May 13, 1969 L. P. RICHARDS 3,443,467

STRINGED MUSICAL INSTRUMENT

Filed June 2, 1967 Sheet 1 of 2

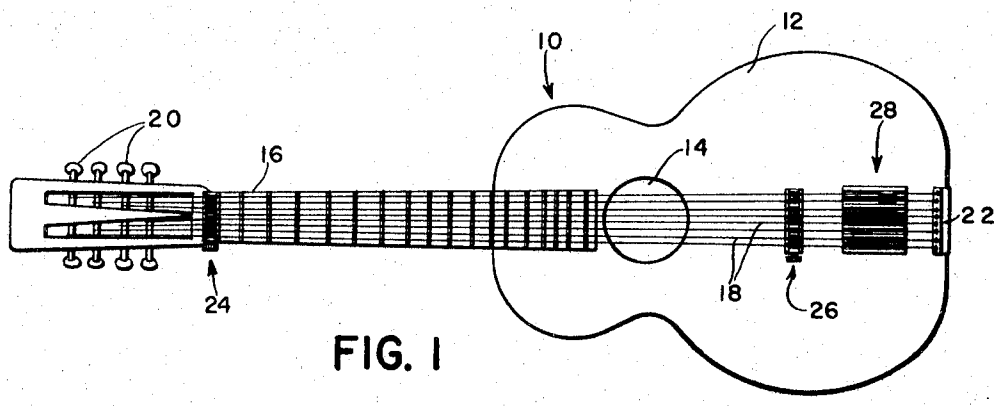


FIG. 1

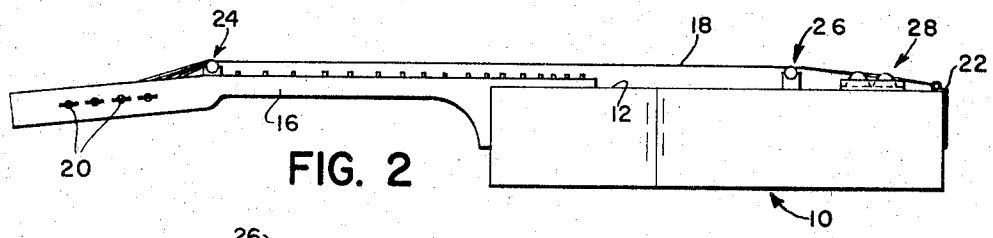


FIG. 2

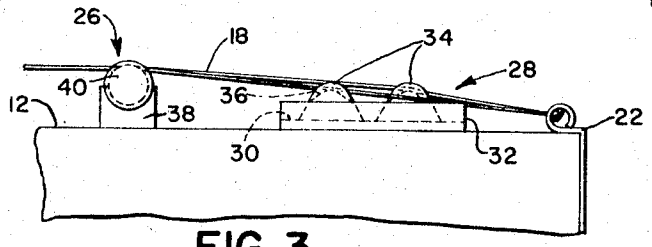


FIG. 3

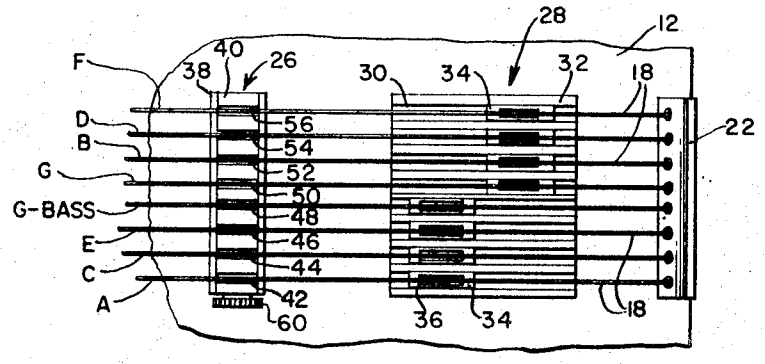


FIG. 4

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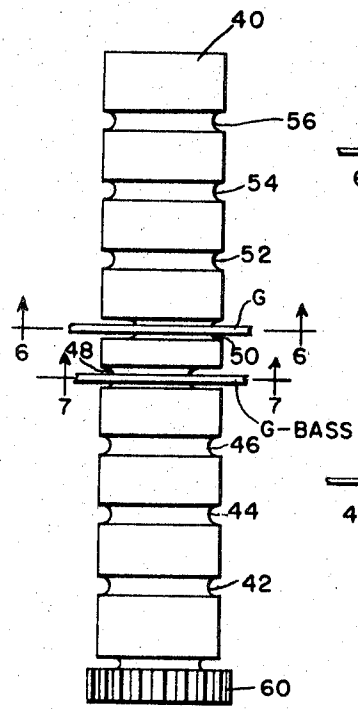


FIG. 5

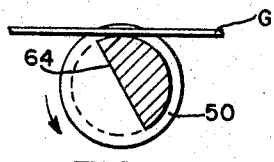


FIG. 6

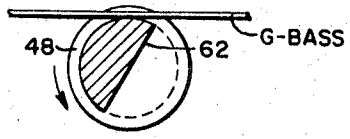


FIG. 7

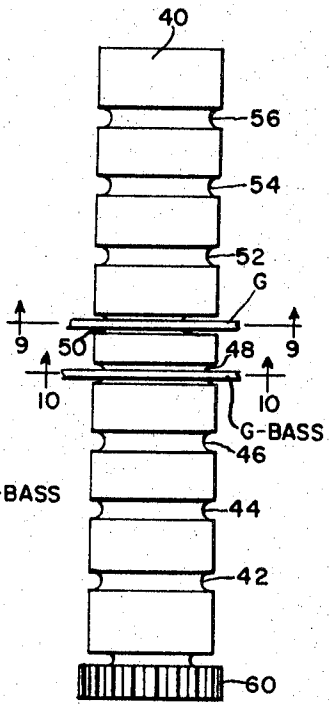


FIG. 8

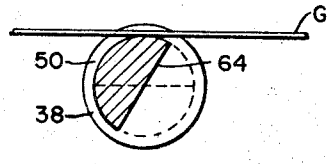


FIG. 9

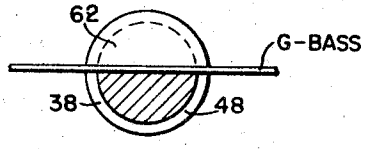


FIG. 10

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3,443,467

STRINGED MUSICAL INSTRUMENT

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Int. Cl. G01d 3/04, 3/14
U.S. Cl. 84—307 6 Claims

ABSTRACT OF THE DISCLOSURE

An eight string guitar having identical cylindrical upper and lower bridges rotatable on the guitar, each bridge having eight annular grooves adapted to receive the respective strings, two of the grooves having deeper diametral slots which retract the respective strings in alternate angular positions of the bridge to vary the strings in playable position, the guitar also having eight slotted members slideable along the guitar body and engageable with the respective strings between the lower bridge and their point of attachment to the instrument body to vary the string tension.

BACKGROUND OF THE INVENTION

(1) *Field of the invention*

This invention relates to stringed musical instruments and more particularly to means for varying the tone and number of strings played without interrupting the playing of the instrument.

(2) *Description of the prior art*

It is known to provide a stringed musical instrument, such as a guitar, with means for changing the tension of the strings without interrupting the playing of the instrument in addition to the conventional tuning or string stretching means on the head of the instrument. However, previous devices for accomplishing this have been relatively complicated, or have been capable of changing the tune of only one string or of all the strings in unison.

SUMMARY OF THE INVENTION

According to the present invention, a stringed musical instrument is provided with means for selectively adjusting the tension of each individual string without interrupting the playing of the instrument. The present invention also provides a simple and inexpensive device for accomplishing said adjustment, which device can be originally installed on the instrument or added to instruments already in use without extensive alteration of the instrument.

Another novel feature of the instrument resides in the provision of means for selectively varying the number of strings in playable position to vary the sound characteristics of the instrument and further to provide such means which are simple and inexpensive and which can be quickly and easily actuated to vary the number of playable strings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a plan view of a guitar embodying the present invention.

FIGURE 2 is a side elevation view of the guitar shown in FIGURE 1.

FIGURE 3 is an enlarged fractional side elevation of the lower portion of the guitar showing the string tension adjusting means.

FIGURE 4 is a plan view of the portion of the guitar shown in FIGURE 3.

FIGURE 5 is an enlarged plan view of one of the

bridges in one of its alternate positions wherein all the strings are presented for playing.

FIGURES 6 and 7 are sections along the respective lines **6—6** and **7—7** of FIGURE 5.

FIGURE 8 is a plan view similar to FIGURE 5 but showing the bridge in another position wherein one of the strings is retracted from playing position.

FIGURES 9 and 10 are sections along the respective lines **9—9** and **10—10** of FIGURE 8.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The instrument chosen for purposes of illustrating the invention is a guitar having a conventional body **10**, which includes an enlarged sounding board **12**, having a central opening **14**, and an elongated, fretted neck **16**. The guitar in the illustrated embodiment has eight strings **18**, which are respectively tuned to produce A, C, E, G Bass, G, B, D, and E in the preferred embodiment, as illustrated in FIGURE 4. The upper ends of the strings are respectively attached to conventional tuning pegs **20**, mounted on the upper end of the neck **16**, while the lower ends of the strings are connected to the lower end of the body by a conventional tension bracket **22**.

The strings **18** are supported above the neck **16** and sounding board **12** by upper and lower bridge means **24** and **26** respectively, the upper bridge means being mounted on the neck above the fretted neck area and proximate to the tuning pegs, while the lower bridge means **26** is mounted on the sounding board between the tension bracket **22** and opening **14**, the portion of the strings between the bridge means being the effective length of strings in their open condition.

The tension in each string **18**, and consequently the turning of the instrument, is adjustable by means of the tuning pegs **20** in the conventional manner. However, for quick and easy adjustment of the pitch of each string, an auxiliary tuning means **28** is provided for each string. The auxiliary tuning means **28** are mounted on the sounding board **12** between the lower bridge **26** and the tension bracket **22**, each auxiliary tuning means **28** including an elongated channel **30** aligned with and underlying the respective string. In the preferred embodiment, the channels **30** are side by side and are formed by a single grooved member **32**, attached to the sounding board between the lower bridge and tension bracket. Slidably mounted in each channel **30** is a generally semi-circular member **32** having approximately the same axial thickness as the width of the channel and being slidable along the channel on its flat side. The top of each member **32** is provided with a longitudial slot **36** adapted to receive the respective strings.

As best seen in FIGURE 3, the portions of the strings **18** between the lower bridge and bracket **22** are canted relative to the sounding board and the grooves **30**, and, when the members **34** are slid toward the bracket **22**, the respective strings engage the bottom of slots **36** and are elevated thereby. As is apparent from the drawing, the further any member **34** is slid toward the bracket **22**, the greater the deflection of the particular string **18** from its normal straight condition, and consequently the greater the tension in the string, so that the pitch of any string can be easily adjusted within limits by simply sliding the particular member **34** along its respective channel. In the illustrated embodiment, the A, C, E, and G Bass strings are shown in their minimum tension condition providable by the tuning means **28**, while the G, B, D, and E strings are shown in their maximum tension condition.

The upper and lower bridge means **24** and **26** are identical, so only the lower bridge will be described in detail. The bridge means includes a transversely channeled support member **38** affixed to the body **10** and a cylindrical

bridge member **40** mounted for rotation about its axis on the member **38**, the bridge member spanning the strings **18** and being axially transverse relative thereto. The construction of the bridge member is best shown in FIGURES 5–10, the bridge member **40** having eight, axially spaced, generally annualar grooves **42, 44, 46, 48, 50, 52, 54** and **56**, respectively receiving the A, C, E, G Bass, G, B, D, and F strings as shown in FIGURE 4, only the G and G Bass strings being shown in FIGURES 5–10 for purpose of clarity.

The bridge member **40** is manually rotatable in the support member **38** via the knob **60** at the end of the member **40** into alternate angular positions, the tension of strings **18** being sufficient to hold the member **40** in the selected position. The illustrated embodiment, the G Bass string gross **48** is provided with a semi-circular slot **62** having a diametrical base, so that when the member **40** is rotated with the slot **62** facing upwardly and receiving the string, the G Bass string is supported a lesser distance above the body **10** than the other strings. Similarly, the groove **50** for the G string is provided with a semi-circular slot **64**, the diametral base of which is angularly offset 120° from the base of the slot **62**, so that the G string is retracted at a different angular position of the member **40**.

In the illustrated embodiment, the member **40** is rotatable into three alternate positions at equal 120° intervals to support three different string combinations in the elevated playing position. In FIGURES 5, 6 and 7 the member is positioned so that all the strings are playable, the relatively shallow annular grooves merely serving to prevent the lateral shifting of the strings. As respectively shown in FIGURES 6 and 7, the slots **62** and **64** in the grooves **48** and **50** are not facing upwardly, so the G Bass and G strings are supported at the same level as the other strings, whereby all the strings are playable to provide maximum volume and richness of sound.

If the player desires to eliminate the G Bass, he simply adjusts the upper and lower bridge means by rotating the bridge members 120° (in a counter clockwise direction as viewed in FIGURE 6) to the position shown in FIGURES 8, 9 and 10, wherein the G string is still supported in a raised position by the grove **50**, while the G Bass string is received by the slot **62** and retracted to a non-playable position. If the member **40** is rotated another 120°, the slot **64** will then be facing upwardly and will receive and retract the G string, while the G Bass string will be supported at the playing elevation with the other strings.

To simplify the explanation, only two of the annular grooves are illustrated with the string retracting slots and only three alternate positions of the member are provided. It is to be understood that a wide variety of numbers of strings could be used with the invention, and a much greater variation in string combinations could also be provided within the scope of the invention.

As is apparent from the above, the adjustment of the number and type of playable strings can be quickly accomplished, without a substantial interruption of the playing. The pitch adjustment can also be accomplished through the tuning means **28** without interruption of the playing.

I claim:

1. A stringed musical instrument comprising: a body; a plurality of adjacent, generally parallel and coextensive strings overlying the body and having opposite ends; means connecting the opposite ends of the strings to the body, the connecting means at one end of the strings including a primary tuning means operative to adjust the tension of each string; upper and lower bridge means mounted on the body and respectively spanning the strings adjacent to their opposite ends and supporting the strings above the body; an elongated channel mounted on the body under and coplanar with each string, the channels beings mounted on the body in a side by side parallel relationship between one of the bridge means and the adjacent connection means, the bottom of each channel being canted relative to the portion of each string between said bridge and connecting means; and a plurality of manually shiftable members mounted for individual sliding movement between alternate positions along the respective channels and adapted to engage the respective strings overlying the respective channels as they move between their alternate positions to deflect the respective strings upwardly between said bridge and connecting means in varying degrees according to the position of the individual members and thereby individually vary the tension in the respective strings.

2. The invention defined in claim **1** wherein at least one of said bridge means includes a manually shiftable bridge member, means mounting the bridge member for shifting into alternate positions on the body, and a plurality of groove means in the bridge member conforming in number and spacing to the strings and respectively receiving and supporting the respective strings, the depth of at least one of the groove means varying according to the alternate positions of the member to vary the distance between the string mounted therein and the body.

3. The invention defined in claim **1** wherein each shiftable member includes a slot parallel to and adapted to receive the respective string.

4. A stringed musical instrument comprising: a body including a relatively flat sounding board; a plurality of adjacent, generally parallel and coextensive strings overlying the body; means connecting the opposite ends of the strings to the body; upper and lower bridge means mounted on the body and respectively spanning the strings adjacent to their opposite end to support the strings above the sounding board, at least one of said bridge means including a manually shiftable bridge member, means mounting the bridge member for shifting into alternate position on the body, and a plurality of groove means in the bridge member, conforming in number and spacing to the strings and respectively receiving and supporting the respective strings, the depth of at least one of the groove means varying according to alternate positions of the member to vary the distance between the string mounted therein and the body.

5. The invention defined in claim **4** wherein said manually shiftable bridge member is generally cylindrical and is mounted for angular shifting about its axis, transverse to the strings into at least three alternate positions, and the groove means are of the same normal depth and support the strings the same predetermined distance above the sounding board in one position of the member, at least one of the groove means being deeper than said normal depth in the second position of the member, and at least one other groove means being deeper than said normal depth in the third position of the member so that different combinations of strings are supported at said predetermined distance from the sounding board in the different positions of the bridge member.

6. The invention defined in claim **5** wherein both the upper and lower bridge means include shiftable bridge members having identical grooves to maintain both ends of the strings the same distance above the body when the members are in corresponding alternate positions.

References Cited

UNITED STATES PATENTS

2,644,360	7/1953	Smith	84—312
2,654,283	10/1953	Barr	84—312
2,972,923	2/1961	Fender	84—307 XR

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U.S. Cl. X.R.

84—312