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3,217,708

MOUTHPIECE PROTECTOR

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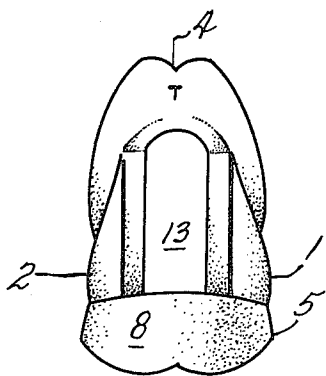


FIG 1.

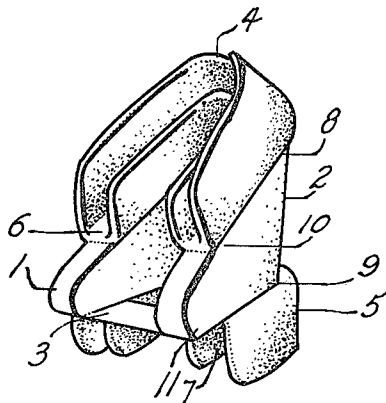


FIG 2.

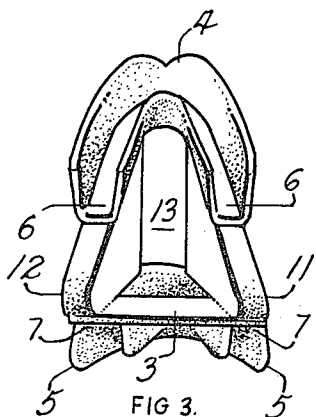


FIG 3.

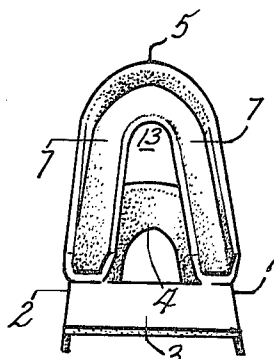


FIG 4.

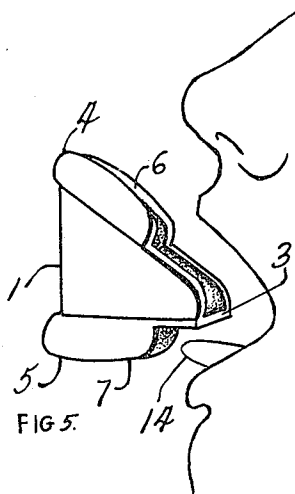


FIG 5.

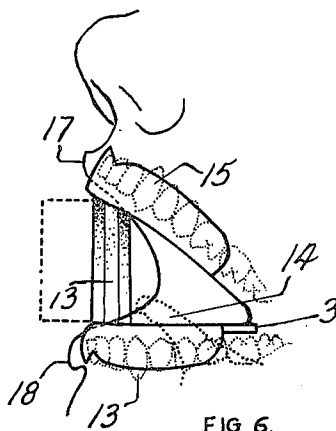


FIG 6.

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## MOUTHPIECE PROTECTOR

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1 Claim. (Cl. 128—136)

This invention relates to a new mouthpiece protector for people who suffer biting the lips, tongue and jaws and other injuries by the teeth and to be worn internal to the mouth. The new protector is adapted for use in keeping the mouth open and tongue regulated while undergoing epilepsy seizures or similar spasmodic attacks, my protector will prevent biting the lips, tongue and jaws and additional injuries caused by the teeth and preventing additional harm to the teeth during such attacks.

The main object of this invention is to provide protection for the lips, teeth, tongue and jaws without interference of normal breathing or free discharge of accumulated saliva that often will cause a choking sensation. A further object of the invention is to provide a protective mouthpiece for the mouth which cannot be swallowed or forced into or become lodged in the affected persons throat and still another object of my mouthpiece protector is to provide a protective device for the mouth and provide such protection when needed and yet enable the wearer to easily dispense or eject the protector from the mouth when the services are no longer required.

In the past various devices and objects have been used to stop or prevent lip, tongue and jaw biting, but have been generally dissatisfactory for a number of reasons. Protectors made of metal prongs or wooden objects and other types of rubber devices, are both crude and cumbersome and often interfere with the victim's need for better breathing. These devices often result in chipping of the enamel, or in the breaking of the teeth when the said devices are forced into a person's mouth. Additional injuries to the person effected may therefore occur due to bad judgment on the part of the person rendering assistance in attempting to force these crude instruments into the victim's mouth when it is substantially closed. Victims of such attacks can push those crude cumbersome objects out of their mouths during gasping for breath or push them further into the mouth to become lodged in the throat by uncontrollable chewing of the teeth because of lack of coverup of the teeth and gums.

My new mouthpiece protector invention overcomes the many defects of the named crude and cumbersome objects and provides adequate protection for the lips, teeth, tongue and jaws without interfering with normal oral breathing and free discharge of saliva and without any danger of being swallowed or lodged in the throat of the wearer. In fact the mouthpiece protector can be quickly and easily removed or ejected from the mouth by the victim or passerby should difficulty arise either in the home or street.

My mouthpiece protector invention is capable of fitting mouths of differing shapes and sizes. To fit almost anyone and to be worn comfortably under pressure and tension. Also to fit within the price of anyone needing such protection.

Additional objects of my invention will be brought out in the described illustrations and appended drawings, wherein a preferred embodiment of the invention is shown, and like reference numerals are employed to indicate corresponding parts in the drawings:

FIGURE 1 is a front elevational view of the protector showing the top portion of the mouthpiece.

FIGURE 2 is a rear perspective view of the mouthpiece.

FIGURE 3 is a rear elevational view of the mouthpiece.

FIGURE 4 is a top plan view of the mouthpiece.

FIGURE 5 is a side view of the mouthpiece partially in perspective, showing its relationship to the user just prior to insertion.

FIGURE 6 is a side view showing the mouthpiece protector in its operative position within the user's mouth, showing how the teeth and the tongue of the user are protected thereby.

The projector is of soft material, such as para rubber or soft plastic or the like, and formed to provide a soft but flexible device or similar type, wherein, the front view seen in FIGURE 1 shows the structural portions indicating the (T) U shape mouthpiece 4 bonded to the two angle slope and slanted side walls 1 and 2 which slope from a maximum depth at the front to a minimum depth in the rear, (B) U shape mouthpiece 5 is bonded at the base of the two side walls 1 and 2, thereby forming the central air passage alley 13. The two angle sloping side walls 1 and 2 require considerably more thickness in construction to assure proper firmness in holding the two U shape trough portion mouthpieces, which are of regular thin and flexible rubber design to enable anyone of any mouth shape to use.

The perspective view shown in FIG. 2, shows the two sloped side walls 1 and 2 rising in an upward and elevated 70 to 90 degree angle to its peak. To assure a snug and firm fit the top U shape trough portion, mouthpiece 4 is bonded to the front vertical area 8 adjacent to the upper cuspid and extends downward and parallel to lower part of mouthpiece 4 at the molar end 10. The side walls 1 and 2 diverge from longitudinal axis of the mouthpiece at an angle of approximately 20 to 40 degrees, as better seen in FIGURES 3 and 4, in order to conform more nearly to the formal mouth configuration. The holding portion of side wall end 11 runs onward to vertical lower front end 9 and rests bonded to lower bottom U shape mouthpiece 5. The inward lower portion of the side wall 11 serves to bond the abutment strip 3 underneath the two side walls 1 and 2 at the end of mouthpiece 5. The trough portion 7 is bonded to the abutment strip 3 to maintain stability and as a guide for the tongue when the mouth is open or partly open. This prevents slipping of the mouthpiece protector device when it is inserted into the mouth and gripped by the teeth. This permits the wearer complete freedom and ease in breathing.

The rear to front view of FIG. 3 is expanded at the rear to fit the inner portions of the cheeks adjacent to the corners of the open mouth, thereby giving additional assistance in the retaining of the mouthpiece protector snugly. It is easier in maneuvering the mouthpiece both into and out of the mouth. The two-side angle walls 11 and 12 diverge outwardly towards the rear with bonded abutment strip 3 shown at its underneath position to provide better retention of the tongue in its natural state at the bottom of the mouth. The central air passage alley 13 that also serves as the saliva discharge outlet is important to this invention in easing additional tension during a major attack of epilepsy or similar convulsions. However, the elevated rise of the device fits the contours of the open mouth and the angle rise permits the upper mouthpiece 4 to fit its intended position for proper upper teeth and gums protection by the open trough 6. The lower and bottom mouthpiece 5 with the trough 7 fit and cover the lower teeth and gums assuring stability in holding the protector rigid and abutment strip 3 over the tongue. In FIG. 4 there is a clear view of the abutment strip 3 horizontal in its upside down bonded position to the side angle walls 1 and 2 and also

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rearward portions of the walls 11 and 12 which are actually extensions of the side walls 1 and 2. In the upside down position of FIG. 4 can also be seen the lower and bottom mouthpiece troughs 5 and 7 in addition to the central air passage 13 that also continues to be seen at the top as in FIG. 3. The abutment strip 3 which serves as the tongue depressor is flat and firmer rubber than the side angle walls 1 and 2. The abutment strip must give greater flexibility in the up and down chewing pressure from the upper teeth. The abutment strip which forms the upper wall of a trough for receiving and guiding the wearer's tongue also will permit a slight movement of the tongue therein which may be necessary for the comfort of the patient.

The ready position of side angle FIG. 5 for inserting the mouthpiece protector in the open or partial open mouth can be seen as the tongue 14 protrudes past the lower lip to meet the abutment strip 3 which is horizontal to the tongue in alignment with the jaw followed by bottom mouthpiece 5 and trough portion 7. The vertical elevated rise of the side angle wall 1 extending upward to secure bonded upper mouthpiece 4 with trough 6 in line to meet the upper lip and cheek, conforms to the open mouth contours. The side sectional view of FIG. 6 shows the mouthpiece protector in its operative position of the open mouth and showing curved cheek in black line extending through the side wall past the central air passage 13 with dotted lines to show correct and true height measurement if the need be to enable a more perfect fit in the event of an odd mouth shape. The upper mouthpiece protector in heavy lines indicate the position of the cuspid in relationship to the upper part mouthpiece fitting under the teeth to receive its downward pressure and tension upon the side wall by the cuspid 15 on the side wall portion of the central air passage downward to the lower mouthpiece shown also in heavy black lines with the full weight distributed to the lower cuspid 13. The up and down pressure from the chew and grip is transmitted along the upper mouthpiece to the upper molar and distributed to the lower mouthpiece to the lower molars at the rear abutment strip 3. The tongue 14 is retained in a substantially prone position by the abutment strip 3 but allows some freedom of movement that will aid to push accumulated saliva through the central air passage alley 13 while cool air continues to travel throughout the mouth to lessen tension of the convulsion. The upper lip 17 and lower lip 18 serve to retain mouthpiece while the protector is in its operative position in the open mouth.

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From the foregoing it can be seen that this invention provides an adequate protection for the lips, teeth, tongue and jaws, that prevents biting or injuring the named organs and enabling the wearer freedom of oral breathing and discharge of saliva from the open mouth. This new mouthpiece protector can be inserted readily and easily in the open or partial open mouth due to the development which is geared to conform with the structure of the normal and abnormal mouth, lips, teeth, tongue and jaws and can be inserted in seconds as well as in ejecting or removing. The other important advantage of this invention is due to the soft rubber or plastic use in making the protector to allow elasticity in placing properly over the tongue and groves of the trough to fit the teeth, with the rear abutment strip as a depressor assuring safety in preventing the device getting stuck or lodged in the throat or mouth.

Having described my invention, I claim:

A mouthpiece-gag having front and rear ends for placement between the upper and lower sets of teeth in the mouth of a user to prevent biting of the lips, tongue and cheeks, comprising an upper U shaped trough having a bottom and adjoining upwardly extending side walls and arranged to engage the upper set of teeth, a lower U shaped trough having a top and adjoining downwardly extending side walls and arranged to engage the lower set of teeth, said troughs being angularly spaced, interconnecting oppositely disposed side walls disposed between said troughs, said interconnecting walls having the shape of right triangles with bottom horizontal edges resting on top of the lower trough, vertical edges extending between said troughs at the front end of the mouthpiece and forwardly and upwardly extending top edges supporting the bottom of the upper trough, said top edges extending upwardly from the rear end of the mouthpiece and a horizontal abutment strip rearwardly positioned between the ends of the lower trough and bridging between the horizontal edges of the interconnecting walls, said troughs, interconnecting side walls and strip being formed of flexible material.

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