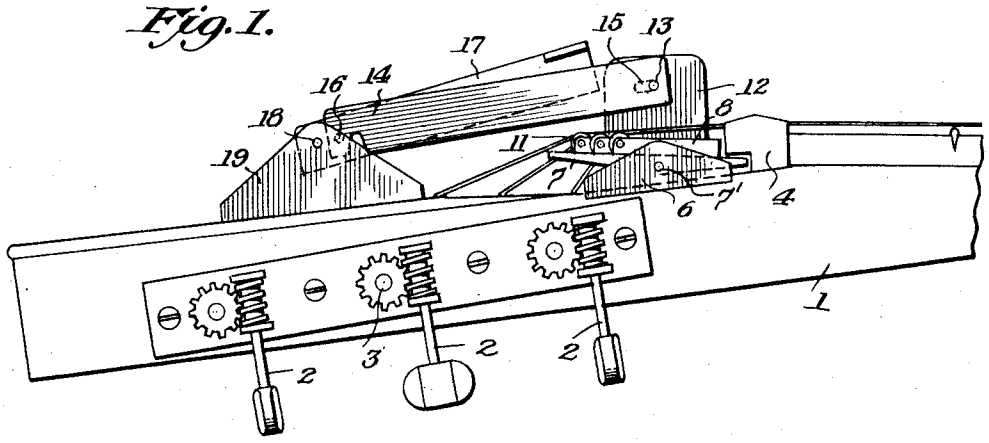


Fig. 2.

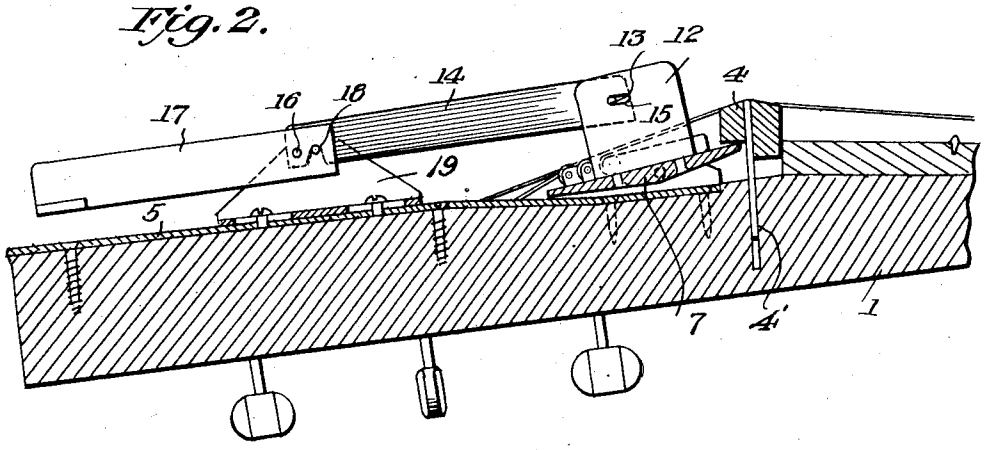
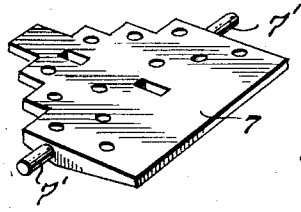


Fig. 5.



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Fig. 3.

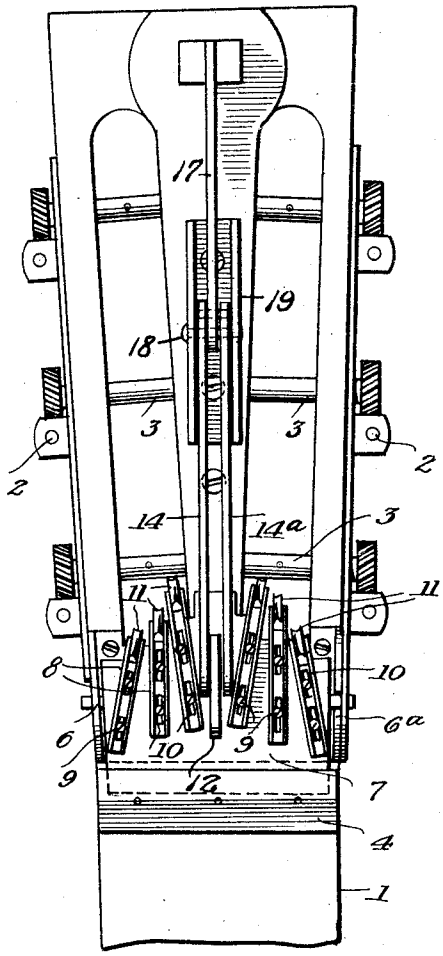


Fig. 4.

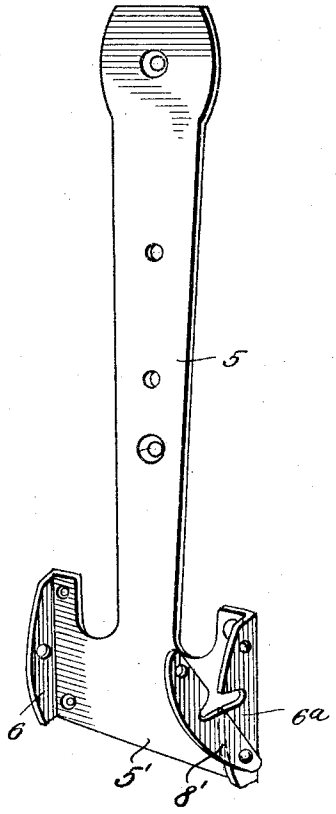
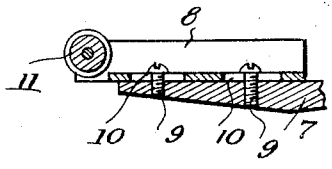


Fig. 6.



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UNITED STATES PATENT OFFICE

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STRINGED MUSICAL INSTRUMENT

Application filed July 13, 1928. Serial No. 292,567.

This invention relates to stringed musical instruments and its general object is to provide an attachment for a stringed instrument to simultaneously vary the tension of the strings for changing the pitch of the tone thereof so that the tone of a standard guitar can be changed from its natural tone to that of a Hawaiian steel guitar and vice versa in an easy and expeditious manner.

A further object of the invention is to provide an attachment of the character set forth that is simple in construction, inexpensive to manufacture, easy to apply to any type of musical instrument and is extremely efficient in operation and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing our invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a side elevation illustrating our attachment secured to the neck of a guitar, with the parts of the attachment in one position.

Figure 2 is a sectional view with parts in elevation and illustrating the parts of our attachment in another position.

Figure 3 is a top plan view.

Figure 4 is a detail view of the base plate which forms a part of our invention.

Figure 5 is a similar view of the rock plate.

Figure 6 is a fragmentary sectional view illustrating a string guide and the manner of securing the same to the rock plate.

Referring now in particular to the drawings, the reference numeral 1 indicates the neck of a stringed musical instrument, as for example a standard guitar, the neck being provided with the usual string adjusting means which includes keys having shanks 2, the latter carrying worms engageable with worm gears to rotate the string shafts 3 that are provided with the usual openings for receiving the strings.

The strings pass over the upper end of a block 4 having converging walls forming the upper end thereof, and thence the strings are disposed over a series of frets arranged in the usual manner on the neck, as suggested in Figures 1 and 2 of the drawings.

In order to change the pitch of the tone of the strings and perform the operation quickly, we provide an attachment for the instrument which includes a base plate 5 mounted by a plurality of screws or the like longitudinally of the neck of the instrument, and in vertical ears 6 and 6ª that are formed with the sides of the enlarged portion 5′ of the base plate we pivotally secure a rock plate 7 having secured thereto by set screws, a plurality of string guides 8, the set screws being indicated by the reference numeral 9 and pass through slots 10 formed in the guides and by which the latter may be longitudinally adjusted on the plate as will be apparent. Each of the guides have journaled at the ends thereof, a grooved roller 11 which receive the strings and guide the latter. These rollers 11 eliminate friction on the strings, with the result they will last for an indefinite period of time. The ear 6 is provided with an opening to accommodate one trunnion 7′ of the rock plate 7 which is removably associated with respect to the ears of the enlarged portion 5′, while the other trunnion 7′ of the rock plate is received in a notch formed in the ear 6ª and is held therein by a keeper 8′ that is pivoted to the ear 6ª as shown in Figure 4, the keeper having an opening adapted to register with an opening in the ear 6ª to receive a securing means such as a screw to hold the keeper in operative position. The opening of the ear 6 and notches of the ear 6ª and keeper provide bearing openings for the trunnions 7 whereby the rock plate is pivoted as above set forth.

The rock plate 7 is provided with a tilting means for the purpose of raising the block 4, as it will be noted from inspection of Figure 2, the rock plate 7 has its forward end engaging the block and raises it in a vertical plane and in a manner which will be pres-

ently described, the block being provided with a horizontal shoulder arranged in the path of the plate 7. Depending from the block is a strip 4' which is guided for vertical movement in a slot formed in the neck, and while means for effecting the rocking movement of the plate 7 to raise the block 4 may be varied, one form of the means for rocking the plate and which we have found effective is clearly shown in Figures 1 and 2 of the drawings. This form includes a vertical flat post 12 rising from the rock plate and in which is formed a slot having arranged therein a pin 13 carried by a pair of bars 14 and 14a. The slot in the vertical flat post 12 is indicated by the reference numeral 15, and the bars 14 and 14a have connected at their opposite ends as at 16, a lever arm 17 which is mounted on a pivot 18 secured between the arms of a U-shape in cross section bracket 19, the latter being fixed to the base plate 5 through the medium of screws or the like.

By this construction, it will be obvious that by shifting the lever arm 17 from the position as shown in Figure 1, over a vertical arc to the position as shown in Figure 2, the plate 7 will be rocked and effect an upward movement of the block 4, thereby simultaneously raising the strings and changing the pitch of the notes produced thereby. In this movement, the lever arm 17 passes over the center of its pivot and locks the plate 7 against accidental movement, and during the movement of the plate 7, it will likewise be apparent that the rollers 11 provide a substantially frictionless engagement with respect to the strings which of course results in the advantages as previously set forth.

It will be noted from inspection of Figure 4 that the ear 6a includes the base portion having a notch formed centrally therein, and pivoted to one end of this base portion, is a section also having a notch which cooperates with the notch of the base portion to provide an opening for one of the trunnions of the plate 7, the other trunnion being arranged in an opening in the ear 6. Suitable detachable means is employed for holding the section secured in operative position on the base portion and by this construction, it will be obvious that the plate 7 is detachable from the ears.

It is thought from the foregoing description that the advantages and novel features of our invention will be readily apparent.

We desire it to be understood that we may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. An attachment for a stringed musical instrument and comprising a base plate adapted to be secured to the neck of the instrument, a rock plate pivotally secured to said base plate at one end thereof, grooved rollers having connection with the rock plate for movement therewith, and for receiving the strings of the instrument, a block mounted for upward movement with respect to the neck, and receiving the strings thereon, said block being arranged in the path of the rock plate whereby the latter engages the same, means for rocking the rock plate to lift the block, and means for retaining the lifting means in operative or inoperative positions.

2. An attachment for a stringed musical instrument and comprising a base plate secured to the neck of the instrument, a rock plate pivotally secured to said base plate at one end thereof, and being detachable with respect thereto, a block having converging walls forming the upper end thereof, means for guiding said block in an upward plane with respect to said neck, said block having a shoulder engageable by said rock plate, string guides carried by said plate and including rollers for receiving said strings, the latter passing over the upper end of said block, a flat post rising from the rock plate, bars pivotally connected with said post, a lever arm pivotally receiving said bars, means secured to the base plate and having the lever lever arm pivotally secured thereto, and said arm being adapted for moving the bars to rock the rock plate for the purpose specified.

3. An attachment for a stringed musical instrument comprising a base plate adapted to be secured longitudinally of the neck of the instrument, ears formed with the base plate at one end thereof, a keeper pivotally secured to one of the ears, means for detachably securing the keeper to its ear, said keeper and its ear being provided with notches to provide an opening, the other ear being provided with an opening, a rock plate having trunnions mounted in the openings, string guides adjustably secured to said rock plate, a block arranged in advance of the rock plate and for receiving the strings, said block having a shoulder formed therewith and arranged in the path of the rock plate whereby the latter engages the shoulder, a strip depending from the block and mounted for upward movement in a slot in the neck, means for rocking the rock plate to simultaneously vary the tension of the strings to change the pitch of the tone thereof, and means for securing the rock plate rocking means in operative or inoperative positions.

In testimony whereof we affix our signatures.

JOHN T. KAUFMAN.
CHRIS KAUFMAN.