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(54) **LUGGAGE CAPABLE OF BEING OPENED IN ALL DIRECTIONS**

(57) A luggage includes a first case (10), a second case (20), and a connecting portion (30). The connecting portion (30) has a pair of teeth rows (32) connected to the first case (10) and the second case (20) respectively and two sliders (34) engage the teeth rows (32). The sliders (34) are moved to make the teeth rows (32) mesh together or separate. When the sliders (34) are moved to separate the teeth rows (32) and they are moved to the same side of the second case (20), the meshed section of the teeth rows (32) becomes a hinge of the second case (20) for opening and closing the luggage. As a result, the second case (20) is capable of being opened in all directions.

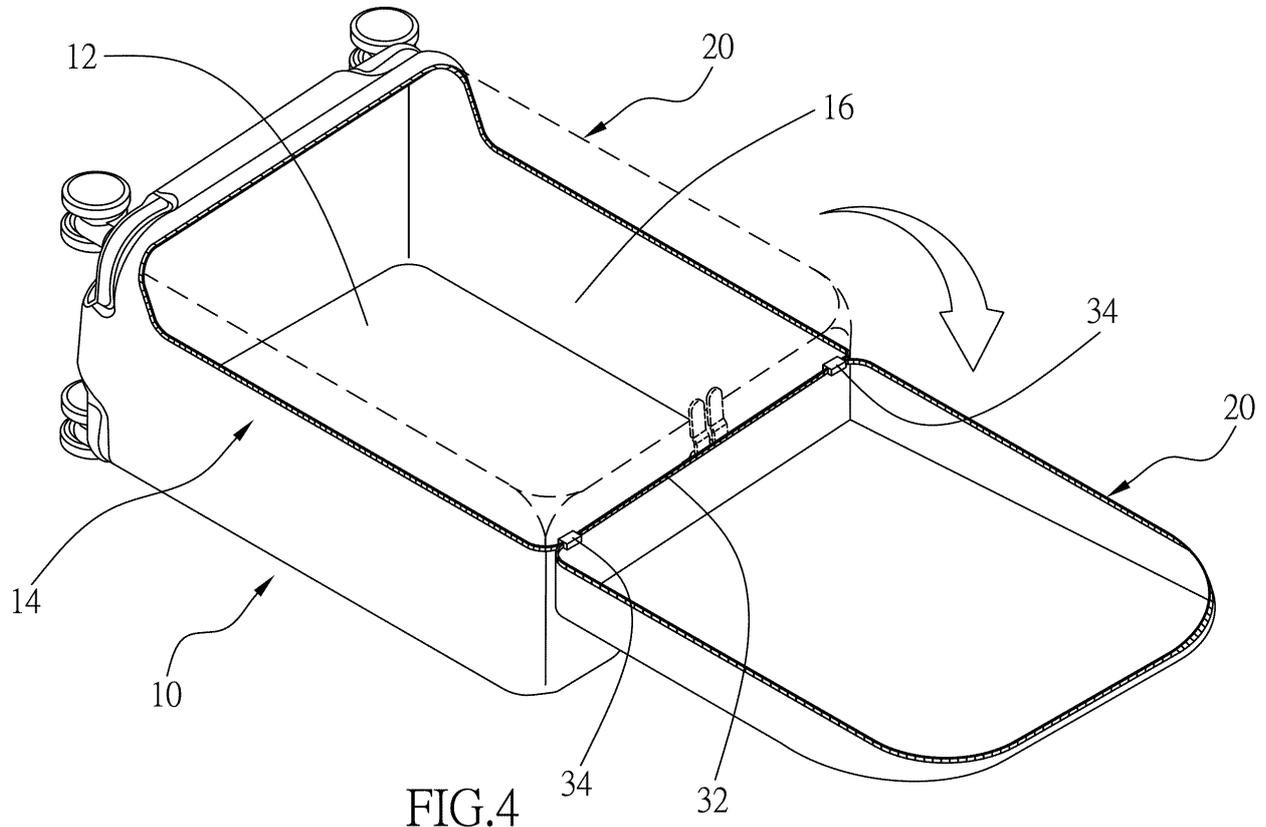


FIG.4

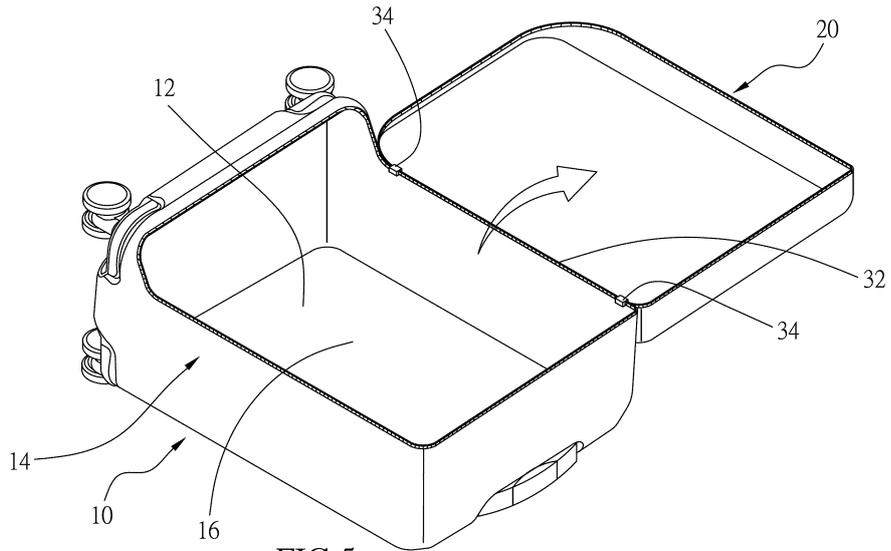


FIG. 5

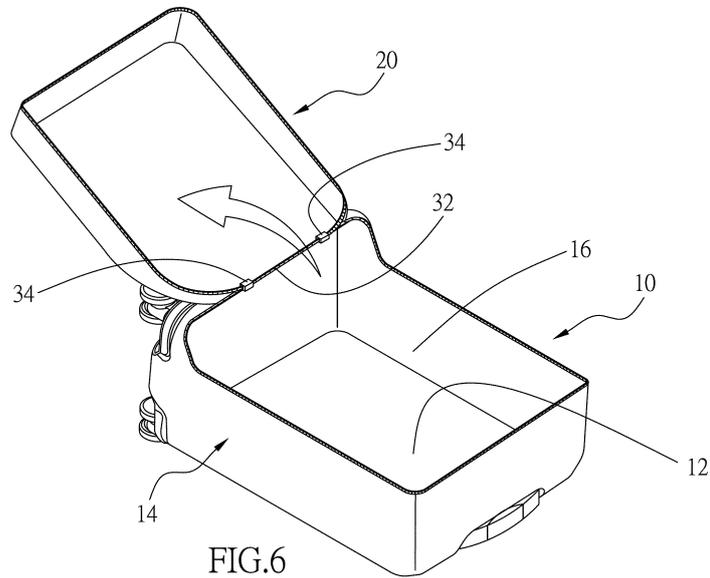


FIG. 6

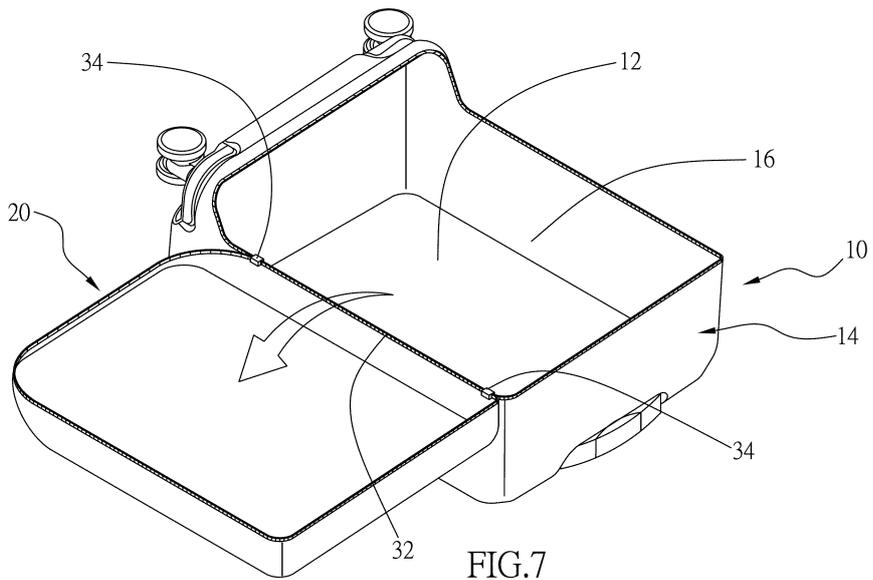


FIG. 7

Description**BACKGROUND OF THE INVENTION****1. Technical Field**

[0001] The invention relates to a suitcase or a luggage, and more particularly to a luggage which is capable of being opened in all directions.

2. Description of Related Art

[0002] A suitcase or a luggage is widely used in storing goods for people in traveling. A conventional suitcase includes a case, a lid, and a zipper to connect the lid to the case. The lid has a side connected to the case, and the zipper is pulled to open or close the lid.

[0003] This kind of conventional suitcase only can be opened in one direction. Sometime the opened lid is blocked by wall or desk. The user has to turn the suitcase in 180 degrees to open it again.

[0004] An improved suitcase is capable of opening the lid in all directions. Such suitcase has a bag in the case to receive goods. It is easy to understand that user has to open the suitcase and then open the bag to take goods. It is inconvenient to user.

BRIEF SUMMARY OF THE INVENTION

[0005] In view of the above, the primary objective of the present invention is to provide a luggage, which is capable of being opened in all directions.

[0006] In order to achieve the objective of the present invention, a luggage includes a first case having a first board and a first rim portion connected to an edge of the first board to form a room within the first board and the first rim portion and an opening at a side opposite to the first board; a second case having a second board and a second rim portion connected to an edge of the second board; and a connecting device having a pair of teeth rows and two sliders, wherein the teeth rows are connected to the first rim portion of the first case and the second rim portion of the second case, and the sliders engage the teeth rows.

[0007] As a result, the sliders are moved to mesh the teeth row together or separate the teeth rows, and when the sliders are moved to separate the teeth rows and the sliders are move to the same side of the second case, the teeth rows have a section meshed together to become a hinge for opening and closing the second case.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0008] The present invention will be best understood by referring to the following detailed description of some illustrative embodiments in conjunction with the accompanying drawings, in which

FIG. 1 is a perspective view of a preferred embodiment of the present invention;

FIG. 2 is another perspective view of the preferred embodiment of the present invention;

FIG. 3 is yet another perspective view of the preferred embodiment of the present invention;

FIG. 4 is a perspective view of the preferred embodiment of the present invention, showing the luggage being opened in the first direction;

FIG. 5 is a perspective view of the preferred embodiment of the present invention, showing the luggage being opened in the second direction;

FIG. 6 is a perspective view of the preferred embodiment of the present invention, showing the luggage being opened in the third direction;

FIG. 7 is a perspective view of the preferred embodiment of the present invention, showing the luggage being opened in the fourth direction; and

FIG. 8 is a left view of the preferred embodiment of the present invention, showing the luggage with the expanding mechanism.

DETAILED DESCRIPTION OF THE INVENTION

[0009] FIG. 1 and FIG. 2 show a luggage of the preferred embodiment of the present invention, including a first case 10, a second case 20, and a connecting device 30 connecting the first case 10 to the second case 20.

[0010] The first case 10 has a first board 12 and a first rim portion 14 connected to the first board 12 to form a room 16 within the first board 12 and the first rim portion 14 and an opening 18 at a side opposite to the first board 12.

[0011] Similar to the first case 10, the second case 20 has a second board 22 and a second rim portion 24 connected to the second board 22. In the present embodiment, the first case 10 is the main of the luggage, and the second case 20 is a lid.

[0012] The connecting device 30 is a zipper in the present embodiment, including a pair of teeth rows 32 and two sliders 34. The teeth rows 32 are connected to edges of the first rim portion 14 of the first case 10 and the second rim portion 22 of the second case 20, respectively, and the sliders 34 engage the teeth rows 32. Moving the sliders 34 may mesh the teeth rows 32 together or separate them.

[0013] As shown in FIG. 3, the first rim portion 14 is a single element, including a, a first bottom side 142 opposite to the first top side 140, and two first lateral sides 144 between the first top side 140 and the first bottom side 142. The first rim portion 14 further includes a flange portion 146 projected from an edge of the first bottom side 142 toward the first top side 140. Opposite sides of the flange portion 146 are connected to the first lateral sides 144 respectively.

[0014] Four wheel assemblies 40 mounted at corners of the first bottom side 142 of the first case 10.

[0015] The second rim portion 24 of the second case

20 is a single element as well, including a second top side 240, and two second lateral sides 242 at opposite sides of the second top side 240.

[0016] As shown in FIGS. 4 to 7, when the sliders 34 are moved to separate the teeth rows 24 and stopped at the same side of the second case 20, the teeth rows 24 still mesh together at the side where the sliders 34 stop, and the meshed side becomes a hinge of the second case 20 to open or close the second case 20. It is noted that the first rim portion 14 has a predetermined height, so that the goods stored in the first case 10 are kept by the first rim portion 14 when the luggage is laid down.

[0017] As shown in FIG. 8, the luggage is provided with an expanding mechanism 50 on the first rim portion 14. The rim portion 14 here has a fixed portion 60, which is connected to the first board 12, and a movable portion 62, which is connected to the second case 20 through the connecting device 30.

[0018] The expanding mechanism 50 includes an extended layer 52 and a zipper 54. The extended layer 52 has opposite sides connected to the fixed portion 60 and the movable portion 62, and the zipper 54 has a pair of teeth rows connected to the fixed portion 60 and the movable portion 62. Zipping or unzipping the zipper 54 may narrow or expand the room 16 of the first case 10.

[0019] In conclusion, the present invention provides the zipper with two sliders 32. Moving the sliders 32 to the same side, and keep a meshed section to be a hinge of the second case 20 that make the luggage of the present invention be capable of opening in all directions. As a result, when the luggage lays down on the ground, it is no need to worry about the direction to open the luggage. Besides, the first rim portion 14 and the flange portion 146 may keep the goods stay in the first case 10 when the luggage lays down or stands.

[0020] It must be pointed out that the embodiments described above are only some preferred embodiments of the present invention. All equivalent structures which employ the concepts disclosed in this specification and the appended claims should fall within the scope of the present invention.

Claims

1. A luggage, comprising:

a first case (10) having a first board (12) and a first rim portion (14) connected to an edge of the first board (12) to form a room (16) within the first board (12) and the first rim portion (14) and an opening (18) at a side opposite to the first board (12);
 a second case (20) having a second board (22) and a second rim portion (24) connected to an edge of the second board (22); and
 a connecting device (30) having a pair of teeth rows (32) and two sliders (34), wherein the teeth

rows (32) are connected to the first rim portion (14) of the first case (10) and the second rim portion (24) of the second case (20), and the sliders (34) engage the teeth rows (32);

whereby the sliders (34) are moved to mesh the teeth rows (32) together or separate the teeth rows, and when the sliders (34) are moved to separate the teeth rows (32) and the sliders (34) are move to the same side of the second case (20), the teeth rows (32) have a section still meshed together to form a hinge for opening and closing the second case (20).

2. The luggage of claim 1, wherein the first case (10) is a single element, and the first rim portion (14) has a first top side (140), a first bottom side (142) opposite to the first top side (140), and two first lateral sides (144) between the first top side (140) and the first bottom side (142).

3. The luggage of claim 2, wherein the first rim portion (14) further includes a flange portion (146) projected from an edge of the first bottom side (142) toward the first top side (140), and the flange portion (146) has opposite sides connected to the first lateral sides (144) respectively.

4. The luggage of claim 2, further comprising a plurality of wheel assemblies (40) connected to the first bottom side (142) of the first rim portion (14) of the first case (10).

5. The luggage of claim 1, further comprising an expanding mechanism (50), wherein the first rim portion (14) of the first case (10) includes a fixed portion (60) connected to the first board (12) and a movable portion (62) connected to the teeth row (32) of the connecting device (30); the expanding mechanism (50) is connected to the fixed portion (60) and the movable portion (62) to expand and narrow the room (16) of the first case (10).

6. The luggage of claim 5, wherein the expanding mechanism includes an extended layer (52) and a zipper (54); the extended layer (52) has opposite sides connected to the fixed portion (60) and the movable portion (62), and the zipper (54) has a pair of teeth rows connected to the fixed portion (60) and the movable portion (62) respectively.

7. The luggage of claim 1, wherein the second case (20) is a single element, and the second rim portion (24) has a second top side (240), and two second lateral sides (242) at opposite sides of the second top side (240).

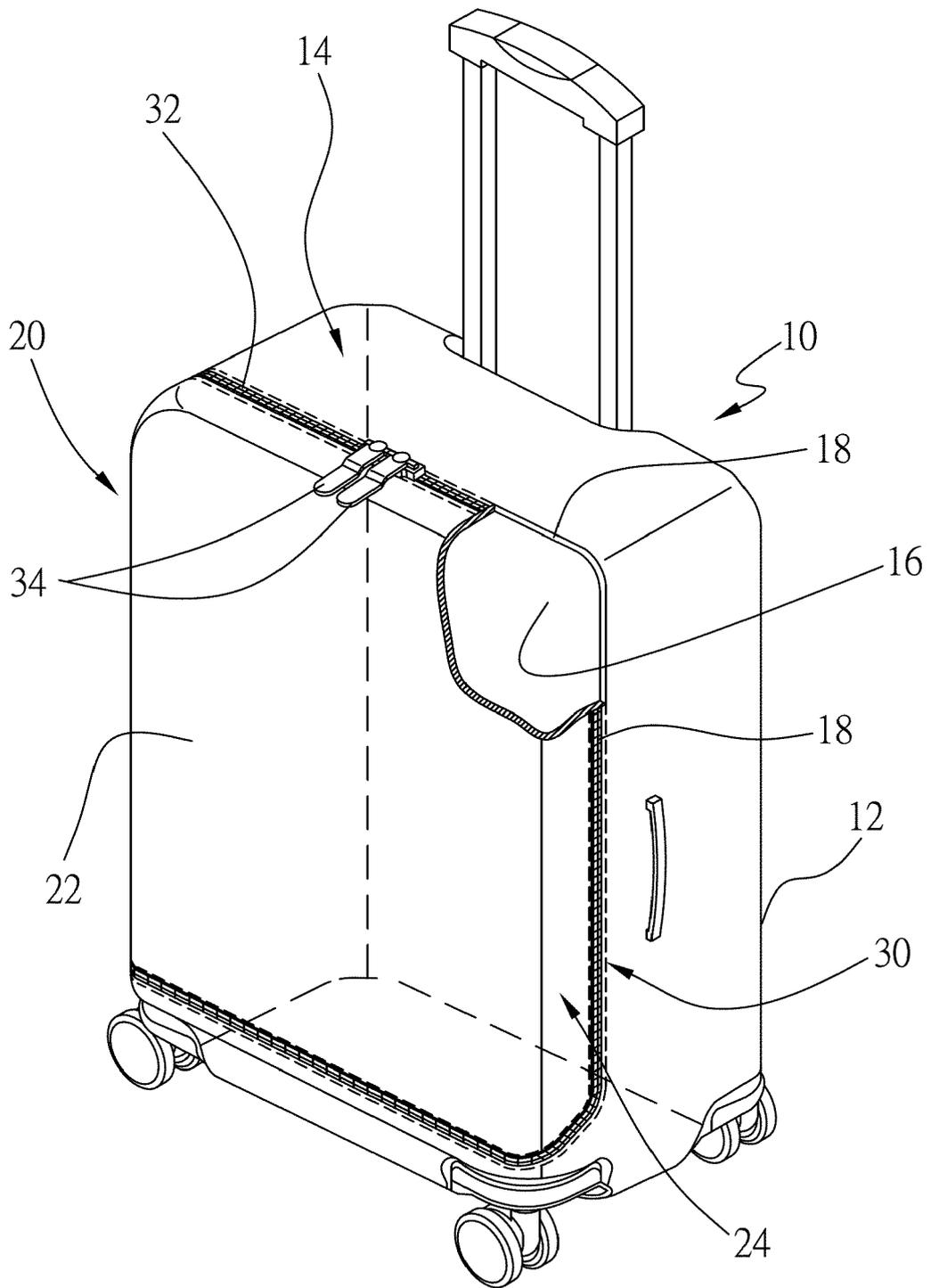


FIG.1

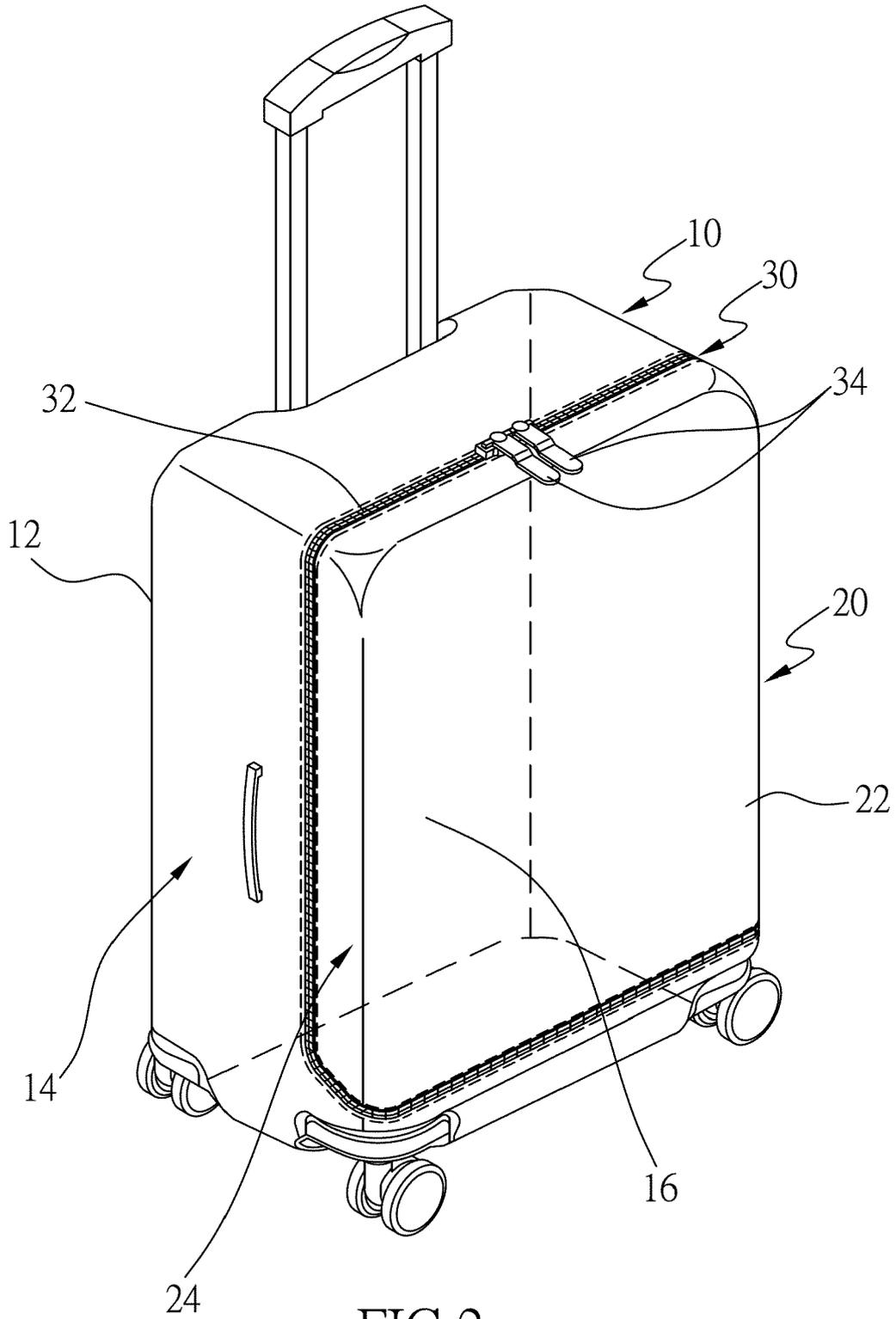


FIG. 2

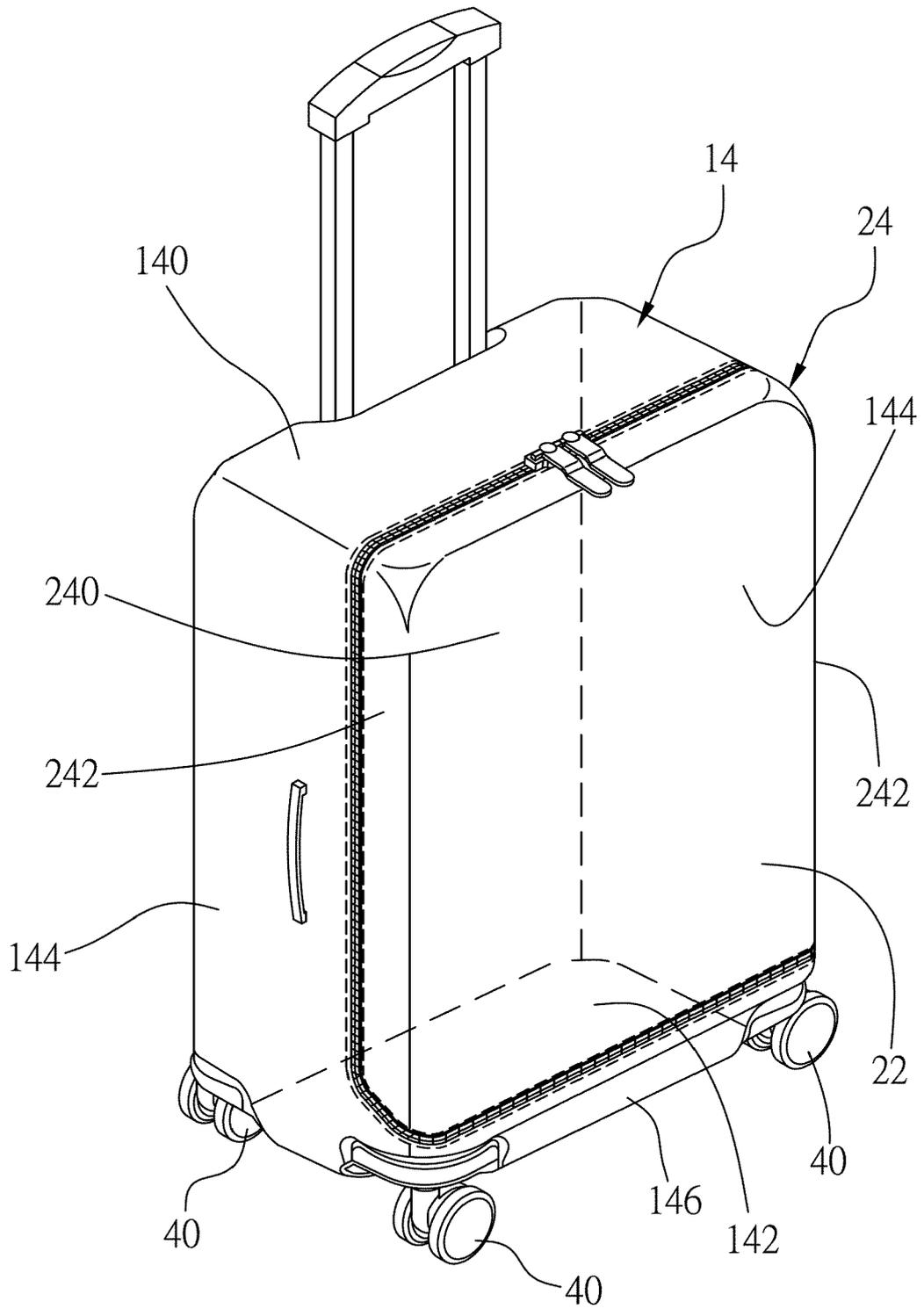


FIG.3

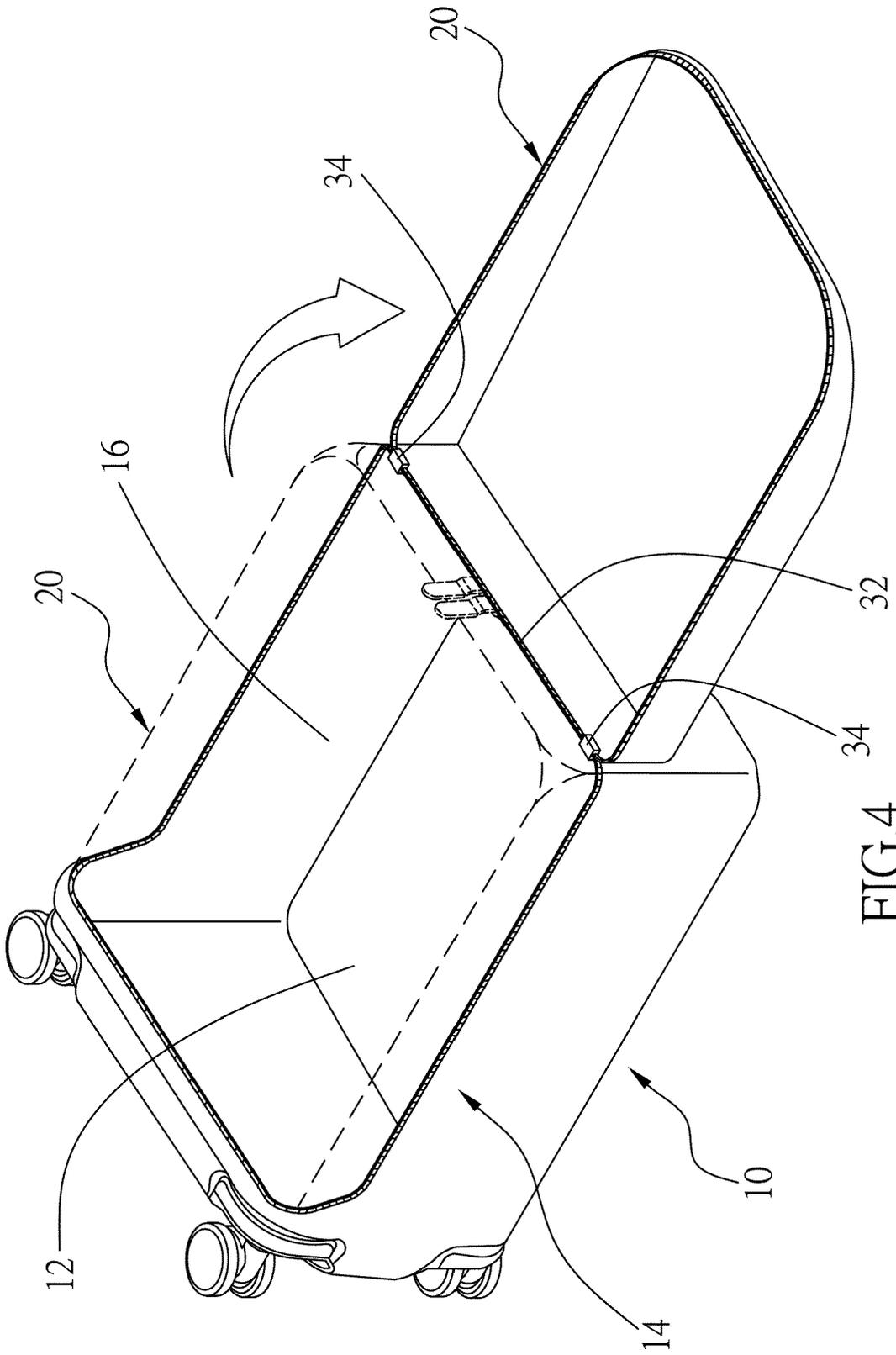


FIG. 4

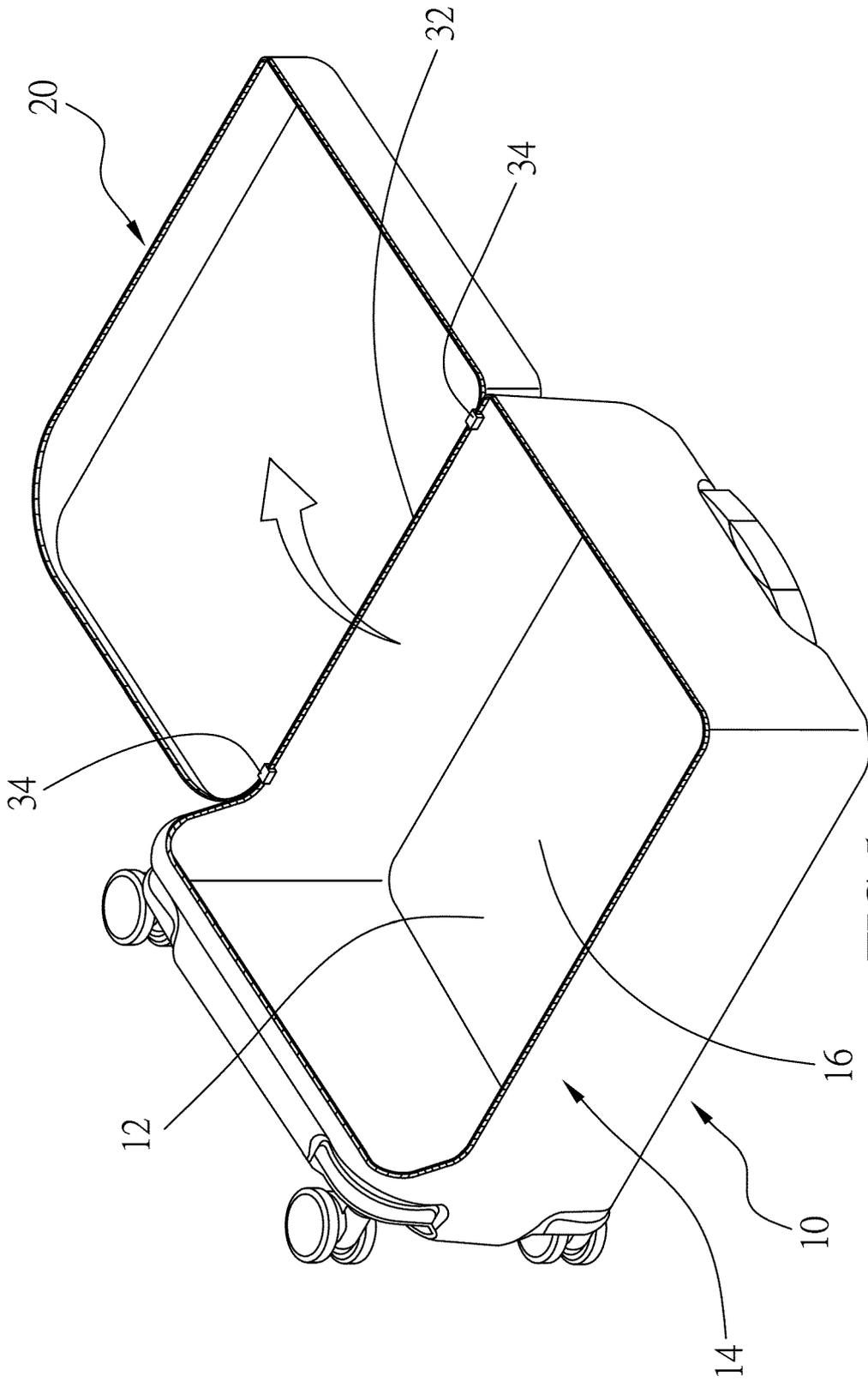


FIG.5

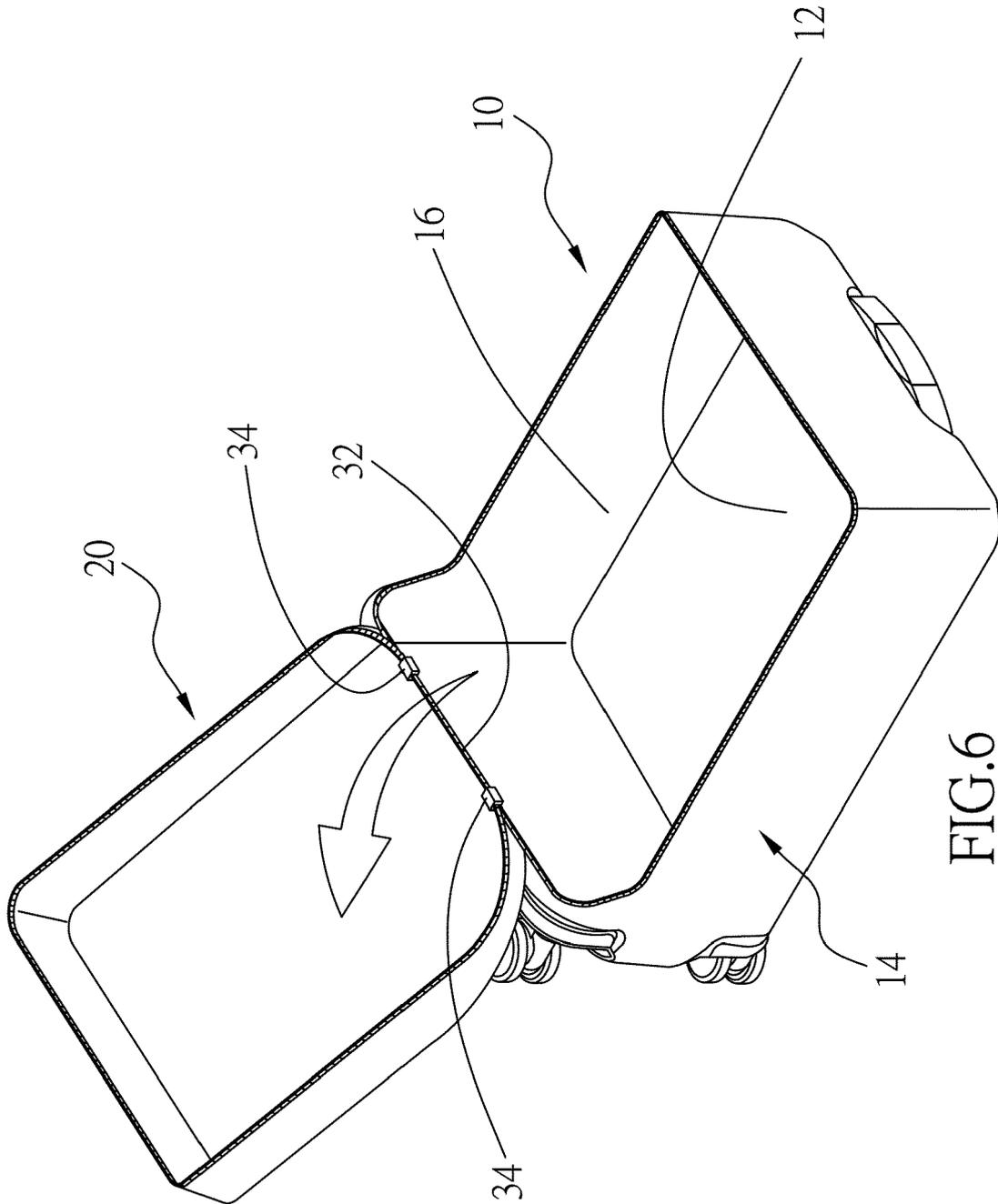


FIG. 6

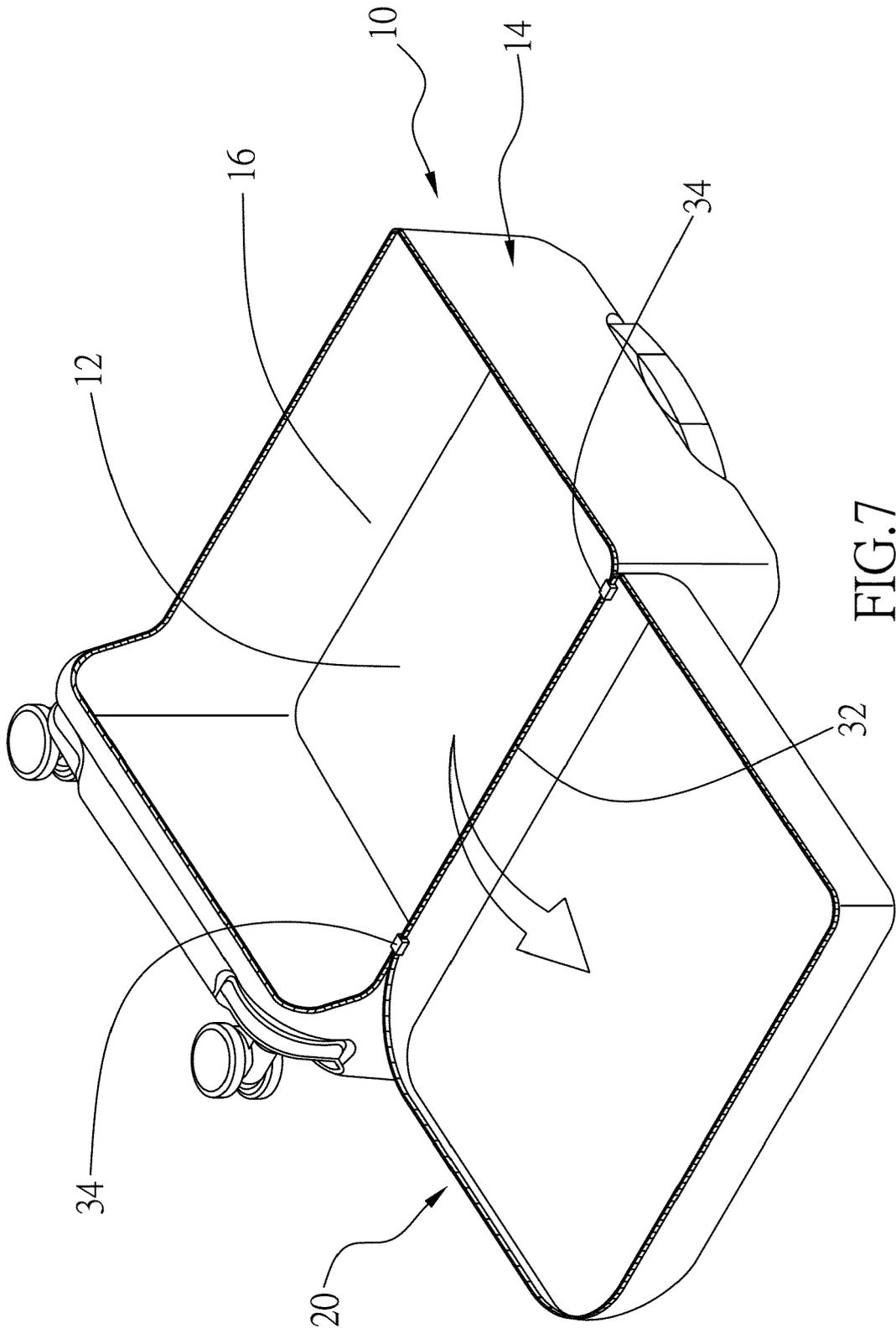


FIG.7

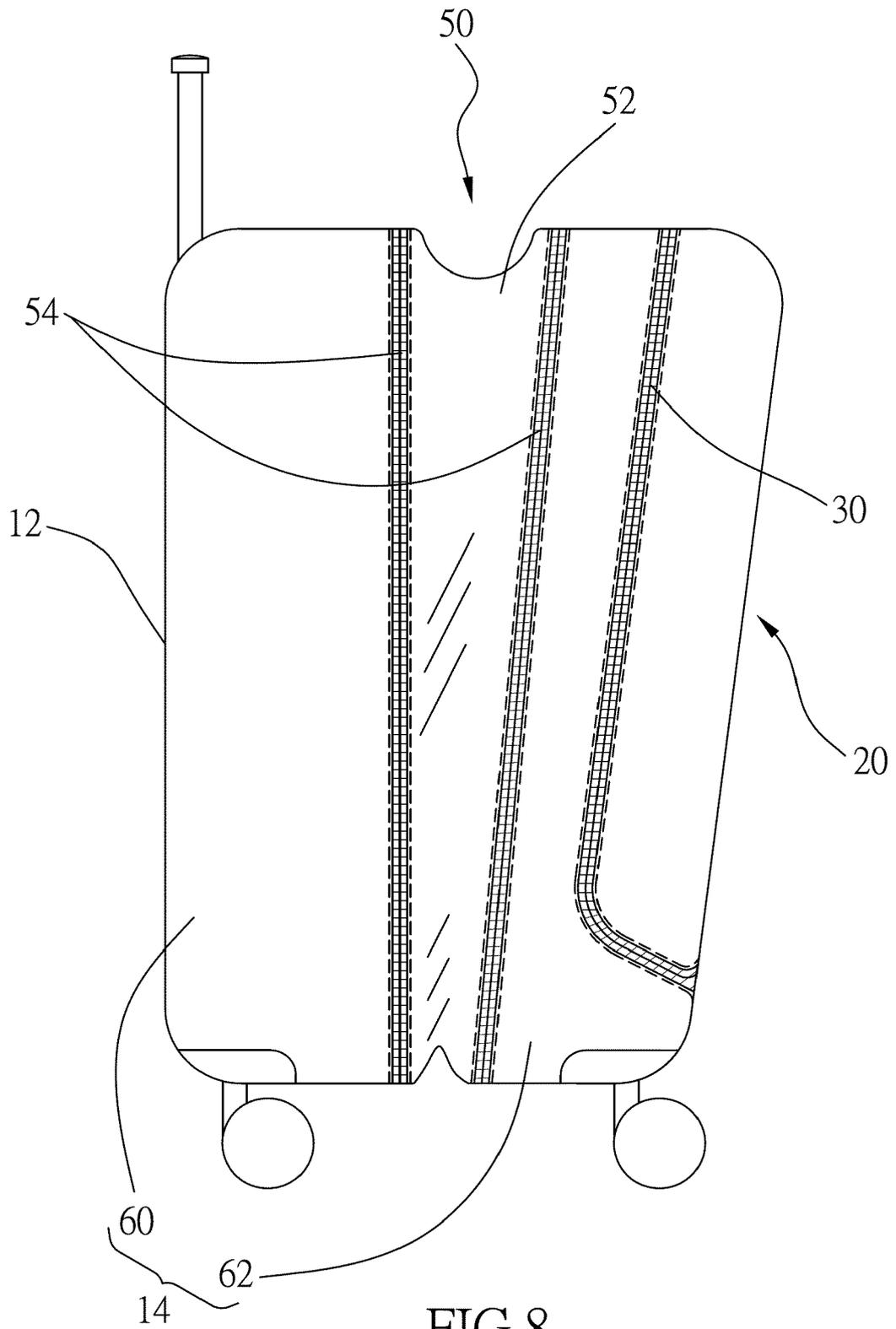


FIG. 8



EUROPEAN SEARCH REPORT

Application Number
EP 18 16 5356

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 21 September 2018	Examiner van Overbeek, Kajsa
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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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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