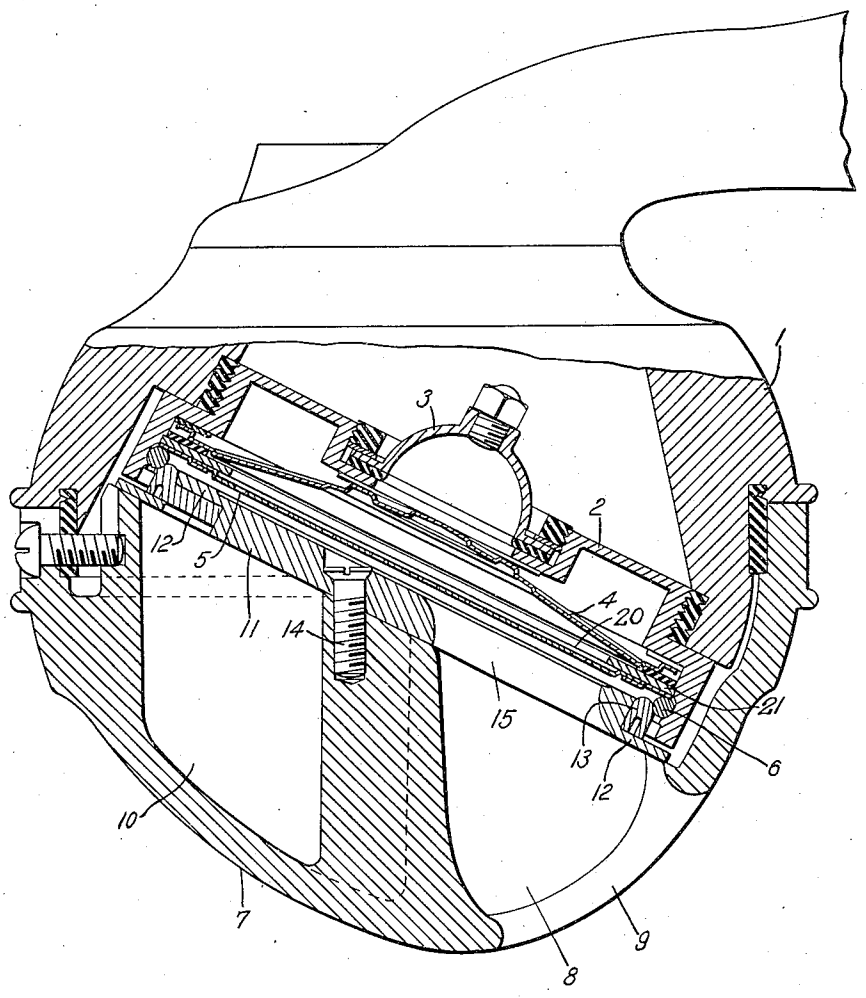
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TELEPHONE TRANSMITTER

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UNITED STATES PATENT OFFICE

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TELEPHONE TRANSMITTER

Application filed May 16, 1930, Serial No. 452,842, and in Great Britain July 22, 1929.

This invention relates to improvements in telephone instruments and more particularly to telephone handsets of the kind described in British Patent No. 304,843 comprising a transmitter and a receiver secured respectively to the ends of a handle in such a manner that the receiver can be held to the ear while the mouthpiece of the transmitter is convenient to the mouth of the user, the transmitter being of the granule type. It is to be understood, however, that the invention is not restricted to instruments of this type.

The principal feature of the invention relates to a telephone handset of the above type in which speech is adapted to be directed on to a portion of the transmitter diaphragm nearest the mouth of the user in order to obtain the shortest possible speech path. The above effect is conveniently attained by the provision of a mouthpiece, suitably and removably mounted on the transmitter casing, which is so formed that sound waves are directed on to a portion of the diaphragm, other than the centre thereof.

Another feature of the invention is a dome shaped mouthpiece for use with a telephone headset transmitter in which a sound channel extends from that part of the outer wall adjacent the mouth of user and which takes the shortest path to the diaphragm.

The mouthpiece is preferably a substantially hollow dome shaped moulding, in which the sound passage formed therein is inclined to the plane of the transmitter diaphragm, and in which a recessed portion or portions is adapted to be closed by a plate in order not to impair the efficiency of the instrument.

The provision of this recess or recesses in the interior of the mouthpiece considerably lightens the instrument.

Another feature of the invention is an apertured plate, that is secured to the mouthpiece in such a manner that the aperture is situated opposite a speech channel formed in the mouthpiece, the said plate forming both the closing plate for a recessed portion of the mouthpiece and the sealing plate for the capsule containing the electrodes and diaphragm assembly, when the mouthpiece is mounted on the transmitter casing.

A further feature of the invention consists in the provision of a thin sheet of cellulose acetate which is inserted in front of the diaphragm for the purpose of protecting the latter and the transmitter capsule from moisture.

These and other features of the invention will be better understood from the following description, but it should be pointed out that although the invention is described with reference to a handset wherein the transmitter and receiver are mounted on a common handle it is not necessarily limited thereto, since many of the features of the invention are applicable to other types of instruments.

A particular embodiment of the invention will now be described with reference to the accompanying drawing which is an enlarged sectional view of the transmitter and mouthpiece, which is adapted to be associated with a telephone handset as illustrated and described in British Patent No. 304,843.

The transmitter casing 1 has secured therein the transmitter capsule 2 inclined in such a position to the plane of the receiver (not shown) that the granules in the chamber 3 tend by gravity to remain in contact with the diaphragm 4 throughout a wide range of angular positions which the handset may assume. In front of the diaphragm a thin sheet of cellulose acetate 20 approximately

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of an inch thick is seated upon a ring 21 for preventing moisture from the breath from entering the capsule. The cellulose sheet may be treated with a waterproof substance such as shellac in order to prevent it absorbing moisture. The sheet of cellulose acetate is protected from mechanical damage by a perforated guard plate 5 mounted in front thereof and the whole diaphragm assembly is mounted in the capsule 2 by the spring retaining ring 6.

The mouthpiece 7 preferably of moulded construction is provided with an approximately horn-shaped channel or funnel 8, pref-

erably closed by a grid 9 forming a plurality of slots across the outer end of the channel, which however, may be left completely open if desired. The mouthpiece is mounted on the transmitter casing 1 in any convenient manner and the inner end of the channel 8 is directed towards a segment of the diaphragm above its central point and near the mouth of the talker instead of toward the centre of the diaphragm as has been the previous practice.

The funnel or channel 8 occupies a relatively small portion of the total volume of the mouthpiece and the majority of the remaining portion of the interior thereof is cut away in order to make the instrument as light as possible. The air cavity 10 so formed is prevented from affecting the performance of the mouthpiece by means of a closing plate 11, which also forms the plate for sealing the capsule when the mouthpiece is mounted on the transmitter casing. This plate 11 is formed with lugs 12 that secure a rubber ring 13, U-shaped in section, in position when the transmitter is assembled, in order to effect a sound proof joint between the capsule and the mouthpiece.

The closing plate 11 is secured to the mouthpiece by a screw 14 and is provided with a hole 15 opposite the inner end of the funnel or channel 8 so shaped as to continue the opening smoothly down to the capsule.

From the foregoing description it will thus be appreciated that an hygienic transmitter mouthpiece has been devised wherein the speech is directed to the nearest part of the diaphragm in a simple and expeditious manner and without impairing the efficiency of the instrument.

It will be understood that although the invention has been described with reference to a transmitter of the type described in British Patent No. 304,843, it is equally applicable to other types of transmitters.

What is claimed is:

1. A telephone transmitter in which the mouthpiece thereof is so formed that sound waves are directed only on to an eccentric portion of the transmitter diaphragm which is nearest the mouth of the user in order to obtain the shortest possible speech path.

2. A telephone handset transmitter in which a single sound passage in the mouthpiece of the transmitter is inclined to the normal to the plane of the transmitter diaphragm, the walls of said passage being disposed so as to direct sound waves only on to a portion of the diaphragm nearest the mouth of the user.

3. A telephone transmitter comprising electrodes and a diaphragm mounted within a capsule secured within the transmitter casing, a thin sheet of cellulose acetate in front of said diaphragm in order to protect the capsule and diaphragm from moisture, and a perforated plate mounted in front of said sheet.

4. A telephone transmitter comprising a casing, a dished diaphragm mounted in said casing, and a thin sheet of cellulose acetate secured in front of the diaphragm to protect the diaphragm from moisture.

5. In a telephone transmitter, a unitary assembly comprising a casing, a dished diaphragm seated in said casing, a thin film of cellulose acetate secured adjacent the concave side of said diaphragm, a perforated guard plate adjacent said film, an annular washer between said film and said guard plate, and a spring retaining ring locking said diaphragm, film, washer and guard plate in said casing.

6. A telephone transmitter comprising a casing, a diaphragm mounted within said casing, a mouthpiece secured to said casing, having a recess and a sound passage terminating adjacent said diaphragm, said sound passage being inclined to the plane of the diaphragm and so disposed as to direct sound waves to only an eccentric portion of the diaphragm nearest the mouth of the user, and a plate member mounted in said mouthpiece, having an imperforate portion for sealing said recess and an aperture substantially conforming to the inner end of said sound passage.

In witness whereof, we hereunto subscribe our names this fifteenth day of April 1930.

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