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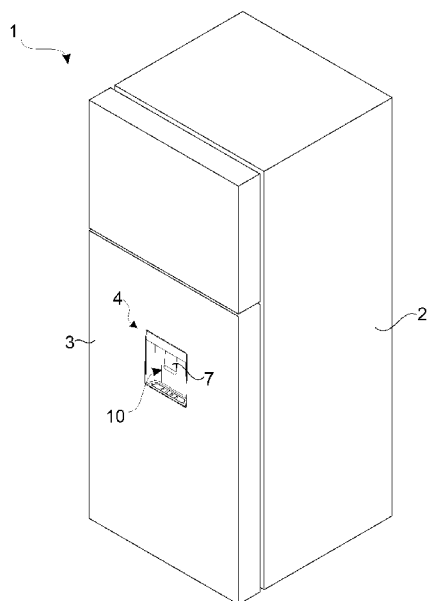
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(54) Title: A REFRIGERATOR COMPRISING A WATER DISPENSER

Figure 1



(57) Abstract: The present invention relates to a refrigerator (1) comprising at least one trigger (7) whereon the user applies pressure, providing the valve (6) to open/close, a recess (10) disposed on the exterior surface of the door (3) or the body (2), wherein the water container, filled with water by the user, is placed, having a ceiling (9) and wherein the trigger (7) performs rotational movement, and where the interior space thereof is used effectively since the depth of the recess (10) is decreased.

Description**A REFRIGERATOR COMPRISING A WATER DISPENSER**

- [0001] The present invention relates to a refrigerator comprising a water dispenser.
- [0002] In refrigerators, water dispensers disposed on the door are used that enable users to take their cooled beverages without opening the refrigerator door. When the user desires to reach the cooled water inside the refrigerator, he/she exerts force on the trigger, disposed on the door or the body, extending in the vertical axis, from inside the body towards outside, and provides the trigger to move by rotating around the horizontal axis. The valve is triggered as a result of applying force on the trigger by the user. A cavity is provided on the door or the body wherein the trigger moves and water outflow is provided. The trigger moves inside this cavity. The distance that the trigger performs its rotational movement depends on the depth of the cavity. As a result of decreasing the amount of space occupied by the cavity on the door or the body in order to utilize the interior volume of the refrigerator more effectively, the rotational angle of the trigger decreases and this decreased angle is not sufficient for providing water to flow by triggering the valve.
- [0003] In the state of the art French Patent Document No. FR1168048, a system is described that is disposed between the trigger and the valve, which triggers the valve and also provides water flow.
- [0004] The aim of the present invention is the realization of a refrigerator wherein the space occupied by the water dispenser is decreased.
- [0005] The refrigerator realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof, comprises at least one pusher, placed to the door or the body, contacting the trigger and providing the force exerted on the trigger to be transmitted to the valve.
- [0006] When force is applied to the trigger by the user, the trigger moves around the horizontal axis. This force applied to the trigger is transmitted to a pusher that bears against the trigger and the pusher rotates. When the pusher bears against the valve, the user continues to apply pressure to the trigger and water flow is provided when the trigger almost completes the

pivotal movement. The trigger activating the valve by means of the pusher, depends on the length of the pivotal movement distance. In the present invention, wherein the pivotal movement distance is shortened by the user applying pressure to the trigger, the valve is triggered by means of the pusher. When the trigger starts to rotate, the pusher also rotates and opens the valve.

[0007] The trigger comprises an arm that contacts the pusher and extends from the trigger towards the pusher. The arm moves by contacting the pusher and rotates the pusher around the horizontal axis whereto it is connected. While force is not applied by the user, the contact of the arm to the pusher is realized at the closest point to the direction where the pusher is mounted on the door or the body. Thus, even though the rotational distance of the trigger is less, the force arm distance is increased for triggering the valve by means of the arm.

[0008] The refrigerator comprises at least one first shaft, disposed between the valve and the exterior surface of the door or the body, providing the trigger to be mounted to the door, around which the trigger performs rotational movement and at least one second shaft, providing the pusher to be mounted to the body, around which the pusher performs rotational movement. As the result of the force applied by the user, the trigger connected to the first shaft makes pivotal movement and in the meantime the pusher connected to the second shaft rotates in the opposite direction with respect to the trigger.

[0009] In an embodiment of the present invention, the first shaft and the second shaft remain parallel and opposite to one another and the pusher extends from the second shaft towards the first shaft. The pusher functions like a lever that triggers the valve by bearing against the valve.

[0010] In an embodiment of the present invention, the refrigerator comprises at least one protrusion disposed on the pusher and at least one support disposed on the valve, against which the protrusion bears when force is applied to the trigger. When the pusher is activated by means of the trigger, the protrusion moves towards the support. The valve is triggered when the protrusion contacts the support.

[0011] The refrigerator realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

[0012] Figure 1 – is the perspective view of a refrigerator.

[0013] Figure 2 – is the perspective view of a water dispenser.

[0014] Figure 3 – is the perspective view of the water dispenser at the position where the trigger thereof is pushed forwards.

[0015] Figure 4 – is the perspective view of a trigger, a valve and a pusher.

[0016] Figure 5 – is the perspective view of a trigger.

[0017] Figure 6 – is the perspective view of a pusher.

[0018] Figure 7 – is the perspective view of a trigger and a pusher placed in the recess on the body or the door.

[0019] The elements illustrated in the figures are numbered as follows:

1. Refrigerator
2. Body
3. Door
4. Water dispenser
5. Water conduit
6. Valve
7. Trigger
8. Pusher
9. Ceiling
10. Recess
11. Opening
12. Arm
13. First shaft
14. Second shaft
15. Protrusion
16. Support
17. Outlet opening

[0020] The refrigerator (1) of the present invention comprises a body (2) wherein the items to be cooled are placed, at least one door (3) which provides access to interior space of the body (2) when opened, a water dispenser (4) disposed on the door (3) or the body (2), a water conduit (5) providing

the water at the water source (K) to be conveyed, a valve (6) disposed on the water conduit (5), a trigger (7) providing the valve (6) to open/close, a recess (10) disposed on the exterior surface of the door (3) or the body (2), wherein the water container, filled with water by the user, is placed, having a ceiling (9) and wherein the trigger (7) performs rotational movement, an outlet opening (17) where the water flows from the water conduit (5) and at least one pusher (8) mounted to the door (3) or the body (2), bearing against the trigger (7), providing the pressure applied on the trigger (7) to be transmitted to the valve (6) (Figure 1, Figure 2, Figure 5).

[0021] In the refrigerator (1) of the present invention, the space occupied by the recess (10) is decreased and therefore the distance the trigger (7) moves by rotating around the horizontal axis when pressure is applied on the trigger (7) by the user decreases. By means of the pusher (8) that provides transmission of force between the trigger (7) and the valve (6), the effect of the force applied to the valve (6) increases and the pusher (8) functions like a lever. The pusher (8) is jointed to the door (3) or to the body (2).

[0022] The refrigerator (1) comprises at least one arm (12), bearing against the pusher (8), extending in the horizontal direction from the trigger (7) towards the pusher (8) almost vertically with respect to the trigger (7). When force is applied to the trigger (7) by the user, the trigger (7) rotates around the horizontal axis and in the meantime the arm (12) connected to the trigger (7) also moves simultaneously with the trigger (7). When the trigger (7) is pushed by the user, the arm (12) bears against the pusher (8) and the arm (12) moves on the surface where it bears against the pusher (8). When the pusher (8) bears against the valve (6), the valve (6) is triggered and water flow from the water conduit (5) is provided. A longer force arm is achieved with respect to the movement distance of the trigger (7) for triggering the valve (6) by means of the arm (12). When the user stops applying pressure to the trigger (7), the force on the valve (6) is removed and water flow stops (Figure 5, Figure 6).

[0023] The refrigerator (1) comprises at least one opening (11) disposed on the ceiling (9) of the recess (10). The trigger (7) extends in vertical direction into the recess (10) by passing through the opening (11).

- [0024] The refrigerator (1) comprises at least one first shaft (13), disposed between the exterior surface of the door (3) or the body (2) and the valve (6), providing the trigger (7) to be mounted to the door (3) or the body (2), around which the trigger (7) performs rotational movement and at least one second shaft (14), providing the pusher (8) to be mounted to the door (3) or the body (2), around which the pusher (8) performs rotational movement. The second shaft (14) is disposed between the rear surface of the door (3) and the water source (K). The pusher (8) extends from the second shaft (14) or the body (2) towards the first shaft (13) and from opposite the trigger (7) towards the trigger (7). While the trigger (7) rotates around the first shaft (13), the pusher (8), connected to the second shaft (14) rotates synchronized with the trigger (7) but in the opposite direction of the trigger (7) (Figure 2, Figure 3, Figure 4).
- [0025] The refrigerator (1) comprises a pusher (8) that rotates around the second shaft (14), in the opposite direction of the trigger (7) that rotates around the first shaft (13) (Figure 5).
- [0026] In the refrigerator (1), the first shaft (13) and the second shaft (14) are disposed parallel and opposite to one another. While the trigger (7) rotates around the horizontal axis as a result of the force applied by the user, the pusher (8) also moves with the pressure of the trigger (7) and the arm (12) and rotates in the opposite direction with respect to the trigger (7).
- [0027] In an embodiment of the present invention, the refrigerator (1) comprises at least one protrusion (15) disposed on the pusher (8) and at least one support (16) disposed on the valve (6), against which the protrusion (15) bears when force is applied to the trigger (7) (Figure 2, Figure 3). When the pusher (8) is activated by means of the trigger (7), the protrusion (15) applies pressure to the support (16). The valve (6) is triggered when the protrusion (15) contacts the support (16). When the distance that the trigger (7) moves by rotating is almost completed, sufficient pressure for providing water flow is applied to the valve (6) by means of the pusher (8) and thus the valve (6) is provided to be opened. When the user stops applying pressure to the trigger (7), the force on the valve (6) is removed and water flow stops.

[0028] By means of the present invention, a refrigerator (1) is realized wherein the water dispenser (4) functions are effectively work even though the depth of the recess (10) is less. The interior space of the refrigerator (1) is used more effectively by decreasing the depth of the recess (10). The distance of the force arm is increased by means of the arm (12) bearing against the pusher (8) and the valve (6) is provided to be triggered even though the trigger (7) rotates in a short distance.

[0029] It is to be understood that the present invention is not limited to the embodiments disclosed above and a person skilled in the art can easily introduce different embodiments. These should be considered within the scope of the protection postulated by the claims of the present invention.

Claims

1. A refrigerator (1) **comprising** a body (2) wherein the items to be cooled are placed, at least one door (3) which provides access to interior space of the body (2) when opened, a water dispenser (4) disposed on the door (3) or the body (2), at least one water conduit (5) providing the water in the water dispenser (4) to be conveyed, a valve (6) disposed on the water conduit (5) and a trigger (7) whereon the user applies pressure, providing the valve (6) to open/close, a recess (10) disposed on the door (3) or the body (2), wherein the water container, filled with water by the user, is placed, having a ceiling (9) and wherein the trigger (7) performs rotational movement and an outlet opening (17) where the water flows from the water conduit (5), **characterized by** at least one pusher (8) mounted to the door (3) or the body (2), bearing against the trigger (7), providing the pressure motion applied on the trigger (7) to be transmitted to the valve (6).
2. A refrigerator (1) as in Claim 1, **characterized by** the trigger (7) having at least one arm (12), bearing against the pusher (8), extending in the horizontal direction from the trigger (7) towards the pusher (8) almost vertically with respect to the trigger (7).
3. A refrigerator (1) as in Claim 1 or 2, **characterized by** at least one first shaft (13), disposed between the exterior surface of the door (3) or the body (2) and the valve (6), providing the trigger (7) to be mounted to the door (3) or the body (2), around which the trigger (7) performs rotational movement and at least one second shaft (14), providing the pusher (8) to be mounted to the door (3) or the body (2), around which the pusher (8) performs rotational movement.
4. A refrigerator (1) as in any one of the above Claims, **characterized by** the pusher (8) that extends towards the trigger (7) from opposite the trigger (7).
5. A refrigerator (1) as in Claim 3 or 4, **characterized by** a pusher (8) that rotates around the second shaft (14), in the opposite direction of the trigger (7) that rotates around the first shaft (13).
6. A refrigerator (1) as in any one of the Claims 3 to 5, **characterized by** the first shaft (13) and the second shaft (14) that are disposed parallel and opposite to one another.
7. A refrigerator (1) as in any one of the above Claims **characterized by** a pusher

(8) that provides transmission of force between the trigger (7) and the valve (6) and functioning like a lever.

8. A refrigerator (1) as in any one of the above Claims **characterized by** at least one protrusion (15) disposed on the pusher (8) and at least one support (16) disposed on the valve (6), against which the protrusion (15) bears when force is applied to the trigger (7).

Figure 1

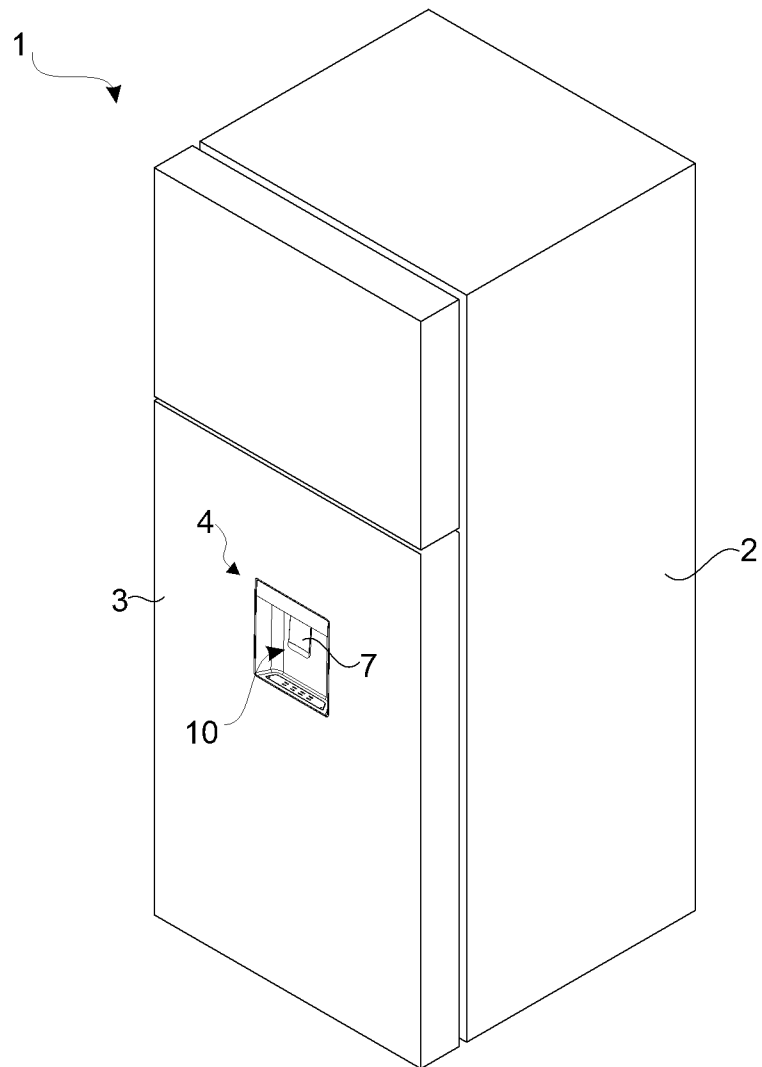


Figure 2

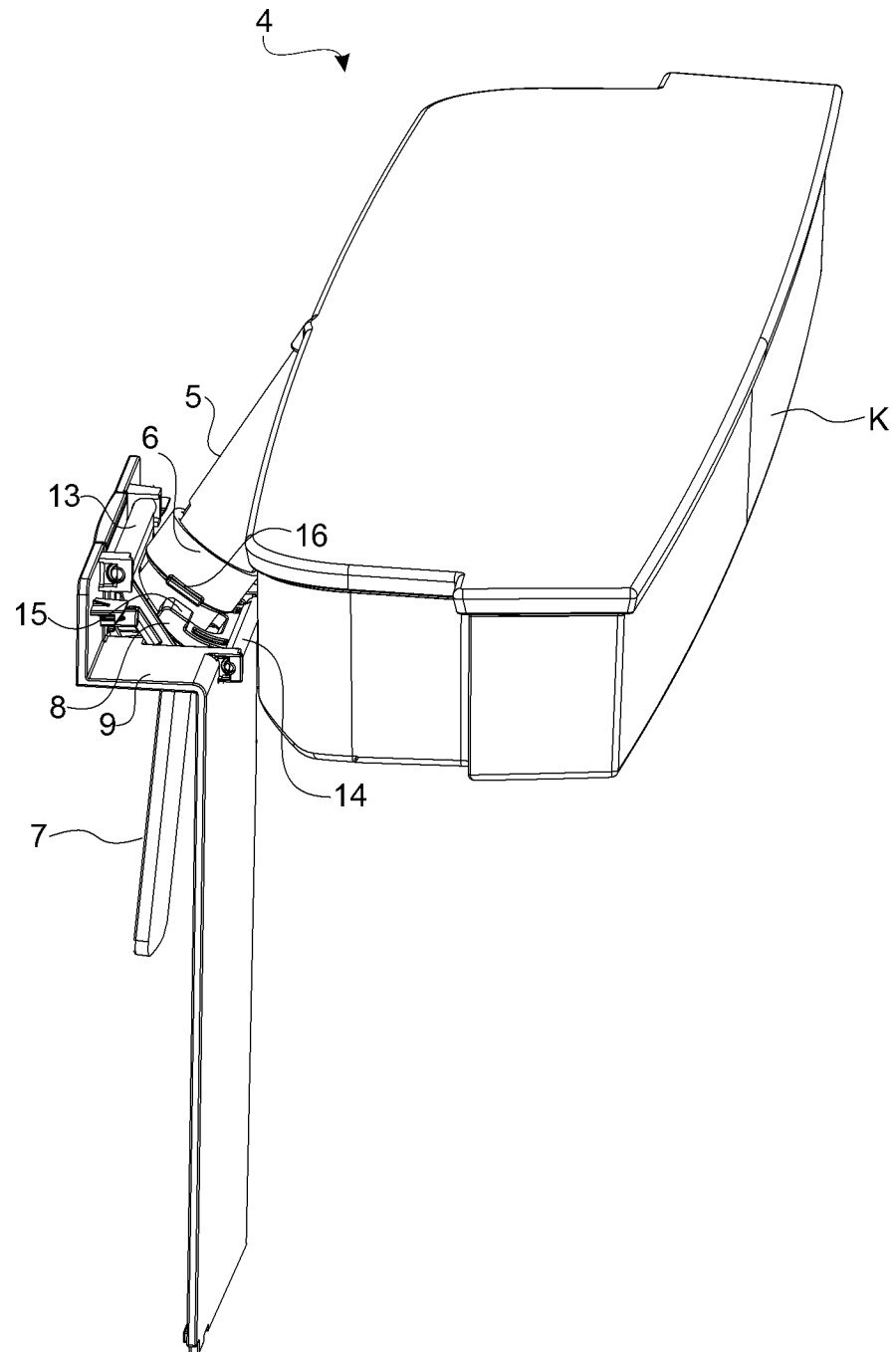
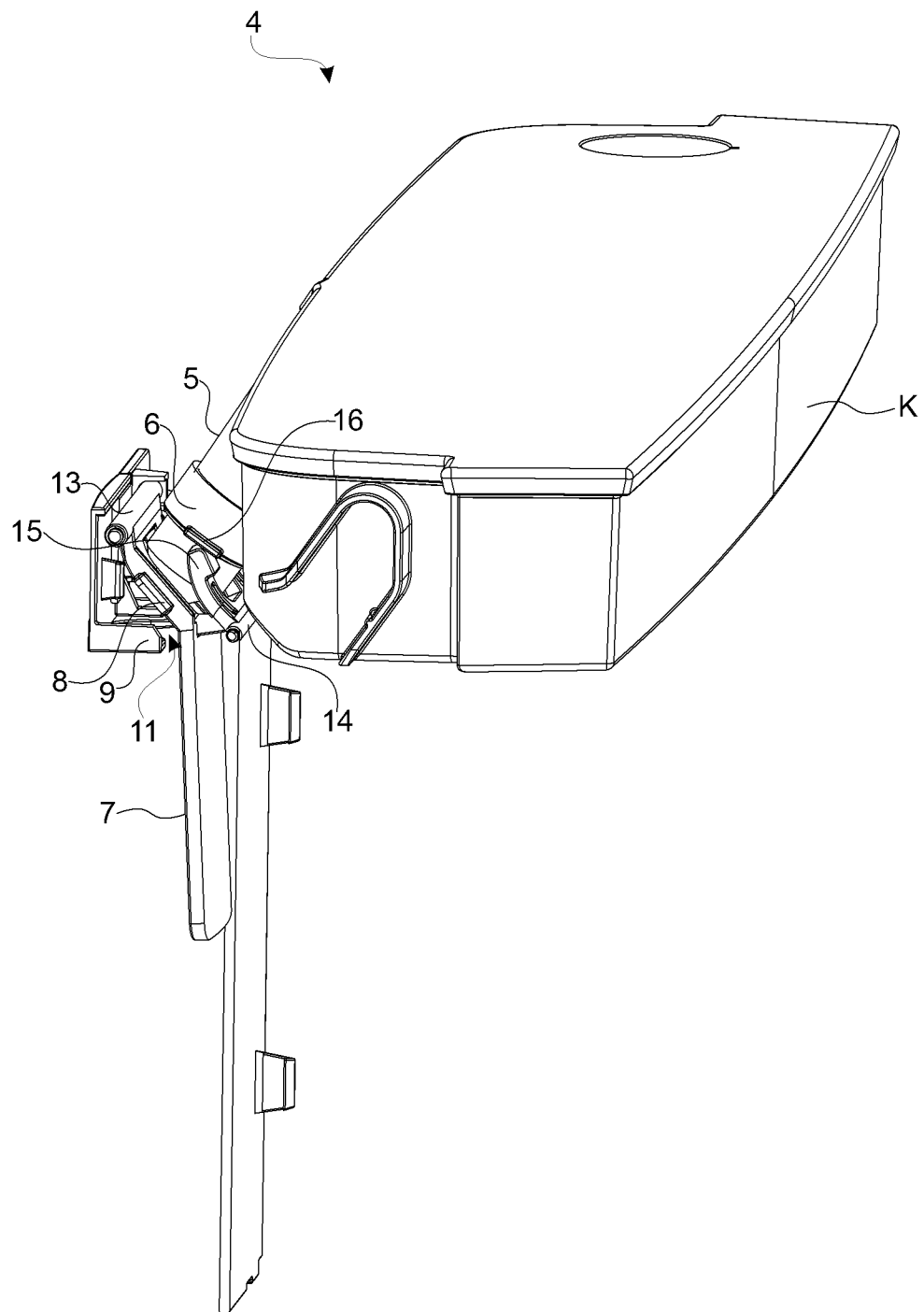


Figure 3



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Figure 4

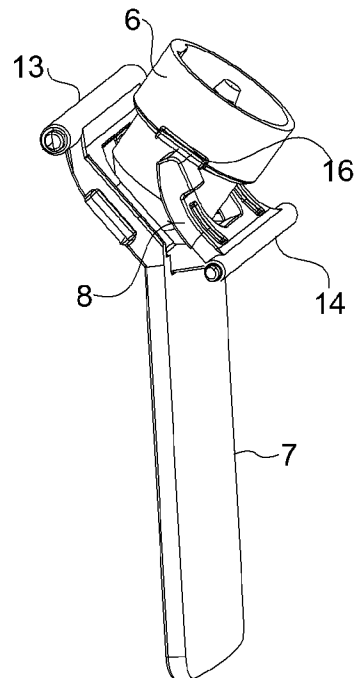


Figure 5

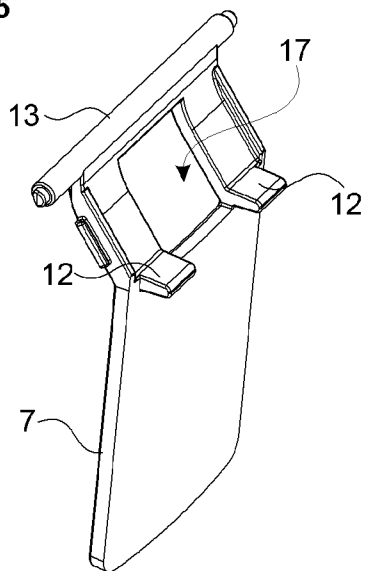


Figure 6

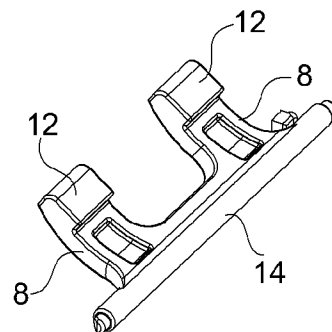


Figure 7

