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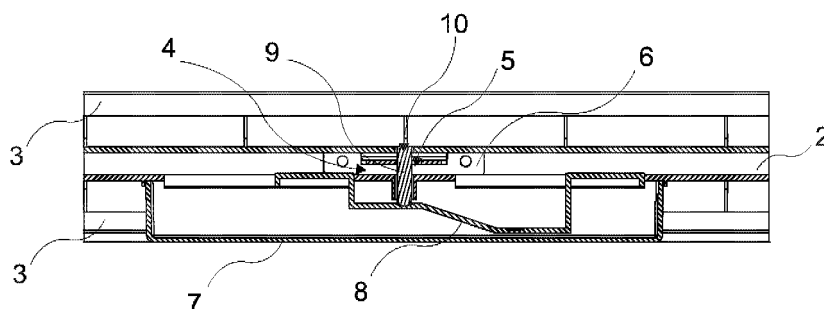
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(54) **A REFRIGERATOR COMPRISING A DOOR**

(57) The present invention relates to a refrigerator (1) comprising a body (2); a door (3) provided on the body (2) and having an open position wherein access into the body (2) is allowed and a closed position wherein access

into the body (2) is prevented, and a locking mechanism (4) which enables the door (3) to be fixed to the body (2) and locked in the closed position

Figure 2



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Description

[0001] The present invention relates to a refrigerator comprising a door which can be locked.

[0002] Doors are used to provide or block access into the body of the refrigerator. Doors having locking mechanisms are used to prevent the door from being opened by children. In the state of the art refrigerators, the locking mechanism which locks the door disrupts the aesthetic appearance of the refrigerators from outside. Furthermore, in refrigerators which can be locked and unlocked by means of a key, the user has difficulty with opening the locked door when the key is lost.

[0003] In the state of the art Korean Patent Application No. KR20010048304, a refrigerator comprising a door having a child lock is disclosed.

[0004] In the state of the art Korean Patent Application No. KR20070093288, a refrigerator comprising a door having a child lock is disclosed.

[0005] The aim of the present invention is the realization of a refrigerator wherein the locking of the door is facilitated.

[0006] The refrigerator realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof, comprises a body; at least one door which is provided on the body an which an open position wherein access to the inner volume of the body is allowed and a closed position wherein access to the inner volume of the body is prevented, and a locking mechanism which enables the door to be fixed to the door and locked in the closed position.

[0007] The refrigerator of the present invention further comprises the locking mechanism having a tongue which is disposed on the body and whereon a locking housing is provided, a housing disposed on the door, a movement member provided in the housing suitable to be slidably moved by the user and a pin which is disposed in the housing and which is suitable to be moved by means of the movement member and which has a released position wherein the pin is almost completely in the housing and a locking position wherein the pin is pushed out of the housing by the movement member so as to fit into the locking housing. The housing is provided on the door. The movement member is almost completely concealed in the housing. The movement member is slid in the housing parallel to the door. The pin is positioned on the movement member. In a preferred version of the present invention, the movement member comprises a ramp. As the movement member is slid when the pin is on the ramp of the movement member, the pin is pushed out of the housing plane or moved so as to be inserted into the housing. Thereby, most of the locking mechanism is concealed on the door. Furthermore, the locking mechanism is positioned so as not to be easily reached by children. The user can easily lock the door or unlock a locked door.

[0008] In an embodiment of the present invention, the refrigerator comprises two doors placed one above the other, a cavity provided on the upper door and a tongue

which is positioned on the body between the two doors. As the movement member is slid when the door is in the closed position, the pin passes through the locking mechanism on the tongue and fits into the cavity on the upper door. Thus, both of the doors are locked in the closed position by sliding a single movement member.

[0009] In another embodiment of the present invention, the housing is provided on the upper section of the door. Thus, the housing is enabled to be positioned so as not to be reached by small children.

[0010] In another embodiment of the present invention, the housing is provided on the lower section of the door. Thus, the user can slide the movement mechanism easily using his/her foot.

[0011] In another embodiment of the present invention, the movement member has a handle. By means of the handle, the movement member can be easily moved by the user.

[0012] By means of the present invention, a refrigerator is realized, wherein the locking of the door is facilitated and the locking mechanism is concealed to a great extent.

[0013] The refrigerator realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

Figure 1 - is the schematic view of the refrigerator related to an embodiment of the present invention.
Figure 2 - is the schematic view of the refrigerator related to an embodiment of the present invention.
Figure 3 - is the exploded schematic view of the refrigerator related to an embodiment of the present invention.
Figure 4 - is the schematic view of the refrigerator related to another embodiment of the present invention.

[0014] The elements illustrated in the figures are numbered as follows:

1. Refrigerator
2. Body
3. Door
4. Locking mechanism
5. Locking housing
6. Tongue
7. Housing
8. Movement member
9. Pin
10. Cavity
11. Handle

[0015] The refrigerator (1) comprises a body (2); a door (3) provided on the body (2) and having an open position wherein access into the body (2) is allowed and a closed position wherein access into the body (2) is prevented, and a locking mechanism (4) which enables the door (3) to be fixed to the body (2) and locked in the closed position.

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[0016] The refrigerator (1) of the present invention comprises the locking mechanism (4) having a tongue (6) which is disposed on the body (2) and whereon a locking housing (5) is provided, a housing (7) disposed on the door (3), a movement member (8) provided in the housing (7) and suitable to be slidably moved by the user, and a pin (9) which is disposed in the housing (7) and which is suitable to be moved by means of the movement member (8) and which has a released position wherein the pin (9) is almost completely in the housing (7) and a locking position wherein the pin (9) is pushed out of the housing (7) by the movement mechanism (4) so as to fit into the locking housing (5). The housing (6) is in the form of a cavity which is formed in the door (3). The movement member (8) is slid in the housing (7) parallel to the door (3). At least a part of the movement member (8) is in the form of a ramp. The pin (9) is disposed on the movement member (8). The pin (9) moves in a vertical plane perpendicular to the door (3) when the movement member (8) is moved in the horizontal plane parallel to the door (3). The pin (9) is almost completely in the housing (7) in the released position. As the movement member (8) is slid in the released position, the pin (9) is pushed by the movement member (8) from the housing (7) towards the tongue (6). The pin (9) has a locking position wherein the pin (9) fits into the locking housing (5) by being pushed by the movement member (8) when the door (3) is in the closed position. The locking housing (5) is disposed on the tongue (6) which is fixed onto the body (2). As the pin (9) extends from the housing (7) and fits into the locking housing (5), the door (3) is enabled to be fixed and locked on the body (2) in the closed position. When the movement member (8) is slid in a direction opposite to the direction wherein the pin (9) is moved from the released position to the locking position when the pin (9) is in the locking position, the pin (9) moves out of the locking housing (5) and reaches the released position.

[0017] In another embodiment of the present invention, the refrigerator (1) comprises two doors (3) disposed on the body (2) one above the other, the tongue (6) provided between the two doors (3), a housing (7) which is provided on one of the doors (3), a cavity (10) which is provided on the other door (3) so as to be aligned with the housing (7), and the pin (9) which fits into the cavity (10) by passing through the locking housing (5) when in the locked position and thus, enabling both of the doors (3) to be locked in the closed position. The tongue (6) is disposed onto the body (2) so as to be positioned between two doors (3). The cavity (10) is positioned on the lower section of the upper door (3) so as to be aligned with the locking housing (5). As the movement member (8) is slid when the doors (3) are in the closed position and the movement member (8) is the released position, the pin (9) passes through the locking housing (5) and fits into the cavity (10). Thus, the two doors (3) are enabled to be locked in the closed position.

[0018] In an embodiment of the present invention, the

refrigerator (1) comprises the housing (7) which is provided on the upper section of the door (3). In the refrigerator (1) comprising two doors (3) which are positioned one above the other, the housing (7) is provided on the upper section of the lower door (3). The movement mechanism (8) is concealed in the housing (7). A locking mechanism (4) is provided for the user, which can easily be reached by hand when he/she wants to lock the door (3) or to unlock the door (3) which is locked.

[0019] In another embodiment of the present invention, the refrigerator (1) comprises the housing (7) which is provided on the lower section of the door (3). Thus, the user can slide the movement member (8) easily with his/her foot. Thus, the locking of the door (3) by the user is facilitated.

[0020] In another embodiment of the present invention, the refrigerator (1) comprises the movement member (8) having a handle (11). The user is enabled to easily slide the movement member (8) by hand or foot by means of the handle (11). In a preferred version of the present invention, the handle (11) is in the form of a protrusion extending outwards from the housing (7).

[0021] By means of the present invention, a refrigerator (1) is realized, comprising the locking mechanism (4) having the housing (7) disposed on the door (3), the movement member (8) which is disposed in the housing (7) and which is moved by being slid and a pin (9) which fits into the locking housing (5) provided on the tongue (6) by being pushed by the movement member (8) when the door (3) is in the closed position and enables the door (3) to be locked in the closed position, wherein the locking of the door (3) is facilitated and the locking mechanism (4) is significantly concealed on the door (3).

Claims

1. A refrigerator (1) **comprising** a body (2); a door (3) provided on the body (2) and having an open position wherein access into the body (2) is allowed and a closed position wherein access into the body (2) is prevented, and a locking mechanism (4) which enables the door (3) to be fixed to the body (2) and locked in the closed position, **characterized by** the locking mechanism (4) having

- a tongue (6) which is disposed on the body (2) and whereon a locking housing (5) is provided,
- a housing (7) disposed on the door (3),
- a movement member (8) provided in the housing (7) and suitable to be slidably moved by the user, and
- a pin (9) which is disposed in the housing (7) and which is suitable to be moved by means of the movement member (8) and which has a released position wherein the pin (9) is almost completely in the housing (7) and a locking position wherein the pin (9) is pushed out of the

housing (7) by the movement mechanism (4) so as to fit into the locking housing (5).

2. A refrigerator (1) as in Claim 1, **characterized by** two doors (3) disposed on the body (2) one above the other, the tongue (6) provided between the two doors (3), a housing (7) which is provided on one of the doors (3), a cavity (10) which is provided on the other door (3) so as to be aligned with the housing (7), and the pin (9) which fits into the cavity (10) by passing through the locking housing (5) when in the locked position and thus, enabling both of the doors (3) to be locked in the closed position. 5 10
3. A refrigerator (1) as in any one of the above claims, **characterized by** the housing (7) which is provided on the upper section of the door (3). 15
4. A refrigerator (1) as in Claim 1 or Claim 2, **characterized by** the housing (7) which is provided on the lower section of the door (3). 20
5. A refrigerator (1) as in any one of the above claims, **characterized by** the movement member (8) which has a handle (11). 25

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Figure 1

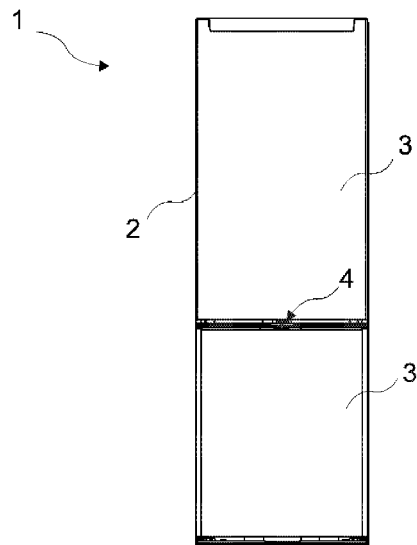


Figure 2

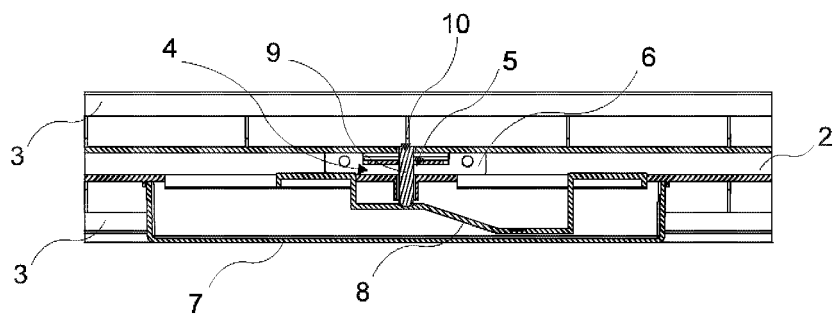


Figure 3

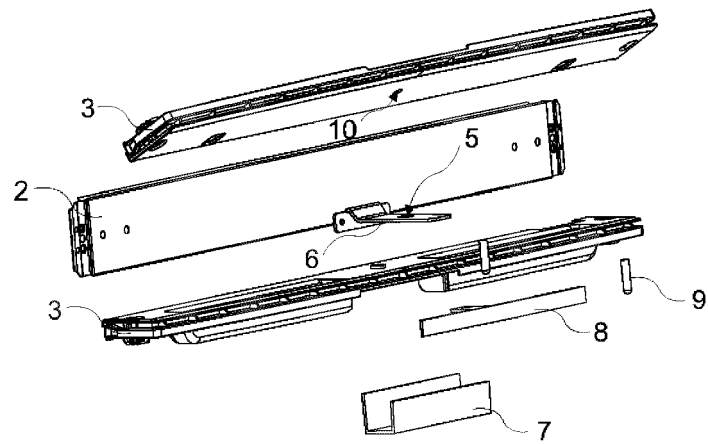
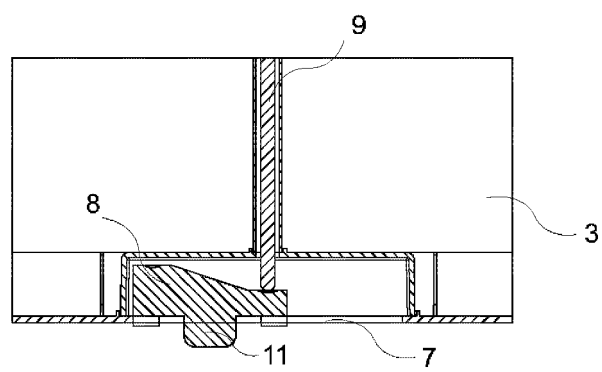


Figure 4





EUROPEAN SEARCH REPORT

Application Number
EP 20 21 6227

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	----- KR 1999 0058125 A (SAMSUNG ELECTRONICS CO LTD [KR]) 15 July 1999 (1999-07-15) * the whole document *	2	
			TECHNICAL FIELDS SEARCHED (IPC)
			F25D E05B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 19 May 2021	Examiner de Graaf, Jan Douwe
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 20 21 6227

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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19-05-2021

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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