Sept. 5, 1961 F. L. PRATT 2,998,742

SPANISH GUITAR WITH MEANS FOR CONVERTING TO HAWAIIAN GUITAR

Filed Oct. 30, 1959

2 Sheets-Sheet 1

Fig. 1

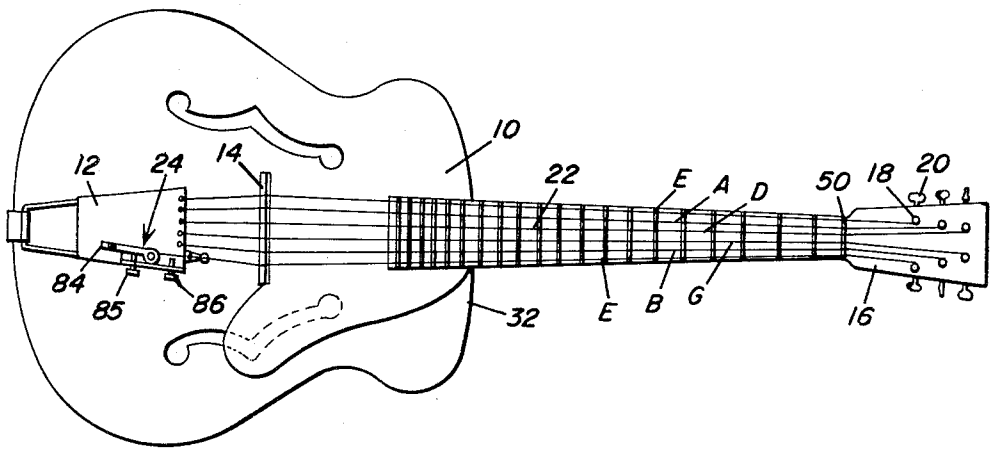


Fig. 2

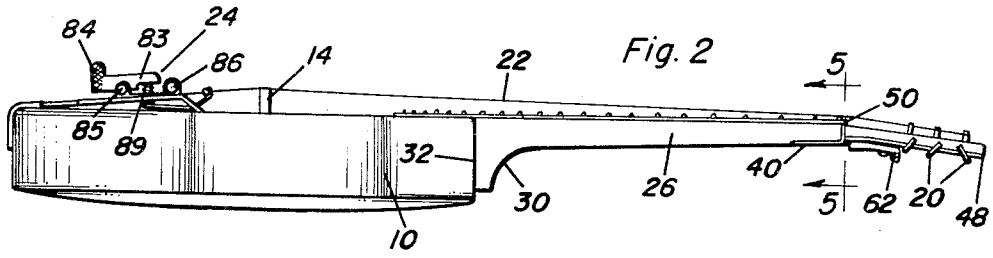


Fig. 3

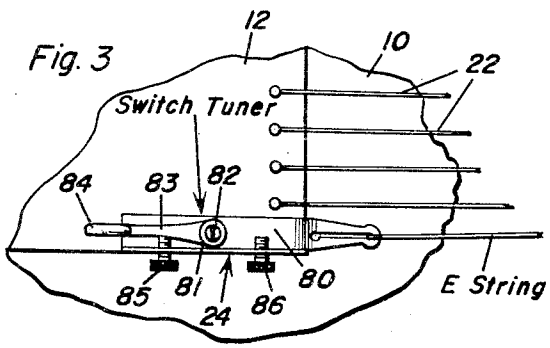


Fig. 4

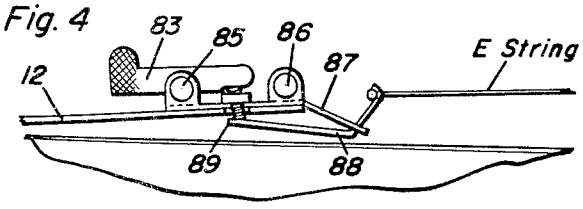
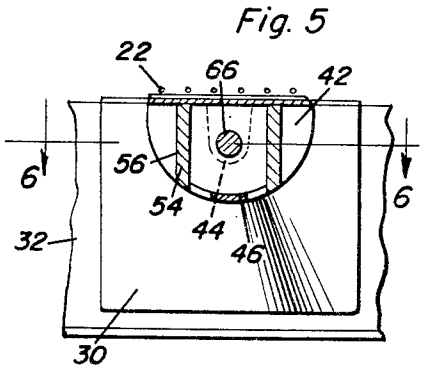


Fig. 5



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Fig. 6

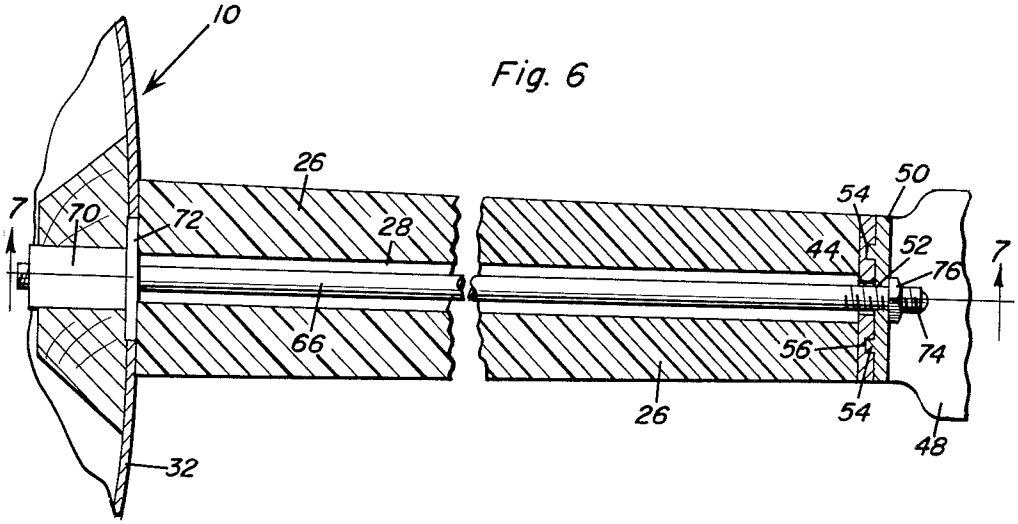


Fig. 7

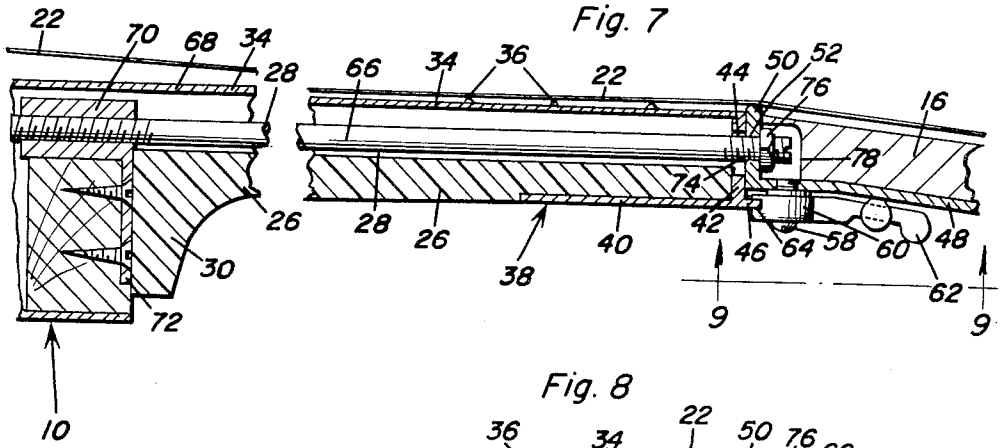


Fig. 8

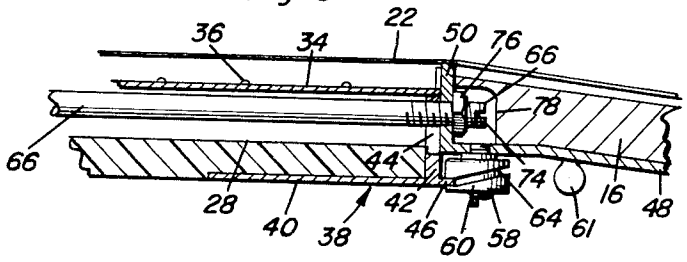
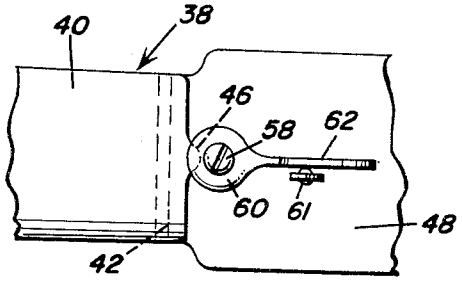


Fig. 9



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SPANISH GUITAR WITH MEANS FOR CONVERTING TO HAWAIIAN GUITAR

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10 Claims. (Cl. 84—267)

This invention relates to a dual purpose guitar, that is, a structurally distinctive single-neck acoustical Spanish guitar which is strung and played in the customary manner but is uniquely constructed to permit the performer to convert to a Hawaiian guitar, then back to a Spanish guitar.

A significant object of the concept is to construct a guitar in such a manner that the one instrument actually takes the place of two instruments. With this advanced instrument the performer may play Spanish-style only, Hawaiian-style only or may switch from one to the other almost without delay. Consequently, the performer is enabled to play a first chorus in one style and the second chorus in another manner and style, thus accomplishing a result which is extremely desirable in a small orchestra where "doubling," variety, time and versatility are at a premium.

Persons conversant with the art of stringed musical instruments and particularly guitars are aware that it is quite possible to elevate the bank of strings so that the distance between the strings and the underlying frets on the fingerboard is ample and permits one to resort to the use of a steel and to in this manner provide for both Spanish and Hawaiian playing. In fact, it is common practice when converting a guitar from one style to another to raise the strings at the nut by placing a steel or an equivalent cap or flanged adapter over the nut to straddle the nut and to provide not only an elevated nut but the desired clearance between the strings and frets. However, this means letting down all of the strings, placing the cap in position and then bringing all the strings up to pitch. By the same token, to change back the cap must be removed and the instrument completely tuned again. Manifestly, this perplexing and time-consuming procedure has posed the problem and others working in this field of endeavor have resorted to the use of raisable and lowerable bridges, adjustable nuts, multiple pitch changing tuners and so on.

In carrying out the underlying principles of the instant invention the desired string clearance result has been attained in a distinctive manner. Instead of moving the strings away from the frets, the present invention moves the frets away from the strings.

Briefly summarized, the instrument herein under advisement is basically a Spanish guitar. It comprises a body provided at a rearward end with a suitable tailpiece with which adjacent or rear ends of the customary strings are connected. Mounted atop the body and forwardly of the tailpiece is the usual bridge. The neck has an inward end operatively mounted on a forward or central front portion of the body. Usually the body will be hollow providing the desired acoustic construction. A fretted conventional type fingerboard is fixed at the top and coextensive in length with the neck with an inner end portion, as usual, overhanging the forward top portion of the body. A head is located at the outer end of the neck and fingerboard and a string suspension nut is carried by the head and interposed between cooperating ends of the head, neck and fingerboard. As is customary the head is provided with any appropriate string-attaching and tuning keys or means. The usual strings (E, B, G, D, A and E) are anchored on the tailpiece and strung over the bridge and nut and are attached to the tuning means on the head. Since we are speaking now of a Spanish guitar it will be evident that the distance or space between the frets and strings is the regulation distance. It is true that high and low bridges and nuts, and adjustable bridges and so on are available to change the existing space between the frets and strings but this is of no moment here. The improvement has to do with means cooperatively associated with the neck and fingerboard by way of which the frets adjacent to the nut and head may be moved down or away from the strings without disturbing the strings, nut or head, whereby to provide prerequisite clearance between the frets and strings to accommodate the aforementioned sliding steel and to thus make the conversion to a Hawaiian guitar and, whenever necessary or desired, back to the Spanish guitar.

In accomplishing the aforementioned new result, the neck should be preferably, but not necessarily, constructed of an appropriate grade of commercial plastics. This material is desirable in that the end portion of the neck and the fretted fingerboard adjacent the head have to move down to obtain the desired clearance which is approximately 3/16 of an inch between the strings and the neck at the head end, the differential between the straight and the flexed components of the neck being less than one degree and barely perceptible at the junctional connection between the neck and forward end of the body. Simple mechanical means are utilized to adjust or raise and lower the neck relative to the strings and nut and head. By preference a simple lever is pivoted on the underneath side of the head and has a groove therein providing a cam into which a lug on the adjacent end of the neck is keyed. Turning the lever and operating the cam means shifts the movable portion of the neck from one position to the other.

The over-all concept also embodies a simple lever-equipped string-anchoring pitch change device preferably mounted on the tailpiece. Operating the lever through a fixed path of operation drops the E or first string one full tone giving the first four strings the Hawaiian-style tuning. However, and because of this the player must compensate for the tuning by playing one tone higher than the written music due to the over-all pitch.

Novelty is also predicated upon that aspect of the concept wherein the upper median portion of the neck is provided with a groove. This groove serves to seat an elongated trussrod. The end of the rod adjacent the body is fixedly joined to the body and the outer end of the rod is fixedly joined to an L-shaped member including the nut and on which the head is fixedly mounted. Thus, the body, trussrod, nut and the head constitute a unitary combination of parts relatively stationary. The neck is interposed between the front of the body and the nut and is adjustable at the nut or head end to achieve the desired result of moving the frets away from the overlying strings.

Other objects, features and advantages will become more readily apparent from the following description of the accompanying illustrative, but not restrictive, drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the views:

FIG. 1 is a plan view of the improved dual purpose guitar constructed in accordance with the principles of the present invention;

FIG. 2 is a side elevation of the same showing the variable or movable neck, the approximate degree of movement and position being shown in phantom lines;

FIG. 3 is a view on a larger scale of a portion of the tail piece showing the pre-set E-string pitch changing device;

FIG. 4 is an edge elevation of the device seen in FIG. 3;

FIG. 5 is an exaggerated view on the section line 5—5 of FIG. 2, looking in the direction of the arrows;

FIG. 6 is an enlarged view of a fragmentary type with parts in section and elevation taken on the horizontal line 6—6 of FIG. 5;

FIG. 7 is a view in section and elevation taken on the central longitudinal line 7—7 of FIG. 6;

FIG. 8 is a view similar to FIG. 7 insofar as the right hand end portion is concerned and which serves to enable the reader to compare the normal position of the neck and the adjusted position for string clearance purposes; and

FIG. 9 is a section on the plane of the line 9—9 of FIG. 7.

As is evident from the illustration in FIGS. 1 and 2 this Spanish guitar in appearance and general construction is basically the same as any standard Spanish guitar. As a matter of fact, many of the components, generally speaking, are old. For example, the acoustic body denoted at 10 is of any suitable hollow construction and shape. The tailpiece 12 is of any suitable construction as is the bridge 14. In shape and appearance the head 16 is not unusual and this head is provided with pegs or pins 18 and turning keys 20 which together provide tuning keys for the six strings. The strings are normally tuned to the pitch indicated by the letters seen in FIG. 1 and the strings are conveniently referred to here by the numeral 22. Since only the E or first string is in any manner altered, this only as to pitch, it will be referred to later on in connection with a pre-set pitch switching or changing means denoted generally by the numeral 24 and mounted in the first hole of the tailpiece 12. The neck assembly is a composite construction here and the neck proper is denoted by the numeral 26, said neck having a lengthwise groove 28 which opens through the inward and outward ends and also through the top. The butt or shoulder 30 is not unusual insofar as design or form is concerned and since this neck in practice will be constructed from a suitable grade of commercial plastics (nylon used for rifle stocks or Plexiglas which can be molded or machined) the positive connection with the forward central portion of the rim of the guitar body, that is the portion 32 is not detailed. The ebony or other type fingerboard is conventional and is denoted by the numeral 34 and is provided with customary fixed brass or equivalent transverse frets 36. A metal fixture is provided at 38 and comprises a suitably curved plate 40 which is set flush in a recess provided therefor in the cooperating surfaces of the right hand end portion of the neck. This plate carries a lateral or right angularly disposed abutment 42 having a clearance notch 44 therein. There is also an integral extension projecting beyond the abutment which is here designated an adjusting and keying lug 46. Cooperating closely with the fixture 38 is an L-shaped metal member comprising a generally horizontal (in the drawing) head plate 48 suitably shaped and having an upstanding flange at one end as at 50 the upper edge of which is rounded and this flange constitutes the aforementioned nut, said nut being said to be located at the inner end of the wooden or equivalent head 16. This nut 50 is provided centrally with a left-hand threaded hole 52 (See FIG. 6) which serves a purpose to be later described. Also the flange has keying ribs 54 keyed into grooves 56 provided therefor in the abutment 42. Thus these parts, the abutment 42 and nut 50 are slidably keyed together but have relative movement, say from the "up" position seen in FIG. 7 to the "down" position seen in FIG. 8. While considering this head and head plate means it will be noted that the plate 48 provides a support for a headed fastener 58 which provides a journal for the headed end 60 of a manually adjustable lever 62. The marginal or peripheral portion of this head 60 is provided with a helical groove 64 (FIG. 8) and the lug is keyed in this groove. Thus the grooved head 60 and lug provide a cam cooperating connection between the head plate and the neck making it possible to adjust the neck up and down or toward and from the strings as has already been pointed out. A highly significant part of this neck construction is the trussrod 66. The screw-threaded inner end 68 of this rod is screwed into an anchoring socket 70 forming an integral part of the adapter plate 72. The adapter plate is suitably shaped and fastened to the forward front portion 32 of the body thus providing a satisfactory anchor for the threaded end of the trussrod. The trussrod extends through and beyond the groove 28 in the manner in FIGS. 7 and 8. The left hand screw-threaded end 74 extends through the notch 44 and is then screwed into the threads provided therefor in the hole 52 where the desired assembly and connection is made by turning the trussrod and drawing the parts together. After the proper adjustment is made in respect to the ribs 54 and grooves 56, the connection is then secured with the aid of the assembling and retaining nut 76. The head is provided with a clearance pocket at 78 to accommodate this construction. It is particularly noticeable that the body with the fixed adapter means (70 and 72) the trussrod 66, nut 50 and head means 16 and 48 constitute a relatively stationary assembly. That is to say, these parts do not move relative to each other. Only the neck and preferably only the right hand flexibly resilient end portion thereof is adjustable as indicated in phantom lines in FIG. 2.

The neck is grooved beneath the fingerboard to receive the trussrod leaving ample room for flexing the neck downward three-sixteenths of an inch from original (Spanish) position at head end of neck, the flexing (or hinging effect) occurring at or near the junction of the neck and body, the remainder of the neck remaining straight and controlled by the cam and lever mechanism at the head.

It is believed that the description and drawings so far considered will enable the reader to understand the variable composite neck assembly and its association with the body and the results attained by being able to switch from the Spanish guitar to a Hawaiian guitar and back again. However, since it is necessary to transpose when this switch over to the Hawaiian guitar is made it is necessary to employ the pitch changing or tuning device or means 24 seen in FIGS. 1 to 4, inclusive. This pre-set switch-tuner takes care of the lowering of the E-string to D when the Hawaiian adjustment is made. The variation of the neck is just part of the over-all concept and the other essential and interdependent part is this switch-tuner comprising a plate 80 on which the headed end 81 is pivoted at 82, said head having an operating lever 83 with an appropriate finger-grip 84 or otherwise constructed so that the lever can be swung forwardly and backwardly through a 180 degree path. The setscrews 85 and 86 provide adjustable stops and also make possible the "pre-set" functioning. The depending finger (FIG. 4) 87 carries the pivoted angle bracket 88 on which the string is fastened. The operating screw controlled by the lever is denoted at 89.

A stud 61 on the head plate 48 (FIG. 9) is a very important feature as it is the controlling stop and functions to keep the neck from being raised against the strings and also provides the fine adjustment necessary for ease in playing the instrument.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A Spanish guitar which may be converted to a Hawaiian steel guitar comprising a body provided at a rearward end with a tailpiece and forwardly of said tailpiece with a bridge, a neck having an inward end operatively mounted on a forward end of said body, a fretted fingerboard fixed atop said neck, a head located at the

outer end of said neck and fingerboard, a string suspension nut carried by said head and interposed between cooperating ends of the head, neck and fingerboard, said head provided with string attaching and tuning means, strings anchored on said tailpiece, strung over said bridge and nut and attached to said tuning means, each string being tuned to a predetermined pitch, the distance between the strings and underlying frets providing the spacing required for a Spanish guitar, and means cooperatively associated with the neck and fingerboard by way of which frets adjacent said nut and head may be moved away from the strings, without disturbing the strings, nut or head, whereby to provide prerequisite clearance between the frets and strings for conversion to a Hawaiian guitar, said means being carried in part by the head and in part by said neck, said neck embodying a trussrod secured at an inner end to the body independently of the neck and secured at an outer end to said nut and head independently of the neck whereby only the neck and fingerboard thereon move toward and from the trussrod, said trussrod, nut and head being rigid with the body and constantly fixed in relation thereto.

2. A Spanish guitar which may be converted to a Hawaiian steel guitar comprising a body provided at a rearward end with a tailpiece and forwardly of said tailpiece with a bridge, a neck having an inward end operatively mounted on a forward end of said body, a fretted fingerboard fixed atop said neck, a head located at the outer end of said neck and fingerboard, a string suspension nut carried by said head and interposed between cooperating ends of the head, neck and fingerboard, said head provided with string attaching and tuning means, strings anchored on said tailpiece, strung over said bridge and nut and attached to said tuning means, there being six strings tuned to E, B, G, D, A and E from first string to last string, respectively, the distance between the strings and underlying frets providing the spacing required for a Spanish guitar, and means cooperatively associated with the neck and fingerboard by way of which frets adjacent said nut and head may be moved away from the strings, without disturbing the strings, nut or head, whereby to provide prerequisite clearance between the frets and strings for conversion to a Hawaiian guitar, and means on the tailpiece to which the first E-string is connected and which means functions to lower the pitch of said E-string one full tone to D when the Hawaiian guitar is in use and which serves to restore the string to the pitch E when the instrument is converted back to a Spanish guitar, said body being a hollow acoustical type, said means being carried in part by the head and in part by said neck, said neck embodying a trussrod secured at an inner end to the body independently of the neck and secured at an outer end to said nut and head independently of the neck whereby only the neck and fingerboard thereon move toward and from the trussrod, said trussrod, nut and head being rigid with the body and constantly fixed in relation thereto.

3. A guitar comprising a body having a rod secured at one end to the forward end of the body, a head secured to the other end of said rod and provided with tuning keys and a string straining and suspending nut, said nut fixed to said head in prerequisite relationship, a neck interposed between the forward end of said body and nut and being joined at an inner end to the body and abutting and movably and adjustably connected at an outer end to said nut, said head, nut and rod being stationary relative to the body, said neck being movable in whole or in part relative to the body, rod, nut and head, said rod being housed in said neck, and a fretted fingerboard superimposed atop and fixed to the neck and covering and concealing the rod.

4. A guitar comprising a body, a trussrod secured at one end to the forward end of the body, a head secured to the other end of said trussrod and provided with tuning keys and a string straining and suspending nut, said nut

fixed to said head in prerequisite relationship, a neck interposed between said forward end and nut and being joined at an inner end to the body and abutting and movably and adjustably connected at an outer end to said nut, said head, nut and trussrod being stationary relative to the body, said neck being movable in whole or in part relative to the body, rod, nut and head, said neck having a lengthwise groove, said trussrod being positioned and confined in said groove but permitting the neck to move relative to the trussrod, and the grooved part of said neck and said trussrod being covered by a fretted fingerboard fixed lengthwise atop the neck, and that end of the neck and fingerboard adjacent to said nut being movable relative to the head, nut and trussrod.

5. A guitar comprising a body having a rod secured at one end to the forward end of the body, a head secured to the other end of said rod and provided with tuning keys and a string straining and suspending nut, said nut fixed to said head in prerequisite relationship, a neck interposed between the forward end of said body and nut and being joined at an inner end to the body and abutting and movably and adjustably connected at an outer end to said nut, said head, nut and rod being stationary relative to the body, said neck being movable in whole or in part relative to the body, rod, nut and head, said neck being made of flexibly resilient plastic material and molded to provide a centralized longitudinal groove opening through inner and outer ends of the neck and also opening through a top side of the neck, said rod being seated in the groove, the groove and rod being covered by a fretted fingerboard fixed lengthwise atop the neck, that end of the neck adjacent said nut being flexed and downwardly movable relative to the rod, nut and head to enable the user to move certain frets on the fingerboard away from the relatively stationary strings in a manner to provide a degree of spaced clearance between the overall fingerboard and strings that a shiftable guitar steel may be applied to the strings without permitting the strings to contact the frets, whereby the guitar may be optionally used as a Spanish-type of a Hawaiian-type at the discretion of the user.

6. The structure defined in claim 5, and wherein the outer end of the neck has a projecting lug, and a lever pivotally mounted beneath said head, the pivoted end of the lever having a helical lug-camming groove, said lug being keyed in said groove, whereby when the lever is manually operated motion is imparted to the lug in a manner to flex the neck and move the frets on the fingerboard toward and from the strings.

7. The structure defined in claim 6, and the combination with said structure of a string anchoring and pitch changing device, said device being supported on the body and pre-set to raise and lower the pitch of a given string one full tone.

8. A guitar comprising a body having a trussrod secured at one end to the forward end of the body, a head secured to the other end of said trussrod and provided with tuning keys and a string straining and suspending nut, said nut fixed to said head in prerequisite relationship, a neck interposed between the forward end of said body and nut and being joined at an inner end to the body and abutting and movably and adjustably connected at an outer end to said nut, said head, nut and trussrod being stationary relative to the body, said neck being made of flexibily resilient plastic material, said trussrod extending lengthwise through the neck, said neck capable of being flexed relative to the trussrod, being provided with a fingerboard, and an operating connection between the head and an adjacent end of the neck for flexing said neck.

9. The structure defined in claim 8, and wherein said operating connection comprises a lug fixed on the neck extending into a camming groove provided in a lever pivotally mounted on said head.

10. A Spanish guitar which may, without moving or disturbing the strings E, B, G, D, A and E, be momentarily converted to a Hawaiian guitar comprising an acoustical hollow body, a head having string attaching and tuning keys and a string suspending and straining nut fixed at an inner end of the head, means rigidly connecting the nut-equipped head to a front portion of said body, a neck operatively interposed between the nut and said front portion, a fretted fingerboard fixed atop said neck, that end of the fingerboard and neck adjacent to said nut rigidly abutting and being movable and having slidingly keyed adjustable connection with said nut and making it possible to move and drop the adjacent fretted surface of the fingerboard to a plane below the plane of the string-suspending edge of said nut, a tailpiece mounted on the body, and manually adjustable lever means pivotally mounted on the tailpiece by way of which the E string may be tuned down one full tone when an intentional switch from a Spanish-style to a Hawaiian-style guitar is made, and alternatively may be restored to its regular pitch when the instrument is restored to a Spanish-style guitar.

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