

Nov. 19, 1957

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2,813,448

TUNING DEVICE FOR STRINGED INSTRUMENT

Filed Jan. 13, 1956

2 Sheets-Sheet 1

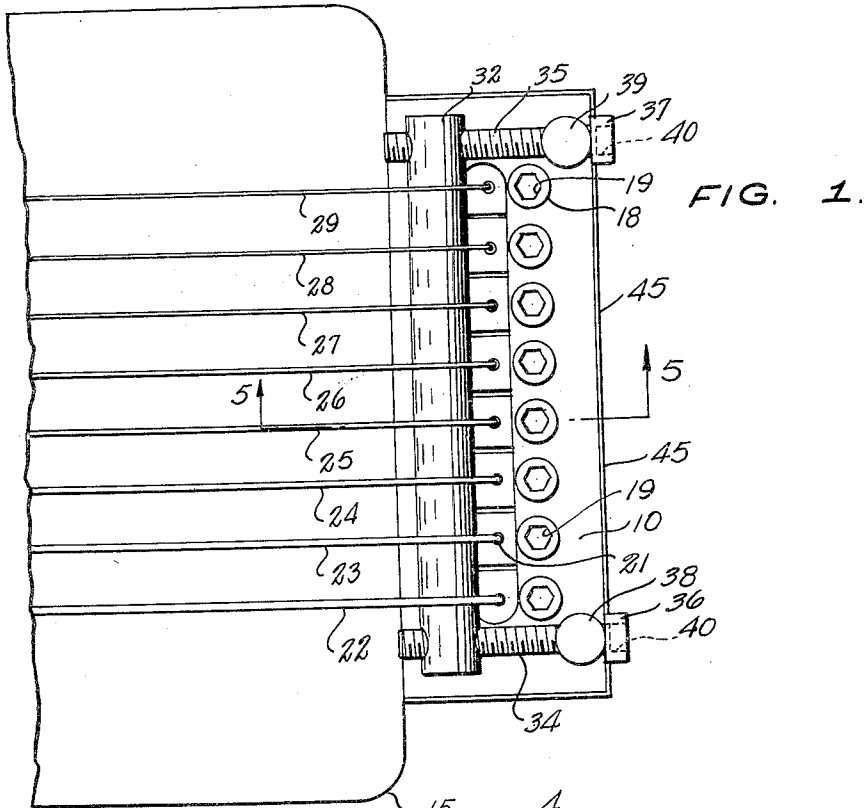


FIG. 1.

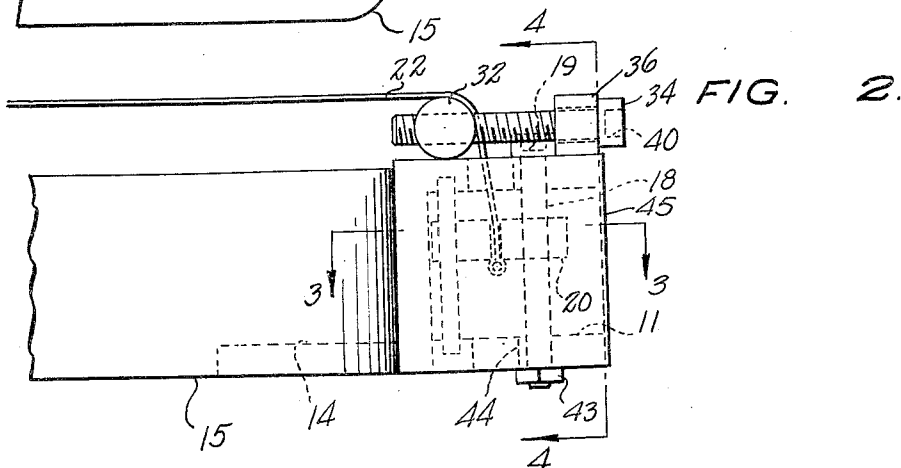


FIG. 2.

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FIG. 3.

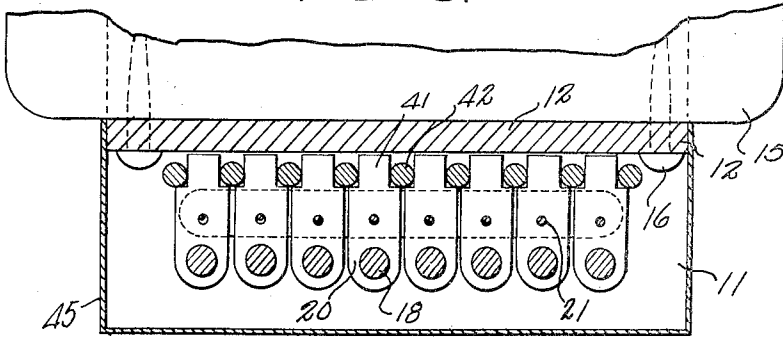
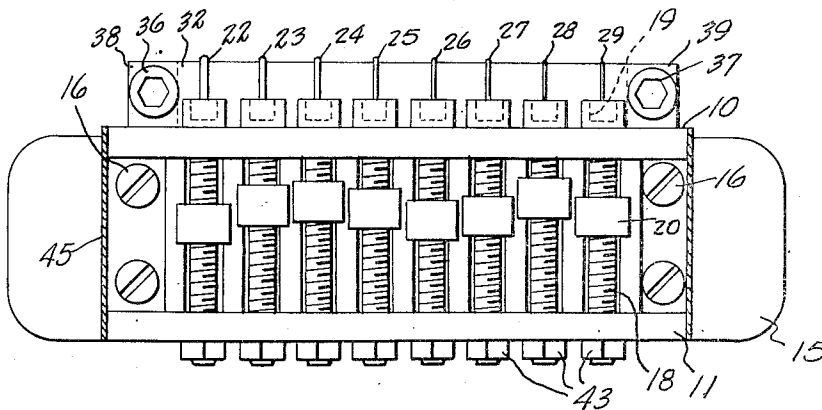
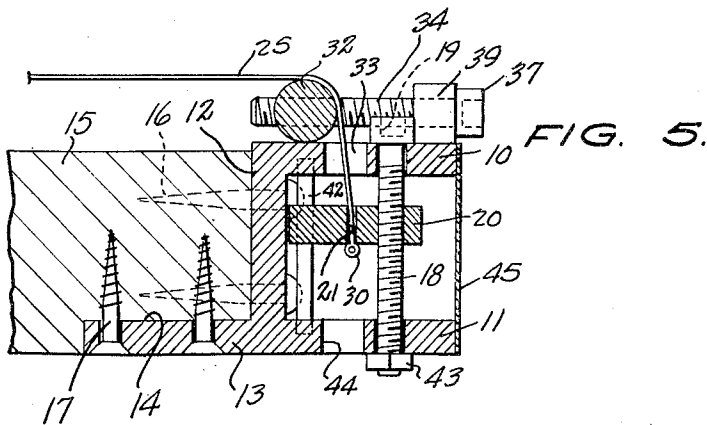


FIG. 4.



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TUNING DEVICE FOR STRINGED INSTRUMENTS

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Application January 13, 1956, Serial No. 559,067

3 Claims. (Cl. 84—297)

The present invention relates to stringed instruments, and in particular to a device for tuning the strings of instruments.

An object of the present invention is to provide a device for tuning the strings of a stringed instrument, such as a steel guitar, and one which is positive in action and enables the user to quickly and accurately bring the tone of each of the strings up to the required pitch.

Another object of the present invention is to provide a tuning device for a stringed instrument which is sturdy in construction, one having few parts easily and quickly assembled, and one which is economically practical.

A further object of the present invention is to provide a device for tuning the strings of a stringed instrument which has means for tuning each string individually and other means for tuning all of the strings at once, enabling the user to bring the pitch of the instrument into registry with the pitch of another instrument.

These and other objects and advantages of the present invention will be fully apparent from the following description when taken in connection with the annexed drawings, in which:

Figure 1 is a plan view of a portion of a steel guitar, with the tuning device of the present invention installed thereon,

Figure 2 is an elevational view of the assembly of Figure 1,

Figure 3 is a sectional view taken on the line 3—3 of Figure 2,

Figure 4 is a sectional view taken on the line 4—4 of Figure 2, and

Figure 5 is a sectional view taken on the line 5—5 of Figure 1.

Referring in greater detail to the drawings in which like numerals indicate like parts throughout the several views, the tuning device of the present invention comprises a pair of plates 10 and 11 arranged in vertical spaced relation and connected together by a vertically-disposed end plate 12. The end plate 12 has a flange 13 projecting from its lower end and extending into a recess 14 in one end of the sounding body 15 of the stringed instrument, the stringed instrument being here illustrated as a guitar of the type known as steel guitars, although the tuning device of the present invention may be adapted for use with other stringed instruments if desired. Screws 16 and 17 fixedly secure the end plate 12 and the flange 13, respectively, to the body 15 of the instrument, there being provided suitable holes in the end plate 12 for the screws 16 and other countersunk holes in the flange 13 for the screws 17.

The plates 10 and 11 are each provided with longitudinally-extending series of holes, here shown as eight in number, through which extend a like number of vertically-disposed threaded elements, or bolts 18, each having a portion inwardly of its upper end supported in the upper plate 10 and a portion inwardly of its lower end supported in the lower plate 11. The bolts 18 are

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free to rotate in clockwise and counterclockwise directions and the head of each bolt 18 is provided with a socket 19 to accommodate a wrench for effecting the rotation of the bolt 18.

A plurality of blocks 20, also eight in number, are arranged in side by side spaced relation between the plates 10 and 11 and longitudinally thereof. Each block 20 has a bore 21 extending from its upper face to its lower face and each block 20 receives in its bore 21 the end portion of one of the strings 22 to 29, inclusive, of the instrument. A knot or bead, as indicated at 30, on the end of the string keeps the string from pulling upwardly out of the block 20. Each block 20 has a threaded bore 31 inwardly of one end and extending from the upper face to the lower face and is threadedly connected to the shank of one of the bolts 18 for vertical upward and downward movement in response to rotational movement of the bolt 18 in clockwise and counterclockwise directions.

The strings 22 to 29, inclusive, are supported above the body 15 by means of a bridge 32 which is arranged longitudinally of the upper plate 10 adjacent a longitudinally extending slot 33 which is cut in the upper plate 10 and through which passes the adjacent portions of the strings 22 to 29, inclusive.

The bridge 32 has a horizontally-disposed threaded bore positioned inwardly of each end. A bolt 34 is threaded into the bore on one end of the bridge 32 and another bolt 35 is threaded into the bore on the other end of the bridge 32. The bolts 34 and 35 are supported for free rotation inwardly of their heads 36 and 37, respectively, in posts 38 and 39, respectively, which rise from each end of the upper plate 10.

The head of each of the bolts 36 and 37 has a socket 40 which accommodates a wrench for manually effecting the back and forth movement of the bridge 32 relative to the end of the body 15 to which is secured the end plate 12 and the flange 13. The sockets 19 in the bolts 18 and the sockets 40 in the heads of the bolts 36 and 37 are preferably of the same size so that a single wrench may be used to effect the vertical movements of the blocks 20 to tune the strings separately or to effect the back and forth movement of the bridge to adjust the pitch of all the strings simultaneously. The heads of the bolts 18 constitute hand-actuable means for effecting the rotational movement of the bolts 18 in clockwise and counterclockwise directions, and the heads of the bolts 36 and 37 constitute hand-actuable means for effecting the back and forth movement of the bridge 32.

The other end of each block 20 has a narrow portion 41 received between adjacent ones of a plurality of vertically-disposed guide pins 42 which have their ends anchored in holes provided in the plates 10 and 11 so that the blocks 20 may move up and down without twisting or binding. A nut 43 is silver soldered to the lower end of each of the bolts 18 and prevents the upward movement of the bolts 18 relative to the plates 10 and 11. A slot 44 extends longitudinally of the lower plate 11 and permits the user of the tuning device of the present invention to insert the strings of the instrument therethrough and into the respective one of the bores 21 in the blocks 20. A cover 45 extends over the ends and open front of the space between the plates 10 and 11 and encloses the blocks 20 in the shank portions of the bolts 18.

In use, the tuning device of the present invention may be attached to either end of any stringed instrument. The strings of the instrument will be secured by one end to one end of the instrument and to the blocks 20 of the tuning device of the present invention. Rotation of the bolts 18 will tighten the strings and bring them to the required pitch without repeated trial and error tight-

ening and backing off of the bolts 18. The bridge 32 is movable to tighten all of the strings simultaneously and therefore to adjust the pitch of the instrument to which the tuning device of the present invention is attached. The tuning device of the present invention will keep the strings of a guitar in tune for a longer period of time than tuning devices presently in use with little or no slipping of the strings.

What is claimed is:

1. A tuning device for a stringed instrument comprising: 10
 ing a pair of plates arranged in vertical spaced relation adapted to be positioned at one end of the sounding body of said instrument and to be fixedly attached thereto; a block adapted to receive an end portion of a string of said instrument positioned between said plates and 15
 connected to said plates for vertical up and down movement; and a bridge arranged longitudinally of the upper one of said plates and connected to said upper plate for back and forth movement relative to said one end of said body.

2. A tuning device for a stringed instrument comprising: 20
 ing a pair of plates arranged in vertical spaced relation adapted to be positioned at one end of the sounding body of said instrument and to be fixedly secured thereto, a threaded element extending through and supported in 25
 said plates for rotational movement in clockwise and counterclockwise directions; a block adapted to receive an end portion of a string of said instrument positioned between said plates and connected to said threaded element for vertical upward and downward movement responsive to rotational movement of said threaded element in clockwise and counterclockwise directions; and 30

a bridge arranged longitudinally of the upper one of said plates and connected to said upper plate for back and forth movement relative to said one end of said body.

3. A tuning device for a stringed instrument comprising a pair of plates arranged in vertical spaced relation adapted to be positioned at one end of the sounding body of said instrument and to be fixedly secured thereto, a threaded element extending through and supported in said plates for rotational movement in clockwise and counterclockwise directions; a block adapted to receive an end portion of a string of said instrument positioned between said plates and connected to said threaded element for vertical up and down movement responsive to rotational movement of said threaded element in clockwise and counterclockwise directions; a bridge arranged longitudinally of the upper one of said plates and connected to said upper plate for back and forth movement relative to said one end of said body, hand-actuable means operatively connected to said threaded element for effecting the rotational movements of said threaded elements in clockwise and counterclockwise directions; and other hand-actuable means operatively connected to said bridge for effecting the back and forth movement of the latter.

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