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(54) **STORAGE DEVICE AND REFRIGERATOR HAVING SAME**

(57) The present invention provides a storage device and a refrigerator having the same. The storage device comprises a box body with an opening on a front side and a drawer received in the box body, the drawer comprising a drawer body and a cover, wherein the storage device further comprises a lifting assembly disposed between the drawer and the box body, the lifting assembly comprises a gear disposed fixedly relative to the box

body, a first rack disposed on the drawer body and engaging with a side of the gear, and a transmission member cooperating with the other side of the gear, the transmission member has a support portion connected with the cover, and a second rack extending downward from the support portion, the second rack engaging with the gear.

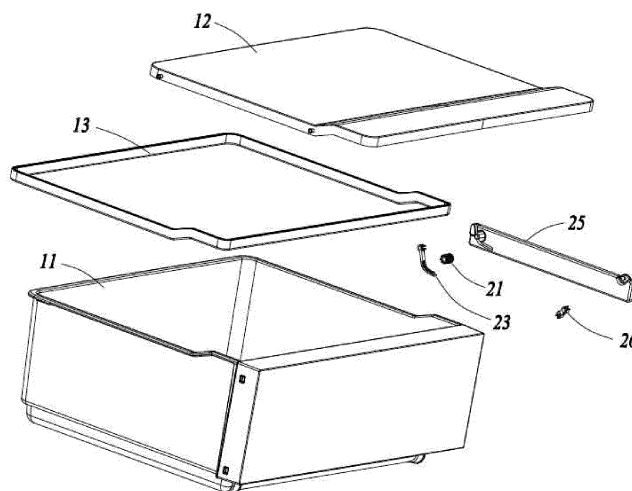


FIG. 3

Description

TECHNICAL FIELD

[0001] The present invention relates to the field of refrigeration devices, and particularly to a storage device and a refrigerator having the same.

BACKGROUND

[0002] More and more refrigerators in the market have a function of keeping items fresh, i.e., a sealed drawer is disposed in the refrigerator and kept at a high humidity level to keep fruits, vegetables and so on placed in the drawer fresh for a long period of time.

[0003] There exists friction between a cover of the drawer and a main body of the drawer when the drawer is drawn or pushed. Therefore, to facilitate drawing or pushing the drawer, a structure located below the cover and configured to lift the cover is usually disposed in the prior art. For example, in the patent document CN106595212A, a cam is disposed to lift the cover when the drawer is drawn open, and the cover falls away from the cam when the drawer is closed; however, the cover is in unstable contact with the cam when the drawer is closed, and the cover is prone to wear when being lifted by the cam.

[0004] In view of this, it is necessary to improve the conventional drawer to solve the above problem.

SUMMARY

[0005] To solve the above technical problem, the present invention provides a storage device and a refrigerator having the same.

[0006] To achieve the above object, technical solutions provided by the present inventions are as follows:

[0007] A storage device, comprising a box body with an opening on a front side and a drawer received in the box body, the drawer comprising a drawer body and a cover, wherein the storage device further comprises a lifting assembly disposed between the drawer and the box body, the lifting assembly comprises a gear disposed fixedly relative to the box body, a first rack disposed on the drawer body and engaging with a side of the gear, and a transmission member cooperating with the other side of the gear, the transmission member has a support portion connected with the cover, and a second rack extending downward from the support portion, the second rack engaging with the gear;

the lifting assembly is configured in a way that when the drawer is drawn, the first rack moves forward and drives the gear to rotate, and the gear drives the transmission member to move upward to lift the cover; when the drawer is closed, the first rack moves backward and drives the gear to rotate, and the gear drives the transmission member to move downward to lower the cover.

[0008] As a further improvement to the present inven-

tion, wherein the second rack is formed to extend obliquely downward from the support portion, the first rack is disposed on an upper side or a lower side of the gear, the second rack engages with an upper right side or a lower right side of the gear when the first rack is disposed on the upper side of the gear, and the second rack engages with an upper left side or a lower left side of the gear when the first rack is disposed on the lower side of the gear.

[0009] As a further improvement to the present invention, wherein the gear comprises a first gear portion engaging with the first rack, and a second gear portion engaging with the second rack, a ratio of a perimeter of a tooth root circle of the first gear portion to a perimeter of a tooth root circle of the second gear portion is a set value, and a ratio of an effective transmission length of the first rack and the gear to the length of the second rack is not greater than the set value.

[0010] As a further improvement to the present invention, wherein a depth of tooth grooves of the first gear portion is smaller than the depth of tooth grooves of the second gear portion.

[0011] As a further improvement to the present invention, wherein a material of the second rack is a flexible material, the lifting assembly further comprises a limiting mechanism disposed on a side of the transmission member away from the gear to prevent the second rack from disengaging from the gear.

[0012] As a further improvement to the present invention, wherein the cover further has a second support shaft extending outward, the lifting assembly further comprises a support rod and a fixed mechanism disposed fixedly relative to the box body, an upper end of the support rod is rotatably connected to the second support shaft, and a lower end of the support rod is rotatably connected to the fixed mechanism.

[0013] As a further improvement to the present invention, wherein the lifting assembly further comprises a base fixed on the box body, the base is provided with a guide groove for receiving the transmission member, the limiting mechanism constitutes at least a portion of a side wall of the guide groove, the guide groove has an opening at an upper end for allowing the support portion to pass through the opening and connect with the cover, and the base further has a gear groove communicated with the guide groove and configured to receive the gear.

[0014] As a further improvement to the present invention, wherein the lifting assembly further comprises a base fixed on the box body, the base is provided with a support groove for receiving the support rod, the fixed mechanism is disposed on an inner wall of the support groove, and an end of the support rod connected to the fixed mechanism is provided with a pair of outwardly-extending support legs which stand on a bottom wall of the support groove when the support rod is driven by the cover to an upright state.

[0015] As a further improvement to the present invention, wherein the lifting assembly further comprises a

base fixed on the box body, the base is provided with a support groove for receiving the support rod, the fixed mechanism is disposed on an inner wall of the support groove, and an end of the support rod connected to the fixed mechanism is provided with a pair of outwardly-extending support legs which stand on a bottom wall of the support groove when the support rod is driven by the cover to an upright state.

[0016] As a further improvement to the present invention,, wherein the cover has a first support shaft extending outward, the support portion is a section of an entire length of the transmission member and is made of a hard material, and a side of the support portion away from the second rack is snap-fitted on a circumferential side of the first support shaft.

[0017] The invention also proposes a refrigerator, the refrigerator comprises storage means as described above

[0018] Advantageous effects of the present invention are as follows: in the storage device provided by the present invention, through the cooperative transmission of the first rack, the gear and the transmission member, the cover can be easily driven to rise or fall by mechanical transmission during the opening and closing process of the drawer, which is labor-saving and stable and smooth throughout the process.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The figures described here are used to provide further understanding of the present application and constitute part of the present application. Illustrative embodiments and depictions thereof in the present application are used to construe the present application and do not constitute improper limitations of the present application. In the figures:

FIG. 1 is a structural schematic view of a storage device in the present invention, wherein the storage device is only illustratively shown as a cabinet;

FIG. 2 is a perspective view of a drawer in FIG. 1;

FIG. 3 is an exploded view of the drawer shown in FIG. 2;

FIG. 4 is a structural schematic view of the drawer shown in FIG. 2 when in a closed state;

FIG. 5 is a structural schematic view in which a base in FIG. 4 is hidden;

FIG. 6 is a structural schematic view of the drawer shown in FIG. 2 when in an open state;

FIG. 7 is a structural schematic view in which a base in FIG. 6 is hidden;

FIG. 8 is a structural schematic view showing the cooperation of the base and a lifting assembly in the present invention;

FIG. 9 is a structural schematic view of a gear in the present invention.

[0020] Listing of parts denoted by reference numbers:

100 storage device, 1---box body, 10---drawer, 11---drawer body, 12---cover, 121---first support shaft, 122---second support shaft, 2---lifting assembly, 21---gear, 211---first gear portion, 212---second gear portion, 22---first rack, 23---transmission member, 231--- support portion, 232---second rack, 24---limiting mechanism, 25---base, 251 guide groove, 2511---opening, 252---gear groove, 253---support groove, 26---support rod, 261---support leg, 27---fixed mechanism, 13---sealing strip.

DETAILED DESCRIPTION

[0021] To make the objectives, technical solutions and advantages of the present application more apparent, technical solutions of the present application will be described clearly and thoroughly with reference to specific embodiments and corresponding figures. Based on the embodiments in the present application, all other embodiments obtained by those having ordinary skill in the art without making inventive efforts all fall within the protection scope of the present application.

[0022] Referring to FIG. 1 and FIG. 2, the present invention provides a storage device 100, comprising a box body 1 with an opening 2511 on a front side and a drawer 10 received in the box body 1. The storage device 100 may be a refrigerator, cabinet or the like.

[0023] The drawer 10 comprises a drawer body 11 and a cover 12. For ease of description, the cover 12 is defined as being located above the drawer body 11, a direction in which the drawer body 11 moves to open the drawer 10 is a forward direction, a direction in which the drawer 10 is closed is a rearward direction, and a width-wise direction of the drawer body 11 is a left-right direction.

[0024] The drawer 10 further comprises a sealing strip 13 fixed on a side of the cover 12 facing towards the drawer body 11. When the cover 12 covers the drawer body 11, the sealing strip 13 may seal a gap between the cover 12 and the drawer body 11, thereby achieving the sealing of the drawer 10. The sealing strip 13 is generally made of a plastic member, an elastic silicone member etc. with a certain elasticity.

[0025] In a specific embodiment of the present invention, the storage device 100 further comprises a lifting assembly 2 disposed between the drawer 10 and the box body 1, and the lifting assembly 2 is disposed on at least one side of left and right sides of the cover 12 to drive the cover 12 to rise or fall.

[0026] As shown in FIG. 3 through FIG. 9, the lifting assembly 2 comprises a gear 21 disposed fixedly relative to the box body 1, and the lifting assembly 2 further comprises a first rack 22 disposed on the drawer body 11 and engaging with one side of the gear 21, and a transmission member 23 cooperating with the other side of the gear 21. The transmission member 23 has a support portion 231 connected with the cover 12, and a second rack 232 extending downward from the support portion 231, the second rack 232 engaging with the gear 21.

[0027] As shown in FIG. 4 through FIG. 7, the lifting assembly 2 is configured in a way that when the drawer 10 is drawn, the first rack 22 moves forward and drives the gear 21 to rotate, and the gear 21 drives the transmission member 23 to move upward to lift the cover 12; when the drawer 10 is closed, the first rack 22 moves backward and drives the gear 21 to rotate, and the gear 21 drives the transmission member 23 to move downward to lower the cover 12.

[0028] Through the cooperative transmission of the first rack 22, the gear 21 and the transmission member 23, the cover 12 can be easily driven to rise or fall by mechanical transmission during the opening and closing process of the drawer 10, which is labor-saving and stable and smooth throughout the process.

[0029] Specifically, the gear 21 may be fixed on an inner wall of the box body 1 or on any fixed structure inside the box body 1 so that the gear 21 can be driven by the first rack 22 to rotate. As shown in FIG. 5 and FIG. 7, the first rack 22 may be a section or an entirety of a front-rear length of the drawer body 11. When the drawer 10 is closed, a position where the first rack 22 engages with the gear 21 is an engagement-starting position; after the drawer 10 is drawn open, the first rack 22 moves forward to disengage from the gear 21, and the gear 21 stops rotating, or the first rack 22 always engages with the gear 21; an effective transmission length of the first rack 22 and the gear 21 is a length from the engagement-starting position to an disengaging position, or an engaging length from the engagement-starting position to a position where the drawer 10 is drawn completely open.

[0030] As shown in FIG. 9, the gear 21 comprises a first gear portion 211 engaging with the first rack 22, and a second gear portion 212 engaging with the second rack 232. A ratio of a perimeter of a tooth root circle of the first gear portion 211 to a perimeter of a tooth root circle of the second gear portion 212 is a set value. A ratio of the effective transmission length of the first rack 22 and the gear 21 to the length of the second rack 232 is not greater than the set value. In this way, it can be ensured that the second rack 232 always engages with the gear 21 when the gear 21 disengages from the first rack 22 or when the drawer 10 is drawn completely open, so that the gear 21 drives the second rack 232 to achieve a continuous mechanical transmission when the drawer body 11 is pushed backward until the first rack 22 engages with the gear 21.

[0031] In the present embodiment, a depth of tooth grooves of the second gear portion 212 is smaller than the depth of tooth grooves of the first gear portion 211, and a depth of tooth grooves of the second rack 232 is smaller than the depth of tooth grooves of the first rack 22, thereby facilitating the engagement of the second gear portion 212 and the second rack 232.

[0032] The second rack 232 is formed to extend obliquely downward from the support portion 231, so that the transmission member 23 is inclined and in a straight line or an arc-shaped curve. In the present embodiment,

the transmission member 23 is inclined and in an arc-shaped curve, so that a degree of engagement between the second rack 232 and the gear 21 is increased, which facilitates the gear 21 to transmit power to the second rack 232, thereby making the transmission member 23 easy to move upward.

[0033] The first rack 22 is disposed on an upper side of the gear 21, the transmission member 23 is inclined forward and downward from a position where the support portion 231 is connected with the cover 12, and the second rack 232 is engaged on a lower right side of the gear 21 so that the first rack 22 moves forward to drive the gear 21 to rotate counterclockwise, and the gear 21 drives the transmission member 23 to move backward and upward to cause the cover 12 to move upward and backward.

[0034] In other embodiments, the transmission member 23 may be inclined backward and downward from a position where the support portion 231 is connected with the cover 12, the second rack 232 is engaged on the lower right side of the gear 21, the first rack 22 moves forward to bring the gear 21 to rotate counterclockwise, and the gear 21 drives the transmission member 23 to move forward and upward to cause the cover 12 to move upward and forward. Similarly, the first rack 22 may also be disposed on a lower side of the gear 21, the transmission member 23 may be inclined backward and downward or forward and downward from the position where the support portion 231 is connected with the cover 12, and accordingly the second rack 232 is engaged on a lower left side or an upper left side of the gear 21, so that the first rack 22 moves forward to drive the gear 21 to rotate clockwise, and the gear 21 drives the transmission member 23 to move forward and upward or rearward or upward to cause the cover 12 to move upward and forward or upward and backward.

[0035] As shown in FIG. 4 through FIG. 7, the cover 12 has a first support shaft 121 extending outward. The support portion 231 is a section of the entire length of the transmission member 23 and is made of a hard material. A side of the support portion 231 away from the second rack 232 is snap-fitted on a circumferential side of the first support shaft 121. On the one hand, the support portion 231 may easily drive the cover 12 to rise or fall, and on the other hand, the support portion 231 can be mounted and detached conveniently; in other embodiments, the support portion 231 may also be configured to be, as a whole, fixed on the first support shaft 121, and can also easily drives the cover 12 to rise or fall.

[0036] In the present embodiment, a material of the second rack 232 is a flexible material, so that the degree of engagement of the second rack 232 and the gear 21 is increased, which facilitates the gear 21 to transmit power to the second rack 232 so that the transmission member 23 can be easily moved upward. The lifting assembly 2 further comprises a limiting mechanism 24 disposed on a side of the transmission member 23 away from the gear 21 to prevent the second rack 232 from disengaging

from the gear 21, and facilitates the engagement of the second rack 232 with the gear 21.

[0037] As shown in FIG. 8, the lifting assembly 2 further comprises a base 25 fixed on the box body 1. The base 25 is provided with a guide groove 251 for receiving the transmission member 23. The limiting mechanism 24 constitutes at least a portion of a side wall of the guide groove 251. The guide groove 251 has an opening 2511 at an upper end for allowing the support portion 231 to pass through the opening 2511 and connect with the cover 12. The base 25 further has a gear groove 252 communicated with the guide groove 251 and configured to receive the gear 21, which can prevent the second rack 232 from disengaging from the gear 21, and facilitate the engagement of the second rack 232 with the gear 21.

[0038] The cover 12 further has a second support shaft 122 extending outward. The lifting assembly 2 further comprises a support rod 26 and a fixed mechanism 27 disposed fixedly relative to the box body 1. An upper end of the support rod 26 is rotatably connected to the second support shaft 122, and a lower end of the support rod 26 is rotatably connected to the fixed mechanism 27. When the drawer 10 is closed, the support rod 26 is disposed inclinedly. When the transmission member 23 is inclined rearward and downward from the position where the support portion 231 is connected with the cover 12, the upper end of the support rod 26 is located at a rear side of the lower end; when the transmission member 23 is inclined forward and downward from the position where the support portion 231 is connected with the cover 12, the upper end of the support rod 26 is located at a front side of the lower end. As such, when the cover 12 is driven by the transmission member 23 to move upward and backward or move upward and forward, the upper end of the support rod 26 is driven so that axes of the upper and lower ends are aligned with a vertical direction, and the support rod 26 can play an auxiliary supporting role after the cover 12 rises and ensure the stability of the drawing process.

[0039] As shown in FIG. 8, the base 25 is further provided with a support groove 253 for receiving the support rod 26, the fixed mechanism 27 is disposed on an inner wall of the support groove 253, and an end of the support rod 26 connected to the fixed mechanism 27 is provided with a pair of outwardly-extending support legs which stand on a bottom wall of the support groove 253 when the support rod 26 is driven by the cover 12 to an upright state, so that the support rod 26 supports more stably.

[0040] The present invention further provides a refrigerator comprising the storage device 100 as described above. The storage device 100 is in a sealed state when the drawer 10 is closed, and facilitates storing food or items to be kept fresh; when the drawer 10 is opened, the user can draw conveniently, which is labor-saving and stable and smooth throughout the process and improves the user's experience.

[0041] To sum up, in the storage device 100 provided by the present invention, the lifting assembly 2 is configured in a way that when the drawer 10 is drawn, the first

rack 22 moves forward and drives the gear 21 to rotate, and the gear 21 drives the transmission member 23 to move upward to lift the cover 12; when the drawer 10 is closed, the first rack 22 moves backward and drives the gear 21 to rotate, and the gear 21 drives the transmission member 23 to move downward to lower the cover 12. The whole process is labor-saving and stable and smooth. The refrigerator having such a storage device 100 facilitates storing food or items to be kept fresh.

[0042] What are described above are only preferred embodiments of the present invention. It should be appreciated that those skilled in the art may also make several variations and improvements without departing from the inventive concept of the present invention. All these variations and improvements fall within the protection scope of the present invention.

Claims

1. A storage device, comprising a box body with an opening on a front side and a drawer received in the box body, the drawer comprising a drawer body and a cover, wherein the storage device further comprises a lifting assembly disposed between the drawer and the box body, the lifting assembly comprises a gear disposed fixedly relative to the box body, a first rack disposed on the drawer body and engaging with a side of the gear, and a transmission member cooperating with the other side of the gear, the transmission member has a support portion connected with the cover, and a second rack extending downward from the support portion, the second rack engaging with the gear;
the lifting assembly is configured in a way that when the drawer is drawn, the first rack moves forward and drives the gear to rotate, and the gear drives the transmission member to move upward to lift the cover; when the drawer is closed, the first rack moves backward and drives the gear to rotate, and the gear drives the transmission member to move downward to lower the cover.
2. The storage device according to claim 1, wherein the second rack is formed to extend obliquely downward from the support portion, the first rack is disposed on an upper side or a lower side of the gear, the second rack engages with an upper right side or a lower right side of the gear when the first rack is disposed on the upper side of the gear, and the second rack engages with an upper left side or a lower left side of the gear when the first rack is disposed on the lower side of the gear.
3. The storage device according to claim 1, wherein the gear comprises a first gear portion engaging with the first rack, and a second gear portion engaging with the second rack, a ratio of a perimeter of a tooth

root circle of the first gear portion to a perimeter of a tooth root circle of the second gear portion is a set value, and a ratio of an effective transmission length of the first rack and the gear to the length of the second rack is not greater than the set value.

4. The storage device according to claim 3, wherein a depth of tooth grooves of the first gear portion is smaller than the depth of tooth grooves of the second gear portion. 10
5. The storage device according to claim 1, wherein a material of the second rack is a flexible material, the lifting assembly further comprises a limiting mechanism disposed on a side of the transmission member away from the gear to prevent the second rack from disengaging from the gear. 15
6. The storage device according to claim 1, wherein the cover further has a second support shaft extending outward, the lifting assembly further comprises a support rod and a fixed mechanism disposed fixedly relative to the box body, an upper end of the support rod is rotatably connected to the second support shaft, and a lower end of the support rod is rotatably connected to the fixed mechanism. 20 25
7. The storage device according to claim 5, wherein the lifting assembly further comprises a base fixed on the box body, the base is provided with a guide groove for receiving the transmission member, the limiting mechanism constitutes at least a portion of a side wall of the guide groove, the guide groove has an opening at an upper end for allowing the support portion to pass through the opening and connect with the cover, and the base further has a gear groove communicated with the guide groove and configured to receive the gear. 30 35
8. The storage device according to claim 5, wherein the lifting assembly further comprises a base fixed on the box body, the base is provided with a support groove for receiving the support rod, the fixed mechanism is disposed on an inner wall of the support groove, and an end of the support rod connected to the fixed mechanism is provided with a pair of outwardly-extending support legs which stand on a bottom wall of the support groove when the support rod is driven by the cover to an upright state. 40 45 50
9. The storage device according to claim 6, wherein the lifting assembly further comprises a base fixed on the box body, the base is provided with a support groove for receiving the support rod, the fixed mechanism is disposed on an inner wall of the support groove, and an end of the support rod connected to the fixed mechanism is provided with a pair of outwardly-extending support legs which stand on a bot-

tom wall of the support groove when the support rod is driven by the cover to an upright state.

10. The storage device according to claim 1, wherein the cover has a first support shaft extending outward, the support portion is a section of an entire length of the transmission member and is made of a hard material, and a side of the support portion away from the second rack is snap-fitted on a circumferential side of the first support shaft.
11. A refrigerator, wherein the refrigerator comprises the storage device according to claim 1.

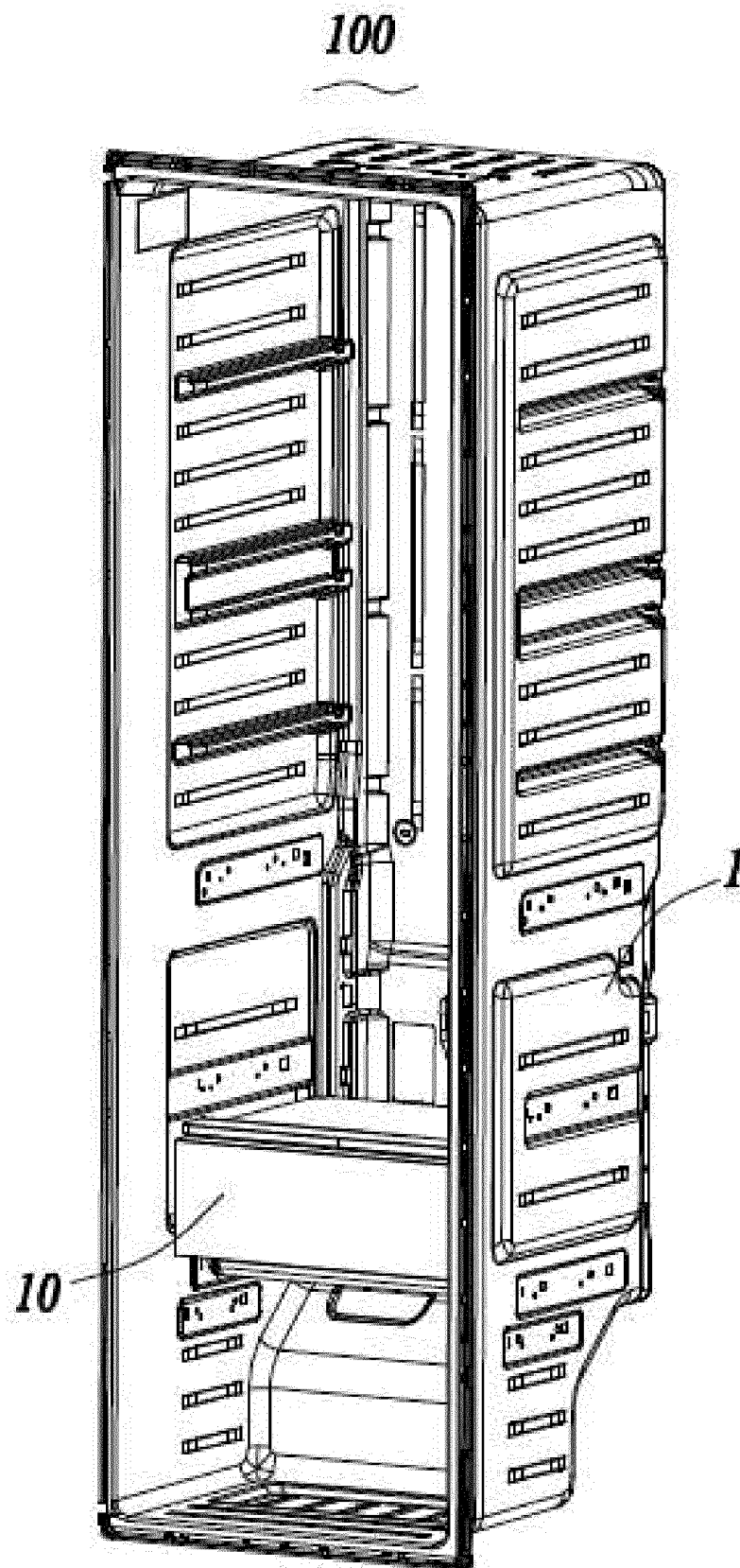


FIG. 1

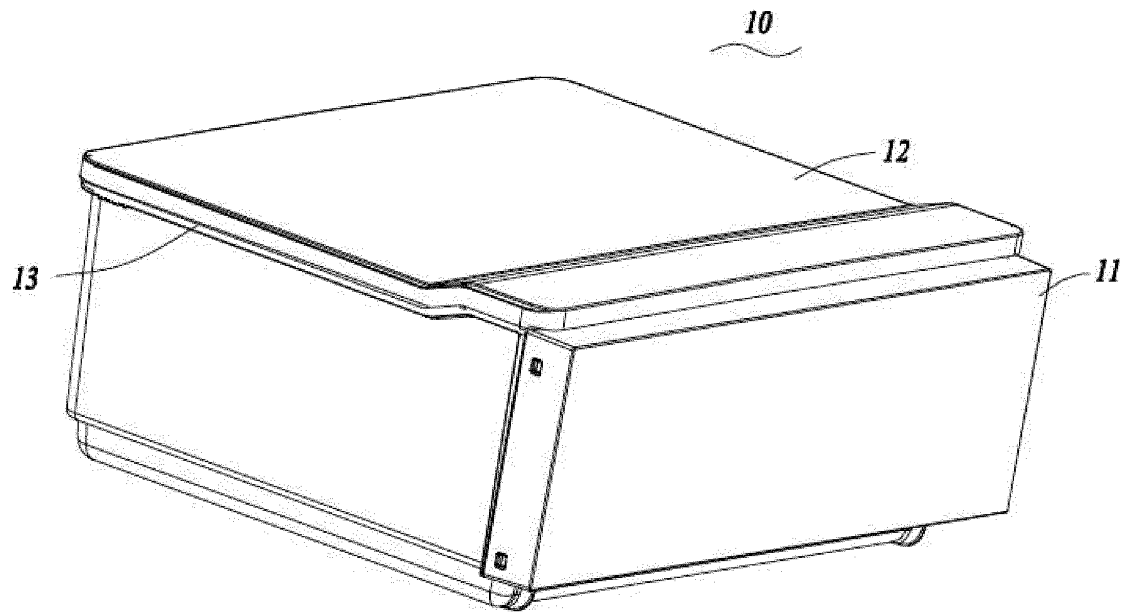


FIG. 2

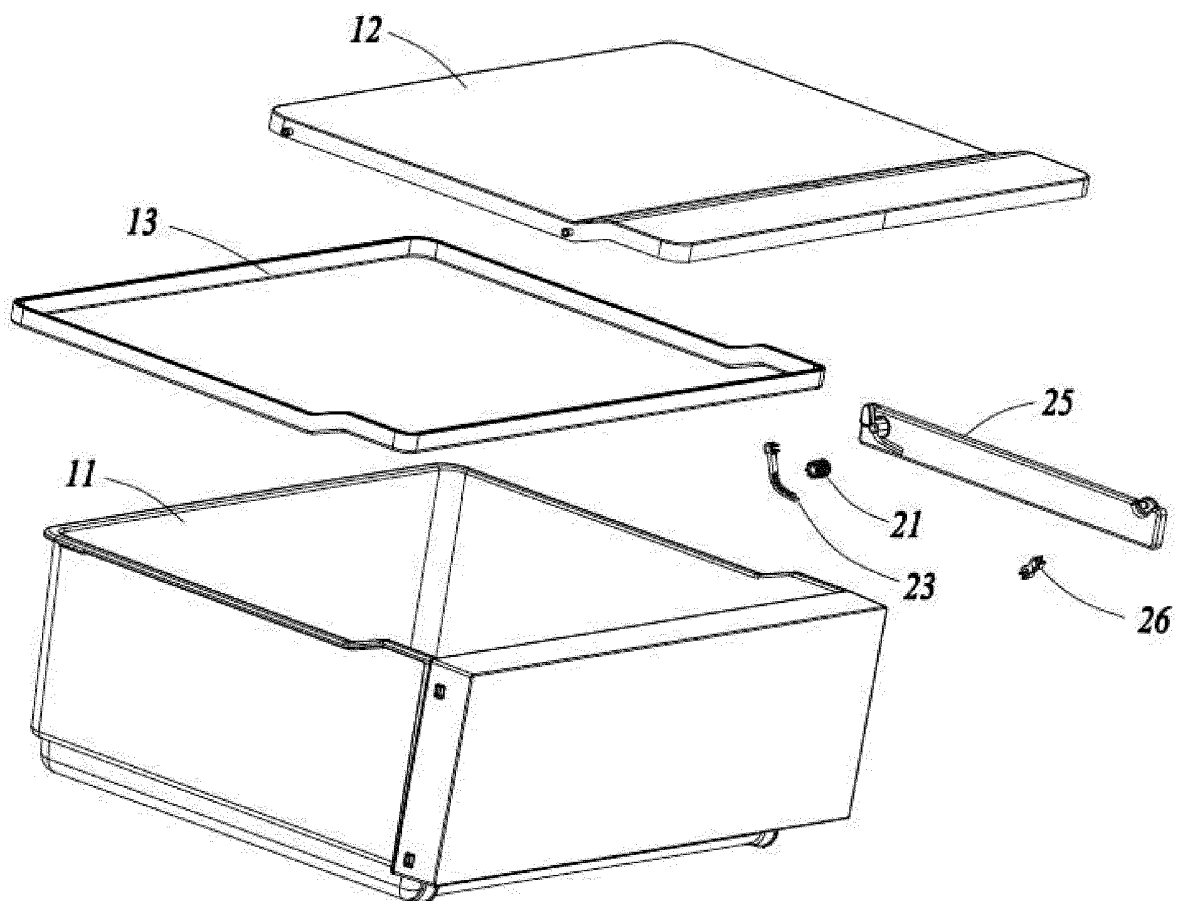


FIG. 3

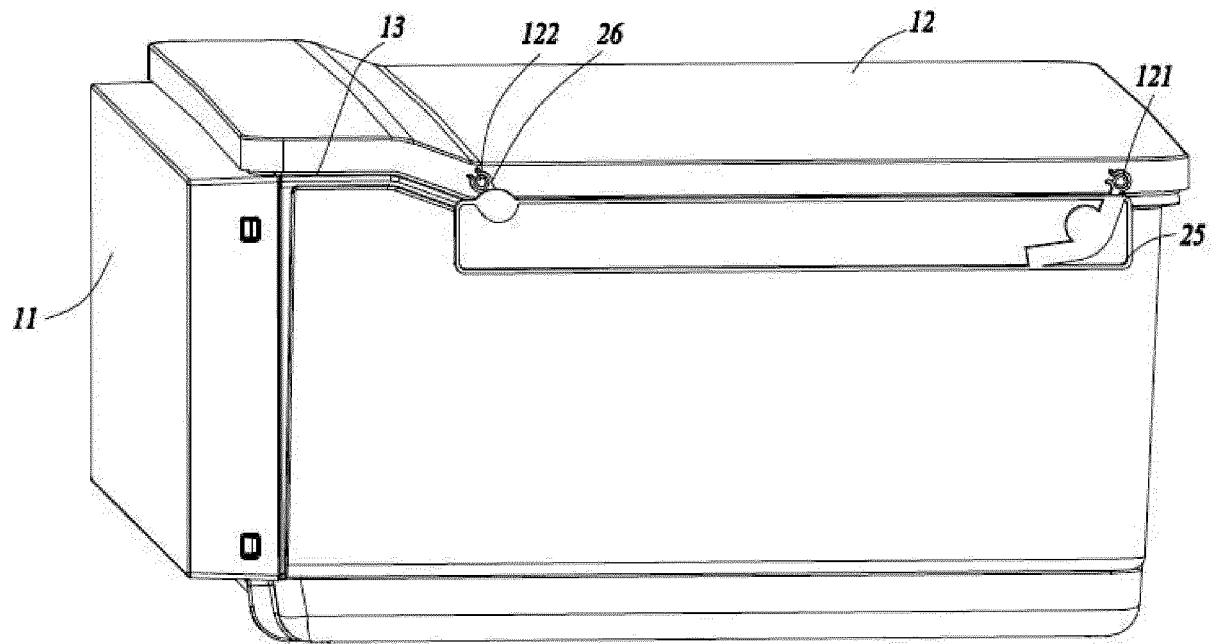


FIG. 4

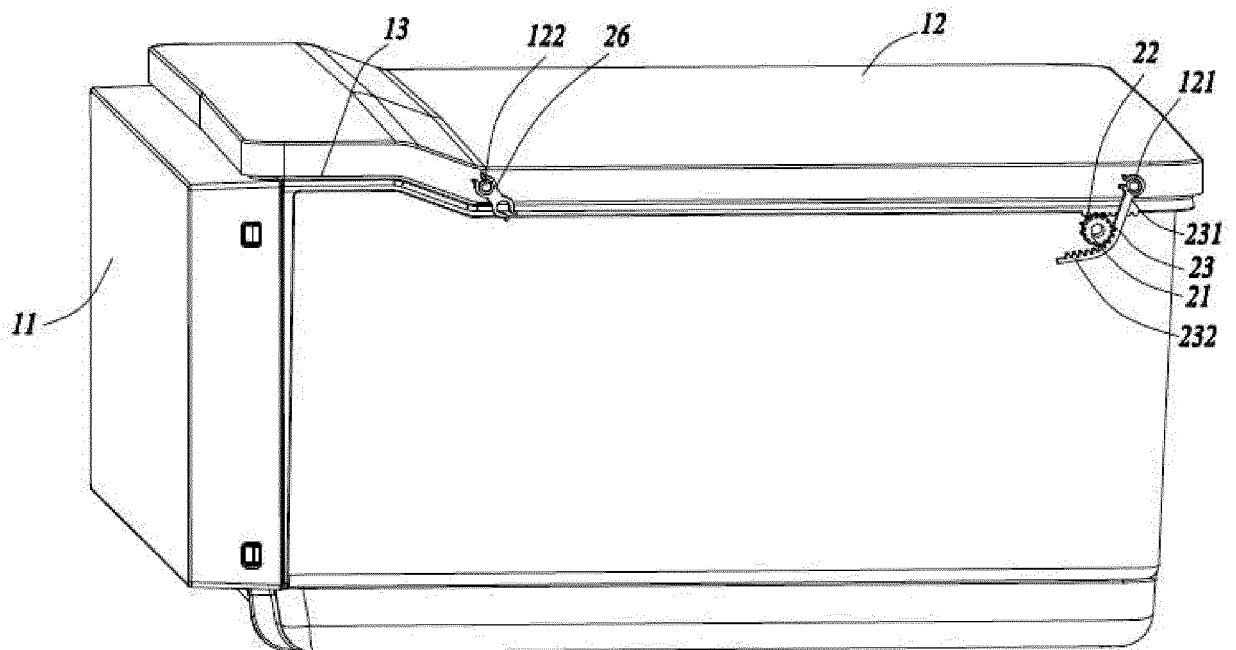


FIG. 5

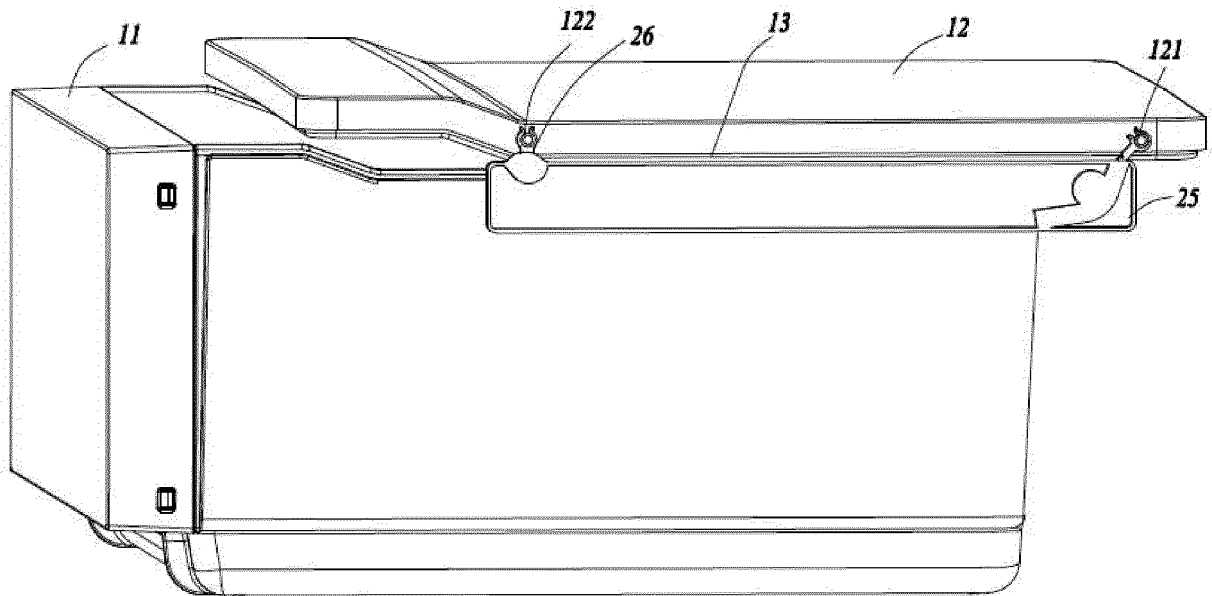


FIG. 6

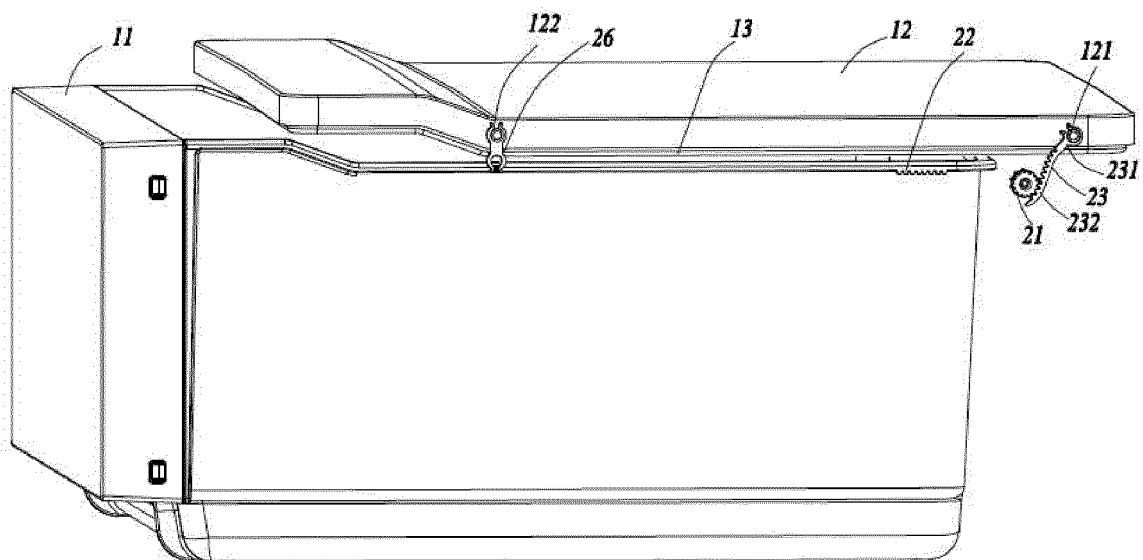


FIG. 7

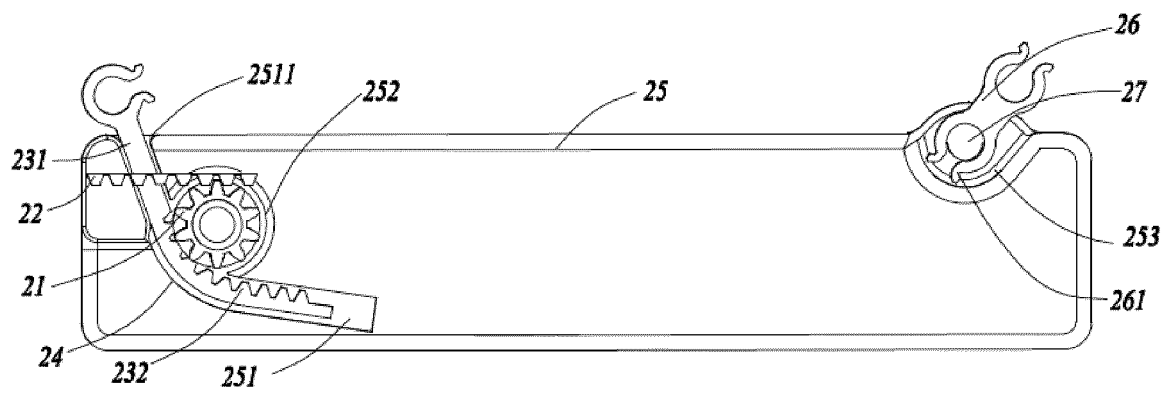


FIG. 8

21

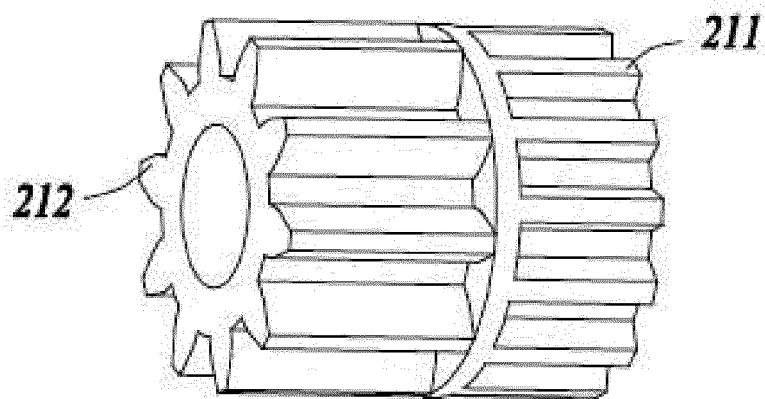


FIG. 9

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/135156

5	A. CLASSIFICATION OF SUBJECT MATTER		
	F25D 25/02(2006.01)i		
	According to International Patent Classification (IPC) or to both national classification and IPC		
10	B. FIELDS SEARCHED		
	Minimum documentation searched (classification system followed by classification symbols)		
	F25D25/-		
	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
	CNABS, CNTXT, CNKI, DWPI, SIPOABS, EPTXT, USTXT, WOTXT, 冰箱, 冷藏冷冻装置, 储物, 抽屉, 盖, 升, 降, 上, 下, 齿轮, 齿条, 传动, 轴, 限位, 固定, 磨, 省力, 顺畅, refrigerat+, icebox+, storage, drawer?, cover?, lid?, lift+, descend+, gear+, rack+, transmit+, axes, axis, shaft?, restrict+, fix+, secur+, wear+, smooth+		
20	C. DOCUMENTS CONSIDERED TO BE RELEVANT		
	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	PX	CN 111189292 A (QINGDAO HAIER REFRIGERATOR CO., LTD. et al.) 22 May 2020 (2020-05-22) description paragraphs 0030-0049, 1-9	1-11
25	Y	CN 106595212 A (QINGDAO HAIER CO., LTD.) 26 April 2017 (2017-04-26) description, paragraphs 0027-0039, and figures 1-10	1-11
	Y	CN 203405053 U (HISENSE RONSHEN (GUANGDONG) REFRIGERATORS CO., LTD.) 22 January 2014 (2014-01-22) description paragraphs 0042-0052, figures 1, 8-10, 14, 17-19	1-11
30	A	CN 104848647 A (HEFEI HUALING CO., LTD. et al.) 19 August 2015 (2015-08-19) entire document	1-11
	A	CN 104236217 A (HEFEI MIDEA REFRIGERATOR CO., LTD.) 24 December 2014 (2014-12-24) entire document	1-11
35	A	CN 110360799 A (LG ELECTRONICS INC.) 22 October 2019 (2019-10-22) entire document	1-11
	☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
40	* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
45			
50	Date of the actual completion of the international search		Date of mailing of the international search report
	22 February 2021		08 March 2021
55	Name and mailing address of the ISA/CN		Authorized officer
	China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088 China		
	Facsimile No. (86-10)62019451		Telephone No.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/135156

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 20190094930 A (LG ELECTRONICS INC.) 14 August 2019 (2019-08-14) entire document	1-11
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