



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
16.11.2011 Bulletin 2011/46

(51) Int Cl.:
F25D 23/02 (2006.01)

(21) Application number: **11165261.6**

(22) Date of filing: **09.05.2011**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(30) Priority: **13.05.2010 IT MI20100150 U**

(71) Applicant: **Candy S.p.A.**
20052 Monza (MB) (IT)

(72) Inventor: **Fumagalli, Silvano**
20900, Monza (MB) (IT)

(74) Representative: **Mittler, Enrico et al**
Mittler & C. S.r.l.
Viale Lombardia, 20
20131 Milano (IT)

(54) **Door for a refrigerator.**

(57) A door for a refrigerator is disclosed; the refrigerator comprises a first compartment (2) and a second compartment (3) arranged in a single body (1) and the door (20) is associated with the first compartment to close the first compartment. The refrigerator comprises a further door (30) to close the second compartment and the first compartment is arranged above the second compartment in the body. The door comprises a hollow part

(21) made in an external side wall (22) of the door and configured for opening the door; said hollow part (21) extends as far as the bottom (201) of the door. The door comprises means (200) arranged on the bottom (201) of the door and closing the hollow part (21) and configured so as to prevent the sliding of the hand of a user from the hollow part to the space (400) comprised between said door (20) and said further door (30). (Fig. 1)

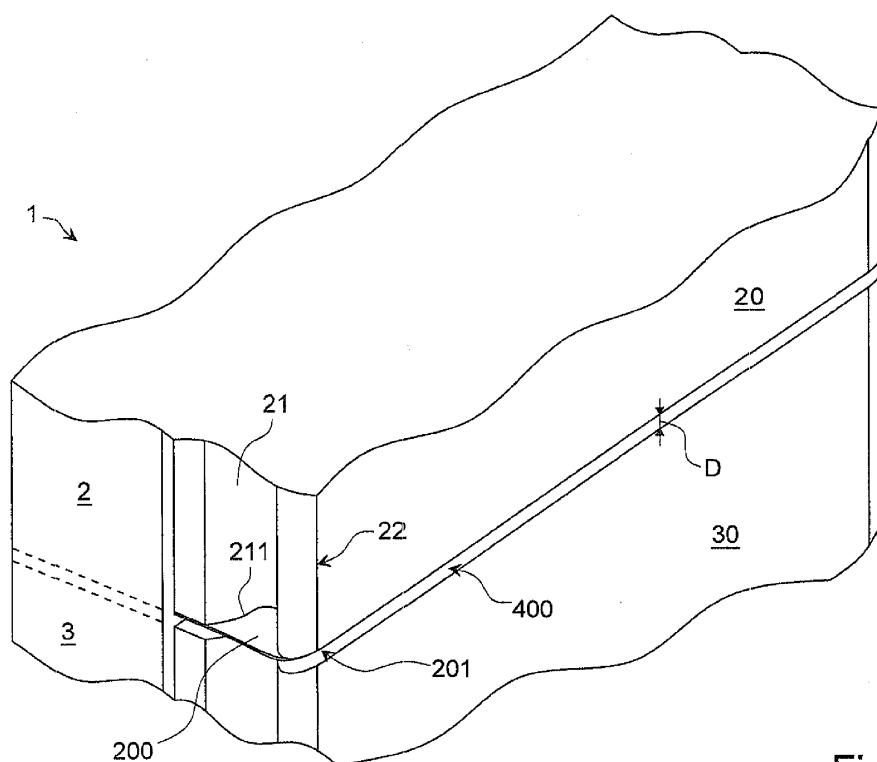


Fig.1

Description

[0001] The present invention relates to a door for a refrigerator.

[0002] Household appliances are known that comprise a compartment with a lower temperature or freezer compartment and a compartment with a higher temperature or refrigerator compartment that are closed by two single doors or hatches. Normally, the freezer compartment is arranged below the refrigerator compartment inside the single body containing both compartments.

[0003] The doors closing said compartments are normally provided with handles for facilitating the opening thereof. Said handles generally protrude from the external profile of the doors to facilitate the gripping thereof. For reasons of greater compactness of the household appliance, some handles are made in the door itself; the doors comprise a hollow part on the external profile that acts as a handle for the door.

[0004] If said hollow parts are made along the external side profile of the door of the refrigerator compartment and considering a small space between one door and the other, as normally exists in the doors currently used for closing refrigerator and freezer compartments, it is possible that the fingers of the hand of the user will remain trapped between the end part of the hollow side part of a door and the other door in sliding of the hand of the user from the hollow part to the space comprised between the two doors.

[0005] In view of the prior art, the object of the present invention is to provide a door for a refrigerator that overcomes the aforesaid drawback.

[0006] According to the present invention, said object is achieved by a door for a refrigerator, said refrigerator comprising a first compartment and a second compartment arranged in a single body, said door being associated with said first compartment to close said first compartment, said refrigerator comprising another door to close the second compartment, said first compartment being arranged above said second compartment in the body and said door comprising a hollow part made in an external side wall of the door and configured for opening the door, said hollow part extending as far as the bottom of the door, characterised in that it comprises means arranged on the bottom of the door and closing the hollow part and configured so as to prevent the sliding of the hand of a user from the hollow part to the space comprised between said door and said another door.

[0007] The features and the advantages of the present invention will be clear from the following detailed description of an embodiment thereof, illustrated by way of non-limiting example in the attached drawings, in which:

figure 1 is a perspective view of a refrigerator according to the present invention;
 figures 2 and 3 show a perspective view of the insert used in the door for a refrigerator of figure 1;
 figure 4 shows a vertical schematic section of the

door for a refrigerator in figure 1;

figure 5 shows a schematic top view of the door for a refrigerator in figure 1.

[0008] With reference to figure 1 there is shown a domestic refrigerator according to the present invention. The refrigerator comprises a body 1 with a first compartment 2 and a second compartment 3 arranged inside the body 1 and below the first compartment 2. Preferably, the second compartment 3 is at a lower temperature than the first compartment 2, i.e. the second compartment is the freezer compartment and the first compartment is the refrigerator compartment of the domestic refrigerator. The doors 20 and 30 for closing the compartments are associated with the compartments 2 and 3.

[0009] The door 20 associated with the first compartment 2 comprises a hollow part 21 made in the external side wall 22 of the door; said hollow part 21 extends as far as the bottom of the door 20, preferably for the entire length of the door 20. The hollow part 21 is the opening handle of the door 20 made in the door 20.

[0010] Preferably, the compartments 2 and 3 are vertically adjacent to one another and the distance D between the two doors 20 and 30 is substantially 1 centimetre but can be slightly less or slightly more than 1 centimetre.

[0011] The door 20 comprises an insert 200 arranged on the bottom 201 of the door 20 and suitable for closing the hollow part 21 from below; in particular, the insert 200 is adjacent to the end 211 of the hollow part 21. In this manner, the hand of the user that slides downwards on the hollow part 21 cannot get caught in the space 400 between the two doors 20 and 30 because of the presence of an obstacle constituted by the insert 200.

[0012] As is visible in figures 2 and 3, the insert 200 comprises a flat part 202 that is suitable for closing the hollow part 21 from the end 211 and elements 203 that are suitable for permitting a stable connection of the insert with the door 20 in such a manner that the insert, once it is inserted into the door 20, is integral with the door 20.

[0013] The door 20 preferably comprises two hollow parts 21 made on the external side walls 22 of the door and comprises at least two inserts 200 to close the hollow parts 21 on the ends 211 and on the bottom 201 of the door 20; preferably, the door comprises four inserts 200 arranged on each end 211, 212 of the two hollow parts 21, as more clearly visible in figure 5.

[0014] The door 20, as more clearly visible in figure 4, comprises a metal sheet 250 in the external part of the door 20. Said metal sheet 250 is folded on the top 207 and on the bottom 201 of the door 20 in such a manner that portions of metal sheet 251 and 252 cover the central part of the top 207 and of the bottom 201 of the door 20. In this manner, both on the top 207 and on the bottom 201 of the door 20 the flat part 202 of each insert 200 and the portion of metal sheet 251, 252, next to an insert 200 or comprised between a pair of inserts 200, makes a uniform structure without differences of level between

inserts 200 and portions of metal sheet 251, 252.

Claims

1. Door for a refrigerator, said refrigerator comprising a first compartment (2) and a second compartment (3) arranged in a single body (1), said door (20) being associated with said first compartment to close said first compartment, said refrigerator comprising another door (30) to close the second compartment, said first compartment being arranged above said second compartment in the body and said door comprising a hollow part (21) made in an external side wall (22) of the door and configured for opening the door, said hollow part (21) extending to the bottom (201) of the door, **characterised in that** it comprises means (200) arranged on the bottom (201) of the door and closing the hollow part (21) and configured so as to prevent the sliding of the hand of a user from the hollow part to the space (400) comprised between said door (20) and said another door (30). 5 10 15 20
2. Door for a refrigerator according to claim 1, **characterised in that** said means (200) comprises at least one insert with a flat part (202) next to the lower end (211) of the hollow part (21) and elements (203) that are suitable for cooperating with the door (20) for integral engagement of the insert with the first door. 25 30
3. Door for a refrigerator according to claim 2, **characterised in that** said insert (200) is next to an end (211) of the hollow part (21). 35
4. Door for a refrigerator according to claim 3, **characterised in that** it comprises a metal sheet (250) that is arranged on the front part (210) and has folded parts (252) covering the bottom of the door (20) in such a manner as to form with said at least one insert a uniform structure without differences of level on the bottom (201) of the door. 40 45
5. Door for a refrigerator according to claim 4, **characterised in that** it comprises two hollow parts (21) made on the two side walls (22) of the door and a pair of inserts (200) arranged on the bottom (201) of the door and closing the hollow parts (21), said metal sheet (250) having folded parts (252) covering the bottom of the door in such a manner as to form with said two inserts a uniform structure without differences of level on the bottom (201) of the door. 50 55
6. Door for a refrigerator according to claim 5, **characterised in that** it comprises another pair of inserts (200) arranged on the top (207) of the door and closing the hollow parts (21), said metal sheet (250) comprising further folded parts (251) covering the top of the door in such a manner as to form with said other

pair of inserts (200) a uniform structure without differences of level on the top (207) of the door.

7. Refrigerator comprising a first compartment (2) and a second compartment (3) arranged in a single body (1) and a door (20) associated with said first compartment to close said first compartment and another door (30) associated with the second compartment to close said second compartment, said first compartment being arranged above said second compartment in the body and in such a manner that there exists a space (400) comprised between said door (20) and said another door (30), said door being defined as in any one of the preceding claim. 5 10 15 20
8. Refrigerator according to claim 7, **characterised in that** said another door (20) of the refrigerator closing the second compartment (3) is arranged at a vertical distance (D) from the door of substantially 1 cm. 25 30

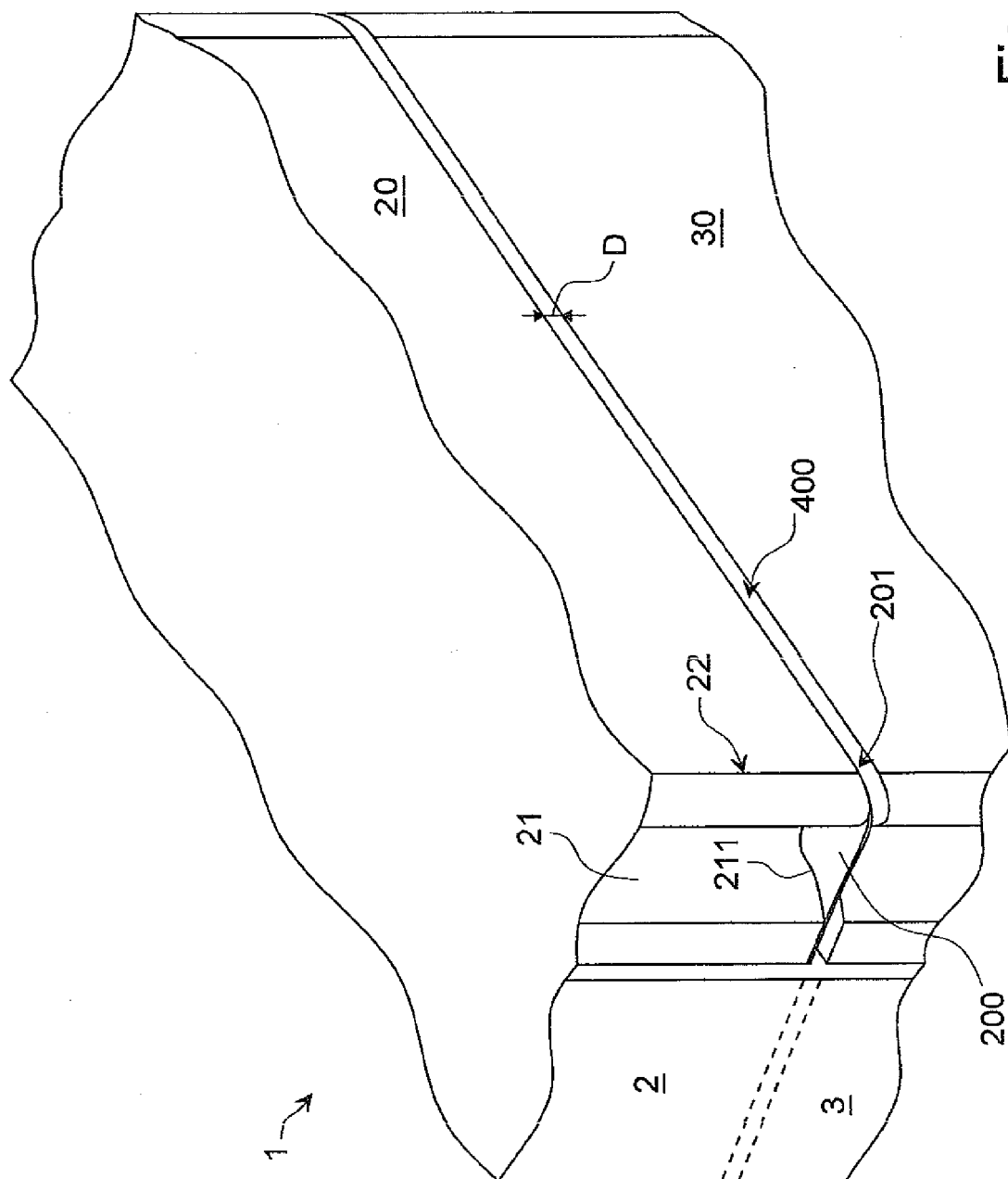


Fig. 1

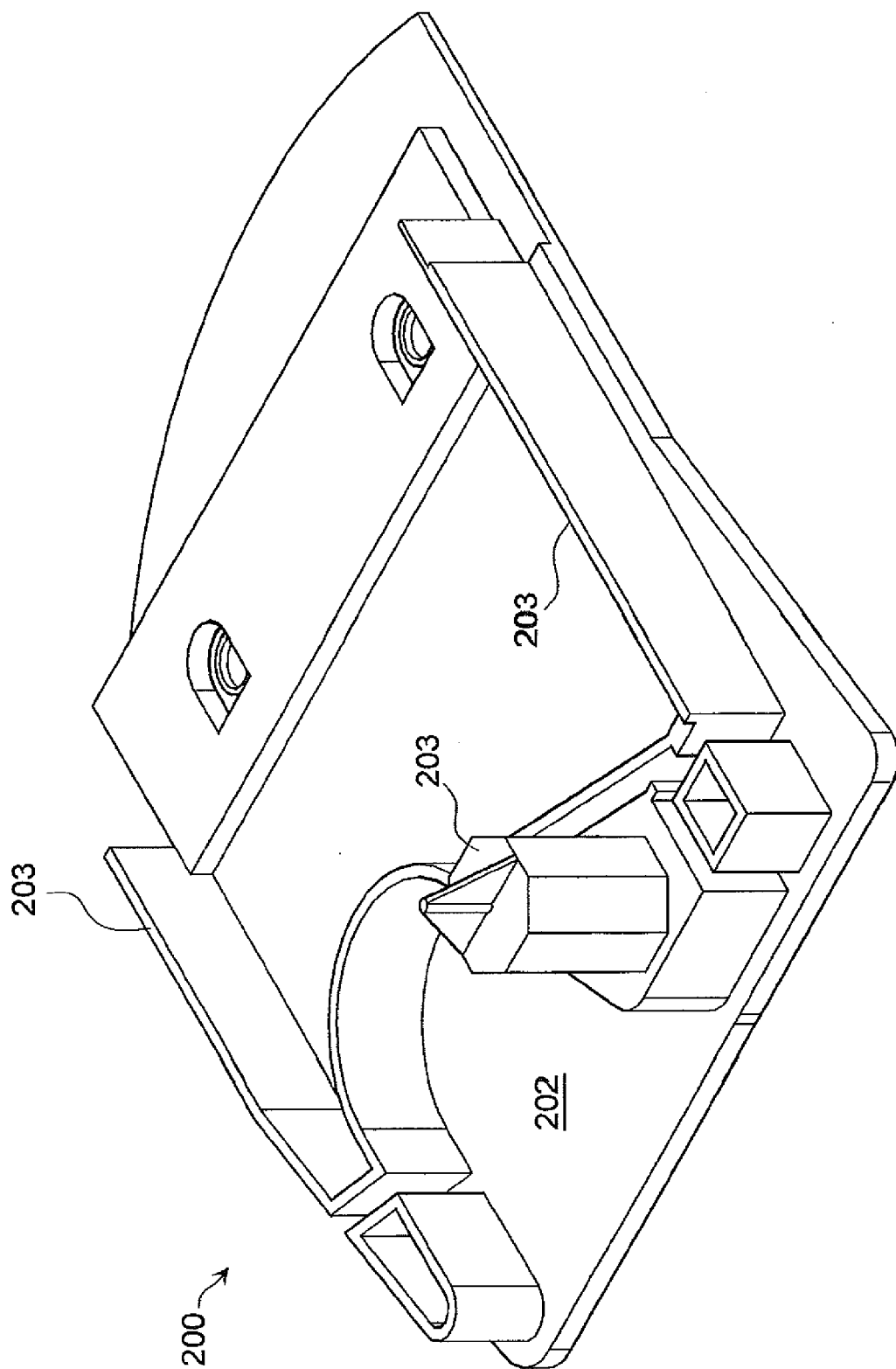


Fig. 2

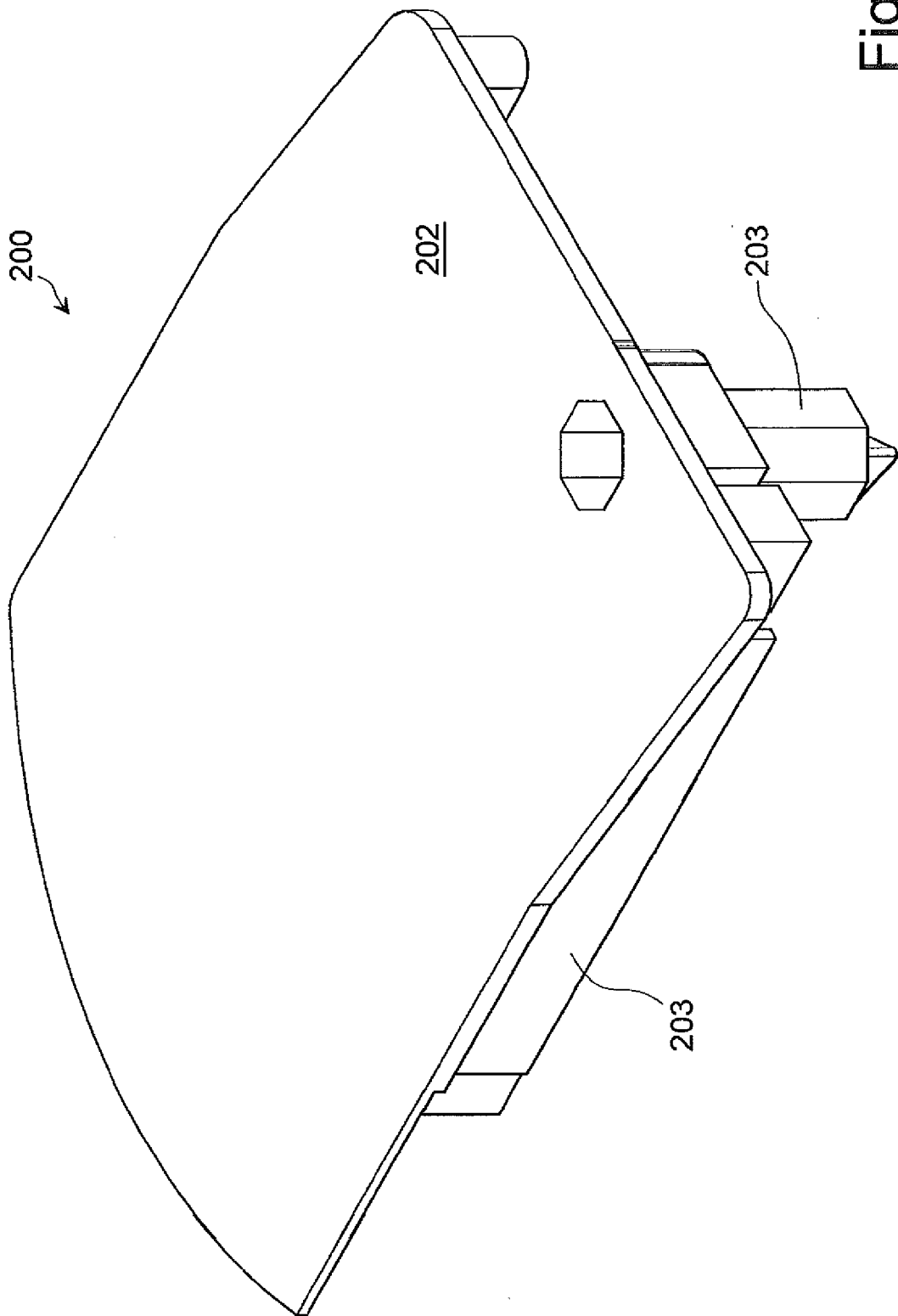


Fig.3

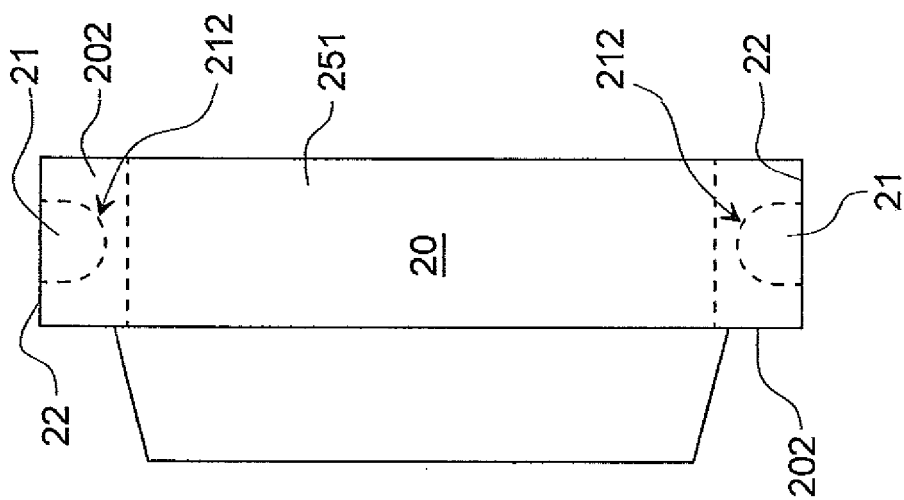


Fig. 5

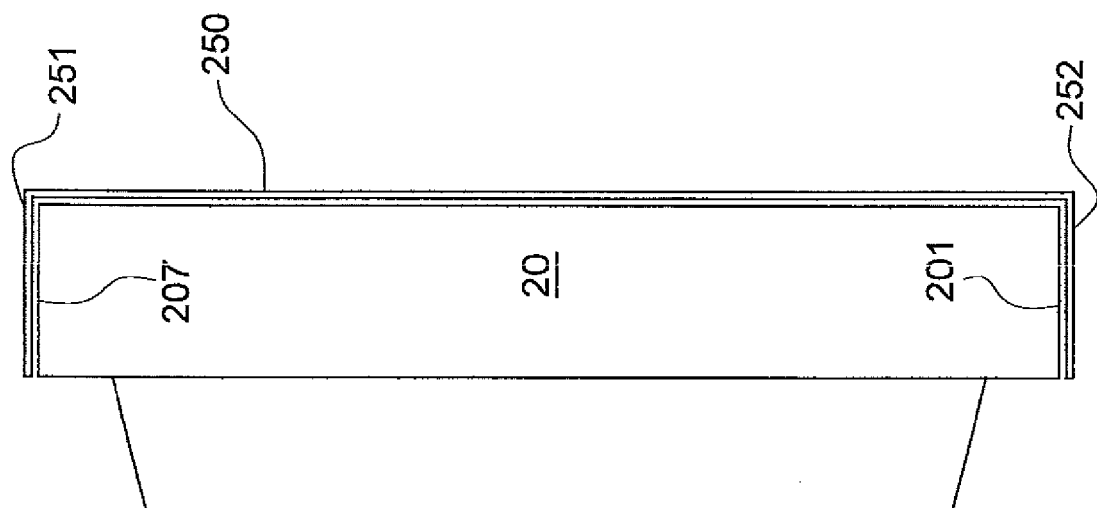


Fig. 4