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F. L. VAN HOUTE
TELEPHONE MOUTHPIECE
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Fig. 2.

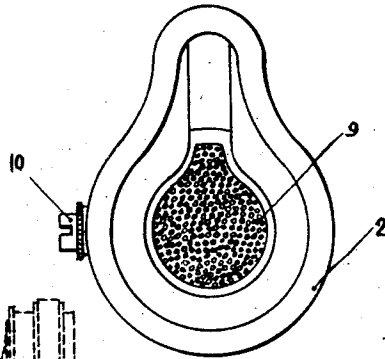


Fig. 1.

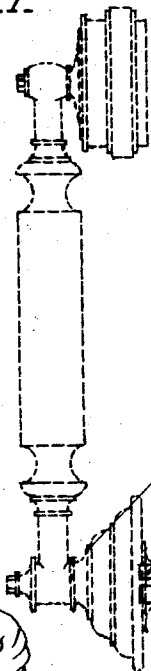


Fig. 3.

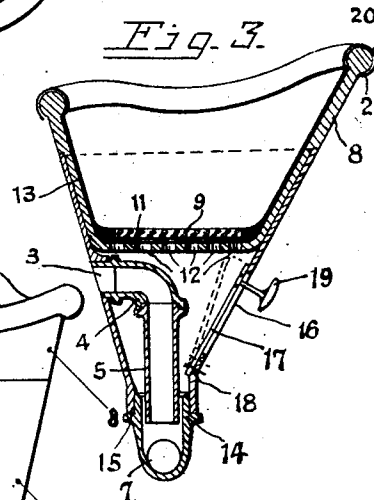


Fig. 4.



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UNITED STATES PATENT OFFICE.

FREDERIK LEENDERT VAN HOUTE, OF THE HAGUE, NETHERLANDS.

TELEPHONE MOUTHPIECE.

Application filed August 28, 1923. Serial No. 659,795.

To all whom it may concern:

Be it known that I, FREDERIK LEENDERT VAN HOUTE, citizen of the Kingdom of the Netherlands, and of Dutch nationality, residing in The Hague, Netherlands, Weimarstraat 125, have invented certain new and useful Improvements Connected with Telephone Mouthpieces, of which the following is a full, clear, and exact specification.

This invention relates to apparatus for use in connection with telephones, dictaphones and other instruments adapted to receive and transmit speech and has for its object to provide a sound proof speaking chamber, that can be used in rooms where many persons are present without these persons even when standing close to the instrument being able to hear what is spoken into the transmitter of the telephone or the like. Inversely the apparatus can be used in noisy rooms without the noise in the room interfering with the conversation.

To attain these purposes the apparatus consists of a funnel shaped horn, one end of which is adapted to fit on the face of the user, whereas the other end can be connected with a microphone or the like, which receives and transmits the speech. According to the invention, in the sidewall of the horn, an opening is provided which opens into a tube lying within the horn, the opening at the inner end of the said tube being turned away from that side of the horn which fits on the face.

The tube leading to the interior part of the horn serves for ventilation purposes, and has a width that is sufficient to provide the required air for aspiration.

According to the invention the efficacy of the apparatus can be increased by providing a sound damping layer between the face of the user and the ventilation opening. This layer can for example consist of rubber sponge or other sound damping material.

If desired the ventilation can be increased by providing a spring controlled valve in the wall of the horn, which can be opened by hand when the user is not speaking.

In order to meet the requirements of hygiene, a loose member is used which fits into the horn. Every user of the apparatus can have such a loose member and in this way each person always uses his own mouthpiece in order to avoid any danger of contagion.

Further, the instrument is so constructed that it can be readily dismounted to clean the various parts.

The instrument can be constructed so as to enclose only the mouth of the speaker, but preferably, and according to the invention, the nose is also enclosed, the transmission of speech being then much clearer.

The instrument can be used in various ways and particularly it can serve to replace the expensive telephone cells or boxes, as any one standing close to the speaker cannot understand the conversation. Further the application in rooms where many persons are working is of great utility. Also in noisy rooms, as for instance in manufacturing or in aeroplanes and in many other cases the apparatus can be used with advantage.

The invention is illustrated in the accompanying drawings in which Fig. 1 is a front elevation of the apparatus applied to a microtelephone.

Fig. 2 is a plan of the horn;

Fig. 3 is a longitudinal sectional view;

Fig. 4 shows the manner in which the apparatus is to be used.

Referring to Fig. 1 the apparatus as a whole is connected to the microphone in the same way as the ordinary little microphone horn. The apparatus comprising a relatively rigid funnel shaped horn 1 of ebonite of about 0.2 inch thickness. At the open end which fits on the face a flexible edge 2 of soft rubber or other suitable material is provided. About halfway along the ebonite horn an opening 3 is provided. In this opening fits a curved tube consisting of two parts 4 and 5, as shown in Figures 1 and 3. The end of this tube lying within the horn is turned away from the face. This tube serves for ventilation purposes and enables a sufficient air supply for breathing during the conversation without interfering with the sound damping qualities of the instrument.

The connection with the microphone 6 is effected by means of a curved tube 7 of metal as for instance copper, aluminium, or of ebonite or any other suitable material. This tube 7 is screwed into the horn 1.

In order to get a larger air supply in the moments when the user is not speaking into the instrument a valve is provided in the wall of the horn 1. This valve consists of a strip of soft rubber 16 fastened on a flat spring 17 which is connected to the wall of

the horn by means of rivets 18. The valve can be operated by pressing a finger upon the knob 19. In Fig. 3 the dotted lines indicate the valve when opened. In normal condition the valve is closed and the rubber strip 16 fits in a hole in the wall of the horn 1.

In Fig. 2 the shape of the soft edge 2 is illustrated. This edge of yielding material fits closely to the face and fits, in the illustrated example, over the mouth and the nose. In the drawings the edge forms part of a separate funnel shaped horn 8 of softer rubber than the horn 1, which separate funnel is placed within the horn 1 and fastened thereto by means of solution or other suitable means. The horn 8 being made of softer rubber than the horn 1 is relatively flexible and has a bottom 11 wherein holes 12 are provided, thus forming a second funnel which is placed in the first. The holes 12 are so wide that they offer no appreciable resistance to the sound waves.

In this second funnel a loose member 13 of soft rubber is placed, this member having a bottom 9 of rubber sponge or other suitable sound damping material adapted to weaken the sound and prevent the words uttered into the mouthpiece from being heard by persons in the vicinity thereof. This loose member on the one hand enlarges the effect of the instrument and on the other hand meets the requirements of hygiene as in offices and the like where the same instrument is to be used by several persons each of the users can use his own loose member. The edge 20 of this loose member is so shaped that it clamps over the edge 2 of the funnel 8.

By the use of this sound damping element the user may speak in his ordinary tone of voice without being overheard.

The curved tube 7, which connects the horn with the microphone is as shown at 14, screwed into the lower part of the horn 1. The tube serving for ventilation purposes consists of two parts 4 and 5 the first of which is screwed in the wall of the horn 1 whereas the second part 5, is screwed in the first part and is so long, that its edge

lies just beyond the edge of the lower edge 15 of the funnel 1. After the tube 7 has been screwed off the part 5 can be removed in order to clean the instrument. In Fig. 4 the manner in which the apparatus is used, is illustrated.

I claim:

1. A mouthpiece for telephone transmitters, dictaphones and the like adapted to make the conversation inaudible to persons near the instrument, comprising a relatively rigid funnel-shaped horn, a second funnel-shaped horn in the larger end of the first named horn and forming an extension thereof, said second named horn being relatively flexible and being provided with a perforated bottom and being further provided at its open end, which is arranged to bear against the face, with a flexible edge of soft material.

2. A mouthpiece for telephone transmitters, dictaphones and the like adapted to make the conversation inaudible to persons near the instrument, comprising a funnel-shaped horn, a second funnel-shaped horn in the larger end of the first named horn and forming an extension thereof and provided with a perforated bottom, and a loose member of sound damping material arranged on and extending across the perforated bottom.

3. A mouthpiece for telephone transmitters, dictaphones and the like adapted to make the conversation inaudible to persons near the instrument, comprising a funnel-shaped horn, a second funnel-shaped horn in the larger end of the first named horn, forming an extension thereof and provided with a perforated bottom, and a tube arranged in the first named horn and having one end communicating with an opening in said horn at a point near the perforated bottom of the second horn, the other end of the said tube opening away from the face of the speaker, the said first named horn also having an opening in one side and a valve to open and close said opening.

In testimony whereof, I have signed my name to this specification:

FREDERIK LEENDERT van HOUTE.