

PATENT SPECIFICATION



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COMPLETE SPECIFICATION

Improvements in Electric Pick-up Arms for Phonographs

We, FABBRICA ITALIANA MAGNETI MARELLI, an Italian Body Corporate, of 22, Corso Venezia, Milan, Italy, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

10 In British Patent No. 440,998, there is described an electric pick-up for phonographs, which pick-up has in its interior a light source intended to illuminate the region adjacent the scanning needle of the sound box.

15 The present invention has for its object to provide a construction which is appropriate when, due to the sound box organisation, the light source cannot be located in immediate proximity to the needle or generally in conditions providing for direct illumination of the needle.

20 According to the invention, intermediate the light source and the needle is located a rod of translucent material, said rod having an appropriate configuration and having one of its transverse end faces situated opposite the light source while the other transverse end face faces the region to be illuminated.

30 The invention comprises, in the case of phonographs combined with radiophonic apparatus, the arrangement of the feed circuit of the light source independent of the circuits of the radiophonic circuit and the control of the said feed circuit by means of a switch which is separate from the switch belonging to the radiophonic apparatus, this switch being preferably combined with the switch of the circuit of the electric motor driving the turntable of the phonograph.

45 On the accompanying drawings a construction of the invention is shown, by way of example. 2 denotes the pick-up arm which carries at its free end a pick-up device 11 intended to carry the needle, shown diagrammatically at 5, which is held by means of a set screw 10.

50 In the interior of the arm 2, at a distance from the needle which depends on the space required longitudinally of the arm by the pick-up 11, the light source is located, which light source

consists of an electric lamp 3 suitably arranged and fed. Said lamp is encircled by a light-impervious casing 12 which has a front opening 12¹ facing towards the needle 5 and is held in position by means of a spring 14. 55

A glass rod 13 is located intermediate the opening 12¹ of the casing 12 and the bottom opening of the arm 2 through which the needle 5 extends. The rod 13 has a cross-section and a configuration adapted to extend round the parts lying intermediate the light source and the region to be illuminated, and one end of said rod has a transverse face *a* opposite the light source while its other end has a transverse face *b* adjacent the position occupied by the needle 5, that is, the region to be illuminated. 60 65 70

The end face *b* of the rod 13, located opposite the region to be illuminated, is with advantage ground to make the light diffusion in the region to be illuminated more uniform. 75

By this arrangement, as an effect of a known phenomenon occurring in the propagation of light in elongated translucent bodies, the light emanating from the light source and impinging on the end face *a* of the rod 13 propagates along said rod and issues from the opposed face *b* in conditions proper to illuminate the desired region. 80 85

It is thus possible to secure the desired illumination in connection with arrangements in which the light source is required to be located at a material distance from the region to be illuminated and in which obstructions to the light propagation exist intermediate them. 90

In the construction of an electric light source in accordance with the present invention, in pick-up arms of photographs associated with radio-receiving sets, it is of advantage that the circuit feeding the light source and the switch thereof be independent of the radiophonic apparatus to avoid noises and hums in the reproduction. 95 100

For such a purpose the feed circuit of the light source may be controlled by means of a switch separate from that embodied in the radiophonic apparatus 105

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- and distinct from that devoted to the control of the circuit of phonographic reproduction; more particularly, the switch for the light source may be with
- 5 advantage combined with that of the circuit of the electromotor driving the turntable, the light source being thus energised only at periods during which the phonograph motor is in operation.
- 10 Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—
- 15 1. A pick-up arm for phonographs having a light source for illuminating the region adjacent the needle of the reproducer sound box, characterised by the fact that the light source is located in the interior
- 20 of the pick-up arm at a distance from the needle and a rod of translucent material is located intermediate the light source and the needle, said rod having an appropriate configuration and having one of its
- 25 transverse end faces situated opposite the light source and the other transverse end face facing the region to be illuminated.
2. A pick-up arm according to claim 1, characterised by the fact that the end
- 30 face of the translucent rod facing the region to be illuminated is adapted to diffuse the light, for example, by being ground.
3. A pick-up arm according to any of the preceding claims, characterised by the fact that in the case of a phonograph combined with a radiophonic apparatus the feed circuit of the light source of the pick-up arm is independent of the circuits of the radiophonic apparatus and is controlled by a switch distinct from that devoted to the control of the circuit of phonographic reproduction.
4. A pick-up arm according to claim 3, characterised by the fact that the switch of the feed circuit of the light source is combined with the switch of the circuit of the motor driving the turn-table of the phonograph.
5. A pick-up arm for phonographs substantially as hereinbefore described and substantially as shown on the accompanying drawing.

Dated this 11th day of July, 1939.
 FABBRICA ITALIANA MAGNETI
 MARELLI,

Per: Boulton, Wade & Tennant,
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[This Drawing is a reproduction of the Original on a reduced scale.]

