Jan. 8, 1952 E. GRIMSHAW 2,581,653

ELECTRICAL PICKUP FOR STRING INSTRUMENTS

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Fig. 1.

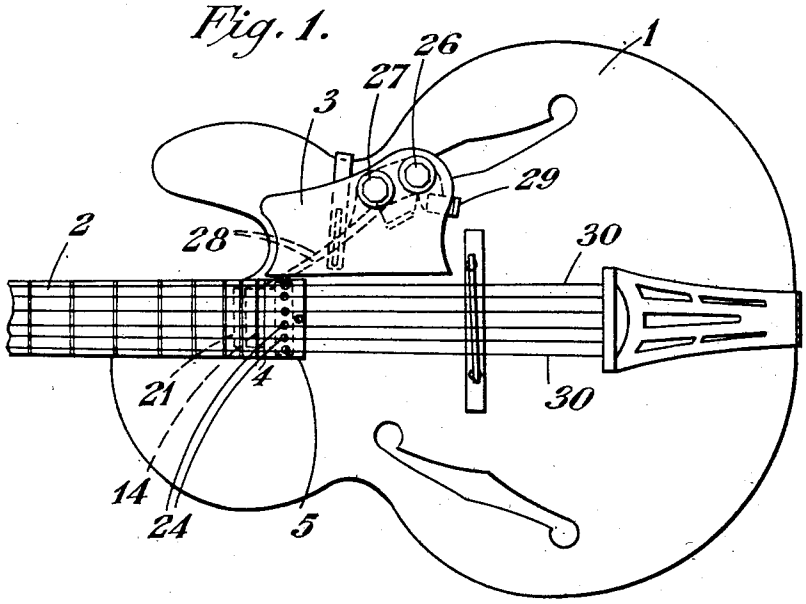
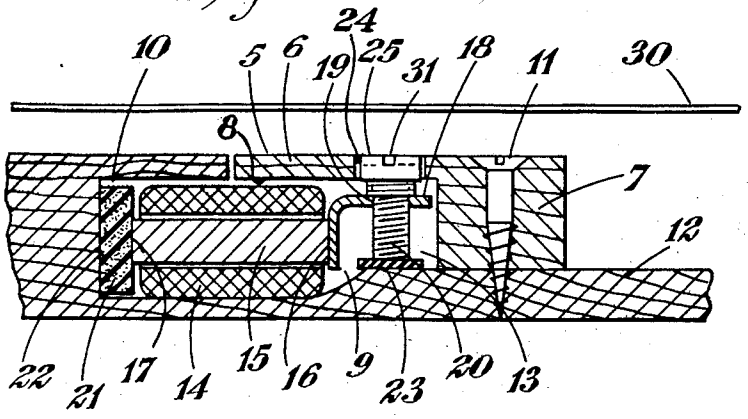


Fig. 2.



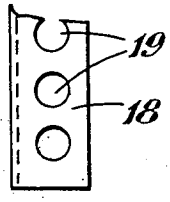


Fig. 3.

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ELECTRICAL PICKUP FOR STRING INSTRUMENTS

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7 Claims. (Cl. 84—1.16)

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This invention relates to musical instruments in combination with electric pick-ups, particularly to banjos, guitars, and instruments of this nature.

Musical instruments of the kind to which the invention is applied comprise, as is well known, a body and a neck.

Among objects of the invention are to provide a combination of musical instrument of the kind referred to above and electrical pick-up which shall be simple to manufacture, employ a minimum number of parts, is simple to assemble and adjust, and which shall require no or very little alteration in the construction of the musical instrument.

The invention will be better understood by reference to the accompanying drawing wherein Figure 1 is a face view of a guitar incorporating an electric pick-up, Figure 2 is a section of the pick-up, taken along its medial axis, and Figure 3 is a detail.

Referring to Figure 1, the body of the guitar is indicated generally by reference 1, and the neck, the upper end of which is not shown, by reference 2. At 3 is indicated a guard situated alongside and substantially coplanar with the strings 30.

Usually, the neck would end at 4. For the purpose of my invention, however, the neck is extended by the member 5, which may be integral with the neck or, as shown, may be the upper surface of a box-like cover member 6, as better seen in Figure 2.

The cover member 6 consists of the upper member 5, already mentioned, an end member 7, and side members which cannot be seen in the drawings, but whose planes are parallel with the plane of Figure 2. The other end 8 of the cover member 6 is open as is also the lower part 9. The end of the neck is recessed as at 10.

By means of a screw 11, the cover member 6 can be secured to the front 12 of the body of the instrument, whereby a hollow cavity 13, in part enclosed by cover member 6 and in part by the recess 10 is provided.

Cavity 13 accommodates a coil 14 surrounding a slab magnet 15 whose poles are respectively at the ends 16 and 17. End 16 is provided with a soft-iron yoke 18 of right-angular cross section, as may be seen from Figure 2.

The length of the yoke, in the direction across the width of the neck is somewhat greater than the distance between the two outer wires 30 of the instrument, and the horizontal member 19 of the yoke is provided with a number of screw threaded holes 19, see Figure 3. The number of

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holes 19 and their distance apart will depend upon the kind of stringed instrument to which the invention is applied. The guitar illustrated in Figure 1 has six strings, and so yoke 18 will have six holes.

Each hole 19 accommodates a screw-threaded soft-iron stud 20.

A damping member 21 of, for example rubber, is situated between pole-end 17 of the slab magnet and the end of the neck of the instrument at 22. Also a strip 23 of insulating material is interposed between the ends of the studs 20 and the front 12 of the instrument.

The upper member 5 of the cover member 6 is provided with a number of holes 24, see Figure 2. The number of holes and their situations and distance apart correspond with the number, situations, and distance apart of studs 20 so that when the parts are assembled in the manner shown in Figures 1 and 2, the heads of the studs extend into holes 24.

Cover member 6 is attached to the body of the instrument by means of screw 11, in such manner that each stud 20 is situated under a different string.

Guard 3 is per se no part of my invention; it is provided, as is known, to protect the body of the instrument from scratching when the instrument is being played. However, as an auxiliary feature of my invention, I make use of this guard for the accommodation of volume and tone controls 26 and other incidental members such as condenser 27.

Coil 14 is connected by wires 28 to the controls 26, and a jack 29 serves as a means for connecting the output of the pick-up to a loud speaker through any amplifying system that may be necessary or desirable.

Adjustment of the distances between the pole pieces of the magnet and the strings can be effected by screwing the studs 20 into or out of yoke 18, for which purpose the heads 25 of the studs are provided with saw-cuts, as at 31.

While I have shown and described a pick-up device in which there is a separate pole piece for each string, it is, of course, obvious that a pole piece may serve more than one string, suitable readjustments being made in the spacing of the holes 19 and 24 and size and shape of the studs; indeed a single pole piece may serve all the strings, in which case a single elongated aperture may be provided in member 5.

While I have shown and described a particular construction of instrument and pick-up, it is apparent that modifications may be made within the spirit and scope of the appended claims.

What I claim is:

1. A stringed musical instrument of the kind having a body part and a neck in combination with an electric pick-up comprising a recess in the end of the neck adjacent to the body, a coil accommodated in the recess, a magnet surrounded by the coil, a soft-iron yoke for the magnet, threaded apertures in said yoke, a soft-iron stud screwed into each aperture, one end of each stud being situated adjacent a wire of the instrument.

2. A stringed musical instrument of the kind having a body part and a neck in combination with an electric pick-up comprising a recess in the end of the neck adjacent to the body, a box-like cover member, an upper member for the box-like member having an upper surface forming a continuation of the fingering surface of the neck, a cavity formed partly by said recess and partly by said box-like cover member, an aperture in said upper member, an electric pick-up device within said cavity, and a magnetic pole piece for said pick-up device, said pole piece extending through said aperture and having its end adjacent to a wire of the instrument.

3. A stringed musical instrument of the kind having a body part and a neck in combination with an electric pick-up comprising a recess in the end of the neck adjacent to the body, a box-like cover member, an upper member for the box-like member having an upper surface forming a continuation of the fingering surface of the neck, a cavity formed partly by said recess and partly by said box-like cover member, a plurality of apertures in said upper member, an electric pick-up device within said cavity, a plurality of magnetic pole pieces for said pick-up device, each said pole piece extending through one of said apertures and having its end adjacent to a wire of the instrument.

4. A pick-up device for a stringed musical instrument having a body part and a neck, comprising within a cavity at the end of the neck adjacent to the instrument, said cavity situated under the strings of the instrument, a coil within said cavity, a magnet surrounded by said coil, a magnetic angular yoke for said magnet, a plurality of screw-threaded apertures in one member of said yoke, a like plurality of screw threaded studs serving as pole-pieces one screwed into each said aperture, a cover member coplanar with the finger board of said neck, a plurality of apertures in said cover member, each said stud extending into an aperture in said cover member.

5. A stringed musical instrument of the kind having a body part and a neck in combination with an electric pick-up comprising a recess in the end of the neck adjacent to the body, a coil accommodated in the recess, a magnet surrounded by the coil, a plurality of pole pieces for the magnet each adjacent to a wire of said instrument, a guard plate adjacent the neck of the instrument, control means attached to the guard situated between the guard and the body of the instrument, connections between said coil and said controls, a jack for outside connections attached to the guard situated between the guard and the body of the instrument, and connections between the controls and jack.

6. A pick-up device for a stringed musical instrument having a body part and a neck, comprising within a cavity at the end of the neck adjacent to the instrument, said cavity situated under the strings of the instrument, a coil within said cavity, a magnet surrounded by said coil, a magnetic angular yoke for said magnet, a plurality of screw-threaded apertures in one member of said yoke, a like plurality of screw threaded studs serving as pole-pieces one screwed into each said aperture, a cover member coplanar with the finger board of said neck, a plurality of apertures in said cover member, each said stud extending into an aperture in said cover member, a guard plate adjacent the neck of the instrument, control means attached to the guard situated between the guard and the body of the instrument, connections between said coil and said controls, a jack for outside connections attached to the guard situated between the guard and the body of the instrument, and connections between the controls and jack.

7. A musical instrument as set forth in claim 3 including an electric system for said pick-up device, volume and tone control devices, and connections connecting said pick-up device to said controls.

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