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(71) Applicant: **BSH Hausgeräte GmbH**
81739 München (DE)

(72) Inventors:
- **Atabay, Emrah**
  59500 TEKIRDAG (TR)
- **Cosar, Sevgi**
  34520 ISTANBUL (TR)
- **Gündogdu, Gürkan**
  59510 TEKIRDAG (TR)
- **Tuban, Gürkan**
  59510 TEKIRDAG (TR)

(54) A HOUSEHOLD APPLIANCE HAVING AN ELECTRICAL CONNECTION WITH A TERMINAL MEMBER

(57) The invention relates to a household appliance (1) having a body (11); a cover (19) hinged to the body (11) and; a functional member (20) disposed on the cover (19); a switch (3) having a first terminal member (31) having a contact part (311) attached to the body (11) and a second terminal (321) attached to the cover (19) correspondingly to the first terminal member (31), contacting each other and completing an electrical transmission circuit for transmitting electric to the functional member (20). The contact part (311) of the first terminal member (31) is arranged as a free end such that resiliently movable when the second terminal (321) contacted to the contact part (311) in a manner increasing contact surfaces of the first terminal member (31) and the second terminal (321).

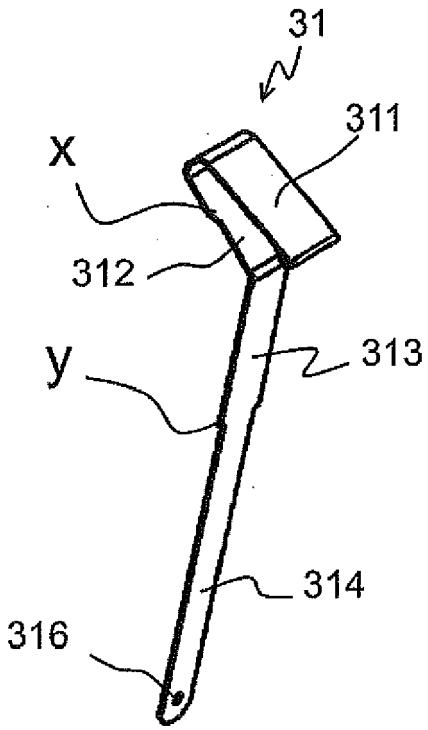

Figure-1a

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Description

[0001] The invention relates to household appliances comprising means providing electrical transmission through a functional member operating by using electrical energy like a LED illumination.

[0002] The present invention particularly relates to a household appliance comprising a switch having terminal members and transmitting electrical energy through a functional member.

[0003] At the prior art, there are some devices as being household appliances having a cover, like a microwave oven, a dishwasher, a cooking device and etc.

[0004] Household cooking devices are usually manufactured in a structure as only a hob or an range with a hob having a top plate part integrated to an oven part. The hobs have a cover covering the top plate while the hob is not in use or retaining open while the hob is in use. The cover is manufactured from ceramic and particularly glass materials. Similarly, the oven part of the cooking device has a door. The door is manufactured form glass material and heat isolation is provided on the door for a cooking chamber.

[0005] Generally, cables are used for transmitting the electrical energy from one point to another point on the household appliance. An electric transmission member instead of the cable is mentioned at our previous application having the application number; TR200408916 and the title; "A Cooking Device Having an Electric Transmission Member ". As it is mentioned at the abstract of the specification of the invention; the cooking device comprises at least one conductive strip arranged directly on the ceramic-based panel in a manner that transmitting the electricity to the functional member. The conductive strips are loaded with positively or negatively charges. The functional member can be an illumination member or a motor which can be actuated at low voltages.

[0006] As it can be seen from the patent application with the publication number; EP1808561, there is a hinge attaching a member of the cooking device in a rotatable manner. As it is mentioned at the abstract of the specification of the invention; a hinge bearing has a snap connector which rests and can be insertable into an opening of a domestic appliance. The snap connector is connected to a hinge holder for hinge axis of a cover plate. The snap connector and the hinged holder are united as a one piece part construction unit. The construction unit consists of a plastic, such as plastic injection molded part. The construction unit is manufactured from a glass-fiber reinforced plastic. The hinge holder has, on one side, a mounting groove for a bearing pin having a hinge rotational axis.

[0007] A switch for an electrical connection and transmission is mentioned at our previous application having the application number; TR201412531. The invention relates to a household appliance having a body; a cover hinged to the body and; a functional member disposed on the cover. The household appliance comprises at least one switch having a first terminal attached to the body and a second terminal attached to the cover corresponding to the first terminal, engaging with each other and completing an electrical transmission circuit for transmitting electric to the functional member.

[0008] Object of the invention is to provide an electrical or signal transmission on a household appliance, in a reliable manner.

[0009] In order to achieve above object, the invention relates to a household appliance having a body; a cover hinged to the body and; a functional member disposed on the cover; a switch having a first terminal member having a contact part attached to the body and a second terminal attached to the cover correspondingly to the first terminal member, contacting each other and completing an electrical transmission circuit for transmitting electric to the functional member. The contact part of the first terminal member is arranged as a free end such that resiliently movable when the second terminal contacted to the contact part in a manner increasing contact surfaces of the first terminal member and the second terminal. Thus, a reliable contact and an electrical or signal transmission is provided with resilience ability of the first terminal member. And the contact surfaces of the first terminal member and the second terminal are increased while the contact part is resilient.

[0010] In another possible embodiment of the invention, the contact part of the first terminal member is formed with an α angle between a locking part of the first terminal member.

[0011] In another possible embodiment of the invention, the α angle between the contact part and the attaching part is an acute angle.

[0012] In another possible embodiment of the invention, the contact part of the first terminal member is a free end of the first terminal member formed as extending outwardly from the body.

[0013] In another possible embodiment of the invention, the first terminal member is disposed in a hinge bearing of the body. Thus, the first terminal member is set reliably on the hinge bearing.

[0014] In another possible embodiment of the invention, the hinge bearing comprises a housing formed on the hinge bearing for fixing the first terminal member.

[0015] In another possible embodiment of the invention, the hinge bearing has tabs fixing the first terminal member from the locking part in a fit manner.

[0016] In another possible embodiment of the invention, the locking part has a locking step arranged at a width providing to rest the locking part on upper points of the tabs.

[0017] In another possible embodiment of the invention, the first terminal member comprises an attaching part securing the first terminal member in the housing.

[0018] In another possible embodiment of the invention, the hinge bearing has an opening on a wall of the hinge bearing.

[0019] In another possible embodiment of the inven-

tion, the attaching part comprises a reclining step reclining to the wall of the opening.

[0020] In another possible embodiment of the invention, the extended connection end substantially extends outward of the opening and hinge bearing.

[0021] In another possible embodiment of the invention, the locking projection has a width wider than the width of the opening. Thus, the first terminal member is fixed in the hinge bearing.

[0022] In another possible embodiment of the invention, the first terminal member comprises an extended connection end connected to an electrical transmission member on the body. Thus, first terminal is connected to the electrical transmission means.

[0023] In another possible embodiment of the invention, the second terminal is an end of an electrical transmission member disposed on the cover. Thus, first terminal is connected to the electrical transmission member.

[0024] In another possible embodiment of the invention, the second terminal is a profile member fixed to the cover. Thus, first terminal is connected to the electrical transmission member.

Explanation of Diagrams:

[0025]

Figure 1a is a perspective view from a lateral side of a first terminal member.

Figure 1b is a two-dimensional view from a front side of the first terminal member.

Figure 1c is a two-dimensional view from a lateral side of the first terminal member.

Figure 2a is a two-dimensional view from a back side of a hinge bearing.

Figure 2b is a two-dimensional view from a front side a hinge bearing.

Figure 3a is a perspective view from a back side of a hinge bearing where a first terminal member of a switch is disposed.

Figure 3b is a perspective view from a front side of a hinge bearing where a first terminal member of a switch is disposed.

Figure 3c is a two-dimensional view from a front side of a hinge bearing where a first terminal member of a switch is disposed.

Figure 3d is a two-dimensional view from a back side of a hinge bearing where a first terminal member of a switch is disposed.

Figure 3e, A-A cross-section, is a cross-sectional view taken from the figure 3c of the hinge bearing with a first terminal member.

Figure 4 is a perspective view from a lateral side of an alternative first terminal member.

Figure 5a is a two-dimensional view from a front side of a hinge bearing where an alternative embodiment of the first terminal member is disposed.

Figure 5b is a perspective view from a front side of a hinge bearing where the alternative embodiment of the first terminal member is disposed.

Figure 5c, B-B cross-section, is a cross-sectional view taken from the figure 5a of the hinge bearing with the alternative first terminal member.

Figure 6a shows how to mouth the alternative first terminal member into the hinge bearing at first step.

Figure 6b shows how to mouth the alternative first terminal member into the hinge bearing at second step.

Figure 6c shows how to mouth the alternative first terminal member into the hinge bearing at third step.

Figure 6d shows the hinge bearing with the first terminal member after the first terminal member is mounted.

Figure 7 is a perspective view from the lateral side of a top plate of a hob of a household appliance.

Detail-A is a close view from the figure 7 and it shows a part where a connection of a first terminal member on the body and a second terminal on the cover is realized.

Figure 8 is an alternative embodiment to "Detail-A, figure 7" and a close view from the lateral side of a cooking device having a profile member transmitting the electricity to an electrical transmission member on the cover and functioning as a second terminal.

Figure 9 is a perspective view from the front of a household appliance particularly a cooking device.

[0026] The invention relates to a household appliance (1) comprising a switch (3) providing electrical transmission to a functional member (20) disposed on a cover (19) hinged to a body (11). The switch (3) comprises a first terminal member (31) which is providing an electrical transmission from over a body (11) of the household appliance (1).

[0027] The household appliance (1) comprises at least one switch (3) having a first terminal member (31) fixed to the body (11) and a second terminal (321) of an electrical transmission member (32) fixed to the cover (19) correspondingly to the first terminal member (31) and the first terminal member (31) and the second terminal (321) contacts each other in a manner that completing an electrical circuit for providing electrical transmission to the functional member (20).

[0028] The household appliance (1) is particularly a cooking device. The cooking device can be structured as a hob (13) as shown in figure-7 or an oven having at least one cooking chamber (12) or a cooking device with the oven and the hob integrated on the same body (11)

as shown in figure-9. A hob (13) of this kind of a cooking device is set on a top plate (14). The top plate (14) is integrated to the body (11). There is a pan-support (16) which will support a cooking pan and burners (15) on the top plate (14). A control panel (17) is disposed on a front side of the body (11) where is easy to reach. Buttons (18), which are attached to the control panel (17), are adjusting properly gas flow for the burners (15).

[0029] A hinge (7) provides to pivot the cover (19) of the household appliance (1) on the body (11) of the household appliance (1). The cover (19) can be structured as a cover which can be closed onto the hob (13) or a door closing a loading opening of the cooking chamber (12). Two hinges (7) are used for pivoting one cover (19). In one embodiment of the invention, the cover (19) is pivoted onto the body (11) of the cooking device, detachably (figure 7, 9). A hinge bearing (71) of the hinge (7) provides to fix the hinge (7) to the body (11). Hence, the hinge bearing (71) is disposed onto the top plate (14) by passing a snap connector (713) of the hinge bearing (71) through a plug-in opening (141) formed on the top plate (14).

[0030] A handrail (23) is formed in a manner being adaptable to an upper side of the cover (19) of the hob (13). The upper side of the cover (19) should be considered when the cover (19) is in an opened position on the top plate (14). The handrail (23) is manufactured from a metal material. The cover (19) is manufactured from a ceramic-based material particularly a glass material. The hinge bearing (71) is manufactured from a non-conductive material particularly a glass-fiber reinforced plastic. In an alternative embodiment, the hinge bearing (71) can be manufactured from a conductive material, in this case, security measures are taken by applying electrical insulation on the hinge bearing (71).

[0031] Figure 1a, figure 1b and figure 1c show the first terminal member (31). As it can be seen from the figures, the first terminal member (31) comprises a contact part (311), a locking part (312), an attaching part (313) and an extended connection end (314). There is an α angle between the contact part (311) and the locking part (312). The α angle lets the contact part (311) to move resiliently. The locking part (312) is formed correspondingly to the contact part (311). There is a β angle between the locking part (312) and the attaching part (313). Thus, the form of the first terminal member (31) corresponds to form of a housing (716) of the hinge bearing (71). Due to the β angle, right mounting of the first terminal member (31) is provided at the right positioning angle. The attaching part (313) provides to mount the first terminal member (31) in the housing (716) and the extended connection end (314) provides the first terminal member (31) to be extended from the hinge bearing (71) towards an electrical transmission member. The electrical transmission member can be a cable (5). An end of the electrical transmission member is fixed to the extended connection end (314) in a manner that transmitting electrical energy to each other. The electrical transmission member is fixed onto the first terminal member (31) via a fixing member (4). The fixing member (4) has a housing (41) to fix the end of the cable (5) (Figure-3b). A connection hole (314) for fixing the fixing member (4) is formed on the connection end (313).

[0032] Figure 2a is a two-dimensional view from a back side of a hinge bearing (71) and the figure 2b is a two-dimensional view from a front side a hinge bearing (71).

[0033] Figure 3a is a perspective view from a back side of a hinge bearing (71) where a first terminal member (31) of a switch (3) is disposed into.

[0034] Figure 3b is a perspective view from a front side of a hinge bearing (71) where a first terminal member (31) of a switch (3) is disposed into.

[0035] Figure 3c is a two-dimensional view from a front side of a hinge bearing (71) where a first terminal member (31) of a switch (3) is disposed into.

[0036] Figure 3d is a two-dimensional view from a back side of a hinge bearing (71) where a first terminal member (31) of a switch (3) is disposed into.

[0037] Figure 3e, A-A cross-section, is a cross-sectional view taken from the figure 3c of the hinge bearing (71) with a first terminal member (31).

[0038] The hinge bearing (71) comprises a hinge holder (711) and a snap connector (713) integrated to the hinge holder (711). A mounting groove (712) is formed on the hinge holder (711). A bearing member (73) is fixed to the hinge bearing (71) by means of passing a bearing pin (731) of the bearing member (73) of the hinge (7) through the mounting groove (712). Latching tongues (714) are formed on wall portions (715) of the snap connector (713) in various types. Latching tongues (714) provides to fix the hinge bearing (71) to the top plate (14) by means of latching tongues (714) are passed through the plug-in opening (141). As it can be seen from the figure 2a, there is a housing (716) formed on a lateral wall of the hinge bearing (71) corresponding to the cover (19). There are two tabs (719) extending parallel to each other and formed on the housing of the hinge bearing (71). There is a distance (a) between two tabs (719). The locking part (312) of the first terminal member (31) is fixed between two tabs (719) in the housing (716). A locking step (x) on the locking part (312) rests on upper points of the tabs (719). The attaching part (313) and the extended connection end (314) extend towards an inner part (720) of the hinge bearing (71) by passing through an opening (718) of the housing (716) (figure 3b, 3c, 5a, 5b). A top part (717) of the hinge bearing (71) is integrated to the hinge bearing (71) and therefore the top part (717) is non-conductive, too. Also, the top part (717) is in a semicircular form. The first terminal member (31) does not extend to the top part (717) of the hinge bearing (71). Thus, the first terminal member (31) does not contact the second terminal (321) as the cover (19) is in a closed position onto the top plate (14). Therefore, the electric transmission is switched off. In an alternative embodiment of the invention, the switch (3) and/ or the hinge bearing (71) can be constructed as in a form that the fist

terminal member (31) contacting the second terminal (321) when the cover (19) is in a closed position.

[0039] Figure 4 is a perspective view from a lateral side of an alternative first terminal member (31). The alternative first terminal member (31) has a locking projection (315) having a width wider than the width (e) of the opening (718) (Figure 2b). When the locking projection (315) is in a vertical position according to plane of the extended connection end (314), the extended connection end (314) passes through the opening (718). After mounting, the locking projection (315) is brought into a horizontal position according to plane. So, the locking projection (315) restricts the movement of the first terminal member (31) and provides not to get out of the opening (718). And also a reclining step (y) on the attaching part (313) rests on the opening (718). So the first terminal member (31) does not move out of the opening (718).

[0040] Figure 5a is a two-dimensional view from a front side of a hinge bearing (71) where an alternative embodiment of the first terminal member (31) is disposed. The locking projection (315) is in the horizontal position.

[0041] Figure 5b is a perspective view from a front side of a hinge bearing (71) where the alternative embodiment of the first terminal member (31) is disposed. The locking projection (315) is in the vertical position.

[0042] Figure 5c, B-B cross-section, is a cross-sectional view taken from the figure 5a of the hinge bearing (71) with the alternative first terminal member (31). The first terminal member (31) is in its last position after mounting.

[0043] Figure 6a shows how to mouth the alternative first terminal member (31) into the hinge bearing (71) at first step. The arrow in the figure 6a shows mounting direction of the first terminal member (31).

[0044] Figure 6b shows how to mouth the alternative first terminal member (31) into the hinge bearing (71) at second step. The arrow in the figure 6b shows mounting direction of the first terminal member (31).

[0045] Figure 6c shows how to mouth the alternative first terminal member (31) into the hinge bearing (71) at third step. The arrow in the figure 6c shows attaching and locking direction of the first terminal member (31). The locking part (312) of the first terminal member (31) passes beyond of the tabs (719).

[0046] The mounting steps of the first terminal member (31) and the alternative first terminal member (31) are the same as figure 6a, 6b and 6c.

[0047] Figure 6d shows the hinge bearing (71) with the first terminal member (31) after the first terminal member (31) is mounted. And the locking projection (315) is brought into horizontal position from vertical position.

[0048] Figure 7 is a perspective view from the lateral side of a top plate (14) of a hob (13) of a household appliance (1).

[0049] Detail-A is a close view from the figure 7 and it shows a part where a connection of a first terminal member (31) on the body (11) and a second terminal (321) on the cover (19) is realized.

[0050] Electrical transmission members (32) are mounted onto both sides of the cover (19) of the top plate (14). An end of the electrical transmission member (32) which is corresponding to the first terminal member (31) on the top plate (14) is the second terminal (321) of the switch (3). The second terminal (321) is in contact the first terminal member (31) on the hinge bearing (71) during switching on. For providing contact and electrical transmission, the cover (19) is mounted and fixed to the profile part (732) of the bearing member (73). The cover (19) is detachable to the profile part (732). When the cover (19) is detached, the switch (3) can not transmit the electrical energy. Therefore, the electrical current is cut off while the first terminal member (31) and the second terminal (321) are not in contact. The first terminal member (31) has flexibility like a spring. According as the flexibility increases a contact surface area of the contact part (311) of the first terminal member (31) which is contacting the second terminal (321), increases. A flexibility adjustment of the first terminal member (31) on the hinge bearing (71) can be arranged via the bend angles of first terminal member (β, α). Also, the bend angles of first terminal member (β, α) facilitates to dispose the first terminal member (31) into the housing (716) of the hinge bearing (71). Detail-A is a close view from the figure 7 and it shows a part where a connection of a first terminal member (31) on the body (11) and a second terminal (321) on the cover (19) is realized. The first terminal member (31) is directly in contact with the second terminal (321) of an electrical transmission member (32). The electrical transmission member (32) is preferably in a form of a conductive strip.

[0051] Figure 8 is an alternative embodiment to "Detail-A, figure 7" and a close view from the lateral side of a cooking device having a profile member (6) transmitting the electricity to an electrical transmission member on the cover (19) and functioning as a second terminal (321) and also by contacting to the second terminal (321).

[0052] Figure 9 is a perspective view from the front of a household appliance (1) particularly a cooking device. The second terminals (321) of the electrical transmission members (32) are disposed on the part where the cover (19) is engaged to the body (11). Other terminals of the electrical transmission members (32) are extending towards the functional member (20) or contacted directly to the functional member (20). A switching member (21) is set for switching on/off to the functional member (20). A contact with an energy supply is controlled by means of the switching member (21). The switching member (21) can be a button with touch or mechanical operated. Else, instead of these switching member (21) can be operated with voice command. The electrical transmission member (32) on the cover (19) is preferably a conductive strip. Each conductive strip is solely loaded with positively or negatively charged at both two ends. The conductive strip can be coated with a nonconductive material. In an alternative embodiment of the invention, the electrical transmission member (32) on the cover (19) can be a cable (5).

[0053] The electrical transmission members (32)

charged negatively or positively, transmit the electrical energy to the functional member (20). The functional member (20) operates at low voltages. For instance, the functional member (20) can be a LED illumination element, a signal, a display illumination or a button operating with electrical energy.

[0054] If an alternating current (AC) will be transmitting on lines of the electrical transmission members (32), the electrical transmission members (32) are charged as phase (positive and negative loads) or neutral. If a direct current (DC) will be transmitting on lines of the electrical transmission members (32), the positive and negative charged lines are formed separately. In this way, an occurrence of a short circuit is prevented. The electronic card (22) converts the current from AC to DC at a desired voltage value. The voltage value on the conductive strips is between 0-60 volts. The conductive strips are manufactured from a metal material comprising silver ion or/and copper ion having a high electrical conductivity capacity. A wall thickness and a length of the conductive strips are formed and adjusted considering a predetermined voltage value which will be transmitted from one end to the another end of the conductive strip.

[0055] Fixing of the conductive strips onto the cover (19) is provided via coating the conductive strip onto the cover (19). In an alternative embodiment of the invention, the fixing can be done in different methods. The conductive strips can adhered onto the cover (19) by an adherent.

[0056] In the case of transforming a direct current (DC), the energy supply is chosen as a SELV (safety extra low voltage/ separated extra low voltage) system. Thus, the user can touch reliably to the low voltage charged conductive strips.

[0057] In a detail description of the invention, the first terminal member (31) can be manufactured from a resilient spring steel metal or the like conductive material. The first terminal member (31) has the bend angle of contact part (α) and the contact part (311) has a form extending outwardly from the hinge bearing (71) with the α angle.

[0058] The first terminal member (31) is positioned on the body (11) as extending towards the cover (19) in a manner contacting the second terminal (321) on the cover (19). In particular, the first terminal member (31) is disposed on the hinge bearing (71). And the hinge bearing (71) is disposed on the body (11). The switch (3) is designed as operating according to an open position of the cover (19) for contacting the first terminal member (31) to the second terminal (321). In an alternative embodiment of the invention, the switch (3) can be designed as operating according to a close position of the cover (19).

[0059] A wall thickness and a width of the first terminal (31) or the second terminal (321) can be changed according to an electrical current density and a width of a contact surface.

[0060] In an alternative embodiment of the invention, the electrical transmission member on the body (11) can be a conductive strip.

[0061] During a rotational movement of the cover (19), the second terminal (321) applies a press and an impulse force to the first terminal member (31). The locking part (312) obstructs getting the first terminal member (31) out of the housing (716). As it can be seen from the figure 16 (A detail) and figure 17, when the cover (19) applied a press on the first terminal member (31), the first terminal member (31) is being bended. Thus, the second terminal (321) on the cover (19) contacts to the contact part (311) of the first terminal member (31). By this way, electrical circuit is completed and an electrical transmission is realized.

[0062] In an opened position of the cover (19) on the top plate (14), an angle between the cover (19) and the top plate (14) is 90° or approximately 100°. Thus switching on the switch (3) is realized and the electrical energy is supplied to the functional member (20).

[0063] In a closed position for the cover (19) in which position of the cover (19) is closed down onto the top plate (14), the switch (3) is switched off. However in alternative embodiments of the invention, the switch (3) is formed as switching on and providing electrical current transmission when the cover (19) is in a closed position on the top plate (14).

[0064] In alternative embodiments of the invention, in case of the cover (19) is in the opened position, a blocker member can be disposed between the first terminal (31) and the second terminal (321) when the electrical transmission is un-desirable. The blocker member is manufactured from a nonconductive material.

[0065] In a preferred embodiment of the present invention, in a closed position of the cover (19) which is closing the opening of the cooking chamber (12), the switch (3) disposed on the cover (19) and the body (11) is in a switched on position. In alternative embodiments of the invention, the switch (3) is set and design as switching on and providing electrical current transmission when the cover (19) is in an opened position on the cooking chamber (12) or in the both opened and closed positions.

[0066] In an alternative embodiment of the present invention, the first terminal member (31) of the switch (3) can be disposed in a housing member (not given in the figures). The housing member is disposed on or inside the body (11). In said alternative embodiment, the second terminal (321) of the switch (3) is formed as extending to the first terminal member (31).

Reference Number List

[0067]

1. Household appliance
11. Body
12. Cooking chamber
13. Hob
14. Top plate

141. Plug-in opening
15. Burner
16. Pan-support
17. Control panel
18. Button
19. Cover
20. Functional member
21. Switching member
22. Electronic card
23. Handrail

3. Switch
31. First terminal member
311. Contact part
312. Locking part
313. Attaching part
314. Extended connection end
315. Locking projection
316. Connection hole
32. Electrical transmission member
321. Second terminal

x: Locking step
y: Reclining step
4. Fixing member
41. Housing
5. Cable
6. Profile member
7. Hinge
71. Hinge bearing
711. Hinge holder
712. Mounting groove
713. Snap connector
714. Latching tongue
715. Wall portion
716. Housing
717. Top part
718. Opening
719. Tab
720. Inner part

73. Bearing member
732. Profile part

Bend angle of contact part: α
Bend angle of first terminal member: β

a. Distance between two tabs
b. Width of attaching part
c. Width of locking part
d. Width of extended connection part
e. Width of opening of the hinge bearing

b<a, c>a

Claims

1. A household appliance (1) having a body (11); a cover (19) hinged to the body (11) and; a functional member (20) disposed on the cover (19); a switch (3) having a first terminal member (31) having a contact part (311) attached to the body (11) and a second terminal (321) attached to the cover (19) correspondingly to the first terminal member (31), contacting each other and completing an electrical transmission circuit for transmitting electric to the functional member (20) **characterized in that** the contact part (311) of the first terminal member (31) is arranged as a free end such that resiliently movable when the second terminal (321) contacted to the contact part (311) in a manner increasing contact surfaces of the first terminal member (31) and the second terminal (321).

2. The household appliance (1) according to claim 1, wherein the contact part (311) of the first terminal member (31) is formed with an α angle between a locking part (312) of the first terminal member (31).

3. The household appliance (1) according to claim 2, wherein the α angle between the contact part (311) and the attaching part (312) is an acute angle.

4. The household appliance (1) according to claim 1 or 2, wherein the contact part (311) of the first terminal member (31) is a free end of the first terminal member (31) formed as extending outwardly from the body (11).

5. The household appliance (1) according to any one of the preceding claims, wherein the first terminal member (31) is disposed in a hinge bearing (71) of the body (11).

6. The household appliance (1) according to claim 5, wherein the hinge bearing (71) comprises a housing (716) formed on the hinge bearing (71) for fixing the first terminal member (31).

7. The household appliance (1) according to claim 5 or 6, wherein the hinge bearing (71) has tabs (719) fixing the first terminal member (31) from the locking part (312) in a fit manner.

8. The household appliance (1) according to claim 7, wherein the locking part (312) has a locking step (x) arranged at a width providing to rest the locking part (312) on upper points of the tabs (719).

9. The household appliance (1) according to claim 6, wherein the first terminal member (31) comprises an attaching part (313) securing the first terminal member (31) in the housing (716).

10. The household appliance (1) according to claim 5, wherein the hinge bearing (71) has an opening (718) on a wall of the hinge bearing (71).

11. The household appliance (1) according to claim 9 and 10, wherein the attaching part (313) comprises a reclining step (y) reclining to the wall of the opening (718).

12. The household appliance (1) according to claim 10 or 11, wherein the extended connection end (314) substantially extends outward of the opening (718) and hinge bearing (71).

13. The household appliance (1) according to claim 10-12, wherein the locking projection (315) has a width wider than the width (e) of the opening (718).

14. The household appliance (1) according to any one of the preceding claims, wherein the first terminal member (31) comprises an extended connection end (314) connected to an electrical transmission member on the body (11).

15. The household appliance (1) according to claim 1, wherein the second terminal (321) is an end of an electrical transmission member (32) disposed on the cover (19).

16. The household appliance (1) according to any one of the preceding claims 1 or 15, wherein the second terminal (321) is a profile member (6) fixed to the cover (19).

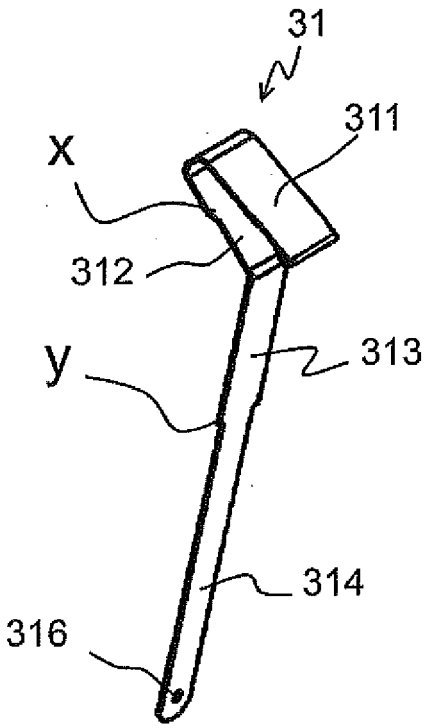


Figure-1a

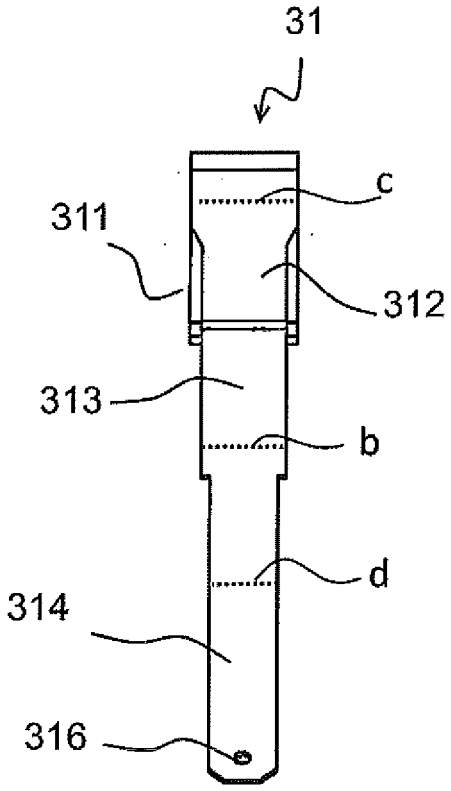


Figure-1b

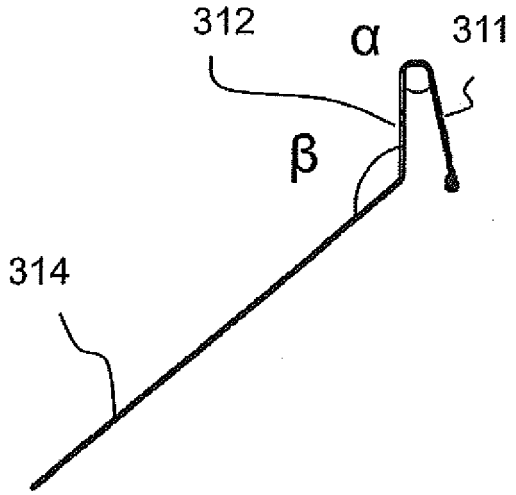


Figure-1c

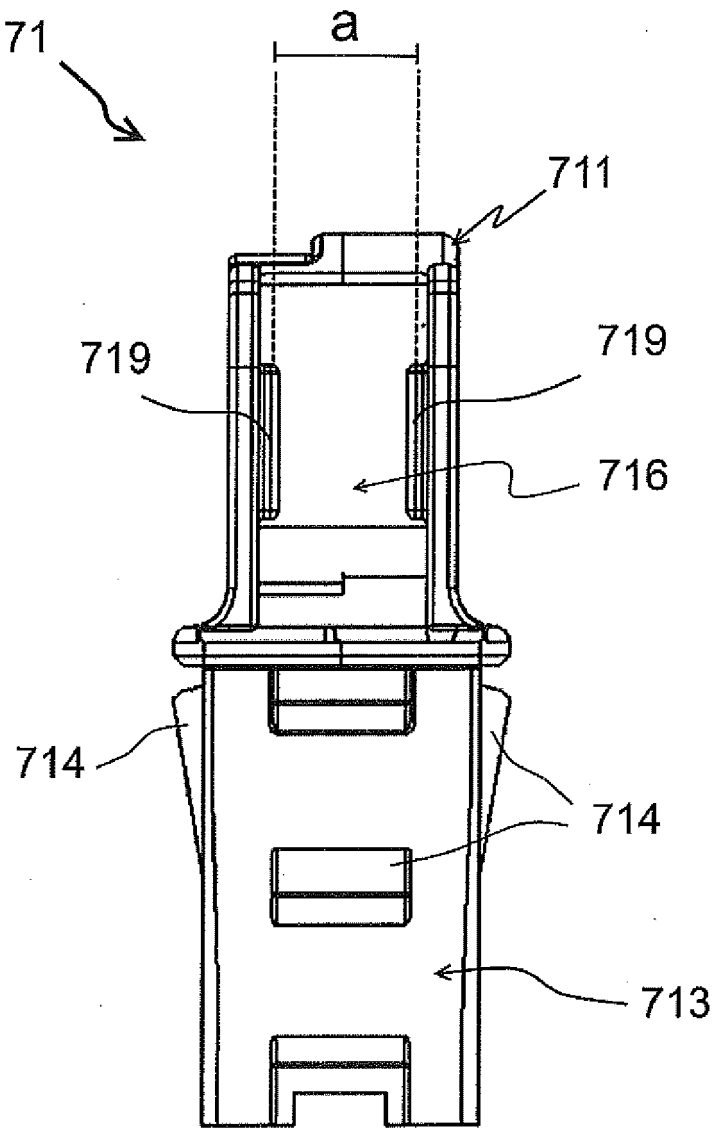


Figure-2a

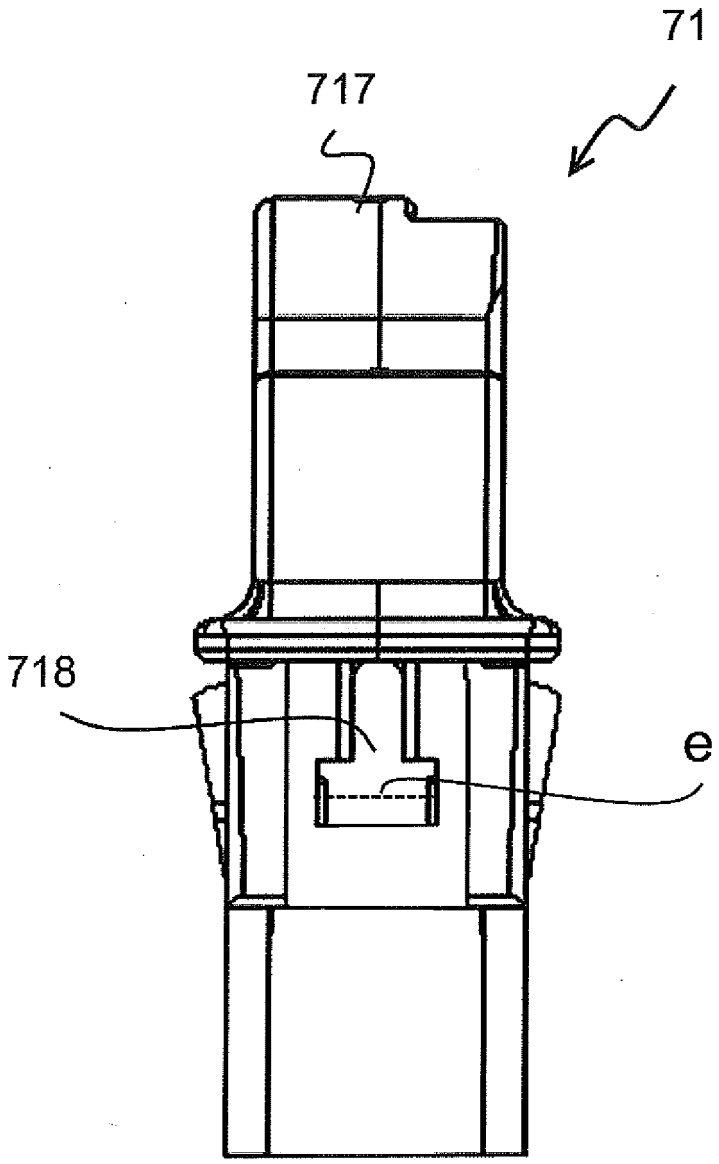


Figure-2b

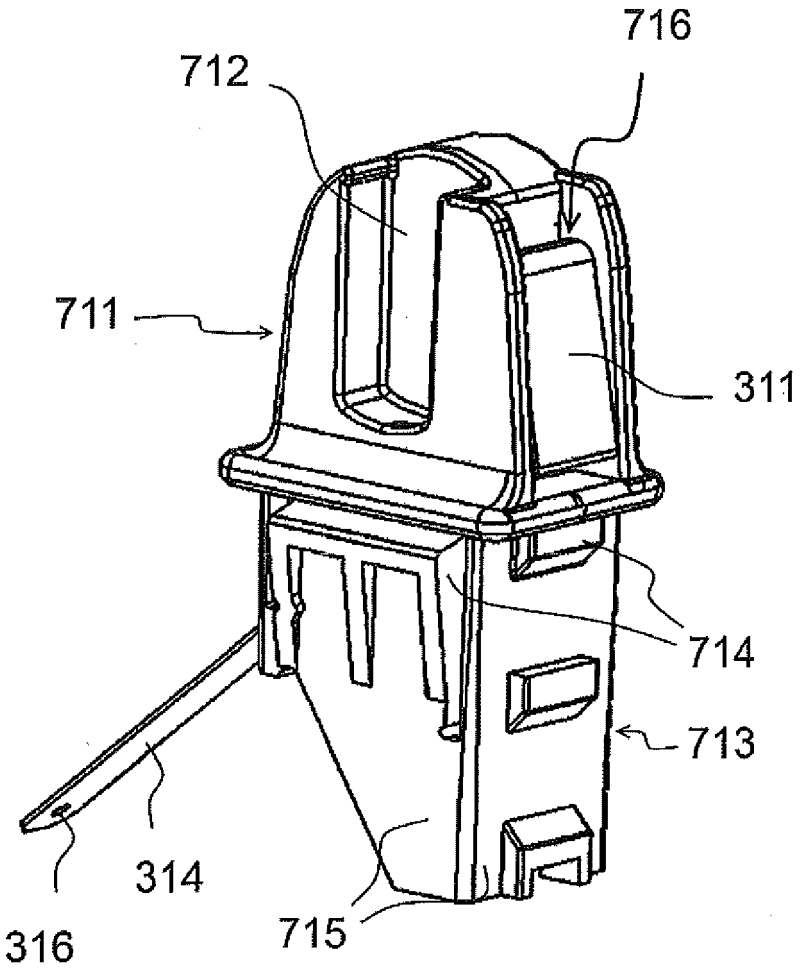


Figure-3a

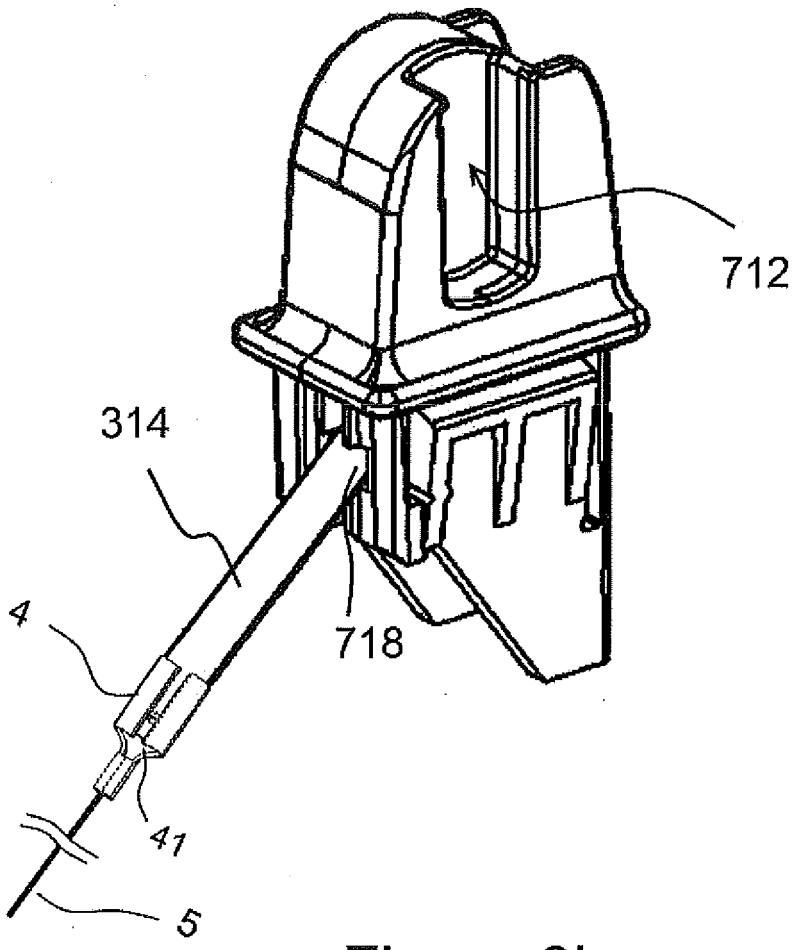


Figure-3b

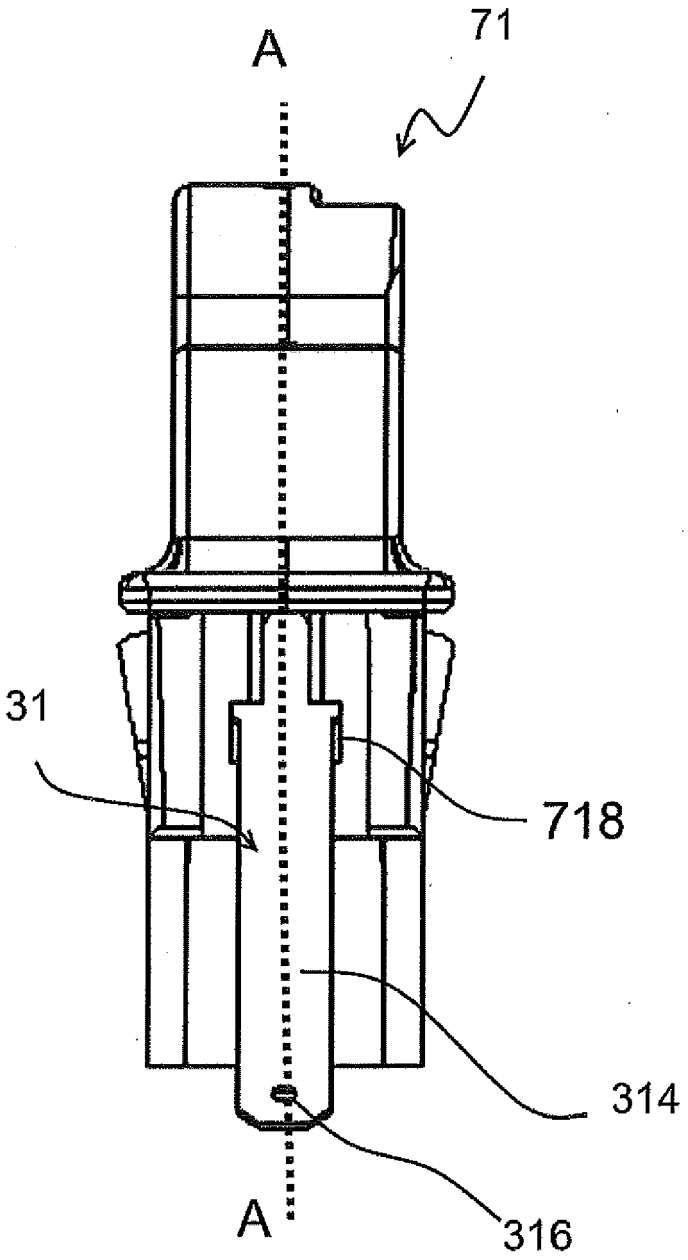


Figure-3c

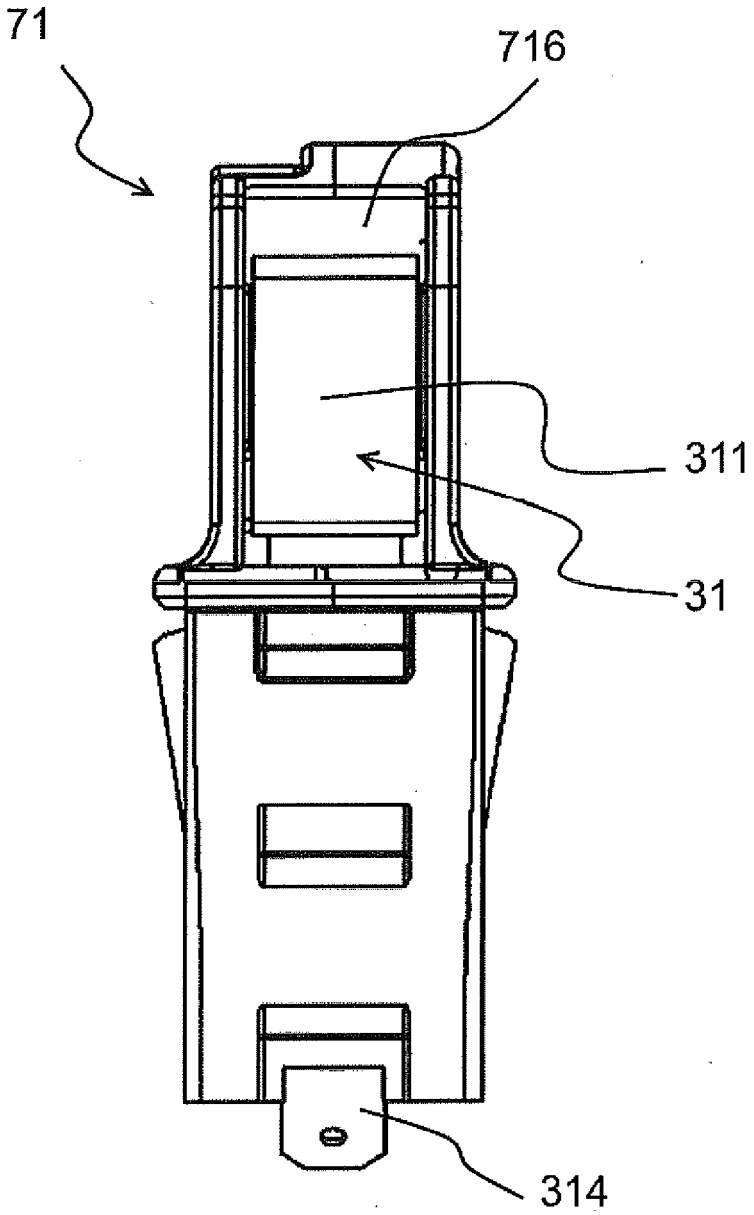


Figure-3d

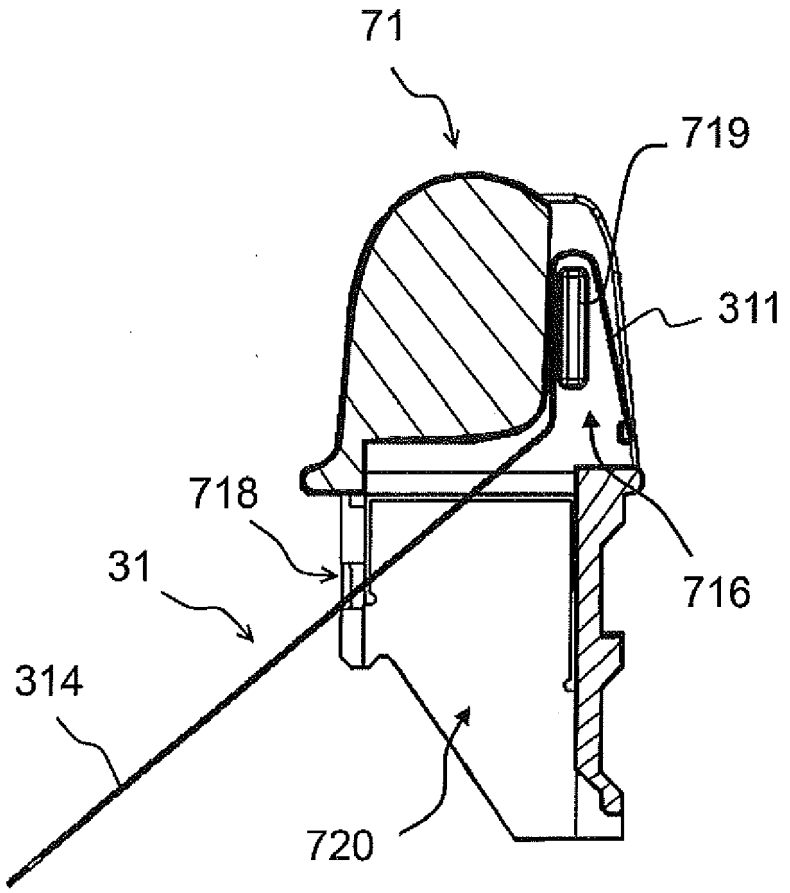


Figure-3e
(A-A cross-section)

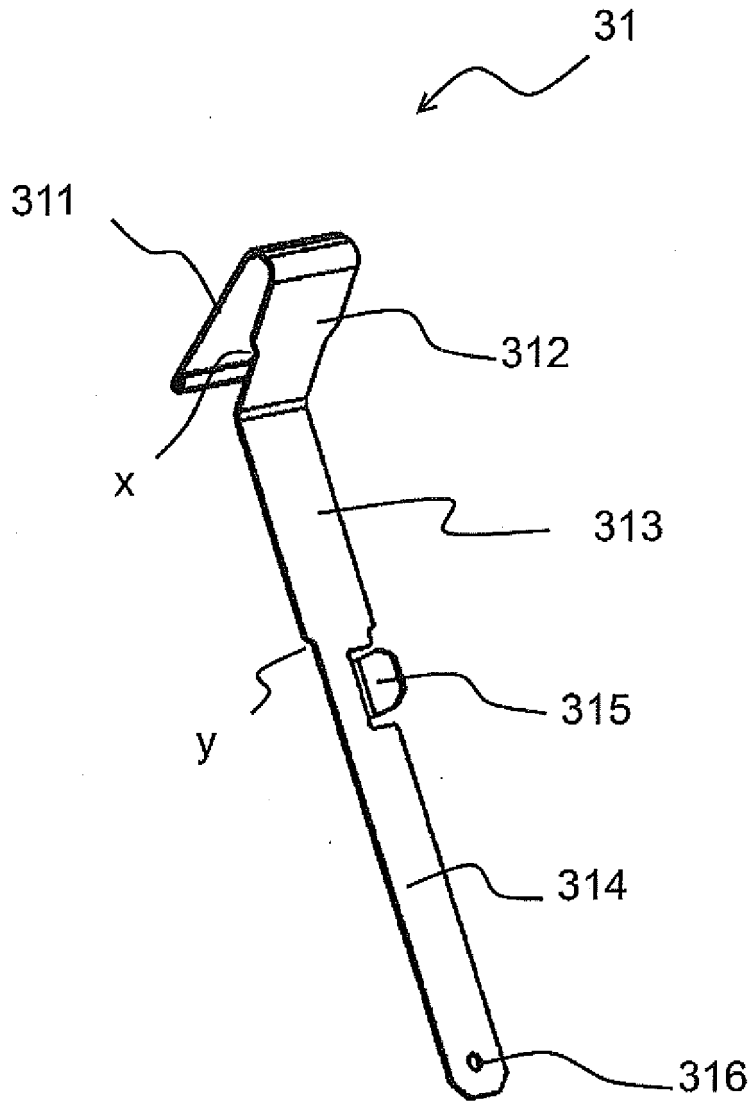


Figure-4

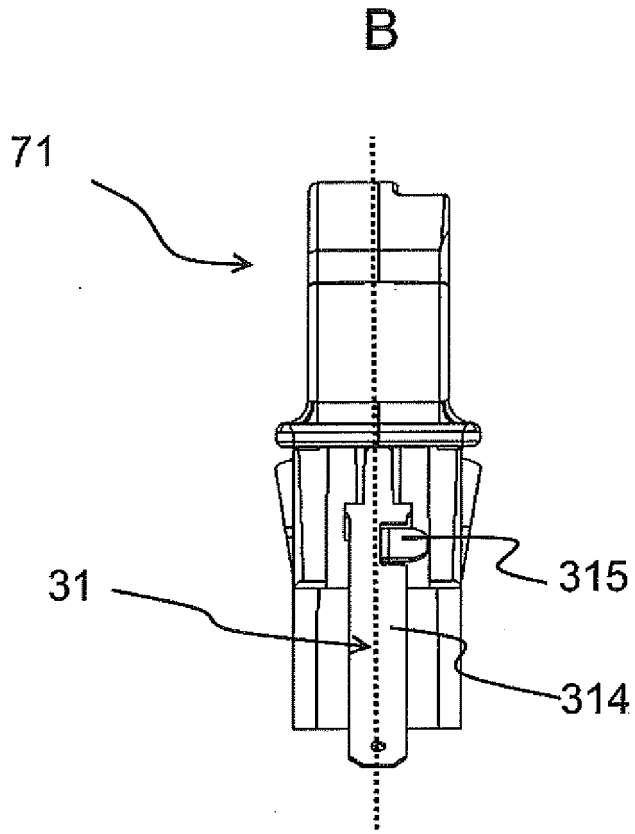


Figure-5a

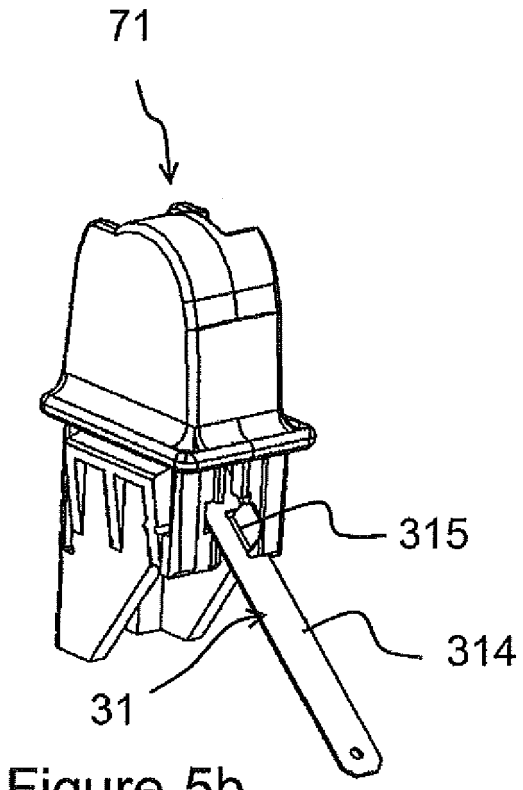


Figure-5b

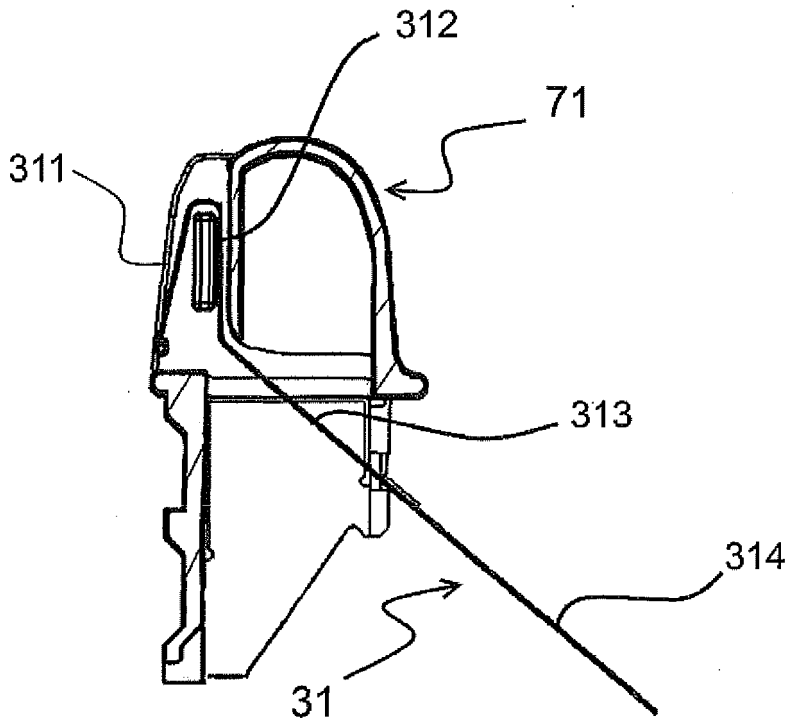


Figure-5c

(B-B cross-section)

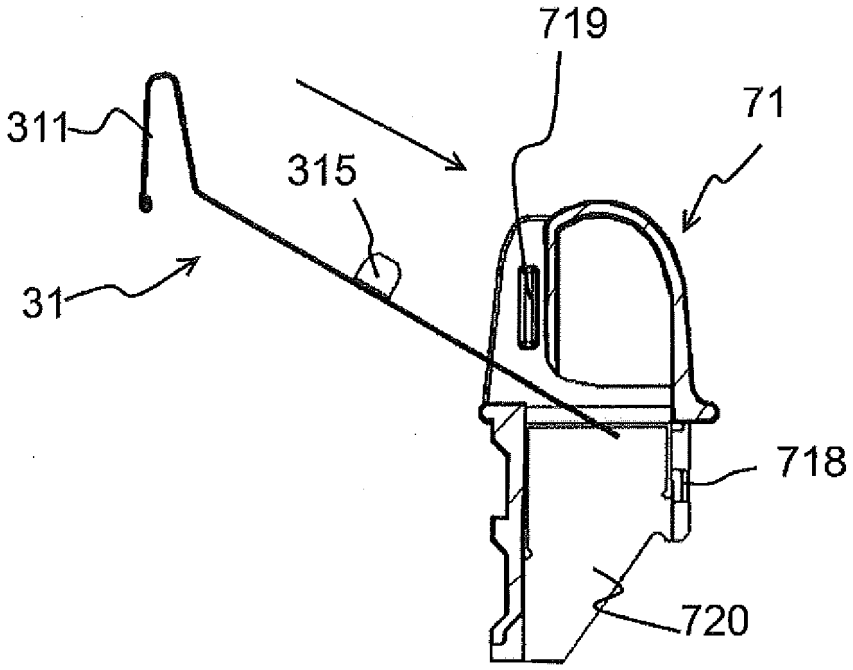


Figure-6a

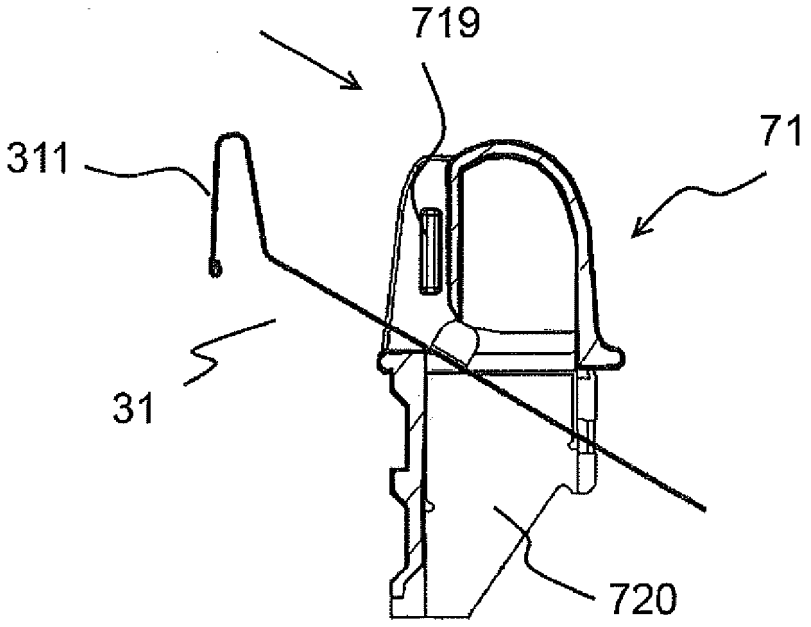


Figure-6b

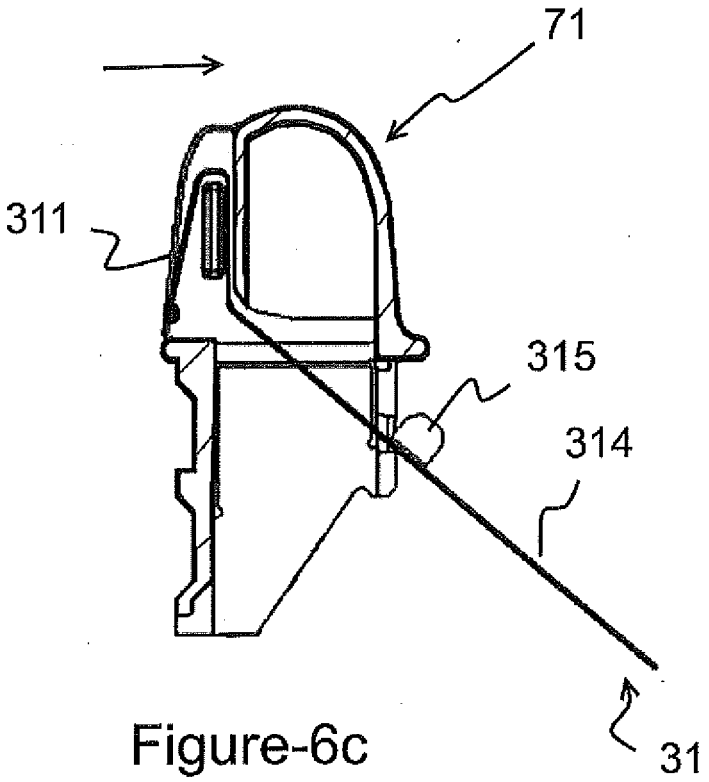


Figure-6c

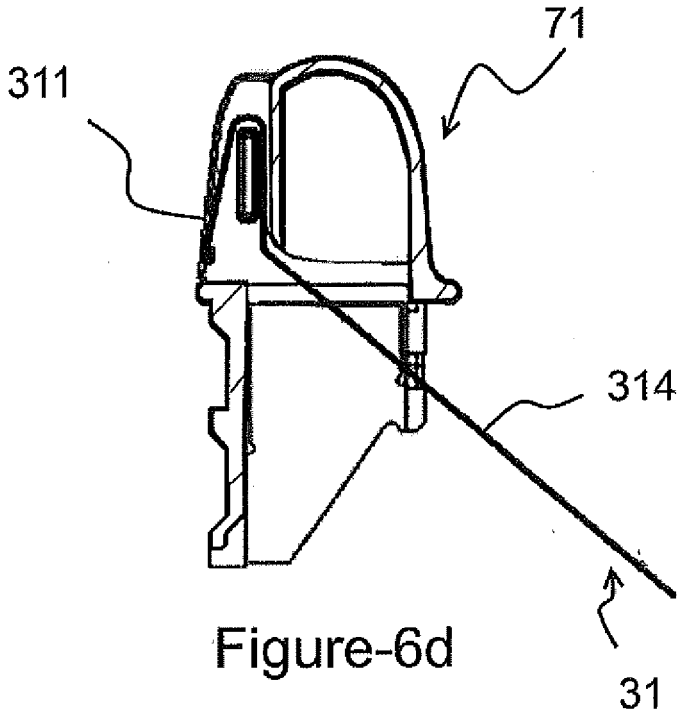


Figure-6d

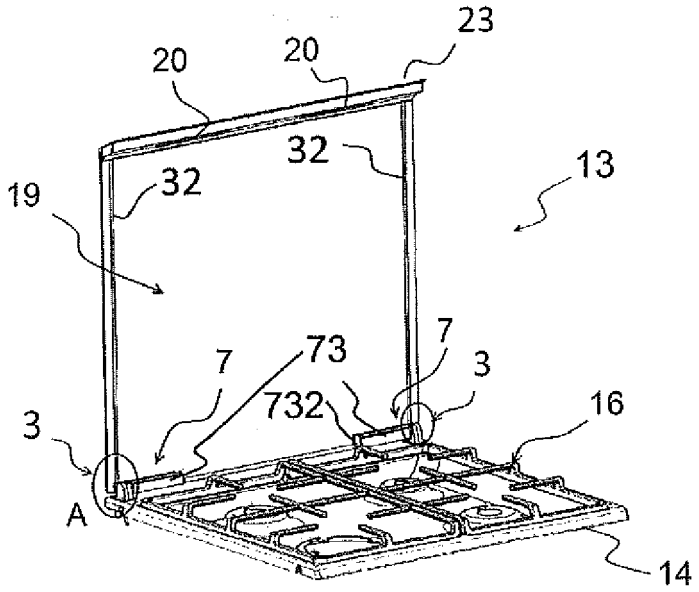
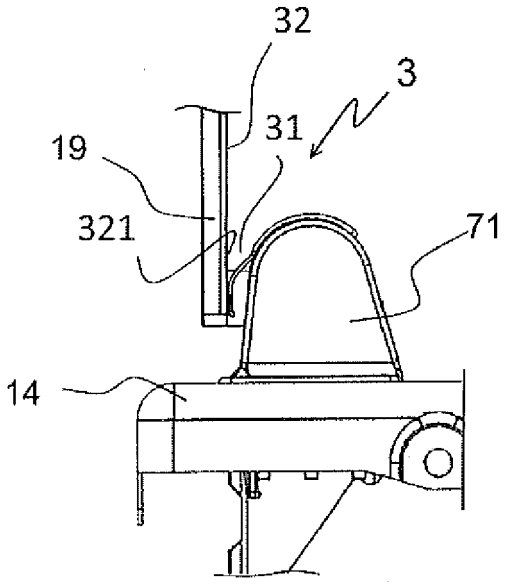


Figure- 7



A-Detail

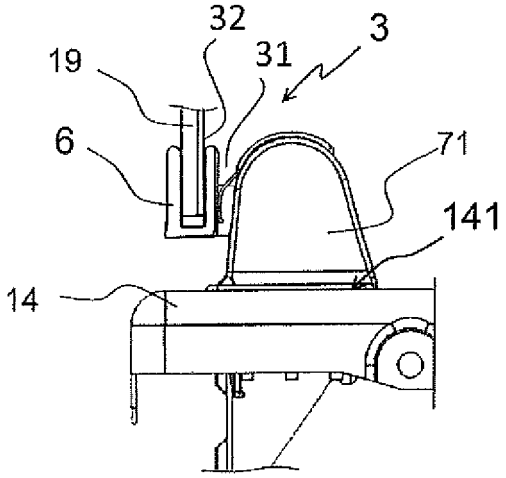


Figure- 8

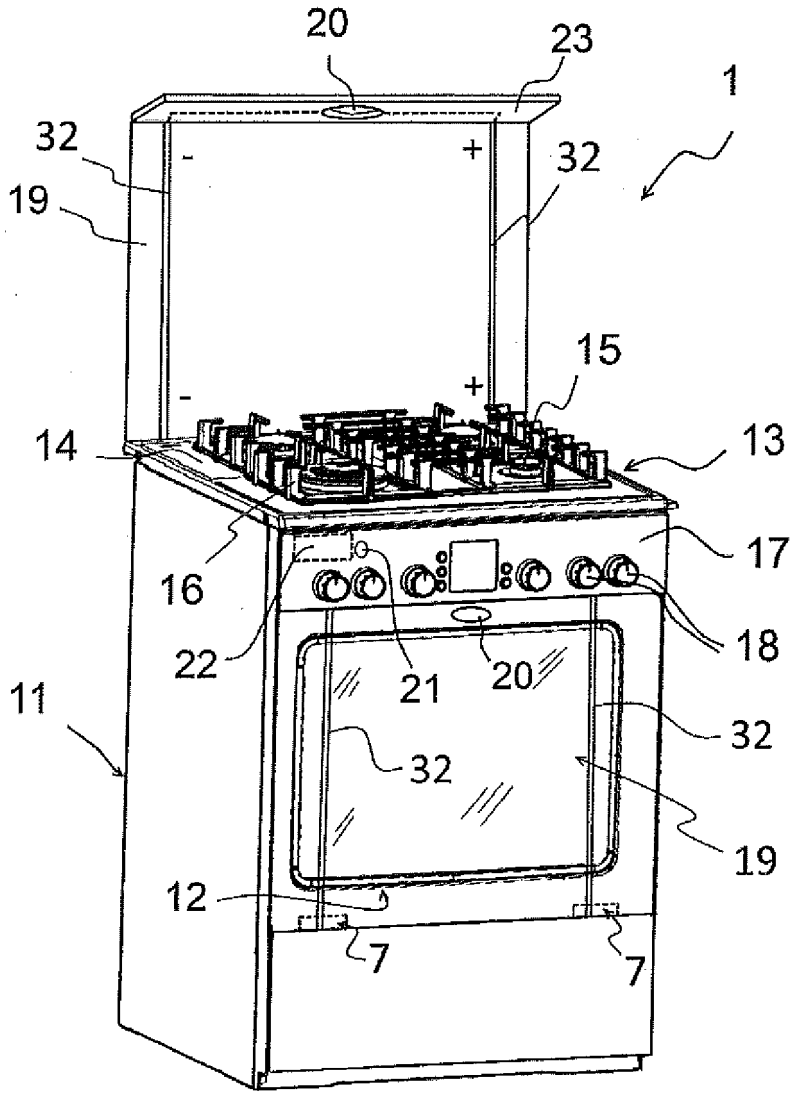


Figure-9

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EUROPEAN SEARCH REPORT

Application Number
EP 16 15 3991

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 1 170 562 A2 (WHIRLPOOL CO [US]) 9 January 2002 (2002-01-09) * figures 1,2 * -----	1-16	INV. F24C7/08 E05D11/00 H01H3/16
A	US 2005/045457 A1 (PARK TAE-HO [KR]) 3 March 2005 (2005-03-03) * figures 2,3,4a,4b * -----	1-16	
A	US 4 999 873 A (LISAK STEPHEN P [US]) 19 March 1991 (1991-03-19) * figure 1, * -----	1-16	
A	US 3 715 537 A (PETERSON F) 6 February 1973 (1973-02-06) * figures 1-4 * -----	1-16	
A	EP 2 438 837 A1 (YEN RU-BIN [CN]) 11 April 2012 (2012-04-11) * figures 1-7 * -----	1-16	
			TECHNICAL FIELDS SEARCHED (IPC) F24C E05D H01H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	21 June 2016	Moreno Rey, Marcos

CATEGORY OF CITED DOCUMENTS

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21-06-2016

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- EP 1808561 A **[0006]**
- TR 201412531 **[0007]**