

[54] **DEVICE FOR TUNING STRINGED INSTRUMENTS**

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[58] Field of Search **84/453-456, 312, 84/315-319**

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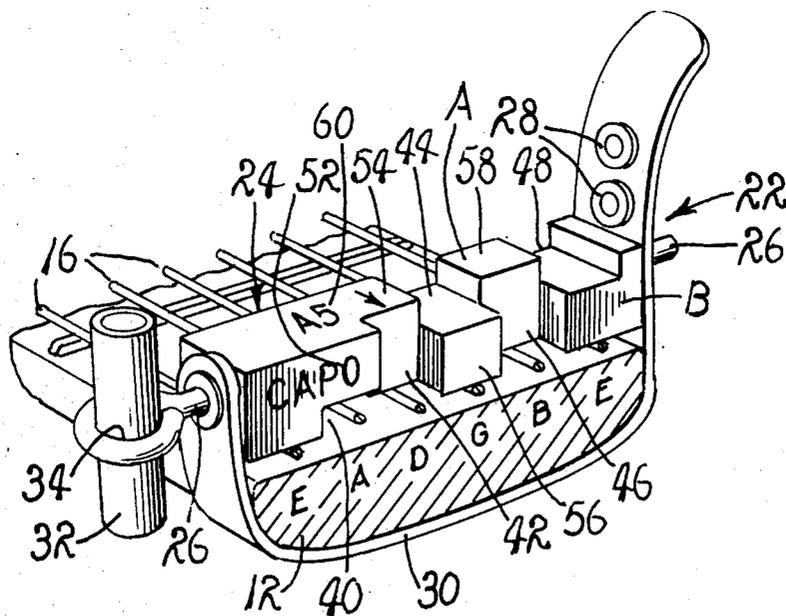
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[57] **ABSTRACT**

An improved device for use in tuning stringed instruments of a type having a fingerboard and including thereon transversely oriented frets and a plurality of substantially parallel strings traversing said frets. The device conforms to an elongated bar adapted to be mounted on a fingerboard and includes an integrated pitch pipe, a plurality of raised fretting surfaces and a plurality of reliefs paired with the fretting surface so that a first string can be tuned to the tone of the pitch pipe, with all other strings thereafter being tuned in sequence as the bar is rotated in a manner such that one string of a pair of adjacent strings is fretted for producing a selected tone while the other string of the pair remains unfretted for accommodating a tuning thereof. A particular feature of the invention resides in its unitary and simplistic configuration which includes paired fretting surfaces and reliefs as well as an integrally related pitch pipe.

8 Claims, 8 Drawing Figures



DEVICE FOR TUNING STRINGED INSTRUMENTS

BACKGROUND OF THE INVENTION

The invention relates to tuning devices and more particularly to an improved tuning device for use with stringed instruments, such as guitars and the like, which include fingerboards having transversely oriented frets traversed by substantially parallel instrument strings.

While many different techniques are employed in tuning stringed instruments, such as guitars and the like, the most commonly employed technique involves the steps of tensioning a first string, either a top or a bottom string, in a manner such that when plucked, a selected tone corresponding to a tone acquired from another instrument is established, thereafter, each of the remaining strings is tuned in a sequence, beginning with the tuned string, by fretting the tuned string and plucking and tensioning the adjacent unfretted string until the tone of the fretted string is acquired. Of course, one having little skill in tuning instruments encounters substantial difficulty in performing this technique.

As a consequence of an obvious need for providing a practical device for use in tuning stringed instruments, many devices have been suggested. These devices are typified by a device shown in the U.S. Letters Patent to Jira, No. 3,230,816, which includes a multiplicity of moving parts.

It can, of course, be appreciated that since a musician normally is employing the device as an aid in tuning his instrument, simplicity in its design will serve to encourage its use. Furthermore, a beginning musician should be provided with a preselected standard tone since such a student often is incapable of acquiring a standard tone from another instrument. Of course, any device employed by a student musician, particularly those of a tender age, should totally be integrated, economic to fabricate and practical to employ.

Therefore, the purpose of the instant invention is to provide a simple, economic, and practical device for use in tuning stringed instruments which overcomes the inadequacies of similar devices heretofore provided and employed.

OBJECTS AND SUMMARY OF THE INVENTION

It therefore is an object of the instant invention to provide an improved device for use in tuning stringed instruments.

Another object is to provide a simplified and economic device for use in tuning stringed instruments of the type having a fingerboard including thereon transversely oriented frets traversed by a plurality of instrument strings.

It is another object to provide an improved device which can readily be employed by students of tender ages in tuning stringed instruments, such as guitars and the like.

Another object is to provide a fully integrated tuning device of an economic and practical construction which can readily be employed in tuning stringed instruments.

These and other objects and advantages of the instant invention are achieved through the use of a simplified bar including an integrally related pitch pipe which serves to provide a standard tone, and a plurality of paired fretting surfaces and adjacent reliefs which

are, in operation, mounted in a simple manner and ready for immediate use in tuning stringed instruments.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of a stringed instrument illustrating one manner in which the device of the instant invention is, in operation, employed.

FIG. 2 is a fragmentary, perspective view, on somewhat of an enlarged scale, illustrating the device shown in FIG. 1.

FIG. 3 is a perspective view of the device illustrated in FIGS. 1 and 2.

FIG. 4 is a side view of the device shown in FIG. 3, rotated through 90°.

FIGS. 5 through 8 are side elevations of the device shown in FIG. 4.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings wherein like reference characters designate like or corresponding parts throughout the several views, there is shown in FIG. 1 a stringed instrument 10. This instrument includes a neck 12 having formed thereon a fingerboard 14 across which a plurality of strings 16 are extended from a common bridge 18 to a plurality of keys 20. Since stringed instruments are well known, a detailed description is omitted in the interest of brevity.

As best shown in Fig. 2, the device which embodies the instant invention is designated 22 and conforms generally to an elongated bar 24. The bar 24 is provided with multiple surfaces arranged in four orthogonally related surface planes, designated A through D. Extending from opposite ends of the bar 24 is a pair of pivot pins 26 which are employed in mounting the bar 24 in a seated disposition with respect to the strings 16. Each pivot pin is received within an eyelet 28 provided in a strap 30 formed of a suitably resilient material. As a practical matter, the strap 30 permanently is coupled at its base to the bar 24, while the distal end of the strap includes a plurality of eyelets 28, any one of which is employed to receive a pivot pin 26. Due to the resiliency of the strap 30 and the pivotal relationship of the eyelet 28 and the pins 26, the bar 24 is permitted to rotate about its longitudinal axis.

Integrally related with the bar 24 is a pitch pipe 32. In practice, the pitch pipe 32 is fixedly coupled to the bar 24. As illustrated, an eye 34 formed in the terminus of one of the pivot pins 26 serves quite satisfactorily. The pitch pipe 32 is, in practice, soldered within the eye 34 so that the device 22 is of a unitary construction. Of course, as is apparent, the pitch pipe 32 and bar 24 can be united in any suitable fashion. The pitch pipe is selected to produce a given tone which serves as a standard for tuning the first string of an instrument with which the device is to be employed.

The uppermost string of the instrument 10 shown in the drawing is designated the first E string, followed in series by strings A, D, G, B and the second E string which is one octave lower than the first E string. Consequently, the tone provided by the pitch pipe 32 is the tone to which the tone of the first E string is to be matched by tensioning the string through the use of an appropriate one of the keys 20.

The bar 24 is fabricated from any suitable material such as a synthetic plastic resin. Three of the four surfaces of the bar 24 are provided with transverse reliefs, designated reliefs 40, 42, 44, 46 and 48. Preferably, the reliefs 40 through 48 are formed by removing segments of the material from selected areas of the surfaces. The depth to which the material is removed is a matter of convenience, however, it is to be understood that the depth substantially is greater than the thickness of the string.

Each relief is disposed adjacent a fretting surface and is so arranged and dimensioned that a preceding string can be fretted or depressed by a fretting surface while the string being tuned is passed through the relief. Hence, the fretting surfaces and their associated reliefs can be considered to be paired. As illustrated, a fretting surface 50 is paired with the relief 40, a fretting surface 52 is paired with the relief 42, a fretting surface 54 is paired with the relief 44, a fretting surface 56 is paired with the relief 46 and a fretting surface 58 is paired with the relief 48.

Arranged along the uppermost surface of the bar 24, opposite each fretting surface and the paired relief being employed there is provided indicia 60 which serves to identify the string being tuned. Also provided is indicia serving to indicate the next direction in which the bar 24 must be rotated in order to achieve a fretting of the next string to be tuned. Preferably, the strings are identified on the surface of the bar as A5, D4, G3, B2 and E1, in order that the string be identified by number as well as by its tone. The direction in which the bar is to be rotated is identified by a direction arrow. As a practical matter, in order to tune the string identified as B2 it is necessary to advance the bar 24 to the fourth fret and fret string G3. Such direction also is identified by a direction arrow.

In order to employ the device 22, the student merely blows into the pitch pipe 32 and tunes the uppermost E string until a tone matching the output from the pitch pipe is achieved. Thereupon the device 22 is mounted on the neck 12, preferably at the fifth fret, in a manner such that the fretting surface 50 of the bar 24 depresses and thus frets the E string adjacent the A string, which is passed through the relief 40. The A string is then plucked and tensioned to provide a tone corresponding to the tone of the fretted E string. Once this has been achieved, the bar 24 is rotated through 90°, as directed by the arrow appearing on the surface D. Hence, the fretting surface 52 is caused to engage and fret the A string, while the relief 42 receives therein the D string. The D string then is tuned to the tone of the fretted A string in the manner hereinbefore described. Once the D string is tuned, the bar again is rotated and the procedure repeated for tuning the G string.

However, in order to tune the B string, it is necessary to advance the bar to the fourth fret and reversely rotate the bar through 90° for thereby bringing the fretting surface 56 into engagement with the G string at the fourth fret, so that the B string is passed through the relief 46 for accommodating tuning in the aforedescribed manner. Once the B string is tuned, the bar 24 again is rotated in a forward direction to the position depicted in FIG. 8 for purposes of tuning the E string to a tone consistent with that of the B string. Thus tuning is completed.

As illustrated in FIGS. 6 through 8, the surface coincident with the surface plane designated D is an uninterrupted surface. Hence, this surface is particularly suited to be seated simultaneously on all strings and employed as a CAPO for changing the pitch of the fingerboard and changing the key of the instrument. For ease in identifying the CAPO, appropriate indicia is provided on the surface coincident with the surface plane designated B, FIG. 4.

In view of the foregoing, it should readily be apparent that the present invention provides a simple, economic, and readily accessible device which can be employed by one possessing little skill for purposes of tuning stringed instruments such as guitars and the like.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the illustrative details disclosed.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An improved device for use in tuning a stringed instrument of the type having an elongated fingerboard including thereon transversely oriented frets and a plurality of substantially parallel strings traversing said frets comprising:

A. an elongated bar of a substantially unitary configuration including means for mounting the bar on said fingerboard, adjacent a single fret, in a substantially transverse and contiguous relationship with said plurality of strings; and

B. means integral with said bar, including a surface thereof, positionable in fretting relation with one string and in unfretted relation with an adjacent string for establishing a selected tone for said one string, to which said adjacent string is tuned.

2. The device of claim 1 wherein said means integral with said bar further includes a plurality of planar fretting surfaces, and means defining a plurality of transversely related reliefs, each having a length coinciding with the width of said bar and arranged adjacent a selected fretting surface, the combined length of said fretting surface and the relief being such as to accommodate a fretting of the one string and a release of the adjacent string, whereby the adjacent string can be tuned to the tone of the adjacent string fretted by the fretting surface.

3. An improved device for use in tuning a stringed instrument of the type having an elongated fingerboard including thereon transversely oriented frets and a plurality of substantially parallel strings traversing said frets comprising:

A. an elongated bar of a substantially unitary configuration including means for mounting the bar on said fingerboard in a substantially transverse and contiguous relationship with said plurality of strings; and

B. means integrally related with said bar for accommodating an establishment of a selected tone for each string of said plurality of strings including,

1. a pitch pipe,

2. a plurality of fretting surfaces, and

3. means defining a plurality of reliefs, each having a width coinciding with the width of said bar and

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arranged adjacent a selected fretting surface, the combined length of said fretting surface and the relief being such as to accommodate a fretting of one string and a release of an adjacent string, whereby the adjacent string can be tuned to the tone of said one string.

4. The device of claim 3 wherein said means integrally related with said bar further includes means comprising an uninterrupted surface for simultaneously fretting all of said strings of said plurality for accommodating a changing of the key of the instrument.

5. The device of claim 3 wherein said fretting surfaces are of substantially planar configuration and are arranged in a plurality of angularly related planes.

6. The device of claim 5 wherein said plurality of reliefs are employed sequentially, and wherein each relief of said plurality of reliefs is contiguous to a preceding relief and is disposed within a plane extending normally

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to the plane in which the preceding relief is disposed, whereby each succeeding relief and fretting surface is rendered effective by rotating said bar about its own axis.

7. The device of claim 4 wherein said elongated bar is of a length sufficient to traverse said fingerboard, the means for mounting the bar on said fingerboard includes a pair of coaxially related, and oppositely extended pivot pins supported at the opposite ends of said bar in coaxial relationship therewith, and a resilient strap adapted to pass beneath the fingerboard instrument and includes eyelets adapted to receive said pair of pivot pins.

8. The device of claim 5 further comprising a continuous surface defining a CAPO for use in changing the key of the instrument.

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