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Gerät, insbesondere Haushaltsgerät

Appareil, spécialement un appareil domestique

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Description

[0001] The invention relates to an appliance, especially to a domestic appliance, comprising a water tank, wherein the water tank comprises a filling element for filling water into the water tank, wherein the filling element can be moved translational into a longitudinal direction between a first idle position and a second filling position, wherein an pulling element is arranged at an axial end of the filling element for pulling the filling element for translational movement along the longitudinal direction.

[0002] Especially in the case of steamers a water tank is required in the domestic appliance where water can be deposited to be used for the steam cooking process. In pre-known appliances the water tank has at least one handle for taking it out from the appliance to fill it with water. Also a handle can be arranged at the filling element to pull it out from an idle position into a filling position in which water can be filled into the water tank. After completion of the filling process the filling element can be pushed back from the filling position into the idle position.

[0003] The document EP 277 337 discloses an appliance comprising a water tank, wherein the water tank is provided as a drawer.

[0004] Thus the grip or handle for pulling out the filling element is arranged outside of the filling element itself and thus forms a part which disturbs the outer plane form of the panel. Thus, it is a drawback that the cleaning of the appliance is complicated in the region of the filing element as the grip or handle perturbs the cleaning operation.

[0005] Therefore, it is an object of the invention to propose a design for an appliance of the kind mentioned above which creates an improved appearance of the appliance especially in the region of the water tank and its filling element and to ensure in spite of this a proper handling of the appliance when filling the water tank.

[0006] The solution of this object is characterized in that the pulling element is arranged at or in the axial end of the filling element, wherein the pulling element can be arranged relatively to the filling element in an inner latching position and in an outer latching position, and wherein means (13) are arranged for preventing a relative rotational movement around the longitudinal direction (L) between the filling element (3) and the pulling element (4).

[0007] Preferably, a latch mechanism is arranged between the pulling element and the filling element. The latch mechanism comprises preferably a cam element with a cam surface and a boss being slidably arranged in the cam element to arrest the pulling element in the inner latching position and in the outer latching position. The cam element can be connected directly or indirectly with the filling element, wherein the boss can be fixed in longitudinal direction with the pulling element.

[0008] The filling element can have a substantial tubular shape with a cylindrical reception for the pulling element. The pulling element can have a knob at one of its axial ends and a cylindrical section for being inserted into the cylindrical reception of the filling element.

[0009] Furthermore, according to the present invention means are arranged for preventing a relative rotational movement around the longitudinal direction between the filling element and the pulling element. Those means can comprise at least one groove extending in the longitudinal direction and being arranged at the outer circumference of the pulling element or at the inner circumference of the cylindrical reception of the filling element, wherein at least one radially extending rib can be arranged at the inner circumference of the cylindrical reception or at the outer circumference of the pulling element, wherein the rib is designed to engage in a form-fitted manner into the groove. Preferably, it is specifically proposed that the at least one groove is arranged at the outer circumference of the pulling element and the at least one radially extending rib is arranged at the inner circumference of the cylindrical reception.

[0010] Additionally, means can be arranged to limit the maximum amount of relative displacement in longitudinal direction between the pulling element and the filling element. Those means can comprise at least one hook element which is arranged at the pulling element or at the filling element, wherein at least one reception can be arranged in the filling element or in the pulling element being designed for a form-fit engagement of the hook element. Preferably, it is specifically proposed that one single hook element is arranged at the pulling element and a corresponding reception is arranged in the filling element. The reception can be designed as a rectangular shaped cutout in the wall of the cylindrical reception of the filling element.

[0011] The outer surface of the pulling element and a panel of the appliance are preferably flush when the pulling element is in the inner latching position and when the filing element is in the idle position.

[0012] The appliance is preferably a steamer.

[0013] The proposed latch mechanism is preferably arranged as a "push-pull" mechanism in the filling element. Such latch mechanisms are known from other technology fields, e. g. in the field of ball-pens. Reference is made to US 6 113 160 concerning a latch where a cam element with a cam surface is shown by which a boss is guided to arrest a part relative to another in an inner and outer latching position.

[0014] The pulling element is incorporated into the filling element which can be easy done also in existing systems.

[0015] By the proposed concept a flush design can be obtained which makes is easy to clean the domestic appliance as no disturbing edges exist any more when the pulling element is in the inner latching position.

[0016] The means for limiting the displacement between the pulling element and the filling element allow to ensure that the latch mechanism is not put under tensile stress.

[0017] The means for preventing rotational movement between the filling element and the pulling element allow

to reduce the tolerances between the mechanism and the filling element.

[0018] The panel with the filling element and the pulling element is in the idle position of the filling element and the inner latching position of the pulling element in a flush arrangement with the knob of the pulling element. Thus, an undisturbed surface is obtained on the panel front side leading to a positive appearance of the appliance.

[0019] In the drawings an embodiment of the invention is depicted.

FIG 1 shows in a perspective view a panel of a domestic steamer with a water tank, wherein a filling element of the water tank is in an idle position,

FIG 2 shows the same arrangement as FIG 1, wherein the filling element of the water tank is in a filling position and wherein a pulling element which is arranged at an axial end of the filling element is in an outer latching position,

FIG 3 shows the same arrangement as FIG 1, wherein the pulling element which is arranged at an axial end of the filling element is shown in a demounted position,

FIG 4 shows in a perspective view the pulling element,

FIG 5 shows in a perspective view the end region of the filling element,

FIG 6 shows a cross sectional view of the filling element in which the pulling element is mounted, wherein the pulling element is in an inner latching position,

FIG 7 shows a side view of the filling element with the pulling element, wherein the pulling element is in the outer latching position and

FIG 8 shows an exploded view of a part of the pulling element with a latch mechanism.

[0020] In FIG 1 a domestic appliance 1 is shown only schematically which is a steamer in the present case. The steamer has a water tank 2. To fill the water tank 2 with water a filling element is used which is not depicted in FIG 1 as it is inside the water tank 2. Thus, the filling element is in an idle position IN in the water tank 2. At the end of the filling element a pulling element 4 is arranged, from which only a knob 11 can be seen in FIG 1. Here, the pulling element 4 is in an inner latching position I.

[0021] As can be seen the surface of a panel 20 of the steamer and the surface of the knob 11 flush and consequently, a flat surface is obtained in the position as shown in FIG 1 so that it is easy to clean the front of the panel 20.

[0022] In FIG 2 the same arrangement is shown, but here the filling element 3 for filling the water tank 2 is in its filling position OUT. Also the pulling element 4 is in its outer latching position II. Thus, the filing element 3 as well as the pulling element 4 have translational moved in a longitudinal direction L compared with FIG 1.

[0023] As can be seen the pulling element 4 is arranged at an axial end 5 of the filling element 3.

[0024] In the position as shown in FIG 2 water can easily be filled into the water tank 2 via the filling element 3. Water is poured into an opening 21.

[0025] In FIG 3 a demounted situation is shown. Here, the pulling element 4 is extracted from the filling element 3 which is here inside the water tank 2.

[0026] Details of the arrangement are apparent from FIG 4 to FIG 8.

[0027] In FIG 4 and FIG 5 is can be seen that the pulling element 4 has the knob 11 at one axial end and a cylindrical section 12 extending into the longitudinal direction L.

[0028] The filling element 3 has a hollow-cylindrical shape in one of its axial ends. Here a cylindrical reception 10 is formed. This reception is designed for insertion of the cylindrical section 12 of the pulling element 4.

[0029] Measures are taken to ensure that no relative rotational movement around the longitudinal direction L can take place. Therefore, means 13 are arranged comprising two grooves 14 at the outer circumference of the cylindrical section 12 of the pulling element 4 and corresponding ribs 15 which are formed in the cylindrical reception 10. Thus, the ribs 15 extend in the mounted state into the grooves 14 and prevent a rotational movement between the parts 3 and 4.

[0030] Also, means 16 are arranged to limit the relative translational displacement between the filing element 3 and the pulling element 4. Those means comprise a hook element 17 which is formed at a circumferential position of the cylindrical section 12 of the pulling element 4, wherein the hook element 17 extends radially outward. At the other hand a reception 18 is arranged in the wall 19 of the filling element 3 and in its cylindrical reception 10.

[0031] In the mounted state the hook element 17 is snapped into the reception 18 of the filling element 3, so that a maximum extend of relative translational movement is defined between the parts 3 and 4.

[0032] Those features can also be seen in FIG 6 and FIG 7. In FIG 6 the pulling element 4 is in its inner latching position I in the filling element 3. To the contrary, in FIG 7 the pulling element 4 is shown in its outer latching position II in the filling element.

[0033] With respect to the latch mechanism 6 which is employed reference is made to FIG 8. The latch mechanism 6 comprises a cam element 7 with a cam surface 8, in which a boss 9 is guided. The boss 9 is guided in a crank 22 which allows a movement transverse to the lon-

gitudinal direction L but no movement in longitudinal direction L. Thus, the knob 11 is guided between two latching positions I and II as explained before.

[0034] The function of the arrangement is as follows:

[0035] At first the arrangement is in the position as shown in FIG 1, i. e. the filling element 3 is in its idle position IN and the pulling element is in its inner latching position I.

[0036] To fill the water tank 2 the knob 11 is pressed inwardly so that the latch mechanism brings out the pulling element 4 in the outer latching position II as shown in FIG 2.

[0037] Now the pulling element 4 can be grabbed by the knob 11 and can be pushed in longitudinal direction L, so that the filling element 3 is also pushed out from the water tank 2 into its filling position OUT as shown in FIG 2.

[0038] Now, water can be poured into the opening 21.

[0039] When the water tank 2 is filled the pulling element 4 is pressed into the direction of the water tank 2 in longitudinal direction L. So, the filling element 3 is pushed into the water tank 2 again and also the pulling element 4 is pushed into its inner latching position I again. Thus, the status according FIG 1 is reached again.

Reference Numerals

[0040]

1	Appliance (Steamer)
2	Water tank
3	Filling element
4	Pulling element
5	Axial end
6	Latch mechanism
7	Cam element
8	Cam surface
9	Boss
10	Cylindrical reception
11	Knob
12	Cylindrical section
13	Means for preventing rotational movement
14	Groove
15	Rib
16	Means to limit the displacement
17	Hook element
18	Reception
19	Wall
20	Panel
21	Opening
22	Crank
L	Longitudinal direction
IN	First position (idle position)
OUT	Second position (filling position)
I	Inner latching position
II	Outer latching position

Claims

1. Appliance (1), especially domestic appliance, comprising a water tank (2), wherein the water tank (2) comprises a filling element (3) for filling water into the water tank (2), wherein the filling element (3) can be moved translational into a longitudinal direction (L) between a first idle position (IN) and a second filling position (OUT), wherein an pulling element (4) is arranged at an axial end (5) of the filling element (3) for pulling the filling element (3) for translational movement along the longitudinal direction (L), wherein the pulling element (4) is arranged at or in the axial end (5) of the filling element (3),
characterized in that
wherein the pulling element (4) can be arranged relatively to the filling element (3) in an inner latching position (I) and in an outer latching position (II), and wherein means (13) are arranged for preventing a relative rotational movement around the longitudinal direction (L) between the filling element (3) and the pulling element (4).

2. Appliance according to claim 1, **characterized in that** a latch mechanism (6) is arranged between the pulling element (4) and the filling element (3).

3. Appliance according to claim 2, **characterized in that** the latch mechanism (6) comprises a cam element (7) with a cam surface (8) and a boss (9) being slidably arranged in the cam element (7) to arrest the pulling element (4) in the inner latching position (I) and in the outer latching position (II).

4. Appliance according to claim 2 or 3, **characterized in that** the cam element (7) is connected directly or indirectly with the filling element (3) and that the boss (9) is fixed in longitudinal direction (L) with the pulling element (4).

5. Appliance according to one of claims 1, to 4, **characterized in that** the filling element (3) has a substantial tubular shape with a cylindrical reception (10) for the pulling element (4).

6. Appliance according to claim 5, **characterized in that** the pulling element (4) has a knob (11) at one of its axial ends and a cylindrical section (12) for being inserted into the cylindrical reception (10) of the filling element (3).

7. Appliance according to one of claims 1 to 6, **characterized in that** means (13) comprise at least one groove (14) extending in the longitudinal direction (L) and being arranged at the outer circumference of the pulling element (4) or at the inner circumference of the cylindrical reception (10) of the filling element (3), wherein at least one radially extending rib (15) is arranged at the inner circumference of the cylindrical reception (10) or at the outer circumference of the pulling element (4), wherein the rib (15) is designed to engage in a form-fitted manner into the groove (14).

8. Appliance according to claim 7, **characterized in that** the at least one groove (14) is arranged at the outer circumference of the pulling element (4) and the at least one radially extending rib (15) is arranged at the inner circumference of the cylindrical reception (10).

9. Appliance according to one of claims 1 to 8, **characterized in that** means (16) are arranged to limit the maximum amount of relative displacement in longitudinal direction (L) between the pulling element (4) and the filling element (3).

10. Appliance according to claim 9, **characterized in that** the means (16) comprise at least one hook element (17) which is arranged at the pulling element (4) or at the filling element (3), wherein at least one reception (18) is arranged in the filling element (3) or in the pulling element (4) being designed for a form-fit engagement of the hook element (17).

11. Appliance according to claim 10, **characterized in that** one single hook element (17) is arranged at the pulling element (4) and a corresponding reception (18) is arranged in the filling element (3).

12. Appliance according to claim 10 or 11, **characterized in that** the reception (18) is designed as a rectangular shaped cutout in the wall (19) of the cylindrical reception (10) of the filling element (3).

13. Appliance according to one of claims 1 to 12, **characterized in that** the outer surface of the pulling element (4) and a panel (20) of the appliance (1) are flush when the pulling element (4) is in the inner latching position (I) and when the filing element (3) is in the idle position (IN).

14. Appliance according to one of claims 1 to 13, **characterized in that** it is a steamer.

Patentansprüche

1. Gerät (1), insbesondere Haushaltsgerät, aufweisend einen Wassertank (2), wobei der Wassertank (2) ein Einfüllelement (3) zum Einfüllen von Wasser in den Wassertank (2) aufweist, wobei das Einfüllelement (3) in einer Längsrichtung (L) zwischen einer ersten Ruheposition (INNEN) und einer zweiten Einfüllposition (AUSSEN) translatorisch beweglich ist, wobei ein Zugelement (4) an einem axialen Ende (5) des Einfüllelements (3) zum Ziehen des Einfüllelements (3) zur Translationsbewegung entlang der Längsrichtung (L) angeordnet ist, wobei das Zugelement (4) am oder im axialen Ende (5) des Einfüllelements (3) angeordnet ist,
dadurch gekennzeichnet, dass
das Zugelement (4) bezüglich des Einfüllelements (3) in einer inneren Einklinkposition (I) und in einer äußeren Einklinkposition (II) angeordnet sein kann und wobei Mittel (13) zum Verhindern einer relativen Drehbewegung um die Längsrichtung (L) zwischen dem Einfüllelement (3) und dem Zugelement (4) angeordnet sind.

2. Gerät nach Anspruch 1, **dadurch gekennzeichnet, dass** ein Klinkenmechanismus (6) zwischen dem Zugelement (4) und dem Einfüllelement (3) angeordnet ist.

3. Gerät nach Anspruch 2, **dadurch gekennzeichnet, dass** der Klinkenmechanismus (6) ein Nockenelement (7) mit einer Nockenfläche (8) und einen Ansatz (9) aufweist, der zum Arretieren des Zugelements (4) in der inneren Einklinkposition (I) und in der äußeren Einklinkposition (II) verschiebbar im Nockenelement (7) angeordnet ist.

4. Gerät nach einem der Ansprüche 2 oder 3, **dadurch gekennzeichnet, dass** das Nockenelement (7) direkt oder indirekt mit dem Einfüllelement (3) verbunden ist, und dass der Ansatz (9) in Längsrichtung (L) am Zugelement (4) befestigt ist.

5. Gerät nach einem der Ansprüche 1 bis 4, **dadurch**

gekennzeichnet, dass das Einfüllelement (3) eine im Wesentlichen röhrenartige Form mit einer zylindrischen Aufnahme (10) für das Zugelement (4) aufweist.

6. Gerät nach Anspruch 5, **dadurch gekennzeichnet, dass** das Zugelement (4) einen Knopf (11) an einem seiner axialen Enden und einen zylindrischen Abschnitt (12) zum Einführen in die zylindrische Aufnahme (10) des Einfüllelements (3) aufweist.

7. Gerät nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** Mittel (13) mindestens eine Nut (14) aufweisen, die in der Längsrichtung (L) verläuft und am Außenumfang des Zugelements (4) oder am Innenumfang der zylindrischen Aufnahme (10) des Einfüllelements (3) angeordnet ist, wobei mindestens eine radial verlaufende Rippe (15) am Innenumfang der zylindrischen Aufnahme (10) oder am Außenumfang des Zugelements (4) angeordnet ist, wobei die Rippe (15) zum formschlüssigen Eingreifen in die Nut (14) ausgelegt ist.

8. Gerät nach Anspruch 7, **dadurch gekennzeichnet, dass** die mindestens eine Nut (14) am Außenumfang des Zugelements (4) angeordnet ist und die mindestens eine radial verlaufende Rippe (15) am Innenumfang der zylindrischen Aufnahme (10) angeordnet ist.

9. Gerät nach einem der Ansprüche 1 bis 8, **dadurch gekennzeichnet, dass** Mittel (16) zum Begrenzen des Maximalbetrags relativer Verschiebung in Längsrichtung (L) zwischen dem Zugelement (4) und dem Einfüllelement (3) angeordnet sind.

10. Gerät nach Anspruch 9, **dadurch gekennzeichnet, dass** die Mittel (16) mindestens ein Hakenelement (17) aufweisen, das am Zugelement (4) oder am Einfüllelement (3) angeordnet ist, wobei mindestens eine Aufnahme (18) im Einfüllelement (3) oder im Zugelement (4) angeordnet ist, die zum formschlüssigen Eingreifen des Hakenelements (17) ausgelegt ist.

11. Gerät nach Anspruch 10, **dadurch gekennzeichnet, dass** ein einzelnes Hakenelement (17) am Zugelement (4) und eine entsprechende Aufnahme (18) im Einfüllelement (3) angeordnet ist.

12. Gerät nach Anspruch 10 oder 11, **dadurch gekennzeichnet, dass** die Aufnahme (18) als rechteckig geformter Ausschnitt in der Wand (19) der zylindrischen Aufnahme (10) des Einfüllelements (3) gestaltet ist.

13. Gerät nach einem der Ansprüche 1 bis 12, **dadurch gekennzeichnet, dass** die Außenfläche des Zugelements (4) und eine Platte (20) des Geräts (1) miteinander bündig sind, wenn sich das Zugelement (4) in der inneren Einklinkposition (I) befindet und sich das Einfüllelement (3) in der Ruheposition (INNEN) befindet.

14. Gerät nach einem der Ansprüche 1 bis 13, **dadurch gekennzeichnet, dass** es ein Dampfgarer ist.

Revendications

1. Appareil (1), en particulier appareil domestique, comprenant un réservoir d'eau (2), dans lequel le réservoir d'eau (2) comprend un élément de remplissage (3) pour remplir d'eau le réservoir d'eau (2), dans lequel l'élément de remplissage (3) peut être déplacé en translation dans une direction longitudinale (L) entre une première position de repos (IN) et une deuxième position de remplissage (OUT), dans lequel un élément de traction (4) est disposé à une extrémité axiale (5) de l'élément de remplissage (3) pour tirer l'élément de remplissage (3) afin qu'il exécute un mouvement de translation le long de la direction longitudinale (L), dans lequel l'élément de traction (4) est disposé à ou dans l'extrémité axiale (5) de l'élément de remplissage (3),
caractérisé en ce que l'élément de traction (4) peut être disposé par rapport à l'élément de remplissage (3) dans une position de verrouillage intérieure (I) et dans une position de verrouillage extérieure (II), et dans lequel des moyens (13) sont prévus pour empêcher un déplacement rotatif relatif autour de la direction longitudinale (L) entre l'élément de remplissage (3) et l'élément de traction (4).

2. Appareil selon la revendication 1, **caractérisé en ce qu'**un mécanisme de verrou (6) est agencé entre l'élément de traction (4) et l'élément de remplissage (3).

3. Appareil selon la revendication 2, **caractérisé en ce que** le mécanisme de verrou (6) comprend un élément de came (7) présentant une surface de came (8) et une bosse (9) qui est agencée de façon coulissante dans l'élément de came (7) pour arrêter l'élément de traction (4) dans la position de verrouillage intérieure (I) et dans la position de verrouillage extérieure (II).

4. Appareil selon la revendication 2 ou 3, **caractérisé en ce que** l'élément de came (7) est connecté directement ou indirectement à l'élément de remplissage (3), et **en ce que** la bosse (9) est fixée en direction longitudinale (L) à l'élément de traction (4).

5. Appareil selon l'une des revendications 1 à 4, **caractérisé en ce que** l'élément de remplissage (3)

présente une forme tubulaire substantielle avec une réception cylindrique (10) pour l'élément de traction (4).

6. Appareil selon la revendication 5, **caractérisé en ce que** l'élément de traction (4) comporte un bouton (11) à l'une de ses extrémités axiales, et une section cylindrique (12) à insérer dans la réception cylindrique (10) de l'élément de remplissage (3).

7. Appareil selon l'une des revendications 1 à 6, **caractérisé en ce que** les moyens (13) comprennent au moins une rainure (14) qui s'étend dans la direction longitudinale (L) et qui est formée à la circonférence extérieure de l'élément de traction (4) ou à la circonférence intérieure de la réception cylindrique (10) de l'élément de remplissage (3), dans lequel au moins une nervure s'étendant radialement (15) est prévue à la circonférence intérieure de la réception cylindrique (10) ou à la circonférence extérieure de l'élément de traction (4), dans lequel la nervure (15) est conçue de manière à réaliser un engagement à complémentarité de forme dans la nervure (14).

8. Appareil selon la revendication 7, **caractérisé en ce que** ladite au moins une rainure (14) est formée à la circonférence extérieure de l'élément de traction (4), et ladite au moins une nervure s'étendant radialement (15) est formée à la circonférence intérieure de la réception cylindrique (10).

9. Appareil selon l'une des revendications 1 à 8, **caractérisé en ce que** des moyens (16) sont prévus pour limiter la quantité maximum de déplacement relatif dans la direction longitudinale (L) entre l'élément de traction (4) et l'élément de remplissage (3).

10. Appareil selon la revendication 9, **caractérisé en ce que** les moyens (16) comprennent au moins un élément de crochet (17) qui est prévu à l'élément de traction (4) ou à l'élément de remplissage (3), dans lequel au moins une réception (18) est prévue dans l'élément de remplissage (3) ou dans l'élément de traction (4) et est conçue pour un engagement à complémentarité de forme de l'élément de crochet (17).

11. Appareil selon la revendication 10, **caractérisé en ce qu'**un seul élément de crochet (17) est prévu à l'élément de traction (4), et une réception correspondante (18) est prévue dans l'élément de remplissage (3).

12. Appareil selon la revendication 10 ou 11, **caractérisé en ce que** la réception (18) est conçue sous la forme d'une découpe de forme rectangulaire dans la paroi (19) de la réception cylindrique (10) de l'élément de remplissage (3).

13. Appareil selon l'une des revendications 1 à 12, **caractérisé en ce que** la surface extérieure de l'élément de traction (4) et un panneau (20) de l'appareil (1) sont à fleur lorsque l'élément de traction (4) se trouve dans la position de verrouillage intérieure (I) et lorsque l'élément de remplissage (3) se trouve dans la position de repos (IN).

14. Appareil selon l'une des revendications 1 à 13, **caractérisé en ce qu'**il s'agit d'une pompe à vapeur.

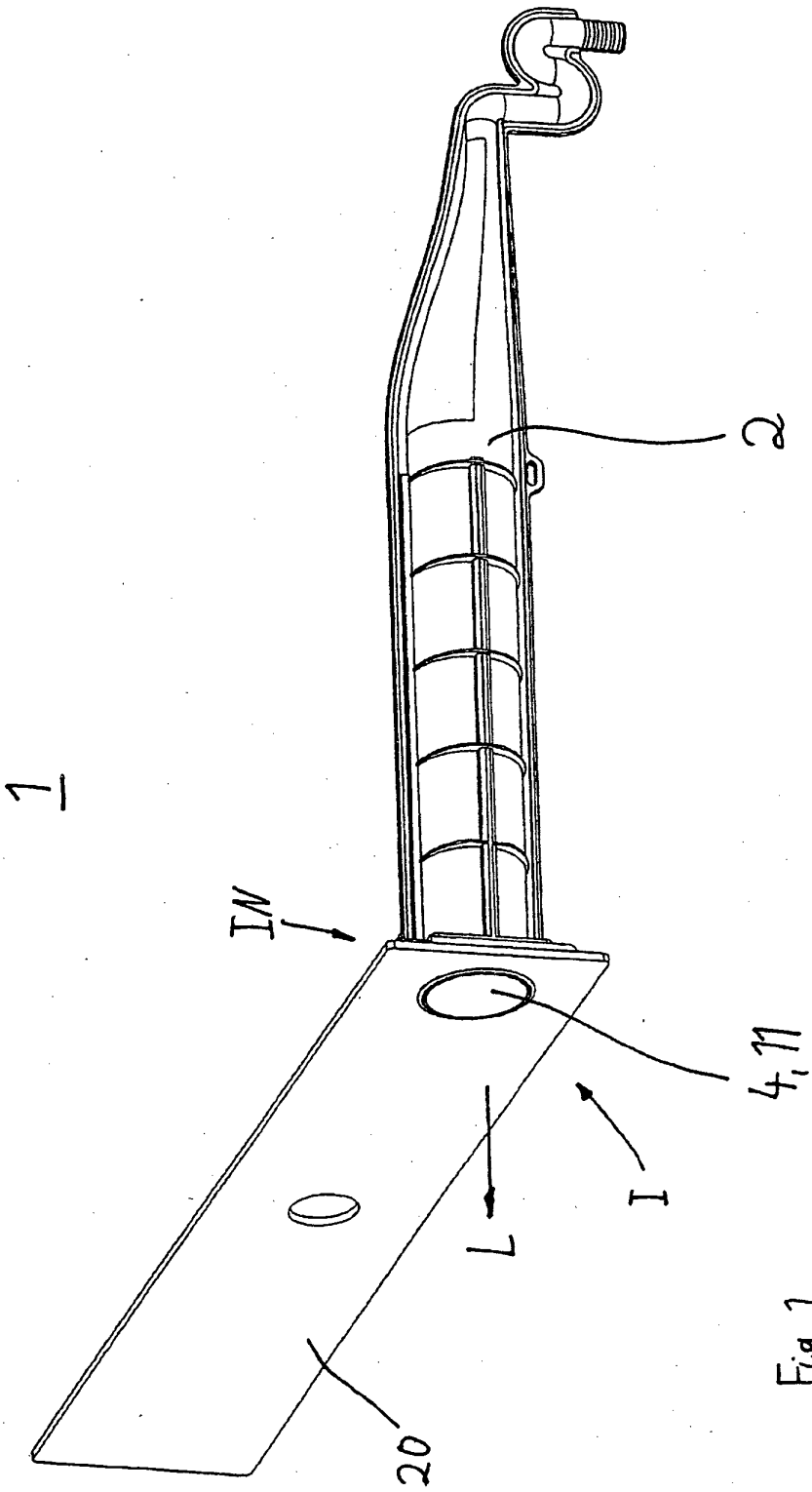

Fig. 1

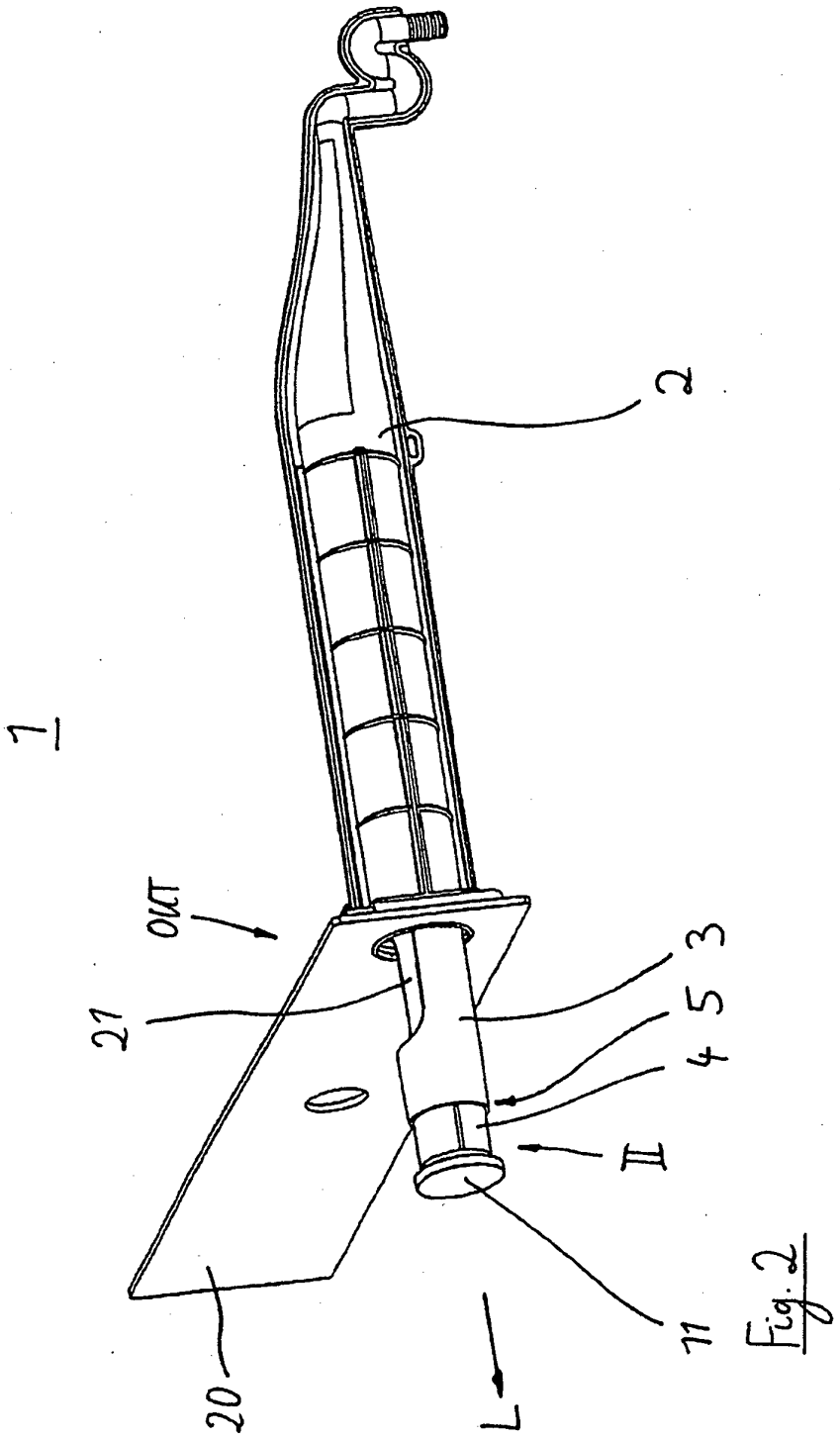

Fig. 2

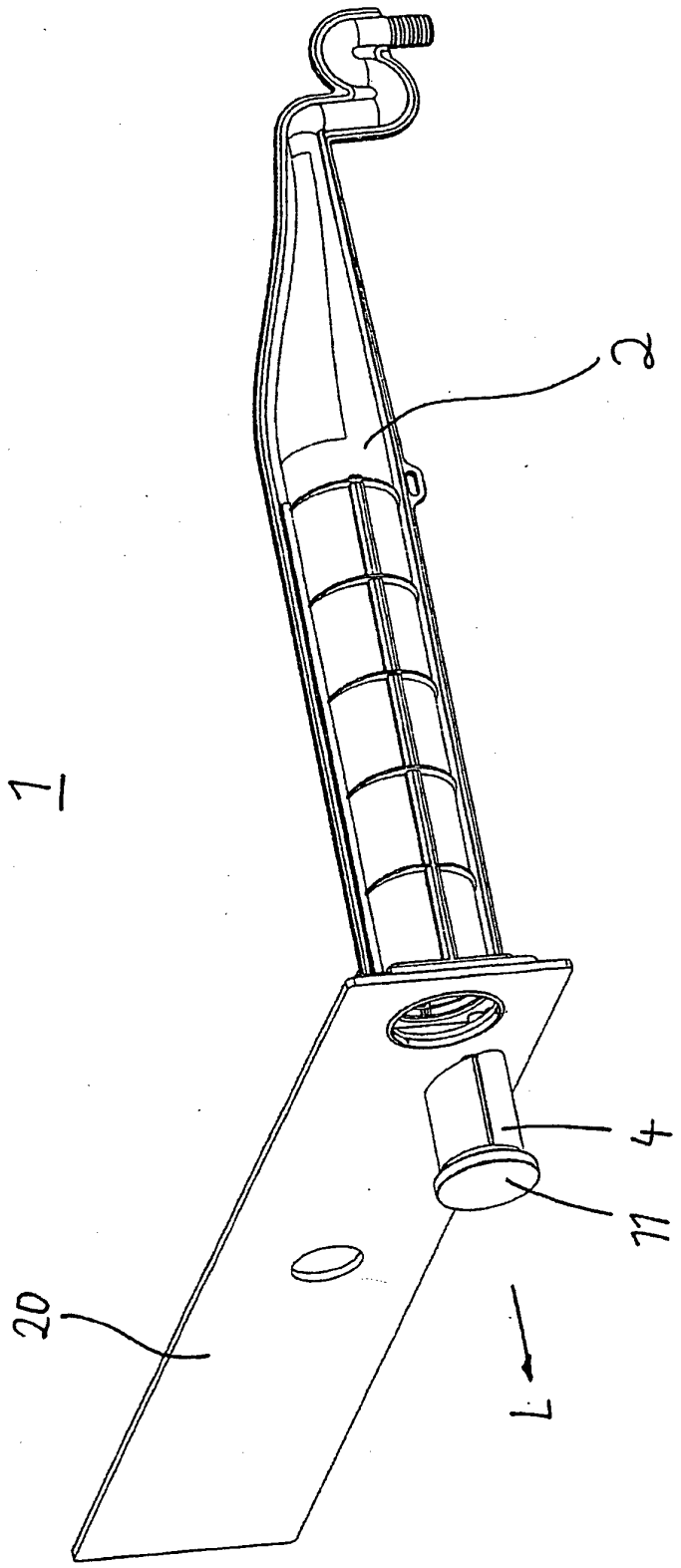

Fig. 3

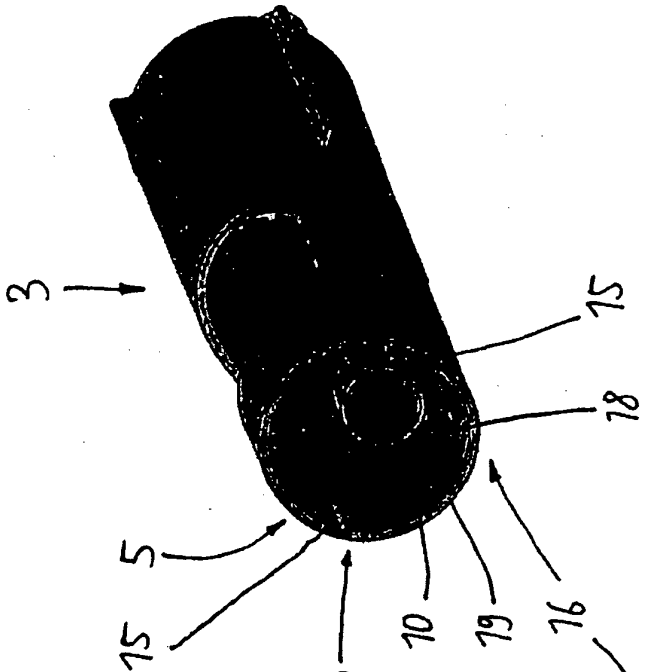

Fig. 5

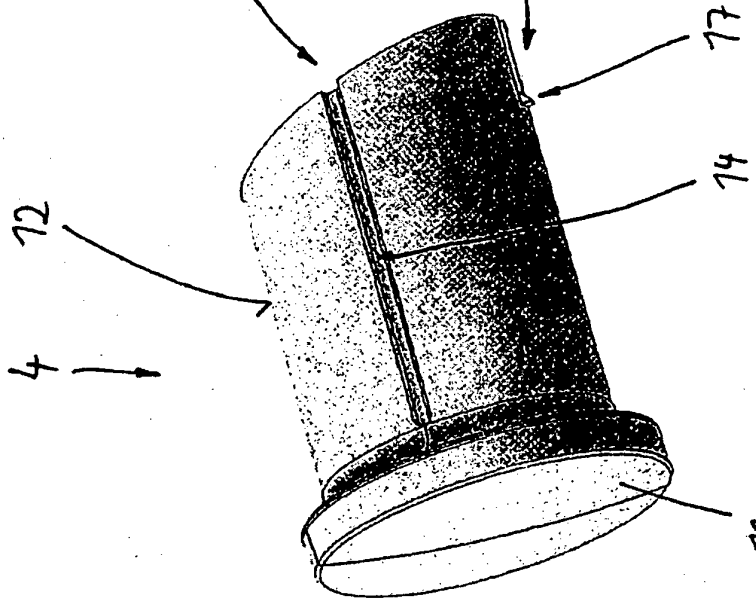

Fig. 4

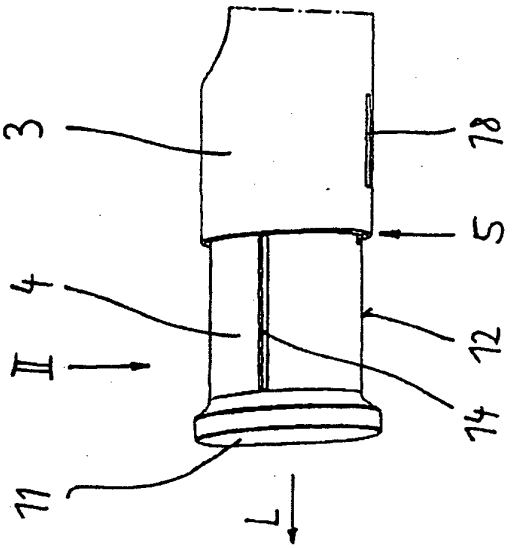

Fig. 7

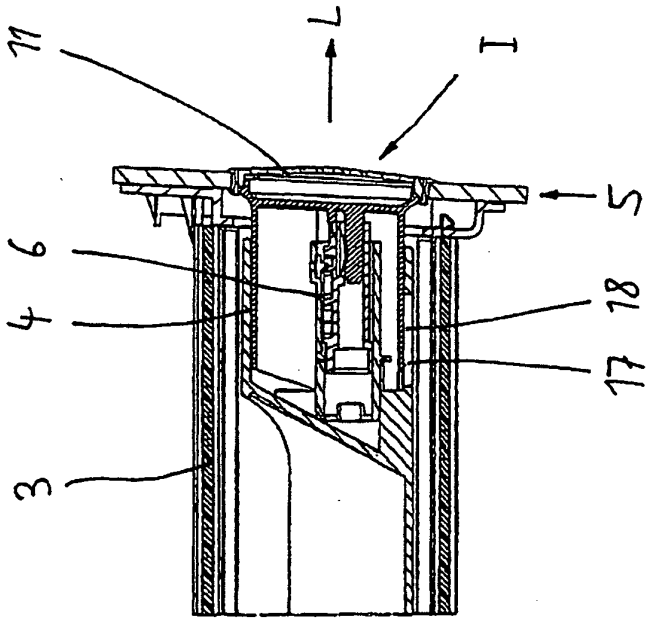

Fig. 6

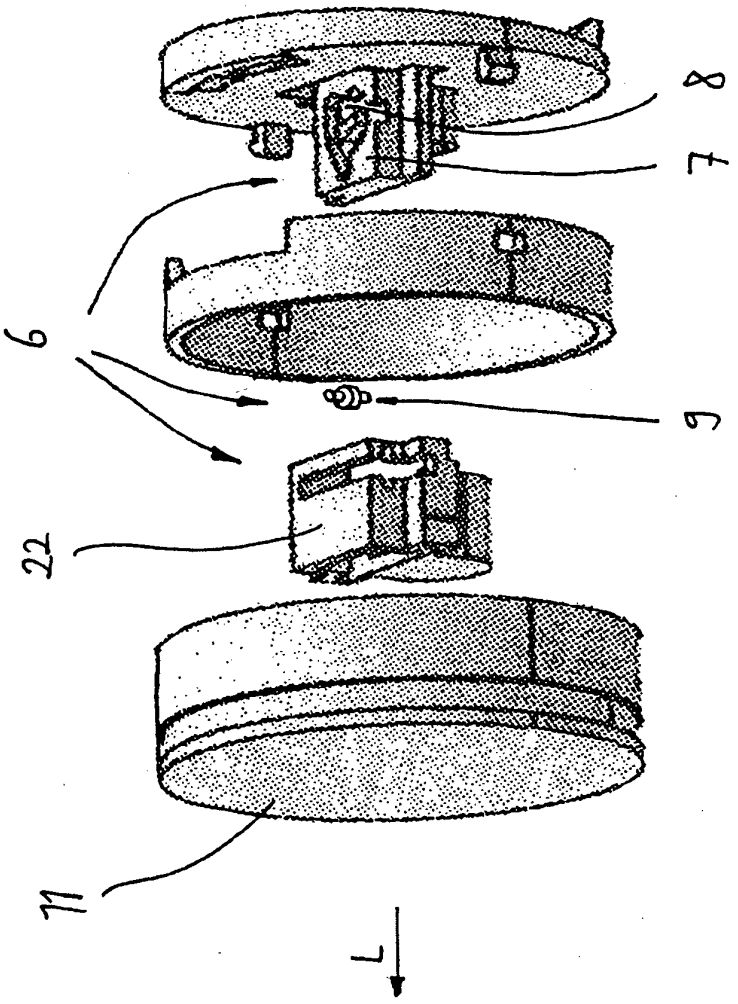

Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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