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(54) **HOOKAH CLOSURE SYSTEM**

(57) The present invention relates to a closure system (1) for a hookah, comprising an upper closure member (3) configured to be connected to a hookah hose and/or a hookah stem and a lower closure member (5) configured to be connected to a water container, an assembling aid (37) configured to define an orientation of the upper closure member (3) with regard to the lower closure member (5) for assembling the upper and lower closure members (3,5) with each other, and an actuating member (7) configured to cooperate with the assembling aid (37) to secure the upper and lower closure members (3,5) to each other.

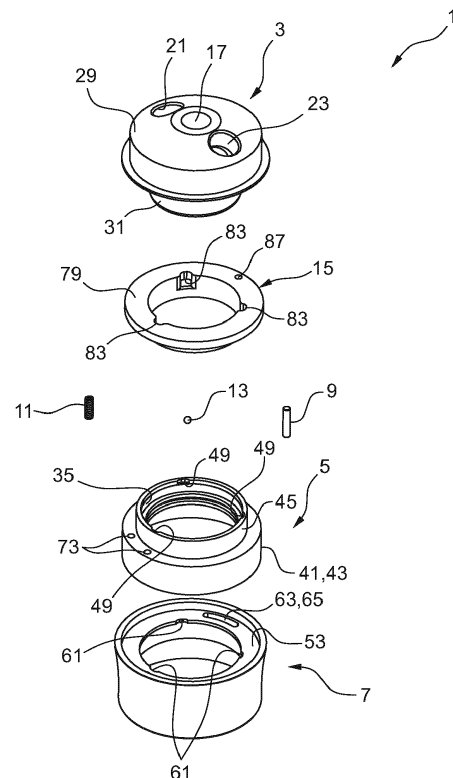


Fig. 1

Description

TECHNICAL FIELD

[0001] The present invention relates to a closure system for a hookah. Further, the present invention relates to a hookah

TECHNICAL BACKGROUND

[0002] Water pipes, also Shisha or Hookah, usually comprise a water container or bowl that is sealingly closed by a closure head attached to the water container. The closure head is generally designed as a multipart component in order to facilitate assembly and disassembly to and from the water container respectively the smoking equipment to be attached thereto. Thereby, a lower closure member is attached to the water container and an upper closure member to be tightly connected to the lower closure member is designed to be connected to the smoking equipment. Therefore, the upper closure member comprises a center connection for connecting to a smoke pipe, to which upper end a tobacco and coal assembly is attached, extending through the lower closure member into the water container and two further connections for attaching at least one smoke hose and potentially a purge valve.

[0003] In order to ensure a reliable functioning of the hookah it is essential that the closure head completely seals the water container. Leakage between the lower and the upper closure members causes an unsatisfying usage of the hookah. Further, the connections to the smoke pipe, the at least one smoke hose and the purge valve need to be tight as well. It has been found out that known closure systems, such as screw closures, snap-fit closures or a bayonet catch, either have the disadvantage of long assembly respectively disassembly times or tend to be not tight or permanent enough in particular due to unintentional releasing of the closure system.

[0004] From EP3011848B1 a hookah closure system is known that essentially consists of three parts, namely a lower closure part to be attached to the water base, an upper closure part with the connections for the at least one hookah hose and the hookah stem, and an activating sleeve for securely fixing the lower and upper closure parts together and for releasing the attachment between the lower and upper closure parts. The closure principal bases on a combination of a spring biasing and a catch mechanism. In the closure state of the closure system, when the activating sleeve is in its passive state, the spring biasing causes the catch mechanism to secure the lower and upper closure parts with each other, when activating the activating sleeve, the spring biasing must be overcome, thereby releasing the catch mechanism in order to enable disassembly of the lower and upper closure parts. The catch mechanism is realized by several circumferentially spaced through holes in the lower closure part in which locking balls are movably arranged

and a circular groove formed on the outside circumference of the upper closure part. The locking balls may be forced into the circular groove by the activating sleeve thereby establishing a form and force fitting attachment of the lower and upper closure parts. By activating the activating sleeve the locking balls are disengaged from the circular groove in order to enable disassembly of the lower and upper closure parts.

[0005] However, assembly of the closure system is very complicated in particular due to the high number of parts necessary. Further, the catch mechanism with the movable locking balls is on the one hand difficult to mount and on the other hand requires an elaborate and expensive manufacturing of the catch mechanism elements such that the through holes in the lower closure member, the groove in the upper closure member and the locking ball itself are imperfectly adapted with regard to each other in terms of dimensioning. The closer system according to EP3011848B1 does further not provide assistance in terms of a defined locking respectively releasing activating direction of the activating sleeve.

[0006] Therefore, there is a need to provide a simplified and more user-friendly hookah closure system.

SUMMARY

[0007] It is an object of the present invention to overcome the above-mentioned disadvantages of the state of the art, particularly to provide a hookah closure system with a simplified and/or more user-friendly assembly and disassembly mechanism, wherein particularly the sealing function is not impaired.

[0008] This objective is solved by the subject matter of the independent claims. Advantageous embodiments are subject to the dependent claims and will be set out herein below.

[0009] A general idea of the invention relates to providing a hookah closure system with an assembling aid that may be configured such that a wrong assembly of the hookah closure system is prohibited. This may be achieved by providing a predefined mounting direction and mounting orientation of its components. Additionally, by using the assembly aid also for securing respectively releasing the closure system a simple, cost-efficient and easy to handle hookah closure system is achieved.

[0010] A further general idea of the present invention relates to equipping the closure system with a sliding guide means for switching between a closed state of the hookah closure system and a released state of the hookah closure system. The sliding guide means provides the user with a predefined and limited actuation movement which is also very intuitive.

[0011] According to a first aspect of the present invention, a closure system for a hookah is provided. The closure system comprises an upper closure member configured to be connected to a hookah hose and/or a hookah stem. For example, the upper closure member may comprise three connections for attaching at least one

hookah hose and a hookah stem and potentially an adapter cone providing air outlet. The connections may be through holes possibly having a threading, snapping or clamping mechanism for easy and secure attachment of the hookah hose respectively hookah stem. The closure system further comprises a lower closure member configured to be connected to a water container. The connection between the lower closure member and the water container may be realized by any suitable means.

[0012] Additionally, an assembling aid is provided having an assembly state in which assembly of the upper and lower closure members with each other is enabled and a blocking state in which assembly of the upper and lower closure members with each other is disabled. The assembling aid may for example define a predetermined direction, position and/or orientation of the upper and lower closure members with regard to each other in which assembly is enabled. When the upper and lower closure members do not coincide with the predetermined direction, position and/or orientation assembly of the upper and lower closure members may be disabled.

[0013] According to the first aspect of the present invention, the hookah closure system further comprises an actuating member configured to cooperate with the assembling aid in order to secure the upper and lower closure members to each other. Due to the fact that the assembling aid is on the one hand used for easy and correct assembly of the lower and upper closure members and on the other hand for fixing the upper and lower closure members to each other the closure system according to the present invention requires less parts respectively components than known prior art closure systems while at the same time providing advantages with regard to assembly and usability. The actuating member may cooperate with the assembling aid such that in an assembled state of the upper and lower closure members with each other disassembly is prohibited. In other words, the closure system is active in particular to ensure safe and reliable functioning of the hookah. For example, the actuating member may have a passive state, in which the upper closure member may be disassembled from the lower closure member, and an active state, in which the upper closure member is secured to the lower closure member against disassembly. Assembly of the upper closure member with the lower closure member may be realized by insertion of one component into the other. For example, the upper and lower closure members may be configured such that the upper closure member may be inserted into the lower closure member in a telescope-manner.

[0014] According to an example embodiment of the hookah closure system according to the present invention, the assembling aid is realized by a corresponding, particularly form-fitting, protrusion-notch-structure arranged on the upper and lower closure members. In other words, at least one protrusion, preferably several protrusions, may be arranged on one of the upper and lower closure members and at least one notch, preferably sev-

eral notches, may be arranged on the other of the upper and lower closure members. The number of protrusions may equal the number of notches. For example, the upper and lower closure members may be rotationally formed sleeves having a rotational axis. An assembly respectively disassembly direction of the upper and lower closure members may be parallel with regard to the rotational axis. The protrusion-notch-structure may define at least one predetermined assembly position, preferably two, three or four predetermined assembly positions, direction and/or orientation, depending on the number of protrusions respectively notches provided.

[0015] According to a further example embodiment of the present invention, the protrusion-notch-structure is realized by at least one upper closure member-sided protrusion and/or notch and by at least one lower closure member-sided notch and/or protrusion, which engage with each other upon mounting the upper closure member with the lower closure member. The notch may be oriented in the lengthwise direction of the respective closure member. The upper closure member-sided protrusion may be arranged on an outer circumference of a preferably cylindrical shaped assembly socket. The lower closure member-sided notch may be arranged on an inner circumference of a ring-shaped or sleeve shaped assembly socket corresponding to the assembly socket of the upper closure member.

[0016] According to a further example embodiment of the present invention, the assembling aid defines a guiding assembly path and/or an axial stop defining an axial end assembly position of the upper closure member with regard to the lower closure member. Therefore, false assembly may be prohibited. Additionally, the axial stop facilitates establishing the assembly end position. By the guiding assembly path, the upper closure member may be guided into the assembly end position which is given when abutting, preferably in a translational direction, against the axial stop.

[0017] According to a further example embodiment of the present invention, the upper and lower closure members are configured such that the upper closure member may be inserted into the lower closure member in a telescope-manner. Further, the assembling aid comprises at least two protrusions arranged on an outer circumference of the upper closure member and at least two notches, particularly extending in the lengthwise direction of the lower closure member, arranged on an inner circumference of the lower closure member. Upon mounting the upper closure member with the lower closure member each protrusion may engage with one notch. The number of protrusions may equal the number of notches. The notches may have the same shape and/or dimension. Further, the protrusions may have the same shape and/or dimension.

[0018] According to a further example embodiment of the present invention, the actuating member, when securing the upper and lower closure members to each other, engages the protrusion-notch-structure. For ex-

ample, the actuating member engages the protrusion-notch-structure such that the notch or guiding path is blocked in order to prevent relative movement of the upper and lower closure members. In particular, relative movement in the lengthwise, telescope and/or a rotational direction is prevented.

[0019] According to a further example embodiment of the present invention, the actuating member is a rotational sleeve with an inner locking ring configured to engage the assembling aid, in particular the protrusion-notch-structure. The inner locking ring may protrude into the notch or guiding path in order to prevent disassembly of the upper and lower closure members from one another.

[0020] According to a further example embodiment of the present invention, the locking ring comprises at least one indentation allocated to the protrusion-notch-structure such that the indentation may form a continuous groove or path with the notch in order to allow passage of the protrusion and/or such that the indentation is rotationally offset with regard to the notch in order to secure the upper and lower closure members to each other. The number of indentations may correspond to the number of protrusions and/or notches of the protrusion-notch-structure. Further, the indentations may have the same cross-section as the notches.

[0021] According to a further aspect of the present invention which may be combined with the previous aspect and preferred embodiments, a closure system for a hookah is provided. The closure system comprises an upper closure member configured to be connected to a hookah hose and/or a hookah stem. For example, the upper closure member may comprise three connections for attaching at least one hookah hose and a hookah stem. The connections may be through holes possibly having a threading, snapping or clamping mechanism for easy and secure attachment of the hookah hose respectively hookah stem. The closure system further comprises a lower closure member configured to be connected to a water container. The connection between the lower closure member and the water container may be realized by any suitable means.

[0022] The hookah closure system also comprises an actuating member that has a passive state, in which the upper closure member may be disassembled from the lower closure member, and an active state, in which the upper closure member is secured to the lower closure member against disassembly. According to the second aspect of the present invention, switching between the active and the passive state is performed via a sliding guide means. The sliding guide means may provide a defined and guided actuation movement, thereby facilitating the use of the closure system. The sliding guide means has a further advantage that it only enables an actuation movement in a predetermined direction and/or for a predetermined extent of movement. The sliding guide means may define at least two, preferably exactly two, engagement or locking end positions, one corre-

sponding to the active state, one corresponding to the passive state. Movement beyond the engagement or locking end positions is prohibited such that a quick and reliable securing and releasing of the hookah closure system is provided. For example, the actuation movement of the actuating member which may be a rotational sleeve may be a rotational movement. Locking the hookah closure system may be done by a clockwise rotation and releasing of the hookah closure system may be done by a counterclockwise rotation, or vice versa.

[0023] According to a further example embodiment of the present invention, the sliding guide means is realized by a slot arranged in the actuating member and a slide block arranged on the lower closure member. The slide block shape may be adapted with regard to the slot shape. The slide block may be press-fittingly mounted in an opening of the lower closure member. Further, upon actuating the actuating member in order to switch between the active and passive state the slide block is guided within the slot in particular between two engagement or locking end positions, preferably one corresponding to the active state and one corresponding to the passive state.

[0024] According to a further example embodiment of the present invention, upon actuating the actuating member in order to switch between the active and passive state the slide block is guided within the slot between two end positions corresponding to the active and passive state.

[0025] According to a further example embodiment of the present invention, the actuating member is a rotational sleeve and the slot extends in a circumferential direction with regard to a rotational axis of the rotational sleeve, wherein particularly the circumferential extension of the slot is in the range of 15° to 45°, in particular is 30°. Therefore, a quick and easy assembly and disassembly mechanism is provided.

[0026] According to a further example embodiment of the present invention, the closure system further comprises a catch mechanism defining at least one latching position corresponding to either a passive state of the actuating member, in which the upper closure member may be disassembled from the lower closure member, or an active state, in which the upper closure member is secured to the lower closure member against disassembly. Preferably, the catch mechanism defines two latching positions one of which corresponding to the active state and the other corresponding to the passive state.

[0027] According to a further example embodiment of the present invention, the sliding guide means and the catch mechanism are adapted with regard to each other. In particular, movement via the sliding guide means is adapted with regard to the at least one latching position. For example, the sliding guide means and the catch mechanism are adapted with regard to each other such that each end position of the sliding guide means is allocated to a latching position of the catch mechanism. Additionally or alternatively, the catch mechanism coop-

erates with a biasing means providing a resistibility against actuation of the actuating member. The biasing means may comprise a spring, such as a pressure spring. The catch mechanism may comprise at least one, preferably two, depression formed in the lower closure member and a movable member, such as a ball, preferably adapted in shape with regard to the depression, which engages the at least one depression when engaging the corresponding end position of the actuation member. For example, upon engagement of an end position by the sliding guide means, preferably the slide block, the catch mechanism simultaneously engages, in particular the movable member engages the depression.

[0028] According to a further example embodiment of the present invention, the biasing means further comprises a force transmitter, preferably a rotational sleeve, acting on the spring in order to press the spring for pre-tensioning the movable member into a latching position, preferably into the depression. The force transmitter may be arranged in between the upper and lower closure members. The force transmitter may also function as a cover for the lower closure member.

[0029] According to a further aspect of the present invention which may be combined with the previous aspect and preferred embodiments, a hookah is provided. The hookah according to the invention comprises a closure system configured according to one of the preceding aspects or preferred embodiments.

[0030] According to a further aspect of the present invention, a method for operating a hookah closure system is provided. It is noted that the method according to the invention can be defined such that it realizes the hookah closure system according to the described aspects of the invention, and vice versa.

BRIEF DESCRIPTION OF THE DRAWINGS

[0031] The following detailed description refers to the accompanying drawings. The same reference numbers may be used in different drawings to identify the same or similar elements. In the following description, for purposes of explanation and not limitation, specific details are set forth such as particular structures, functionality, etc. in order to provide a thorough understanding of the various aspects of the claimed invention.

[0032] However, it will be apparent to those skilled in the art having the benefit of the present disclosure that the various aspects of the invention claimed may be practiced in other examples that depart from these specific details. In certain instances, descriptions of well-known devices and methods are omitted so as not to obscure the description of the present invention with unnecessary detail.

Fig. 1 shows an explosive view of an example embodiment of the hookah closure system according to the invention;

Fig. 2 shows a perspective view of an upper closure member of the hookah closure system of figure 1;

Fig. 3 shows a side view of the upper closure member of figure 2;

Fig. 4 shows a cross-sectional view of the upper closure member of figures 2 and 3;

Fig. 5 shows a side view of a cover of the hookah closure system of figure 1;

Fig. 6 shows a top view of the cover of figure 5;

Fig. 7 shows a side view of a lower closure member of the hookah closure system of figure 1;

Fig. 8 shows a top view of the lower closure member of figure 7;

Fig. 9 shows a side view of an actuating member of the hookah closure system of figure 1; and

Fig. 10 shows a top view of the activating member of figure 9.

DETAILED DESCRIPTION

[0033] In the following detailed description of preferred embodiments of the present invention a hookah closure system is generally indicated with the reference numeral 1.

[0034] Referring to Figure 1, the Hookah closure system 1 in an example embodiment is shown in an exploded view. The example embodiment of the Hookah closure system 1, Figure 1 comprises an upper closure member, a lower closure member 5, and an actuating member 7 as main components. As can be further seen in the example embodiment of the Hookah closure system 1 in Figure 1, the Hookah closure system 1 further comprises a slide lock 9 in the form of a guiding pin that is part of a sliding guide means 63 for securing and releasing the Hookah closure system 1 which will be explained later on. Further, a pressure spring 11 of a biasing means and a locking ball 13 of a catch mechanism is shown. Additionally, the Hookah closure system 1 according to Figure 1 comprises a force transmitter 15 in the form of a cover arranged in between the lower and upper closure members 5, 3. Functioning of the Hookah closure system 1 according to the present invention and preferred embodiments of the single components will be explained under reference to Figures 2-10.

[0035] In Figures 2-4, the upper closure member 3 is shown in different views. The upper closure member 3 is essentially manufactured as a solid piece, in particular made out of metal or plastics and essentially comprises a cylindrical shape. As can be best seen in Figure 4, the

upper closure member 3 comprises a central channel 17 for connecting to a Hookah stem (not shown) and for providing fluid communication between the Hookah stem and a water container to be attached to the lower closure member 5. The channel 17 may comprise a thread 19 at least section-wisely provided for attachment of the Hookah stem. Additionally, two further channels 21, 23 are provided for connecting to a Hookah hose and an adapter cone for providing air outlet with regard to the water container. Also, the channels 21, 23 may be equipped with a thread 25 for easy attachment of the respective components. In the channel 17, another thread 27 may be arranged on an opposite end of the channel 17, for example for connecting to a steel pipe (not shown).

[0036] In general, the upper closure member consists of two cylinder sections 29, 31 and an abutment ring or surface 33 protruding the outer diameters of the cylinder sections 29, 31. The upper cylinder section 29 essentially serves for connecting to the Hookah equipment, such as the Hookah hose, the Hookah stem and potentially an adapter cone for ventilation. The lower cylinder section 31 has the function to form the connection with the lower closure member 5 and is designed such that it may be translationally inserted into a corresponding opening 35 (Figure 7, 8) of the lower closure member 5.

[0037] On the outer circumference of the lower cylindrical section 31 which has a lesser diameter than the upper cylindrical section 29 an assembling aid which, in general, is referred to by the reference numeral 37 in the form of three protrusions 39 is formed. According to the present invention, the assembling aid 37 not only serves to facilitate assembly and disassembly, in particular to prohibit false assembly, but also for locking the Hookah closure system 1. Locking the Hookah closure system 1 is realized by securely and releasably attaching the upper and lower closure members 3, 5 with each other.

[0038] Now referring to Figures 7 and 8, the lower closure member 5 is shown in detail. The lower closure member 5 is essentially manufactured in the form of a rotational sleeve with a ring cylindrical wall 41 that comprises a stepped shape consisting of a lower ring cylinder 43 having a bigger diameter to be faced in the water container and a ring cylinder 45 essentially for connecting with the upper closure member 3, in particular with the lower cylindrical section 31. The ring cylinder 43 delimits an opening 47 for receiving a connection section of the water container. As can be best seen in the top view of the lower closure member 5 in Figure 8, the lower closure member 5 comprises the counterparts of the assembling aid 37 in the form of notches 49 provided on an inner circumference 51 of the ring cylinder 45 delimiting the assembly opening 35.

[0039] When comparing Figures 2-4 with Figures 7-8, the functioning of the assembling aid 37 becomes clear. When translationally mounting the upper and lower closure members 3, 5 with each other, in particular in a telescope manner, in particular when translationally inserting the upper closure member 3 into the lower closure

member 5, the upper closure member-sided protrusions 39 engage the lower closure member-sided notches 49. In order to enable and ensure assembly of the upper and lower closure members 3, 5, the orientation of the lower closure member with regard to the upper closure member 5 has to be adapted. In other words, the lower and upper closure member 5, 3 may only be mounted with each other in a predetermined orientation. Due to the fact that the assembly aid 37 comprises three protrusions 39 and three form-corresponding notches 49, three predetermined relative orientations are provided.

[0040] Referring to Figures 9 and 10, the actuating member 7 is shown in detail. The actuating member 7 is realized as a rotational sleeve with an inner locking ring 53 and a sleeve jacket 55 delimiting an opening 57 for receiving the lower closure member 5. The inner diameter of the opening 57 is adapted with regard to the outer diameter of the closure member 5, in particular the ring cylinder 41. Firstly, the locking ring 53 is arranged and dimensioned to be laid on top of a top ring surface 59 of the lower closure member 5 and further serves to cooperate with the assembling aid 37 in order to secure the upper and lower closure members 3, 5 to each other. The sleeve jacket 55 may have a truncated cone-shaped section 60 increasing in diameter which improves usability of the actuating member 7.

[0041] The locking ring 53 comprises three indentations 61, each allocated to the protrusion-notch-structure 39, 49, in particular to the notches 49, such that the indentations 61 may form a continuous groove or path with the notches 49 in order to allow passage of the protrusions 39 in an assembly state, respectively disassembly state of the closure system 1. The indentations 61 may also be oriented rotationally offset with regard to the notches 49 in order to secure the upper and lower closure members 3, 5 to each other, in particular to provide a locking state of the Hookah closure system 1. In other words, in order to enable assembly of the lower and upper closure members 3, 5, the actuating member 7 is to be brought into its passive state in which the upper closure member may be assembled and disassembled from the lower closure member 5. This is realized by positioning the indentations 61 in vertical alignment with the notches 49 so as to provide a continuous guiding path for the notches 39. When the actuating member 7 is brought in its active state in which the upper closure member 5 is secured to the lower closure member 5 against disassembly and in which the upper closure member 3 may not be mounted to the lower closure member 5, a rotational or circumferential offset between the indentation 61 and the notches 49 is adjusted. On the one hand, then, the locking ring 53 blocks the guiding path, respectively, the opening into the notches 49 such that the protrusions 39 may not engage the notches 49. Further, if the upper and lower closure members 3, 5 are mounted to each other, when the actuating member 7 is brought in its active state and the indentations 7 are not aligned with the notches 49, the locking ring 53 now blocks the

guiding path, respectively the exit of the notches 49 in order to prohibit disassembly of the upper and lower closure members 3, 5 from each other

[0042] Again referring to Figures 7, 8 and 9, 10, the sliding guide means 63 of the Hookah closure system 1 according to another aspect of the present invention is described. Via the sliding guide means 63, switching between the active state and passive state of the actuating member 7 is realized, respectively performed. For example, when rotating the actuating member 7 clockwise, the active state is achieved in order to secure the upper and lower closure members 3, 5 to each other, whereas when rotating the actuating member 7 anti-clockwise, the passive state is reached in which assembly, respectively disassembly, of the upper and lower closure members 3, 5 may be done.

[0043] In the example embodiment, as shown in the Figures, the sliding guide means 63 comprises a slot 65 arranged in the actuating member 7, in particular in its locking ring 53. The sliding guide means 63 further comprises the slide block in the form of the slide pin 9, as shown in Figure 1, which is to be fixedly attached to the lower closure member 5. In order to attach the guiding pin 9 to the lower closure member 5, an opening 67 is provided in a top face 69 of the lower closure member 5 facing in the upwards, vertical direction. The guiding pin 9 may be press-fittingly arranged within the opening 67.

[0044] Upon actuating the actuating member 7 in order to switch between the active and passive state of the actuating member 7, the slide block pin 9 is guided within the slot 65. The slot 65 is curved in the circumferential direction in order to enable smooth and guided passage of the guiding pin 9. When mounting the actuating member 7 to the lower closure member 5, the orientation of the actuating member 7 with regard to the lower closure member 5 must be such that the guiding pin 9 is received within the slot 65. For example, the guiding pin 9 vertically, respectively axially protrudes the clocking ring 53. The slot 65 provides two end positions, in particular rotational end positions, corresponding to the active and passive state. In other words, the circumferential extension of the slot 65 defines the possible relative movement, in particular relative rotational movement, of the actuating member 7 with regard to the lower closure member 5. Further, the circumferential extension of the slot 65 defines the necessary relative actuation movement of the actuating member 7 for engaging the active, respectively passive state. For example, the circumferential extension of the slot 65 may be in the range of 50° to 45°, in particular be 30°.

[0045] The Hookah closure system 1 according to an example embodiment of the present invention further comprises a catch mechanism 71 providing, respectively defining, two latching positions, one corresponding to the passive state of the actuating member and one corresponding to the active state of the actuating member 7. The catch mechanism 71 comprises, for example, two circumferentially spaced depressions 73 arranged on the

top surface 69 of the lower closure member 5. Further, the catch mechanism 71 comprises a movable member such as the locking ball 13 shown in Figure 1 which engages the depression 73 to latch or snap into the two end positions defining the active and passive state of the actuating member 7. The locking ball 13 is mounted via a hole 75 in the locking ring 53 of the actuating member 7 when the actuating member 7 is mounted to the lower closure member 5.

[0046] In a further example embodiment of the present invention, as shown in Figures 5 and 6, the Hookah closure system 1 comprises a biasing means which is configured to cooperate with the catch mechanism 71 in order to apply a pretensioning force into the latching positions, respectively in order to provide resistibility against actuation of the actuating member 7 when the latching positions are engaged. For example, the biasing means may comprise a pressure spring 11 also received within the hole 75 in the locking ring 53 after the locking ball 13 has been mounted. The force transmitter 15, preferably provided in the form of a rotational sleeve, is shown in Figures 5 and 6, acts on the pressure spring 13 in order to press the spring 30 for pretensioning the locking ball 13 into one of the resting positions provided by the depressions 73.

[0047] In the assembly state, the sleeve 15 is mounted to the lower closure member 5 in the actuating members 7 such that a lower ring 77 is received within the opening 35 of the lower closure member 5 and an upper ring 79 having a bigger diameter than the lower ring 77 is received within an opening 81 delimited in the axial direction by the locking ring 53 and in the rotational direction by the sleeve jacket 55. As can be seen in particular in Figure 6, the force transmitter sleeve 15 also comprises grooves 83 provided on an inner circumference 85 of the ring 79 and 77 which are adapted with regard to the notches 49 and the indentations 61 in terms of circumferential orientation, shape and dimension. A hole 87 provided on the upper ring 79 is allocated to the guiding pin 9 such that in the assembly state, the guiding pin 9 is received from the bottom within the hole 87. This means that when actuating the actuating member 7, the force transmitter sleeve 15 is rotated together with the actuating member 7. In order to bias the pressure spring 11 in order to pretension the movable member within the latching positions, the pressure spring 11 is dimensioned such that it actually protrudes the hole 87 in the actuating member 7 and such that the force transmitter sleeve 15 may act with a flat ring surface 89 onto the pressure spring 11 to compress the pressure spring 11 in the axial/vertical direction.

[0048] From Figures 8 and 10, it is clear that the circumferential extension of the slot 65 corresponds to the circumferential distance between the two depressions 73 defining the two latching positions that correspond to the active and passive state of the actuating member 7.

[0049] The features disclosed in the above description, the figures and the claims may be significant for the re-

alization of the invention in its different embodiments individually as in any combination.

REFERENCE SIGN LIST

[0050]

1	closure system
3	upper closure member
5	lower closure member
7	actuating member
9	guiding pin
11	pressure spring
13	locking ball
15	force transmitter sleeve
17, 21, 23	channel
19, 25, 27	thread
29, 31	cylinder section
33	abutment surface
35	opening
37	assembling aid
39	protrusion
41	ring cylindrical wall
43, 45	ring cylinder
47	opening
49	notch
51	inner circumference
53	locking ring
55	sleeve jacket
57	opening
59	top ring surface
60	truncated cone-shaped section
61	indentation
63	sliding guide means
65	slot
67	opening
69	top surface
71	catch mechanism
73	depression
75	hole
77, 79	ring
81	opening
83	groove
85	inner circumference
87	hole
89	force transmitting surface

Claims

1. Closure system (1) for a hookah, comprising an upper closure member (3) configured to be connected to a hookah hose and/or a hookah stem and a lower closure member (5) configured to be connected to a water container, an assembling aid (37) having an assembly state in which assembly of the upper and lower closure members with each other is enabled and a blocking state in which assembly of the upper

and lower closure members with each other is disabled, and an actuating member (7) configured to cooperate with the assembling aid (37) in order to secure the upper and lower closure members to each other.

2. Closure system (1) according to claim 1, wherein the assembling aid (37) is realized by a corresponding, particularly form-fitting, protrusion-notch-structure arranged on the upper and lower closure members.

3. Closure system (1) according to claim 1 or 2, wherein the protrusion-notch-structure is realized by at least one upper closure member-sided protrusion and/or notch and by at least one lower closure member-sided notch and/or protrusion, which engage with each other upon mounting the upper closure member (3) with the lower closure member, wherein particularly the notch is oriented in the lengthwise direction of the respective closure member.

4. Closure system (1) according to any of the preceding claims, wherein the assembling aid (37) defines a guiding assembly path and/or an axial stop defining an axial end assembly position of the upper closure member (3) with regard to the lower closure member.

5. Closure system (1) according to any of the preceding claims, wherein the upper and lower closure members are configured such that the upper closure member (3) may be inserted into the lower closure member (5) in a telescope-manner and wherein the assembling aid (37) comprises at least two protrusions arranged on an outer circumference of the upper closure member (3) and at least two notches, particularly extending in the lengthwise direction of the lower closure member, arranged on an inner circumference of the lower closure member, wherein particularly upon mounting the upper closure member (3) with the lower closure member (5) each protrusion engages with one notch.

6. Closure system (1) according to any of claims 2 to 5, wherein the actuating member, when securing the upper and lower closure members to each other, engages the protrusion-notch-structure in particular such that the notch or guiding path is blocked in order to prevent relative movement of the upper and lower closure members.

7. Closure system (1) according to any of the preceding claims, wherein the actuating member (7) is a rotational sleeve with an inner locking ring (53) configured to engage the assembling aid, in particular the protrusion-notch-structure.

8. Closure system (1) according to claim 7, wherein the locking ring (53) comprises at least one indentation

allocated to the protrusion-notch-structure such that the indentation may form a continuous groove or path with the notch in order to allow passage of the protrusion and/or such that the indentation is rotationally offset with regard to the notch in order to secure the upper and lower closure members to each other.

9. Closure system (1), in particular according to one of the preceding claims, for a hookah, comprising an upper closure member (3) configured to be connected to a hookah hose and/or a hookah stem, a lower closure member (5) configured to be connected to a water container, and an actuating member (7) that has a passive state, in which the upper closure member (3) may be disassembled from the lower closure member, and an active state, in which the upper closure member (3) is secured to the lower closure member (5) against disassembly, wherein switching between the active and the passive state is performed via a sliding guide means.
10. Closure system (1) according to claim 9, wherein the sliding guide means (63) is realized by a slot arranged in the actuating member (7) and a slide block arranged on the lower closure member, wherein particularly the slide block is press-fittingly mounted in an opening of the lower closure member.
11. Closure system (1) according to claim 10, wherein upon actuating the actuating member (7) in order to switch between the active and passive state the slide block is guided within the slot between two end positions corresponding to the active and passive state.
12. Closure system (1) according to any of claims 10 to 11, wherein the actuating member (7) is a rotational sleeve and the slot extends in a circumferential direction with regard to a rotational axis of the rotational sleeve, wherein particularly the circumferential extension of the slot is in the range of 15° to 45°, in particular is 30°.
13. Closure system (1) according to any of the preceding claims, further comprising a catch mechanism (71) defining at least one latching position corresponding to either a passive state of the actuating member, in which the upper closure member (3) may be disassembled from the lower closure member, or an active state, in which the upper closure member (3) is secured to the lower closure member (5) against disassembly.
14. Closure system (1) according to claim 13, wherein the sliding guide means (63) and the catch mechanism (71) are adapted with regard to each other, in particular such that each end position of the sliding guide means (63) is allocated to a latching position

of the catch mechanism, and/or wherein the catch mechanism (71) cooperates with a biasing means providing a resistibility against actuation of the actuating member.

15. Hookah comprising a closure system (1) according to any of the preceding claims.

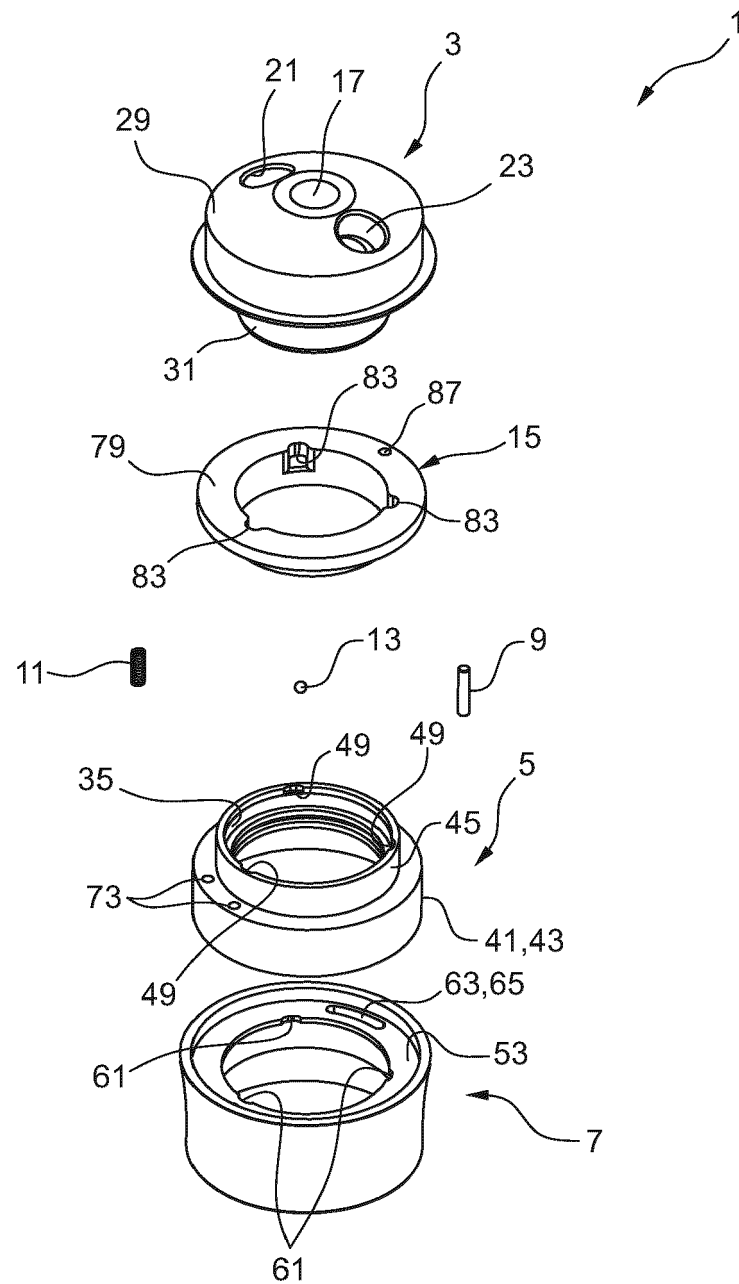


Fig. 1

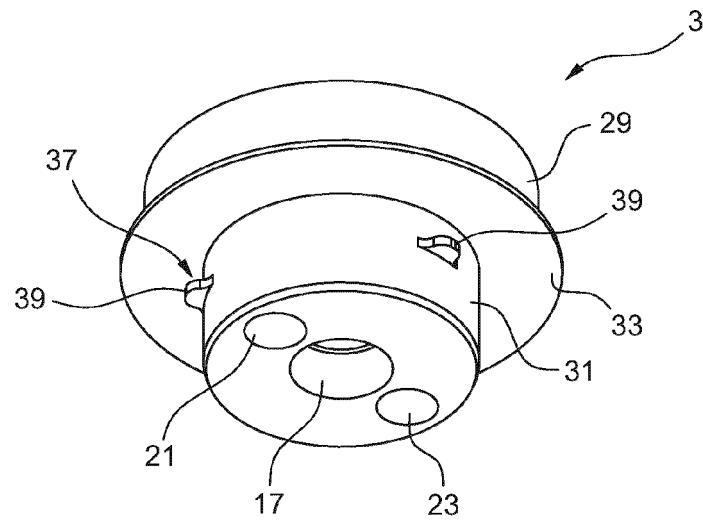


Fig. 2

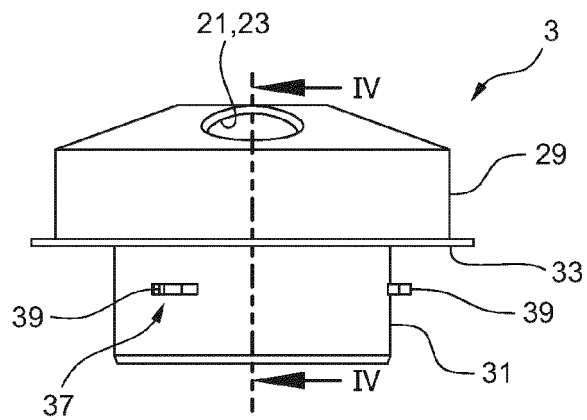


Fig. 3

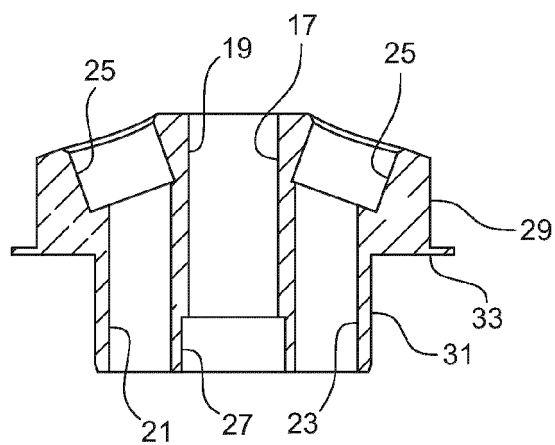


Fig. 4

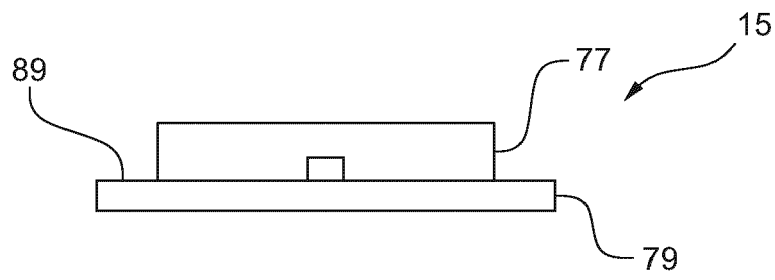


Fig. 5

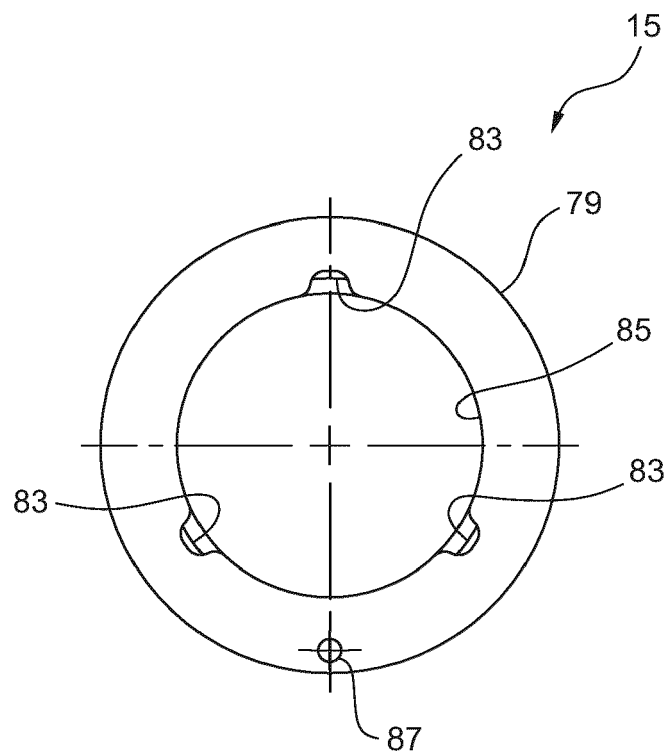


Fig. 6

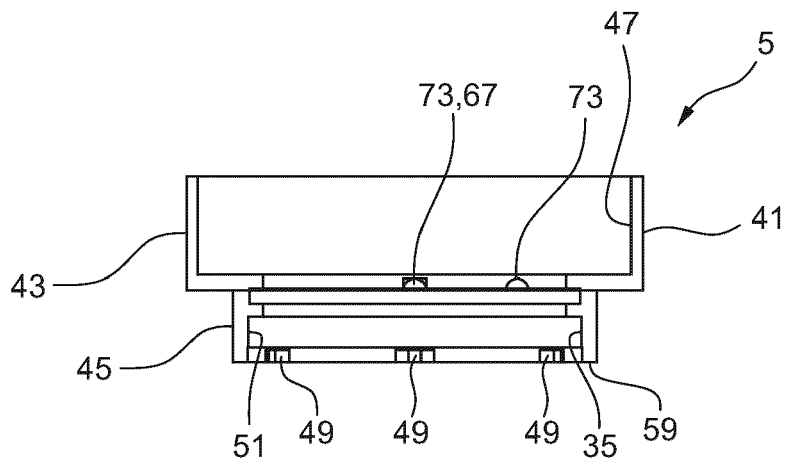


Fig. 7

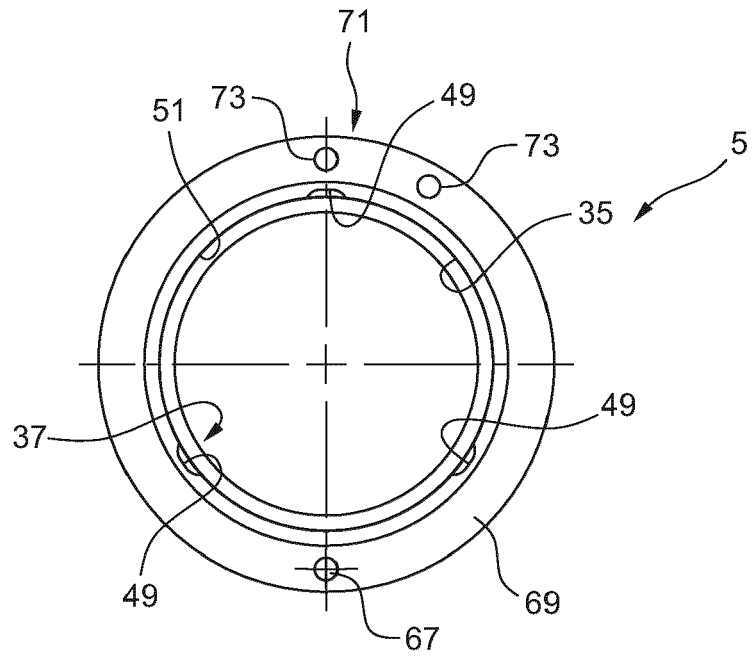


Fig. 8

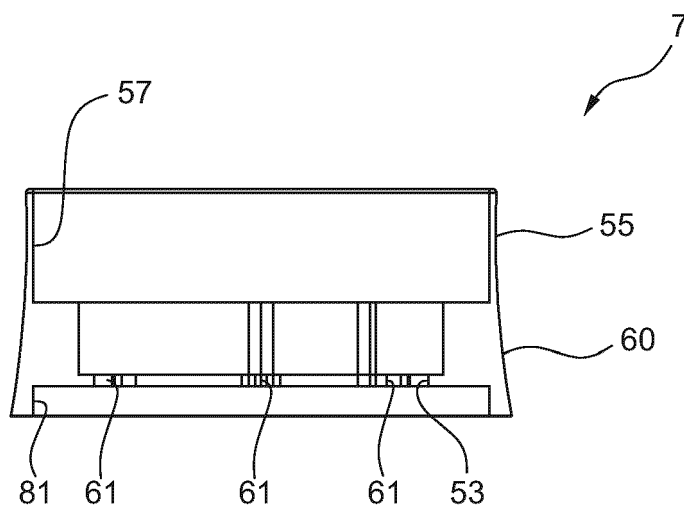


Fig. 9

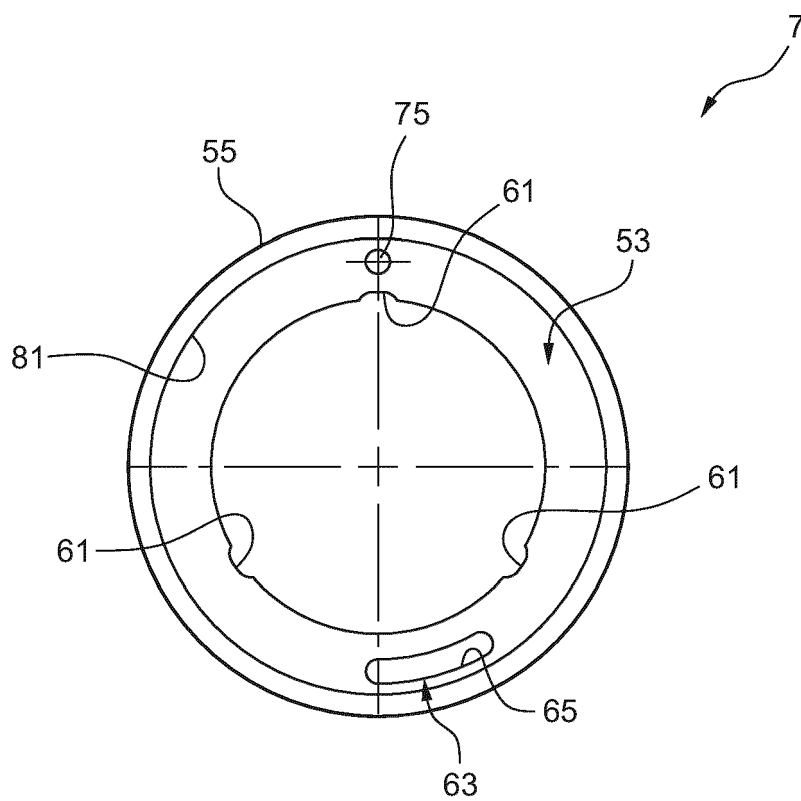


Fig. 10



EUROPEAN SEARCH REPORT

 Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	DE 20 2015 007964 U1 (SCHMIDT INNOVATIONS GMBH [DE]) 14 January 2016 (2016-01-14) * paragraphs [0036] - [0039], [0042], [0045]; figures 1-3 *	1-4,6,9, 13-15 5,7,8, 10-12	INV. A24F1/30
X A	US 2018/084825 A1 (SCHMIDT ALEXANDER [DE] ET AL) 29 March 2018 (2018-03-29) * paragraphs [0036] - [0039], [0042], [0045]; figures 1-3 *	1-4,6,9, 13-15 5,7,8, 10-12	
X A	DE 20 2012 005521 U1 (CHUNGA UG HAFTUNGSBESCHRAENKT [DE]) 9 September 2013 (2013-09-09) * paragraphs [0024] - [0027], [0029]; figures 1-4 *	1-5,7,9, 15 8,10-14	
X	DE 20 2014 102447 U1 (DABES IBRAHIM [DE]) 29 September 2014 (2014-09-29) * paragraph [0016]; figures 1-3 *	9,15	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			A24F
Place of search		Date of completion of the search	Examiner
Munich		10 May 2021	Schwarzer, Bernd
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 20 20 3671

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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10-05-2021

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 202015007964 U1	14-01-2016	DE 202015007964 U1	14-01-2016
		EP 3011848 A1	27-04-2016
		ES 2647848 T3	26-12-2017
		PL 3011848 T3	31-01-2018

US 2018084825 A1	29-03-2018	NONE	

DE 202012005521 U1	09-09-2013	NONE	

DE 202014102447 U1	29-09-2014	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 3011848 B1 [0004] [0005]