

#### Search history

Search 1: FT=((snoring OR (sleep\* W3 breath\*)) near (device OR system OR apparatus)) and PD<20140206 and IC=(A61F5\* OR A61C7\*) (Results 752)

Search 2: 1 AND (CC= CO) (Results 0)

Search 3: 1 AND (FT = (lower AND upper) near (jaw OR member)) (Results 153)

Search 4: 3 AND (FT = tie OR extend\* OR arm) (Results 125)

Search 5: 4 AND (FT = flexible OR elastic) (Results 72)

Search 6: 5 AND (FT = (hole or groove)) (Results 31)

**Title:** ANTI-**SNORING DEVICE**, HAS ROD-LIKE ELEMENT HELD BETWEEN TEETH, BALL-LIKE ELEMENT MOUNTED AT LOWER SURFACE OF TONGUE, AND **ELASTIC** MOLD INCLUDING THROUGH **HOLES** AND INSERTED UNDER STRESS IN NOSTRILS, FOR KEEPING ALINASAL OPEN

**Abstract:** The device has a ball-like element (9) mounted at a lower surface of tongue (2) in an oral region. The ball-like element is held by an adjustable traction device at ears, so that the tongue is compressed towards palate (5) during sleep. A rod-like element (8) is connected with the traction device by a connecting part. The rod-like element is held between teeth and has an opening via which flow of air in respiratory system is maintained. An **elastic** mold has through **holes** and is inserted under stress in nostrils, for keeping alinasal open.

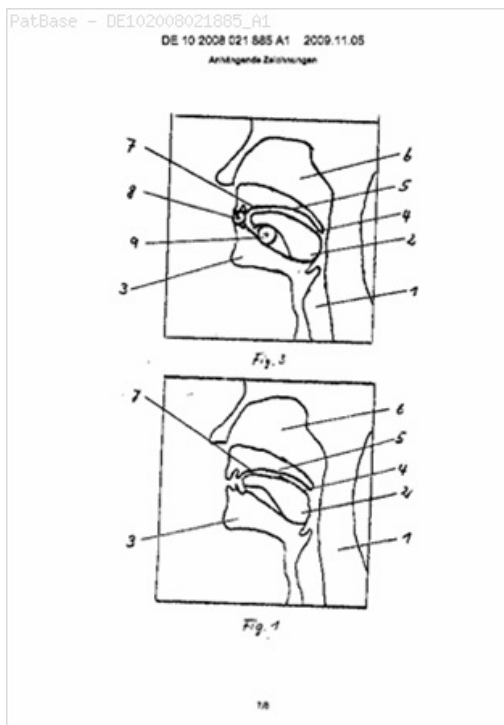
**Classifications:**

**International (IPC 8-9):** A61F5/56 (Advanced/Invention);

A61F5/56 (Core/Invention)

**CPC:** A61F5/566

**European:** A61F5/56B



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| DE102008021885 A1  | 20091105         | DE200810021885     | 20080502         |

**Priority:**

DE200810021885 20080502

**Probable Assignee:**

LI WU

**Assignee(s):** (std):

LI WU

**Inventor(s):** (std):

LI WU

**Title:** NASAL DEVICES, SYSTEMS AND METHODS

**Abstract:** Source: US2011218451A Described herein are passive nasal device having a resistance to exhalation that is greater than the resistance to inhalation. Also described are devices, methods and systems for sensing and measuring intranasal pressure when a subject is wearing a passive nasal respiratory device that is configured to inhibit exhalation more than inhalation. Also described are adapters for nasal devices and methods of using a nasal device adapter. Adapters may be used so that a passive nasal device may be applied indirectly in communication with a subject's nose; in some variations this may allow the passive nasal device to be re-used. Also described herein are nasal devices having a billowing airflow resistor that is configured to have a greater resistance to exhalation than to inhalation. The billowing airflow resistor typically includes a first layer that is adjacent to a second layer; the first layer is **flexible** and billows opens during inhalation so that the first layer remains separated from the second layer, but remains substantially parallel to the second layer. During exhalation, the first layer collapses back down against the second layer. Additional passive nasal devices, systems and methods of using them are also described.

**Classifications:**

**International (IPC 8-9):** A61B5/085 A61F5/56

A61M16/00 (Advanced/Invention);

A61F5/56 A61M16/00 (Core/Invention)

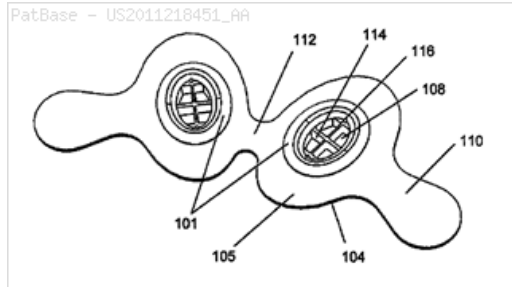
**CPC:** A61F5/56 A61M15/08 A61M15/085 A61M16/0666 A61M16/0866

A61M16/106 A61M16/0858 A61M2205/0216

**European:** A61F5/56 A61M15/08 A61M16/06L K61M15/08B

K61M16/08R

**US:** 128/848 128/848S 600/533 600/533P



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2011218451 AA    | 20110908         | US20090062888      | 20090915         |
| WO10031040 A2      | 20100318         | WO2009US56948      | 20090915         |
| WO10031040 A3      | 20100722         | WO2009US56948      | 20090915         |

**Priority:**

US20080097187P 20080915      US20080103545P 20081007      US20080105292P 20081014  
WO2009US56948 20090915      US20090062888 20090915

**Probable Assignee:** THERAVENT INC

**Assignee(s):** (std): DOSHI RAJIV ; DOWNING JONATHAN ; FERDINAND ARTHUR ; PIERCE RYAN K ; LOOMAS BRYAN ; MINO TORU ; LAI DANNY YU YOUH ; HATANAKA MOTOHIDE ; SANDOVAL ARTHUR G ; WONG MICHAEL P ; VENTUS MEDICAL INC ; SUMMERS JONATHAN PATRICK ; SERVAITES JEFFREY W ; SATHER ELLIOT

**Assignee(s):** THERAVENT INC ; VENTUS ASSIGNMENT FOR BENEFIT OF CREDITORS LLC

**Inventor(s):** (std): DOSHI RAJIV ; DOWNING JONATHAN ; FERDINAND ARTHUR ; HATANAKA MOTOHIDE ; LAI DANNY YU YOUH ; LOOMAS BRYAN ; MINO TORU ; PIERCE RYAN K ; SANDOVAL ARTHUR G ; SATHER ELLIOT ; SERVAITES JEFFREY W ; SUMMERS JONATHAN PATRICK ; WONG MICHAEL P

**Agent(s):** SHOOP RICHARD D ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** A PALATE RETAINER WITH ATTACHED NASOPHARYNGEAL AIRWAY **EXTENDER** FOR USE IN THE TREATMENT OF OBSTRUCTIVE SLEEP APNEA

**Abstract:** Source: US2011178439A A medical appliance for the treatment of obstructive sleep apnea in a patient, the appliance comprising: a securing device configured to be removably affixed to the patient's jaw; and a biasing member which is insertable behind the soft palate and/or the base of the patient's tongue, thereby providing for the flow of air in the nasopharyngeal airway; wherein the securing device is connected to the biasing member to allow insertion and/or removal of the biasing member from the nasopharyngeal airway.

**Classifications:**

**International (IPC 8-9):** A61B1/04 A61B5/11 A61F5/56

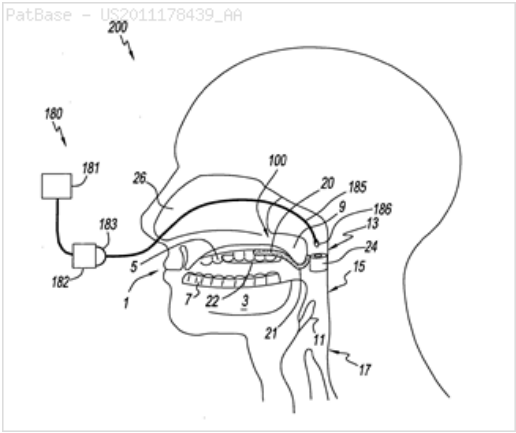
B23P17/04 (Advanced/Invention);

A61F5/56 (Core/Invention)

**CPC:** Y10T29/49826 A61F5/566

**European:** A61F5/56B

**US:** 128/848 128/848S 29/428 29/428S 600/109 600/109S 600/590 600/590P



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AU2009298395 AA    | 20100408         | AU20090298395      | 20091002         |
| AU2009298395 BB    | 20141120         | AU20090298395      | 20091002         |
| CA2739292 AA       | 20100408         | CA20092739292      | 20091002         |
| DE602009026340 D1  | 20141009         | DE200960026340T    | 20091002         |
| EP2331035 A1       | 20110615         | EP20090818548      | 20091002         |
| EP2331035 A4       | 20120613         | EP20090818548      | 20091002         |
| EP2331035 B1       | 20140827         | EP20090818548      | 20091002         |
| US2011178439 AA    | 20110721         | US20090120964      | 20091002         |
| WO10040026 A1      | 20100408         | WO2009US59333      | 20091002         |

**Priority:**

EP20090818548 20091002 US20080194956P 20081002 WO2009US59333 20091002  
US20090120964 20091002

**Probable Assignee:** LUMEN DEVICES LLC

**Assignee(s):** (std): FLAHERTY J CHRISTOPHER ; FRIEDMAN MICHAEL ; IRWIN JOHN N ; LUMEN DEVICES LLC

**Assignee(s):** LUMEN DEVICES LLC GREENWICH ; FLAHERTY J

**Inventor(s):** (std): FLAHERTY J CHRISTOPHER ; FRIEDMAN MICHAEL ; IRWIN JOHN N

**Inventor(s):** J CHRISTOPHER FLAHERTY ; JOHN N IRWIN ; MICHAEL FRIEDMAN ; FLAHERTY J

**Agent(s):** IP GATEWAY PATENT AND TRADEMARK ATTORNEYS; IP GATEWAY PATENT AND TRADEMARK ATTORNEYS PTY LTD; IP GATEWAY PATENT AND TRADE MARK ATTORNEYS PTY LTD; SIM AND MCBURNEY; VON KREISLER SELTING WERNER PARTNERSCHAFT VON PATENTANWALTEN U RECHTSANWALTEN MBB; VON KREISLER SELTING WERNER; VON KREISLER SELTING WERNER PARTNERSCHAFT VON PATENTANWALTEN U RECHTSANWALTEN MBB; GREELEY PAUL D

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** DEVICE FOR USE IN MOUTH OF PATIENT TO PREVENT **SNORING**, HAS ADJUSTING **DEVICE** THAT IS INSERTABLY AND LINGUALLY ATTACHED IN ATRIUM OF REGION WITH RESPECT TO TOOTH ROW IN UPPER TOOTH RECEIVING TRACK TO PROJECT HOOK ELEMENT DOWNWARDLY FROM PLANE

**Abstract:** The device (1) has a connection element that is attached at a lower tooth receiving track. A hook element is detachably connected with the connection element. An adjusting device (4) is insertably and lingually attached in an atrium of a region with respect to a tooth row in an upper arc-shaped tooth receiving track (2) in an inner area to project the hook element downwardly from a lower delimiting plane to the track (2), where the region and the inner area are enclosed by the tooth receiving track.

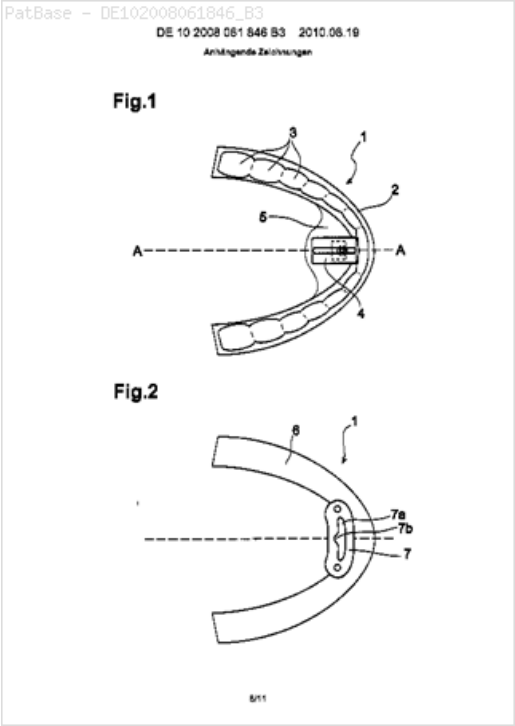
**Classifications:**

**International (IPC 8-9):** A61F5/56 (Advanced/Invention);

A61F5/56 (Core/Invention)

**CPC:** A61F5/566

**European:** A61F5/56B



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| DE102008061846 B3  | 20100819         | DE200810061846     | 20081215         |

**Priority:**

DE200810061846 20081215

**Probable Assignee:**

RAMOSER HORST

**Assignee(s):** (std):

RAMOSER HORST

**Inventor(s):** (std):

RAMOSER HORST

**Title:** ORAL SLEEP APNOEA DEVICE

**Abstract:** Source: US2014332011A An oral treatment **device** for sleep apnoea and **snoring**, including a pad adapted to rest under the tongue of a user, so as to support the tongue from below, and engage the lower surface of the tongue using a reflex action of the relaxed tongue, the tongue flow adaptation effect. Implementations also include textured surfaces on the front of the device to encourage the tongue-tongue reflex and tongue protrusion. The device is designed to be tolerated for relatively long periods of time, and minimise any disruption to sleep, while providing effective tongue positioning.

**Classifications:**

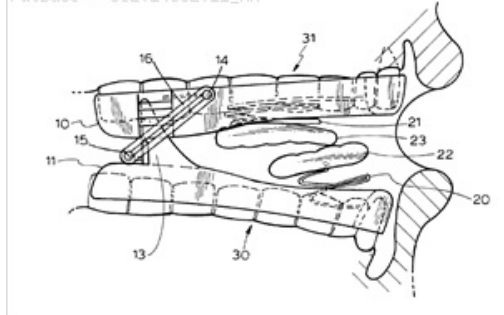
**International (IPC 8-9):** A61C11/04 A61C7/08

A61F5/56 (Advanced/Invention)

**CPC:** A61F5/566

**US:** 128/848

PatBase - US2014332011\_AA



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AU2011254095 BA    | 20120315         | AU20110254095      | 20111216         |
| AU2012350369 AA    | 20130620         | AU20120350369      | 20121217         |
| AU2012350369 BB    | 20160519         | AU20120350369      | 20121217         |
| CA2857697 AA       | 20140602         | CA20122857697      | 20121217         |
| EP2790618 A1       | 20141022         | EP20120856591      | 20121217         |
| EP2790618 A4       | 20150715         | EP20120856591      | 20121217         |
| US2014332011 AA    | 20141113         | US20120365030      | 20121217         |
| WO13086586 A1      | 20130620         | WO2012AU01546      | 20121217         |

**Priority:**

AU20110254095 20111216 AU20120350369 20121217 WO2012AU01546 20121217

**Probable Assignee:** HIBOBI PTY LTD

**Assignee(s):** (std): HIBOBI PTY LTD

**Assignee(s):** HIBOBI PTY LTD29 GLENEAGLES AVENUENEW SOUTH WALES 2071KILLARAAU ; TUREK GREGORY

**Inventor(s):** (std): TUREK GREGORY

**Inventor(s):** TUREK GREGORYAU

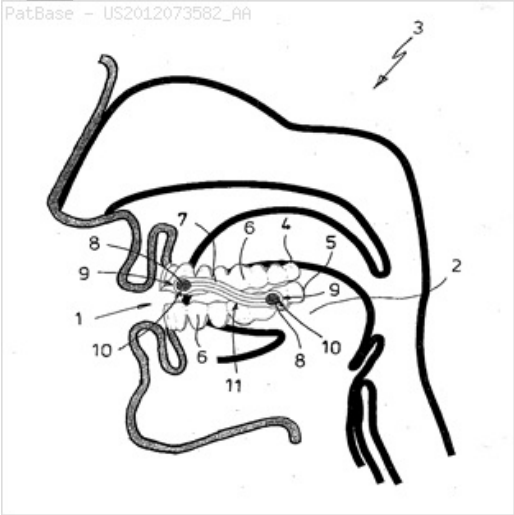
**Agent(s):** FRANKE HYLAND; BENOIT AND COTE INC; KIPA AB

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** ANTI-**SNORING DEVICE**

**Abstract:** Source: US2012073582A An intraoral anti-**snoring device**, for shifting the **lower jaw** forward in relation to the **upper jaw**, with an **upper jaw** bar and a **lower jaw** bar that are both U-shaped and are connected to each other in a hinge joint at their outer flanks facing away from each other via protrusion **ties** by means of fixing buttons. At each of the two end sections of the protrusion **tie**, a round **hole** is provided for accepting the fixing button. The invention proposes a curved design for the protrusion **tie**, specifically an S-shaped design, with the center section having a cross-sectional contour--at least in part--that permits a temporary change of the distance of the round **holes** relative to each other by means of an **elastic** deformation of the protrusion **tie** in the longitudinal and in transverse direction. Preferably, the center section has an elongated **hole** that **extends** from one round **hole** to the other round **hole** and has a width that is smaller than or equal to the diameter of the round **hole**. Due to the resulting longitudinal edge strips that are capable of spring action, the fixing button is able to avoid excessive pressure by moving into the elongated **hole**.

**Classifications:**  
**International (IPC 8-9):** A61C5/14 A61F5/56 (Advanced/Invention)  
**CPC:** A61F5/566  
**European:** A61F5/56B  
**US:** 128/848 128/859



**Family:**

| Publication number | Publication date | Application number | Application date |
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| DE102010046369 A1  | 20120329         | DE201010046369     | 20100924         |
| DE102010046369 B4  | 20130124         | DE201010046369     | 20100924         |
| US2012073582 AA    | 20120329         | US20100973088      | 20101220         |
| US8640705 BB       | 20140204         | US20100973088      | 20101220         |

**Priority:**

DE201010046369 20100924

**Probable Assignee:** ERKODENT ERICH KOPP GMBH  
**Assignee(s):** (std): ERKODENT ERICH KOPP GMBH ; KOPP HANS PETER  
**Inventor(s):** (std): KOPP HANS PETER  
**Agent(s):** RENNER OTTO BOISSELLE AND SKLAR LLP

**Title:** APPARATUS AND METHODS FOR THE TREATMENT OF SLEEP APNEA

**Abstract:** Source: US2013312768A A medical apparatus for the treatment of one or more sleep disorders such as obstructive sleep apnea in a patient is provided. The apparatus comprises an elongate member with a middle portion, a first fixation element and a second fixation element. The middle portion applies a force to a segment of a patient's airway.

**Classifications:**

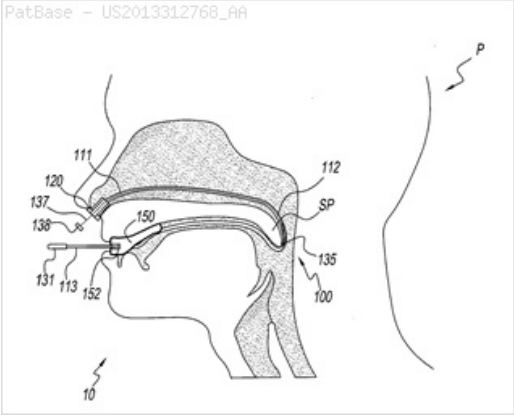
**International (IPC 8-9):** A61F11/00 A61F2/20

A61F5/56 (Advanced/Invention)

**CPC:** A61F5/566

**European:** A61F5/56B

**US:** 128/848



**Family:**

| Publication number | Publication date | Application number | Application date |
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| US2013312768 AA    | 20131128         | US20120985977      | 20120216         |
| US2017266034 AA    | 20170921         | US20170611085      | 20170601         |
| US9668911 BB       | 20170606         | US20120985977      | 20120216         |
| WO12112783 A1      | 20120823         | WO2012US25458      | 20120216         |

**Priority:**

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| US20110443839P | 20110217 | US20120985977 | 20120216 | WO2012US25458 | 20120216 |
| US20170611085  | 20170601 | US20130985977 | 20130816 |               |          |

**Probable Assignee:** LUMEN DEVICES LLC

**Assignee(s):** (std): FLAHERTY CHRISTOPHER J ; FLAHERTY J CHRISTOPHER ; FRIEDMAN MICHAEL ; GARIBOTTO JOHN T ; GORMAN WILLIAM J ; IRWIN III JOHN N ; LUMEN DEVICES LLC

**Inventor(s):** (std): FLAHERTY CHRISTOPHER J ; FLAHERTY J CHRISTOPHER ; FRIEDMAN MICHAEL ; GARIBOTTO JOHN T ; GORMAN WILLIAM J ; IRWIN III JOHN N

**Agent(s):** ONELLO AND MELLO LLP; GREELEY PAUL D

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** SNORING AND OBSTRUCTIVE SLEEP APNEA PREVENTION AND TREATMENT DEVICE

**Abstract:** Source: US2012234332A A anti-snoring and anti-obstructive sleep apnea apparatus has a plate or metal frame tongue shelf splint to prevent the flaccid tongue falling back, a palate shelf splint projection to elevate the soft palate and prevents its vibration, incisors teeth receptacles or pockets sockets for jaw displacer to hold the mandible moved forwards, and to prevent it falling back held between the bite block, catheter-tubing to administer oxygen supplementation from the external source which reduces air turbulence and promotes nasal breathing, a submental suprahyoid muscle stimulator placed below the tongue, and above the mucous membrane. An injection port is provided to administer any therapeutic agents and local anesthetics to reduce the sensitivity of the tongue and oral cavity mucus membrane lining to the foreign objects. This device is used to deliver therapeutic agents to prevent and to treat halitosis and various diseases.

**Classifications:**

**International (IPC 8-9):** A61F5/56 A61M16/00 (Advanced/Invention)

**CPC:** A61M16/0488 A61F5/566 A61M19/00 A61M2202/0208

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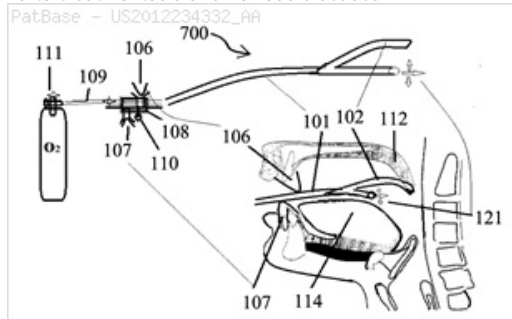
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**European:** A61F5/56B A61M16/04M A61N1/05K5 A61N1/36C

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K61M210/06D6

**US:** 128/848

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2012234332 AA    | 20120920         | US20120485955      | 20120601         |

**Priority:**

US20120485955 20120601

**Probable Assignee:**

SHANTHA TOTADA R

**Assignee(s):** (std):

SHANTHA TOTADA R

**Inventor(s):** (std):

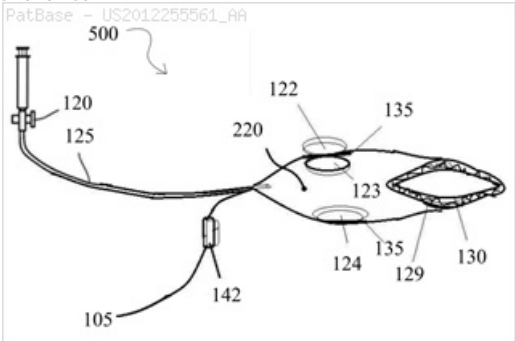
SHANTHA TOTADA R

**Title:** DEVICE FOR SNORING AND OBSTRUCTIVE SLEEP APNEA TREATMENT

**Abstract:** Source: US2012255561A A **device** for **snoring** and obstructive sleep apnea treatment has an oral **elastic** glove portion adapted to removably cover a free moving portion of a user's tongue. Three vacuum suction cups are used to attach the device to the hard palate and the dorsal and ventral surfaces of the tongue in order to hold the device in place without allowing the tongue to move backwards. A vacuum creating cannula and a syringe attached to a tip of the device to create a vacuum once the device is positioned in the user's mouth. In addition, a balloon is provided to prevent soft palate vibrations. A skin attachment pad is removably attached to the user's face close to the mouth and holds the end of a string provided to secure the tongue glove from moving during sleep or be accidentally swallowed.

**Classifications:**

**International (IPC 8-9):** A61C5/00 A61F5/56  
A61M16/00 (Advanced/Invention);  
A61C17/06 A61C19/06 A61C5/14 A61M25/02 (Advanced/Non-invention)  
**CPC:** A61F5/566 A61C17/043 A61C19/063 A61M25/02 A61C5/90  
**European:** A61F5/56B  
**US:** 1/1 128/848



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
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**Priority:**

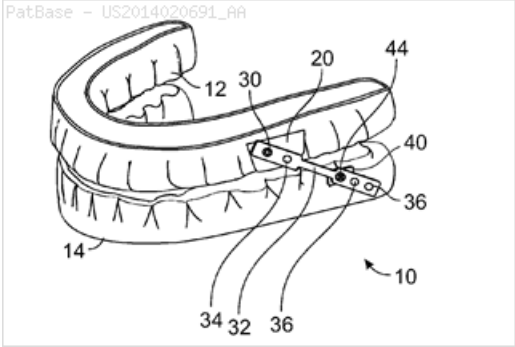
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| <b>Probable Assignee:</b>  | SHANTHA TOTADA R         |
| <b>Assignee(s):</b> (std): | SHANTHA TOTADA R         |
| <b>Inventor(s):</b> (std): | SHANTHA TOTADA R         |
| <b>Agent(s):</b>           | PATWRITE LLC; MARK DAVID |

**Title:** ORAL APPLIANCE FOR TREATMENT OF MEDICAL CONDITIONS SUCH AS OBSTRUCTIVE SLEEP APNEA AND SNORING AND FOR IMPROVING ATHLETIC PERFORMANCE AND METHOD OF OPTIMIZING SAME

**Abstract:** Source: US2014020691A An oral appliance for treatment of medical conditions, such as obstructive sleep apnea and snoring, and/or for improving athletic performance, comprises a maxillary and a mandibular baseplate component each configured to conform to at least some of the teeth of the user; at least one pair of straps adjustably coupling the baseplate components, wherein the strap defines the relative horizontal positioning of the baseplate components; at least one pair of shim holding brackets coupled to one baseplate component; and a plurality of shims, wherein each shim is replaceably received in the shim holding bracket and configured to abut against the other baseplate component, wherein the shim when received within the shim holding bracket defines the relative vertical positioning of the baseplate components, and wherein the shims are provided in varying heights to allow for varying the vertical positioning of the oral appliance for a specific user.

**Classifications:**  
**International (IPC 8-9):** A61F5/56 (Advanced/Invention)  
**CPC:** A61F5/566  
**US:** 128/848



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2014020691 AA    | 20140123         | US20130945850      | 20130718         |

**Priority:**  
US20120672989P 20120718                      US20130945850 20130718  
**Probable Assignee:**     REST ASSURED TECHNOLOGIES  
**Assignee(s):** (std):     REST ASSURED TECHNOLOGIES  
**Inventor(s):** (std):     SWEENEY JAMES G ; SWEENEY JAMES E ; MICCO JOHN