



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
06.05.2015 Bulletin 2015/19

(51) Int Cl.:
A47F 3/04 (2006.01)

(21) Application number: **14189016.0**

(22) Date of filing: **15.10.2014**

(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

- **Mykkänen, Mikko**
FI-01510 Vantaa (FI)
- **Tiainen, Olli**
FI-07900 Loviisa (FI)
- **Hinkkanen, Juuso**
FI-06100 Porvoo (FI)
- **Heinävaara, Kimmo**
FI-07910 Valko (FI)
- **Immonen, Anselmi**
FI-00200 Helsinki (FI)

(30) Priority: **01.11.2013 FI 20136074**

(71) Applicant: **Norpe Oy**
06150 Porvoo (FI)

(72) Inventors:
• **Rautavuori, Antti**
FI-00610 Helsinki (FI)

(74) Representative: **Berggren Oy Ab**
P.O. Box 16
Antinkatu 3 C
00101 Helsinki (FI)

(54) **Freezer island**

(57) The present invention relates to a freezer island (20) for a grocery store comprising a frame structure (30) surrounding at least one open or openable product space (23) for frozen food products. The product space (23) of the freezer island (20) comprises a shelf part (21) comprising shelves (27) and a chest part (22) below the shelf part (21) for the frozen products.

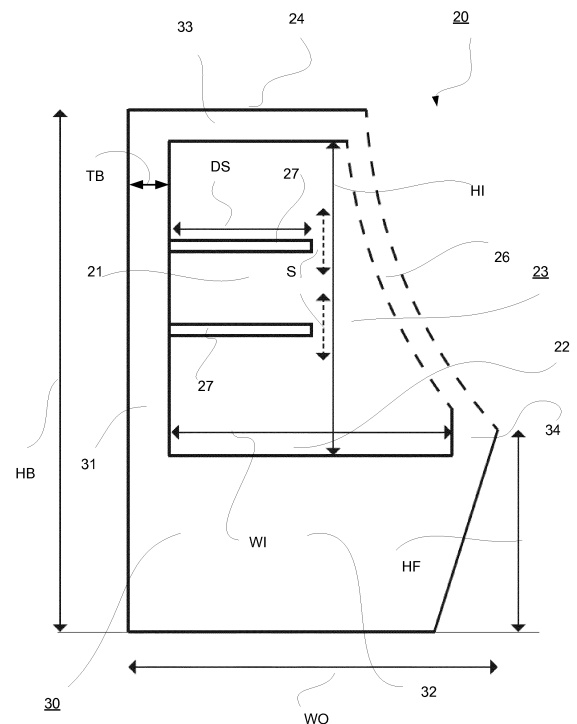


Fig. 2

Description

[0001] The present invention relates to a freezer island and more especially the invention relates to a freezer island according to the preamble of claim 1.

[0002] Freezer islands are used in grocery stores for frozen food products and they are located in middle of the floor space of the store so that customers have access to the product space around the island at least from the longitudinal sides of the island. In some cases freezer islands may be located next to a wall or another structure so that accessibility is only from one longitudinal side of the island. In figure 1A is shown one example of a freezer island 10 according to prior art which is a narrow freezer island, typically located next to a wall at the grocery store. The freezer island 10 has a box-like appearance and it is open or openable (it can have energy saving openable lids) from the top for customers to pick desired food products. The freezer island 10 has a frame structure 11 having walls 15 and a base part 16 surrounding a product space 12 and typically it is supported by feet 13 on the floor of the grocery store. In figure 1 B is shown another example of a freezer island 10 according to prior art, which is a wide freezer island, typically located at middle of the floor space of the grocery store. The freezer island 10 has a box-like appearance and it is open or openable (it can have energy saving openable lids) from the top for customers to pick desired food products. The freezer island 10 has a frame structure 11 having walls 15 and a base part 16 surrounding a product space 12 and typically it is supported by feet 13 on the floor of the grocery store. The height of these types of freezer islands from the floor surface to the highest point is typically 600 - 900 mm. One disadvantage of the freezer island 10 of these types is limited visibility of products: products located near walls 15 can only be seen if the customers stand right next to the freezer island and can have a look directly from above and shorter customers, for example children, may not have visibility over the walls 15 at all. Another disadvantage relates to ergonomics of customer, especially in cases where the freezer island is located so that accessibility is from one longitudinal side only. The customer may have to reach out to an awkward almost back horizontally bent position in order to reach a product located near the bottom of the product space away from the wall that the customer is standing next to. The product space of these types of freezer islands according to prior art is limited in vertical direction by the height of the walls that have a maximum in order to save accessibility of the customer to the products.

[0003] An object of the present invention is to create a freezer island in which the disadvantages of prior art arrangements are eliminated or at least minimized.

[0004] A particular object of the invention is to create a freezer island in which the visibility of products to customers is good irrespective of location of standing or height of the customer.

[0005] A particular object of the invention is to create

a freezer island where the reachability of products to customer is good and possible in good ergonomic position.

[0006] A particular object of the invention is to create a freezer island with more product space for frozen food products in the product space in relation to floor space need compared to freezer islands according to prior art.

[0007] In order to achieve the above objects and those that will come apparent later the freezer island is mainly characterized by the features of the characterizing part of claim 1. Advantageous embodiments and features are defined in dependent claims.

[0008] According to the invention the product space of the freezer island comprises two main parts a shelf part comprising shelves for food products and a chest part below the shelf part.

[0009] According to an advantageous feature the product space of the freezer island comprising the shelf part and the chest part forms a continuous space without limiting horizontal wall or lid structures.

[0010] According to the invention the height of the freezer island is 1300 - 1700 mm such that an average man can see over the top surface of the ceiling part of the freezer island.

[0011] According to an advantageous feature of the invention the inside height of the product space is about 800 - 1200 mm and the maximum inside width of the product space is about 700 - 900 mm.

[0012] According to an advantageous feature of the invention the freezer island comprises a frame structure that has a back wall, a front wall, a base part, side walls and a ceiling part.

[0013] According to an advantageous feature of the invention the freezer island comprises two freezer islands according to the invention and it is open or openable from both longitudinal sides for customers to pick desired frozen food products. Advantageously the freezer island comprises two freezer islands with back walls against each other forming a center wall.

[0014] According to an advantageous feature of the invention the freezer island has transparent, openable doors that are in inclined position in relation to vertical direction such that from the view of the customer the main direction of the surface of the door is backwards and upwards inclined. The surface of the door in relation to vertical direction can be straight, broken line or curved, advantageously convex in view of the customer.

[0015] According to an advantageous feature of the invention the freezer island has a ceiling part the top surface of which can be used for food products preserved at room temperature.

[0016] By the invention a freezer island is created that has good visibility of products that is easy to use by customer in good ergonomic position. Further the freezer island has even 35% more product space for frozen food products in the product space in relation to floor space need compared to freezer islands according to prior art.

[0017] In the following the invention is described in detail with reference to the accompanying drawings, in

which

in figures 1A - 1B are schematically shown two examples of a freezer island according to prior art,

in figure 2 is schematically shown one example of a freezer island according to the invention and

in figure 3 is schematically shown another example of a freezer island according to the invention.

[0018] During the course of the following description of figures 2 - 3 like numbers and signs will be used to identify like elements, parts and part components unless otherwise mentioned.

[0019] In figure 1A is shown one example of a freezer island 10 according to prior art which is a narrow freezer island, typically located next to a wall at the grocery store. The freezer island 10 has a box-like appearance and it is open or openable (it can have energy saving openable lids) from the top for customers to pick desired food products. The freezer island 10 has a frame structure 11 having walls 15 and a base part 16 surrounding a product space 12 and typically it is supported by feet 13 on the floor of the grocery store. In figure 1B is shown another example of a freezer island 10 according to prior art, which is a wide freezer island, typically located at middle of the floor space of the grocery store. The freezer island 10 has a box-like appearance and it is open or openable (it can have energy saving openable lids) from the top for customers to pick desired food products. The freezer island 10 has a frame structure 11 having walls 15 and a base part 16 surrounding a product space 12 and typically it is supported by feet 13 on the floor of the grocery store. Typically width of the narrow freezer island 10 measured from outer surface of opposite longitudinal walls 15 is 800 - 900 mm and width of the wide freezer island 10 measured from outer surface of opposite longitudinal walls 15 is 1800 - 1900 mm and height measured from surface of the floor 14 of the grocery store to the upmost point of the frame structure 11 is about 900 mm. Typically height of the product space 12 is about 500 mm and width of the product space of the narrow type 700 - 800 mm and width of the product space of the wide type 1700 - 1800 mm.

[0020] In figure 2 is shown one example of a freezer island 20 according to the invention. The freezer island 20 has a cabinet-like appearance and it is open or openable from the front, i.e. from the longitudinal side at customer side, for customers to pick desired frozen food products. The freezer island 20 has a frame structure 30 having a back wall 31, a front wall 34, a base part 32 and a ceiling part 33 and side walls (not shown) surrounding a product space 23. The product space 23 of the freezer island 20 comprises two main parts for products: a shelf part 21 comprising shelves 27 and a chest part 22 below the shelf part 21. The freezer island 20 has transparent, openable doors 26 that are in inclined position in relation

to vertical direction such that from the view of the customer the main direction of the surface of the door 26 is backwards and upwards inclined. The surface of the door 26 in relation to vertical direction can be straight, broken line or curved, advantageously convex in view of the customer. The height of the freezer island 20 is such that an average man can see over the top surface 24 of the ceiling part 33 of the freezer island 20. The height HB (back height) of the freezer island 20 measured from surface of the floor is advantageously 1300 - 1700 mm and the width WO (outer width) of the freezer island 20 according to this example measured from outer surface of the back wall 31 to the outermost point of the front wall 34 is 1000 - 1200 mm. The height HI (inside height) of the product space 23 is 800 - 1200 mm and the maximum width WI (inside width) of the product space 23 is 700 - 900 mm. The height HF (front height) of the base part 32 measured from the floor of the store is 400 - 600 mm. The shelf depth DS of the shelves is about 400 mm and thickness of the back wall TB is about 150 mm. In this example the freezer island 20 has a horizontal top surface 24 of the ceiling part 33 which can be used for food products preserved at room temperature.

[0021] In figure 3 is shown another example of a freezer island 20 according to the invention. The freezer island 20 has a "two cabinets - with backs against each other" -like appearance and it is open or openable from both longitudinal sides for customers to pick desired frozen food products. The freezer island 20 has a frame structure 30 having a center wall 35, a front wall 34, a base part 32 and a ceiling part 33 and side walls (not shown) surrounding two product spaces 23. This example corresponds mainly to the freezer island according to example of figure 2 but has two freezer islands 20 according to the example of figure 2 with back walls 31 against each other forming the center wall 35, which can also be of one wall structure only. The product spaces 23 of the freezer island 20 comprise two main parts for products: a shelf part 21 comprising shelves 27 and a chest part 22 below the shelf part 21. The freezer island 20 has transparent, openable doors 26 that are in inclined position in relation to vertical direction such that from the view of the customer the main direction of the surface of the door 26 is backwards and upwards inclined. The surface of the door 26 in relation to vertical direction can be straight, broken line or curved, advantageously convex in view of the customer. The height of the freezer island 20 is such that an average man can see over the top surface 24 of the ceiling part 33 of the freezer island 20. The height HB (center height) of the freezer island 20 measured from surface of the floor is advantageously 1300-1700 mm and the width WO (outer width) of the freezer island 20 according to this example measured between the outermost points of each front wall 34 is 2000 - 2400 mm. The height HI (inside height) of each product space 23 is 800 - 1200 mm and the maximum width WI (inside width) of each product space 23 is 700 - 900 mm. The height HF (front height) of the base part

32 measured from the floor of the store is 400 - 600 mm. The shelf depth DS of the shelves is about 400 mm and the thickness TB of the center wall is about 150 mm. In this example the freezer island 20 has a horizontal top surface 24 of the ceiling part 33 which can be used for food products preserved at room temperature.

Reference signs used in the drawing:

[0022]

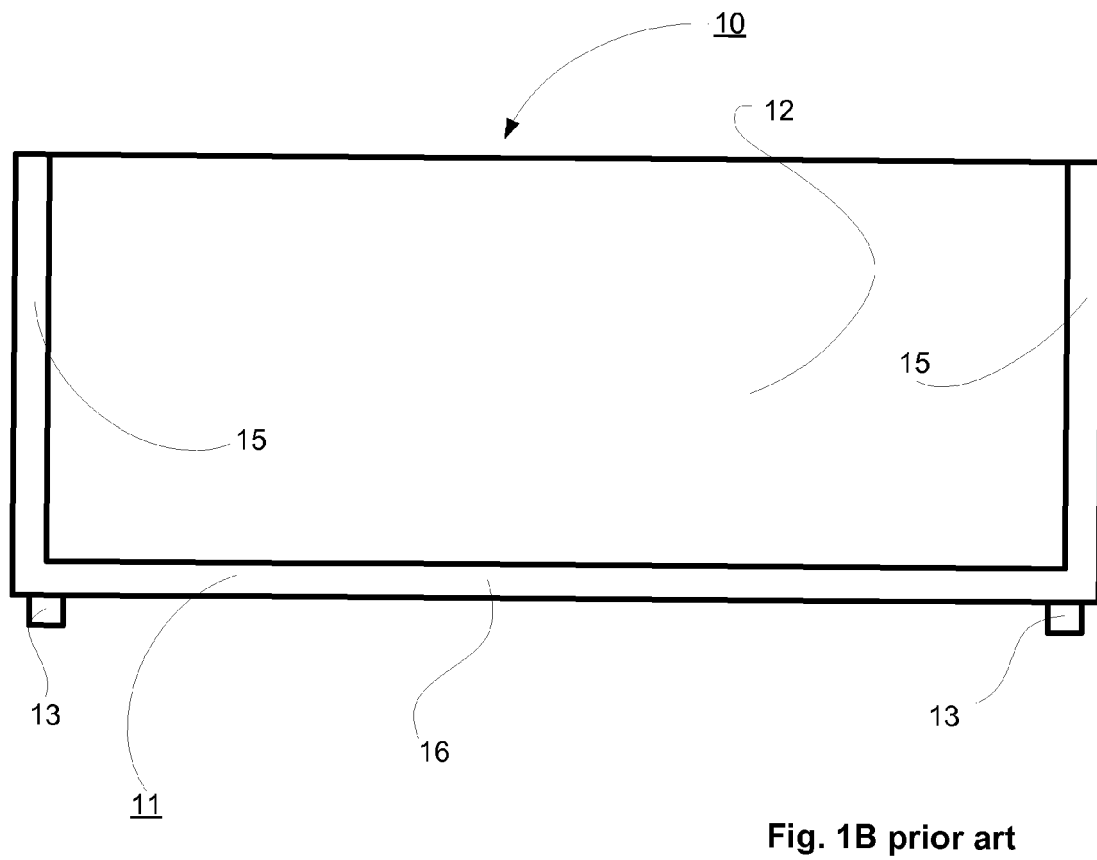
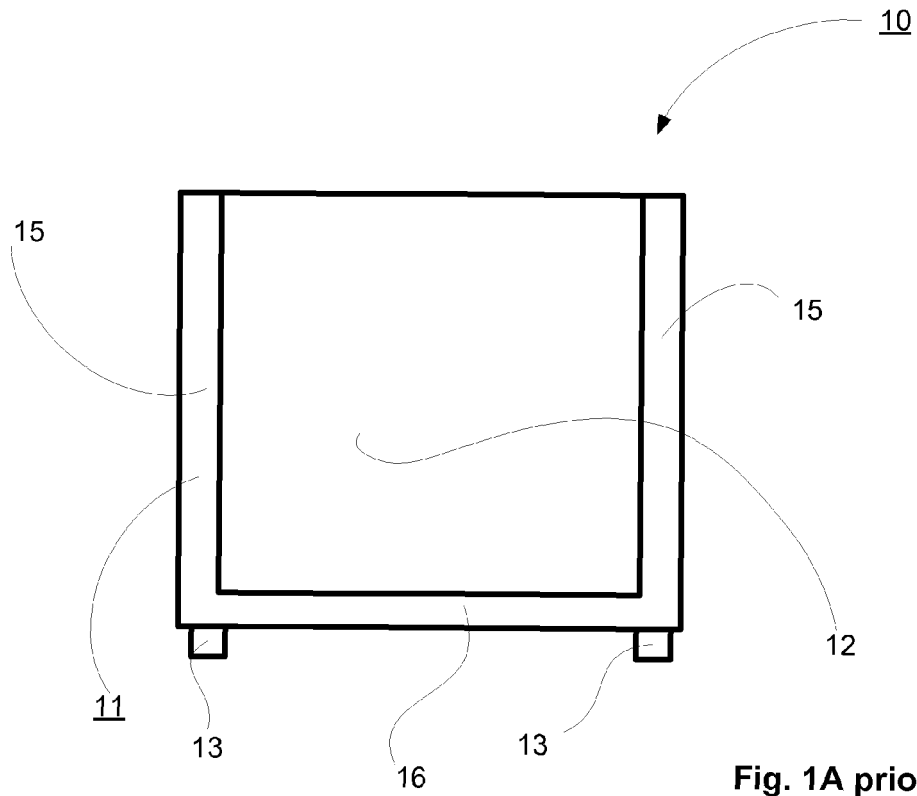
10	freezer island, prior art
11	frame structure, prior art
12	product space, prior art
13	foot, prior art
15	wall, prior art
16	base part, prior art
20	freezer island
21	shelf part
22	chest part
23	product space
24	top surface of the ceiling part
26	door
27	shelf
30	frame structure
31	back wall
32	base part
33	ceiling part
34	front wall
35	center wall
HB	back height; center height
HF	front height
HI	inside height
WO	outer width
WI	inside width
DS	shelf depth
TB	thickness of the back / center wall

Claims

- Freezer island (20) for a grocery store comprising a frame structure (30) surrounding at least one open or openable product space (23) for frozen food products, which product space (23) of the freezer island (20) comprises a shelf part (21) comprising shelves (27) and a chest part (22) below the shelf part (21) for the frozen products, **characterized in that** the height (HB) of the freezer island (20) measured from surface of the floor of the grocery store is 1300 - 1700 mm.
- Freezer island according to claim 1, **characterized in that** the inside height (HI) of the product space (23) is 800 - 1200 mm and the maximum inside width (WI) of the product space (23) is 700 - 900 mm.
- Freezer island according to claim 1, **characterized**

in that the frame structure (30) has a back wall (31), a front wall (34), a base part (32), side walls and a ceiling part (33).

- Freezer island according to any of previous claims, **characterized in that** the freezer island (20) has transparent, openable doors (26) that are in inclined position in relation to vertical direction.
- Freezer island according to claim 4, **characterized in that** surface of the door (26) in relation to vertical direction is straight, broken line or curved.
- Freezer island according to any of previous claims, **characterized in that** the freezer island (20) comprises two freezer islands (20) according any of previous claims and that it is open or openable from both longitudinal sides for customers to pick desired frozen food products.
- Freezer island according to any of claims 3 - 6, **characterized in that** the freezer island (20) comprises two freezer islands (20) with back walls (31) against each other forming a center wall (35).
- Freezer island according to any of previous claims, **characterized in that** the product space (23) of the freezer island (20) comprising the shelf part (21) and the chest part (22) forms a continuous space.



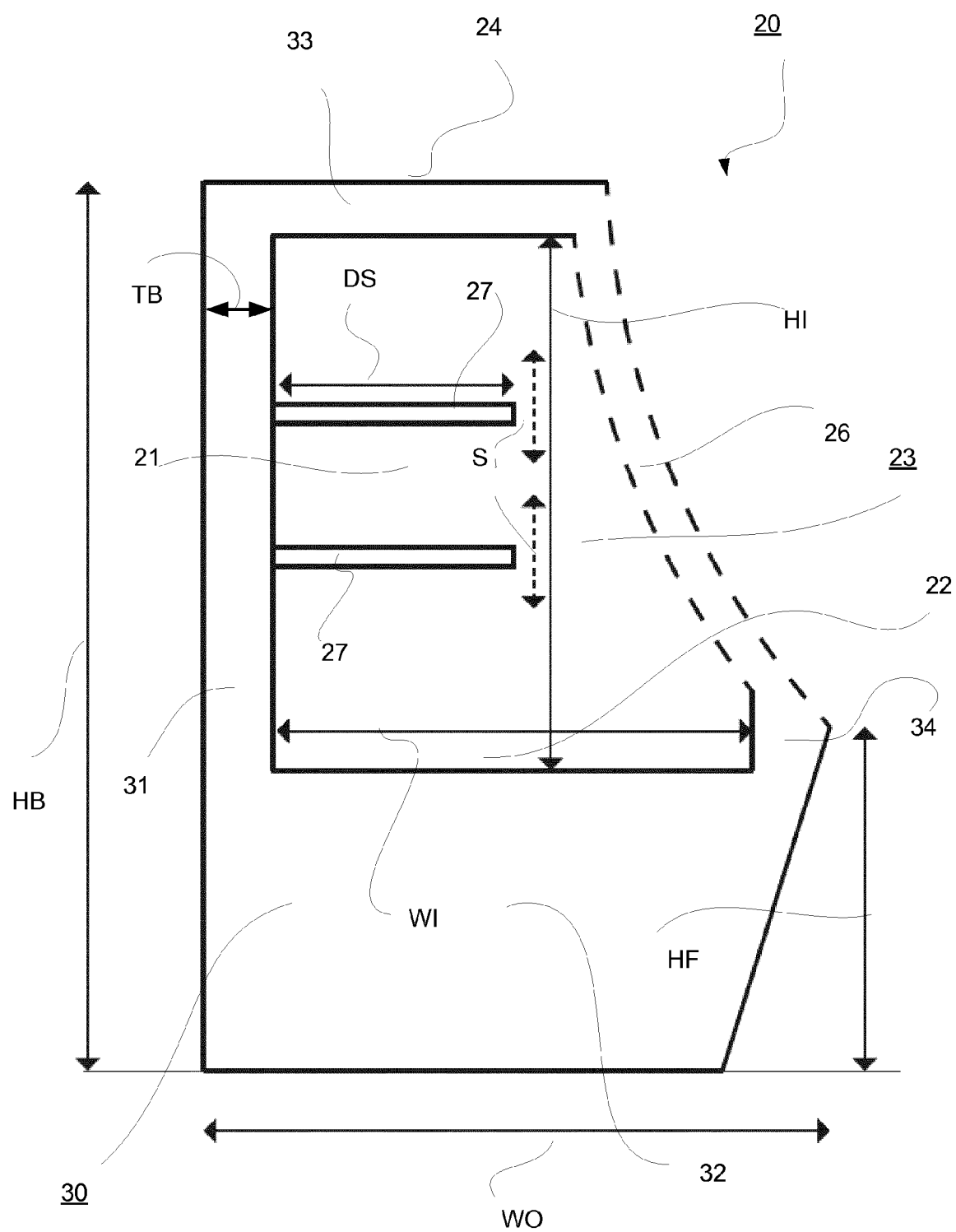


Fig. 2

