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TUNER FOR STRING INSTRUMENTS

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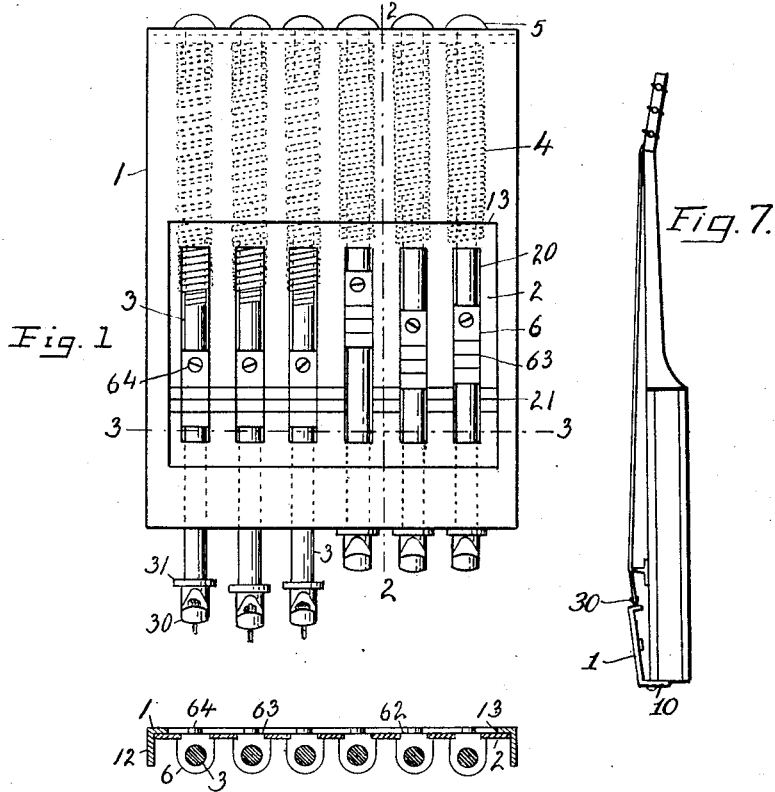


Fig. 1

Fig. 7

Fig. 3

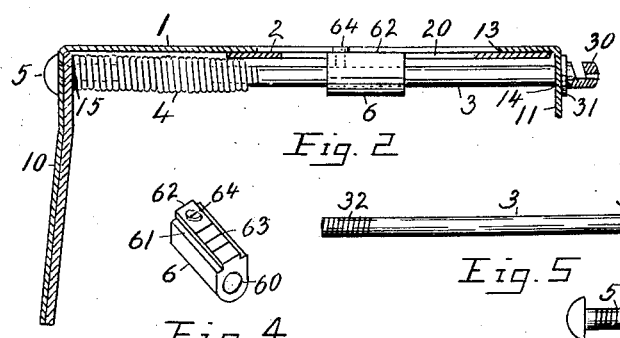


Fig. 2

Fig. 4

Fig. 5

Fig. 6

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TUNER FOR STRING INSTRUMENTS

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6 Claims. (Cl. 84-297)

This invention relates to improved means of tuning string instruments.

The object of the invention is to provide a visual indicator of the tension of a string on an instrument which will produce the required tone accurately.

A further object is to replace the uncertainty of tuning by ear and substitute a tested mechanical adjustment.

The invention is adapted to various types of stringed instruments and is shown as applied to a guitar in the accompanying drawing in which:

Figure 1 is a top view of a tail piece of a six stringed guitar.

Figure 2 is a vertical sectional view of the same on the line 2-2 of Figure 1.

Figure 3 is a cross section of Figure 1 on the line 3-3.

Figure 4 is a perspective view of the adjustable indicator.

Figure 5 is a side view of a terminal rod.

Figure 6 is a side view of an end securing screw.

Figure 7 is a side view of a guitar with the tuner mounted in place.

In the device shown to illustrate my invention the tail piece 1 has a bent extension 10 which is secured to the instrument in the usual manner.

At the opposite end there is a short bend 11 which has a row of perforations 14.

The tail piece 1 has a rectangular aperture 13. Secured to the lower side of this aperture 13 is a thin plate 2 with a series of slots 20 and one or more rows of cross surface marks 21 between the slots 20.

A rod 3 having a collar 31 and a hook end 30 passes through each one of the perforations 14 and its threaded end 32 is screwed into one end of a coil tension spring 4. A screw 5 passes through an aligned one of the perforations 15 of the bend 10 and is screwed into the opposite end of the spring 4.

A block 6 having a flat surface 62 with grooves 61 on each side, the width of the slot 20 apart, is bored through its length at 60.

The block 6 is mounted to slide on the rod 3, and to be held by a small set screw 64 when adjusted. The surface 62 has a set of similar markings 63 to the markings 21 on the plate 2. In the preferred form the plate 2 and the surfaces 62 of the blocks 6 are of a dark colour and the markings 21 and 63 are three parallel rows of white.

The mode of operation is as follows:—

Before the instrument with this device leaves the factory the set of strings secured to the

hooks 30 are carefully tuned by sound. The blocks 6 are then adjusted so that the markings form continuous lines and the set screws 64 are tightened to hold the blocks 6, securely in place on the rods 3.

When the markings appear as continuous lines all the strings will be in correct tune. Should a string become loose or break its spring will pull its block out of alinement. A broken string is replaced when necessary and the loose string is then tightened by the usual method until its marking comes into alinement. The string will then be under the proper tension to give the required note.

The collars on the rods prevent their being pulled more than a short distance when a string is loose.

I claim:

1. In a tuning device for a stringed musical instrument, a tail piece attachable to the instrument, spring tensioned rods secured to the tail piece and to the strings of the instrument, fixed marks on the tail piece and adjustable markers on the rods, adapted when the markers are adjusted on the rods, to indicate the required tension of each string, when tuned.

2. In a tuning device for a stringed musical instrument, spring tensioned rods secured to the instrument and to the strings, adjustable markers on the rods and fixed marks on the instrument, adapted when the markers are adjusted on the rods, to indicate the required tension of each string, when tuned.

3. In a tuning device for a stringed musical instrument, a tail piece attachable to the instrument, a series of rods in parallel under the tail piece secured to the strings, coil springs secured to the tail piece and to the rods, slots in the surface of the tail piece above the rods, blocks slidable on the rods and in the slots, means to secure the blocks to the rods, transverse lines marked on the tail piece between the slots, and on the blocks, which blocks are adapted to be relatively positioned on the rods to indicate the required tension of each string when tuned.

4. In a tuning device for a stringed musical instrument, a tail piece having a rear bent extension attachable to the instrument, a row of perforations in the extension above the instrument, a short front downward bend, to the tail piece having a corresponding row of perforations, a series of coil springs positioned beneath the tail piece secured by terminal screws through the rear perforations, rods joined to the springs projecting through the corresponding front perforations

5 rods, parallel slots in the tail piece over each rod, adjustable blocks on the rods, grooved to slide in the slots, a transverse mark on the tail piece between the slots, and on the blocks in the slots, adapted when the blocks are relatively positioned on the rods to indicate the required tension of each string when tuned.

10 5. In a tuning device for a stringed musical instrument, a tail piece attachable to the instrument having a series of perforations in its front end, a series of spring tensioned rods secured to the rear end of said tail piece to extend under the tail piece and to project through the perforations in the front end, a set of strings connected to the projecting rods, parallel slots in the tail piece over the rods, adjustable markers

piece between the slots, adapted when the markers are adjusted on the rods to indicate the tension required to tune each string.

6. In a tuning device for a stringed musical instrument, a tail piece attachable to the instrument, slotted longitudinally, having a series of spring tensioned rods extending from the tail piece below the slots and beyond the other end of the tail piece, a set of strings connected to the rods, adjustable markers on the rods and a fixed transverse mark on the tail piece between the slots, adapted when the markers are adjusted on the rods to indicate the tension required to tune each string.

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