July 7, 1942. J. SIEZ ET AL 2,288,975

SANITARY TELEPHONE MOUTHPIECE

Filed Nov. 16, 1940

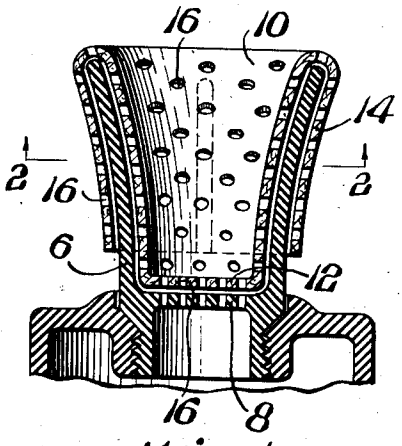


Fig. 1.

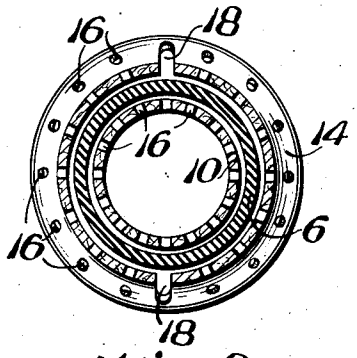


Fig. 2.

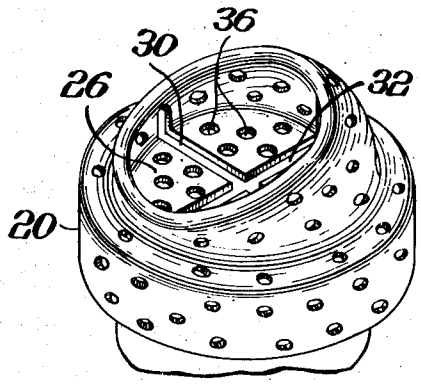


Fig. 3.

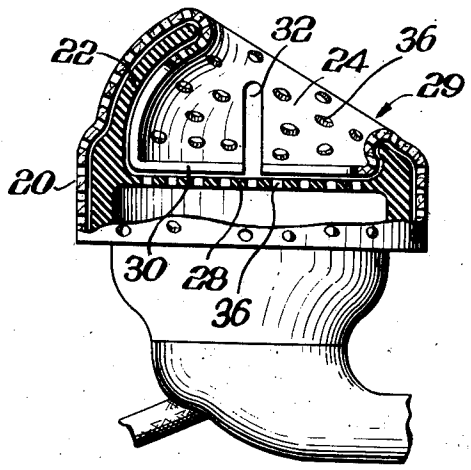


Fig. 4.

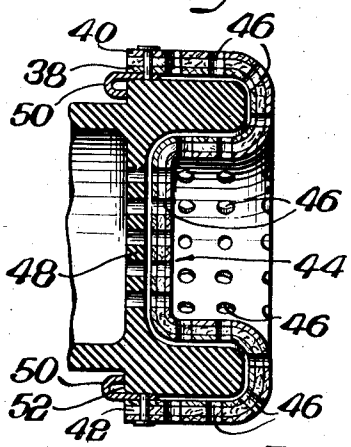


Fig. 5.

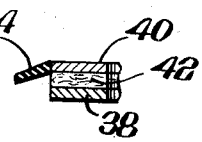


Fig. 6.

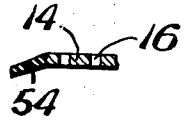


Fig. 7.

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SANITARY TELEPHONE MOUTHPIECE

Jacob Siez and Shirley Grossman,
Philadelphia, Pa.

Application November 16, 1940, Serial No. 365,854

6 Claims. (Cl. 179—185)

Our invention relates to a sanitary telephone mouthpiece and it relates more particularly to a detachable, inexpensive and easily applied mouthpiece formed of or embodying absorbent material calculated to receive and retain for a relatively long time an antiseptic substance, thereby rendering and maintaining sterile the mouthpiece of the telephone instrument to prevent transmission of contagions or infections from one user to another.

Telephone pieces of this character have heretofore been made but have been designed for a particular, specific form of telephone instrument, and it is therefore one object of our invention to provide a mouthpiece which is easily attachable to the various forms of telephone instruments. Furthermore, telephone mouthpieces heretofore made have, as far as we know, covered the telephone instrument in contact with the mouth or the ear only partially, thus not completely eliminating the danger of infection, and it is therefore another object of our invention to provide a sanitary mouthpiece which completely covers the telephone instrument in contact with the mouth or the ear.

Still further, telephone mouthpieces of which we are aware have heretofore depended on fumes or vapors of antiseptic substances for their sanitary effect, and, while such constructions are more or less satisfactory, it is nevertheless well known that the contact of germs or bacteria with a liquid antiseptic is more effective and produces more complete sterilization than could be attained by fumes.

Where fumes are depended upon for sterilization, the sterilizing mouthpiece loses its effectiveness when the antiseptic substance has partly or completely evaporated. It is therefore a still further and important object of our invention to produce a sanitary mouthpiece in which antiseptic substances of a soluble but non-volatile nature are employed so that the condensation of moisture from the breath of the user on the sanitary mouthpiece containing the soluble but non-volatile antiseptic substance produces a temporary solution of the antiseptic substance thus effectively eliminating germs and bacteria, and, when the moisture thus condensed from the breath of the user is evaporated, the antiseptic substances still remain in the sanitary mouthpiece and are therefore capable of being used over and over again, it being necessary to replace the sanitary mouthpiece only when it wears out by protracted use.

In the accompanying drawing:

Fig. 1 represents a cross-sectional view of one form of telephone instrument to which our invention is applied.

Fig. 2 represents a section on line 2—2 of Fig. 1.

Fig. 3 represents a view in elevation showing a different form of telephone instrument provided with our sanitary mouthpiece.

Fig. 4 represents a view partly in cross-section and partly in elevation showing details of construction of the form illustrated in Fig. 3.

Fig. 5 represents a modified form of our sanitary mouthpiece applied to still another form of telephone instrument.

Figs. 6 and 7 represent fragmentary cross-sectional views showing a modified form of construction for fastening the devices of Figs. 1 and 3 to a telephone receiver.

Referring to the drawing in which like reference characters indicate like parts, 6 designates a mouthpiece of the old type of telephone which comprises a vertical stand and a removable ear piece connected to the stand by a wire, the stand and the ear piece being omitted as they form no part of this invention. The mouthpiece 6 of the telephone instrument is of a generally curved and outwardly flaring construction and is provided with the transmission diaphragm 8. Our sanitary mouthpiece is preferably made of a molded, absorbent composition such as matted or felted material, or molded, absorbent card board or blotting paper or the like, and comprises the inner portion 10 which is nested within the mouthpiece proper 6 so as to fit snugly therewithin, said inner portion 10 having a bottom 12 which fits against the transmission diaphragm 8. The inner mouthpiece 10 is formed integral with the outer, turned down portion 14 which envelopes the exterior surface of the telephone mouthpiece 6 more or less to about the distance shown in Fig. 1. The bottom portion 12 of our mouthpiece is provided with apertures 16 which register with the apertures in the transmission diaphragm 8 so as not to interfere with the operation of the telephone instrument. The inner and outer portions 10 and 14 are provided with apertures 16. Since the inner portion 10, the bottom portion 12 and the outer portion 14 are molded to shape of any absorbent material impregnated with the desired non-volatile antiseptic, and in order to be able to apply the device to a telephone instrument, such as the mouthpiece 6 which flares outwardly, and in the event that the material from which the sanitary mouthpiece is molded does not have sufficient elasticity,

we have provided the outer portion 14 with slots 18 which serve as hinges to permit the outward flaring of the outer portion 14 sufficiently to clear the outwardly flared end of the telephone mouthpiece 6 whereupon the opposite wings of the outer portion 14 on either side of the slots 18 will tend to spring back into their original molded position thus snugly hugging the exterior of the telephone mouthpiece 6 and firmly retaining the sanitary mouthpiece in position. Since the telephone mouthpiece 6 is only moved up and down for adjustment to the mouth of the speaker, and since the entire device is not subject to any pulling action away from the telephone instrument proper, it follows that the amount of frictional engagement afforded by our construction is quite sufficient to hold the sanitary attachment in place. The antiseptic, non-volatile substances used may be sprayed into the mouthpiece after it is molded, or the sanitary mouthpiece may be soaked in the desired antiseptic solution or the antiseptic solution may be incorporated in the pulp from which our sanitary mouthpiece is initially molded. In any event, the antiseptic substances are permanently retained in the absorbent material and, when the user talks into the mouthpiece and thus breathes into it, or when the user sneezes into the mouthpiece, the particles of moisture from the breath, which also carry any germs or bacteria present in the respiratory system or mouth of the user, are deposited mostly on the inner portion 10 and bottom 12 and somewhat on the outer portion 14. These particles of moisture are immediately absorbed by the absorbent material of our sanitary mouthpiece and, as soon as said particles of moisture come in contact with our sanitary mouthpiece, they immediately and momentarily dissolve the antiseptic substance contained therein so that an antiseptic solution is momentarily formed by each particle of moisture which is absorbed by the sanitary mouthpiece thus effectively killing any germs or bacteria transmitted from the mouth of the user onto the sanitary mouthpiece.

In Figs. 3 and 4 we have shown the same sanitary mouthpiece molded of the same absorbent material and provided with the same antiseptic substances but molded in a different shape so as to accommodate the receiver of the more modern hand set or French telephone. In this construction we provide the outer skirt 20 which is shaped snugly to hug or envelope the outer contour 22 of the hand set telephone receiver, this outer skirt or envelope merging with an inner portion 24 and the integral bottom portion 26. The inner portion 24 is formed to conform to the interior of the mouthpiece 22 and the bottom portion 26 abuts against the transmission diaphragm 28. Since the opening 29 of this type of receiver is smaller at its outer extremity than is the cavity of the receiver at the point where the transmission diaphragm 28 is positioned, and in order to facilitate application of this form of sanitary mouthpiece to this form of telephone receiver, we have provided the inner portion 24 with intersecting slots 30 and 32 so that the inner portion 24 may be squeezed together enough to clear or pass through the opening 29, whereupon the quadrants, forming the bottom portion 26, tend to resume their initial position thus causing the curved inner portion 24 to hug the correspondingly curved telephone mouthpiece 22. This firmly retains the sanitary mouthpiece in position without the necessity of extraneous fastening devices. The bottom 26 is provided with perforations 36 to correspond to the perforations of the transmission diaphragm 28.

In Fig. 5 we have shown a modified form of invention applied to a still different form of mouthpiece and in this construction we utilize an inner shell 38 and an outer shell 40 both of said shells being formed of card board or any other similar light, absorbent and moldable substance, the shells 38 and 40 being spaced to enclose absorbent padding of fluffy material 42 such as cotton or the like which is provided with volatile as well as non-volatile antiseptic substances. In this construction, not only is the bottom portion 44 provided with apertures 45 to register with the apertures of the transmission diaphragm 48, but the entire body portion of the sanitary mouthpiece is provided with apertures 46 over its entire area so as to permit antiseptic fumes to surround the telephone mouthpiece at all times. This form of our invention has dual operation in the sense that being formed of absorbent material impregnated with soluble antiseptic substances the moisture from the user's breath condenses on the mouthpiece and this serves to dissolve the antiseptic substances and eliminate sources of infection, and the fumes from volatile, antiseptic substances serve to sterilize by indirect contact. This form of our sanitary mouthpiece, namely, the inner shell 38 and outer shell 40, is obviously applicable to the form of telephone instruments shown in Figs. 1 and 3, and it is equally obvious that the form shown in Figs. 1 and 3 is readily applicable to the form of instrument shown in Fig. 5. In Fig. 5 we have shown a telephone instrument the contour of which is such as not to make the frictional engagement of the sanitary mouthpiece with the telephone instrument proper practicable and we therefore have provided the sanitary mouthpiece with spring clips 50 which are adapted to collapse into a substantially flat position while the sanitary mouthpiece is being forced over the telephone instrument, said spring clips 50 being adapted to resume their normal position and then automatically to engage the shoulder 52 of telephone instruments of this construction. While we have illustrated the spring clips 50 only in Fig. 5 and as applied to the form of sanitary mouthpiece comprising the inner shell 38 and outer shell 40, etc., it is obvious that, where the molded solid sanitary mouthpieces of Figs. 1 and 3 are used in connection with a telephone instrument such as shown in Fig. 5, the clips 50 will be employed for retaining the sanitary mouthpiece in position.

The essence of our invention therefore resides in making a molded sanitary mouthpiece impregnated with volatile or non-volatile antiseptic substances, or a combination of both with perforated bodies, such sanitary mouthpieces being preferably frictionally attached to telephone instruments where the contour or shape of the telephone instruments permits (such as the flaring mouthpiece 6 of Fig. 1 or the curved eccentric formation of the mouthpiece 22 as in Fig. 3), and being provided with spring clips 50 which are collapsible easily to slide over the telephone instrument and which are adapted to expand to engage any shoulder or protuberance as shown in Fig. 5.

Where, due to the absence of the shoulder 52 for instance or its equivalent, the hooks 50 or their equivalent cannot be used, and where the

contour of the telephone instrument is such as to preclude frictional engagement of the sanitary mouthpiece with the telephone instrument along the lines suggested in Figs. 1 and 4, we utilize an elastic band **54** which is attached to the rear free edge of the sanitary mouthpiece and which is adapted to snap on and tightly engage the body of the telephone instrument such as the lower portion of the mouthpiece **6** of Fig. 1, the lower end of the body portion **22** of Fig. 4 or the corresponding portion of the telephone instrument shown in Fig. 5. This form of attachment of our sanitary mouthpiece is only diagrammatically illustrated in Figs. 6 and 7 in which only the rearmost free edge of the sanitary mouthpieces shown in Figs. 1 and 5 are illustrated with the rubber band **54** applied thereto in any desired manner.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A sanitary mouthpiece for telephone instruments comprising a molded body of absorbent material, said body being perforated throughout its entire extent, and enclosing the entire interior and exterior of the mouthpiece of the telephone and being charged with an antiseptic substance.

2. A sanitary mouthpiece for telephone instruments comprising a molded body portion of absorbent material, said body portion enclosing substantially the entire interior and exterior of the mouthpiece of the telephone and being charged with an antiseptic substance, there being spaced, through apertures distributed substantially throughout the entire extent of said sanitary mouthpiece.

3. A sanitary mouthpiece for a telephone instrument embodying a flared, concaved cavity surrounding a transmission diaphragm comprising, a molded body adapted to abut against and enclose the entire interior as well as the entire exterior of said cavity and said transmission diaphragm, said sanitary mouthpiece being impregnated with volatile and non-volatile antiseptic substances, there being a slot formed in a portion of said body whereby the same may be expanded sufficiently to slip over the mouthpiece of the telephone instrument.

4. A sanitary mouthpiece for a telephone instrument embodying a flared, concaved cavity surrounding a transmission diaphragm comprising, a molded body portion adapted to abut against and enclose the interior as well as the exterior of said cavity and said transmission diaphragm, said sanitary mouthpiece being impregnated with volatile and non-volatile antiseptic substances and having spaced apertures throughout its entire extent.

5. A sanitary mouthpiece for a telephone instrument comprising an inner shell, an outer shell, an absorbent padding intermediate said shells, said shells and said padding being molded to conform to the form of and to cover the entire interior and exterior of the mouthpiece of a telephone instrument, there being through apertures distributed over the entire area of said sanitary mouthpiece, said padding being charged with an antiseptic substance.

6. A sanitary mouthpiece for a telephone instrument comprising an inner shell, an outer shell, an absorbent padding intermediate said shells, said shells and said padding being molded to conform to the form of and to cover the entire interior and exterior of the mouthpiece of a telephone instrument, there being through apertures distributed over the entire area of said sanitary mouthpiece, said padding and said shells being impregnated with volatile and non-volatile antiseptic substances.

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