June 4, 1940. V. J. LAWRENCE 2,203,466

STEEL FOR HAWAIIAN GUITARS

Filed March 11, 1939

Fig. 1.

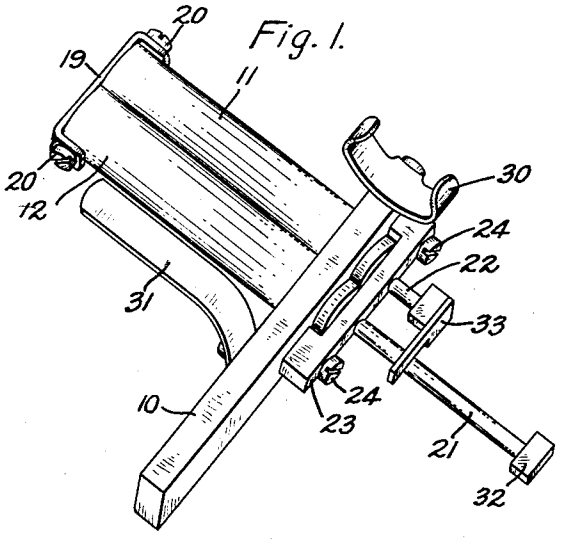


Fig. 3.

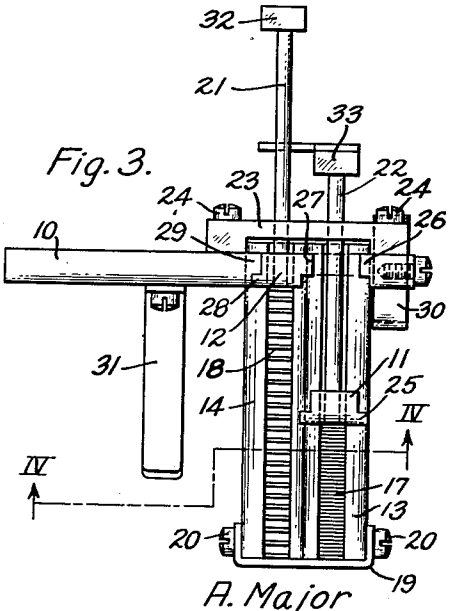


Fig. 4.

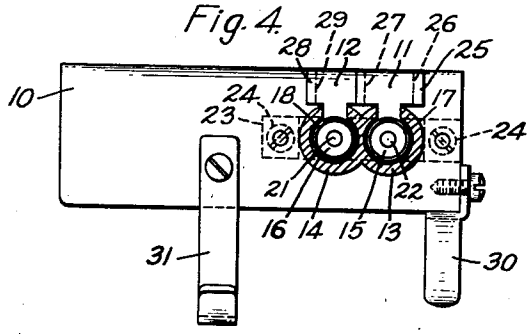


Fig. 2.

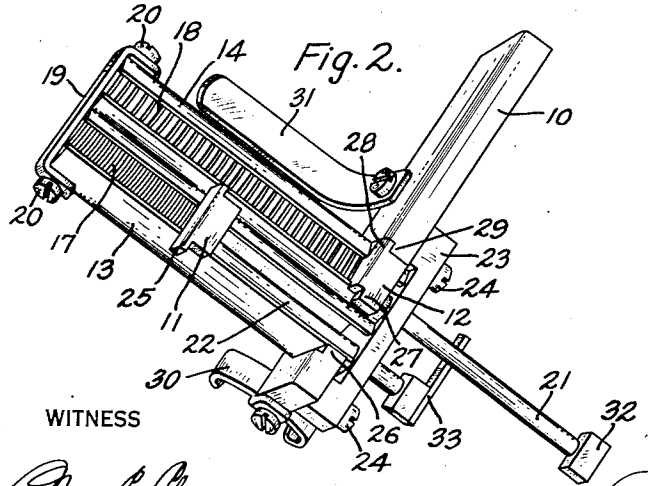
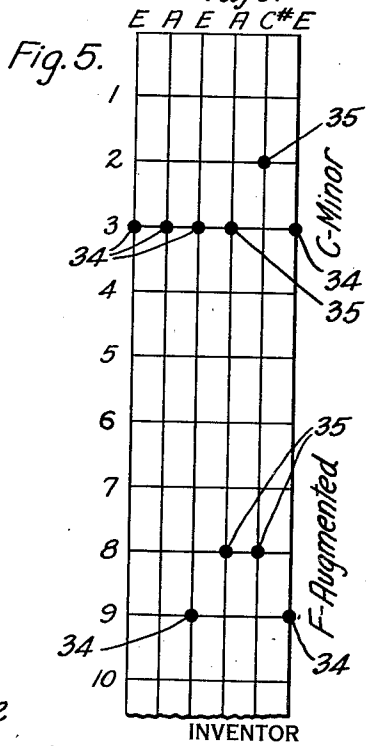


Fig. 5.



WITNESS

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STEEL FOR HAWAIIAN GUITARS

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8 Claims. (Cl. 84—319)

The invention relates to steels for Hawaiian or steel guitars.

Heretofore, the steels provided for use with Hawaiian or steel guitars have been plain metallic bars. In using the well known steel, the player is greatly handicapped in the number of full chords that he can produce. For example, with the most common tuning of the guitar, A major, the only chords possible using three or more notes are major chords. It is possible to play two notes of other chards such as A minor, augmented or diminished chords, and three of a seventh by turning the steel at an acute angle to the line of the strings, but this is an awkward motion and the effect is weak. It is essential to get full strength of chords other than the major or the chord in which the instrument is tuned to project fully the effects, modulations and progressions written by the composer.

The beauty of the music produced on the guitar is greatly augmented when each chord in a harmonic sequence is clear and full.

The object of the invention is the provision of a steel having a plurality of relatively movable parts for application to the strings of a Hawaiian or steel guitar to cooperate in controlling the pitch of the notes produced.

Other objects of the invention will, in part, be obvious, and, in part, appear hereinafter.

The invention accordingly is disclosed in the accompanying drawing and comprises the features of construction, combination of elements, and arrangement of parts which will be exemplified in the structure hereinafter set forth and the scope of which will be indicated in the claims.

For a fuller understanding of the objects of the invention, reference may be had to the following detailed description, taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of a steel constructed in accordance with this invention;

Fig. 2 is a perspective view of a steel constructed in accordance with this invention, but from the opposite side as shown in Fig. 1;

Fig. 3 is a top plan view showing details of the construction;

Fig. 4 is a section taken along the line IV—IV of Fig. 3 showing details of the construction; and

Fig. 5 is a diagram illustrating how the steel may be applied to the strings of the guitar.

Referring now to the drawing, and Figs. 1 and 2 in particular, the steel comprises a main bar 10 and a plurality of auxiliary bars 11 and 12. As illustrated, the auxiliary bars 11 and 12 are disposed to fit into a notch provided in the main bar 10, thereby providing a continuous bar simulating the well known steel provided for use in the playing of the Hawaiian guitar.

In order to enable the use of a steel of this type in the manner of the well known steel, the auxiliary bars 11 and 12 are disposed to be biased into alignment with the main bar 10. In this particular embodiment of the invention, the biasing means is disposed in slotted tubes 13 and 14 carried by the main bar 10. These tubes 13 and 14 may be mounted on the main bar 10 in any suitable manner as by threading their upper ends and providing in the main bar 10 threads for receiving the threaded ends of the tubes. However, it is to be understood that any other suitable method may be employed for mounting the tubes on the main bar 10.

These tubes 13 and 14 may also be utilized as guides for controlling the movement of the auxiliary bars 11 and 12. In order to utilize them for this purpose, the auxiliary bars 11 and 12 are provided with disc-shaped members or heads 15 and 16, respectively, of a proper size to fit into the tubes. The connections between the heads 15 and 16 and auxiliary bars 11 and 12, respectively, extend through the slots in the tubes 13 and 14.

Springs 17 and 18 are disposed in the tubes 13 and 14, respectively, to engage the disc-shaped heads 15 and 16, respectively, and bias the auxiliary bars 11 and 12 into alignment with the main bar 10. In designing the steel, the springs will be made of the proper strength to give a biasing force which may be readily overcome by the player. The springs may be made from any well known spring material, preferably from some material which will not readily corrode in the atmosphere.

The assembly of the structure is facilitated if the lower ends of the tubes 13 and 14 are open. The heads of the auxiliary bars 11 and 12 may then be readily inserted and moved to their positions in alignment with the main bar 10. The springs may then be placed in position and a strap 19 mounted on the lower ends of the tubes to retain the springs in their biasing position. The strap 19 may be held on the tubes in any suitable manner and in this particular instance are shown attached to the tubes by means of screws 20.

Actuating means are provided for the auxiliary bars 11 and 12. In this particular embodiment of the invention the actuating bars comprise rods 21 and 22 which are connected to the auxiliary bars 12 and 11, respectively. These rods

may be connected in any suitable manner as by threading their ends and providing in the auxiliary bars threaded openings for receiving the threaded ends of the rods 21 and 22.

In case there is a tendency for the rods to bind as they are actuated, a bridge 23 may be mounted on the main bar 10. This bridge may be attached to the main bar in any suitable manner as by means of screws 24 as illustrated. The bridge illustrated may be of any desired shape, and in this particular instance is merely a bar with depending members. Openings are provided in the bridge for receiving the actuating rods 21 and 22. These openings will be large enough to permit the rods to slide freely.

The auxiliary or movable bars 11 and 12 are provided with shoulders to increase their width so that they are not apt to slide off the strings and also to facilitate sliding sidewise. As illustrated, the auxiliary bar 11 is provided with laterally extending shoulders 25. The shoulder on the right is illustrated in Fig. 3, overlapping the shoulder 26 provided on the upper edge of a portion of the bar 10, while the shoulder on the left overlaps a shoulder 27 provided on the upper edge of the right side of the bar 12 as viewed in Fig. 3. The auxiliary bar 12 is also provided with a shoulder 28 which overlaps a shoulder 29 provided on the bar 10.

In order to enable the player to readily hold the steel, a clip 30 will be provided on the main bar 10 for receiving the forefinger of the hand. Spaced some distance from this clip, a strap 31 may be provided which will extend laterally over the second and third fingers.

Assuming that the steel is for the left hand of a right-handed player, then in applying it the forefinger is projected into the clip and the second and third fingers under the strap. This locates the bar 10 in the proper position under the hand. Thumb buttons or actuating members 32 and 33 will be provided on the rods 21 and 22, respectively, to facilitate the actuation of the auxiliary bars out of alignment with the main bar 10. The button 33 may be made of any suitable shape to enable the operation of the rod 22 independently. In this particular embodiment of the invention for convenience the button 33 will be made substantially L-shaped, so that it extends across the button 33. However, any suitable actuating means may be provided for operating the auxiliary bars 11 and 12.

Referring now to the diagram in Fig. 5, when the player is about to apply or has applied the steel to the strings in a normal or right-angled position, and he desires to get a chord of three, four or more notes, he will place his thumb on button 33 and actuate the auxiliary bar 11 out of alignment with the main bar 10. This can be seen in the diagram illustrated in Fig. 5 where the dots 34 illustrate the main bar 10 and the dots 35 illustrate the auxiliary bars 11 and 12. In this particular illustration the main bar and auxiliary bar 12 are applied to the strings near the third fret and the auxiliary bar 11 pushed to the second fret. This modifies the pitch of the strings under the auxiliary or movable bar 11 from that obtained with the solid bar by at least a full half tone when the solid bar is on a predetermined fret and by more than a half tone as the player approaches the bridge end of the guitar.

No attempt will be made to describe all the combinations that may be effected by the use of this steel, since they will be evident to anyone skilled in the art. With major tuning, minor, seventh, diminished and augmented chords may be obtained in at least three notes.

Referring now to Fig. 2, it will be observed that in this embodiment of the invention the auxiliary bar 11 may be actuated independently of the auxiliary bar 12. However, the auxiliary bar 12 may not be actuated independently of the auxiliary bar 11. Therefore, in the operation, when it is desired to actuate both bars, it is only necessary to press the button 32. As soon as the player releases his thumb from the buttons, the springs 17 and 18 bias the auxiliary bars 11 and 12 into alignment with the main bar 10.

It will be readily appreciated that any number of auxiliary bars may be provided. Further, they may be made of any predetermined width, depending on the conditions to be met in the playing of an instrument.

The main bar 10 and auxiliary bars 11 and 12 may be made of the same materials as the ordinary steels which are usually brass. In fact, any metal may be used which does not dampen appreciably the vibration of the strings.

I claim as my invention:

1. A steel for a Hawaiian guitar having a plurality of strings comprising a plurality of metallic members biased into alignment to present a straight-edged steel for applying to the strings and means for actuating the metallic members out of alignment to cooperate in controlling the pitch of the notes produced on the strings.

2. A steel for a Hawaiian guitar provided with a plurality of strings comprising a plurality of metallic members disposed for movement relative to one another, means disposed to bias the metallic members into alignment for applying to the strings of the guitar, and means disposed for operation to move the metallic members out of alignment to cooperate in controlling the pitch of the notes produced.

3. In a steel for a Hawaiian guitar provided with a plurality of strings, in combination, a main metallic member in the form of a bar having a notch cut therein, a metallic member disposed for movement relative to the main metallic member and shaped to substantially fill said notch, resilient means for biasing the movable member into alignment with the main metallic member to provide a substantially continuous bar for application to the strings, and means disposed for manual operation for actuating said metallic member out of alignment with the main metallic member to cooperate in controlling the pitch of the notes produced from the strings.

4. In a steel for a Hawaiian guitar provided with a plurality of strings, in combination, a main metallic member having a notch provided therein, an auxiliary metallic member shaped to substantially fill said notch, means for biasing the auxiliary metallic member into position in said notch, means for actuating the auxiliary metallic member out of position in said notch, and means for retaining said auxiliary metallic member in substantial parallel alignment with the main metallic member to cooperate in controlling the pitch of the notes produced when the steel is applied to the strings.

5. A steel for a Hawaiian guitar provided with a plurality of strings, comprising, in combination, a main metallic bar having a notch cut therein, an auxiliary metallic member disposed to substantially fill said notch to present a steel simulating a bar for application to the strings, a guide for controlling the movement of the auxiliary metallic member carried by the main metallic

member, resilient means associated with said auxiliary metallic member for biasing it into alignment with the main metallic member, and means for actuating the auxiliary metallic member out of alignment with the main metallic member to cooperate in controlling the pitch of the notes produced from the strings.

6. A steel for a Hawaiian guitar provided with a plurality of strings comprising, in combination, a main metallic bar having a notch cut therein, an auxiliary metallic member disposed to substantially fill said notch to present a steel simulating a bar for application to the strings, a guide for controlling the movement of the auxiliary metallic member carried by the main metallic member, resilient means associated with said auxiliary metallic member for biasing it into alignment with the main metallic member, means for actuating the auxiliary metallic member out of alignment wtih the main metallic member to cooperate in controlling the pitch of the notes produced from the strings, and means carried by said members for facilitating the holding of the steel by the player.

7. In a steel for a Hawaiian guitar having a plurality of strings, in combination, a frame, a plurality of metallic members carried by the frame and disposed for relative movement, a spring disposed to bias one of the metallic members into alignment with another of the metallic members, and a thumb button disposed for operation to actuate one of the metallic members to different positions relative to another metallic member.

8. In a steel for a Hawaiian guitar provided with a plurality of springs, in combination, a main metallic member in the form of a bar having a notch therein, a plurality of auxiliary metallic members disposed in the notch in the main metallic member, the auxiliary metallic members being disposed for movement, means disposed to bias the auxiliary metallic members into alignment with the main metallic member and means for actuating the auxiliary metallic members out of alignment with the main metallic member either singly or together.

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