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(54) **REFILL FOR HAIR-SHAPING APPLIANCE**

**NACHFÜLLUNG FÜR HAARSTYLINGVORRICHTUNG**

**RECHARGE POUR APPAREILS DE TRAITEMENT DES CHEVEUX**

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## Description

**[0001]** The present invention relates to appliances that use a refill to operate and more particularly but not exclusively to appliances for treating the hair such as straightening irons.

**[0002]** The refill contains for example a product to be applied to the region to be treated, and optionally also an applicator that comes into contact with the zone on which the product is intended to be deposited.

**[0003]** International applications WO 2009/078046 and WO 2015/097626 discloses a refill housed in a seat of a hair treatment appliance.

**[0004]** Patent application US 2013/0233335 and international application WO 2016/107828 also discloses a refill mounted on a hair treatment appliance having a fixing system that uses sliding of a T-section extension in a complementary slot of the appliance.

**[0005]** It may be desirable, for use in certain appliances, to have different refills available, notably exhibiting different fixing means.

**[0006]** According to a first of its aspects, the invention seeks to propose a new refill according to claim 1 and achieves this by virtue of a refill for an appliance, notably a hair-shaping appliance, comprising a fixing means able to collaborate with a complimentary member belonging to a receiving structure of the appliance, the fixing means of the refill comprising two profile elements able to engage in an insertion guide of the receiving structure and between them defining a space in which one or more members of the appliance are able to engage in order to perform additional functions where appropriate.

**[0007]** The use of two profile elements makes it possible to achieve good retention of the refill on the appliance and to have a space between the two profile elements in which space one or more members of the appliance can engage.

**[0008]** Preferably, the refill extends along a longitudinal axis.

**[0009]** Preferably, the profile elements extend in the direction of insertion of the refill as it is fitted into the appliance, and advantageously along the longitudinal axis of the refill. This allows effective retention of the refill along its entire length.

**[0010]** Preferably, the fixing means has the overall shape of a T slotted in its middle, the slot corresponding to the space situated between the two profile elements.

**[0011]** Preferably, one of the profile elements comprises, at its rear end, a hook-shaped retaining projection that is intended to engage with a clip of the appliance in order to keep the refill in position thereon.

**[0012]** What is meant by the "rear end" is the end of the profile element that is intended to be first to engage in the insertion guide of the receiving structure as the refill is being fixed to the receiving structure.

**[0013]** Preferably, one of the profile elements, notably the one that does not have the aforementioned retaining projection, has at its rear end a positioning finger to make

the refill easier to position when it is being inserted into the appliance. The positioning finger may be chamfered to make it easier to engage in the insertion guide of the appliance. The chamfer may be situated on the opposite edge to the retaining projection.

**[0014]** Preferably, the retaining projection is longer than the positioning finger.

**[0015]** Preferably, the positioning finger is not as wide as the profile element from which it extends. The positioning finger may, where it meets the profile element, have a discontinuity on the same side as the retaining projection.

**[0016]** Preferably, the opposite edge of the finger to the retaining projection is situated in the continuation of the edge of the profile element from which it extends.

**[0017]** The refill may be made of a plastic, notably of PET, PBT, PP, PC, POM, SAN or PA6,6, particularly of PET, PBT or PA 6,6. PC, PET, PBT, PP and PA6,6 are very well able to withstand the thermal stresses that may be applied to the refill.

**[0018]** The refill may comprise a member for applying a product, preferably cosmetic, notably a felt. The felt may be impregnated with cosmetic product.

**[0019]** As an alternative, it is possible for the refill not to have an applicator member. Such a refill may make it possible to use the appliance without any product being applied or may allow the user him or herself to insert into the refill an applicator member, for example one previously impregnated with a product.

**[0020]** Preferably, the refill comprises a mobile element capable of moving from an inactive position in which the element is set back from the space between the two profile elements into an active position in which this element projects into said space. The mobile element may move from the inactive position into the active position when the refill is first fitted to the appliance, such that the active position of the mobile element constitutes an indicator as to whether or not the refill has been used. Such a mobile element also acts as a memory regarding the use of the refill.

**[0021]** The mobile element may be embodied in various ways. For example, the element is a pin that is able to move with friction in a corresponding housing in the refill, so as to maintain the active position once it has been brought into the latter.

**[0022]** The mobile element may be molded together with the fixing means, notably being connected to the latter by a severable bridge of material that is intended to become broken during the transition of said element from the inactive position to the active position, or by a deformable connecting part. The mobile element is for example a hook molded with one of the abovementioned profile elements, said hook being designed to be snap-fastened in the active position to the other profile element. The hook may comprise an end part which catches in a corresponding housing of the other profile element.

**[0023]** The connecting part is for example a film hinge or a severable bridge of material.

**[0024]** In one variant, the mobile element may alternatively be embodied in the form of a hook articulated on the body of the refill.

**[0025]** Another subject of the invention is an assembly comprising a refill according to the first aspect of the invention described hereinabove and an appliance designed to accept the refill, the appliance comprising a refill receiving structure comprising an insertion guide into which the two profile elements engage when the refill is fitted to the receiving structure of the appliance.

**[0026]** Preferably, the insertion guide is designed such that the refill is fitted and removed by way of a sliding movement along the guide. The insertion guide may form a guideway and the profile elements may form rails sliding in the guideway as the refill is fitted in the appliance.

**[0027]** Preferably, the refill comprises a mobile element as described hereinabove and the receiving structure comprises on the one hand a relief positioned in such a way as to bring the mobile element from its inactive position into its active position when the refill is first fitted to the appliance, and on the other hand comprises a blocking member arranged upstream of said relief in the direction of insertion of the refill and designed to collaborate with the mobile element so as to allow the mobile element to pass in the direction of removal of the refill and prevent the mobile element from passing in the direction of fitting of the refill after the refill has been fitted for the first time.

**[0028]** The blocking member may be able to move between a first position in which the blocking member projects from the appliance in such a way as to intercept the mobile element in the active position when a refill is used on the appliance, and a second position that is at least partially retracted so as to allow the mobile element in the active position to pass when a refill is used on the appliance, the blocking member comprising a return member keeping it in the first position and being designed to move, in the direction of removal of the refill, from its first position into its second position under the action of the mobile element so as to allow the mobile element to pass and being arranged so as to remain in the first position during insertion of the refill so as to prevent the passing of the mobile element in the active position. The blocking member may be a spring wire or a movable part on which a spring acts.

**[0029]** It is possible for the blocking member not to be symmetrical with respect to a median plane perpendicular to the direction of travel of said element in contact therewith.

**[0030]** Thus, the blocking member may have contact surfaces for contact with said element that have different inlet and outlet slopes, having an inlet slope steeper than an outlet slope, the inlet slope preventing the passage of said element in the active position by forming a stop that prevents the travel of said element, and the outlet slope allowing said element to engage with the blocking member so as to cause it to retract when said element passes in the direction of removal of the refill. The block-

ing member is overcome in one direction by said element.

**[0031]** As an alternative, the blocking member is an immobile relief projecting into the space when the refill is fitted to the appliance, the mobile element being designed to move from its active position toward its inactive position under the action of the blocking member in the direction of removal of the refill and being designed to maintain its active position in the direction of fitting of the refill after the refill has been fitted for the first time, so as to prevent the blocking member from moving into the space between the two profiles. It is possible for the blocking member not to be symmetrical with respect to a median plane perpendicular to the direction of travel of said element in contact therewith. Thus, the blocking member may have contact surfaces for contact with said element that have different inlet and outlet slopes, having an inlet slope steeper than an outlet slope, the inlet slope preventing the passage of said element in the active position by forming a stop that prevents the travel of said element, and the outlet slope allowing said element to engage with the blocking member so as to cause the mobile element to retract when said element passes in the direction of removal of the refill. The blocking member is overcome in one direction by said mobile element.

**[0032]** The appliance preferably comprises a contactor actuated by the refill when the refill is fitted to the appliance so as to detect the presence of this refill on the appliance. This contactor is preferably situated upstream of the abovementioned blocking member so as to be actuated prior to the blocking of the refill during the introduction thereof, in the case of a refill that has already been used. The appliance may have a second contactor which is actuated only once insertion of the refill is complete.

**[0033]** The refill preferably includes a cosmetic product, the appliance advantageously being intended to treat the hair.

**[0034]** The appliance has for example two arms, also referred to as members, that are joined by a hinge, the refill receiving structure being formed on one of the arms.

**[0035]** Preferably, the appliance comprises at least one heating plate intended to come into contact with the hair, notably when the arms of the appliance are closed.

**[0036]** Another subject of the invention is an article for an appliance according to claim 10, notably an appliance for shaping the hair, comprising a fixing means able to collaborate with a complimentary member of a receiving structure of the appliance, the article fixing means comprising two profile elements able to engage in an insertion guide of the receiving structure and between them defining a space in which one or more members of the appliance are able to engage, the appliance comprising a contactor to detect a refill as described hereinabove when the refill is mounted on the receiving structure of the appliance, the article being designed to actuate the contactor of the appliance.

**[0037]** Such an article makes it possible to simulate the presence of a refill on the appliance. Such an article

notably makes it possible for the user to use the appliance in its refill-present mode operation without a refill of cosmetic product being inserted in the appliance.

**[0038]** Preferably, the article does not contain any cosmetic product. Thus, the user can use the appliance with all of its functionalities apart from the application of product.

**[0039]** Preferably, while the article is being fixed to the receiving structure, the presence of the fixing means is detected by the detection element.

**[0040]** Preferably, the article is able to be inserted into and removed from the device more than once. In particular, the article has the same configuration between its insertion into and removal from the device. The article preferably does not have a mobile element as described hereinabove and does not engage with the blocking member. Thus, the blocking member cannot prevent the reinsertion of the article, which may be used as many times as necessary. This is because, in the absence of cosmetic product, it is not necessary to prevent the reinsertion of the article.

**[0041]** Preferably, the article is configured so that it occupies the corresponding space on the receiving structure, as a refill would.

**[0042]** Preferably, the article has an appearance substantially identical to that of a refill, except that it does not contain a cosmetic product.

**[0043]** Preferably, the article is configured not to come into contact with the lock of hair treated by the device and/or with a pressing element of the device when the device is being used to treat the hair.

**[0044]** Preferably, the article is made of a thermoplastic material such as PET, PBT, PA6,6, PP, POM, PC or SAN, notably PET, PBT or PA6,6.

**[0045]** Another subject of the invention is an assembly according to claim 11 comprising an article as described hereinabove and an appliance designed to accept a refill as described hereinabove, the appliance comprising a refill receiving structure comprising an insertion guide into which the two profile elements engage when the refill is fitted to the receiving structure of the appliance.

**[0046]** According to a second of its aspects, the invention relates to a refill for an appliance, notably a hair-shaping appliance, comprising:

- two profile elements that engage in an insertion guide of the receiving structure along which the refill moves when it is fitted on the appliance and when it is removed from the latter, and
- a mobile element acting as a memory of use, capable of moving from an inactive position in which the element is set back from a space between the two profile elements into an active position in which this element projects into said space, said element being intercepted by a blocking member of the receiving structure passing between the two profile elements when it is in the active position, during insert fitting of the refill into the receiving structure and removal

thereof therefrom, the mobile element serving as a memory of use, being arranged in such a way that the blocking member can be overcome by said element in the direction of removal of the refill and that the blocking member opposes the passage of said element in the direction of insertion of the refill, if an attempt is made to reinsert a refill that has already been used.

**[0047]** The invention makes it possible, notably for reasons of hygiene, in particular when the appliance is used to successively treat different people, to prevent the reuse of a refill that has previously been fitted on the appliance and then removed.

**[0048]** Another subject of the invention is an assembly comprising a refill according to the second aspect of the invention described hereinabove and an appliance, designed for using the refill, the appliance having a refill receiving structure having an insertion guide in which the profile elements engage when the refill is fitted and along which the refill travels when it is fitted on the appliance and when it is removed therefrom, the receiving structure having a relief that is positioned so as to act on the element acting as a memory of use of the refill when the refill is fitted on the appliance for the first time, so as to cause it to pass from its inactive position to its active position, and a blocking member disposed so as to enter the space between the two profile elements and intercept said element when the latter is in the active position, while the refill is being fitted in and removed from the receiving structure, the element and the blocking member being designed such that the blocking member can be overcome by said element in the direction of removal of the refill and such that the blocking member prevents said element from passing in the direction of insertion of the refill, if an attempt is made to reinsert a refill that has already been used.

**[0049]** The invention makes it possible to block the fitting of the refill in a simple and effective manner if the latter has previously been used on the appliance.

**[0050]** All the refill and assembly features described hereinabove in connection with the first aspect of the invention can be applied to this second aspect of the invention.

**[0051]** According to a third aspect, the invention relates to a refill for an appliance, notably for shaping the hair, comprising a fixing means for attachment to a receiving structure of the appliance comprising two profile elements able to engage in an insertion guide of the receiving structure, along which the refill moves when being fitted to the appliance and when being removed therefrom, the refill being something other than a refill for an appliance, notably an appliance for shaping the hair, comprising

- two profile elements that engage in an insertion guide of the receiving structure along which the refill moves when it is fitted on the appliance and when it

- is removed from the latter, and
- a mobile element acting as a memory of use, capable of moving from an inactive position in which the element is set back from a space between the two profile elements into an active position in which this element projects into said space, said element being intercepted by a blocking member of the receiving structure passing between the two profile elements when it is in the active position, during insert fitting of the refill into the receiving structure and removal thereof therefrom, the mobile element being arranged in such a way that the blocking member can be overcome by said element in the direction of removal of the refill and that the blocking member opposes the passage of said element in the direction of insertion of the refill, if an attempt is made to re-insert a refill that has already been used.

**[0052]** Another subject of the invention is an assembly comprising a refill according to the third aspect of the invention described hereinabove and an appliance designed to use the refill, the appliance comprising a refill receiving structure comprising an insertion guide into which the profile elements engage when the refill is fitted.

**[0053]** All the refill and assembly features described hereinabove in connection with the first aspect of the invention can be applied to this third aspect of the invention.

**[0054]** The invention may be understood better from reading the following detailed description of nonlimiting illustrative embodiments thereof and from studying the appended drawing, in which:

- figure 1 schematically shows a perspective view of an example of an appliance lacking the positioning finger of the invention, with the refill fitted,
- figure 2 shows the appliance of figure 1 with the refill absent,
- figure 3 shows part of the appliance of figure 2, with the cover of the upper arm removed,
- figure 4 schematically shows a partial view of an example of a refill lacking the positioning finger of the invention,
- figure 5A schematically illustrates a perspective view of a refill according to the invention,
- figure 5B is a view in cross section on VB-VB of figure 5A,
- figure 5C schematically illustrates a perspective view of an alternative form of refill, after the refill has been used,
- figure 5D is a view in cross section on VD-VD of figure 5C,
- figures 6A and 6B show side views of the refill of figure 4, before and after use on the appliance, respectively,
- figure 7 schematically shows a perspective view of an alternative form of refill lacking the positioning finger of the invention,
- figure 8 is a schematic in longitudinal section of the

- refill of figure 7,
- figures 9A and 9B illustrate the change in configuration of the refill of figure 8, before and after the use thereof,
- 5 - figure 10 is an example of an algorithm that can be implemented during the operation of the appliance,
- figure 11 shows, very schematically, the electronic circuit of the appliance,
- 10 - figure 12 schematically shows a perspective view of an alternative form of refill according to the invention, and
- figure 13 schematically depicts an example of an article.

15 **[0055]** In the example illustrated in the figures, the appliance 1 to which the invention applies is a straightening iron, having two arms 2, 3 that are connected by an articulation 4 and carry heating elements 5, 6 on opposing faces of the arms. These elements 5 and 6 make up  
20 straightening plates.

**[0056]** This appliance 1 takes a refill 10 which is fixed to one of the arms, next to one of the heating elements, in this case the upper arm 2 and the heating element 5.

**[0057]** The refill 10, shown on its own in figure 4, has  
25 a body 11 which contains a product to be applied, in this case a cosmetic product to be applied to the hair.

**[0058]** The refill 10 also has an application means 13 for applying this product, such as a felt, for example, which comes into contact with the hair while the appliance is being used. The refill 10 has a means 12 for fixing it  
30 to a receiving structure of the appliance, only a part of which has been shown in figure 2.

**[0059]** The product contained in the refill can be applied to the hair as the latter passes between the arms.

35 **[0060]** In the example in question, the means for fixing the refill to the appliance has two profile elements 14 and 15, which are inserted into guideway elements provided on the corresponding arm.

**[0061]** The appliance has for example three guideway elements 17, 18 and 19 that are intended to cooperate with the upper profile element 15, and two guideway elements 20 and 21 that are intended to cooperate with the lower profile element 14, when the refill 10 is fitted on the appliance.

45 **[0062]** The refill 10 may comprise a hook 23 extending from the rear end of one of the two profile elements 14 or 15 and intended to cooperate with a clip 24 in order to hold the refill in position, this hook 23 being for example snap-fastened in the clip 24 at the end of its insertion into the appliance, and being able to be withdrawn therefrom by a mechanism of the push/pull type or the like.

**[0063]** The appliance has an electrical contactor 26 which is actuated by the refill 20 when the latter is present, and which makes it possible to indicate whether the refill is present. This contactor comprises a lever 26a against  
50 which a seal 26b may press, said seal itself being actuated by a pusher 26c.

**[0064]** The appliance 1 has a blocking member 30, the

role of which is to cooperate with a mobile element 33 of the refill 10 that serves as a memory of use.

**[0065]** The blocking member 30 is returned elastically by a leaf spring 31 in this example and has, at the front, an edge 34 substantially perpendicular to the plane of the wall 35 to which the guideway elements are attached, and, at the rear, a less steep edge 37.

**[0066]** The blocking member 30 is disposed for example through a slot 36 in the wall 35 and can retract when the element 33 passes in the direction of removal of the refill.

**[0067]** In the example in question, the mobile element 33 is in the form of a pin which is mounted as a friction fit in a corresponding housing 42 in the upper profile element 15, as can be seen in figures 5A and 5B.

**[0068]** The element 33, the initial inactive position of which is shown in figures 5A and 5B, does not project into the space 43 defined between the two profile elements 14 and 15 before the refill is used for the first time, as can be seen in figures 5B and 6A, notably.

**[0069]** The appliance 1 has a relief designed to move the element 33 when the refill 10 is fitted on the appliance for the first time.

**[0070]** In the example in question, this relief is formed by a ramp 45 of the guideway element 18 situated at the rear edge 37 of the blocking member 30. Thus, when the profile elements 14 and 15 slide in the guideway elements when the refill is used for the first time, the ramp 45 is pressed progressively against the element 33 and pushes it into its housing 42.

**[0071]** The element 33 thus projects into the space 43 between the profile elements 14 and 15, as illustrated in figure 5D.

**[0072]** The blocking member 30 engages between the profile elements 14 and 15 when the refill 10 is fitted on the appliance. Thus, during the insertion of the refill 10, the blocking member 30 sweeps over the zone into which the element 33 extends once in the active position as shown in figures 5C and 5D.

**[0073]** The slope of the rear edge 37 of the blocking member 30 is chosen such that the element 33 can deform the blocking member 30 during the removal of the refill in order to retract and pass over said blocking member 30.

**[0074]** The pusher 26c which acts on the contactor 26 is situated upstream of the blocking member 30 with regard to the direction of introduction of the refill 10 into the appliance 1. Thus, the contactor 26 is actuated even before the blocking member 30 exerts its possible action of blocking the insertion of the cartridge.

**[0075]** The assembly formed by the refill and the appliance operates as follows.

**[0076]** The first time the refill 10 is fitted on the appliance, the ramp 45 causes the element 33 to move from the position of figures 5A and 5B to that of figures 5C and 5D. This change in position takes place when the element 33 has already passed over the front edge 34 of the blocking member 30, on account of the offset between this

edge 34 and the ramp 45 in the direction of insertion of the refill 10. The blocking member 30 therefore does not impede the fitting of the refill 10.

**[0077]** During the removal of the latter, the element 33 can pass over the blocking member 30 on account of the slope of the rear edge 37 thereof.

**[0078]** However, if an attempt is made to refit the refill, the element 33 butts against the front edge 34 of the blocking member 30 on account of the increased slope of this front edge 34, which prevents it from being passed over by the element 33. Therefore, the user cannot reuse the refill.

**[0079]** The element 33 that serves as a memory of use can be embodied in various other ways and other than with the aid of a pin that is able to move with friction in a housing, as has just been described with reference to figures 1 to 6B.

**[0080]** It is thus possible, as illustrated in figures 7 to 9B, to embody the element 33 in the form of a hook, comprising an end part 53 which catches in a housing 51 of the lower profile element 14 and a connecting part 52 which connects the end part 53 to the body of the refill. This embodiment not having the positioning finger (80) of the invention makes it possible to form the element 33 by molding it in one piece with the profile elements 14 and 15 and the body of the refill 10.

**[0081]** When the refill 10 is fitted for the first time, the ramp 45 of the appliance presses against the element 33, for example at the elbow formed between the parts 52 and 53 of the element 33, and the part 53 can be snap-fastened in the housing 51, as illustrated in figure 9B.

**[0082]** The path followed by the blocking member 30 relative to the refill 10 while the latter is being fitted is shown by way of a broken line in this figure.

**[0083]** Figure 9A shows that, in the initial position, which corresponds to that of figures 7 and 8, before the refill is used for the first time, the end part 53 is situated above the path of the blocking member 30 and therefore does not impede the fitting of the refill. In the active position, as illustrated in figure 9B, once the end part 53 has been snap-fastened in the housing 51, it can butt against the blocking element 30.

**[0084]** As illustrated in figure 12, the refill also comprises, extending from the rear end of the profile element 14 or 15 that does not bear the hook 23, a positioning finger 80 making it easier for the profile elements 14 and 15 to be positioned with respect to the guideway elements 17 to 19 of the appliance during insertion of the refill in the insertion guide.

**[0085]** This positioning finger 80 may have a chamfer 82 on its opposite edge to the hook 23. Such a chamfer 82 makes positioning even easier.

**[0086]** The finger 80 may also, where it meets the profile element 14, form a discontinuity 84 on the same side as the hook 23, the finger 80 being smaller in width than the profile element 14 from which it extends. Thus the refill 10 has, between the finger 80 and the hook 23, a space 86 which is wider than the space between the two

profile elements 14 and 15. Such a space 86 makes it easier to attach the hook 23 to the clip of the corresponding appliance.

**[0087]** The hook 23 may extend further to the rear than the positioning finger 80 so that the latter does not impede the snap-fastening of the hook 23 onto the clip 24.

**[0088]** The refill 10 may be replaced by an article, as depicted for example in figure 13, having the same structure as the refill 10 except for the element serving as a memory of use and for the cosmetic product, which it does not have. Thus, when it is fixed to the device in the same way as a refill 10, the article acts on the detection element 26 in the same way as the refill 10 would.

**[0089]** As an alternative, the article may have a different structure than the refill. For example, the article does not have the felt, the housing normally provided for the latter on refills being open or closed. The article may be a part that does not come into contact with the hair or the pressing element when the arms are closed but acts on the detection element in order to be detected as a refill.

**[0090]** The article may be made from a different material than the refill.

**[0091]** The appliance 1 has an electronic circuit 100, shown schematically in figure 10, which has an electronic memory 101, for example of the EEPROM type. This electronic circuit 100 is connected to the contactor 26 which is actuated while the refill 10 is being fitted on the appliance. It is also connected to at least one electrical resistor 102 for steam production, to one or more electrical resistors 103 for heating the elements 5, 6, and to one or more temperature sensors 104 that make it possible, for example, to know the temperature of the plates.

**[0092]** A switch 105, for example of the reed switch type, makes it possible to know the closed or open state of the appliance. The switch 105 is disposed for example on one of the arms and a magnet is disposed on the other of the arms so as to change the state of the switch 105 when the two arms 2, 3 are in the closed position. The switch 105 makes it possible to inform the electronic circuit 100 of the number of closures of the arms. The electronic circuit 100 is designed to be connected by a power cable 106 to the AC mains, for example the 110 V or 240 V mains.

**[0093]** The electronic circuit 100 may be in the form of one or more boards, some of which may be disposed in the handpiece and others of which may be disposed in the base station when the appliance has such a base station, which serves for steam production by containing for example a water reservoir and a pump.

**[0094]** The electronic circuit 100 has at least one component such as a microcontroller, programmed to execute an algorithm controlling the operation of the appliance, preferably in accordance with the diagram in figure 11.

**[0095]** The electronic circuit 100 is powered when the cable 106 is connected to the electric mains and can detect fitting of the refill when the appliance is switched off. The step 201 of connecting the cable 106 of the ap-

pliance to the mains makes it possible, in a step 202, to detect, by virtue of a contactor 26, the possible insertion of the refill 10 prior to the appliance 1 being switched on, in step 203, by pressing a corresponding button.

**[0096]** If the insertion of the refill is detected in step 202, then a variable *ILS\_nbr* representative of the number of closures of the arms is initialized in step 204, even though the appliance 1 has not yet been started up.

**[0097]** When the appliance is switched on, in step 203, a detection of the presence of the refill is carried out in step 205. If the refill has not been fitted, which corresponds to the branch 206 in the diagram, the variable *ILS\_nbr* is initialized in step 207 and the operation of the appliance 1 is effected in the downgraded mode, this being schematically indicated by the block 208 in figure 10. In this downgraded mode, the temperature is predefined so as to be non-adjustable, for example set to the value of 180°C, the generation of steam is prevented and cannot be activated, and the corresponding state is signaled to the user, for example by the flashing of an LED or the emission of an audible signal.

**[0098]** The appliance 1 remains in this downgraded mode until a refill is possibly inserted in step 209, in which case the appliance operates in a non-downgraded mode, depicted by the block 210 in figure 10, in which the temperature can be adjusted by the user, starting from a default value stored in the memory, which corresponds to the last use value in the non-downgraded mode. The steam generator is activated and the corresponding state is signaled to the user for example by the abovementioned LED being illuminated in a non-flashing manner.

**[0099]** In the non-downgraded mode, the electronic circuit 100 detects the closure of the arms 2, 3 on the locks treated in step 211, so as to increment the variable *ILS\_nbr* by a quantity representative of the number of closures. In order to save memory space, this variable is preferably incremented every *n* closures, where *n*=5, for example. Thus, every 5 closures, the variable *ILS\_nbr* is incremented by 5 units.

**[0100]** In step 211, it is also possible to allow the user to modify the setpoint heating temperature of the plates. The quantity of water remaining for the generation of steam can be detected in order to trigger a corresponding alarm, if need be.

**[0101]** In step 212, a check is made as to whether the variable *ILS\_nbr* is less than a predefined threshold *n1*, where *n1*=160, for example. If the variable *ILS\_nbr* is less than *n1*, the cosmetic composition in the refill is considered not to have been used up and the appliance 1 can continue to operate in the non-downgraded mode, as is indicated schematically by the branch 213 in figure 11. If the value of the variable *ILS\_nbr* becomes greater than or equal to the threshold *n1*, as is depicted by the branch 215, the appliance passes back into the downgraded mode, corresponding to the block 208 in figure 11. The setpoint heating temperature of the plates thus returns to the predefined value of the downgraded mode, the operation of the steam generator is interrupted, and

the corresponding state is signaled by the display of the LED, which flashes.

**[0102]** If the appliance 1 is stopped without its power supply being cut, this being shown schematically in step 216, and the appliance is then started in step 217, the stored value of the variable *ILS\_nbr* is read in step 218. If this value is less than the threshold n1, as is depicted by the branch 219 in figure 10, the appliance maintains the non-downgraded mode depicted by the block 210. If the stored value of the variable *ILS\_nbr* is greater than or equal to the threshold n1, the appliance passes into the downgraded mode, as is depicted by the branch 221 and the block 208.

**[0103]** If, when the appliance is on, the user removes the refill, as is depicted by the branch 220 and step 223, the variable *ILS\_nbr* is reinitialized in step 224 and the appliance 1 passes into the downgraded mode.

**[0104]** Preferably, the appliance 1 is designed, in the event of a prolonged period of non-use, that is to say without closures of the arms 2, 3 being detected, to pass into sleep mode in step 230, until the on button is pressed in step 210.

**[0105]** The block 231 schematically indicates the case in which the appliance 1 is disconnected, in which case, when it is reconnected, the algorithm in figure 10 returns to step 201 described above.

**[0106]** Returning to the test in step 205, if the appliance 1 is started in step 203 with the refill 10 already fitted, this corresponding to the branch 234 in figure 10, the value of the variable *ILS\_nbr* is read in step 235 and this value is compared with a second threshold n2, which is different from the threshold n1 and notably less than the latter. The threshold n2 is equal to 20, for example. If the value of the variable *ILS\_nbr* is greater than or equal to n2, the appliance passes into the downgraded mode in step 208. This thus avoids operating the device in the non-downgraded mode if the user has disconnected and then reconnected the appliance with an already significant number of openings and closures of the arms, it being probable that the user has started to use the refill and has then allowed a non-negligible period of time to pass before resuming treatment, since disconnecting the appliance frequently implies that it has been put away. In the case of uses that are excessively spaced apart in time, the cosmetic composition contained in the refill is likely to evaporate, resulting in reduced effectiveness of the refill.

**[0107]** If the variable *ILS\_nbr* is strictly less than the second threshold n2, the appliance can operate in the non-downgraded mode, corresponding to the branch 237 and the block 210 in figure 11.

**[0108]** The invention is not limited to the algorithm illustrated.

**[0109]** It may notably be advantageous to count not just the number of closures of the arms but also the duration of closure of the arms on the hair, which may be representative of the length of locks treated. This can make it possible to determine more exactly the degree

to which the cosmetic composition within the refill has been used up and thus to signal the need to replace the refill more precisely to the user.

**[0110]** In order to determine the duration of closure of the arms, the electronic circuit 100 of the appliance is advantageously provided with a clock 110, shown by way of dotted lines in figure 10, preferably provided with a battery for saving the data in a clock memory.

**[0111]** In the example in question, the downgraded mode corresponds to operation without the steam generator and at a predefined temperature of the heating plates.

**[0112]** In variant embodiments of the invention, the downgraded mode is different and corresponds for example to operation still with a possibility of adjusting the temperature of the heating plates, this preferably being more limited than in the presence of steam.

**[0113]** In a variant that is not illustrated, the appliance is designed such that it can identify the nature of the fitted refill, by virtue for example of one or more reliefs on the refill which encode information which is read by one or more corresponding contactors present on the appliance. In this case, it is possible to modify the threshold values, notably the first threshold n1, depending on the nature of the refill, for example in order to take into account the fact that the cosmetic composition is used up differently from one refill to another depending on the nature thereof.

**[0114]** It is also possible, in a variant, to store the duration for which a refill is present on the corresponding arm. This can notably make it possible to force the appliance to pass into the downgraded mode beyond a certain duration in order to avoid a situation in which the user carries out a treatment with a refill, the cosmetic composition of which may have lost its effectiveness on account of its evaporating, for example.

**[0115]** Needless to say, the invention is not limited to the examples that have just been described.

**[0116]** The element 33 is produced for example by being molded together with the adjacent profile element, being connected thereto by one or more severable bridges of material. Once in the active position, the element 33 can be held only by friction or, alternatively, by snap-fastening in the profile element opposite.

**[0117]** Although the invention has been illustrated in connection with a refill fitted on the appliance by a sliding movement, the invention also applies to refills that are fitted by a movement other than just a sliding movement, for example a rotational movement or a more complex movement including translational and rotational components, for example.

**[0118]** The blocking member 30 may also be produced as a plastics part that is articulated about a pivot axis and is returned to its initial position by a coil spring.

**[0119]** The shape of the profile of the cartridge may be different from the overall T shape illustrated, and the element 33 can be moved in some other way than in the spatial direction defined between the two profile ele-



ments; for example, it can be moved in a direction parallel to the stem of the T.

**[0120]** If need be, the presence of the element 33 in the active position, that is to say after the cartridge has already been used, can be detected automatically if an attempt is made to fit the cartridge on the appliance, by virtue for example of a mechanical or optical sensor, in order to signal the reason for which the refill cannot be fitted to the user, for example by a message being displayed on a screen or by an indicator light being illuminated.

### Claims

1. A refill (10) for an appliance (1), notably a hair-shaping appliance (1), the refill comprising a fixing means able to collaborate with a complimentary member belonging to a receiving structure of the appliance (1), the fixing means of the refill comprising two profile elements (14, 15) able to engage in an insertion guide (17, 18, 19, 20, 21) of the receiving structure and between them defining a space (43) in which one or more members of the appliance are able to engage, one of the profile elements (14; 15) comprising, at its rear end, a hook-shaped retaining projection (23) that is intended to engage with a clip (24) of the appliance in order to keep the refill in position thereon, the other of the profile elements (14, 15) having at its rear end a positioning finger (80), having preferably a chamfer, to make the refill easier to position when it is being inserted into the appliance.
2. The refill as claimed in claim 1, the profile elements (14, 15) extending in the direction of insertion of the refill (10) as it is fitted into the appliance (1).
3. The refill as claimed in claim 1 or 2, extending along a longitudinal axis, and the profile elements (14, 15) extending along said longitudinal axis of the refill (10).
4. The refill as claimed in any one of the preceding claims, the fixing means (14, 15) having in cross section the overall shape of a T slotted in its middle.
5. The refill as claimed in any one of the preceding claims, the retaining projection (23) being longer than the positioning finger (80).
6. The refill as claimed in any one of the preceding claims, the refill (10) being made of a plastic, notably of PET, PBT, PP, PC, POM, SAN or PA6,6, particularly of PET, PBT or PA 6,6.
7. The refill as claimed in any one of the preceding claims, comprising an applicator member (13) for applying a product, preferably cosmetic, notably a felt.
8. The refill as claimed in any one of claims 1 to 6, having no applicator member (13).
9. The refill as claimed in any one of the preceding claims, the refill (10) comprising a mobile element (33) capable of moving from an inactive position in which the element is set back from the space (43) between the two profile elements (14, 15) into an active position in which this element projects into said space (43).
10. An article for an appliance (1) designed to accept the refill of claim 1, notably an appliance (1) for shaping the hair, comprising a refill fixing means able to collaborate with a complimentary fixing means situated on a receiving structure belonging to the appliance (1), the refill fixing means comprising two profile elements (14, 15) able to engage in an insertion guide (17, 18, 19, 20, 21) of the receiving structure and between them defining a space in which one or more members of the appliance are able to engage, one of the profile elements (14; 15) comprising, at its rear end, a hook-shaped retaining projection (23) that is intended to engage with a clip (24) of the appliance in order to keep the refill in position thereon, the other of the profile elements (14, 15) having at its rear end a positioning finger (80) to make the refill easier to position when it is being inserted into the appliance, the appliance (1) comprising a contactor (26) to detect a refill (10) as claimed in any one of claims 1 to 9 when one is mounted on the receiving structure of the appliance (1), the article being designed to actuate the contactor (26) of the appliance (1).
11. An assembly comprising a refill (10) as claimed in any one of claims 1 to 9 and an appliance (1) designed to accept the refill, the appliance comprising a refill receiving structure comprising an insertion guide (17, 18, 19, 20, 21) into which the two profile elements (14, 15) engage when the refill (10) is fitted to the receiving structure of the appliance (1), preferably by way of a sliding movement along the insertion guide that forms preferably a guideway in which the profile elements forming rails slides as the refill (10) is fitted on the appliance (1), the appliance being preferably for treating hair and comprising two arms (2, 3) that are joined by a hinge, the refill (10) receiving structure being formed on one of the arms (2, 3).
12. The assembly as claimed in claim 11, the refill being as claimed in claim 11, and the receiving structure comprising on the one hand a relief (18) positioned in such a way as to bring the mobile element (33) from its inactive position into its active position when the refill (10) is first fitted to the appliance (1), and on the other hand comprising a blocking member

(30) arranged upstream of said relief (18) in the direction of insertion of the refill (10) and designed to collaborate with the mobile element (33) so as to allow the mobile element (33) to pass in the direction of removal of the refill (10) and prevent the mobile element (33) from passing in the direction of fitting of the refill after the refill (10) has been fitted for the first time, preferably the mobile element (33) being connected to one of the profile elements (14; 15) by a severable bridge of material that is intended to become broken during the transition from the inactive position to the active position or the mobile element (33) being a hook molded with one of the profile elements (14; 15), designed to be snap-fastened in the active position to the other profile element (14; 15), the hook notably comprising an end part (53) which catches in a corresponding housing (51) in the other profile element (14; 15).

13. The assembly as claimed in claim 12, the blocking member (30) being able to move between a first position in which the blocking member (30) projects from the appliance in such a way as to intercept the mobile element (33) in the active position when a refill is used on the appliance, and a second position that is at least partially retracted so as to allow the mobile element (33) in the active position to pass when a refill is used on the appliance, the blocking member (30) comprising a return member keeping it in the first position and being designed to move, in the direction of removal of the refill (10), from its first position into its second position under the action of the mobile element (33) so as to allow the mobile element to pass and being arranged so as to remain in the first position during insertion of the refill so as to prevent the passing of the mobile element (33) in the active position.
14. The assembly as claimed in claim 12, the blocking member (30) being an immobile relief projecting into the space (43) when the refill (10) is fitted to the appliance (1), the mobile element (33) being designed to move from its active position toward its inactive position under the action of the blocking member (30) in the direction of removal of the refill (10) and being designed to maintain its active position in the direction of fitting of the refill after the refill (10) has been fitted for the first time, so as to prevent the blocking member (30) from moving into the space (43) between the two profiles (14, 15).
15. The assembly as claimed in any one of claims 11 to 14, the appliance (1) comprising a contactor (26) actuated by the refill (10) when it is fitted to the appliance (1) so as to detect the presence of the refill (10) on the appliance (1).

## Patentansprüche

1. Nachfüllung (10) für eine Vorrichtung (1), insbesondere eine Haarformungsvorrichtung (1), wobei die Nachfüllung ein Befestigungsmittel umfasst, welches mit einem komplementären Element zusammenwirken kann, welches zu einer Aufnahmestruktur der Vorrichtung (1) gehört, wobei das Befestigungsmittel der Nachfüllung zwei Profilelemente (14, 15) umfasst, welche in eine Einführführung (17, 18, 19, 20, 21) der Aufnahmestruktur eingreifen können und zwischen ihnen einen Raum (43) definieren, in welchen eine oder mehrere Elemente der Vorrichtung eingreifen können, wobei eines der Profilelemente (14; 15) an seinem hinteren Ende einen hakenförmigen Haltevorsprung (23) umfasst, welcher dazu bestimmt ist, mit einem Klipp (24) der Vorrichtung in Eingriff zu sein, um die Nachfüllung darauf in Position zu halten, wobei das andere der Profilelemente (14, 15) an seinem hinteren Ende einen Positionierungsfinger (80) aufweist, welcher bevorzugt eine Abfasung aufweist, um die Positionierung der Nachfüllung zu erleichtern, wenn diese in die Vorrichtung eingeführt wird.
2. Nachfüllung nach Anspruch 1, wobei sich die Profilelemente (14, 15) in der Einführrichtung der Nachfüllung (10) erstrecken, wenn diese in die Vorrichtung (1) eingebaut wird.
3. Nachfüllung nach Anspruch 1 oder 2, wobei sich diese entlang einer Längsachse erstreckt, und die Profilelemente (14, 15) sich entlang dieser Längsachse der Nachfüllung (10) erstrecken.
4. Nachfüllung nach einem der vorhergehenden Ansprüche, wobei das Befestigungsmittel (14, 15) im Querschnitt die Gesamtform eines in ihrer Mitte geschlitzten T aufweist.
5. Nachfüllung nach einem der vorhergehenden Ansprüche, wobei der Haltevorsprung (23) länger als der Positionierungsfinger (80) ist.
6. Nachfüllung nach einem der vorhergehenden Ansprüche, wobei die Nachfüllung aus einem Plastik gemacht ist, insbesondere aus PET, PBT, PP, PC, POM, SAN oder PA 6,6, insbesondere aus PET, PDT, PA 6,6.
7. Nachfüllung nach einem der vorhergehenden Ansprüche, umfassend ein Applikatorelement (13) zum Aufbringen eines Produkts, bevorzugt kosmetisch, insbesondere ein Filz.
8. Nachfüllung nach einem der Ansprüche 1 bis 6, wobei diese kein Applikatorelement (13) aufweist.

9. Nachfüllung nach einem der vorhergehenden Ansprüche, wobei die Nachfüllung (10) ein mobiles Element (33) umfasst, welches sich aus einer inaktiven Position bewegen kann, in welcher das Element von dem Raum (43) zwischen den beiden Profilelementen (14, 15) zurückgesetzt ist, in eine aktive Position, in welcher dieses Element in den Raum (43) hineinragt.
10. Artikel für eine Vorrichtung (1), welcher ausgestaltet ist die Nachfüllung nach Anspruch 1 aufzunehmen, insbesondere eine Vorrichtung (1) zum Formen der Haare, umfassend ein Nachfüllungsbefestigungsmittel, welches mit einem komplementären Befestigungsmittel zusammenwirken kann, welches auf einer Aufnahmestruktur angeordnet ist, welche zur Vorrichtung (1) gehört, wobei das Nachfüllungsbefestigungsmittel zwei Profilelemente (14, 15) umfasst, welche in eine Einföhrführung (17, 18, 19, 20, 21) der Aufnahmestruktur eingreifen können und zwischen ihnen einen Raum definieren, in welchen ein oder mehrere Elemente der Vorrichtung eingreifen können, wobei eines der Profilelemente (14; 15) an seinem hinteren Ende einen hakenförmigen Haltvorsprung (23) umfasst, welcher dazu bestimmt ist, mit einem Klipp (24) der Vorrichtung in Eingriff zu sein, um die Nachfüllung darauf in Position zu halten, wobei das andere der Profilelemente (14, 15) an seinem hinteren Ende einen Positionierungsfinger (80) aufweist, um das Positionieren der Nachfüllung zu erleichtern, wenn diese in die Vorrichtung eingeföhrt wird, wobei die Vorrichtung (1) ein Schütz (26) umfasst, um einen Nachfüllung (10) nach einem der Ansprüche 1 bis 9 zu erkennen, wenn eine auf der Aufnahmestruktur der Vorrichtung (1) angebracht ist, wobei der Artikel ausgestaltet ist das Schütz (26) der Vorrichtung (1) zu betätigen.
11. Anordnung, umfassend eine Nachfüllung (10) nach einem der Ansprüche 1 bis 9 und eine Vorrichtung (1), welche ausgestaltet ist die Nachfüllung aufzunehmen, wobei die Vorrichtung eine Nachfüllungsaufnahmestruktur umfasst, welche eine Einföhrführung (17, 18, 19, 20, 21) umfasst, in welche die beiden Profilelemente (14, 15) eingreifen, wenn die Nachfüllung (10) an der Aufnahmestruktur der Vorrichtung (1) angebracht ist, bevorzugt via einer Gleitbewegung entlang der Einföhrführung, welche bevorzugt eine Führungsbahn bildet, in welcher die Profilelemente, welche Schienen bilden, gleiten, wenn die Nachfüllung (10) auf die Vorrichtung (1) aufgebracht wird, wobei die Vorrichtung bevorzugt zur Behandlung von Haaren ist und zwei Arme (2, 3) umfasst, welche durch ein Gelenk verbunden sind, wobei die Aufnahmestruktur der Nachfüllung (10) auf einen der Arme (2, 3) gebildet ist.
12. Anordnung nach Anspruch 11, wobei die Nachfüllung wie in Anspruch 11 beansprucht ist, und die Aufnahmestruktur ein Relief (18) aufweist, welches so positioniert ist, um das mobile Element (33) von seiner inaktiven Position in seine aktive Position zu bringen, wenn die Nachfüllung (10) zum ersten Mal an der Vorrichtung (1) angebracht wird, und andererseits ein Blockierungselement (30) umfasst, welches vor dem Relief (18) in der Richtung der Einföhrung der Nachfüllung (10) angeordnet ist und ausgestaltet ist mit dem mobilen Element (33) zusammenzuwirken, so dass das mobile Element (33) in der Richtung des Entfernens der Nachfüllung (10) passieren kann und das mobile Element (33) darin zu hindern, in der Richtung des Anbringens der Nachfüllung zu passieren nachdem die Nachfüllung (10) zum ersten Mal angebracht wurde, wobei das mobile Element (33) bevorzugt mit einem der Profilelemente (14, 15) durch eine trennbare Materialbrücke verbunden ist, welche vorgesehen ist während des Übergangs von der inaktiven Position zu der aktiven Position gebrochen zu werden, oder wobei das mobile Element (33) ein Haken ist, welcher mit einem der Profilelemente (14; 15) ausgeformt ist, welcher ausgestaltet ist in der aktiven Position an das andere Profilelement (14; 15) schnappbefestigt zu sein, wobei der Haken insbesondere ein Endteil (53) umfasst, welches in einem korrespondierenden Gehäuse (51) in dem anderen Profilelement (14; 15) einrastet.
13. Anordnung nach Anspruch 12, wobei das Blockierungselement (30) sich zwischen einer ersten Position, in welcher das Blockierungselement (30) von der Vorrichtung hervorspringt, so dass das mobile Element (33) in der aktiven Position abgefangen wird, wenn eine Nachfüllung auf der Vorrichtung verwendet wird, und einer zweiten Position, welche zumindest teilweise eingefahren ist, so dass dem mobilen Element (33) in der aktiven Position erlaubt wird zu passieren, wenn eine Nachfüllung auf der Vorrichtung verwendet wird, wobei das Blockierungselement (30) ein Rückföhrelement umfasst, welches es in der ersten Position hält und ausgestaltet ist sich in der Richtung des Entfernens der Nachfüllung (10) von seiner ersten Position in seine zweite Position unter der Wirkung des mobilen Elements (33) zu bewegen, so dass dem mobilen Element erlaubt wird zu passieren, und welches angeordnet ist, in der ersten Position während des Einföhrens der Nachfüllung zu bleiben, so dass das Passieren des mobilen Elements (33) in die aktive Position verhindert wird.
14. Anordnung nach Anspruch 12, wobei das Blockierungselement (30) ein unbewegliches Relief ist, welches in den Raum (43) hervorspringt, wenn die Nachfüllung (10) an die Vorrichtung (1) angebracht ist, wobei das mobile Element (33) ausgestaltet ist, sich von seiner aktiven Position zu seiner inaktiven

Position unter der Wirkung des Blockierungselements (30) in die Richtung des Entfernens der Nachfüllung (10) zu bewegen, und ausgestaltet ist in seiner aktiven Position in der Richtung des Anbringens der Nachfüllung zu bleiben, nachdem die Nachfüllung (10) zum ersten Mal angebracht wurde, so dass das Blockierungselement (30) gehindert wird sich in den Raum (43) zwischen den beiden Profilen (14, 15) zu bewegen.

15. Anordnung nach einem der Ansprüche 11 bis 14, wobei die Vorrichtung (1) ein Schütz (26) umfasst, welches durch die Nachfüllung (10) betätigt wird, wenn diese an der Vorrichtung (1) angebracht wird, um das Vorhandensein der Nachfüllung (10) an der Vorrichtung (1) zu erkennen.

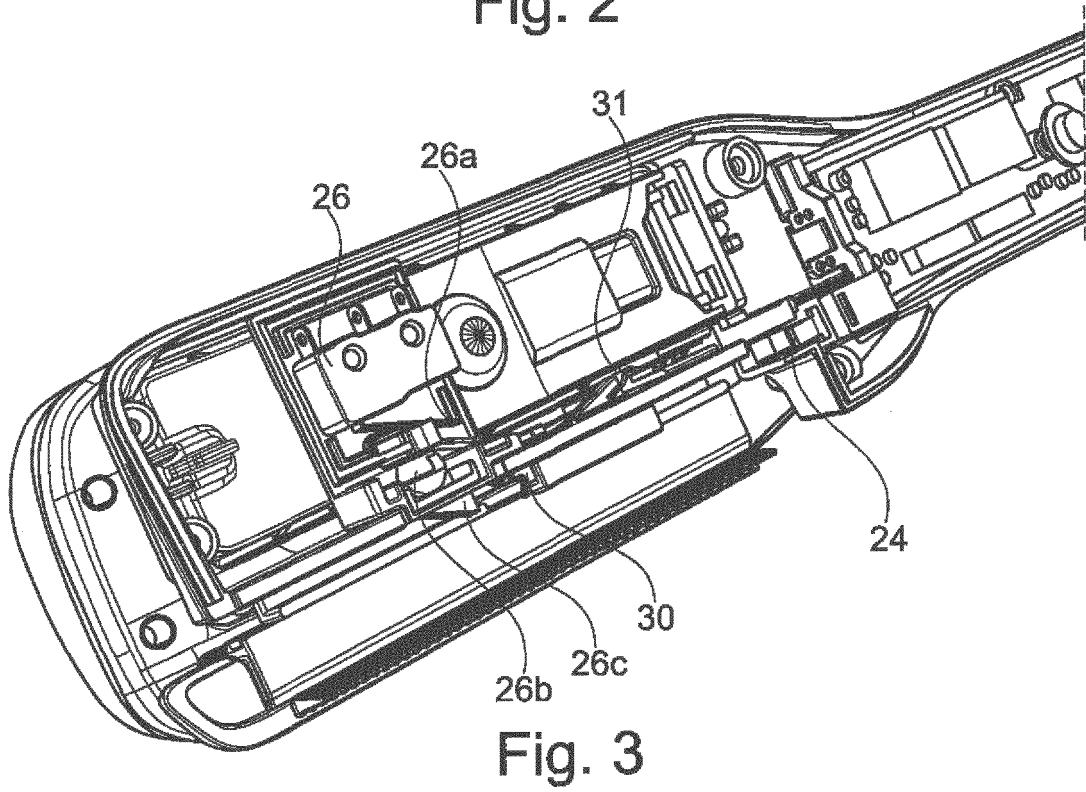
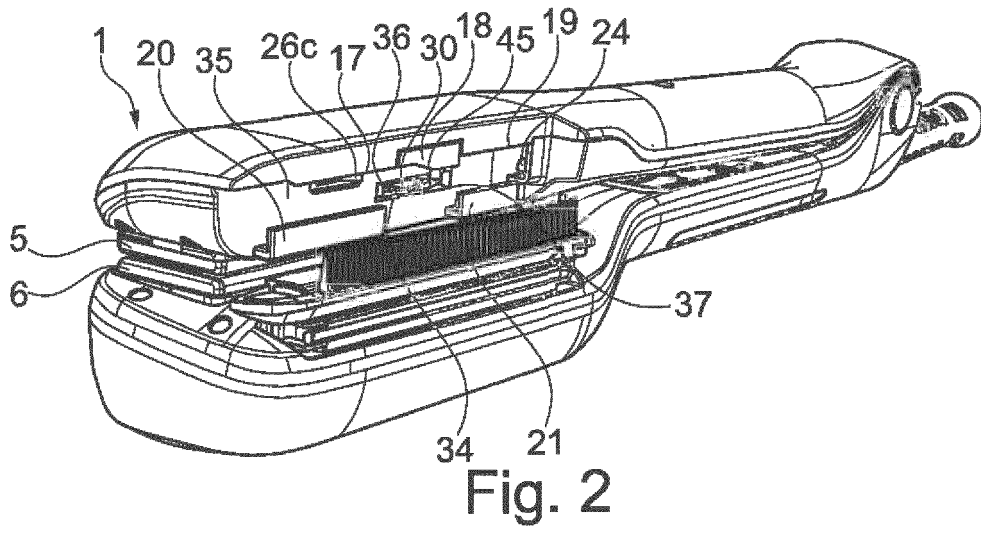
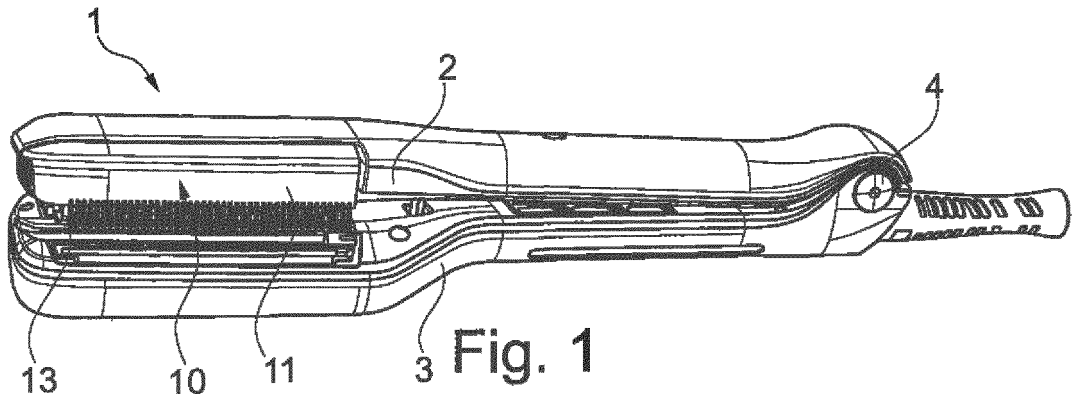
### Revendications

1. Recharge (10) pour un appareil (1), notamment un appareil (1) de mise en forme des cheveux, la recharge comportant un moyen de fixation apte à coopérer avec un organe complémentaire appartenant à une structure d'accueil de l'appareil (1), le moyen de fixation de la charge comportant deux éléments de profilé (14, 15) aptes à s'engager dans un guide d'insertion (17, 18, 19, 20, 21) de la structure d'accueil et définissant entre eux un espace (43) dans lequel un ou plusieurs organes de l'appareil sont aptes à s'engager, l'un des éléments de profilé (14 ; 15) comportant, au niveau de son extrémité arrière, une saillie de retenue en forme de crochet (23) qui est prévue pour s'engager avec une pince (24) de l'appareil afin de maintenir la recharge en position sur ce dernier, l'autre des éléments de profilé (14, 15) ayant, au niveau de son extrémité arrière, un doigt de positionnement (80), ayant de préférence un chanfrein, pour faciliter le positionnement de la recharge lors de l'insertion de cette dernière dans l'appareil.
2. Recharge selon la revendication 1, les éléments de profilé (14, 15) s'étendant dans la direction d'insertion de la recharge (10) lorsqu'elle est mise en place dans l'appareil (1).
3. Recharge selon la revendication 1 ou 2, s'étendant le long d'un axe longitudinal, et les éléments de profilé (14, 15) s'étendant le long dudit axe longitudinal de la recharge (10).
4. Recharge selon l'une quelconque des revendications précédentes, le moyen de fixation (14, 15) ayant, en coupe, la forme globale d'un T fendu en son milieu.
5. Recharge selon l'une quelconque des revendica-

tions précédentes, la saillie de retenue (23) étant plus longue que le doigt de positionnement (80).

- 5 6. Recharge selon l'une quelconque des revendications précédentes, la recharge (10) étant réalisée à partir d'une matière plastique, notamment en PET, PBT, PP, PC, POM, SAN ou PA6, 6, en particulier en PET, PBT ou PA6, 6 ;
- 10 7. Recharge selon l'une quelconque des revendications précédentes, comprenant un organe d'application (13) pour appliquer un produit, de préférence un produit cosmétique, notamment un feutre.
- 15 8. Recharge selon l'une quelconque des revendications 1 à 6, n'ayant pas d'organe d'application (13).
- 20 9. Recharge selon l'une quelconque des revendications précédentes, la recharge (10) comportant un élément mobile (33) pouvant passer d'une position inactive dans laquelle l'élément se situe en retrait de l'espace (43) entre les deux éléments de profilé (14, 15) à une position active dans laquelle cet élément fait saillie dans ledit espace (43).
- 25 10. Article pour un appareil (1) conçu pour accepter la recharge selon la revendication 1, notamment un appareil (1) pour mettre les cheveux en forme, comportant un moyen de fixation de recharge apte à coopérer avec un moyen de fixation complémentaire situé sur une structure d'accueil appartenant à l'appareil (1), le moyen de fixation de recharge comportant deux éléments de profilé (14, 15) aptes à s'engager dans un guide d'insertion (17, 18, 19, 20, 21) de la structure d'accueil et définissant entre eux un espace dans lequel un ou plusieurs organes de l'appareil sont aptes à s'engager, l'un des éléments de profilé (14 ; 15) comportant, au niveau de son extrémité arrière, une saillie de retenue en forme de crochet (23) qui est prévue pour s'engager avec une pince (24) de l'appareil afin de maintenir la recharge en position sur ce dernier, l'autre des éléments de profilé (14, 15) ayant, au niveau de son extrémité arrière, un doigt de positionnement (80) pour faciliter le positionnement de la recharge lorsqu'elle est insérée dans l'appareil, l'appareil (1) comportant un contacteur (26) pour détecter une recharge (10) selon l'une quelconque des revendications 1 à 9, lorsqu'elle est montée sur la structure d'accueil de l'appareil (1), l'article étant conçu pour actionner le contacteur (26) de l'appareil (1).
- 30 11. Ensemble comportant une recharge (10) selon l'une quelconque des revendications 1 à 9 et un appareil (1) conçu pour accepter la recharge, l'appareil comportant une structure d'accueil de recharge comportant un guide d'insertion (17, 18, 19, 20, 21) dans lequel s'engagent les deux éléments de profilé (14,
- 35 40 45 50 55

- 15) lorsque la recharge (10) est mise en place sur la structure d'accueil de l'appareil (1), de préférence au moyen d'un mouvement de coulissement le long du guide d'insertion qui forme de préférence une voie de guidage dans laquelle les éléments de profilé formant des rails coulissent lorsque la recharge (10) est mise en place sur l'appareil (1), l'appareil étant de préférence prévu pour traiter les cheveux et comportant deux bras (2, 3) qui sont assemblés par une charnière, la structure d'accueil de la recharge (10) étant formée sur l'un des bras (2, 3).
12. Ensemble selon la revendication 11, la recharge étant selon la revendication 11 et la structure d'accueil comportant d'une part, un relief (18) positionné afin d'amener l'élément mobile (33) de sa position inactive à sa position active lors de la première mise en place de la recharge (10) sur l'appareil (1), et comportant d'autre part, un organe de blocage (30) agencé en amont dudit relief (18) dans la direction d'insertion de la recharge (10) et conçu pour coopérer avec l'élément mobile (33) de façon à permettre le passage de l'élément mobile (33) dans le sens du retrait de la recharge (10) et à interdire le passage de l'élément mobile (33) dans le sens de la mise en place de la recharge après la première mise en place de la recharge (10), de préférence l'élément mobile (33) étant raccordé à l'un des éléments de profilé (14 ; 15) par un pont de matière sécable destiné à se rompre pendant la transition de la position inactive à la position active ou bien l'élément mobile (33) étant un crochet moulé avec l'un des éléments de profilé (14 ; 15) conçu pour s'encliqueter dans la position active sur l'autre élément de profilé (14 ; 15), notamment le crochet comportant une partie d'extrémité (53) qui s'accroche dans un logement (51) correspondant de l'autre élément de profilé (14 ; 15).
13. Ensemble selon la revendication 12, l'organe de blocage (30) étant mobile entre une première position dans laquelle l'organe de blocage (30) fait saillie de l'appareil de sorte à intercepter l'élément mobile (33) dans la position active lorsqu'une recharge est utilisée sur l'appareil, et une seconde position qui est au moins partiellement rétractée afin de permettre le passage de l'élément mobile (33) dans la position active lorsqu'une recharge est utilisée sur l'appareil, l'organe de blocage (30) comprenant un organe de rappel le maintenant dans la première position et étant conçu pour passer, dans le sens du retrait de la recharge (10), de sa première position à sa seconde position sous l'action de l'élément mobile (33) afin de permettre le passage de l'élément mobile et étant agencé pour rester dans la première position, lors de l'insertion de la recharge, pour interdire le passage de l'élément mobile (33) dans la position active.
14. Ensemble selon la revendication 12, l'organe de blocage (30) étant un relief immobile faisant saillie dans l'espace (43) lors de la mise en place de la recharge (10) sur l'appareil (1), l'élément mobile (33) étant conçu pour passer de sa position active vers sa position inactive sous l'action de l'organe de blocage (30) dans le sens de retrait de la recharge (10) et étant conçu pour conserver sa position active dans le sens de la mise en place de la recharge après la première mise en place de la recharge (10), pour empêcher le passage de l'organe de blocage (30) dans l'espace (43) entre les deux profilés (14, 15).
15. Ensemble selon l'une quelconque des revendications 11 à 14, l'appareil (1) comportant un contacteur (26) actionné par la recharge (10) lorsqu'elle est mise en place sur l'appareil (1) afin de détecter la présence de la recharge (10) sur l'appareil (1).



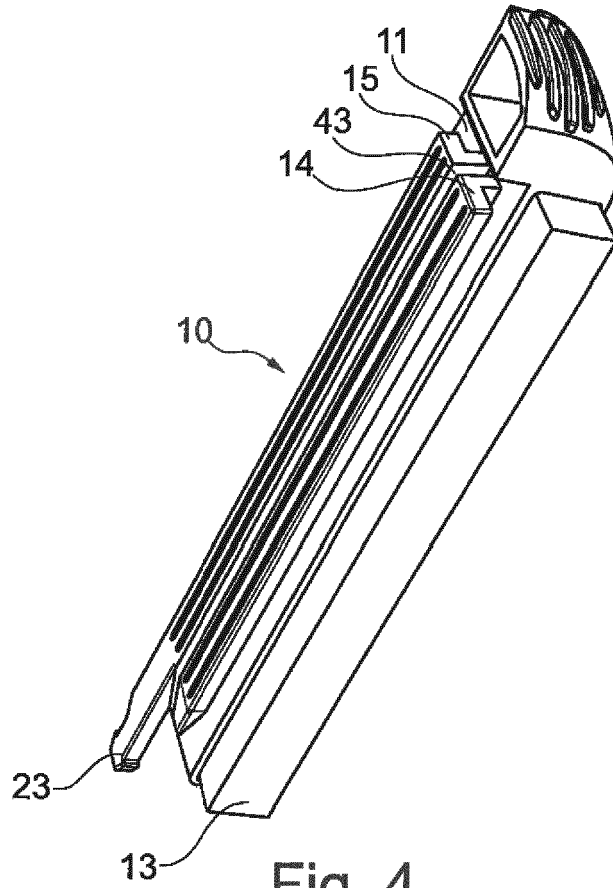


Fig. 4

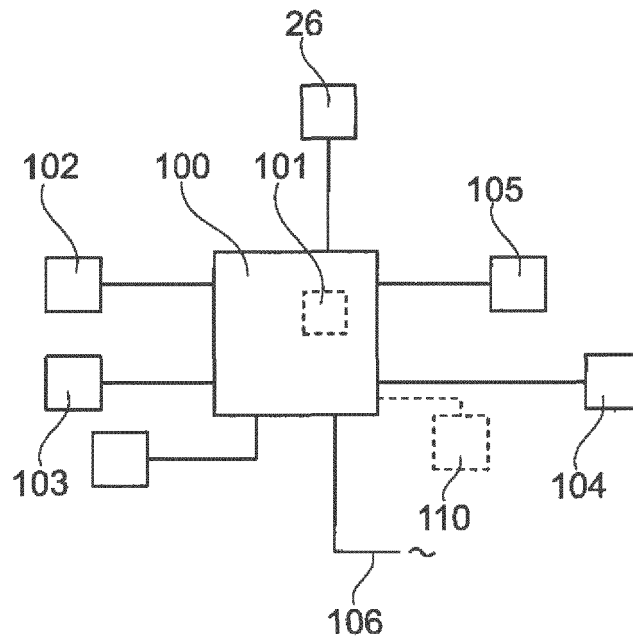


Fig. 10

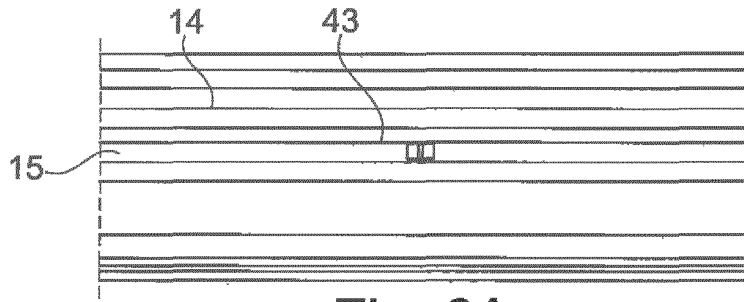


Fig. 6A

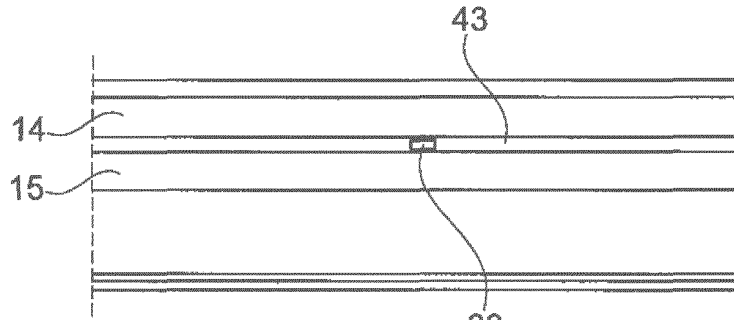


Fig. 6B

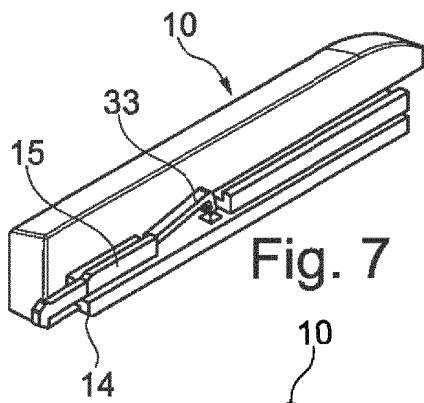


Fig. 7

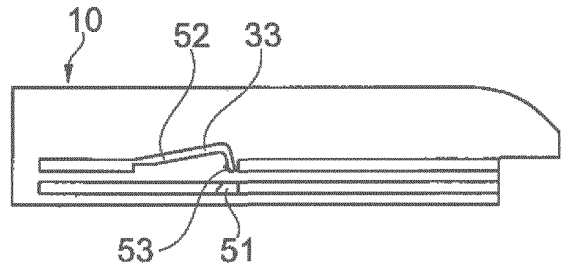


Fig. 8

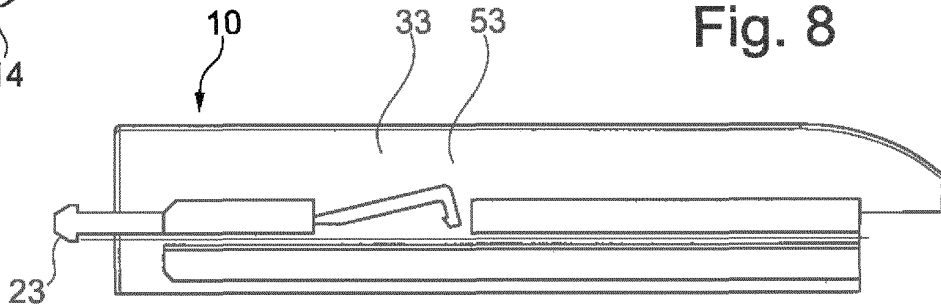


Fig. 9A

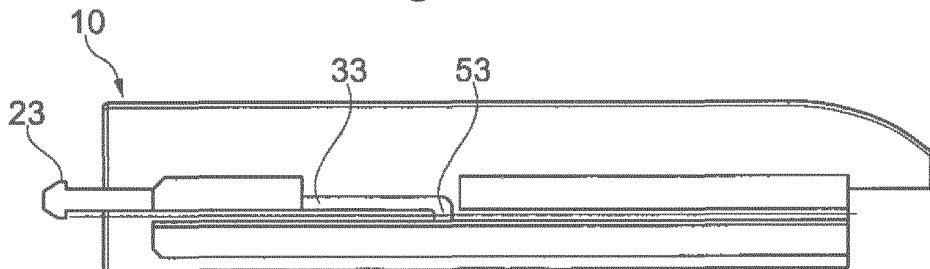


Fig. 9B



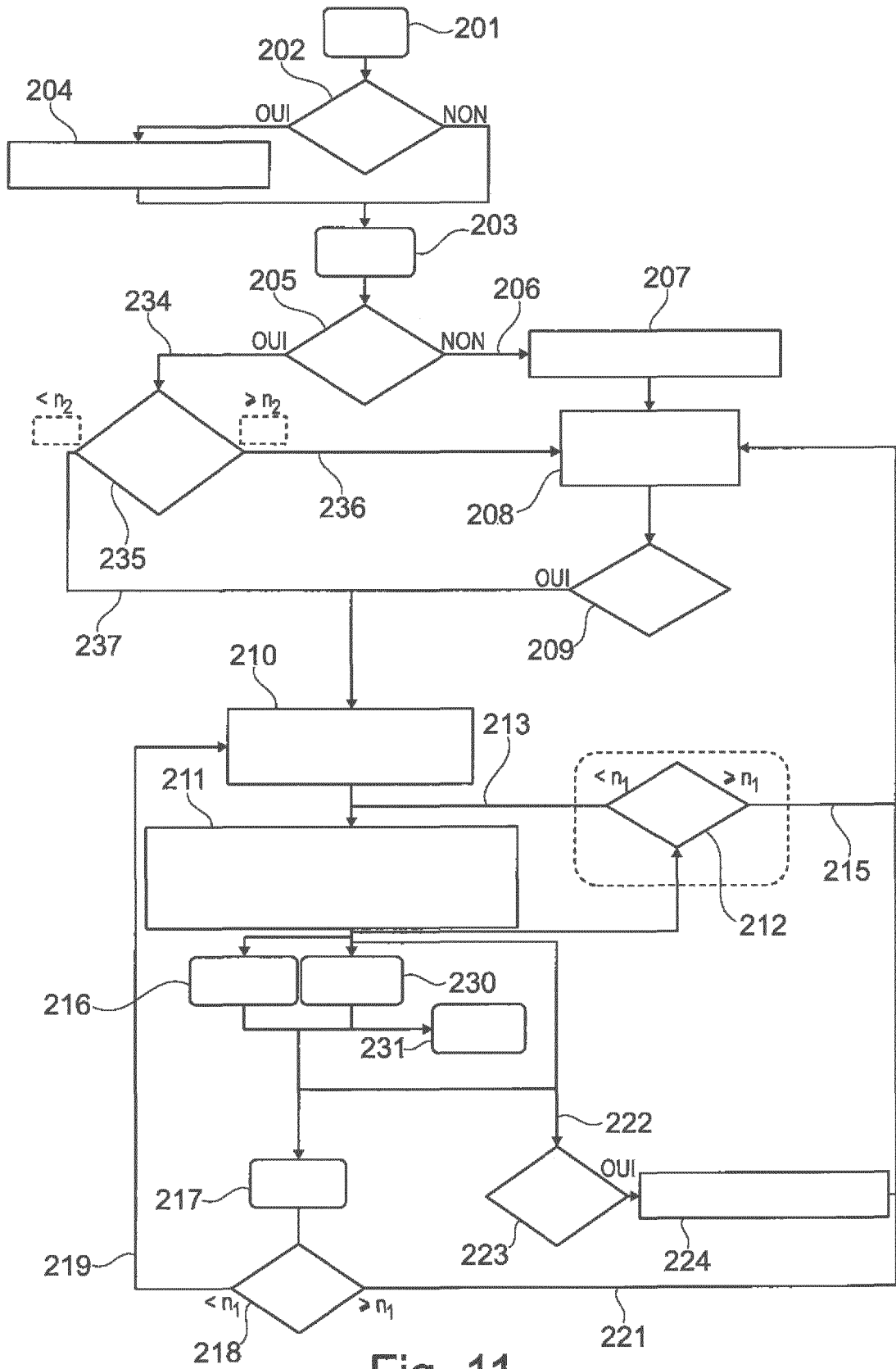


Fig. 11

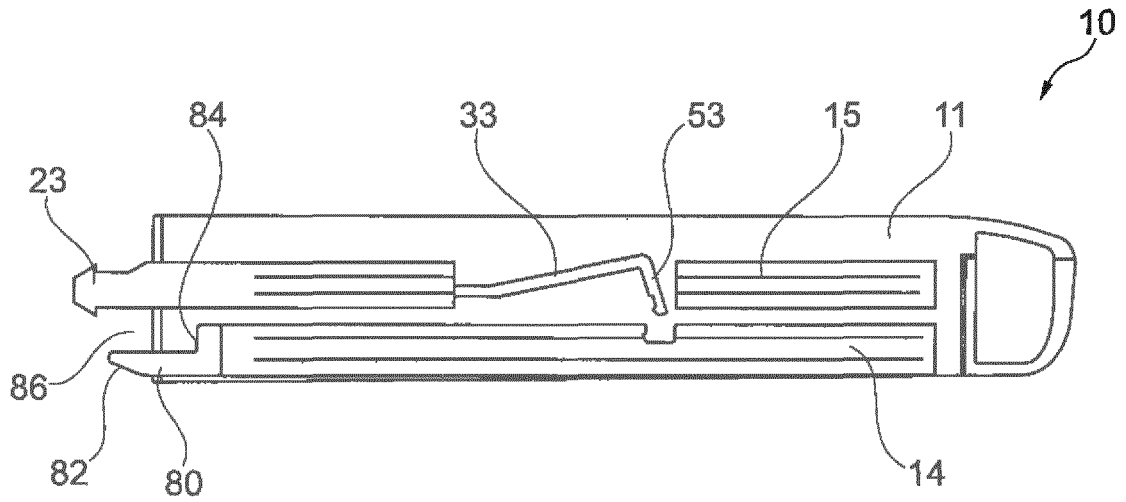


Fig. 12

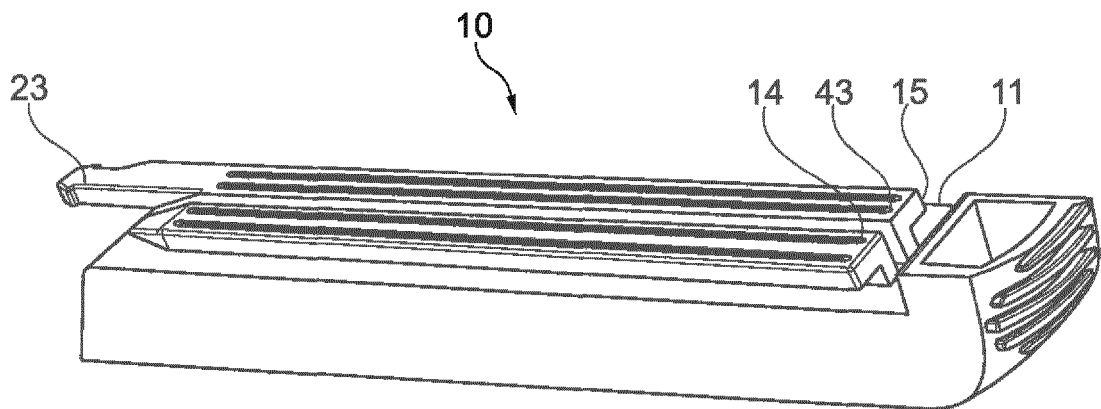


Fig. 13

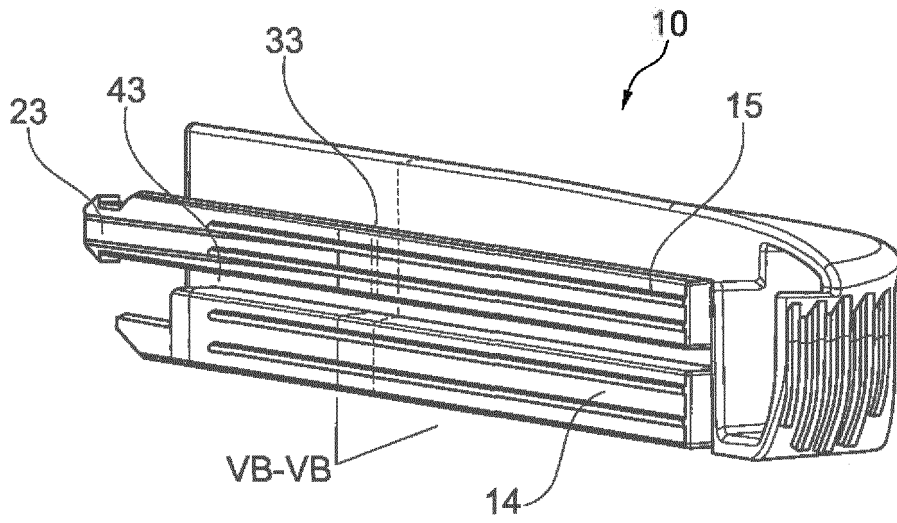


Fig. 5A

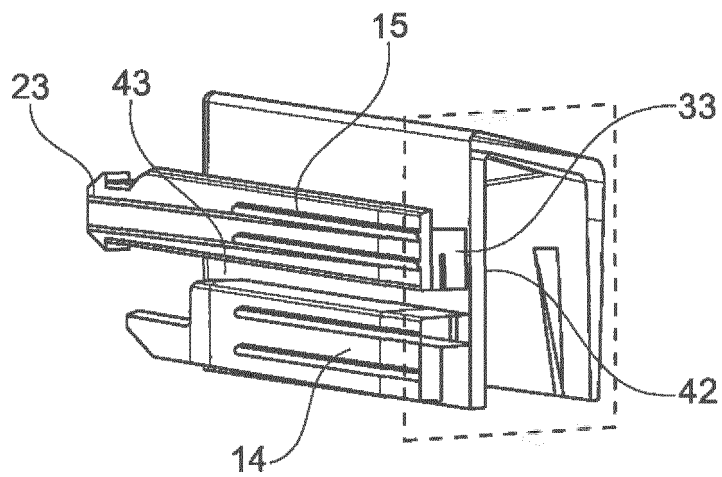


Fig. 5B

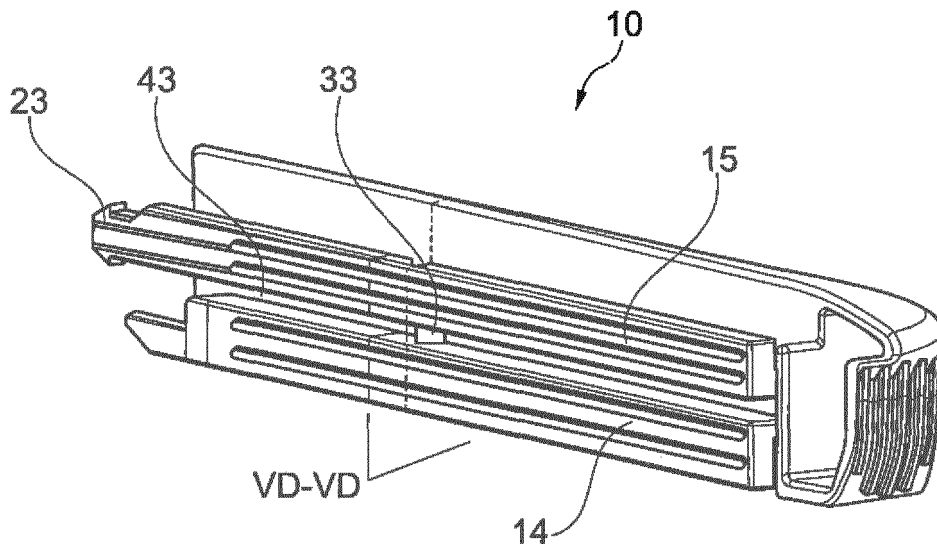


Fig. 5C

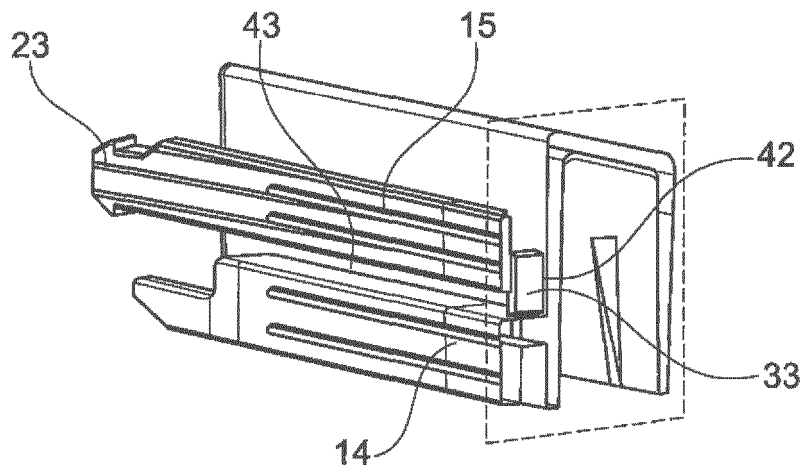


Fig. 5D

**REFERENCES CITED IN THE DESCRIPTION**

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