



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
21.01.2015 Bulletin 2015/04

(51) Int Cl.:
A45C 5/03 (2006.01) **A45C 5/14** (2006.01)
A45C 7/00 (2006.01)

(21) Application number: **13005077.6**

(22) Date of filing: **24.10.2013**

(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

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(30) Priority: **18.07.2013 CN 201320429391 U**

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(54) **Hard suitcase**

(57) A suitcase body of a hard suitcase includes an upper suitcase body having a top wall and upper side walls which form an upper cavity with an opened bottom, a lower suitcase body having a bottom wall and lower side walls which form a lower cavity with a closed bottom and an opened top, and a cover. Peripheries of the upper and lower suitcase bodies are connected in a permanently closed manner, and the upper and lower cavities are

communicated with each other, and an access opening is defined in the top wall by removing a part of the top wall, the rest and a portion of the upper side walls form an installation area for installing partial wheels, the rest of wheels are installed on the lower suitcase body. Such a simple structure of the suit case is convenient to take and put articles, which is easy to operate.

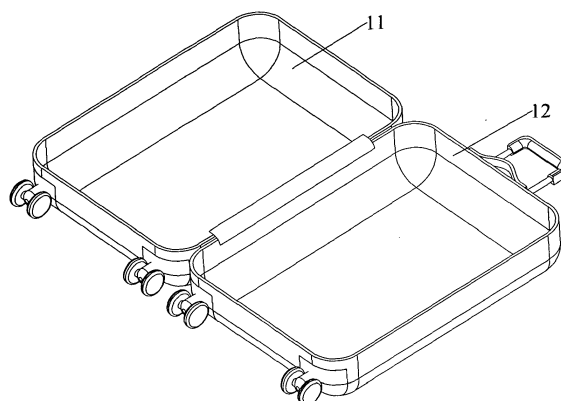


Fig. 1 (Prior art)

Description

FIELD OF THE INVENTION

[0001] The present invention relates in general to a suitcase, and more particularly to a hard suitcase, which is easy to open and close.

BACKGROUND OF THE INVENTION

[0002] Suitcases, so-called travel suitcases, or luggage, are used to save articles needed on the journey so as to facilitate travel.

[0003] The suitcases include hard suitcases and soft suitcases according to their different materials of housings.

[0004] Generally, the soft suitcases have a suitcase body made of fabric materials, by which their manufacturing process is simple, and their structures or shapes are various. When many articles are accommodated within the suitcase body, the shape of the suitcase body may change slightly so as to save more articles. However, the soft suitcase could not adequately protect the articles when it is extruded or collided, as an extrusion force or collision force will be passed to the articles directly.

[0005] While the housings of hard suitcases are made of hard materials, such as ABS, PC, PP, EVA or aluminum alloy, in which the articles are protected. Namely, a protective barrier is formed between the articles and the outside, so as to prevent the articles from being damaged by extrusion and collision.

[0006] A conventional hard suitcase (as shown in Fig. 1) is composed of an upper suitcase body 11, a lower suitcase body 12, and four wheels installed on a side wall of the hard suitcase with a pair of wheels being located on the upper suitcase body 11 and the other pair being located on the lower suitcase body 12. The upper suitcase body 11 is connected with the lower suitcase body 12 in a manner that can be opened and closed. Each of the upper suitcase body 11 and the lower suitcase body 12 has a cavity, when the upper suitcase body 11 is butted up against the lower suitcase body 12, the two cavities with almost the same size form an enclosed space for saving articles. However, two main issues exist in the conventional hard suitcase as following:

[0007] On one hand, as the volume of the upper suitcase body 11 and the lower suitcase body 12 are almost the same, and both of them have a cavity, thus the upper suitcase body 11 and the lower suitcase body 12 need to be opened completely with 180° to take or put in articles, which occupies much space, and is inconvenient to take or put in articles on the journey, such as on the train or bus, where the space is limited.

[0008] On the other hand, private articles will be completely exposed to the public when the upper suitcase body 11 and the lower suitcase body 12 are opened completely with 180° to take or put in articles, which causes user's privacy not to be protected adequately.

SUMMARY OF THE INVENTION

[0009] The objective of the present invention is to provide a hard suitcase which is easy to open and close.

[0010] In order to achieve the above objective, inventors tried to change the structure of the hard suitcase, such as open an access opening at a top wall of the suitcase body, so as to be convenient to take articles. But a side wall near the top wall is easy to deform so that wheels can not be installed thereon. To enhance support of the wheels, two pairs of wheels could be installed on the lower portion of the side wall where a stable triangular support structure is constituted by the side walls and the bottom wall, that is, the portion near the bottom wall. However, as known, two pairs of wheels with greater spacing therebetween will provide more stable support for the hard suitcase, but spacing between the two pairs of wheels installed on the lower portion of the side wall is not sufficient, thus the hard suitcase is not stable. To overcome the shortcoming, inventors think up to remove a part of top wall to form the access opening, thereby a pair of wheels could be installed on the upper portion of the side wall where the stable triangular support structure is formed, thereby, the spacing between the two pairs of wheels is increased. However, due to the suitcase body of the hard suitcase is made by plastic molding, but such a suitcase body with remained top wall is hard to be formed by the plastic molding process. Thus, the present invention provides a new technical solution to solve this problem.

[0011] The above problem is solved by providing a hard suitcase, including a suitcase body and multiple wheels, the suitcase body including an upper suitcase body of hard material, a lower suitcase body of hard material and a cover, the upper suitcase body having a top wall and upper side walls which form an upper cavity with an opened bottom, the lower suitcase body having a bottom wall and lower side walls which form a lower cavity with a closed bottom and an opened top, peripheries of the upper suitcase body and the lower suitcase body being connected in a permanently closed manner, and the upper cavity and the lower cavity being communicated with each other to form an accommodating space of the suitcase body, an access opening being defined in the top wall by removing a part of the top wall to communicate with the accommodating space, the rest of the top wall and a portion of the upper side walls that connects with the rest of the top wall forming an installation area for installing part of the wheels thereon, the rest of the wheels being installed on the lower suitcase body, and the cover being installed on the upper suitcase body so as to open or close the access opening.

[0012] Accordingly, the hard suitcase of the present invention provides an individual upper suitcase body and an individual lower suitcase body, thereby the upper suitcase body could remain part top wall, the remained top wall and a portion of the upper side walls that connects with the remained top wall form an installation area for

installing part of the wheels thereon. And the separated upper suitcase body and lower suitcase body are connected in a permanently closed manner, and only one access opening is opened at the top wall of the suitcase body, thereby the structure and operation are simple, meanwhile, the security of the suitcase body is improved, and in turns, occurrence of opening the hard suitcase at the connecting position between the upper suitcase body and the lower suitcase body is prevented. An accommodating space of the suitcase body is provided by inter-connecting the upper cavity and the lower cavity, and a cover is installed at the upper suitcase body in a manner that can be opened and closed, through which an access opening can be opened handily to take articles or closed to save articles. It's convenient to take or put articles if only to open the cover to open the accommodating space. Due to the small size of the cover, the cover would not occupy much space even it is opened completely when user is taking or putting articles. Of course, user also can hold the cover with a hand, and then take or put articles with the other hand, which is easy to operate and occupy less space, meanwhile, the articles in the accommodating space will not be exposed, which adequately protects user's privacy.

[0013] Preferably, the upper suitcase body and the lower suitcase body are connected in a tensile and closed manner. The accommodating space can be adjusted by stretching the upper suitcase body and the lower suitcase body, so as to adapt to different situations.

[0014] In an embodiment, the hard suitcase further includes an expanding zipper and a flexible band with a width larger than that of the expanding zipper, the flexible band has an upper side encircling and fixed on the upper side walls, and a lower side encircling and fixed on the lower side walls, and the expanding zipper configured at an outer side of the flexible band that is opposite to the accommodating space has an upper side encircling and fixed on the upper side walls, and a lower side encircling and fixed on the lower side walls. The flexible band is firmly connected between the upper suitcase body and the lower suitcase body, so as to realize a non-detachable and closed connection between the upper suitcase body and the lower suitcase body. The width of the flexible band is larger than that of the expanding zipper. When the expanding zipper is closed, the distance between the upper suitcase body and the lower suitcase body is the width of the expanding zipper, which is short. When the expanding zipper is unzipped, the distance between the upper suitcase body and the lower suitcase body is the width of the flexible band, which is longer, thereby adjusting the size of the accommodating space.

[0015] Concretely, the hard suitcase further includes two enclosed plastic bones, one of which is partially covering an outer side of the expanding zipper and connected to the upper side walls, the other is partially covering the outer side of the expanding zipper and connected to the lower side walls, when the expanding zipper is closed, the two enclosed plastic bones contact with each other.

The enclosed plastic bones, on one hand, can protect the expanding zipper from being knocked open or torn open by external force, on the other hand, improves the waterproof effect of the hard suitcase.

[0016] Preferably, the upper suitcase body is butted up against the lower suitcase body firmly. The firm butt connection of the upper suitcase body and the lower suitcase body improves the reliability of the connection of the upper suitcase body and the lower suitcase body.

[0017] In an embodiment, a lower edge of the upper side walls and an upper edge of the lower side walls are butted to form a contacting line, a circular enclosed strip is provided to cover the contacting line and firmly connected with the upper side walls and the lower side walls. By means that the upper suitcase body and the lower suitcase body are butted, and a lower edge of the upper side walls and an upper edge of the lower side walls are butted to form a contacting line, with the addition that a circular enclosed strip firmly connected with the upper side walls and the lower side walls coats the contacting line, so as to realize the firm butt connection of the upper suitcase body and the lower suitcase body, the structure is simple and easy to accomplish, in addition, the connection has high reliability.

[0018] Concretely, the circular enclosed strip includes an inner enclosed strip covering the contacting line at an inner side of the upper side walls and the lower side walls, and an outer enclosed strip covering the contacting line at an outer side of the upper side walls and the lower side walls. The outer enclosed strip and the inner enclosed strip cover the contacting line at the outer side and inner side of the suitcase body respectively, so as to cover the contacting line, on one hand improving the reliability of connection between the upper suitcase body and the lower suitcase body, on the other hand improving the waterproofness of the suitcase.

[0019] Preferably, the upper suitcase body and the lower suitcase body are connected firmly in a sleeve manner. The firm connection in the sleeve manner of the upper suitcase body and the lower suitcase body improves the reliability of connection between the upper suitcase body and the lower suitcase body.

[0020] In an embodiment, either of the upper side walls and the lower side walls partially sleeves the other one, and the upper side walls and the lower side walls are firmly connected at a contacting area of the upper side walls and the lower side walls. The upper side walls and the lower side walls are connected in sleeve manner and fixed at the contacting area of the upper side walls and the lower side walls. The structure is simple and easy to accomplish, in addition, the connection has high reliability.

[0021] Concretely, a lower portion is formed by extending the lower edge of the upper side walls towards the accommodating space and then extending downward, and the lower portion is inserted into the lower side walls. The lower edge of the upper side walls is caved to form the lower portion, and the lower portion is inserted into

the lower side walls, thus, when the lower side walls sleeves the lower portion, the outer wall of the hard suitcase is plane, which can prevent the contacting area of the lower portion and the lower side walls from outside impact, improving the safety of connection between the upper suitcase body and the lower suitcase body.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] Fig. 1 is a schematic view of a conventional hard suitcase;

[0023] Fig. 2 is a perspective view of a hard suitcase according to the first embodiment of the present invention;

[0024] Fig. 3 is an exploded view of a hard suitcase according to the first embodiment of the present invention;

[0025] Fig. 4 is a perspective view of the interior of a suitcase body according to the first embodiment of the present invention, when the suitcase body is not expanded;

[0026] Fig. 5 is a partial sectional view along A direction in Fig. 4;

[0027] Fig. 6 is a perspective view of the interior of a suitcase body according to the first embodiment of the present invention, when the suitcase body is expanded;

[0028] Fig. 7 is a partial sectional view along A' direction in Fig. 6;

[0029] Fig. 8 is a perspective view of a hard suitcase in use according to the first embodiment of the present invention, when the suitcase body is in use and expanded;

[0030] Fig. 9 is a perspective view of a hard suitcase according to the second embodiment of the present invention;

[0031] Fig. 10 is a partial sectional view along B direction in Fig. 9;

[0032] Fig. 11 is a perspective view of a hard suitcase according to the third embodiment of the present invention; and

[0033] Fig. 12 is a partial sectional view along C direction in Fig. 11.

DETAILED DESCRIPTION OF ILLUSTRATED EMBODIMENTS

[0034] In order to describe the technical solutions, structure features, purpose and effect to achieve of the present invention in detail, various preferred embodiments will now be described with reference to the Figures.

[0035] Figs. 2 to 8 show a hard suitcase A00 according to the first embodiment of the present invention.

[0036] As shown in Figs. 2 to 4, hard suitcases A00 includes a suitcase body 100, and four wheels 200, wherein, the suitcase body 100 includes an upper suitcase body 110 of hard material, a lower suitcase body 120 of hard material and a cover 130. The upper suitcase

body 110 having a top wall 112 and upper side walls 111 which form an upper cavity 110a with an opened bottom, the lower suitcase body 120 having a bottom wall 122 and lower side walls 121 which form a lower cavity 120a with a closed bottom and an opened top, peripheries of the upper suitcase body 110 and the lower suitcase body 120 are connected in a permanently closed manner, and the upper cavity 110a and the lower cavity 120a are communicated with each other to form an accommodating space 100a of the suitcase body 100, the accommodating space 100a is used for saving articles. An access opening 113 is defined in the top wall 112 by removing a part of the top wall to communicate with the accommodating space 100a, the rest of the top wall 112 and a portion of the upper side walls 111 connected with the rest of the top wall 112 form an installation area 114 for installing wheels 200. One side of the cover 130 is rotatably connected to the edge of the upper side walls 111, and the other sides are connected to peripheries of the access opening 113 by a zipper (not shown) so as to open and close the accommodating space 100a. User can take articles from or put them in the hard suitcase A100 through opening or closing the cover 130.

[0037] As shown in Fig. 5 to Fig. 8, Concretely, suitcase body 100 is a general rectangular box, the bottom wall 121 constitutes a bottom surface of the suitcase body 100, the cover 130 constitutes a top surface of the suitcase body 100, the upper side walls 111 and the lower side walls 121 constitute four side surfaces of the suitcase body 100. Four wheels 200 are installed symmetrically at a side surface of the suitcase body 100, two wheels 200 thereof are installed at the installation area 114, the other two wheels 200 are installed symmetrically on the lower suitcase body 120. A telescopic rod 300 and a handle 400 are disposed on another side surface that is opposite to the side surface at where the wheels 200 are installed. The suitcase body 100 is placed on a side surface thereof to transport the hard suitcase A00, and the four wheels 200 are on the ground, the suitcase body 100 also can be placed obliquely, and then only two wheels 200 are on the ground, at this time, the side surface having the telescopic rod 300 and the handle 400 is located on the top, user can operate telescopic rod 300 and handle 400 handily to pull the hard suitcase A00. The number of the wheels is there or more than there, that is, can be singular or dual.

[0038] The hard suitcase A00 of the present invention provides an individual upper suitcase body 110 and an individual lower suitcase body 120, thereby the upper suitcase body 110 could remain part top wall 112, the remained top wall 112 and portion of the upper side walls 111 connected with the remained top wall 112 form an installation area 114 for installing wheels. And the separated upper suitcase body 110 and lower suitcase body 120 are connected in a permanently closed manner, and only one access opening 113 is opened at the top wall 112, thereby the structure and operation are simple, meanwhile, the security of the suitcase body 100 is im-

proved, and in turns, occurrence of opening the hard suitcase A00 is opened at the connecting position between the upper suitcase body 110 and the lower suitcase body 120 is prevented. An accommodating space 100a of the suitcase body 100 is provided by interconnecting the upper cavity 110a and the lower cavity 120a, and the cover 130 is installed at the upper suitcase body 110 in a manner that can be opened and closed, through which an access opening 113 can be opened handily to take articles or closed to save articles. It's convenient to take or put articles if only to open the cover 130 to open the accommodating space 100a, and then take and put articles handily. Due to the small size of the cover 130, the cover 130 would not occupy much space even it is opened completely when user is taking or putting articles. Of course, user also can hold the cover 130 with a hand, and then take or put articles with the other hand, which is easy to operate, and occupy less space, meanwhile, the articles in the accommodating space 100a will not be exposed, which adequately protects user's privacy.

[0039] In this embodiment, the suitcase body 100 further includes a flexile band 140 and an expanding zipper 150, the flexile band 140 is a circular connecting band with a width larger than that of the expanding zipper 150. The flexile band 140 has an upper side encircling and fixed on the lower edge of the upper side walls 111, and a lower side encircling and fixed on the upper edge of the lower side walls 121. The expanding zipper 150 includes a upper zipper 151, a lower zipper 152 and a zipper puller 153, and the expanding zipper 150 is configured at an outer side of the flexile band 140 that is opposite to the accommodating space 100a, with the upper zipper 151 encircling and fixed on the lower edge of the upper side walls 111, and the lower zipper 152 encircling and fixed on the upper edge of the lower side walls 121. When the zipper puller 153 is zipped up so as to close the upper zipper 151 and the lower zipper 152, the upper suitcase body 110 and the lower suitcase body 120 get closer to each other, and the flexile band 140 is folded between the upper side walls 111 and the lower side walls 121, as shown in Fig. 5. When the zipper puller is unzipped so as to open the upper zipper 151 and the lower zipper 152, the upper suitcase body 110 is lifted up from the lower suitcase body 120, and the flexile band 140 is unfolded, as shown in Fig. 7.

[0040] Further, the suitcase body 100 further includes two enclosed plastic bones 160, one of which is covering an outer side of the upper zipper 151 and connected to the upper side walls 111, the other is covering the outer side of the lower zipper 152 and connected to the lower side walls 121. When the zipper puller 153 is zipped up so as to close the upper zipper 151 and the lower zipper 152, the two enclosed plastic bones 160 contact with each other, so as to protect the expanding zipper 150, preventing the upper zipper 151 and the lower zipper 152 from being split by external force, meanwhile, improving the waterproof effect of the hard suitcase A00.

[0041] According to the hard suitcase A00 of this em-

bodiment, the upper suitcase body 110 and the lower suitcase body 120 are connected in a tensile and closed manner by the flexile band 140 and the expanding zipper 150, at the same time, the accommodating space 100a of the hard suitcase A00 also can be adjusted by them as required, so as to adapt to different situations.

[0042] The technical solution that the upper suitcase body 110 and the lower suitcase body 120 are connected in a tensile and closed manner is not limited to be realized by the flexile band 140 and the expanding zipper 150, a retractable band replacing the flexile band 140 and multiple lock catches replacing the expanding zipper 150 also can connect the upper suitcase body 110 with the lower suitcase body 120 in the tensile and closed manner. The upper suitcase body 110 and the lower suitcase body 120 are connected in a sleeve manner, so the upper suitcase body 110 and the lower suitcase body 120 also can be connected in a tensile and closed manner by adjusting the width of the contacting area of the upper suitcase body 110 and the lower suitcase body 120.

[0043] Figs. 9 and 10 show a hard suitcase B00 according to the second embodiment of the present invention.

[0044] The difference between the hard suitcase B00 of the second embodiment and the hard suitcase A00 of the first embodiment is that the connection type of the upper suitcase body 110' and the lower suitcase body 120' of the hard suitcase B00 is firm butt connection.

[0045] Concretely, the upper suitcase body 110' is butted up against the lower suitcase body 120', a lower edge of the upper side walls 111' and an upper edge of the lower side walls 121' are butted to form a contacting line α . The hard suitcase B00 further includes a circular enclosed strip 140', which covers the contacting line α and firmly connected with the upper side walls 111' and the lower side walls 121'. Concretely, the circular enclosed strip 140' includes an inner enclosed strip 141' covering the contacting line α at an inner side of the upper side walls 111' and the lower side walls 121', and an outer enclosed strip 142' covering the contacting line α at an outer side of the upper side walls 111' and the lower side walls 121', the inner enclosed strip 141' and the outer enclosed strip 142' cover the contacting line α together. The outer enclosed strip 142', the upper side walls 111' and the inner enclosed strip 141' are firmly connected by machine sewing thread at upper side of the contacting line α . The outer enclosed strip 142', the lower side walls 121' and the inner enclosed strip 141' are firmly connected by machine sewing thread at lower side of the contacting line α . These described above can realize firm butt connection between the upper suitcase body 110' and the lower suitcase body 120'.

[0046] Figs. 11 and 12 show a hard suitcase C00 according to the third embodiment of the present invention.

[0047] The difference between the hard suitcase C00 of the third embodiment and the hard suitcase A00 of the first embodiment, the hard suitcase B00 of the second embodiment is that the connection type of the upper suit-

case body 110" and the lower suitcase body 120" of the hard suitcase C00 is firm sleeve connection.

[0048] Concretely, the upper suitcase body 110" and the lower suitcase body 120" are connected in a sleeve manner. Either the upper side walls 111" or the lower side walls 121" partially sleeves the other one, the sleeve connection of them forms a contacting area with either the upper side walls 111" or the lower side walls 121" being located at the inner side and the other being located at the outer side. The upper side walls 111" and the lower side walls 121" are firmly connected by machine sewing thread at the contacting area, so as to realize firm sleeve connection of the upper suitcase body 110" and the lower suitcase body 120".

[0049] Preferably, a lower portion 111a" is formed by extending the lower edge of the upper side walls 111" inward and then extending downward, the outer edge of the lower portion 111a" has same shape and size with the inner edge of the lower side walls 121". The lower side walls 121" sleeves the lower portion 111a", that is the lower portion 111a" is inserted into the lower side walls 121", so as to form the contacting area with the upper side walls 111" being located at the inner side of the contacting area, and the lower side walls 121" being located at the outer side thereof. The lower portion 111a" and the lower side walls 121" are firmly connected by machine sewing thread at the contacting area. Because the lower portion 111a" is formed by extending the lower edge of the upper side walls 111" inward and then extending downward, and then the lower portion 111a" is inserted into the lower side walls 121", so when the lower side walls 121" sleeves the lower portion 111a", the outer wall of the suitcase body 100" is plane, which can prevent the contacting area of the lower portion 111a" and the lower side walls 121" from outside impact, improving the safety of connection between the upper suitcase body 110" and the lower suitcase body 120".

[0050] With regard to the hard suitcase A00 of the first embodiment, the upper suitcase body 110 and the lower suitcase body 120 are connected in a permanently closed manner by the flexible band 140 and the expanding zipper 150. With regard to the hard suitcase B00 of the second embodiment, the upper suitcase body 110' and the lower suitcase body 120' are butted, the upper suitcase body 110' and the lower suitcase body 120' are connected in a permanently closed manner by the circular enclosed strip 140', two side of which are connected with the upper suitcase body 110' and the lower suitcase body 120' respectively. The upper suitcase body 110" and the lower suitcase body 120" of the hard suitcase C00 according to the third embodiment are connected in a sleeve manner, the size of the lower side of the upper side walls 111" is not equal to the size of the upper side of the lower side walls 121", thus, the upper side walls 111" and the lower side walls 121" can be connected in the sleeve manner and form a contacting area. The upper side walls 111" and the lower side walls 121" are firmly connected by machine sewing thread at the contacting area, thus

the upper suitcase body 110" and the lower suitcase body 120" can be connected in a permanently closed manner. These mentioned above just are several specific technical solutions about realizing permanently closed connection between the upper suitcase body and the lower suitcase body of the hard suitcase, but the technical solutions of the present invention is not limited to these, the separated upper suitcase body and lower suitcase body can also be connected in a permanently closed manner by means of machine sewing, glue, soldering, and so on.

[0051] While the invention has been described in connection with what are presently considered to be the most practical and preferred embodiments, it is to be understood that the invention is not to be limited to the disclosed embodiments, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the invention.

Claims

1. A hard suitcase, comprising a suitcase body and multiple wheels, the suitcase body comprising an upper suitcase body of hard material, a lower suitcase body of hard material and a cover, the upper suitcase body having a top wall and upper side walls which form an upper cavity with an opened bottom, the lower suitcase body having a bottom wall and lower side walls which form a lower cavity with a closed bottom and an opened top, peripheries of the upper suitcase body and the lower suitcase body being connected in a permanently closed manner, and the upper cavity and the lower cavity being communicated with each other to form an accommodating space of the suitcase body, an access opening being defined in the top wall by removing a part of the top wall to communicate with the accommodating space, the rest of the top wall and a portion of the upper side walls that connects with the rest of the top wall forming an installation area for installing part of the wheels thereon, the rest of the wheels being installed on the lower suitcase body, and the cover being installed on the upper suitcase body so as to open or close the access opening.
2. The hard suitcase according to claim 1, wherein the upper suitcase body and the lower suitcase body are connected in a tensile and closed manner.
3. The hard suitcase according to claim 2, further comprising an expanding zipper and a flexible band with a width larger than that of the expanding zipper, the flexible band has an upper side encircling and fixed on the upper side walls, and a lower side encircling and fixed on the lower side walls, and the expanding zipper configured at an outer side of the flexible band that is opposite to the accommodating space has an

upper side encircling and fixed on the upper side walls, and a lower side encircling and fixed on the lower side walls.

4. The hard suitcase according to claim 3, further comprising two enclosed plastic bones, one of which is partially covering an outer side of the expanding zipper and connected to the upper side walls, the other is partially covering the outer side of the expanding zipper and connected to the lower side walls, when the expanding zipper is closed, the two enclosed plastic bones contact with each other. 5
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5. The hard suitcase according to claim 1, wherein the upper suitcase body is butted up against the lower suitcase body firmly. 15
6. The hard suitcase according to claim 5, wherein a lower edge of the upper side walls and an upper edge of the lower side walls are butted to form a contacting line, a circular enclosed strip is provided to cover the contacting line and firmly connected with the upper side walls and the lower side walls. 20
7. The hard suitcase according to claim 6, wherein the circular enclosed strip comprises an inner enclosed strip covering the contacting line at an inner side of the upper side walls and the lower side walls, and an outer enclosed strip covering the contacting line at an outer side of the upper side walls and the lower side walls. 25
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8. The hard suitcase according to claim 1, wherein the upper suitcase body and the lower suitcase body are connected firmly in a sleeve manner. 35
9. The hard suitcase according to claim 8, wherein either the upper side walls or the lower side walls partially sleeves the other one, and the upper side walls and the lower side walls are firmly connected at a contacting area of the upper side walls and the lower side walls. 40
10. The hard suitcase according to claim 9, wherein a lower portion is formed by extending the lower edge of the upper side walls towards the accommodating space and then extending downward, and the lower portion is inserted into the lower side walls. 45

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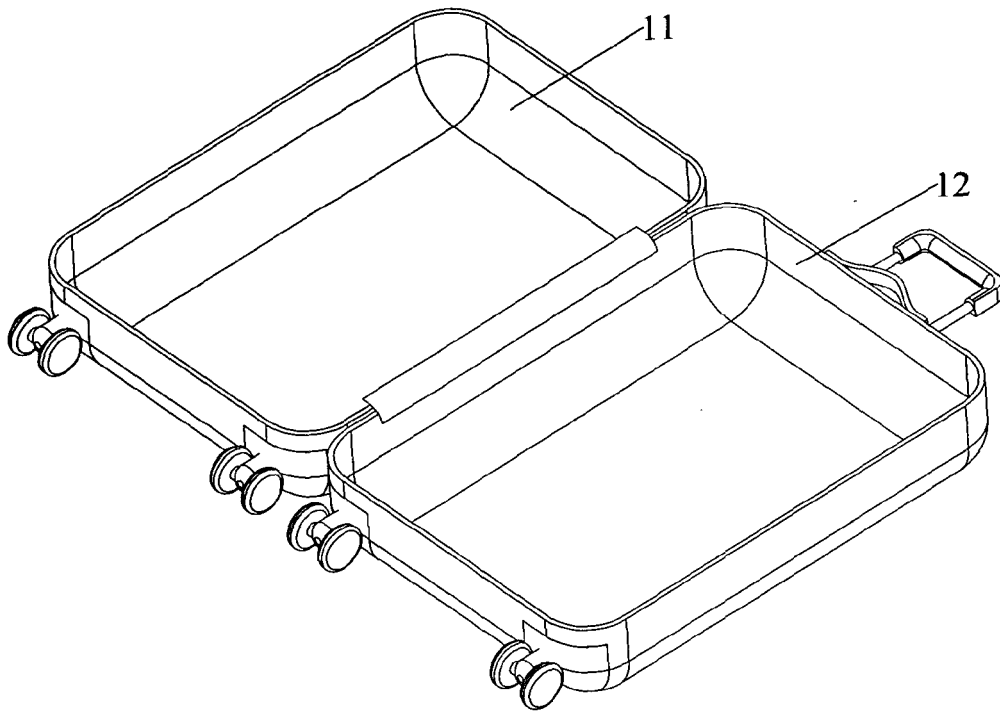


Fig. 1 (Prior art)

A00

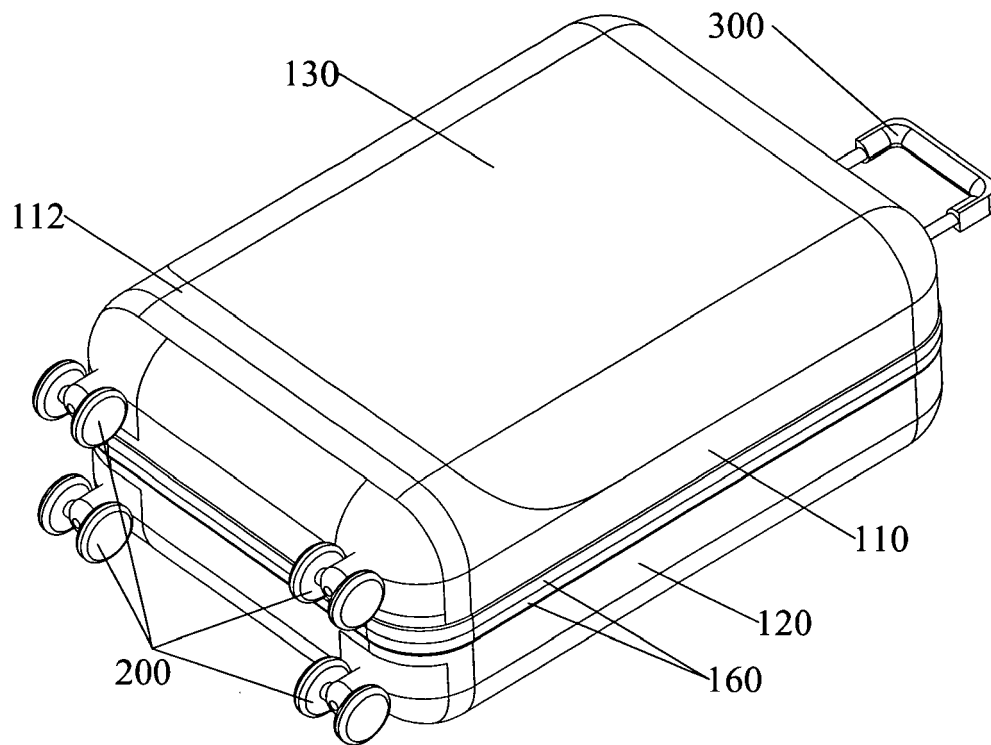


Fig. 2

A00

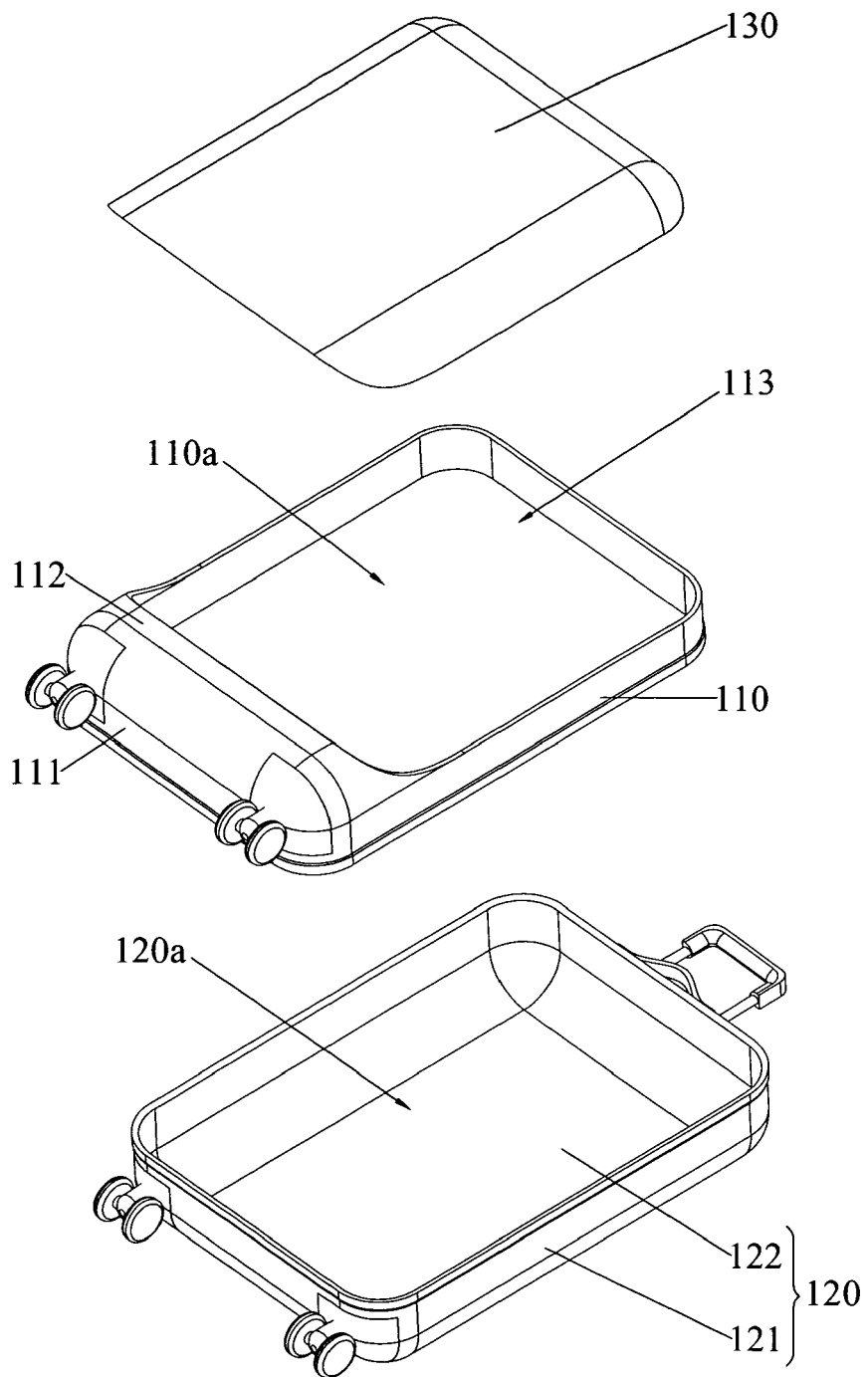


Fig.3

A00

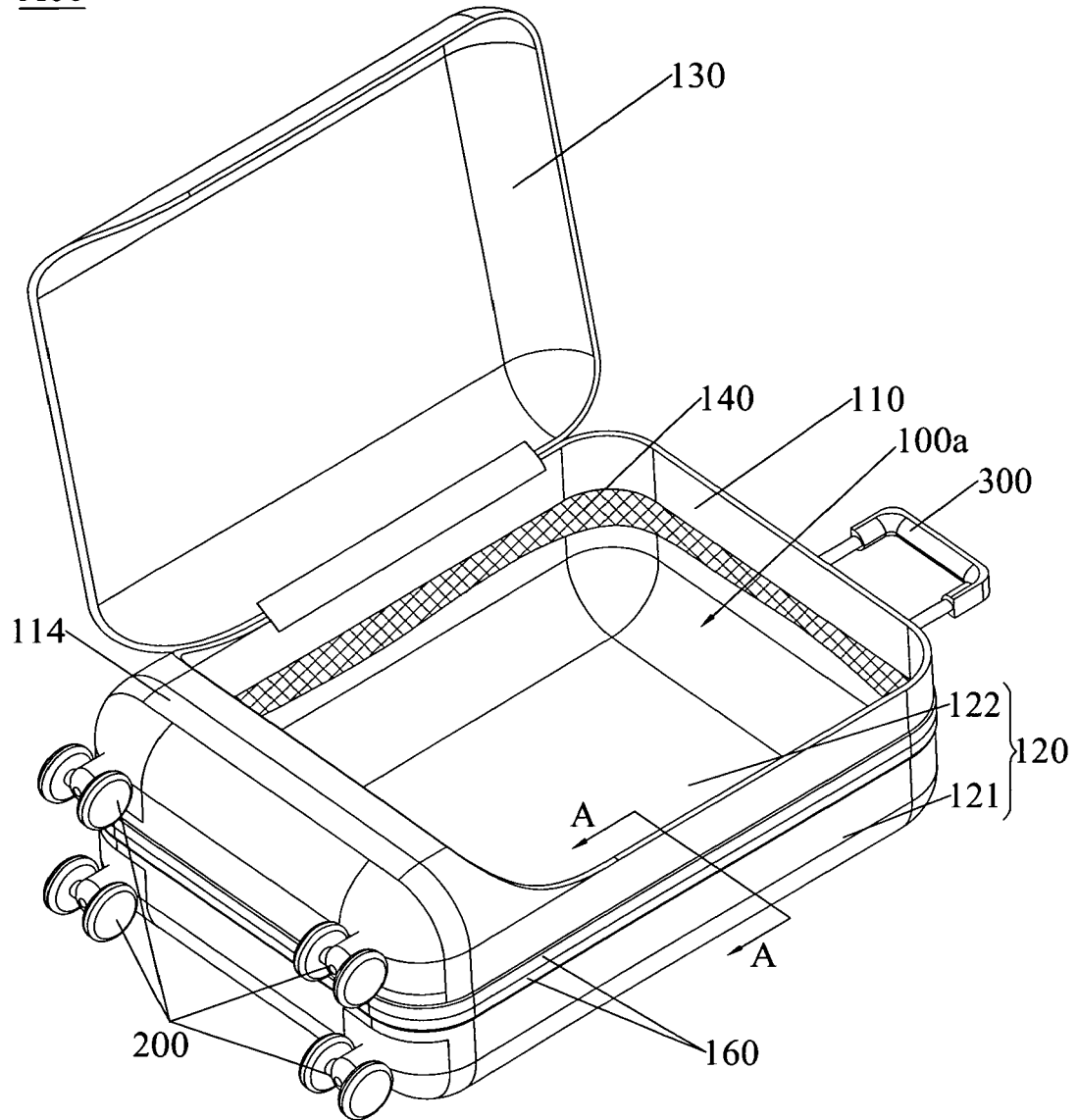


Fig. 4

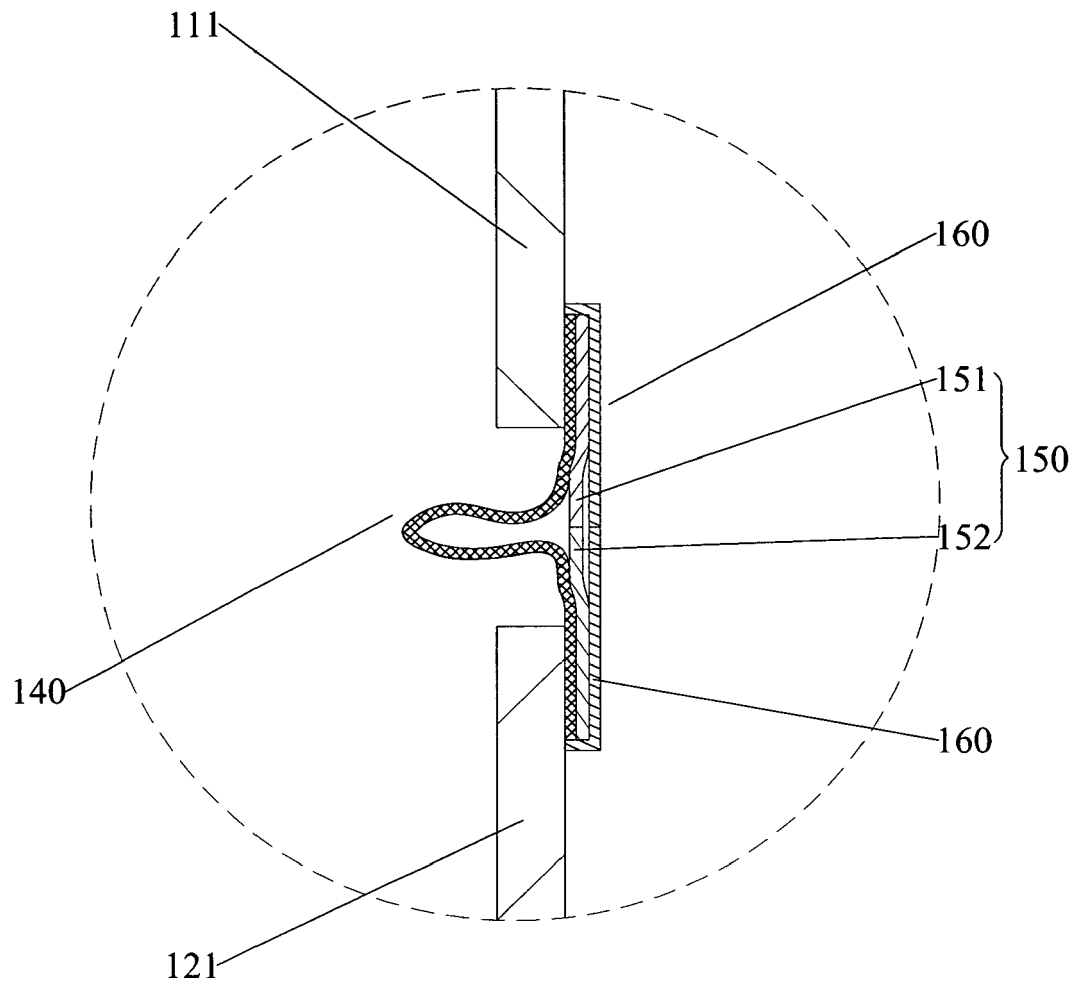


Fig.5

A00

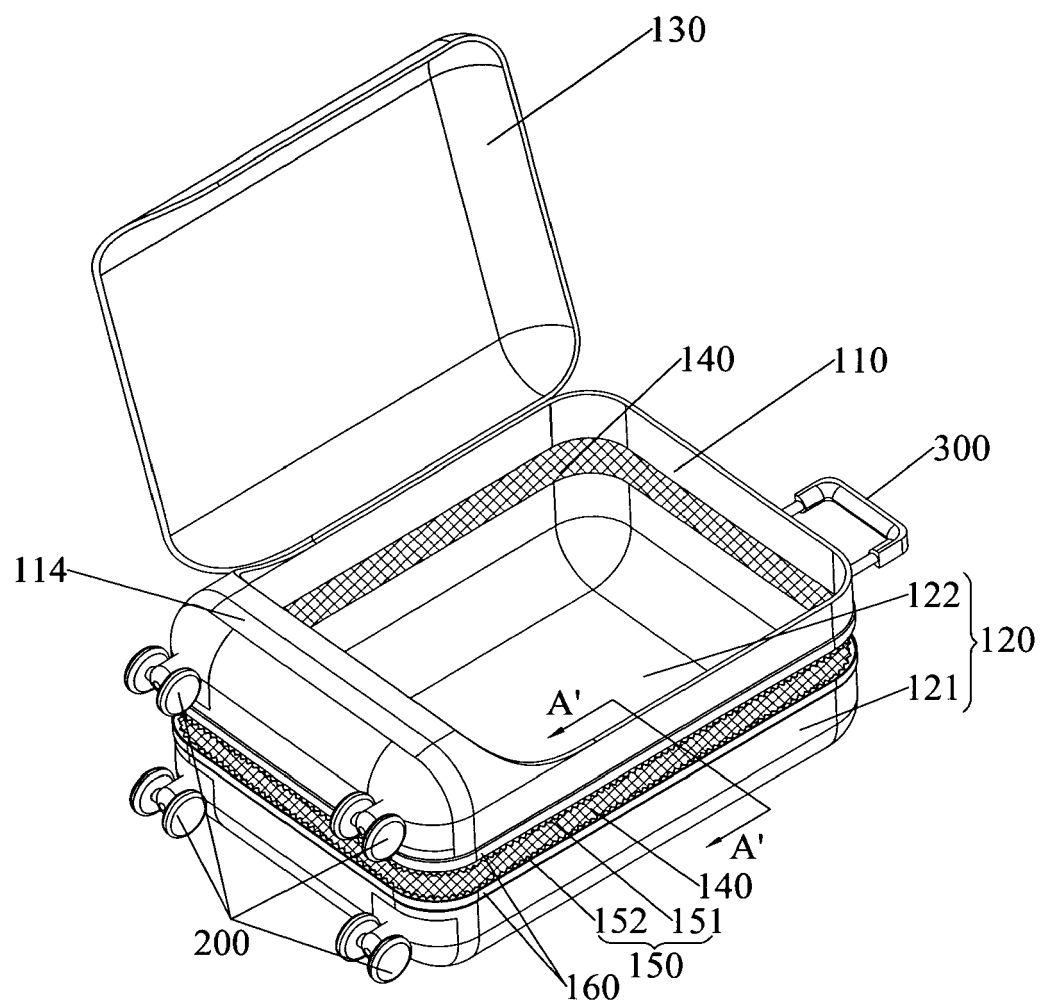


Fig. 6

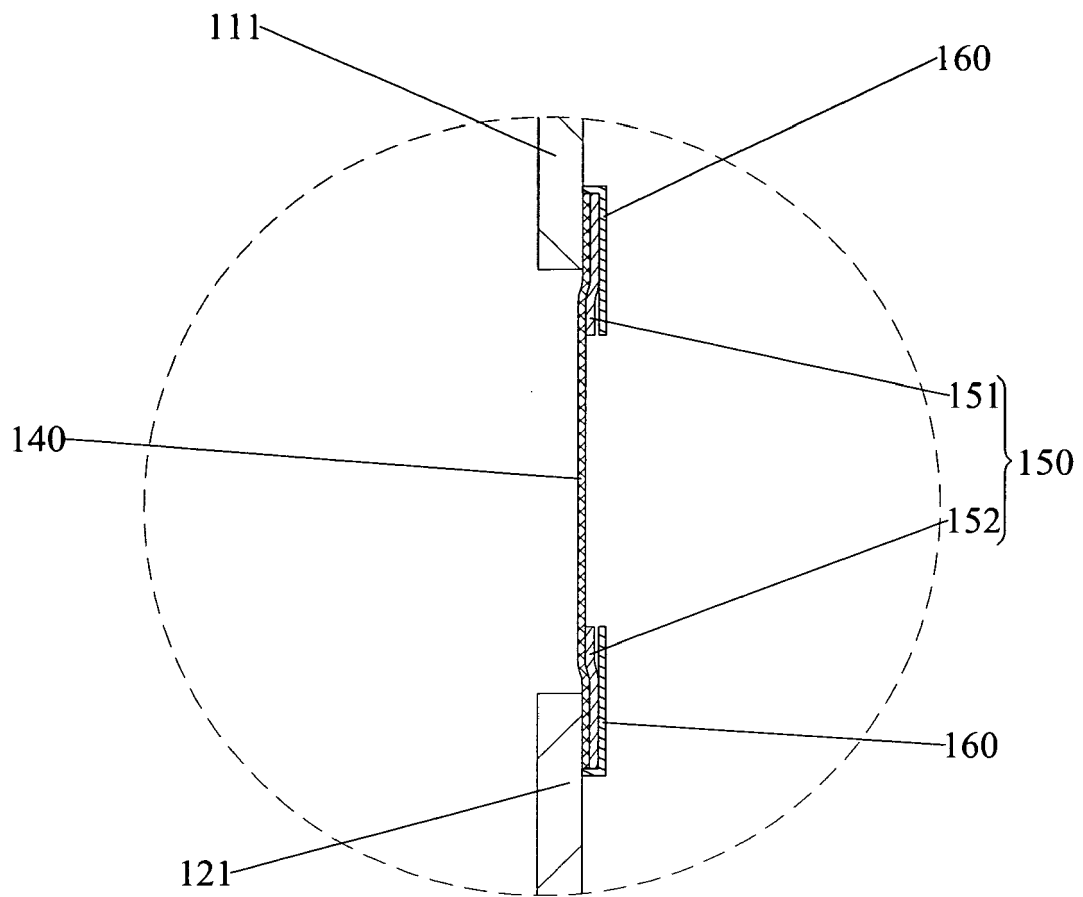


Fig. 7

A00

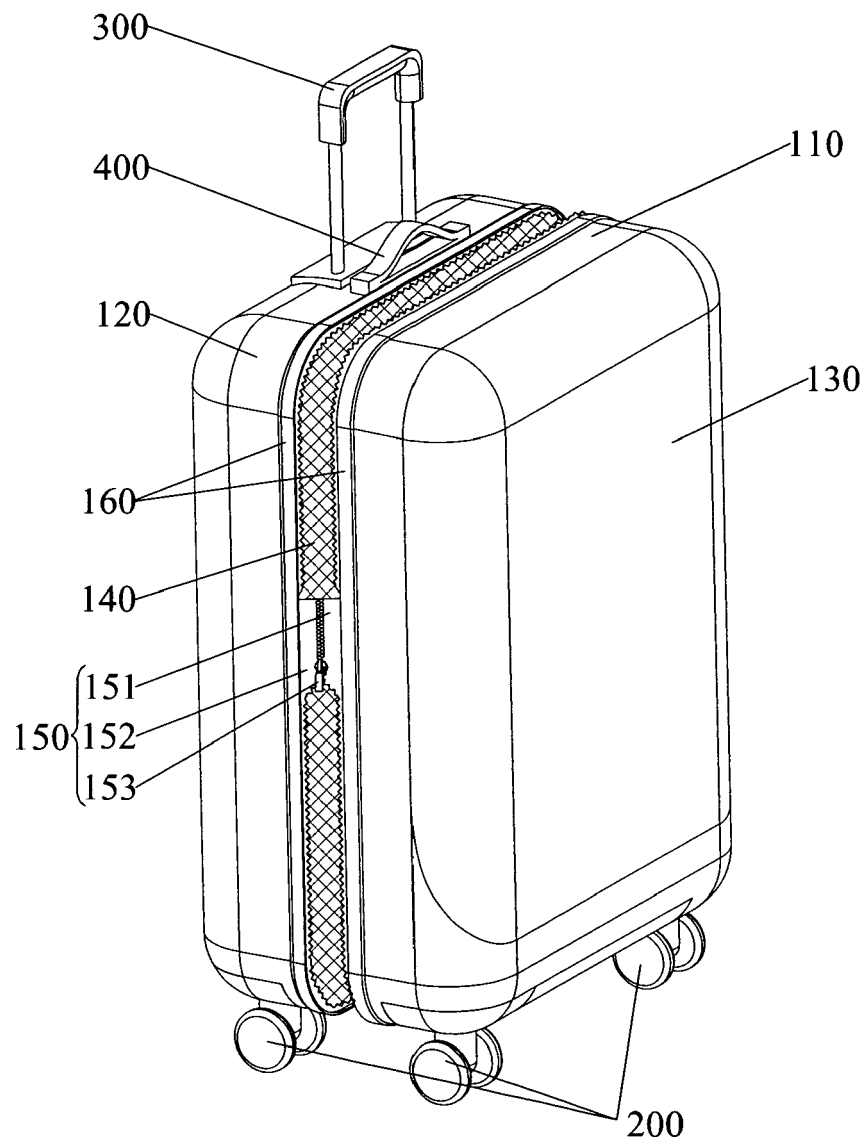


Fig. 8

B00

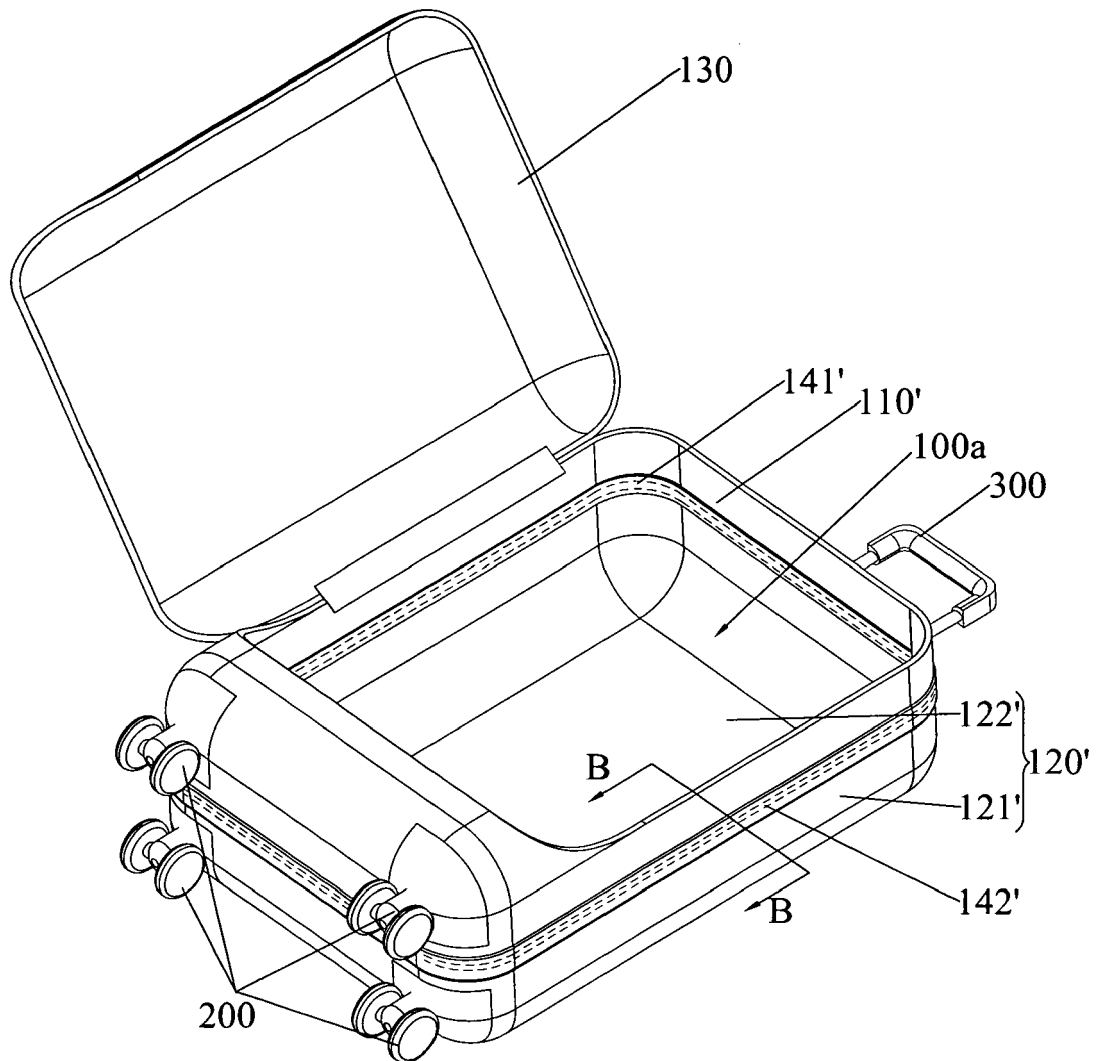


Fig. 9

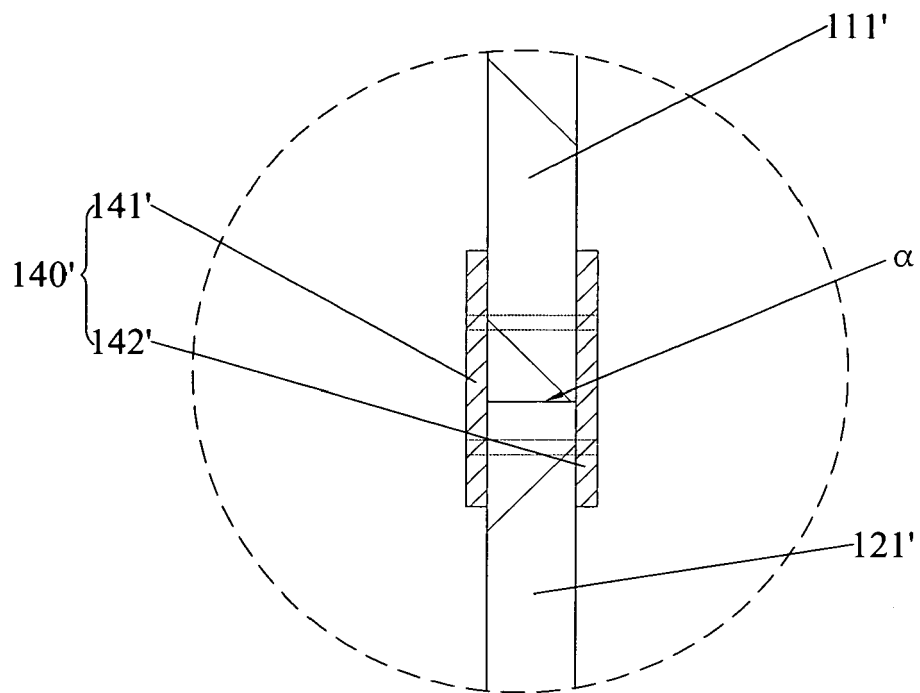


Fig.10

C00

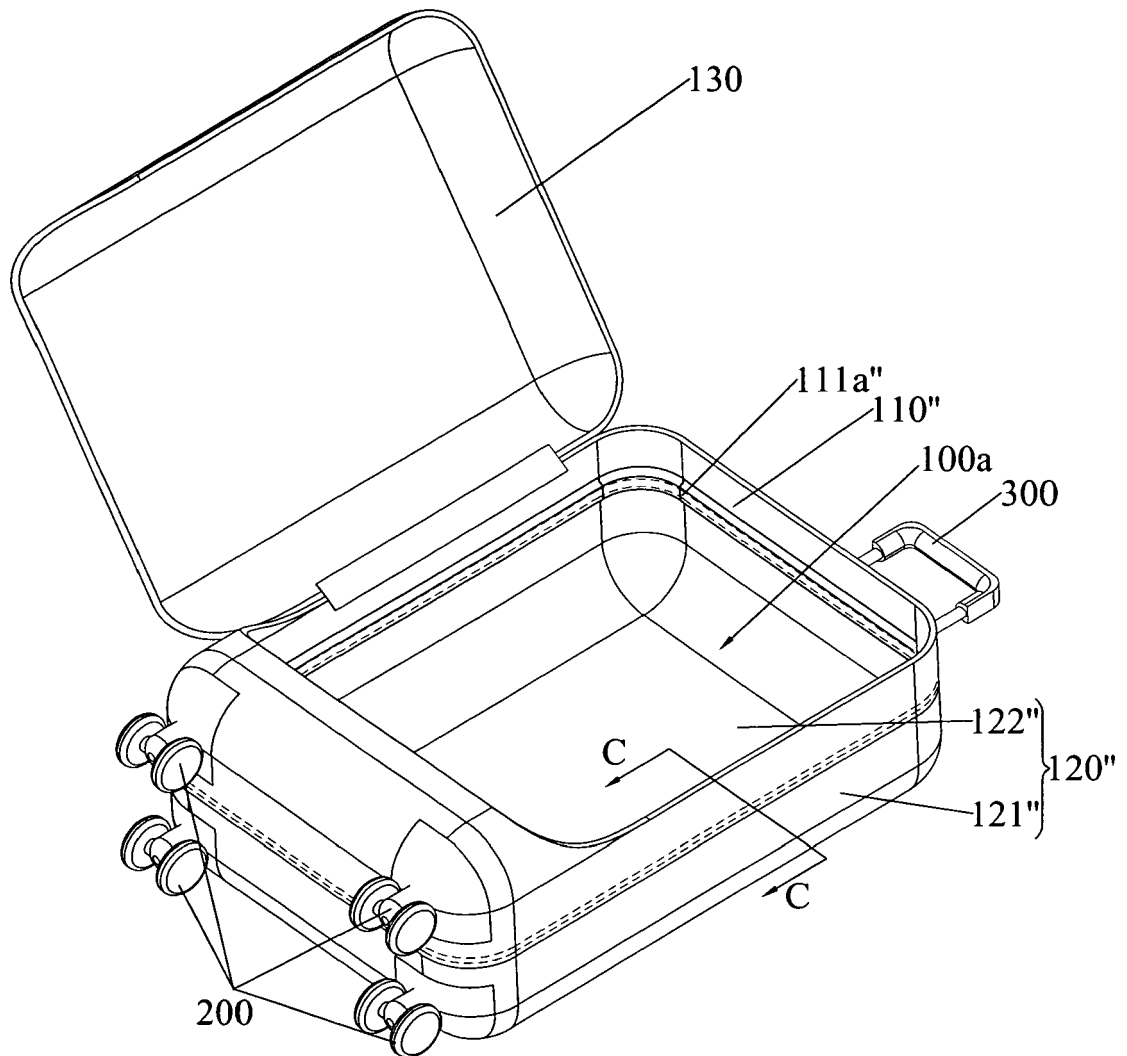


Fig. 11

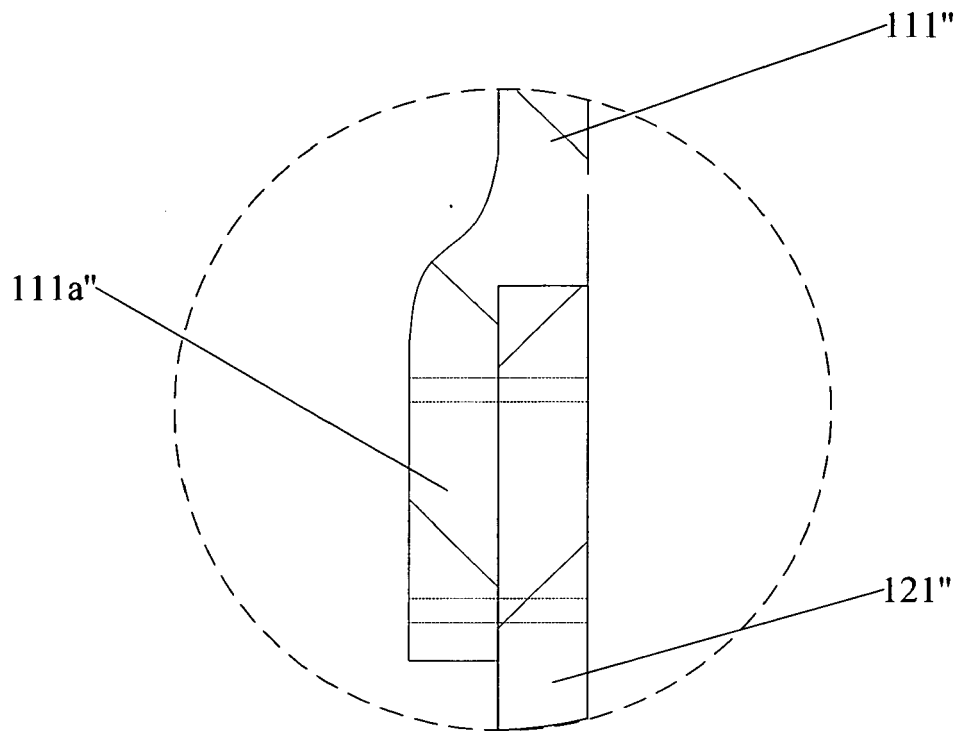


Fig.12



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Application Number
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