Oct. 21, 1941. F. J. NICKEL, JR 2,260,049

TUNING DEVICE FOR STRING INSTRUMENTS

Filed June 12, 1940

Fig. 1.

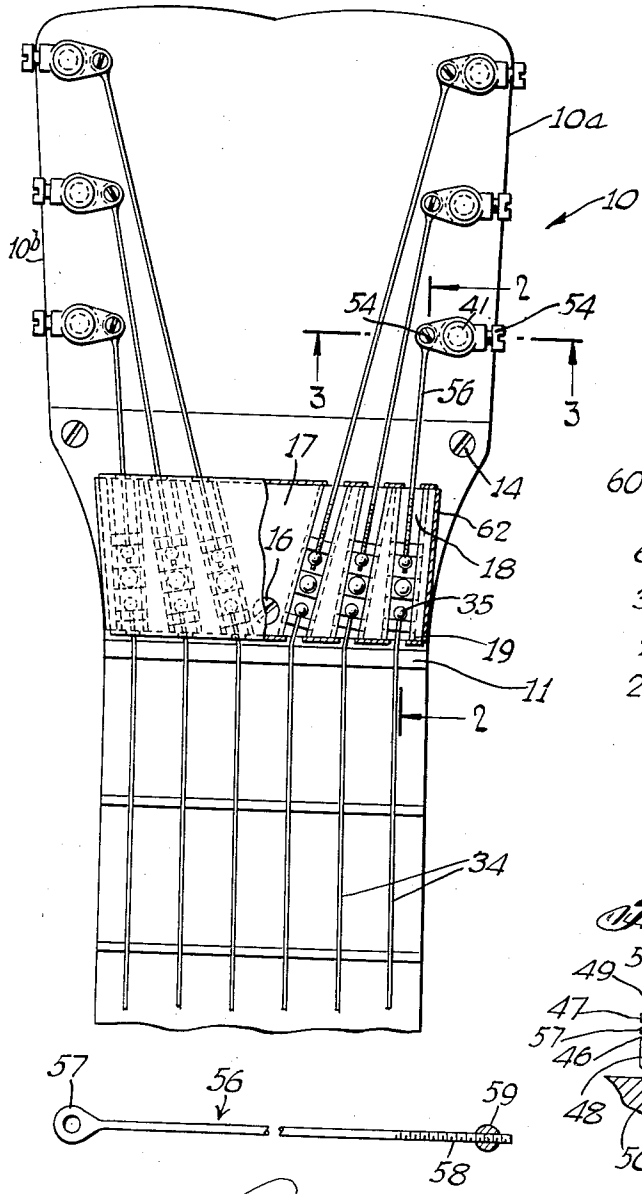


Fig. 2.

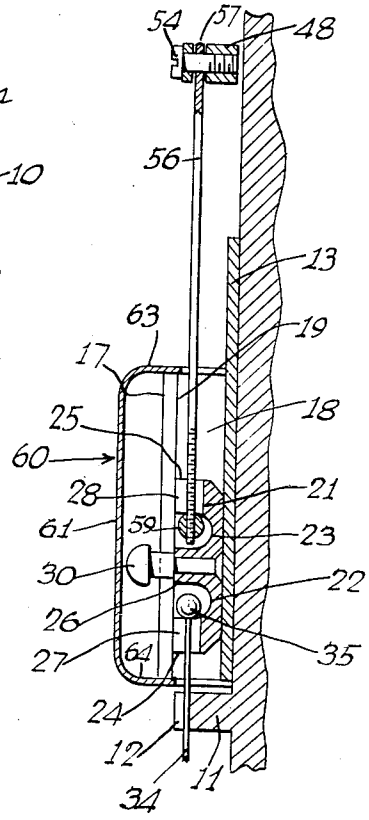
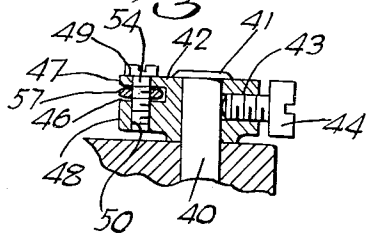


Fig. 4.

Fig. 3.



INVENTOR
FRANK J. NICKEL, JR.
BY
Carl Miller
ATTORNEY

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TUNING DEVICE FOR STRING INSTRUMENTS

Frank J. Nickel, Jr., Belair, Md.

Application June 12, 1940, Serial No. 340,129

5 Claims. (Cl. 84—297)

This invention relates to tuning devices for string instruments, and is generally directed to an improvement over the structure shown and described and claimed in my co-pending application Serial No. 243,731, filed December 3, 1938, now Patent Number 2,201,869.

An object of this invention is to provide a highly improved tuning device for musical string instruments, to permit quick replacement of a broken string and also to facilitate adjusting the tension of the string.

A further object of this invention is to provide a durable musical instrument having highly improved tuning device of the character described, which shall be relatively inexpensive to manufacture, simple to construct, easy to adjust, which shall yet be practical and efficient to a high degree.

Other objects of this invention will in part be obvious and in part hereinafter pointed.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawing, in which is shown one of the various possible illustrative embodiments of this invention;

Fig. 1 is a top plan view of the upper end of the neck of a guitar or other musical instrument of the string type, provided with string replacing and tension adjusting means embodying the invention;

Fig. 2 is a cross-sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a cross-sectional view taken on line 3—3 of Fig. 1; and

Fig. 4 is a top plan view of one of the connecting rods.

Referring now in detail to the drawing, 10 designates the upper portion of the neck of a guitar, or other string musical instrument. Ordinarily, the strings of a guitar or other string instruments are attached to one end of the body of the instrument, the other end of the string being wound around a tensioning screw. With such instruments breaking of a string necessitates attachment of a new string to one end of the body of the instrument, and at the other end to the tuning or adjusting screw.

As will appear hereinafter, in the present instrument, a broken string may easily and quickly be replaced and the tension on the string may be easily adjusted to properly tune the same. To this end, the neck 10 is formed with a nut 11 having spaced string receiving slots 12. Fixed to the upper surface of the neck 10, above the bridge 11, is a metal plate 13 attached thereto as by screws 14.

Fixed to plate 13, as by screw 16, is a block 17 formed with a plurality of inclined slots 18, three of the slots 18 being inclined in one direction, and the other three in an opposite direction. The side walls of the slots 18 are formed with grooves 19, and slidably mounted within each slot, is a connector 21 formed in its upper face with a pair of U-shaped recesses 22 and 23 forming end walls 24 and 25, and a central wall 26. End walls 24 and 25 are formed with longitudinal slots 27 and 28.

Attached to the central wall 26, is an upstanding pin 30 projecting above the block 17, to facilitate handling of the connector 21.

It will be noted that the nut 11 is formed with six slots 12, each aligned with the lower end of one of the slots 18.

The strings 34 for the instrument are provided with an integral ball or head at each end, one end being connected to the usual tailpiece of the instrument, (not shown) and the other end 35 being received in the recess 22, with the adjacent portion of the string passing through the slot 27 of the connector 21 and through the adjacent slot 12 of the bridge 11.

It will now be understood that should a string 34 break, a new string may be quickly connected to the connector 21 at one end and to the tailpiece at the other end.

Highly improved means is provided to tension the strings 34. To this end, there is fixed to the upper end of the neck of the instrument, a plurality of upstanding posts 40, there being three posts adjacent one side edge 10*a* of the neck 10, and three posts adjacent the other side edge 10*b* of said neck. Each post 40 has a head 41 at its upper end. Rotatably mounted on each post is a member 42 provided with a radial screw threaded opening 43 to receive a set screw 44 for fixing said member to the post in any angular adjusted position of the former.

Member 42 is formed with a slot 45 adjacent its inner end, forming a tongue 47 above the slot and a tongue 48 below the slot. The tongues 47 and 48 are formed with aligned openings 49 and 50. The lower opening 50 is screw threaded. Extending through the openings 49 and 50, is a screw 54 traversing the slot 46. Interconnecting each screw 54 with one of the connectors 21 is a connecting rod 56. Each connecting rod 56 has

an eyelet 57 at one end through which one of the screws 54 passes. The other end of each rod is screw threaded, as at 58, and screwed thereto, is a ball or nut 59 having an axial screw threaded opening to receive said screw threaded portion of the rod. The screw threaded portion of each rod passes through one of the slots 28 in one of the connectors 21. The rod 56 thus interconnects screw 54 with the connector 21.

The ball 59 is received in the recesses 23, and adjustment of the position of the connector 21 may be made either by turning the ball 59 or by loosening the set screw 44, turning member 42 about the axis of post 40 and then again tightening said set screw. It will thus be noted that the instrument may be tuned from the top of the instrument quickly and easily.

A casing 60 may be provided for the connector 21, said casing having a top wall 61, side walls 62 and end walls 63 and 64. The end walls are slotted to permit the strings 34 and the rods 56 to pass therethrough.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

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

1. A tuner for a string instrument having a neck, comprising a member slidably mounted on said neck and having means to receive one end of a string, a post fixed to the neck, a member rotatably mounted about said post, means fixing said rotatable member to said post in various angular positions, and means interconnecting said second member with said rotatable member.

2. A tuner for a string instrument having a neck, comprising a member slidably mounted on said neck and having means to receive one end of a string, a post fixed to the neck, a member rotatably mounted about said post, means fixing said rotatable member to said post in various angular positions, means interconnecting said second member with said rotatable member, and means to adjust the operative length of said interconnecting means.

3. A tuner for a string instrument having a neck, comprising a connector slidably mounted thereon and having means for attachment to one string of said instrument, a post fixed to said neck, a member rotatably mounted about the axis of said post, means fixing said member to said post in various angular positions, a connecting rod attached at one end thereof to said member, and a member screwed to said rod and engaging said connector.

4. A tuner for a musical instrument having a neck, comprising a connector slidably mounted on said neck, a post fixed to said neck, a member mounted on said post rotatable about the axis of said post, means fixing said member against rotation in various angular positions, a connector rod connected to said member at a point spaced from the axis of said post, said connecting rod having a screw threaded portion, a member screwed to said screw threaded portion, said connector having a recess to receive said member screwed on said screw threaded portion, and being formed with a slot through which said screw threaded portion of said rod passes.

5. A tuner for a string instrument having a neck, comprising a plate fixed to said neck, a block on said plate formed with a plurality of slots, a connector member slidably mounted within each slot, a plurality of posts fixed to said neck, there being one post for each connector, a member mounted on each post rotatable about the axis of said post, means fixing each rotatably mounted member against rotation at various angular positions about the post on which said member is mounted, and adjustable means interconnecting each connector with one of said members.

FRANK J. NICKEL, JR.