(51) International Patent Classification: F25D 23/04 (2006.01)

(21) International Application Number: PCT/EP2013/070701

(22) International Filing Date: 4 October 2013 (04.10.2013)

(25) Filing Language: English

(26) Publication Language: English


(71) Applicant: ARCELİK ANONIM SIRKETI [TR/TR]; E5 Ankara Asfalti Uzeri, Tuzla, 34950 Istanbul (TR).

(54) Title: COOLING DEVICE COMPRISING COVER

Figure 1

(72) Inventors; and


(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,

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(57) Abstract: The present invention relates to a cooling device (1) comprising a body (2), more than one compartment (3) situated inside the body (2) and that can be accessed therein from the front side, a door (4) and at least one shelf (5) placed on the door (4).

Published: — with international search report (Art. 21(3))
Description

COOLING DEVICE COMPRISING COVER

[0001] The present invention relates to a cooling device comprising a cover that closes the front of the compartments situated therein.

[0002] In cooling devices one or more than one compartment is used containing the foodstuffs therein. Inside the cooling device, foodstuffs of different types are stored. The user desires to store the perishable goods or the ones that are not used daily, in the compartments wherein they are placed such that the cold air is conserved better. Therefore, special compartments are formed inside the body for the perishable foods or the ones that are not used daily, having decreased interaction with the other compartments.

[0003] In the state of the art Japanese Patent Document No. JP2011069612, a refrigerator is described comprising a shelf, the position of which is changed by being moved forwards/backwards.

[0004] In the state of the art Korean Patent Document No. KR20040054931, a refrigerator is described having an additional part that is mounted to the shelves on the door, which creates extra storing space by being pulled towards the compartments situated inside the body.

[0005] In the state of the art European Patent Document No. EP2235452, a cooling device is described having an exterior shelf that encircles the shelf like a sheath.

[0006] The aim of the present invention is the realization of a cooling device that comprises a cover which provides flexibility of usage by its position being changed.

[0007] The cooling device 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 cover mounted on the shelf so as to move by sliding, having a closed position and an open position that the cover is changed to by being pulled towards the compartment while in the closed position, providing the front of the compartment to be entirely closed.

[0008] In an embodiment of the present invention, the cover has walls that surround the shelf from the front and the sides. The cover remains
connected to the shelf by means of its side walls while in the open or closed position. Thus, the shelf is prevented from detaching from the cover.

[0009] In an embodiment of the present invention, the cover surrounds the shelf like a shell. The cover and the shelf, being of the same shape and almost the same size, are placed so as to be one within the other. Thus, the cover and the shelf appear to be like one piece while the cover is in the closed position.

[0010] In an embodiment of the present invention, the cooling device comprises the cover that is moved between the closed and open positions by being moved forwards/backwards and a fixing means that provides the cover to be fixed onto the shelf both in the closed and open positions. The cover is moved between the closed or open positions by being moved forwards/backwards in the horizontal direction while the shelf remains stationary.

[0011] In an embodiment of the present invention, the cooling device comprises at least one crisper disposed at the lower side of the body and carried outside the body by being pulled forwards and furthermore the cover that entirely closes the front of the compartment above the crisper while in the open position. The lower wall of the cover bears against the ceiling of the crisper while the cover is in the open position. The crisper is situated at the lower part of the body. The air that cools inside the body descends downwards in the course of time. Therefore, the temperature of the compartment located just above the crisper is lower than the other compartments. That the front of the compartment situated just above the crisper is closed by the cover provides storing of the foodstuffs for a longer period of time.

[0012] In an embodiment of the present invention, the cooling device comprises at least one protrusion that extends in the horizontal direction on the lower wall of the cover and at least one housing on the lower wall of the shelf, wherein the protrusion is at least partially seated. While the cover is in the open position, the entire protrusion is situated inside the housing. The protrusion moves inside the housing while the cover is changed from the
closed position to the open position.

[0013] In an embodiment of the present invention, the cover is detachably mounted on the shelf. Thus, the cover is used by being attached to the shelf that is situated opposite the desired compartment. This allows the user to have flexibility of usage.

[0014] In the cooling device of the present invention, by means of the cover surrounding the shelf like a shell, the fronts of the compartments inside the body are closed.

[0015] A cooling device realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

[0016] Figure 1 – is the sideways partial view of the cooling device when the cover is in the closed position.

[0017] Figure 2 – is the sideways partial view of the cooling device when the cover is in the open position.

[0018] Figure 3 – is the perspective view of the cover and the shelf.

[0019] Figure 4 – is the perspective view of the cover, the shelf and the compartment.

[0020] Figure 5 – is the perspective view of the cover and the shelf related to an embodiment of the present invention.

[0021] Figure 6 – is the perspective view of the cover, the shelf and the compartment related to an embodiment of the present invention.

[0022] The elements illustrated in the figures are numbered as follows:

1. Cooling device
2. Body
3. Compartment
4. Door
5. Shelf
6. Fixing means
7. Cover
8. Crisper
9. Protrusion
10. Housing

[0023] The cooling device (1) comprises a body (2), more than one compartment
(3) situated inside the body (2) and that can be accessed therein from the front side, a door (4) and at least one shelf (5) placed on the door (4) (Figure 1).

[0024] The cooling device (1) of the present invention comprises at least one cover (7) mounted rotatably on the shelf (5) and having a closed position (C) and an open position (O) the cover (7) is changed to from the closed position (C) by being moved, providing the front of the compartment (3) to be closed entirely while the door (4) is closed. The shelves (5) are disposed almost opposite to the compartments (3). While the door (4) is open, the cover (7) is moved by the user by being pulled towards the compartment (3) in the horizontal direction while the shelf (5) remains stationary. When the door (4) is closed, the front of the compartment (3) is entirely closed. Thus, the compartment (3) with the cover (7) situated in the front thereof, is prevented from being affected from the temperature of the other compartments (3) inside the body (2). The products in the compartment (3), the front of which is closed by the cover (7), are stored independently from the products in the other compartments (3). When the front of the compartment (3) is desired to be open, the cover (7) is pushed by the user towards the door (4) and the cover (7) is provided to be changed to the closed position (C). The cover (7), while in the closed position (C), is nested with the shelf (5) and almost occupies the same space that is occupied by the shelf (5) alone (Figure 1, Figure 2).

[0025] In an embodiment of the present invention, the cover (7) is U shaped and has walls that are parallel to the side surface and the front surface of the shelf (5). The side walls and the front wall of the cover (7) are situated opposite to the side surface and the front surface of the shelf (5). While the cover (7) is in the closed position (C), the front wall of the cover (7) does not contact the front surface of the shelf (5), but the side walls of the cover (7) at least partially contact the side surfaces of the shelf (5). Consequently, the cover (7) is prevented from detaching from the shelf (5).

[0026] In an embodiment of the present invention, the cover (7) has the same shape as the shelf (5) and is almost the same size. The cover (7) surrounds the shelf (5) like a sheath while in the closed position (C). The
cover (7), while in the closed position (C), is nested with the shelf (5) and occupies almost the same space that is occupied by the shelf (5) alone. The height of the shelf (5) and the cover (7) at least partially equals the height of the compartment (3), at the front of which they are situated. Consequently, while the cover (7) is in the closed position (C), the front of the compartment (3) is provided to be entirely closed when the door (4) is closed (Figure 3, Figure 5).

[0027] In an embodiment of the present invention, the cooling device (1) comprises the cover (7) that is moved between the closed position (C) and the open position (O) by being moved forwards/backwards and at least one fixing means (6) that provides the cover (7) to be attached on the shelf (5) both in the closed position (C) and the open position (O). While the cover (7) is in the open position (O) or the closed position (C), the fullness or the emptiness of the shelf (5) does not make a difference. The cover (7) remains connected to the shelf (5) both in the open position (O) and the closed position (C). Thus, the shelf (5) is provided to support the cover (7).

[0028] In an embodiment of the present invention, the cooling device (1) comprises at least one crisper (8) disposed at the lower side of the body (2) and carried outside of the body (2) by being pulled forwards and the cover (7) that entirely closes the front of the compartment (3) located above the crisper (8) while in the open position (O) and which bears against the crisper (8). The crisper (8) is situated at the lowermost part of the body (2). As the temperature decreases inside the body (2), the density of the cooled air increases and it descends downwards. Therefore, temperature conditions between +3°C and -2°C is formed in or in the vicinity of the crisper (8). A closed compartment (3) is achieved by means of the cover (7) that closes the front of the compartment (3) situated just above the crisper (8). The foodstuffs stored in this compartment (3) are provided to be stored for a longer period of time (Figure 1, Figure 2).

[0029] In an embodiment of the present invention, the cooling device (1) comprises at least one protrusion (9) disposed on the lower wall of the cover (7), and at least one housing (10) that is arranged on the lower wall of the shelf (5) so as to be opposite the protrusion (9) when the cover (7) is
in the closed position (C), wherein the protrusion (9) moves forwards/backwards while the cover (7) changes position. The forwards/backwards movement of the cover (7) is realized by the protrusion (9) sliding inside the housing (10). The length of the housing (10) is at least partially equal to the length of the protrusion (9). Thus, the protrusion (9) is prevented from dislodging from the housing (10) during forwards/backwards movement of the cover (7) (Figure 5, Figure 6).

[0030] In an embodiment of the present invention, the cover (7) is detachably mounted on the shelf (5). The cover (7) is used by being attached to the shelf (5) situated opposite the desired compartment (3). This provides the user with flexibility of usage. Furthermore, the user is given the opportunity to take out the cover (7) from the body (2) when not in use.

[0031] In the cooling device (1) of the present invention, the front of the desired compartment (3) is closed by means of a cover (7) mounted on the shelf (5). The cover (7) is used by being attached to the shelf (5) that is situated opposite the desired compartment (3). This provides the user with flexibility of usage. The products in the compartment (3), the front of which is closed by the cover (7), are stored independently from the products in the other compartments (3). The cover (7), while in the closed position (C), is nested with the shelf (5) and occupies almost the same space that is occupied by the shelf (5) alone.
Claims

1. A cooling device (1) comprising a body (2), more than one compartment (3) situated inside the body (2) and that can be accessed therein from the front side, a door (4) and at least one shelf (5) placed on the door (4), characterized by at least one cover (7) - that is mounted movably on the shelf (5), - that has a closed position (C) and an open position (O) the cover (7) is changed to from the closed position (C) by being moved, providing the front of the compartment (3) to be entirely closed when the door (4) is closed.

2. The cooling device (1) as in Claim 1, characterized by the U shaped cover (7) having walls parallel to the side surfaces and front surface of the shelf (5).

3. The cooling device (1) as in Claim 1, characterized by the cover (7) having the same shape and almost the same size as the shelf (5), and that surrounds the shelf (5) like a sheath while in the closed position (C).

4. The cooling device (1) as in any one of the Claims 1 to 3, characterized by the cover (7) that is moved between the closed position (C) and the open position (O) by being moved forwards/backwards and by at least one fixing means (6) that provides the cover (7) to be attached on the shelf (5) both in the closed position (C) and the open position (O).

5. The cooling device (1) as in any one of the above Claims, characterized by at least one crisper (8) disposed at the lower side of the body (2) and carried outside of the body (2) by being pulled forwards and by the cover (7) that entirely closes the front of the compartment (3) located above the crisper (8) while in the open position (O) and that bears against the crisper (8).

6. The cooling device (1) as in any one of the Claims 3 to 5, characterized by at least one protrusion (9) disposed on the lower wall of the cover (7), and at least one housing (10) that is arranged on the lower surface of the shelf (5), that is situated so as to be opposite the protrusion (9) when the cover (7) is in the closed position (C), wherein the protrusion (9) moves forwards/backwards while the cover (7) changes position.

7. The cooling device (1) as in any one of the above claims, characterized by the cover (7) that is detachably mounted onto the shelf (5).
**A. CLASSIFICATION OF SUBJECT MATTER**

INV. F25D23/04

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

F25D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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Further documents are listed in the continuation of Box C.

See patent family annex.

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Date of the actual completion of the international search: 24 January 2014

Date of mailing of the international search report: 05/02/2014

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Tel. (+31-70) 340-2040,
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Authorized officer: Dezso, Gabor
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