Dec. 16, 1930. S. W. JOHNSON 1,785,311

ATTACHMENT FOR FRETTED MUSICAL INSTRUMENTS

Filed Sept. 29, 1928 2 Sheets-Sheet 1

Fig. 1.

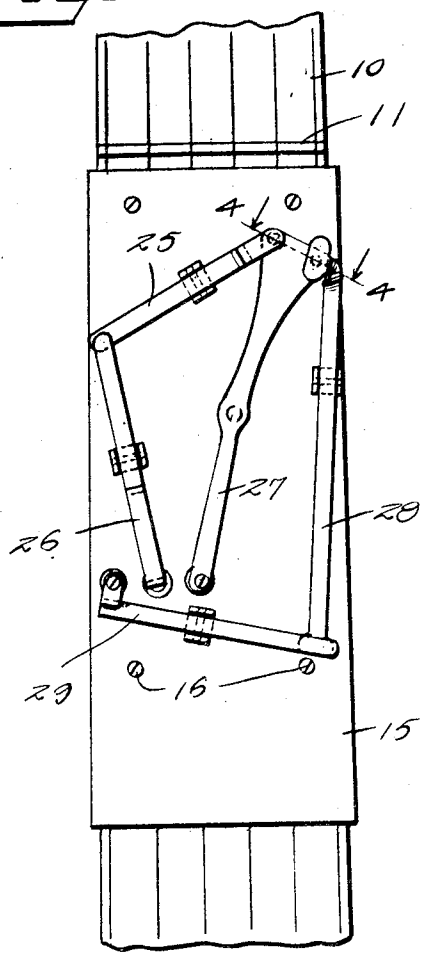


Fig. 2.

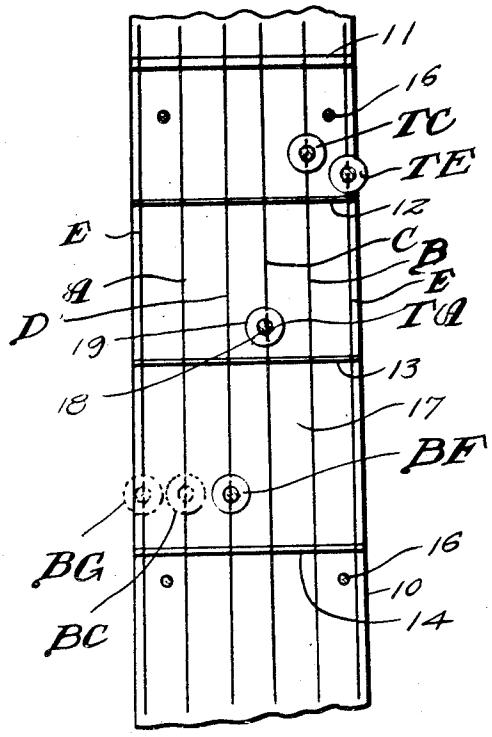


Fig. 3.

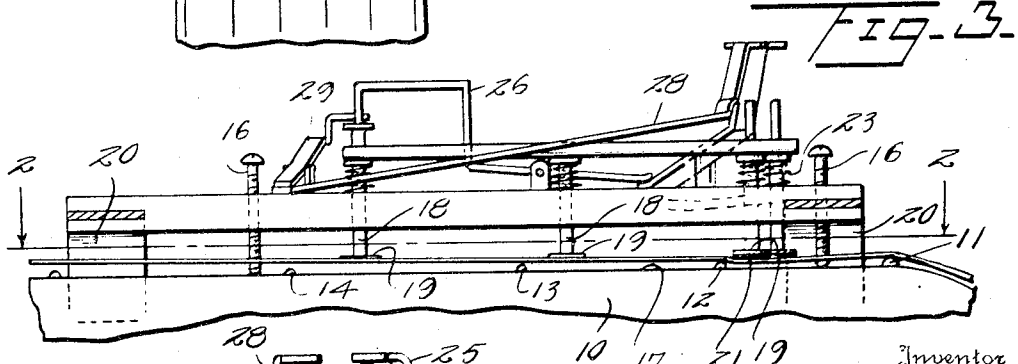
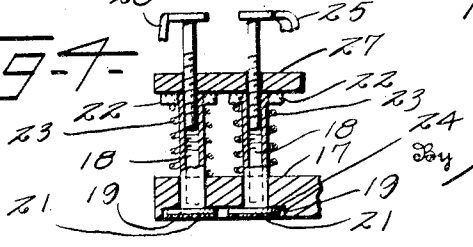


Fig. 4.



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ATTACHMENT FOR FRETTED MUSICAL INSTRUMENTS

Filed Sept. 29, 1928 2 Sheets-Sheet 2

Fig. 5.

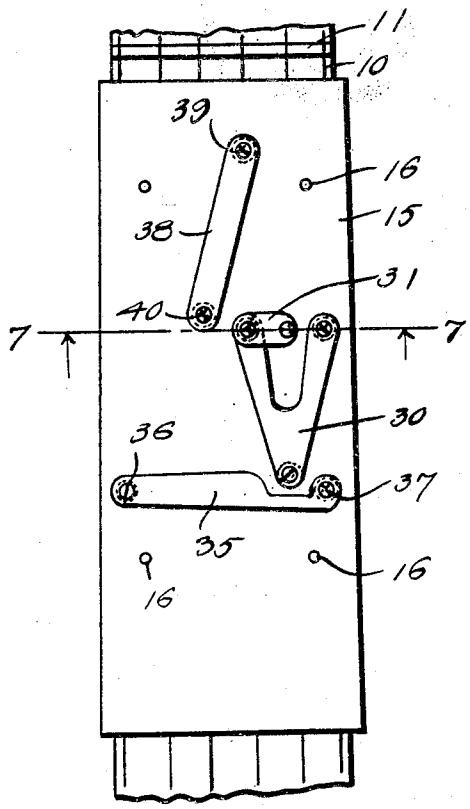


Fig. 6.

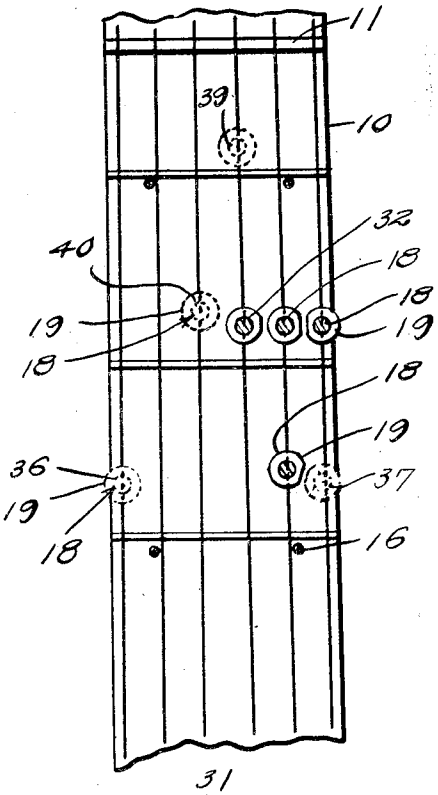
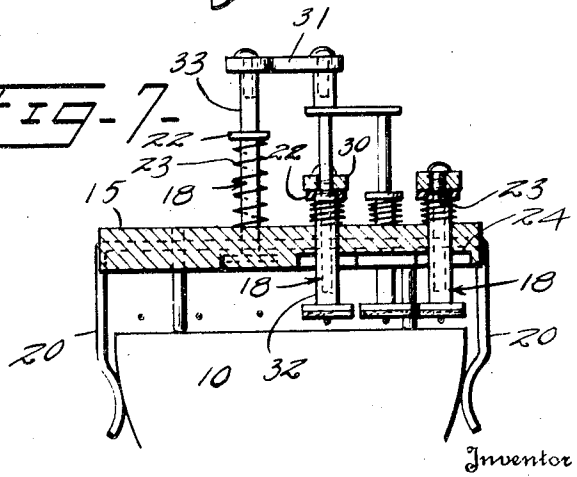


Fig. 7.



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UNITED STATES PATENT OFFICE

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ATTACHMENT FOR FRETTED MUSICAL INSTRUMENTS

Application filed September 29, 1928. Serial No. 309,232.

This invention relates to an attachment for fretted instruments, such as guitars, mandolins, banjos and modifications of these instruments, and has for an important object thereof the provision of apparatus which may be readily attached to and detached from the neck or key board of the instrument and which may be employed in the production of a series of chords commonly employed in playing the instrument.

An important and more specific object of the invention is the provision of means whereby the chords of such a group may be played while employing but one finger to press upon a key or corresponding actuating member to press the strings into engagement with the frets.

A further object of the invention is to provide a member adapted to be attached to the key board of a fretted instrument and having a series of bars or levers, the operation of which serves to produce different chordal depressions of the strings of the instruments, the arrangement being such that all of the chords of a different key may be played and each actuated by the use of a single finger.

A still further object of the invention is to provide a device of this character which may be readily attached to and detached from the key board, which may be durable and efficient in service and which may be very cheaply produced.

These and other objects I attain by the construction shown in the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a plan view showing one form of attachment constructed in accordance with my invention;

Figure 2 is a sectional view taken on the line 2—2 of Figure 3, one of the bars being depressed, certain of the plungers being indicated in cooperation with their respective strings in dotted lines;

Figure 3 is a side elevation with one of the bars operated, portions being broken away;

Figure 4 is a section on the line 4—4 of Figure 1;

Figure 5 is a plan view of a form of the invention capable of producing a different set of chords including the chords of two keys;

Figure 6 is a sectional view with one of the bars depressed, the remaining plungers being indicated in dotted lines;

Figure 7 is a section on the line 7—7 of Figure 5.

Referring now more particularly to the drawings, the numeral 10 generally designates the neck of a fretted instrument, at present illustrated as a guitar, 11 the nut and 12, 13 and 14, the first, second and third frets of the instrument. In accordance with my invention, I provide a plate or support 15 having adjustable legs 16 to engage upon the key board 17 of the instrument and support the plate in spaced relation thereto. Extending through the plate are a plurality of plungers 18, each having at its lower end a string engaging head 19 aligning with one of the strings of the instrument when the plate is applied thereto and adapted to engage the string between adjacent frets of the key board. Means are provided for securing the plate in position upon the key board after application thereto which may comprise, as at present illustrated, spring legs 20 disposed at opposite sides of opposite ends of the plate and embracing the neck 10. The heads 19 of the plungers are preferably padded, as at 21, to prevent twanging noises, such as would result were bare metal employed and an uneven contact with the string secured.

Above the plate 15, each plunger has a flange 22 threaded thereon and between the plate and this flange, a spring 23 extends, normally urging the plunger upwardly, so that its head 19 is disposed within a recess 24 formed in the under surface of the plate for its reception. These plungers are provided upon the plate in desired numbers.

In Figures 1 to 4, I have illustrated the form of the invention for use with the guitar in playing of the chord of the key of C natural.

The strings of the guitar, as is well known to those familiar with the art, when tuned in the ordinary manner, read from left to right, as E, A, D, G, B and E, the lower or base

E and upper or treble E being separated by two octaves. The chords played upon the guitar in the key of C are the tonic, which includes a base C and treble notes G, C and E, the sub-dominant chord which includes a base F and a treble group A, C and F, and a dominant chord which includes a base G and treble group G, B and F. In the tonic chord, the base C and treble C must be produced by engagement of the A string between the second and third frets and the B string between the note and the first fret. In the sub-dominant chord, the base F and treble group A, C and F are produced by engagement of the D string between the second and third frets, the G string between the first and second frets and the B and E strings between the note and the first fret. In the dominant chord, the base G and treble F must be produced by engaging the base E string between the second and third frets and the treble E string between the note and the first fret. The apparatus accordingly includes a plunger BG to engage the base E between the second and third frets, a plunger BC to engage the base A between the second and third frets, a plunger BF to engage the base D between the second and third frets, a plunger TA to engage the treble G between the first and second frets and plungers TC and TF to engage the treble strings B and E respectively between the note and the first fret.

To provide for the formation of the fretted notes or those notes caused by engagement of a string with the fret in the tonic chord and key of C, the plungers TC and BC have associated therewith levers 25 and 26, the outer ends of which overlie the upper ends of the plungers and the inner ends of which overlap, so that when the lever 25, which actuates the plunger TC, is depressed, the lever 26 will be actuated to depress the plunger BC. The sub-dominant chord requires depression of the plungers TA, TC, TF and BF, and these plungers are simultaneously operated by a rigid bar 27, to which the upper ends of the plungers BF and TA are secured, as illustrated, and through which the upper ends of the plungers TC and TF extend, the bar resting upon the flanges or spring seats 22. An arrangement similar to that employed for operation of the plungers DC and TC is employed for simultaneous operation of the plungers TF and BG, pivoted levers 28 and 29 being provided, the outer ends of which overlie the plungers and the inner ends of which overlie one another, so that when the lever 28 is actuated, the lever 29 is actuated simultaneously therewith. It will be noted that the extended upper ends or plungers TC and TF are slidable through the bar 27 when actuated by their associated levers, so that no operation of this bar takes place.

The structure just described can be employed only for playing the chords of one key. In many instances, however, it is possible to combine in a single structure apparatus for playing more than one key, as in the structure illustrated in Figures 5 to 7 which may be employed in playing the keys of D major and A major respectively.

In the key of D major, the tonic chord comprises a base D and a treble group A, D, and F♯. Of these notes, the treble notes are all fret notes. The sub-dominant chord includes a base G and treble notes G, B and G, of which the latter G is played upon the treble E string and is a fret note. The dominant chord includes a base A and a treble group A, C♯ and E, of which the treble notes A and C♯ are fret notes. In the key of A major, the tonic chord includes a base A and treble notes A, C♯ and E, of which the treble notes A and C♯ are fret notes. The sub-dominant includes a base D and treble A, D and F♯, of which all of the treble notes are fret notes. The dominant chord includes base notes E and F and treble notes G♯, B and E, of which the base F and treble G♯ are fret notes.

It will be noted that the tonic chord of D major contains the same fret notes as the sub-dominant chord of A major and that the dominant chord of D major contains the same fret notes as the tonic chord of A major, so that these two groups of chords may be produced by a single group of plungers 18 actuated by bars rigidly connecting them and indicated at 30 and 31 respectively. It will also be noted that the group actuated by the bar 30 includes one of the plungers of the group actuated by the bar 31, so that some construction must be provided permitting the bar 31 to be actuated without an actuation of the bar 30. This is accomplished by providing the common plunger 32 with a reduced extension which is slidable through the bar 30 and is secured to the bar 31. The bar 30, when depressed, engages the spring seat flange 22 of this plunger to depress the same. The second plunger 33 associated with the bar 31 is elongated to correspond in length with the plunger 32.

It will be noted that when the bar 30 is depressed, the bar 31 will also be depressed and with it the plunger 33. This, however, is immaterial, for the reason that the treble B string with which this plunger coacts between the first and second frets is at this time engaged by a plunger 34 associated with the bar 30 between the second and third frets and, of course, in an instrument of this character, the lowermost fret affected controls the produced note. These two bars thus suffice for the production of four chords in the two keys and it is only necessary to provide a bar 35 and associated plungers 36 and 37 for the formation of the fret notes of the sub-domi-

nant D major chord and a bar 38 and associated plungers 39 and 40 for the formation of the dominant A major chord to complete the group.

It will at once be obvious that employing the principles above laid down, an attachment capable of playing any selected chord group may be produced and that, in many instances, it will be possible to include in a single attachment the apparatus for producing chords in a plurality of keys, wherein each chord may be produced by the depression of a single element instead of the complicated fingering often necessary to produce them. Since both the arrangement illustrated and the manner of securing simultaneous operation of a selected group of plungers may be considerably modified, I do not limit myself to the specific structure hereinbefore set forth except as hereinafter claimed.

I claim:—

1. An attachment for use in playing a group of chords upon a fretted musical instrument comprising an elongated base, holding means mounted at opposite ends of said base for removably holding said base on the neck of the instrument, adjustable means in said base for spacedly positioning the base above the finger board, a plurality of string engaging members in the base having enlarged lower portions adapted to selectively engage the strings of the instrument, and padding carried by the lower portions of the string engaging members.

2. An attachment for use in playing a group of chords upon a fretted musical instrument comprising an elongated base, clamp means mounted upon the base at the opposite ends thereof for removably clamping the base on the neck of the instrument, adjustable means in said base for spacedly positioning the base above the finger board, a plurality of string engaging members carried by the base, said string engaging members having enlarged lower portions, padding mounted on the lower portions of said string engaging members, said elongated base having recesses in the lower portion thereof, said enlarged lower portions of said string engaging members being adapted to normally seat in said recesses.

3. An attachment for use in playing a group of chords upon a fretted musical instrument comprising a base, clamp means mounted in the opposite ends of the base for removably clamping the base on the neck of the instrument, adjustable means for said base for spacedly positioning the base above the finger board, a plurality of string engaging members slidably mounted in the base, said string engaging members having enlarged lower portions, padding mounted on the lower surface of said string engaging members, and yielding means for said string engaging members for normally urging the same upwardly to engage the lower surface of the base.

4. An attachment for use in playing a group of chords upon a fretted musical instrument comprising an elongated base, clamping means mounted on the base at the opposite ends thereof for removably holding the base on the neck of the instrument, means for adjusting the base in spaced relation to the finger board, a plurality of string engaging members mounted in the base, said string engaging members having padded lower portions, and means for selectively engaging said string engaging members for playing the desired chords.

In testimony whereof I hereunto affix my signature.

SAMUEL W. JOHNSON.