June 30, 1936. W. T. PARKIN 2,045,674

MOUTHPIECE

Filed Aug. 24, 1935

Fig. 1

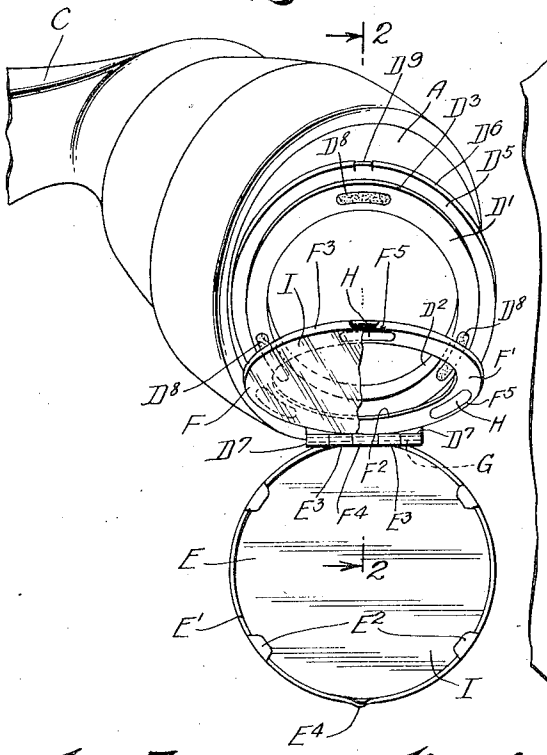


Fig. 2

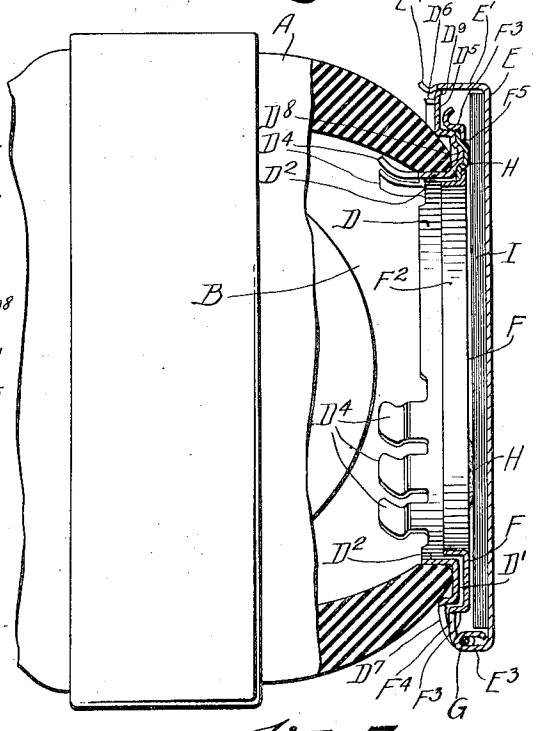


Fig. 3

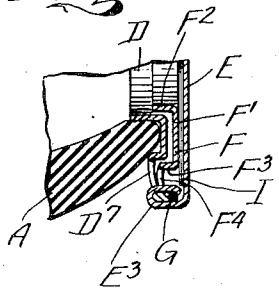


Fig. 4

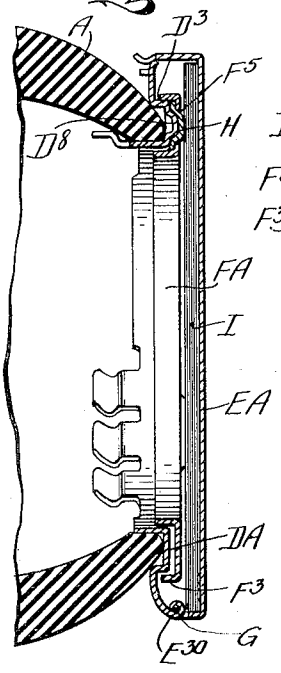
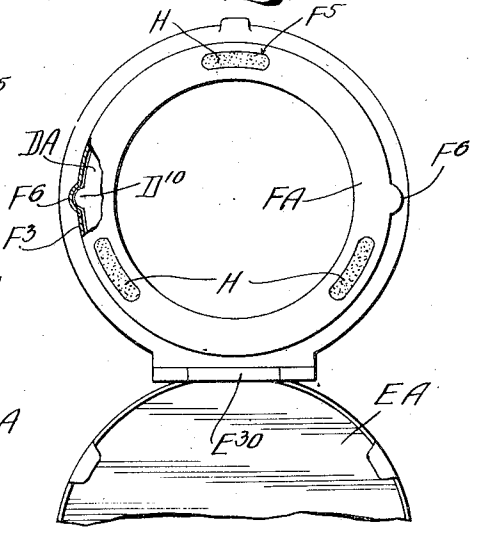


Fig. 5



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UNITED STATES PATENT OFFICE

2,045,674

MOUTHPIECE

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Application August 24, 1935, Serial No. 37,649

6 Claims. (Cl. 179—185)

The present invention relates to the mouthpieces of telephone transmitters, speaking tubes, and other voice transmitting apparatus, and has for its general object, the provision of improved means for preventing the accumulation of dust, moisture, and germs on or in such mouthpieces, and the attainment of such cleanliness and hygienic advantages with improvement, rather than impairment, of the voice transmitting effectiveness of the transmitter.

The present invention makes use of the general principles of the invention disclosed and claimed in the prior application of Frederick C. Kauffmann, deceased, Ser. No. 2467 filed January 19, 1935, and comprises improvements in the apparatus disclosed in said application. The preferred form of apparatus disclosed in said prior application, comprises a part adapted for detachable connection to the rim of a telephone mouthpiece opening and having means adapted to hold a thin paper or analogous sheet engaging said means in a position in which the sheet extends across, and forms a protective curtain for, the mouthpiece opening, and comprises a member which is hinge connected to said part to turn into and out of the position in which it extended across the mouthpiece aperture, and which is provided with means for releasably so holding a pile of sheets that when said member is turned into its mouthpiece closing position, the end sheet of said pile is brought into engagement with said holding means, if the latter is not then in engagement with a sheet previously brought into engagement therewith.

One specific object of the present invention is to provide apparatus such as the above mentioned apparatus of said prior application, with improved provisions for detaching an end sheet from the pile held in the cover member, when the latter is turned into its open position, and for holding the detached sheet in front of the mouthpiece opening, until that sheet is removed for replacement by the then end sheet of the pile held in the cover member. Another specific object of the invention is to provide an arrangement facilitating the renewal of the sheet material holding means. A further specific object of the invention is to provide a connection between the cover member and its supporting part which will effectively insure that the end sheet of the pile held in the cover member is brought into proper relation with the material holding means, when the cover member is turned into its closed position, regardless of the number of sheets in, and thickness of, the pile.

The various features of novelty which characterize the present invention are pointed out with particularity in the claims annexed to, and forming a part of this specification. For a better understanding of the invention, however, its advantages, and specific objects attained with its use, reference should be had to the accompanying drawing and descriptive matter in which I have illustrated and described preferred embodiments of the present invention.

Of the drawing:

Fig. 1 is a perspective view of a so-called French telephone having its transmitter mouthpiece provided with a preferred form of the present invention, and with a movable part thereof displaced from its normal position;

Fig. 2 is a partial section on the broken line 2—2 of Fig. 1;

Fig. 3 is a partial section taken similarly to Fig. 2, with the parts shown in slightly different relative positions as a result of a difference in the conditions of use; and

Fig. 4 is a view taken similarly to Fig. 2, illustrating a modified construction; and

Fig. 5 is an elevation taken at right angles to Fig. 4 and illustrating the parts thereof in different relative positions.

In the form of the invention shown in Figs. 1–3, there is detachably connected to the rim A surrounding and defining the mouthpiece chamber B of the transmitter C of a hand telephone of the well known French type, a device comprising a supporting member D, a cover member E, and an intermediate member F, which, like the member E, is hinge connected to the member D.

The supporting member D is preferably formed of thin sheet metal, and in the form shown, comprises a flat annular portion D′ adapted to bear against the end edge of the mouthpiece rim A, and flange portions D^2 and D^3, which extend away from the inner and outer edges respectively, of the portion D′, at the side of the latter adjacent the mouthpiece rim. The inner flange D^2, which enters the mouthpiece opening, is generally cylindrical, and is provided with outwardly bent spring finger extensions D^4 bearing against the inner surface of the mouthpiece rim which converges toward the mouthpiece opening, so as to hold the member D in place, detachably, but with suitable security. The outer flange D^3 comprises a short portion immediately adjacent the portion D′, which is or may be generally cylindrical, and a portion D^5 which extends radially outward from the edge of said cylindrical portion remote from the portion D′, and merges into an outer cylindrical portion D^6. The latter extends about the mouthpiece and gives edge finish to the support

D, and also serves, as do the other flange portions of the support D, to give stiffness to the latter. At one side, the flange portion D^3 is formed with spaced apart extensions D^7 bent about and forming an anchorage for the ends of a hinge pintle G, by which the members E and F are each hinge connected to the support D.

The intermediate member F comprises an annular portion F' which is parallel to and immediately in front of the support portion D' in the normal position of the member F shown in Fig. 2, and inner and outer transverse flange portions F^2 and F^3. The latter, in the normal position of the member F, respectively overlap the support flange portions D^2 and D^3 of the supporting member D, with which the member F is then in frictional and resilient engagement, whereby the member F is yieldingly held in its normal position. An extension F^4 from the outer flange F^3 is bent about a central portion of the pintle G, and thereby hinge connects the part F to the support D. In the flat portion F' of the member F, are formed short arc shaped slots F^5 at intervals about the axis of the member. In the preferred construction illustrated, three such slots are equally spaced about said axis.

In the normal condition of the apparatus, the slots F^5 register with and receive arc shaped projections D^8 from the outer surface of the portion D' of the support D, and said projections force outwardly away from the outer surface of the portion F', portions of flexible bodies H which then extend across the ends of the projections D^8 and each of which has an adhesive outer surface. The bodies H may be formed of any flexible material having the required adhesive property. In particular, they may be formed by working latex on, and into, a cloth foundation at the outer side of the latter which is exposed through the apertures F^5 in the normal condition of the apparatus. Each body H has edge portions overlapping and pressed into adhering engagement with the inner side of the portion F' at the margin of the corresponding slot F^5 therein. With the described arrangement, when the intermediate member F is turned out of its intermediate position, each body H may be readily renewed, if and when as a result of age, use, or other cause, the portion of the body exposed through the slot F^5 loses its desired adhesive properties. Advantageously, and as shown, the projections D^8 are hollow bosses formed by a stamping or press action on the thin sheet metal of which the support D is formed.

The cover member E is preferably formed of sheet metal, and comprises a body portion in the form of a flat disc, slightly larger in diameter than the member D, and a narrow rim or transverse marginal flange E' which surrounds the portion D', and immediately adjacent portion of its flange D^3, when the member E is in the closed position as shown in Fig. 2. The member E thus provides a shallow storage space or receptacle for a pile of sheets I of thin paper or other material adapted for successive use as mouthpiece curtains. As shown, the pile of sheets I is normally held in place in the cover receptacle by integral extensions E^2 from the edge of the rim portion E', which are bent into substantial parallelism with, but are spaced away from the disc-like body portion of the member E. Extensions E^3 from the rim portion are bent about the portions of the hinge pintle G between the portions D^7 of the support D, and the intermediate member hinge portion F^4.

If at a time at which no sheet G is already engaged by the bodies H and held in a position in which it extends across the mouthpiece opening, the member E is turned into its closed position, the end sheet I of the pile held in the member E, will be brought into adhering engagement with the bodies H. The sheet so engaged by the bodies H will adhere to the latter, and thereby be retained in curtain relation with the mouthpiece opening, when the member E is next turned into its open position, the edges of the sheet so engaged then yielding to disengage from the pile holding fingers E^2.

The member E is releasably held in its closed position shown in Fig. 2, by means shown as comprising a resilient extension E^4 from the side of the rim portion E remote from its hinge connection to the support D, and adapted to yieldingly engage a more or less resilient finger or projection D^9 from the part D. As shown, the end of the projection E^4 is shaped to stand away from the part D^9 sufficiently for its ready engagement by the finger nail of the telephone user, when the latter wishes to turn the cover E into its open position.

In the preferred form of the present invention, the connection between the members D and E is such that in the closed position of the latter, the portions of the end sheet I of the pile held in the member E, will be pressed snugly toward the bodies H and their supporting projections D^8, regardless of whether the number of sheets then in the pile is the maximum which the member E can hold, or is a smaller number, so that the pile is of a thickness less than its maximum. This result is obtained with the construction shown, by so shaping the hinge projections E^3, that the bearing sleeve for the pintle G which they form, is of a depth in the direction transverse to the disc body portion of the member E, which is appreciably greater than the pintle diameter. In consequence, when the appreciable, though relatively small, pressure required to move the projection E^4 into operative engagement with the projection D^9 is applied to the outer side of the member E, the member E will be bodily pressed toward the member F at all points around their common axis and thereby insure the proper engagement of the portions of sheet I in front of the bodies H with each of the latter, regardless of the number of sheets in the pile.

When a curtain sheet I is pressed into snug engagement with bodies H, spaced as illustrated and described, the curtain sheet will be so attached to the support D, that the sound produced air pressure variations to which it is subjected in the normal use of the mouthpiece with which it is associated, will produce no rustling or other curtain noise audible in the receiver to which sounds are transmitted by the transmitter, such as I have found to be produced when the curtain sheet is not snugly attached to portions of the support D at points suitably distributed around the mouthpiece axis. A curtain sheet supported as described, improves sound transmission, primarily, as I believe, by eliminating or minimizing the effects of room noises.

The modified form of apparatus illustrated in Fig. 4, includes parts DA, EA, and FA, corresponding, respectively, to the parts D, E, and F of the construction first described, but differing therefrom slightly in respect to the manner in which the parts are connected. In Fig. 4 the intermediate part FA is not hinge connected to either of the parts DA and EA, but is separable there-

from, though normally held in resilient and frictional engagement with the part DA. Except for the omission of a hinge connection portion, the member FA may be exactly like the member F. Advantageously, and as shown, however, the members FA and DA have cooperating provisions facilitating their assemblage with the projections D^8 of the part DA in register with the slots F^5 of the part FA. The provisions for the purpose shown, comprise pockets or recesses F^6 formed in the flange portion F^3 of the part FA, which, in the normal position of the latter, resiliently receive hollow boss or projection portions D^{10} carried by the flange portion D^3 of the member DA. Except for its portions D^{10}, the member DA need not differ from the member D first described.

With the intermediate member readily separable from the other parts of the device, the replacement of the bodies H may be effected a little more readily, under some conditions, than when the intermediate member is hinge connected to the other parts of the device. In general, however, I consider that this advantage is less important than the avoidance of all risk of loss or misplacement of a separable part thereof, which is insured by the non-detachable connection of the parts in the construction first described.

The member EA may be identical in form with the member E, but, as shown, the member EA includes but a single hinge connection projection E^{30}, and the latter is bent snugly about the hinge pintle G, so that the device shown in Fig. 4 does not have the lost motion in the hinge connection between the support and cover parts, provided in the construction first described, and which I consider ordinarily desirable, because of its above described compensation for variations in thickness of the pile of sheets I held in the cover member.

As will be apparent, the invention, in either of the forms illustrated, may readily be adapted for use with transmitter mouthpieces quite different in form from the one shown in the drawing herein, by suitable changes in proportions, and in the transmitter engaging fingers or portions of the support member. It seems unnecessary, however, to illustrate such adaptability of the apparatus, particularly as the above mentioned prior application illustrates the use of the general features of the invention therein disclosed and utilized herein, in connection with transmitter mouthpieces of different forms.

While in accordance with the provisions of the statutes, I have illustrated and described the best forms of embodiment of my invention now known to me, it will be apparent to those skilled in the art that changes may be made in the forms of the apparatus disclosed without departing from the spirit of my invention as set forth in the appended claims and that in some cases certain features of my invention may be used to advantage without a corresponding use of other features.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The combination with a part formed with an aperture and adapted for attachment to a voice transmitting mouthpiece and formed with projections at its front side and angularly spaced about the axis of said part, of an apertured member releasably held in front of said part and formed with slots through which said projections extend, adhesive material adhering to said member and including a portion held in front of each projection and thereby projected through the corresponding slot, and a second member comprising means for releasably holding a pile of sheets and connected to said part for movement into and out of a position in which the end sheet of said pile extends across said aperture in position for engagement by said adhesive material, whereby, when said second member is moved out of said position, the end sheet may be retained by its engagement with said adhesive material in position to extend across said aperture.

2. The combination with a part formed with an aperture and adapted for attachment to a voice transmitting mouthpiece, of an apertured member hinge-connected to said part for movement into and out of, and normally held in, a position in front of said part with said apertures in register with one another, sheet material holding means carried by said member, a second member comprising means for releasably holding a pile of sheets and hinge connected to said part for movement into and out of a position in which the end sheet of said pile extends across said apertures in position for engagement by said adhesive material, whereby, when said second member is moved out of said position, the end sheet may be retained by said adhesive material in position to extend across said apertures.

3. In apparatus of the character described, the combination with a part formed with an aperture and with a projection at one side, of an apertured member releasably secured to said part at said one side of the latter and formed with a slot through which said projection extends, flexible material comprising a portion extending across each such slot and a marginal extension from said portion between said part and the portion of said member adjacent the margin of said slot and comprising adhesive material by which said extension is secured to the said portion of said member and by which an object engaging the portion of said material extending across such slot may be connected to said member.

4. The combination with an annular sheet metal part formed with a projection at one side, of an annular member releasably secured to said part at said one side of the latter and formed with a slot through which said projection extends, flexible material comprising a portion extending across said slot, and a marginal extension from said portion between said part and the portion of said member adjacent the margin of said slot and having adhesive material at its side exposed through said slot, by which said extension is secured to said member and by which an object engaging the portion thereof extending across such slot may be connected to said material and member.

5. The combination with a part formed with an aperture and adapted for attachment to a voice transmitting mouthpiece, of a member formed with an aperture, said part and member having cooperating parts for releasably holding said member in front of said part with their apertures in register, sheet holding means carried by said member, and a second member comprising means for releasably holding a pile of sheets and connected to said part for movement into and out of a position in which the end sheet of said pile extends across said apertures in position for engagement by said holding means, whereby, when said second member is moved out of said position, the end sheet may be retained

by its engagement with said holding means in position to extend across said apertures.

6. A part formed with an aperture, and in combination therewith, a member comprising means for releasably holding a pile of sheets, a hinge-connection between said part and member for movement of said member relative to said part into and out of a position in which an end sheet of said pile extends across said aperture, and sheet holding means adapted to be engaged by said end sheet on movement of said member into said position and adapted to detach said end sheet from said holding means and retain it in the position in which it extends across said aperture when said member is moved out of the first mentioned position, said hinge connection permitting bodily movement toward and away from said part of said member, when the latter is in said position, to thereby insure contact of said end sheet with said holding means notwithstanding variations in the thickness of said pile.

WINFRED T. PARKIN.