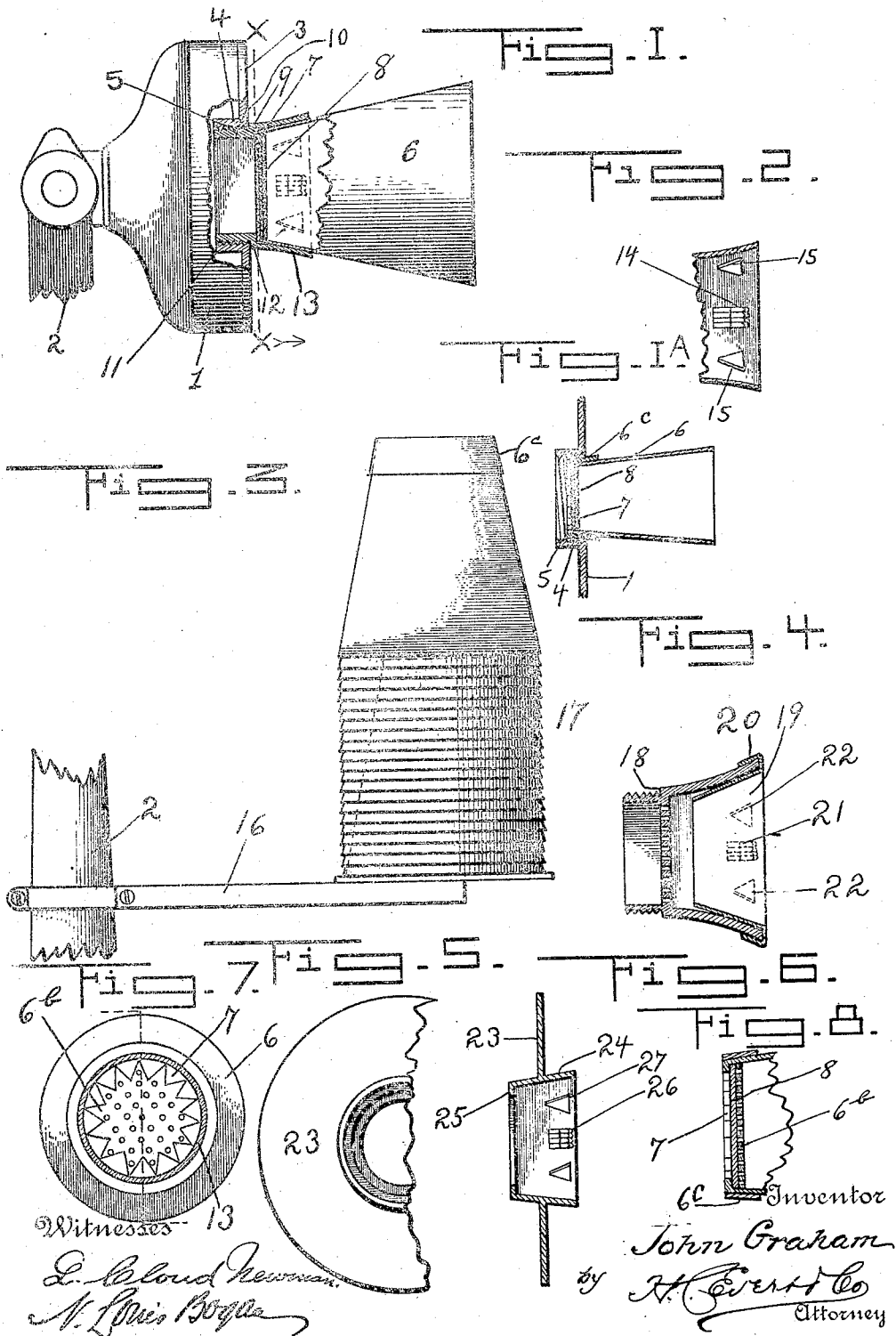


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MOUTHPIECE FOR SOUND TRANSMITTERS.
APPLICATION FILED APR. 22, 1910.

984,558.

Patented Feb. 21, 1911.



UNITED STATES PATENT OFFICE.

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MOUTHPIECE FOR SOUND-TRANSMITTERS.

984,558.

Specification of Letters Patent.

Patented Feb. 21, 1911.

Application filed April 22, 1910. Serial No. 556,956.

To all whom it may concern:

Be it known that I, JOHN GRAHAM a citizen of the United States of America, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Mouthpieces for Sound-Transmitters, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to mouth-pieces for sound transmitters and is designed primarily for use in connection with public telephones and speaking tubes.

Although a mouth-piece in accordance with this invention is adapted particularly for use in connection with telephone transmitters and speaking tubes, yet it is to be understood that the invention can be used for any purposes wherein it is found applicable.

The indiscriminate use of public sound transmitting devices, such as telephones and speaking tubes is disagreeable and dangerous, by reason of the frequent collecting of dirt and germs in the mouth-piece of the instrument and under such conditions many persons hesitate to make use of public sound transmitting devices, especially when sanitary conditions are bad and where the habits of the users of the devices are such as to injure the health.

To effectually prevent the transmission of germs of contagious diseases between individuals using the transmitting device is the essential object of this invention and to this end the invention consists in providing a sanitary mouth-piece of inexpensive material, simple in construction and quickly mounted in operative position and designed to be employed but once and after use destroyed at small cost.

A further object of the invention is to provide a mouth-piece for sound transmitting devices in a manner as hereinafter set forth and which will overcome the unpleasant odors emitting from anti-septic mouth-pieces or linings, such odors being very objectionable to many individuals.

A further object of the invention is to provide a mouth-piece for sound transmitting devices in a manner as hereinafter set forth for overcoming the inconveniences and delays and uncertainties attending the renewing of linings for mouth-pieces and to also overcome the recharging of anti-septic con-

tainers or substances in special mouth-pieces and also overcoming the necessity and expense of taking care of the forms of sanitary mouth-pieces now in general use.

A further object of the invention is to provide a sanitary mouth-piece in a manner as hereinafter set forth which is conveniently and quickly attached to and removed from a sound transmitting device or to the ordinary mouth-piece of a telephone transmitter.

A further object of the invention is to provide a means for the ready destruction of the mouth-piece when removed from the instrument to prevent any danger of re-use of the mouth-piece whereby each individual using a sound transmitting device will be compelled to use an independent mouth-piece thereby reducing dangers of transmission of diseases through this medium to a minimum.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown the adaptation of the invention in connection with a telephone transmitter, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views: Figure 1 is a longitudinal sectional view of a mouth-piece and its attaching means or carrier and showing by way of example, the adaptation of the mouth-piece and its attaching means in connection with a telephone transmitter. Fig. 1^a is a longitudinal sectional view showing the adaptation of a mouth-piece in accordance with this invention in connection with a transmitter without the employment of the attaching means. Fig. 2 is a sectional detail illustrating a portion of the attaching means or carrier. Fig. 3 is a side elevation showing a nest of mouth-pieces supported upon a bracket, the bracket by way of example, being shown connected to the pedestal of a telephone. Fig. 4 is a sectional view of a modified form of attaching means or carrier. Fig. 5 is an elevation broken away illustrating the front plate of a telephone transmitter having formed integral therewith the attaching means or carrier for the mouth-piece. Fig. 6 is a vertical sectional view of the plate shown in

Fig. 5. Fig. 7 is a cross-sectional view looking in the direction of the arrow and on line X—X, Fig. 1, and, Fig. 8 is a sectional detail illustrating a modified arrangement of diaphragm with respect to the perforated closure disk.

The mouth piece and attaching means or carrier is illustrated by way of example in connection with a telephone transmitter, but it is to be understood that the mouth-piece with or without its attaching means can be employed in connection with any form of sound transmitting device for which it is found applicable. The use of the term "telephone" is to be taken generically for any form of sound transmitting device for which the mouth-piece is found applicable.

Referring to the drawings, 1 denotes a telephone transmitter pivotally-connected to a pedestal or stand 2 and provided with a front plate 3 having a centrally-disposed opening and further provided with an inwardly-extending annular integral collar 4 provided with peripheral threads 5.

The mouth-piece consists of a body-portion 6 in the form of a shell and which is preferably conical in contour and manufactured from any inexpensive and easily destructible material such as a sized woven fabric as cotton cloth, lawn, silk, etc., or from any character of paper or card-board or paraffin paper or card-board or any other material suitable for the purpose. Preferably, the body-portion 6 is constructed of paper, which while flexible to any required degree, may be made of sufficient rigidity to withstand very rough usage and yet be easily crushed out of shape by the hand when removed from the sound transmitting device or readily torn and rendered unfit for further use. The blank from which the shell is formed has one edge thereof toothed or serrated and to provide triangular-shaped portions, which when the blank is shaped to provide the body-portions 6, are bent inwardly at right angles as indicated at 7 and constitute retaining arms for a perforated disk 6^b which is arranged at the inner end of the body-portion 6 and secured to the arms 7. The arms 7 also act to make the shell more rigid at its reduced end. The perforated disk 6^b constitutes a closure for the inner or outlet end of the mouth-piece and which further constitutes a means for making the inner end of the mouth-piece very rigid to prevent it from collapsing. The disk 6^b is perforated in such manner as to not interfere with the passage of the sound waves to the sound transmitting device and is formed of any suitable material, preferably paper or card-board with which the mouth-piece is attached. Arranged preferably within the body-portion 6 is a sanitary diaphragm 8 which is mounted against the perforated disk 6^b and is con-

structed of any suitable moisture-proof material that will not arrest the passage of the sound waves but will prevent the passage therethrough of moisture, breath, dust or disease germs into the transmitter. The inner end of the mouth-piece may be further reinforced by a peripheral band 6^c.

One end of the mouth-piece is of a size small enough to enter the opening in the face plate of the transmitter and when using, the individual takes up the mouth-piece and inserts the small end into the threaded opening of the face plate of the transmitter and then gives the mouth-piece a slight turn, preferably to the right, and the same is then ready for use. When through speaking, the individual pulls the mouth-piece out of the transmitter and crushes the same in the hand to destroy it.

For more convenient use in public places or the like, I provide attaching means or a carrier which is connected to the threaded collar of the front plate of the transmitter and to attaching means or carrier is adapted to be connected the mouth-piece. The said attaching means comprises a cylindrical body portion 10 having peripheral threads 11, which engage with the threads 5 whereby the attaching means is connected to the transmitter. The body-portion 10 at its outer end is formed with a laterally-extending annular flange 12 which when the body-portion 10 is mounted in position abuts against the outer face of the plate 3. Projecting from the flange 12 is a flaring holder 13 slitted at various points to provide inwardly-extending clamping arms 14, which are adapted to engage the periphery of the mouth-piece when the latter is mounted in the holder 13 and retain the mouth-piece in position. The holder 13 is furthermore slitted at various points to provide inwardly-extending piercing barbs or teeth 15, which when the mouth-piece is mounted in the holder 13 are adapted to pierce the mouth-piece so that after the mouth-piece has been used by an individual and during the act of removal, the barbs or teeth 15 will destroy the inner portion of the mouth-piece so that the latter cannot be used again and therefore it necessitates the employment of a new mouth-piece when it is desired to again use the telephone. The attaching means is formed preferably of thin metal, but it is obvious that any suitable material can be employed.

In Fig. 3 the pedestal 2 is shown provided with a bracket 16 for supporting a nest 17 of mouth-pieces within reach of the individual who is to use the telephone so that he can conveniently remove a mouth-piece and mount the same in the holder 13 for use and after using the telephone will then remove the mouth-piece and crush it or as before stated, the barbs or teeth 15 will de-

stroy the mouth-piece in removal so that it cannot be used again.

Referring to Fig. 4, a modified form of attaching means or carrier is inserted in and connected to the ordinary mouth-piece 18 of the telephone. The attaching means or carrier in Fig. 4 consists of a conical-shaped body-portion 19 provided with a clamping flange 20 which is adapted to bind against the periphery of the mouth-piece 18 at the outer end thereof as clearly shown in Fig. 4 whereby the attaching means or carrier is fixedly secured in position. The body-portion 19 is provided with clamping arms 21 and piercing barbs or teeth 22.

In Figs. 5 and 6, the attaching means is illustrated as integral with the front plate 23 of the transmitter and consists of a conical-shaped body-portion 24 formed integral intermediate its end with the plate 23 and having its inner end provided with an inwardly-extending annular flange 25. The body-portion is formed with the clamping arms 26 and the piercing barbs or teeth 27.

In Fig. 8 the diaphragm 8 is shown attached to the arms 7 and the disk 6^b secured against the diaphragm 8.

The clamping arms 21 in Fig. 4 and the clamping arms 26 in Fig. 6 perform the same function as the clamping arms in Figs. 1 and 2 and the piercing barbs in Fig. 4 and Fig. 6 perform the same function as the piercing barbs or teeth 15 in Figs. 1 and 2.

The attaching means or carriers illustrated in Figs. 1, 4 and 6 are constructed of any suitable material preferably metal.

If desired, the periphery of each of the mouth-pieces can be provided with suitable advertising matter or with instructions for their individual use.

The manner in which the mouth-piece is used with the attaching means or carriers is as follows: The attaching means or carrier is first connected to the transmitter and it will now be assumed that the sound transmitting device is desired for use by an individual. The person using the device removes one of the mouth-pieces from the nest or from any other suitable support upon which the mouth-pieces are mounted or the mouth-piece may be given to the individual by an attendant. The individual places the small end of the mouth-piece within the holder 13 and against the flange 12, the barbs or teeth piercing the mouth-piece and the spring arms 14 clamping the mouth-piece in position in the holder 13. The diaphragm 8 in the mouth-piece is capable of transmitting sound and allowing free and full conversation while the device is being used and, as before stated, will prevent any disease germs or other substances passing into the transmitter. When the conversation is ended the individual simply pulls out the cup and during such operation it is de-

stroyed for further use owing to the action of the piercing barbs or teeth 15 causing the mouth-piece to become torn as it is removed. The foregoing method is employed whenever a mouth-piece is used.

A novel feature of the invention is that the mouth-piece can be used as an advertising medium, the advertising matter not only being upon the periphery of the mouth-piece but also upon the inner face thereof.

What I claim is:—

1. In combination, a flexible mouth-piece for a telephone closed at its inner end by a sound penetrable diaphragm, and a carrier having a plurality of resilient arms for clamping the mouth-piece to hold it in position.

2. In combination, a flexible mouth-piece for a telephone closed at its inner end by a sound penetrable diaphragm, and a detachable carrier having a plurality of resilient arms for clamping the mouth-piece to hold it in position.

3. In combination, a removable cup-shaped mouth-piece for telephones, and a carrier for attaching the mouth-piece to a telephone transmitter and provided with means for destroying the mouth-piece as the latter is removed from the carrier.

4. In combination, a removable mouth-piece for telephones capable of being destroyed during the act of removal, and a carrier for connecting the mouth-piece to a telephone transmitter and provided with resilient arms for securing the mouth-piece in position and also provided with means for destroying the mouth-piece during its removal from the carrier.

5. In combination, a mouth-piece for telephones formed of light flexible material capable of being destroyed when removed from the telephone, and a carrier connected with the transmitter of the telephone and adapted to receive the mouth-piece and provided with resilient arms for retaining the mouth-piece in position and further provided with piercing barbs for destroying the mouth-piece during the removal thereof from the carrier.

6. In combination, a removable mouth-piece for telephones capable of being destroyed during the act of removal, a carrier for connecting the mouth-piece to a telephone transmitter and provided with resilient arms for securing the mouth-piece in position and also provided with means for destroying the mouth-piece during its removal from the carrier, and a sound penetrable diaphragm secured to the mouth-piece.

7. In combination, a mouth-piece for telephones formed of light flexible material capable of being destroyed when removed from the telephone, a carrier connected with the transmitter of the telephone and adapted to receive the mouth-piece and provided with resilient arms for retaining the mouth-piece

in position and further provided with piercing barbs for destroying the mouth-piece during the removal thereof from the carrier, and a sound penetrable diaphragm secured to the mouth-piece.

8. In combination, a mouth-piece for telephones formed of light flexible material capable of being destroyed when removed from the telephone, and a carrier adapted to be mounted in the face plate of a telephone transmitter and adapted to receive the mouth piece and provided with resilient arms for retaining the mouth-piece in position.

9. A telephone mouth-piece substantially conical in contour and formed of paper, and a sound penetrable diaphragm secured to the mouth-piece, and a carrier for detachably connecting the mouth-piece to a telephone transmitter and provided with means for destroying the mouth-piece during the removal of the latter from the carrier.

10. As a new article of manufacture, a mouth-piece for sound transmitting devices composed of light flexible material of sufficient rigidity and capable of being readily destroyed, a perforated disk secured to the mouth-piece at the inner end thereof and constituting a closure for the outlet of the mouth-piece, and an imperforate sound penetrable diaphragm secured to the mouth-piece and constituting means to prevent the passage of moisture, germs and dirt through the outlet end of the mouth-piece.

11. As a new article of manufacture, a mouth-piece for sound transmitting devices composed of light flexible material of sufficient rigidity and capable of being readily destroyed, a perforated disk secured within the mouth-piece at the inner end thereof, and a carrier for attaching the mouth-piece to a telephone transmitter.

12. As a new article of manufacture, a mouth-piece for sound transmitting devices composed of light flexible material of sufficient rigidity and capable of being readily destroyed, a perforated disk secured within the mouth-piece at the inner end thereof and constituting a closure for the outlet of the mouth-piece, an imperforate sound penetrable diaphragm arranged within the mouth-piece and constituting means to prevent the passage of moisture, germs and dirt through the outlet end of the mouth-piece, and a carrier for attaching the mouth-piece to a telephone transmitter.

13. As a new article of manufacture, a mouth-piece for sound transmitting devices composed of light flexible material of sufficient rigidity and capable of being readily destroyed, a perforated disk secured within the mouth-piece at the inner end thereof and constituting a closure for the outlet of the mouth-piece, and a carrier for attaching the mouth-piece to a telephone transmitter and

provided with means for destroying the mouth-piece while the latter is being removed from the carrier.

14. As a new article of manufacture, a mouth-piece for sound transmitting devices composed of light flexible material of sufficient rigidity and capable of being readily destroyed, a perforated disk secured within the mouth-piece at the inner end thereof and constituting a closure for the outlet of the mouth-piece, an imperforate sound penetrable diaphragm arranged within the mouth-piece and constituting means to prevent the passage of moisture, germs and dirt through the outlet end of the mouth-piece, and a carrier for attaching the mouth-piece to a telephone transmitter and provided with means for destroying the mouth-piece while the latter is being removed from the carrier.

15. A sound transmitting device mouth-piece substantially conical in contour and formed of paper and having its reduced end provided with a reinforcing band whereby said reduced end is of greater rigidity than its enlarged end.

16. In combination, a sound transmitting device mouth-piece substantially conical in contour and formed of paper and having its reduced end of greater rigidity than its enlarged end, a perforated paper disk secured to the reduced end of the mouth-piece, and a sound penetrable impervious disk secured to the reduced end of the mouth-piece and arresting the passage of moisture, breath, dust and disease germs through the reduced end of the mouth-piece.

17. As a new article of manufacture, a mouth-piece for sound transmitting devices composed of light flexible material of sufficient rigidity and capable of being readily destroyed, a perforated disk secured to the mouth-piece at the inner end thereof and constituting a closure for the outlet end of the mouth-piece, and a moisture-proof diaphragm secured to the mouth-piece in proximity to the perforated disk.

18. In combination with a mouth-piece for sound transmitting devices substantially conical in contour, a perforated closure at one end of the mouth-piece, and a moisture-proof disk composed entirely of paper and arranged in proximity to the perforated disk.

19. A sound transmitting device mouth-piece substantially conical in contour and formed of paper and having its reduced end of greater rigidity than its enlarged end, and a carrier for attaching the mouth-piece to a sound transmitting device and provided with means for destroying the mouth-piece while the latter is being removed from the carrier.

20. In combination, a sound transmitting device mouth-piece substantially conical in

contour and formed of paper and having its reduced end of greater rigidity than its enlarged end, a perforated paper disk secured to the reduced end of the mouth-piece, a sound penetrable impervious disk secured to the reduced end of the mouth-piece and arresting the passage of moisture, breath, dust and disease germs through the reduced end of the mouth-piece, and a carrier for attaching the mouth-piece to a sound transmitting device and provided with means for destroying the mouth-piece while the latter is being removed from the carrier.

21. As a new article of manufacture, a mouth-piece for sound transmitting devices composed of light flexible material of sufficient rigidity and capable of being readily destroyed, a perforated disk secured to the mouth-piece at the inner end thereof and constituting a closure for the outlet end of the mouth-piece, a moisture-proof diaphragm secured to the mouth-piece in proximity to the perforated disk, and a carrier for attaching the mouth-piece to a sound transmitting device and provided with means for destroying the mouth-piece while the latter is being removed from the carrier.

22. In combination with a mouth-piece for sound transmitting devices substantially conical in contour, a perforated closure at one end of the mouth-piece, a moisture-proof disk composed entirely of paper and arranged in proximity to the perforated disk, and a carrier for attaching the mouth-piece to a sound transmitting device and provided with means for destroying the mouth-piece while the latter is being removed from the carrier.

23. As a new article of manufacture, a mouth-piece for sound transmitting devices comprising a shell constructed of impervious

paper, a perforated disk connected to the outlet end of the shell and formed of paraffin paper, and a sound penetrable moisture-proof disk secured to the outlet end of the shell and formed of paraffin paper.

24. A sound transmitting device mouth-piece substantially conical in contour having its reduced end provided with inwardly-extending retaining arms, and a circular member arranged within said mouth-piece and abutting against said arms.

25. A sound transmitting device mouth-piece substantially conical in contour having its reduced end provided with inwardly-extending retaining arms, a circular member arranged within said mouth-piece and abutting against said arms, and a reinforcing band for the reduced end of said mouth-piece.

26. A sound transmitting device mouth-piece substantially conical in contour having its reduced end provided with inwardly-extending retaining arms, and a circular member arranged within said mouth-piece and abutting against said arms, said member provided with a plurality of perforations.

27. A sound transmitting device mouth-piece substantially conical in contour and having its reduced end provided with inwardly-extending retaining arms, a circular member arranged within said mouth-piece and abutting against said arms, said member provided with a plurality of perforations, and a reinforcing band for the reduced end of said mouth-piece.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN GRAHAM.

Witnesses:

HERBERT RAY BURGESS,
RHEA W. GRAHAM.