

UNITED STATES PATENT OFFICE

2,486,263

MICROPHONE PICKUP AND VOLUME CONTROL

Harry De Armond, Toledo, Ohio, assignor to Rowe Industries, Toledo, Ohio

Application November 18, 1946, Serial No. 710,433

4 Claims. (Cl. 84—1.16)

1

This invention relates to a combined unitary microphone pick up and volume control in which a pick up and variable control mechanism for stringed musical instruments are arranged together and has for its object the provision of a unique combination in which the variation means are united with the electromagnet unit itself in such a compact simplified manner that the entire unit may be readily supported on the musical instrument itself and very readily manually operated to vary the volume of amplification.

Further objects and advantages are within the scope of this invention such as relate to the arrangement, operation and function of the related elements of the structure, to various details of construction and to combinations of parts, elements per se, and to economies of manufacture and numerous other features as will be apparent from a consideration of the specification which may be preferred, in which:

Figure I is a top plan view of one embodiment of my invention in which a compact magnetic unit and a volume control rheostat is shown;

Figure II is a bottom plan view thereof;

Figure III is a longitudinal elevational view of the combined pick up and volume control;

Figure IV is an end view looking in the direction of the arrow of Figure III; and

Figure V is a perspective view of the several magnets combined in a unitary electromagnet device for the several strings of the instrument.

Referring to the embodiment of my invention, illustrated in Figures I through IV, attention is called to the fact that I provide a longitudinal plate 30 adapted to be placed over the round hole of a guitar. On the underside of the plate 30, shown on the left hand side in Figure II, is a spring clip 31 arranged to fit under the flat top of the guitar, the ends of the plate 30 being located on the front face thereof. As shown in Figure II, I also have a plurality of swinging retaining legs 32 and 33, pivoted at 34 to the electromagnet unit, hereinafter described in such a manner that these swinging legs may be swung along the underside of the top of the guitar cooperating with the action of the spring clip 31 at the other end so that the entire unit is suitably and removably connected to the guitar by the combined action of the spring clip 31 of the retaining legs 32 and 33. It will be noted that I provide pads 36 and 37 on the underside of the plate 30 at the opposite ends thereof, as shown in Figure II, to contact the topside of the face of the guitar and avoid any scratching or marring thereof.

2

I have illustrated in Figure V, my electromagnet unit, consisting of a plurality of magnets 40, one for each of the strings of the instrument, said magnets consisting of cylindrical members vertically arranged, one underneath each of the strings as indicated. These magnets are pressed into a plastic coil form or supporting base therefor indicated at 41, the molded plastic block provided with an annular recess 42, in which the coil 43 of the magnet is wound, a very large number of turns of fine wire being used, and the same is provided with an outside protecting insulating band 42' of plastic material, the whole forming a complete magnet unit.

It will be noted that in the left hand side of the magnet unit or block 41, the two left hand magnets are shorter than the others. Moreover, the plastic block or coil form 41 is also cut away to form a recess 44 clearly shown in the perspective view of Figure V, and this space is arranged to receive the rheostat 50 hereinafter described more in detail. To suitably house the rheostat 50, it will be seen that the form block 41 has a back wall 45 and depending end wall 46 with an open-ended slot 46' for suitably receiving and mounting the shaft bearing of the rheostat. The two magnets at the left hand side, as shown in Figures III and V are shorter since it is undesirable to amplify the tones produced by the No. 1 and No. 2 strings of the instrument. Moreover, I have found a very suitable means for securing the magnet block or coil form 41 to the plate 30 is to provide in the two parallel depending side edges of the form 41, longitudinal depressions 47 into which fit the corresponding depressions in the flanges 48 secured to either side of plate 30, as indicated in Figure III. In this way, the coil form unit 41 may be readily snapped in place in these depending flanges 48, and if desired, the same may be fixed in one particular position by set screws 49.

In the embodiment of my invention herein illustrated, I provide a rheostat 50 as the volume control means which is conveniently located in the cutaway recess portion 44 of the magnet block 41. The arrangement is shown more in detail in Figures III, IV, and V, in which it will be seen that the rheostat 50 is adjustably secured in a slot 46' of the end wall 46 of the coil form or block 41.

To this end, the rotating shaft of the rheostat passes through a bearing 51 therefor and a washer 53 fixed to the rheostat bears against the end wall 46 of the plastic block 41, and a nut 54 screw threaded on the rheostat extension or bearing

3

part, is used to hold the washer and rheostat firmly in place with the casing of the same on one side and the washer 53 and locking nut 54 on the other side of the plastic block end wall 46. The rotor of the rheostat has an enlarged hand control wheel 56 secured thereto, which wheel 56 extends upwardly through the plate 30 through a slot 54 therein for that purpose. It will be understood that the wires of the coil for the electromagnet are connected through the rheostat 50 in such a way that the volume may be varied by causing the current to pass through more or less resistance and that the outlet lead 55 leads to a suitable amplifier. It will be understood that by adjustably mounting the rheostat 50, the extent to which the rotatable wheel 56 extends through the slot 54 in the plate 30 may be adjusted as required by each individual player as may be necessary.

It is apparent that, within the scope of the invention, modifications and different arrangements may be made other than is herein disclosed, and the present disclosure is illustrative merely, the invention comprehending all variations thereof.

What I claim is:

1. In a combined electric pick up and volume control unit adapted to be connected to an electronic amplifier, a plastic insulating coil form, said form having upper and lower flange portions forming therebetween a coil receiving recess, one of said flange portions having a depending magnet supporting holder cut away at one end to form a rheostat receiving space, an end wall depending from said flange portion having an open ended slot therein for the shaft of said rheostat; a plurality of individual electromagnets inserted in said form; a supporting plate adapted to support said unit with each of said individual electromagnets under a corresponding string on said instrument; a rheostat having an adjustable member supported from said end flange or said coil form; an opening in said plate; and a manually rotatable wheel connected to said rheostat extending through said opening for rotating said adjustable member.

2. In a combined electric pick up and volume control unit adapted to be connected to an electronic amplifier, a plastic insulating coil form, said form having upper and lower flange portions forming therebetween a coil receiving recess, one of said flange portions having a depending magnet supporting holder cut away at one end to form a rheostat receiving space; an end wall depending from the said flange portion having an open ended slot therein for the shaft of said rheostat; a plurality of individual electromagnets inserted in said form, a coil of magnet wire surrounding said electromagnets; a plastic cover for said coil of magnet wire positioned in said coil receiving recess; a supporting plate adapted to support said insulating coil form; a rheostat having an adjustable member supported from said end flange of said coil form; an opening in said supporting plate, and a manually rotatable wheel connected to said rheostat extending through said opening for rotating said adjustable member.

3. In a combined electric pick up and volume control unit adapted to be connected to an elec-

4

tronic amplifier, a plastic insulating coil form, said form having upper and lower flange portions forming therebetween a coil receiving recess, one of said flange portions having a depending magnet supporting holder cut away at one end to form a rheostat receiving space; an end wall depending from the said flange portion having an open ended slot therein for the shaft of said rheostat; a plurality of individual electromagnets inserted in said form, a coil of magnet wire surrounding said electromagnets; a plastic cover for said coil of magnet wire positioned in said coil receiving recess; a supporting plate adapted to support said insulating coil form; said supporting plate having downturned flanges, grooved portions on opposite sides of the insulating coil form adapted to engage the downturned flanges on said supporting plate; a plurality of setscrews located in said downturned flanges and adapted to engage the said grooved portions on either side of the insulating coil form, to hold same in position; a rheostat having an adjustable member supported from said end flange of said coil form; an opening in said supporting plate, and a manually rotatable wheel connected to said rheostat extending through said opening for rotating said adjustable member.

4. In a combined electric pick up and volume control unit adapted to be connected to an electronic amplifier, a plastic insulating coil form, said form having upper and lower flange portions forming therebetween a coil receiving recess, one of said flange portions having a depending magnet supporting holder cut away at one end to form a rheostat receiving space; an end wall depending from the said flange portion having an open ended slot therein for the shaft of said rheostat; a plurality of circular magnet receiving openings in said insulating coil form of varying depth, individual electromagnets of varying length inserted in said magnet receiving openings; a coil of magnet wire surrounding said electromagnets; a plastic cover for said coil of magnet wire positioned in said coil receiving recess; a supporting plate adapted to support said insulating coil form, said supporting plate having downturned flanges, grooved portions on opposite sides of the insulating coil form adapted to engage the downturned flanges on said supporting plate; a plurality of setscrews located in said downturned flanges and adapted to engage the said grooved portions on either side of the insulating coil form to hold same in position; a rheostat having an adjustable member supported from said end flange of said coil form; an opening in said supporting plate, and a manually rotatable wheel connected to said rheostat extending through said opening for rotating said adjustable member.

HARRY DE ARMOND.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS		
Number	Name	Date
2,294,861	Fuller	Sept. 1, 1942
2,455,575	Fender et al.	Dec. 7, 1948