



# UNITED STATES PATENT OFFICE.

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LOUD-SPEAKER CONNECTER FOR EAR PHONES.

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This invention is a novel improvement in devices for connecting the ear-phones of radio sets and the like to the sound boxes or horns of phonographs, or to megaphones and the like, in order to amplify the sound. The invention consists in a novel connector for the purpose above specified, and which is simple to manufacture, efficient in operation, and constructed substantially as shown in the drawings and hereinafter described.

I will explain the invention with reference to the accompanying drawings and summarize in the claims the novel features of construction for which protection is desired.

In said drawings:

Fig. 1 illustrates my novel connector, as used to connect an ear-phone to the horn-arm of an ordinary phonograph.

Fig. 2 is an enlarged side elevation of the connector detached.

Fig. 3 is an end elevation thereof.

Fig. 4 is a longitudinal section through the connector applied to an ear-phone.

Fig. 5 is a view, partly in section, showing two such connectors connecting two ear-phones to a megaphone.

The connector is shown approximately full size in Figures 2, 3, and 4, and is preferably formed of rubber of good quality. It comprises a body portion 1 which approximately resembles a concavo-convex disk and from the convex side of this body 1 extends a centrally disposed hollow conical portion 1<sup>a</sup> which is tapered both interiorly and exteriorly and has an opening in its outer end. The part 1<sup>a</sup> is smaller at its outer end than the end of the movable horn-arm H of the usual type of phonograph, such as the Edison, as indicated in Fig. 1, so that when the ordinary sound box is removed from such horn-arm H the part 1<sup>a</sup> may be inserted into the open end of the horn-arm as indicated in Fig. 1, the conical part 1<sup>a</sup> fitting closely into the end of the horn-arm H much like a cork in a bottle, and thus securely but removably mounting the connector on the horn-arm. Some other types of phonograph horn-arms (such as the Victrola) have smaller ends, and when the sound box is removed the connector may be applied to such horns by slipping the part 1<sup>a</sup> over the tapered end of the horn arm as indicated in Fig. 4, in which the dotted lines H' indicate the end of such horn-arm. Thus the connector is applicable to any of the ordinary

types of phonograph sound box horn-arms.

The body 1 in diameter approximates the diameter of an ordinary ear-phone E, and it has on its outer periphery, and at the side opposite the portion 1<sup>a</sup> a cylindrical flange 1<sup>c</sup> which is of an internal diameter approximately equal to that of an ordinary ear-phone E, as shown more particularly in Fig. 4, flange 1<sup>c</sup> being adapted to be stretched over an ordinary ear-phone E, whereby the connector is firmly but detachably secured thereto. The flange 1<sup>c</sup>, being made of a good grade of rubber, can be stretched over the periphery of the receiver or ear-phone E, as shown, and will conform to the shape of said ear-phone when applied thereto.

On the face of body 1 opposite but adjacent the inner end of conical portion 1<sup>a</sup>, is an annular series of tits or projections 1<sup>e</sup> (six being shown) formed integral with the body 1, and adapted to engage the adjacent face of the ear-phone E, as shown in Fig. 4, when the connector is applied thereto, and these tits then prevent any disagreeable relative vibrations of the ear-phone or connector.

In order to facilitate applying the connector to an ear-phone E the flange 1<sup>c</sup> should be first turned back as indicated in dotted lines 1<sup>c'</sup> in Fig. 4, and then the connector positioned against the face of the ear-phone with the tits 1<sup>e</sup> pressing against the diaphragm or face of the ear-phone around the usual opening therein, and then the flange 1<sup>c</sup> is turned back to proper position and will close over and bind upon the usual annular convex peripheral surface of the ear-phone, and securely hold the connector on the ear-phone.

As shown in Fig. 5, a connector attached to an ear-phone may be inserted in the small end of an ordinary megaphone M of any suitable construction, the ear-phone forming a base or stand for the megaphone. For use with megaphones the body 1 is preferably provided with an annular flange 1<sup>f</sup> (Fig. 5) surrounding the base of the part 1<sup>a</sup>, said flange 1<sup>f</sup> being adapted to engage the outer edge of the mouth of the megaphone M (in case the opening in the latter should be larger than the base of the part 1<sup>a</sup>) and insure a close fit between the mouth of the megaphone and the connector said flange 1<sup>f</sup> assisting in securely holding the megaphone M in place on the connector. When so connected the megaphone acts as a "loud speaker" for the ear-phone. To further amplify

the sound a hole can be cut in the side of the megaphone M (Fig. 5) and a second connector, attached to the other ear-phone of the pair may be secured to the megaphone by engaging its part 1<sup>a</sup> in such opening as indicated in Fig. 5, the pair of ear-phones thus used giving a greater volume of sound. The megaphone could be supported in a horizontal position if desired, and the connectors of both ear-phones attached to the side thereof.

My connector provides a convenient "loud speaker" attachment for telephones, radios, phonographs, dictaphones, and the like at a minimum cost. It is very simple; there are no loose parts which may become lost, and by reason of the cone or cork-shaped portion 1<sup>a</sup>, the connector does not require any metal, or other, connections, and the part 1<sup>a</sup> provides means whereby the connector can be readily attached to any standard phonograph horn, or horn-arm, either by fitting same into the end thereof, as in Fig. 1, or by stretching same over the end thereof, as in Fig. 4. The tits or projections 1<sup>e</sup> contacting with the face of the ear-phone take up or prevent any annoying vibrations. The cylindrical flange 1<sup>e</sup> may be readily stretched over a standard ear-phone and will firmly secure the connector thereto.

The device is made of one-piece rubber and requires no metal parts to attach it to the ear-phone, or to a phonograph horn or megaphone. The cork shape of the part 1<sup>a</sup> enables the connector to be readily engaged with all ordinary makes of phonograph horns, and no fitting has to be done in order to apply the device to machines now on the market. This connector enables a radio owner to readily utilize a phonograph as a "loud speaker", or by simply making or

purchasing a small megaphone he can readily make a "loud speaker" out of such megaphone.

I claim:

1. A loud speaker connector for ear-phones; comprising a hollow body adapted to engage an ear-phone, a tubular tapered portion of less diameter coaxial with the body and communicating therewith, and adapted to be telescopically engaged with a phonograph horn-arm, said body having an exterior elastic annular flange coaxial with said tapered portion, for the purpose specified.

2. A loud speaker connector for ear-phones, comprising a hollow body having a tubular tapered portion at one side of less diameter than the body, adapted to be telescopically engaged with a phonograph horn-arm; a plurality of integral tits in the body adapted to engage the face of the ear-phone to which the body is attached; and an exterior annular elastic flange at the side of the body opposite said tapered portion, for the purpose specified.

3. A loud speaker connector for ear-phones, comprising a hollow body having an elastic peripheral flange portion adapted to be stretched around an ear-phone to fasten the attachment thereto; a tubular tapered portion of less diameter than the body and communicating therewith, adapted to be telescopically engaged with a phonograph horn-arm; a plurality of integral tits on the body adapted to engage the face of the ear-phone to which the body is attached; and an exterior annular flange coaxial with said tapered portion, for the purpose specified.

In testimony that I claim the foregoing as my own, I affix my signature.

WILLIAM F. SCHACHT.