July 23, 1940. D. J. DICKERSON 2,209,016

ELECTRIC PICKUP UNIT FOR STRINGED INSTRUMENTS

Filed March 26, 1938

Fig. 1.

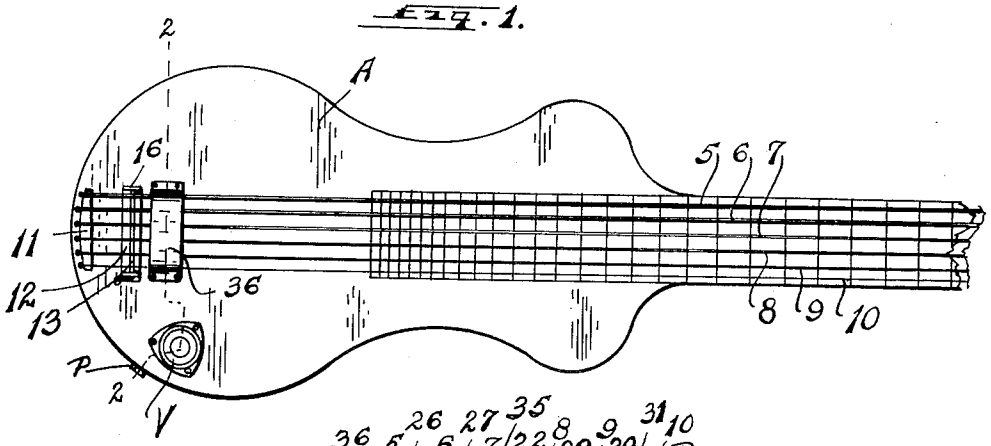


Fig. 2.

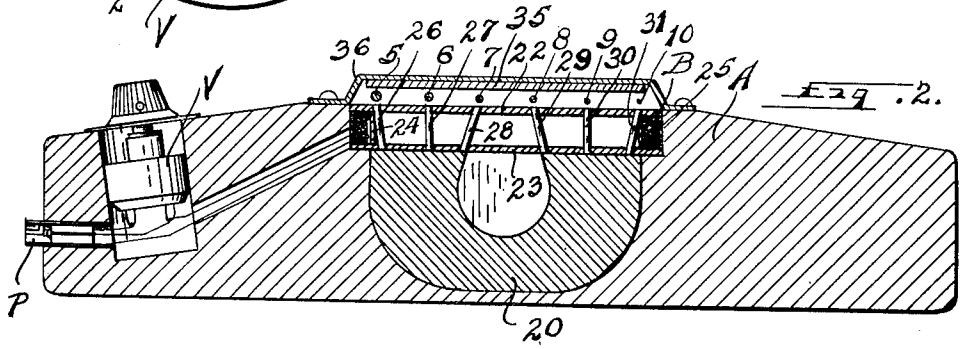


Fig. 3.

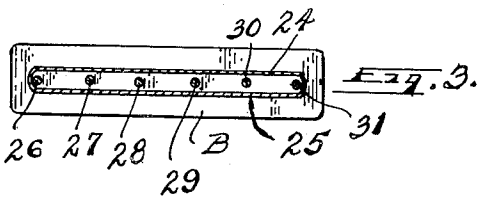


Fig. 4.

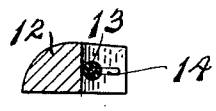
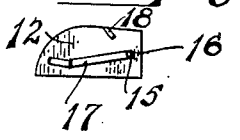


Fig. 5



Inventor

Delbert J. Dickerson

By R. M. Thomas

Attorney

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ELECTRIC PICKUP UNIT FOR STRINGED INSTRUMENTS

Delbert J. Dickerson, Los Angeles, Calif., assignor to Dickerson Musical Instrument Manufacturing Co., West Los Angeles, Calif.

Application March 26, 1938, Serial No. 198,260

1 Claim. (Cl. 84—1.15)

My invention relates to musical instruments and has for its object to provide a new and highly efficient electrical guitar or like instrument.

A further object is to provide a new electrical pickup unit for use in stringed instruments which gives better tone quality, clearer reception and greater volume through the construction of the pickup unit.

A still further object is to provide a damper for like instruments which may be used when playing over the radio or where the acoustics are not good to dampen a chord so that the tones will not continue to expand from the strings or string vibrations after the time desired.

A still further object is to provide an electrical pickup unit for stringed instruments in which the pole pieces are so mounted as to be in the strongest magnetic field of the unit and with which there is used a magnetic field plate for producing clearer, sharper tones and to act as a keeper to hold the magnetic charge within the permanent magnet.

These objects I accomplish with the device illustrated in the accompanying drawing in which similar numerals and letters of reference indicate like parts throughout the several views and as described in the specification forming a part of this application and pointed out in the appended claim.

In the drawing

Figure 1 is a plan view of a guitar showing my improvements incorporated therein.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a transverse longitudinal section of the sound coil.

Figure 4 is a section transversely of the damper for the strings.

Figure 5 is an end view of Figure 4.

In my drawing in which I have shown my device the body of the guitar is shown as A, with the neck cut away as not being necessary to my invention. The strings 5, 6, 7, 8, 9 and 10, are of the usual type and are mounted at the base of the body A by passing them through holes and securing them on the opposite side. The strings pass over a rear string support plate 11, and then over a bridge 12. Forward of this bridge 12 and mounted thereto, I provide a string damper or control member for killing the vibrations of the string over a long period of time and which dampener may be used or not as required by the individual needs of the musician. This dampener consists of a cylinder rubber or like type of body 13 mounted onto a crank arm 14 of a control shaft 15. This shaft is mounted in bearings 16 at each end of the bridge 12 and one end of the shaft is extended through the end of the bearing and formed into a control arm 17 which arm is set to control the position of the dampener. This arm 17 may be raised when it is desired over a lug 18 to use the dampener on the side of the bearing 16 or the arm may be lowered to the level of the body A when not in use.

The pickup of the sound of the strings is made by mounting a horseshoe permanent magnet 20 in a socket in the body A with the legs outwardly and over the legs there is a sound coil B. This pickup or sound coil B is made of top and bottom plates or side pieces 22 and 23 spaced apart by an elongated core 24 of the spool 25 and having wire wound around the core to form the body of the coil. Individual string actuating and actuated small rod-like pole pieces 26, 27, 28, 29, 30 and 31, are then passed through the core of the spool with the one end toward the magnet and the outside end directly under the wire to which it is being tuned. The cores are set on an angle as shown in Figure 2 of the drawing to insure proper control of the magnetic field and at the same time to prevent crossing of the magnetic current from one to the other or from one leg of the magnet to the other. The wire of the spool is then connected to a volume control V set in the body A and to a plug socket P for connecting the device to an amplifier such as is used in radio amplification.

Across the top of the pole pieces and over the strings of the guitar, I provide a magnetic field plate 35 secured to a nonmagnetic bridge 36 to set the field plate in proper position and not upset the magnetic field so created. With this field plate above the strings of the instrument and over the pole pieces, the volume is increased, the tone quality improved, and the length of the life of the permanent magnet greatly increased.

It will be obvious that a tone control may be used together with the volume control or either one may be used separately if desired without departing from the spirit of the invention or the scope of the claim.

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

An electric pickup unit to be used with a stringed musical instrument comprising a U-shaped permanent magnet having the end faces of the legs of the magnet wider than any cross section of the legs; an elongated wired spool mounted with one side mounted on the legs of said magnet; spaced apart pole pieces mounted in and extending through the core of said spool with the outer ends diverging outwardly; a substantially non-magnetic member to be mounted on the instrument and spaced from said pole pieces; and a magnetic field plate mounted on the underside of said member directly above but spaced from the pole pieces to act in conjunction with the pole pieces upon the strings of the instrument.

DELBERT J. DICKERSON.