Jan. 31, 1939. G. R. MILLER 2,145,490

MAGNETIC PICK-UP FOR MUSICAL INSTRUMENTS

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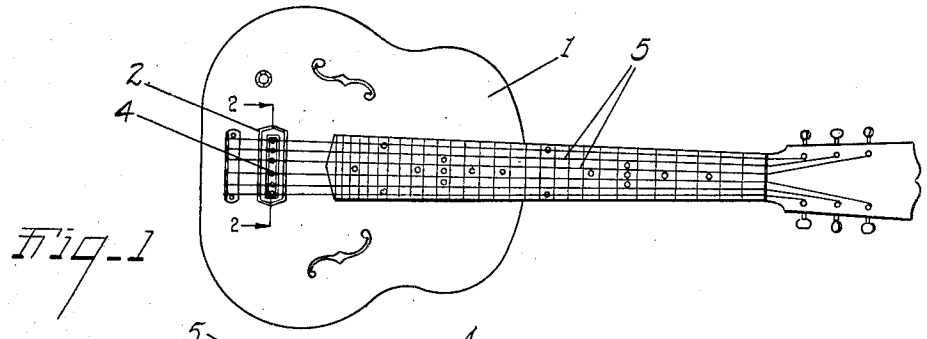


Fig. 1

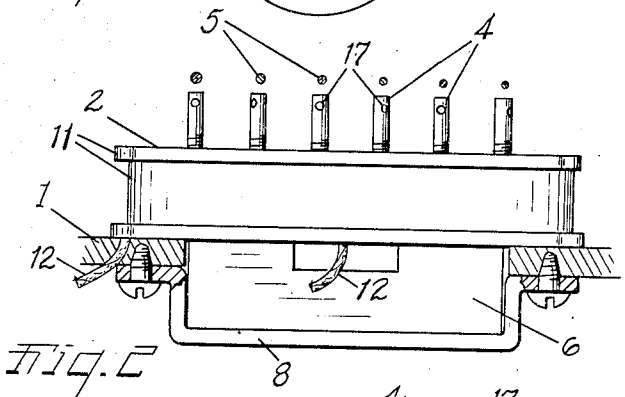


Fig. 2

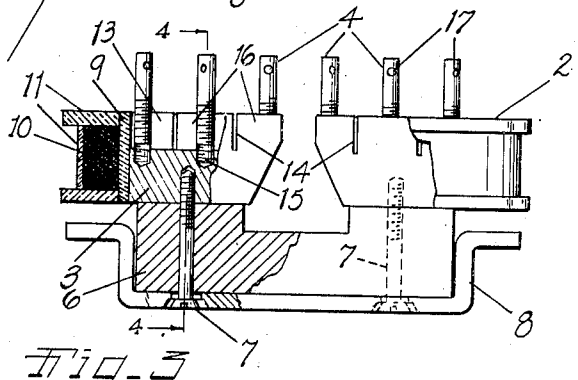


Fig. 3

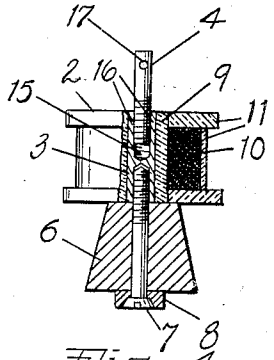


Fig. 4

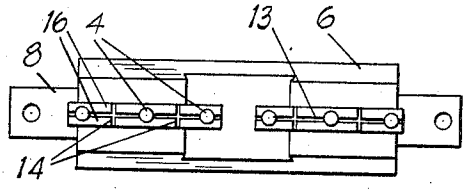


Fig. 5

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MAGNETIC PICK-UP FOR MUSICAL INSTRUMENTS

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6 Claims. (Cl. 84—1)

The main objects of my invention are:

First, to provide an improved magnetic pickup for an electrically amplified musical instrument.

Second, to provide a pickup of the type described which is adjustable for each string or vibrator of the instrument.

Third, to provide a magnetic pickup of the type described having improved provision for tuning or voicing the same.

Fourth, to provide means for adapting a stringed electrically amplified musical instrument to perform uniformly regardless of variations in the strings available for use in the same.

Further objects relating to details and economies of my invention will definitely appear from the description to follow. The invention is defined in the claims.

A structure embodying the features of my invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is a view illustrating a stringed instrument equipped with a magnetic pickup forming a part of an electrical amplifier for the instrument.

Fig. 2 is an enlarged fragmentary view in section on line 2—2 of Fig. 1, more clearly illustrating details of the invention.

Fig. 3 is a view of the pickup similar to Fig. 2, partially broken away and in section to illustrate details of construction of the magnetic pickup of my invention.

Fig. 4 is a view further illustrating details of the construction of Fig. 3, being partially broken away and in section on line 4—4 of Fig. 3.

Fig. 5 is a top plan view of the pickup structure illustrated in Figs. 2, 3, and 4.

It is a primary object of the present invention to provide means for adapting a stringed electrically amplified musical instrument to suit the tastes of different types of players or players having individualistic playing traits or habits, as well as to provide means for overcoming or offsetting variations found in different types, makes, or qualities of strings used on such instruments, which variations, unless provision is made to offset the same, do not produce satisfactory results.

Illustrative of this object is the fact that in some instances players wish the treble strings of an instrument to predominate, while in other cases players desire to have the bass strings predominate in volume. It is also a fact that a string of a certain gauge or made by a certain manufacturer in some instances has a tendency to pick up and give more volume than a string of another size or make. Thus, if strings of a number of different makes or sizes are employed in an instrument, the result is that one or more of them stand out in volume over others.

With the object of overcoming these difficulties, I provide means for individually adjusting the pole pieces provided in the magnetic pickup whereby one may reduce or increase the volume of any given string or strings and thereby equalize any one or more of the strings with the others.

Referring to the drawing, the reference numeral 1 in general indicates a stringed instrument of the guitar type which is provided with six strings and also has an electrical amplifier the magnetic pickup of which is indicated by the reference numeral 2. I have selected this instrument for purposes of illustration only and it will be obvious that the instruments to which my invention is applicable may vary in type, size, number of strings, etc., inasmuch as the disclosure hereof is particularly directed to the construction of the pickup 2.

This pickup consists of a base 3 of soft steel adapted to support a plurality of pole pieces 4 whose number varies in accordance with the number of strings 5 on the instrument. These pieces 3 are attached to the solid magnet members 6 and to the instrument by means of the machine screws 7 threaded into tapped holes in the base and removably securing the same to the bracket 8, which bracket is secured by screws to the sound box of the instrument as illustrated in Fig. 2. Base 3 is surrounded by a continuous strip 9 of suitable insulating material which forms a core for the coil 10 of the pickup, the coil being enclosed in well known manner by further insulating members 11. The leads for the coil are indicated by the reference numeral 12.

Reference being had to Figs. 3, 4, and 5, it will be noted that the base 3 has slots 13, 14 sawed therein longitudinally and transversely thereof, but prior to sawing base 3 to provide the aforesaid slots, the threaded holes 15 accommodating the pole pieces 3 are drilled and tapped therein at spaced intervals. After the slotting has been performed as aforesaid, it will be found that the opposed jaws 16 resulting therefrom possess a considerable spring action tending to firmly grip pole pieces 4 which are threadedly screwed into holes 15. In this manner, I provide for individual adjustment of the various pole pieces 4. To further facilitate such adjustment I drill transverse holes or apertures 17 adapted to receive a suitable pin or capstan member to rotate and adjust the same.

The form of base 3 which I have illustrated is a divided one adapted for mounting on a horseshoe type magnet, as illustrated in Figs. 2 and 3. It will be apparent that the type of magnet employed is not controlling in my invention and that for bar type magnets the base may be made in one piece if desired.

An instrument equipped with a pickup having individually adjustable pole pieces of my invention is capable of wide manipulation to adapt the same to the tastes and mannerisms of the player in the matter of playing the instrument. Moreover, the same overcomes the difficulty hitherto experienced due to non-uniformity of strings, so that regardless of make or size any one thereof may be readily and easily equalized with the rest. It is evident that the manipulations necessary are exceedingly simple and that the spring gripping action exerted by the opposed jaws is amply sufficient to hold the pole pieces in adjusted position at all times.

I have illustrated and described my improvements in an embodiment which is very practical. I have not attempted to illustrate or describe other embodiments or adaptations as it is believed this disclosure will enable those skilled in the art to embody or adapt my improvements as may be desired.

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

1. A pickup unit for use in an electrically amplified stringed musical instrument, said unit having a plurality of individual pole pieces, a magnet, and means for adjustably mounting said pole pieces relative to said magnet and to the strings of the instrument with which they are associated, comprising a base, and means for removably securing the base to the magnet, said base being longitudinally and transversely slotted to divide a portion thereof into a plurality of pairs of opposed spring jaw members, said jaw members having threaded holes therebetween and the pole pieces being threaded to adjustably position the same in said holes.

2. A pickup unit for use in an electrically amplified musical instrument having a plurality of vibrators, said unit comprising individual pole pieces associated with the vibrators, and means for adjustably mounting said pole pieces relative to the vibrators, comprising pole piece supporting means, said supporting means being longitudinally and transversely slotted to divide a portion thereof into a plurality of pairs of opposed spring jaw members, said jaw members having threaded holes therebetween and the pole pieces being threaded to adjustably engage in said holes.

3. In a stringed electrically amplified musical instrument, a magnetic pickup therefor having a plurality of pole pieces, there being one pole piece for each string of the instrument, and means for adjusting said pole pieces individually relative to the strings comprising threaded portions on said pole pieces, a base, and means for removably securing the base to the instrument, said base having spring jaw members provided with threaded portions adapted to frictionally and threadedly engage said pole pieces.

4. A magnetic pickup for a stringed electrically amplified musical instrument, said pickup having a plurality of pole pieces, there being one pole piece for each string of the instrument, and means for adjusting said pole pieces individually relative to the strings comprising a pole piece support having spring jaw members adapted to frictionally engage said pole pieces and resist movement thereof relative to the support.

5. A magnetic pickup for an electrically amplified instrument comprising a base, said base having a portion thereof longitudinally and transversely slotted whereby to provide spring jaw members, and a threaded pole piece, said jaw members being provided with mutually facing threaded portions to threadedly engage said pole piece whereby to adjustably mount the latter, said jaw members resiliently engaging said pole piece to retain it in adjusted position.

6. A magnetic pickup for an electrically amplified instrument comprising a base, said base having a portion thereof slotted whereby to provide pairs of spring jaw members, means for removably securing said base to the instrument, and a plurality of threaded pole pieces, said jaw members having threaded portions engaging said pole pieces whereby to adjustably mount the latter, said jaw members resiliently engaging said pole pieces to retain them in adjusted position.

GEORGE R. MILLER.