June 9, 1959 F. D. JURICEK 2,889,732

PEDAL OPERATED TUNING CONTROL FOR A STRINGED INSTRUMENT

Filed Dec. 16, 1955

Fig. 1

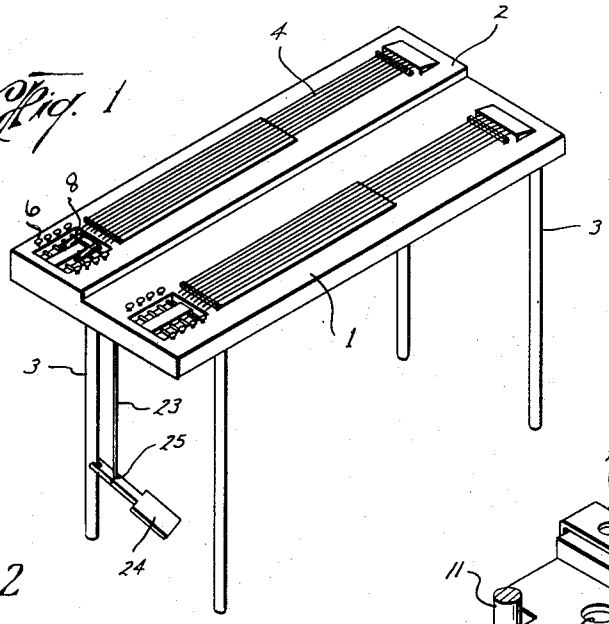


Fig. 4

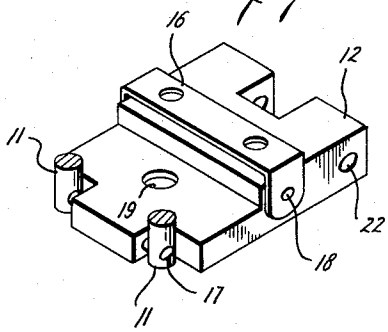


Fig. 2

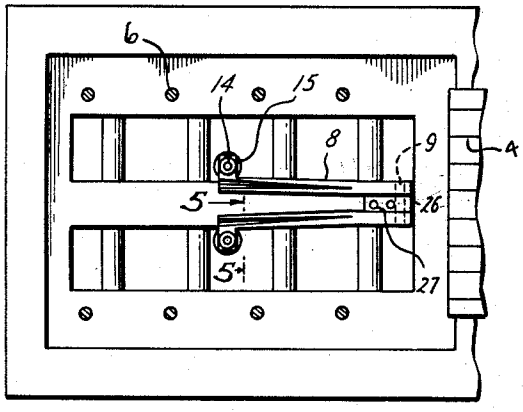


Fig. 5

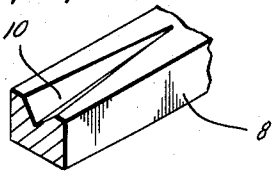
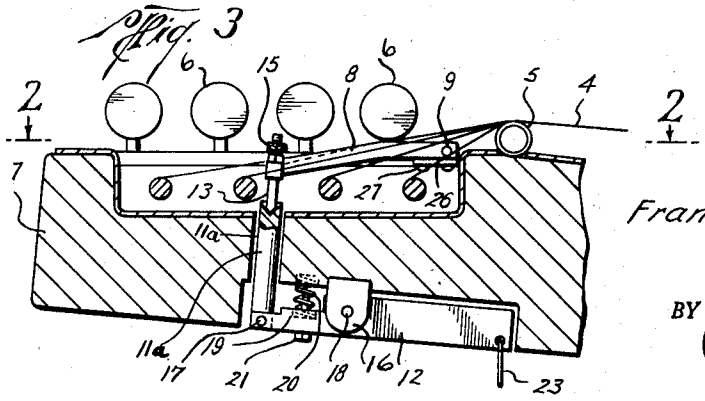


Fig. 3



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PEDAL OPERATED TUNING CONTROL FOR A STRINGED INSTRUMENT

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3 Claims. (Cl. 84—312)

This invention relates to new and useful improvements in a tone changer.

It is an object of this invention to provide a means for changing the tone of a selected number of strings on a stringed instrument.

It is another object of the invention to provide a tone changer for stringed instruments that may be pedal operated and that may be tuned to bring about the desired change without retuning the rest of the strings.

In the field of string instruments, particularly steel guitars, different tunings are desirable for different types of music. It is customarily the practice, at the present time, to construct instruments having multiple necks so that a variety of tunings may be available. Tone changers have been employed to change the tension on a selected number of strings of the various instruments, to vary the tone, but such changers as are presently employed are expensive to manufacture and mechanically complicated. It is an object of this invention to provide a tone changer of simple construction, inexpensive to produce and tunable in the same manner as the usual string is tuned.

With the above and other objects in view, the invention has relation to certain novel features of construction, operation and arrangement of parts more particularly defined in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a perspective view drawn to a reduced scale of an instrument on which the tone changer has been mounted.

Figure 2 is a top plan view of the changer mounted on an instrument taken on line 2—2.

Figure 3 is a side elevational view, in cross section, showing the changer mounted in an instrument neck.

Figure 4 is a perspective view of the rocking bar employed, and

Figure 5 is an enlarged fragmentary view of the string receiving lever.

Referring now more particularly to the drawings, the numeral 1 designates the neck of a stringed instrument such as a steel guitar, which may be one of multiple necks in a four legged instrument, as 2, having suitable legs 3, 3. The strings 4 are mounted in the usual manner, being tightly stretched on the instrument and passing over the raised bar 5, commonly referred to as the bridge, and being tuned by means of the tuning keys 6, 6 in the neck tuning key assembly 7. Levers 8 are mounted in the neck assembly 7 by means of a suitable spacer bar 26 which is bolted to the key assembly 7 by suitable bolts as 27, 27 through which one end of the levers is freely pivotal on a suitable axle 9. There is a string receiving channel or groove 10 in the upper face of each lever 8, which is preferably shallow and deepens downwardly toward the free end of the lever 8 and acts as a guide for the string to be tuned.

As many levers as desired may be so employed, to change the tone of any of the strings, preferably the center two, as shown. Push bars 11, 11 extend through

suitable vertical ports 11*a* in the instrument and are pivotally mounted at the lower ends thereof to the rocking bar 12 and are concave at the upper end to seat the terminus of an adjusting screw 13. The free ends of the levers 8, 8 are outwardly extended and the adjusting screws, as 13, are mounted through the vertical ports 14 in the extended portions of the free ends of the levers 8, 8. A locking nut 15 is mounted on the upper end of the adjusting screws 13.

The lower ends of the push rods 11 are pivotally secured to the one end of the rocking bar 12 by suitable means such as the axles 17, 17. The rocking bar 12 is pivotally anchored to the neck of the instrument as at 18 in any suitable manner, such as a bar 16, which may be bolted to the neck of the instrument either in a chamber in the bottom of the instrument neck or directly to the bottom surface of the instrument beneath the key assembly 7, and the rocking bar has a spring chamber, as 19, in which the resilient means, such as the coil spring 20, is mounted. The spring 20 bears constantly against the neck of the instrument 1, urging the rocking bar 12 into inactive position. A strip screw as 21 is mounted in the rocking lever 12 at any desired position, preferably extending into the chamber 19, providing an aligning shaft for the spring 20, and which may be adjusted to contact the bottom of the chamber 19, or the bottom of the instrument when the lever 12 is rocked, thus permitting a limitation on the rocking movement of the lever 12 on its axis.

On the other end of the rocking lever 12 is a suitable pedal rod connection 22 on which the pedal rod 23 is releasably secured. A suitable pedal, as 24, is pivotally mounted on one leg 3 of the instrument, and has suitable pedal rod receiving means 25 thereon.

When the device is assembled and the instrument has been tuned, the pedal may be depressed, raising the push rods 11 and levers 8, and the strings riding in the channels of the levers 8 again tuned to the new position by means of the screws 13, the stop screw 21 being adjusted to limit the rocking action to the desired position.

When the instrument is in use, the strings riding in the channels of the levers 8 may be stretched to the desired increased tension at the will of the operator by depressing the pedal 24, changing the tone produced by vibrations of strings, and the tone of these strings may be varied by the degree of depression of the pedal 24. When the pedal 24 is released, the spring 20 will immediately return the rods 11 to starting position, and the pressure of the strings on the levers 8 will cause them to follow the downward movement of the rods 11.

As many of these tone changers as is desired may be mounted on the instrument, and the pedals may be mounted on the legs of the instrument, as shown, or, if desired, a bar may be mounted between two end legs and the pedals pivoted from said bar, or any other suitable means may be employed to suspend the number of pedals desired. Any number of levers 8 may be employed, provided the laterally extended ends are positioned to place the screws 13 between two strings of the instrument, so that in raising and lowering of the levers 8 they will not contact abutting strings not so raised or lowered.

It is contemplated that the bar 12 may be reversed to permit changing the tone of any desired number of strings by lowering the levers, and maintaining the greater tension on the strings when the pedal is in inactive position.

While the foregoing is considered a preferred form of the invention, it is by way of illustration only, the broad principal of the invention being defined by the appended claims.

What I claim is:

1. In a stringed instrument tone changer, a stringed

instrument, a pivotally mounted rocking bar on said instrument, push rods pivotally mounted to one end of said rocking bar, pivotally mounted levers having an outwardly and downwardly tapered groove in the extended end thereof movable by said push rods upwardly into contact with the strings of the instrument to increase the tension of said strings, means mounted between said rocking bar and the instrument for yieldably maintaining said rocking bar in inactive position.

2. In a tone changer for string instruments, a stringed instrument having a tuning key assembly, levers pivotally mounted in said tuning key assembly, the upper faces of said levers having tapered longitudinal string receiving channels, actuating means pivotally mounted on the bottom of said instrument having rods extending through said instrument in position to contact the free ends of said levers, tuning screws mounted in the free ends of said levers having a lock nut on one end and in contact with said rods at the other end and means on said actuating means for adjustably limiting the movement thereof in one direction.

3. In a tone changer for stringed instruments, a stringed instrument having a tuning key assembly, levers

in said tuning key assembly having one end pivotally mounted and the other end being downwardly extended and having a longitudinal downwardly tapering groove, an adjusting screw extending through said free end of said levers, a push rod extending through the instrument and movable against said adjusting screw, a pivotally mounted actuating arm mounted in said instrument opposite said tuning key assembly, one end of said arm being pivotally secured to the lower end of said push rod and the opposite end of asid arm having a pedal operated connecting rod extending therefrom, yieldable means mounted between said actuating arm and said instrument to yieldably maintain said arm in inactive position and an adjusting screw mounted through said actuating arm for limiting the upward movement thereof.

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