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M. WALLSHEIN

3,312,216

TONGUE-THRUSTING INHIBITING DEVICES

Filed July 22, 1963

FIG. 1

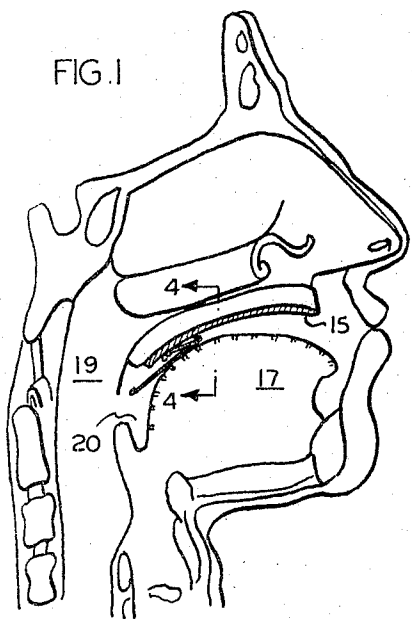


FIG. 2

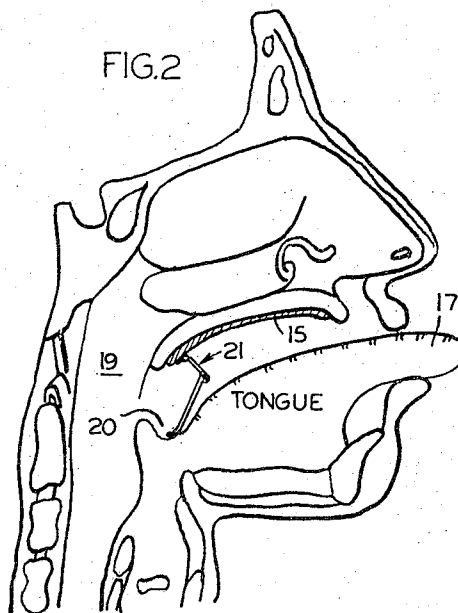


FIG. 3

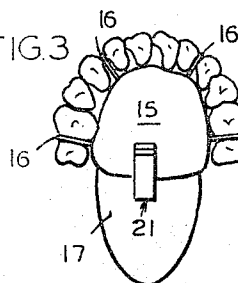


FIG. 4

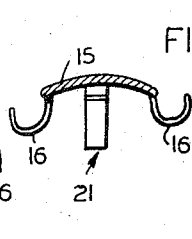


FIG. 5

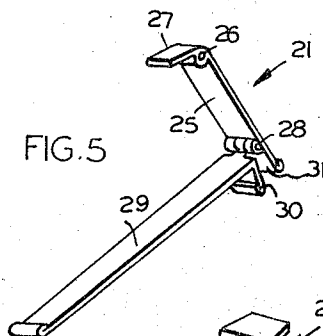


FIG. 6

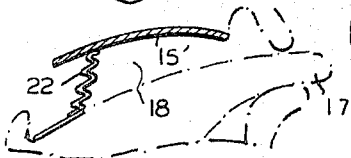


FIG. 8

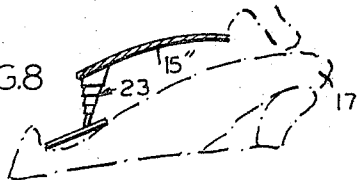


FIG. 10

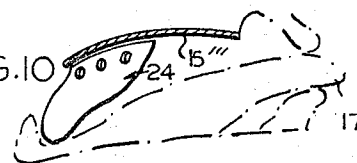


FIG. 9

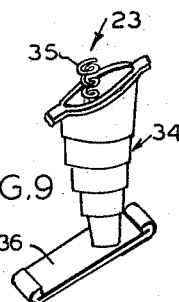


FIG. 7

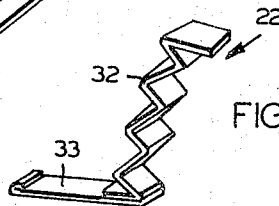
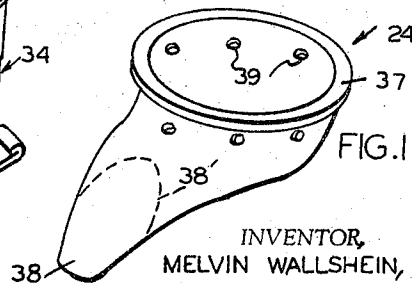


FIG. 11



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TONGUE-THRUSTING INHIBITING DEVICES

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12 Claims. (Cl. 128-136)

The present invention relates to novel anti-tongue-thrusting appliances which are carried in the mouth to inhibit such a bad tendency.

The principal object of this invention is to provide tongue-thrusting inhibitors to be carried in the mouth, which cause no detrimental feeling or objectionable incident while the tongue is wholly in the mouth, but which upon thrusting of the tongue outward, will cause the wearer such an annoyance that the tongue will have to be retracted to stop the inconvenience.

Another object thereof is to provide appliances of the character mentioned, which are attached to the upper teeth in the manner of a denture.

A further object of this invention is to provide tongue-thrusting inhibitors of the kind set forth, which are simple in construction, reasonable in cost, easy to mount and remove, and which are efficient in carrying out the purposes for which they are designed.

Other objects and advantages will become apparent as this disclosure proceeds.

For the practice of this invention, one form it may assume is to have a frame piece which is adapted to be releasably mounted on the upper teeth in the manner of a denture. The plate is provided with a normally extended contractible means which is in contracted condition when the tongue is wholly inside the mouth and the mouth is closed. Though such means contacts the tongue, there is no objectionable sensation due to its presence because at the region of contact which is between the front and rear teeth, the tongue soon acclimates itself to and is not bothered by the presence of said means. However, as the tongue is thrust forwardly out of the mouth, said contracted means automatically extends itself, drops towards the oesophagus and bears against the far reaches at the base of the tongue in the vicinity of the epiglottis where the tongue region is extremely sensitive. The resulting annoyance which is caused to occur, compels the wearer of such appliance to retract the tongue and close the mouth, for only by such action will said means automatically assume its contracted condition or be able to be restored to contracted condition by tongue or finger manipulations thereon.

It is to be noted that when the mouth is closed, the tongue assumes a hump-form and is close to the palate plate. When the tongue is thrust out of the mouth, it flattens and thins, thereby creating a substantial space between itself and the palate plate. This fall and rise of the tongue with respect to the palate, are herein utilized to operate the annoyner means:

In the accompanying drawing forming part of this specification, similar characters of reference indicate corresponding parts in all the views.

FIG. 1 is a side view showing a tongue-thrusting inhibiting appliance embodying the teachings of this invention, mounted in a mouth which is closed. Here, the tongue holds the contractible means in contracted condition.

FIG. 2 is like FIG. 1, but here the tongue is thrust out of the mouth and the said means has assumed its extended condition and position.

FIG. 3 is a view of the appliance shown mounted in the mouth on the upper teeth and the contractible means is in contact with the tongue. This view is taken looking upward into the mouth.

FIG. 4 is a front elevation of the appliance.

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FIG. 5 is a perspective view of the normally extended, contractible means shown in FIG. 1.

FIG. 6 is a side view of an appliance of modified form mounted in a mouth out of which the tongue is extending. Here the contractible means is a normally extended, resilient accordion-fold blade spring.

FIG. 7 is a perspective view of the blade spring included in FIG. 6.

FIG. 8 is a view like FIG. 6, showing another form of appliance. Here, the contractible means is offered by a spring-biased, normally extended telescopic structure.

FIG. 9 is a perspective view of said telescopic structure.

FIG. 10 is a view like FIG. 6, showing still another modified construction embodying this invention, using a resilient sack.

FIG. 11 is a perspective view showing such sack.

The FIGS. 5, 7, 9 and 11 are enlarged views.

In the drawing, the numeral 15 designates a plate of acrylic, plastic or other suitable material, held against the palate in a mouth in the nature of a denture, by the hooks extending therefrom, which are releasably snapped on selected upper teeth locations so that such plate is securely mounted. On the underside of said plate 15, there is secured one end of an normally extended, contractible structure which the tongue holds in contracted condition when it is within the mouth and the mouth is closed as shown in FIG. 1, for the tongue 17 is then very near said palate plate 15. However, when the tongue is thrust out of the mouth, it thins and flattens, dropping in position as shown in FIG. 2, whereby a large space 18 is created within the mouth. When this happens, said means, several embodiments of which are indicated generally by the numerals 24, 21, 22 and 23, automatically assumes its normal extended condition. This causes its free end to move rearwardly downwardly towards the oesophagus 19 and become lodged against the extremely sensitive region at the base of the tongue in the vicinity of the epiglottis 20, thereby causing considerable annoyance to the wearer, who thereupon must bring the tongue back into the mouth to restore said extended means to its contracted condition and position, in order that said nuisance shall cease.

The contractible means 21 is a hinge structure comprised of the links or leaves 25 and 29 which are hinged together by the pin 28 and extend rearwardly in the mouth with said hinge pin from right to left and forward of the distal ends of said leaves. When the tongue is out of the mouth as in FIG. 2, the leaf 25 extends downwardly forwardly and the leaf 29 extends downwardly rearwardly; said leaves then being in an obtuse angle relation; the upper end of the leaf 25 being hinged secured at the rearward central section of the underside of the palate plate 15, by an axis pin through the hole 26. I prefer to provide stop means to limit the extent of extension, this hinge structure 21 is capable of. So, there may be the rearwardly extending tab 27 from the attached end at 26 to stop against the palate plate 15, and the tabs 30 and 31 extending from the pivotally joined ends of the leaves 29 and 25 respectively which are adapted to contact each other upon the occurrence of a predetermined extension of the hinge structure as shown in FIG. 2, thus permitting the hinge to open no further. In contracted condition when the tongue is in and the mouth is closed, the hinge is in or very nearly in closed condition as shown in FIG. 1, for the tongue is in a humped formation and extends nearly up to the palate plate. Should the mouth be opened and the tongue thrust outward therefrom as in FIG. 2, the tongue will thin and flatten and the hinge 21 will automatically open due to the action of gravity, whereupon the distal end of the leaf 29 will bear against the sensitive area and cause annoyance to the wearer. Now upon bringing the tongue

inward and closing the mouth, the tongue will again assume its humped condition and thus automatically raise and close the hinge 21, thereby restoring it to its original location where it is not bothersome.

The normally extended, contractible means 22 comprises a resilient accordion-pleated blade spring 32 which is secured at its upper end to the rear central portion of the underside of the palate plate 15' and carries a rearwardly extending shoe or foot element 33. The fold lines of said accordion-fold spring extend from right to left in the mouth. When said spring is extended, its general line extends rearwardly downwardly so that the rear edge of its foot will bear against the sensitive area in the mouth. When the mouth is closed and the tongue is in, said spring 32 is collapsed and its foot sits on the tongue where it does not bother the wearer. But as soon as the tongue is thrust outward of the mouth, said spring 32 will automatically assume extended condition for its foot 33 to cause annoyance to the wearer.

The contractible means 23 comprises a telescopic structure 34 which is biased by an internal compression coil spring 35 to be normally in extended condition. At the lower end of such structure, there is a foot 36. The upper end of said telescopic structure is secured to the rear central portion of the underside of the palate plate 15". When the tongue is in and the mouth is closed, the said structure is in collapsed condition and its foot sits on the tongue where it does not bother the wearer. But as soon as the tongue is thrust out of the mouth, said structure 34 will automatically extend whereupon its foot will bear against the sensitive region in the mouth and cause annoyance to the wearer.

The contractible means 23 comprises a telescopic rubber-like material, whose mouth flange 37 is secured to the rearward central region of the underside of the palate plate 15"". Said sack is normally in extended condition and is so shaped that it extends rearwardly downwardly where its end is a sort of teat 38 which sets against the sensitive area in the mouth when the tongue is thrust outward of the mouth. However, when the tongue is in and the mouth is closed, this sack is collapsed and rests on the tongue at a forward region where it does not bother the wearer. As soon as the tongue is thrust out of the mouth, said sack will automatically extend whereupon its teat 38 will assume the position to cause an annoyance.

Each of the normally extended, contractible means 21-24, automatically assumes extended condition upon a thrust of the tongue out of the mouth and it is to be noted that the hinge means 21 is fully automatic in its action, for it also collapses upon bringing the tongue in and closing the mouth. To make the means 22, 23 or 24 to collapse, it may be brought to such condition by use of the fingers, or the tongue must be drawn into the mouth and its tip directed towards the back of the mouth to work said means to collapse and be restored to its forward position against the tongue at about the region where the leaf 29 touches the tongue in FIG. 1, to have the annoyance cease. It may be noted that the sack 24 is collapsed by having the tongue manipulate the teat region to enter the sack as is shown started at 38'; said sack being provided with holes 39 for the passage of air.

This invention is capable of numerous forms and various applications without departing from the essential features herein disclosed. It is therefore intended and desired that the embodiments shown herein shall be deemed merely illustrative and not restrictive and that the patent shall cover all patentable novelty herein set forth; reference being had to the following claims rather than to the specific description and showing herein to indicate the scope of this invention.

I claim:

1. A tongue-thrusting inhibiting device of the character described, comprising a frame piece adapted to fit into a user's mouth adjacent the palate in releasably fixed engagement with the upper teeth in the mouth, and a freely contractible tongue-contacting means having two ends; said means being biased to extended condition when contracted; one of the ends thereof being mounted on the frame piece and the other end adapted to contact the tongue; said means extending downwardly rearwardly from the frame piece whereby on mounting the device in the mouth when the tongue is within the mouth, the said other end of said means will contact the tongue at a position forward of the oesophagus, and said means will be in contracted condition, whereupon opening the mouth and thrusting the tongue outwardly therefrom causing the tongue to move downwardly from the palate, said means will automatically become extended and the said other end thereof will bear against the far reaches of the epiglottis to cause annoyance to the user.

2. A device as defined in claim 1, wherein said contractible means is adapted to automatically assume contracted condition by the normal movement of the tongue towards the palate when the tongue is drawn into the mouth and the mouth is closed after said means has been extended by the tongue being thrust out of the mouth.

3. A device as defined in claim 2, wherein said contractible means is a hinge structure comprising a comparatively short leaf and a comparatively long leaf; said leaves being in a movable hinged relationship; the distal end of said shorter leaf being hinged to said frame piece; both said hinge axes being from side to side in the mouth when the frame piece is mounted in the mouth; the hinge axis joining said leaves being forward of the other hinge axis when the device is mounted in the mouth.

4. A device as defined in claim 3, wherein said hinge structure includes means to limit the movement of said shorter leaf away from the frame piece and to limit the extent said hinge structure is permitted to open when the tongue is thrust out of the mouth.

5. A device as defined in claim 1, wherein said contractible means is a self-openable and closable accordion-pleated member.

6. A device as defined in claim 1, wherein said contractible means is a resilient accordion-pleated blade spring.

7. A device as defined in claim 1, wherein said contractible means is a telescopic structure.

8. A device as defined in claim 1, wherein said contractible means is a resilient rubber-like sack capable of being everted; said sack having a mouth rim.

9. A device as defined in claim 8, wherein the mouth rim of the sack is secured to said frame piece; said device being provided with an air vent communicative with said sack.

10. A device as defined in claim 9, wherein the bottom of the sack is in the form of a teat.

11. A device as defined in claim 9, wherein the wall of the sack is provided with a vent hole.

12. A device as defined in claim 1, wherein said frame piece is a palate plate.

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