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(54) EXPANDABLE LUGGAGE

(57) An expandable luggage (1) comprises a first (2) and a second half-part (3) comprising a respective perimeter edge (8, 11). A first closing mechanism (12) associated with the perimeter edges (8, 11) and equipped with a first zip track (21) to close and open the luggage, and a second closing mechanism (13) associated with the perimeter edges (8, 11) and equipped with a second zip track (29) to close and open the luggage, wherein when the first zip track (12) is closed, the luggage has a minimum storage volume and wherein when the first zip track (12) is in open condition and the second zip track (13) is in closed condition, the luggage has a maximum storage volume. A first portion (12a) of the first closing mechanism (12) comprises connection members (35) operating between the first zip track (21) to at least one perimeter edge (8, 11) configured to take up a first operating configuration, corresponding to a first operating distance of the first zip track (21) from the perimeter edge (8, 11), and a second operating configuration, corresponding to a second operating distance of the first zip track (21) from the perimeter edge (8, 11).

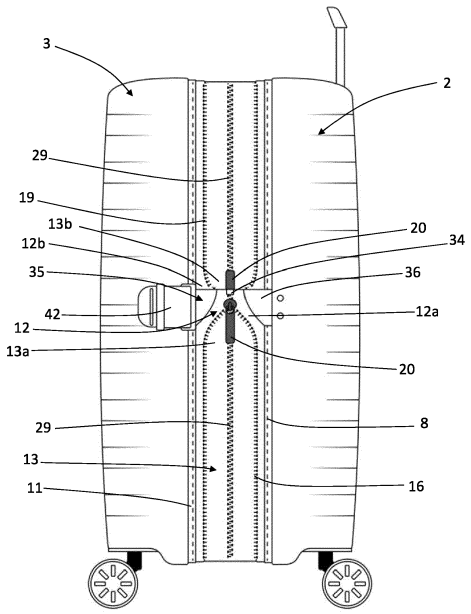

Fig 5

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Description

[0001] The present invention relates to expandable luggage, preferably luggage for transporting personal possessions during a journey, which can take up different storage volumes depending on requirements.

[0002] The storage space requirements of travelers vary considerably as a function of the type of journey that must be undertaken.

[0003] In the case of long journeys it is often necessary to have luggage with high storage volume, whereas for short journeys the storage volume of luggage can be smaller.

[0004] Expandable luggage that meets this requirement by providing a variable storage volume according to requirements is known.

[0005] This luggage provides that two shells that make the luggage are joined together by two closing mechanisms.

[0006] More in particular, a first closing mechanism comprises a first tape made in two half-parts that are joined (closed condition) and separated (open condition) by the sliding of a slider along a zip track. Each half-part is sewn, respectively, at the edge of the first or the second shell of the suitcase.

[0007] Similarly, a second closing mechanism comprises a second tape, also made in two half-parts joined (closed condition) and separated (open condition) by the sliding of a further slider along a zip track, wherein each half-part is sewn, respectively, at the edge of the first or the second shell of the suitcase.

[0008] The two tapes are superimposed over one another so that the first tape conceals the second tape. The second tape has greater transversal dimensions than the first tape, in particular one or both of the half-parts of the second tape have a greater width than the corresponding half-parts of the first tape.

[0009] When both of the closing mechanisms are closed, the suitcase is closed and is in the configuration of minimum expansion.

[0010] When the first closing mechanism is open and the second closing mechanism is closed, the suitcase is still closed and is in the configuration of maximum expansion.

[0011] When both of the closing mechanisms are open, the suitcase is open.

[0012] The Applicant has noted that in the suitcases briefly described above when the first closing mechanism is open and the second closing mechanism is closed, the zip track of the first closing mechanism, at an end portion thereof, continues to be engaged by the respective slider.

[0013] The Applicant has found that this leads to incomplete opening of the first closing mechanism and therefore causes incomplete expandability of the suitcase at the end portion of the first closing mechanism.

[0014] According to the experience of the Applicant, such a lack of expandability, although limited to only the end portion of the first closing mechanism, indirectly involves three sides of the suitcase, said suitcase managing to expand completely only at the opposite side to the one engaged by the end portion of the first closing mechanism.

[0015] The Applicant has found that this causes a reduction of the actual storage capacity of the suitcase when in condition of maximum expansion, as well as an unappealing asymmetry of the suitcase when in this last condition.

[0016] The Applicant has found that the maximum storage capacity of the suitcase when in condition of maximum expansion could be obtained by removing the slider from the zip track of the first closing mechanism. The Applicant has, however, noted that the operations necessary to reinsert the slider on the zip track would be too demanding and not always possible for an average user to carry out.

[0017] The Applicant has also hypothesized not connecting the end portion of the first closing mechanism to the edges of the opposite shells, so as to free such an end portion from the constraint with the shells of the suitcase and allow a free movement thereof.

[0018] The Applicant has, however, found that, in this way, when the user grips the slider that lies in the unconstrained end portion of the first closing mechanism to close the latter and take the suitcase into the condition of minimum expansion, the slider tends to jam and not to slide along the zip track due to the free movement of the end portion. It is almost always necessary for the user to grip and hold the free end portion of the first closing mechanism with one hand and actuate the slider with the other hand, making the operation not always easy.

[0019] The Applicant has also found that not connecting the end portion of the first closing mechanism to the edges of the opposite shells obtains an opening that allows access to the gap between the first and the second closing mechanism when the first closing mechanism is superimposed externally to the second. Undesired bodies could accidentally be inserted in such an opening, which could in some cases damage the closing mechanisms themselves.

[0020] The Applicant has also found that by using certain closing mechanisms, such opening could even allow access inside the suitcase.

[0021] The Applicant has perceived that by connecting the zip track of the first closing mechanism, at the end portion of the latter, to one or both of the edges of the shells so that the zip track can take up different operative distances from the edge(s) of the shells, it is possible to position the zip track at a minimum operating distance to make a configuration of minimum expansion of the luggage and at a maximum operating distance to make a configuration of maximum expansion of the luggage.

[0022] The Applicant has found that such a connection makes it possible to actuate the slider along the zip track also starting from the end portion of the first closing mechanism with a single hand, since such an end portion is not completely freed from the constraint with the edges

of the shell and is not therefore completely free to move in any direction.

[0023] The Applicant has also found that such a connection does not create any access opening to the gap between the first and the second closing mechanism.

[0024] The present invention therefore refers to an expandable luggage comprising:

a first half-part and a second half-part configured to define a storage space, wherein the first half-part and the second half-part comprise a respective perimeter edge;

a first closing mechanism associated with the perimeter edge of the first half-part and with the perimeter edge of the second half-part and equipped with a first zip track to close and open the luggage, and a second closing mechanism associated with the perimeter edge of the first half-part and with the perimeter edge of the second half-part and equipped with a second zip track to close and open the luggage;

wherein the first closing mechanism and the second closing mechanism are placed in at least partial superimposition relationship;

wherein when the first zip track is in closed condition, the first and the second half-part of luggage define a minimum storage volume and wherein when the first zip track is in open condition and the second zip track is in closed condition, the first and the second half-part of luggage define a maximum storage volume;

wherein a first portion of the first closing mechanism comprises connection members operating between the first zip track at at least one among the perimeter edge of the first half-part and the perimeter edge of the second half-part, the connection members being configured to take up a first operating configuration, corresponding to a first operating distance of the first zip track at the first portion of the first closing mechanism from the perimeter edge on which the connection members are operative, and a second operating configuration, corresponding to a second operating distance of the first zip track at the first portion of the first closing mechanism from the perimeter edge.

[0025] In the present description and in the following claims, the term "tape" is meant to indicate a substantially tape-like and flexible assembly (monolithic or consisting of many elements joined together) in which two opposite ends can be identified.

[0026] The term "connected" is meant to indicate that an element has a constraint with respect to the element to which it is connected. Such a constraint does not necessarily have to be understood as direct (except when explicitly specified), but can also be understood as an indirect constraint, in other words it can occur by interposition of further intermediate elements between the two elements "connected" together.

[0027] In the present description and in the following claims, the term "zip track" of a closing mechanism is meant to indicate the path that a slider follows along the closing mechanism to open and close the latter.

[0028] The luggage according to the present invention can comprise one or more of the following features considered singularly or in combination with each other.

[0029] Preferably, the first closing mechanism comprises first and a second tape having respective first longitudinal edges defining the first zip track; the first longitudinal edges being configured to be coupled together to define the closed condition of the first zip track and to be decoupled to define the open condition of the first zip track.

[0030] Preferably, the connection members operate between the first zip track and both the perimeter edge of the first half-part and the perimeter edge of the second half-part of the luggage.

[0031] In this way, the first portion of the first closing mechanism is connected to both the half-parts of the luggage through the connection members so that the first zip track can take up different operative positions with respect to both the half-parts of the luggage.

[0032] Preferably, the first closing mechanism comprises a second portion that is connected respectively to the perimeter edge of the first and the second half-part of the luggage without the help of the connection members. The second portion of the first closing mechanism is preferably connected to the perimeter edge of the first and second half-part of the luggage so that the first zip track, at the second portion of the first closing mechanism, lies a single operating distance from the perimeter edges of the two half-parts of the luggage.

[0033] Preferably, the first zip track comprises an end stop for a slider; said end stop being arranged on said first portion of the first closing mechanism. The end stop acts on the first longitudinal edges of the first and the second tape of the first closing mechanism, so as to hold the first and the second tape of the first closing mechanism joined together and in close together condition. In particular, the end stop keeps the respective first longitudinal edges of the first and second tape in contact relationship.

[0034] The end stop for the slider prevents the slider from being able to be removed from the first zip track. The position of the end stop is at the first portion of the first closing mechanism. In this way, the connection members allow a controlled movement of the end stop in a direction substantially perpendicular to the edges of the two half-parts and therefore allow the luggage to actuate the maximum expansion.

[0035] Preferably, the first operating distance corresponds to a minimum distance of the end stop from the perimeter edge and the second operating distance corresponds to a maximum distance of the end stop from the perimeter edge.

[0036] Preferably, the minimum distance of the end stop from the perimeter edge coincides with the operating distance at which the first zip track in closed condition,

in the second portion of the first closing mechanism, lies from the perimeter edge.

[0037] The minimum distance of the end stop is thus preferably such as to place the end stop substantially aligned with the first zip track when the latter is closed. In this way, when the luggage is in the condition of minimum expansion, the first zip track extends entirely (end stop included) parallel to the edges of the two half-parts of the luggage and entirely at the same operating distance from the edges of the two half-parts of the luggage.

[0038] Preferably, the maximum distance of the end stop from the perimeter edge is such as to misalign, in the direction parallel to the edges of the two half-parts, the end stop from the first zip track. When the end stop is at the maximum distance from the perimeter edge, the luggage is in the condition of maximum expansion. In this condition, the first longitudinal edges of the first and second tape (that define the first zip track) lie, at the second portion of the first closing mechanism, substantially parallel and apart from one another (open condition of the first closing mechanism). In this condition, the end stop is not aligned with the first longitudinal edges of the first and second tape at the second portion of the first closing mechanism.

[0039] Preferably, the connection members are configured to take up the first operating configuration when the first zip track is in closed condition. Preferably, the connection members are such as to take up the first operating configuration when the first zip track is in closed condition without the need for an external intervention to switch the connection members in such an operating configuration. In other words, the connection members are such as to autonomously reach the first operating configuration when the first zip track is in closed condition.

[0040] Preferably, the connection members are elastically deformable.

[0041] Alternatively, the connection members can be configured as many rigid or flexible parts slidably connected together to form a telescopic element.

[0042] Again alternatively, the connection members can be configured as many rigid or flexible parts hinged together to make an extensible element through book-style folding.

[0043] Again alternatively, the connection members can be configured as many rigid or flexible parts hinged together to form a windable element.

[0044] Preferably, in the first operating configuration the connection members are undeformed.

[0045] Preferably, in the passage from the first to the second operating configuration the connection members elastically deform and recover the elastic deformation in the passage from the second operating configuration to the first operating configuration. In this way, the connection members tend to take the first zip track, arranged at the first portion of the first closing mechanism, back to the first operating distance, in other words in the condition of minimum expansion of the luggage.

[0046] Preferably, the connection members comprise a first elastic fabric arranged between the first longitudinal edge of the first tape and the perimeter edge of the first half-part of the luggage.

[0047] Preferably, the connection members comprise a second elastic fabric arranged between the first longitudinal edge of the second tape and the perimeter edge of the second half-part of the luggage.

[0048] Preferably, the first and the second elastic fabric elastically deform, expanding, when the luggage takes up the condition of maximum expansion. In this way, when the luggage needs to be arranged in the condition of maximum expansion, the first and the second elastic fabric allow the first zip track, arranged at the first portion of the first closing mechanism, to move away from the edges of the two half-parts of the luggage and thus allow the maximum expansion of the inner volume of the luggage.

[0049] Preferably, the first and the second elastic fabric are arranged at least at the end stop of the first zip track.

[0050] Preferably, the first elastic fabric is connected to the first tape and to an area of the luggage arranged at the perimeter edge of the first half-part of the luggage.

[0051] Preferably, the second elastic fabric is connected to the second tape and to an area of the luggage arranged at the perimeter edge of the second half-part of the luggage.

[0052] The exact connection position of the elastic fabrics on the first and the second tape of the first closing mechanism is comprised between the first longitudinal edge and the second longitudinal edge.

[0053] Preferably, the first and the second elastic fabric are connected a same distance from the longitudinal edge of the respective tape.

[0054] Alternatively, the first and the second elastic fabric can be integral with the first and the second tape. In this case, preferably, at least one portion of the first and of the second tape are made of elastic fabric.

[0055] Preferably, on the opposite side with respect to the connection with the first or the second tape, the first and the second elastic fabric are connected to a respective area arranged at the free perimeter edge of the first and the second half-part of the luggage.

[0056] Preferably, the first portion of the first closing mechanism on which the connection members are operative is an end portion of the first closing mechanism.

[0057] Preferably, the first closing mechanism comprises a third portion, opposite to the first portion, which defines a second end portion for the first closing mechanism.

[0058] Preferably, on the second end portion of the first closing mechanism there are further connection members. Such further connection members are preferably of the same type as the connection members already mentioned above.

[0059] Preferably, the connection members are only provided at the first and, even more preferably, the second end of the first closing mechanism.

[0060] Preferably, a further end stop is arranged at the

second end portion of the first closing mechanism. Such a further end stop is active on the first zip track on the opposite side with respect to the aforementioned end stop. The further end stop also acts on the first longitudinal edges of the first and of the second tape of the first closing mechanism, so as to keep the first and the second tape of the first closing mechanism joined together and in close-together condition. In particular, the further end stop keeps the respective first longitudinal edges of the first and of the second tape in contact relationship. The further end stop acts on a further slider of the first zip track, so that the first zip track can be opened and closed by acting on only one of the two sliders or on both of the sliders. The position and the features of the further end stop are identical to those described above in relation to the end stop, except for the fact that the further end stop, as stated, is arranged at the second end portion of the first closing mechanism.

[0061] Preferably, the first closing mechanism and the second closing mechanism are associated with at least three consecutive sides of each perimeter edge.

[0062] Preferably, the first closing mechanism is superimposed over the second closing mechanism. In this way, when the luggage is in the condition of minimum expansion, only the first closing mechanism is visible and able to be actuated.

[0063] Further features and advantages of the invention will be highlighted better by the description of some preferred embodiments, made with reference to the attached drawings, in which:

- figure 1 is a schematic side view of an expandable luggage in accordance with the present invention in a first operating configuration;
- figure 2 is a schematic side view, on the opposite side with respect to the view of figure 1, of the luggage of figure 1 in a second operating configuration;
- figure 3 is a schematic side view of the luggage of figure 1 in a third operating configuration;
- figure 4 is a schematic side view of the luggage of figure 1 in a fourth operating configuration;
- figure 5 is a schematic side view of the luggage of figure 2 with some parts removed to better highlight others;
- figure 6 is a schematic view according to the section VI-VI of the luggage of figure 1 in a first variant embodiment;
- figure 6A is a schematic view according to the section VI-VI of the luggage of figure 1 in a second variant embodiment;
- figure 7 is a schematic view according to the section VII-VII of the luggage of figure 2 in a first variant embodiment; and
- figure 7A is a schematic view according to the section VII-VII of the luggage of figure 2 in a second variant embodiment.

[0064] The representations in the attached figures should not necessarily be considered to be to scale and do not necessarily respect the proportions between the various parts.

[0065] With reference to the attached figures, an expandable luggage in accordance with the present invention is wholly indicated with 1.

[0066] The expandable luggage 1 according to the attached figures is a rigid luggage, in other words of the type comprising a first half-part 2 and a second half-part 3 preferably made of plastic material capable of maintaining a predetermined shape or recovering such a predetermined shape following a deformation. In this type of luggage, the first and the second half-part 2, 3 are called shells. Therefore, in the rest of the present description reference will be made without distinction to the first shell or to the first half-part 2 and to the second shell or to the second half-part 3.

[0067] In other embodiments that are not illustrated, the expandable luggage is of the soft type, in other words of the type in which the first and the second half-part are made of textile material.

[0068] With particular reference to figure 1, the first half-part 2 and/or the second half-part 3 comprises one or more accessories 4 arranged to allow the transportation of the luggage, schematized in the attached figures with a transportation handgrip and a telescopic handle.

[0069] The first 2 and the second half-part 3 also comprise respective two wheels 5 to allow the luggage to slide on a surface during transportation.

[0070] The first half-part 2 comprises four side walls 6 and a bottom wall 7 from which the side walls 6 extend.

[0071] The side walls 6 have respective free edges that define a perimeter edge 8 of the first half-part 2.

[0072] The second half-part 3 comprises four side walls 9 and a bottom wall 10 from which the side walls 9 extend.

[0073] The side walls 9 have respective free edges that define a perimeter edge 11 of the second half-part 3.

[0074] The first 2 and the second half-part 3 are joined together by a first closing mechanism 12, of the zip type, which preferably extends along the entire development of the perimeter edges 8, 11 of the two half-parts 2, 3.

[0075] The first 2 and the second half-part 3 are also joined together by a second closing mechanism 13, of the zip type, which preferably extends along the entire development of the perimeter edges 8, 11 of the two half-parts 2, 3 (tops better illustrated in figure 4).

[0076] As illustrated in figure 3 the first closing mechanism 12 comprises a first tape 14 having a first longitudinal edge 15 equipped with a plurality of teeth 16. The first closing mechanism 12 also comprises a second tape 17 also having a first longitudinal edge 18 equipped with a plurality of teeth 19. The first longitudinal edges 15, 18, with the respective teeth 16, 19, of the first and second tape 14, 17 are engaged by a slider 20 and define a first zip track 21.

[0077] Similarly (see figure 2), the second closing mechanism 13 comprises a first tape 22 having a first

longitudinal edge 23 equipped with a plurality of teeth 24. The second closing mechanism 13 also comprises a second tape 25 also having a first longitudinal edge 26 equipped with a plurality of teeth 27. The first longitudinal edges 23, 26 with the respective teeth 24, 27, of the first and second tape 22, 25 are engaged by a slider 28 and define a second zip track 29.

[0078] As illustrated in figure 3, the first closing mechanism 12 is superimposed over the second closing mechanism 13. In particular, when the first closing mechanism 12 is in closed condition, it conceals the second closing mechanism 13, whether the second closing mechanism 13 is in closed or open condition.

[0079] When the first zip track 21 is in closed condition, the first 2 and the second half-part 3 define a minimum storage volume (condition illustrated in figure 1). When the first zip track 21 is in open condition and the second zip track 29 is in closed condition, the first 2 and the second half-part 3 define a maximum storage volume (condition illustrated in figure 2). When both the first zip track 21 and the second zip track 29 are in open condition, access to inside the luggage 1 is allowed (condition partially illustrated in figure 4).

[0080] For this purpose, the distance measured in the transversal direction, in other words in a direction substantially perpendicular to the first zip track 21, of the teeth 16, 19 of the first closing mechanism 12 from the respective perimeter edges 8, 11 of the two shells 2, 3 is less than the distance, measured along the same direction, of the teeth 24, 27 of the second closing mechanism 13 from the respective perimeter edges 8, 11 of the two shells 2, 3.

[0081] In a first embodiment illustrated in figure 6A, the first 14 and the second tape 17 of the first closing mechanism 12 comprise a respective second longitudinal edge 30, 31 and the first 22 and the second tape 25 of the second closing mechanism 13 comprise a respective second longitudinal edge 32, 33.

[0082] The second longitudinal edges 30, 32 of the first tapes 14, 22 of the first 12 and of the second closing mechanism 13 are connected to the first shell 2, for example they are sewn, thermowelded or glued to the first shell 2. The second longitudinal edges 30, 32 of the first tapes 14, 22 of the first 12 and of the second closing mechanism 13 are directly connected to the perimeter edge 8 of the first shell 2 along at least three consecutive sides of the perimeter edge 8.

[0083] In this embodiment, the second longitudinal edges 31, 33 of the second tapes 17, 25 of the first 12 and of the second closing mechanism 13 are connected to the second shell 3, for example they are sewn, thermowelded or glued to the second shell 3. The second longitudinal edges 31, 33 of the second tapes 17, 25 of the first 12 and of the second closing mechanism 13 are directly connected to the perimeter edge 11 of the second shell 3 along at least three consecutive sides of the perimeter edge 11.

[0084] In other words, in this embodiment, the first 12 and the second closing mechanism 13 are structurally identical and connected to the shells 2, 3 of the luggage 1 in superimposition relationship.

[0085] In a different embodiment illustrated in figure 6, the first tapes 14, 22 of the first 12 and of the second closing mechanism 13 are integral with one another.

[0086] In this embodiment, the first 14 and the second tape 17 of the first closing mechanism 12 comprise a respective second longitudinal edge 30, 31 which are connected respectively to the first shell 2 and to the second shell 3 along at least three sides thereof. In particular, the second longitudinal edge 30 of the first tape 14 is directly connected, for example by sewing, by thermowelding or by gluing, to the perimeter edge 8 of the first shell 2. The second longitudinal edge 31 of the second tape 17 is directly connected, for example by sewing, by thermowelding or by gluing, to the perimeter edge 11 of the second shell 3.

[0087] The first 22 and the second tape 25 of the second closing mechanism 13 comprise a respective second longitudinal edge 32, 33. The second longitudinal edge 32 of the first tape 22 is directly connected to the first tape 14 of the first closing mechanism 12 in a position comprised between the first 15 and the second longitudinal edge 30 of the first tape 14. Similarly, the second longitudinal edge 33 of the second tape 25 is directly connected to the second tape 17 of the first closing mechanism 12 in a position comprised between the first 18 and the second longitudinal edge 31 of the second tape 17. Preferably, the first tape 22 of the second closing mechanism 13 is directly connected to the first tape 14 of the first closing mechanism 12 in the same position in which the second tape 25 of the second closing mechanism 13 is directly connected to the second tape 17 of the first closing mechanism 12.

[0088] As shown in figure 6, the first 22 and the second tape 25 of the second closing mechanism 13 have a size, measured in the transversal direction, greater than the distance that separates the first longitudinal edges 15, 18 of the first 14 and second tape 17 of the first closing mechanism 12 from the respective point in which the tapes 22, 25 of the second closing mechanism 13 are connected to the tapes 14, 17 of the first closing mechanism 12.

[0089] In both the embodiments, the first 12 and the second closing mechanism 13 respectively comprise a first end portion 12a, 13a and a second end portion 12b, 13b opposite to the first (as illustrated in figure 5).

[0090] As schematically illustrated in figure 5, the first end portions 12a, 13a are partially superimposed over the second end portions 12b, 13b, so that the first 12 and the second closing mechanism 13 extend along the entire perimeter edge 8, 11 of the first and of the second shell 2, 3.

[0091] At the first 12a and the second end portion 12b of the first closing mechanism 12, there is a respective end stop 34 (only one of which is visible in figure 5) arranged to stop the sliding of a slider 20 and avoid the

complete disengagement thereof from the first zip track 21. The first zip track 21 is thus equipped with two sliders 20 having opposite operative directions.

[0092] Similarly, at the first 13a and second end portion 13b of the second closing mechanism 13, there is a respective end stop (not illustrated) arranged to stop the sliding of a slider 28 and avoid the complete disengagement thereof from the second zip track 29. The second zip track 29 is thus equipped with two sliders 28 having opposite operative directions.

[0093] In other embodiments, the end stop of the second closing mechanism 13 can be provided in other positions not comprised in the first 13a and second end portion 13b.

[0094] The end stop can be made from a metallic or plastic clip arranged on the teeth of the respective closing mechanism, can be made by fusion of some teeth of the respective closing mechanism or can be made by gluing of some teeth of the respective closing mechanism.

[0095] In the operating configuration of figure 5, the two sliders 28 of the second zip track 29 (which is illustrated in closed condition) are concealed by the sliders 20 of the first zip track 21 (which is illustrated in open condition).

[0096] The first end portion 12a of the first closing mechanism 12 comprises connection members 35 which act between the first zip track 21 and at least one (preferably both) of the perimeter edges 8, 11 of the two shells 2, 3. The connection members 35 act on the first zip track 21 at the end stop 34, as schematically illustrated in figure 5. In particular, the connection members 35 act on a limited portion of the first closing mechanism 12 which comprises the end stop 34. The connection members 35 do not therefore act on the entire extension of the first zip track 21 but only on a limited portion thereof.

[0097] In particular, at the portion of the first closing mechanism 12 on which the connection members 35 act, the first 14 and the second tape 17 are not directly connected to the perimeter edges 8, 11 of the two shells 2, 3. At the portion of the first closing mechanism 12 on which the connection members 35 act, the first 14 and the second tape 17 are connected to the perimeter edges 8, 11 of the two shells 2, 3 through the connection members 35.

[0098] The connection members 35 are configured to take up at least two operative configurations.

[0099] The first operating configuration of the connection members 35 corresponds to a first operating distance between the first zip track 21 and the perimeter edges 8, 11 of the two shells 2, 3. Such a first operating distance is such that the first zip track 21 is at a minimum distance from the longitudinal edges 8, 11 of the two shells. In this operative condition, the end stop 34 is substantially aligned with the first zip track 21 and the latter extends for the entire extension thereof parallel to the perimeter edges 8, 11 of the two shells 2, 3. In the first operating configuration of the connection members 35, the luggage 1 is in the condition of minimum expansion, in other words the first zip track 21 is closed. Preferably, the second operative condition of the connection members 35 can only be reached with the first closing mechanism 12 open.

[0100] The second operating configuration of the connection members 35 corresponds to a second operating distance between the first zip track 21 and the perimeter edges 8, 11 of the two shells 2, 3. Such a second operating distance is such that the portion of the first zip track 21 on which the connection members 35 act is at a maximum distance from the longitudinal edges 8, 11 of the two shells. In this operative condition, the end stop 34 is misaligned from the first zip track 21, as schematically illustrated in figure 5. In particular, the end stop 34 is substantially aligned with the second zip track 29. As illustrated in figure 5, in the second operating configuration the connection members 35 allow the first 14 and the second tape 17 of the end portion 12a of the closing mechanism 12 to be distanced from the longitudinal edges 8, 11 of the shells 2, 3. In the second operating configuration of the connection members 35, the luggage 1 is in the condition of maximum expansion, with the first zip track 21 open and the second zip track 29 closed. In this condition, the teeth 16, 19 of the first 14 and of the second tape 17 are parallel to the longitudinal edges 8, 11 of the two shells 2, 3 along the entire extension of the first zip track 21 in which the tapes 14, 17 are directly connected to the longitudinal edges 8, 11 and deviate towards the end stop 34 at the portion of the first zip track 21 on which the connection members 35 act, as illustrated in figure 5.

[0101] In the preferred embodiment of the invention, the connection members 35 comprise an elastic fabric 36. Preferably, the elastic fabric 36 comprises a first elastic insert 37 which connects the first tape 14 of the first closing mechanism 12 to the peripheral edge 8 of the first shell 2. The elastic fabric 36 comprises a second elastic insert 38 which connects the second tape 17 of the first closing mechanism 12 to the peripheral edge 11 of the second shell 3.

[0102] When the luggage 1 is in the condition of minimum expansion (for example because the luggage 1 is empty or contains little material), the elastic fabric 36 is undeformed and positions the first 14 and the second tape 17 of the first end portion 12a of the first closing mechanism 12 substantially in alignment with the portions of first 14 and second tape 17 directly connected to the peripheral edges 8, 11 of the two shells 2, 3.

[0103] When the luggage 1 is in the condition of maximum expansion (for example because the luggage 1 is filled with clothes or similar), the elastic fabric 36 is elastically deformed and allows the first 14 and the second tape 17 of the first end portion 12a to move away from the portions of first 14 and second tape 17 directly connected to the peripheral edges 8, 11 of the two shells 2, 3, as illustrated in figure 5.

[0104] In both of the embodiments of the first closing mechanism 12 and of the second closing mechanism 13 illustrated in figure 6 and 6A, the first elastic insert 37 is

connected to the first tape 14 of the first closing mechanism 12 and is connected to the peripheral edge 8 of the first shell 2 (as shown in figures 7 and 7A). Preferably, the first elastic insert 37 is directly connected to the first tape 14 of the first closing mechanism 12 and directly connected to the peripheral edge 8 of the first shell 2. For this purpose, the first elastic insert 37 can be sewn to the first tape 14, can be thermowelded or glued to the first tape 14 or can be integral with the first tape 14. Preferably, the first elastic insert 37 can be sewn, thermowelded, glued or in any case made integral with the peripheral edge 8 of the first shell 2 or can be sewn, thermowelded or glued to a coating 39 for the peripheral edge 8, as illustrated in figures 7 and 7A.

[0105] In both of the embodiments of the first closing mechanism 12 and of the second closing mechanism 13 illustrated in figures 7 and 7A, the second elastic insert 38 is connected to the second tape 17 of the first closing mechanism 12 and is connected to the peripheral edge 11 of the second shell 3. Preferably, the second elastic insert 38 is directly connected to the second tape 17 of the first closing mechanism 12 and directly connected to the peripheral edge 11 of the second shell 3. For this purpose, the second elastic insert 38 can be sewn to the second tape 17, can be thermowelded to the second tape 17 or can be integral with the second tape 17. Preferably, the second elastic insert 38 can be sewn, thermowelded, glued or in any case made integral with the peripheral edge 11 of the second shell 3 or can be sewn, thermowelded or glued to a coating 40 for the peripheral edge 11, as illustrated in figures 7 and 7A.

[0106] With reference to figure 5, the connection members 35 are also provided on the second end portion 12b of the first closing mechanism 12. What has been described above in relation to the connection members 35 acting on the first end portion 12a of the first closing mechanism 12 applies identically to the connection members 35 acting on the second end portion 12b.

[0107] In order to conceal the first 12a and the second end portion 12b of the first closing mechanism 12 (which as stated can be at least partially superimposed), a connection body 41 is provided that extends from the first 2 to the second shell 3 at the first 12a and the second end portion 12b of the first closing mechanism 12. The connection body 41 is stably connected to both of the shells 2, 3 and comprises a central portion 42 made of elastic material to allow a correct expansion of the luggage 1 when in condition of maximum expansion. Figure 5 illustrates the connection body 41 partially removed to allow the first end portion 12a of the first closing mechanism 12 to be seen.

[0108] In the embodiment of the invention illustrated in figures 6A and 7A, the first tape 14 of the first closing mechanism 12 has transversal dimensions equal to the second tape 17 of the first closing mechanism 12, just as the first tape 22 of the second closing mechanism 13 has transversal dimensions equal to the second tape 25 of the second closing mechanism 13. In this way, when the luggage 1 is in the condition of maximum expansion the first 21 and the second zip track 29 are arranged substantially centered between the first 2 and the second shell 3.

[0109] In embodiments that are not illustrated, the first tape 22 of the second closing mechanism 13 can have greater (or lesser) transversal dimensions than the second tape 25 of the second closing mechanism 13. In this case, the second zip track 29 is closer to (or further from) the second shell 3 with respect to the first shell 2.

Claims

1. Expandable luggage (1) comprising:

a first half-part (2) and a second half-part (3) configured to define a storage space, wherein the first half-part (2) and the second half-part (3) comprise a respective perimeter edge (8, 11);
a first closing mechanism (12) associated with the perimeter edge (8) of the first half-part (2) and with the perimeter edge (11) of the second half-part (3) and equipped with a first zip track (21) to close and open the luggage, and a second closing mechanism (13) associated with the perimeter edge (8) of the first half-part (2) and with the perimeter edge (11) of the second half-part (3) and equipped with a second zip track (29) to close and open the luggage;
wherein the first closing mechanism (12) and the second closing mechanism (13) are placed in at least partial superimposition relationship;
wherein when the first zip track (12) is in closed condition, the first (2) and the second half-part (3) of luggage define a minimum storage volume and wherein when the first zip track (12) is in open condition and the second zip track (13) is in closed condition, the first (2) and the second half-part (3) of luggage define a maximum storage volume;
wherein a first portion (12a) of the first closing mechanism (12) comprises connection members (35) operating between the first zip track (21) at at least one among the perimeter edge (8) of the first half-part (2) and the perimeter edge (11) of the second half-part (3), the connection members (35) being configured to take up a first operating configuration corresponding to a first operating distance of the first zip track (21), at the first portion (12a) of the first closing mechanism (12), from the perimeter edge (8, 11) on which the connection members are operative, and a second operating configuration corresponding to a second operating distance of the first zip track (21), at the first portion (12a) of the first closing mechanism (12), from the perimeter edge (8, 11).

2. Expandable luggage (1) according to claim 1, wherein the connection members (35) operate between the first zip track (21) and both the perimeter edge (8) of the first half-part (2) and the perimeter edge (11) of the second half-part (3).

3. Expandable luggage (1) according to claim 1 or 2, wherein the first zip track (21) comprises an end stop (34) for a slider (20); said end stop (34) being arranged at said first portion (12a) of the first closing mechanism (12).

4. Expandable luggage (1) according to claim 3, wherein the first operating distance corresponds to a minimum distance of the end stop (34) from the perimeter edge (8, 11) and the second operating distance corresponds to a maximum distance of the end stop (34) from the perimeter edge (8, 11).

5. Expandable luggage (1) according to claim 4, wherein the minimum distance of the end stop (34) from the perimeter edge (8, 11) coincides with the distance at which the first zip track (21), in different portions from the first portion (12a) of the first closing mechanism (12), lies from the perimeter edge (8, 11) when in the closed condition.

6. Expandable luggage (1) according to any one of the previous claims, wherein the connection members (35) are configured to take up the first operating configuration when the first zip track (21) is in closed condition.

7. Expandable luggage (1) according to any one of the previous claims, wherein the connection members (35) are elastically deformable.

8. Expandable luggage (1) according to claim 7, wherein the passage from the first operating configuration to the second operating configuration of the connection members (35) is carried out by elastically deforming the connection members (35).

9. Expandable luggage (1) according to claim 7 or 8, wherein in the first operating configuration the connection members (35) are undeformed.

10. Expandable luggage (1) according to any one of the previous claims, wherein the first closing mechanism (12) comprises a first (14) and a second tape (17) having respective first longitudinal edges (15, 18) defining the first zip track (21); the first longitudinal edges (15, 18) being configured to be coupled together to define the closed condition of the first zip track (21) and to be decoupled to define the open condition of the first zip track (21).

11. Expandable luggage (1) according to claim 10, wherein the connection members (35) comprise an elastic fabric (36) arranged between the first longitudinal edge (15) of the first tape (14) and the perimeter edge (8) of the first half-part (2) of the luggage.

12. Expandable luggage (1) according to claim 11, wherein said elastic fabric (36) is anchored to the first tape (14) and to the perimeter edge (8) of the first half-part (2) of the luggage.

13. Expandable luggage (1) according to any one of the previous claims, wherein the first portion (12a) of the first closing mechanism (12) on which the connection members (35) operate is an end portion of the first closing mechanism (12); the first closing mechanism (12) also comprising a second end portion (12b), opposite the first, on which further connection members (35) are active.

14. Expandable luggage (1) according to any one of the previous claims, wherein the first closing mechanism (12) and the second closing mechanism (13) are associated with at least three consecutive sides of each perimeter edge (8, 11).

15. Expandable luggage (1) according to any one of the previous claims, wherein the first closing mechanism (12) is superimposed over the second closing mechanism (13).

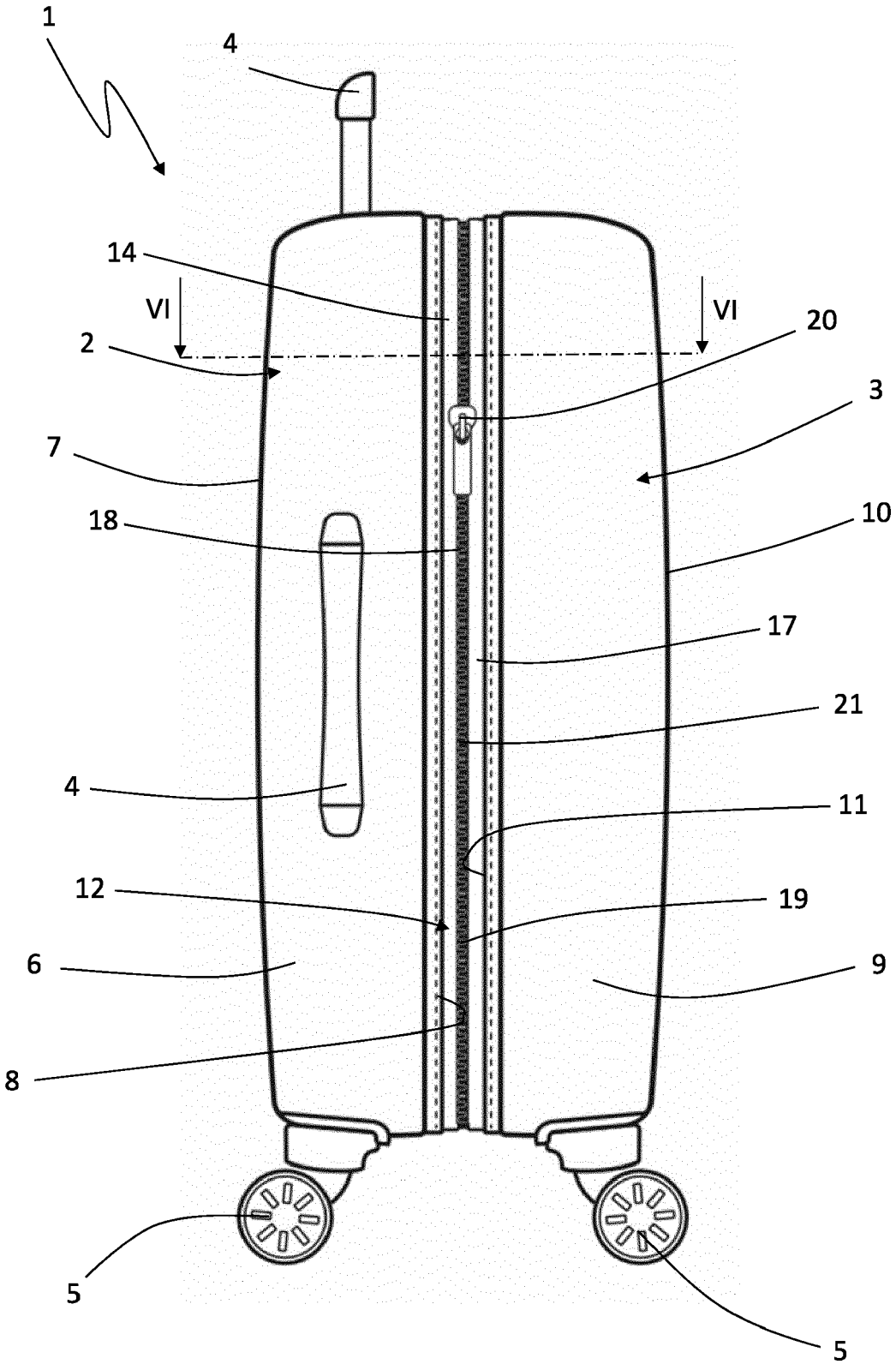

Fig 1

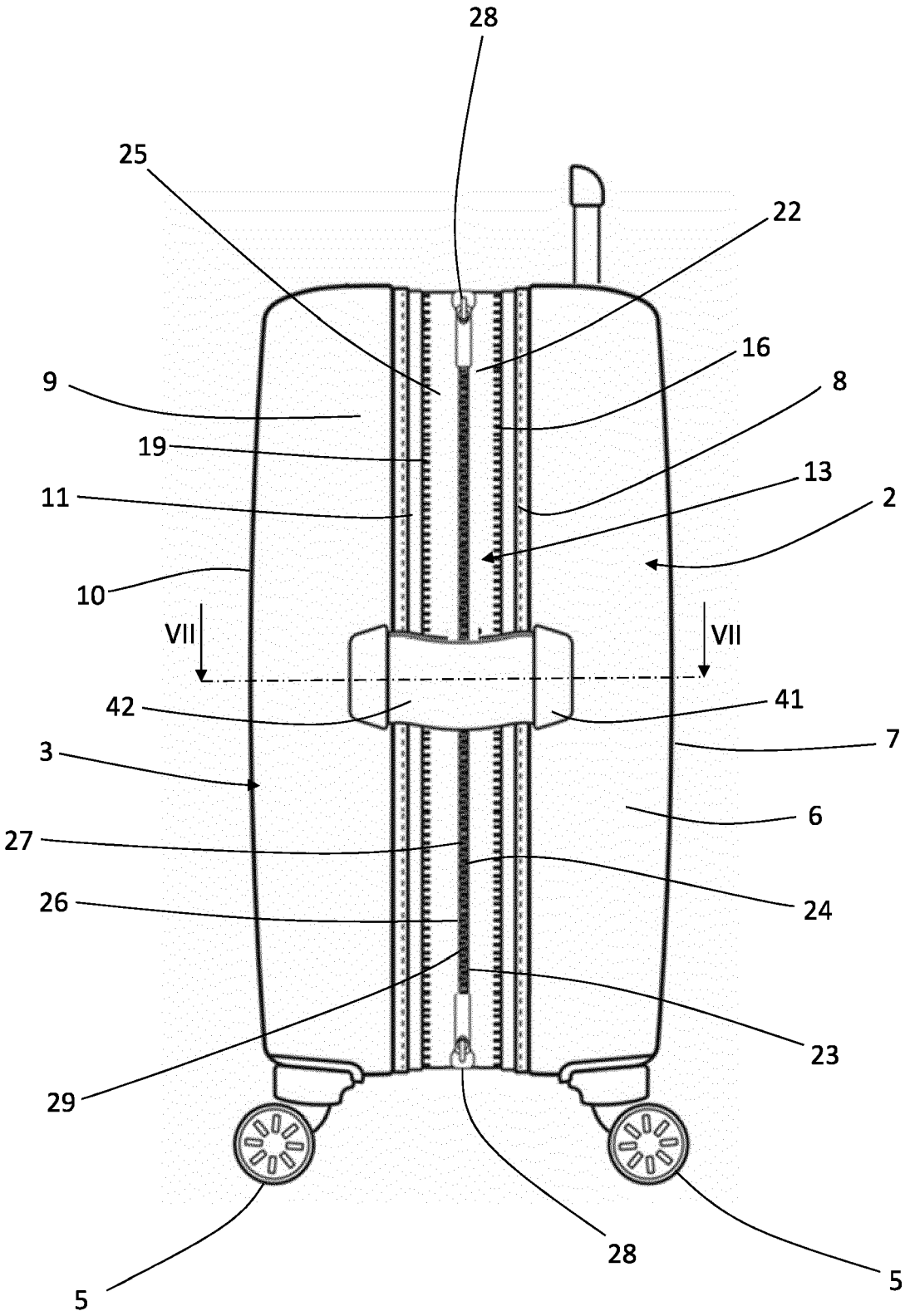

Fig 2

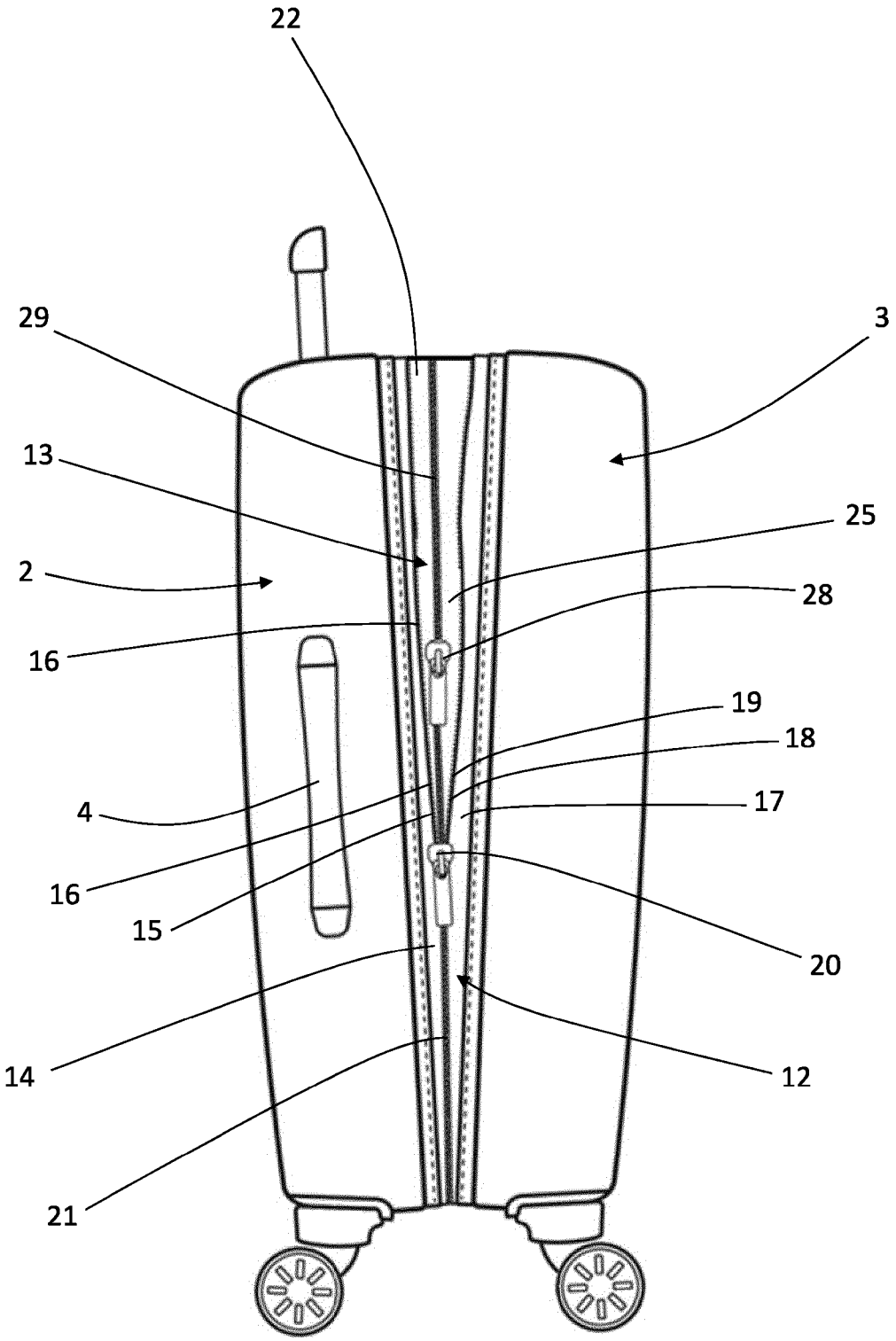

Fig 3

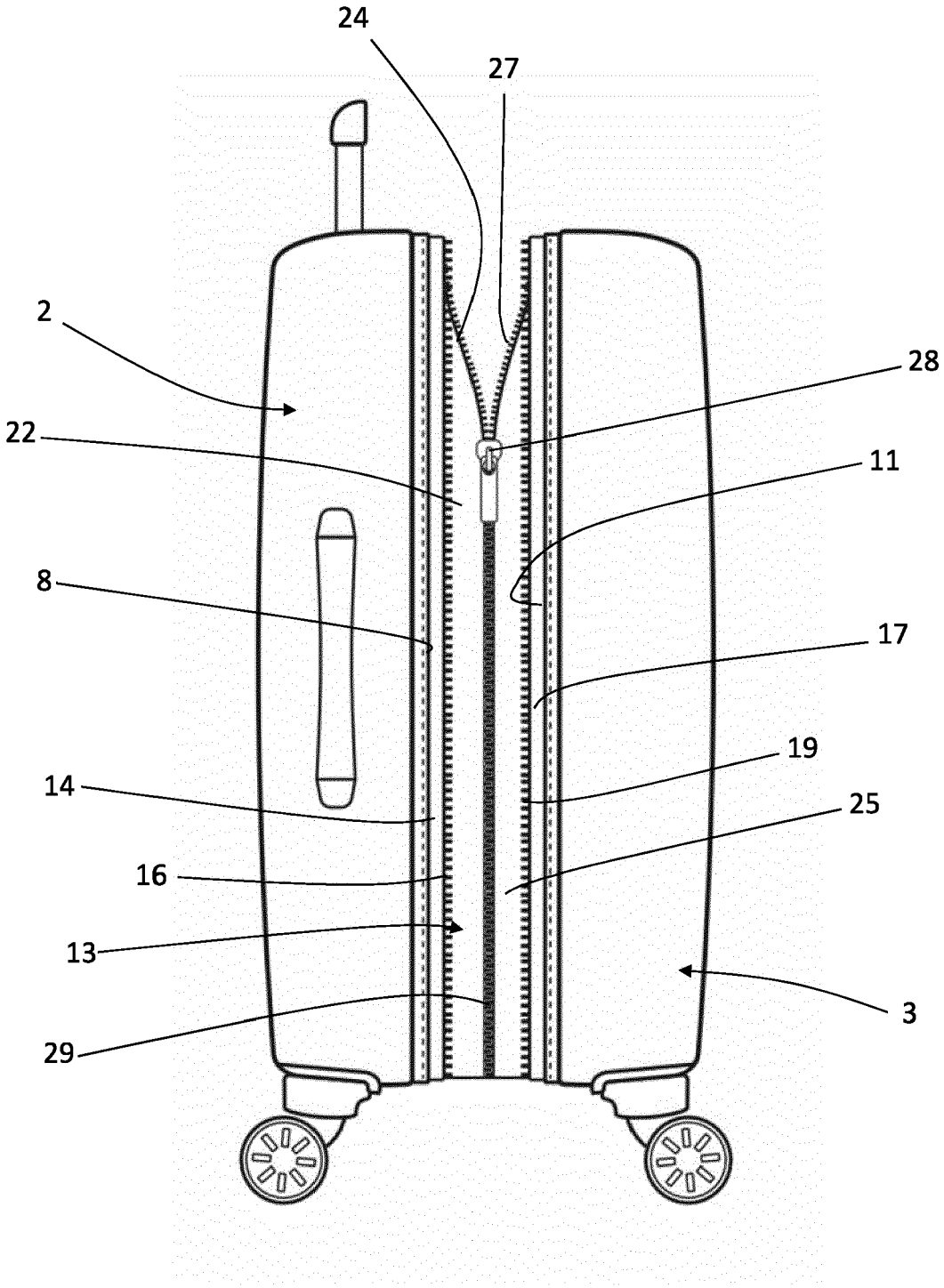

Fig 4

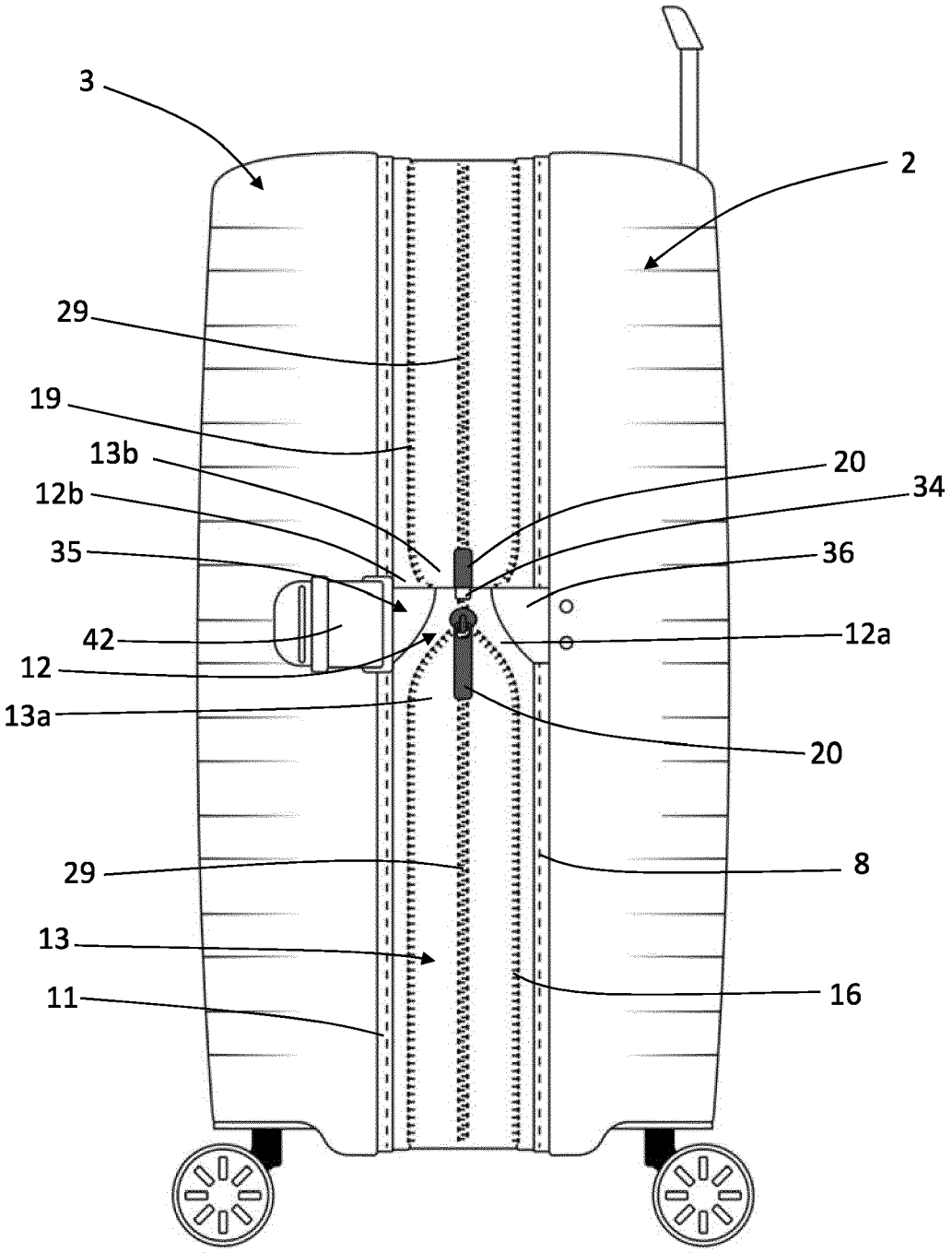

Fig 5

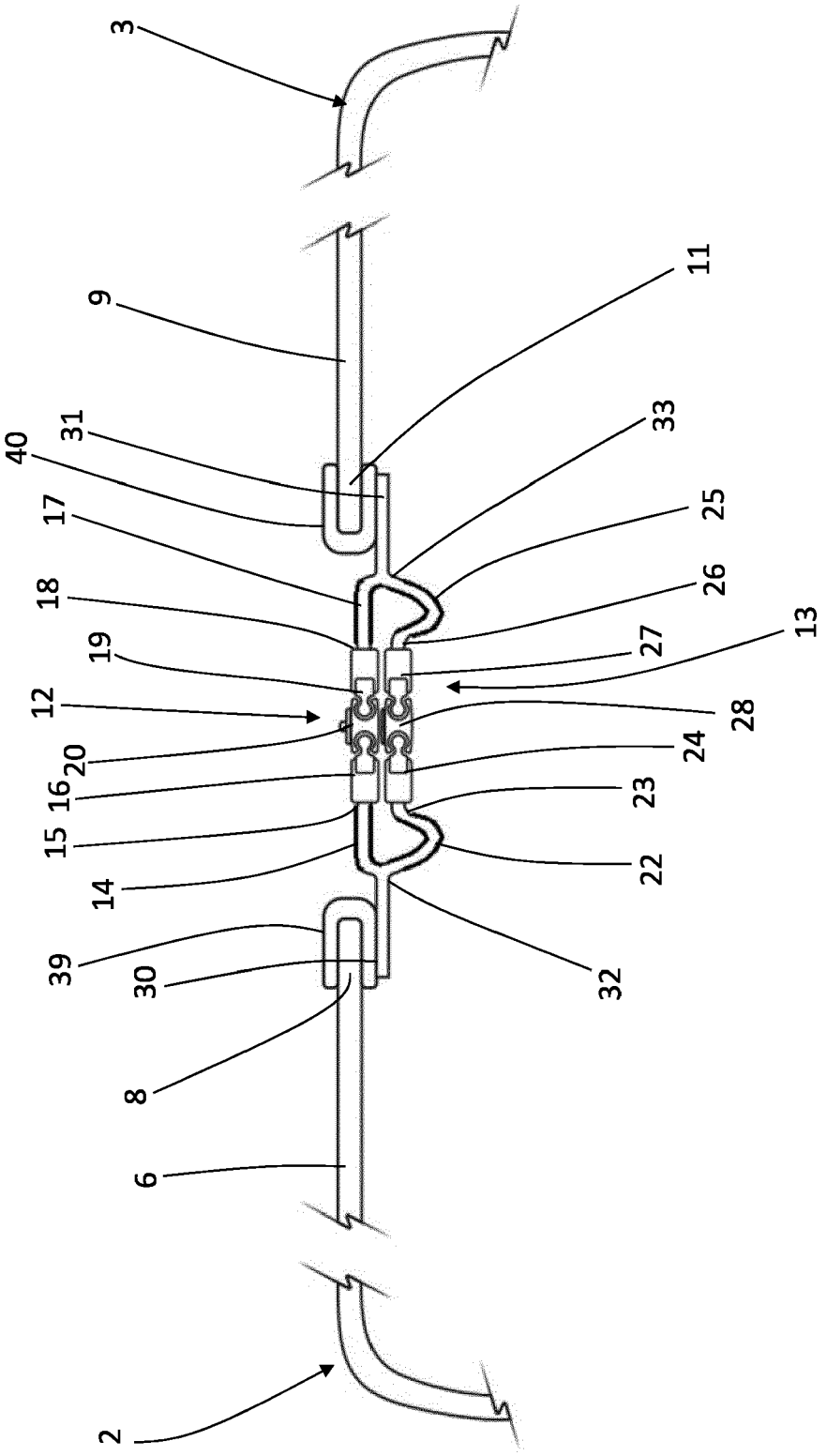
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Fig 6

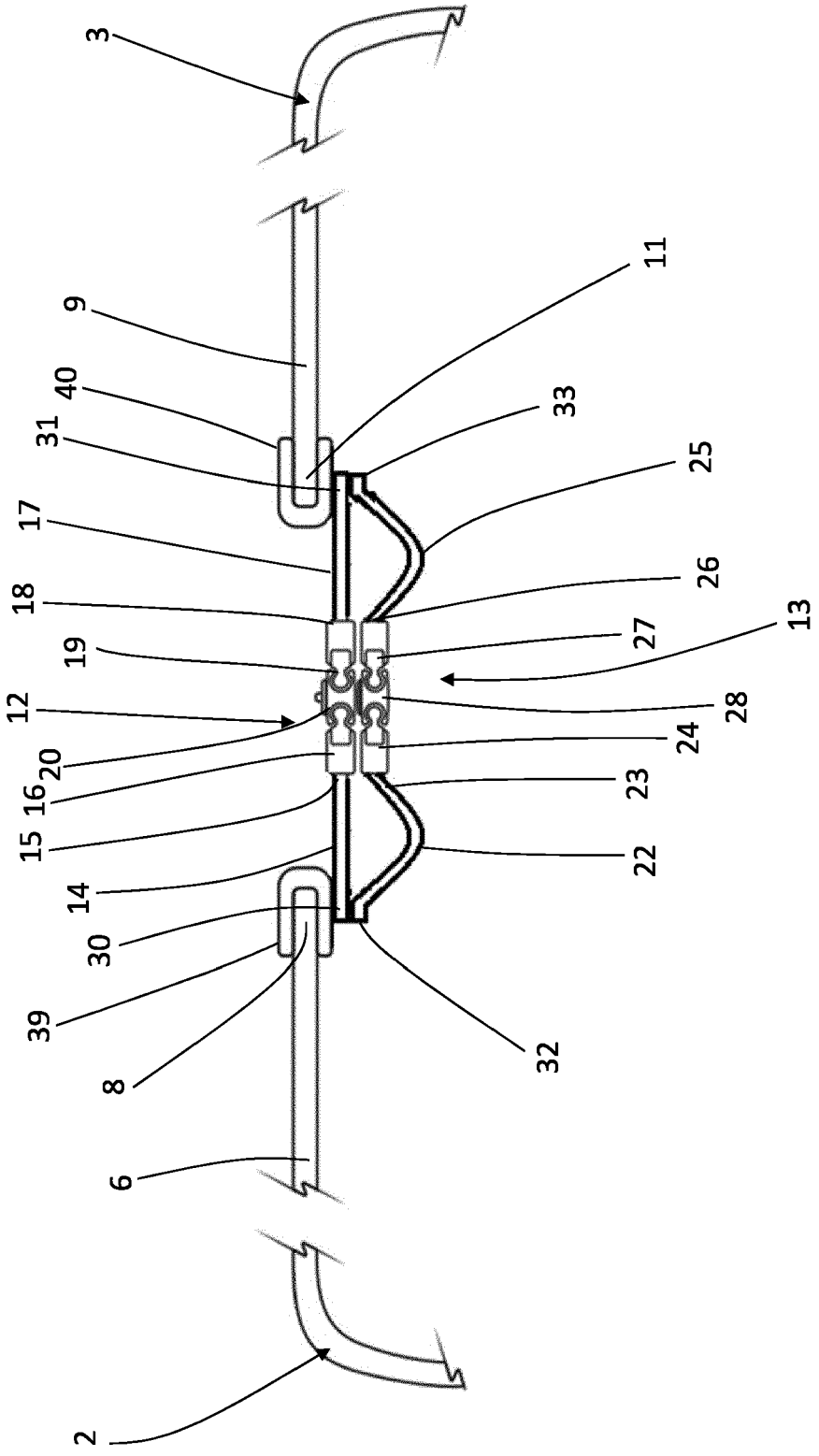
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Fig 6A

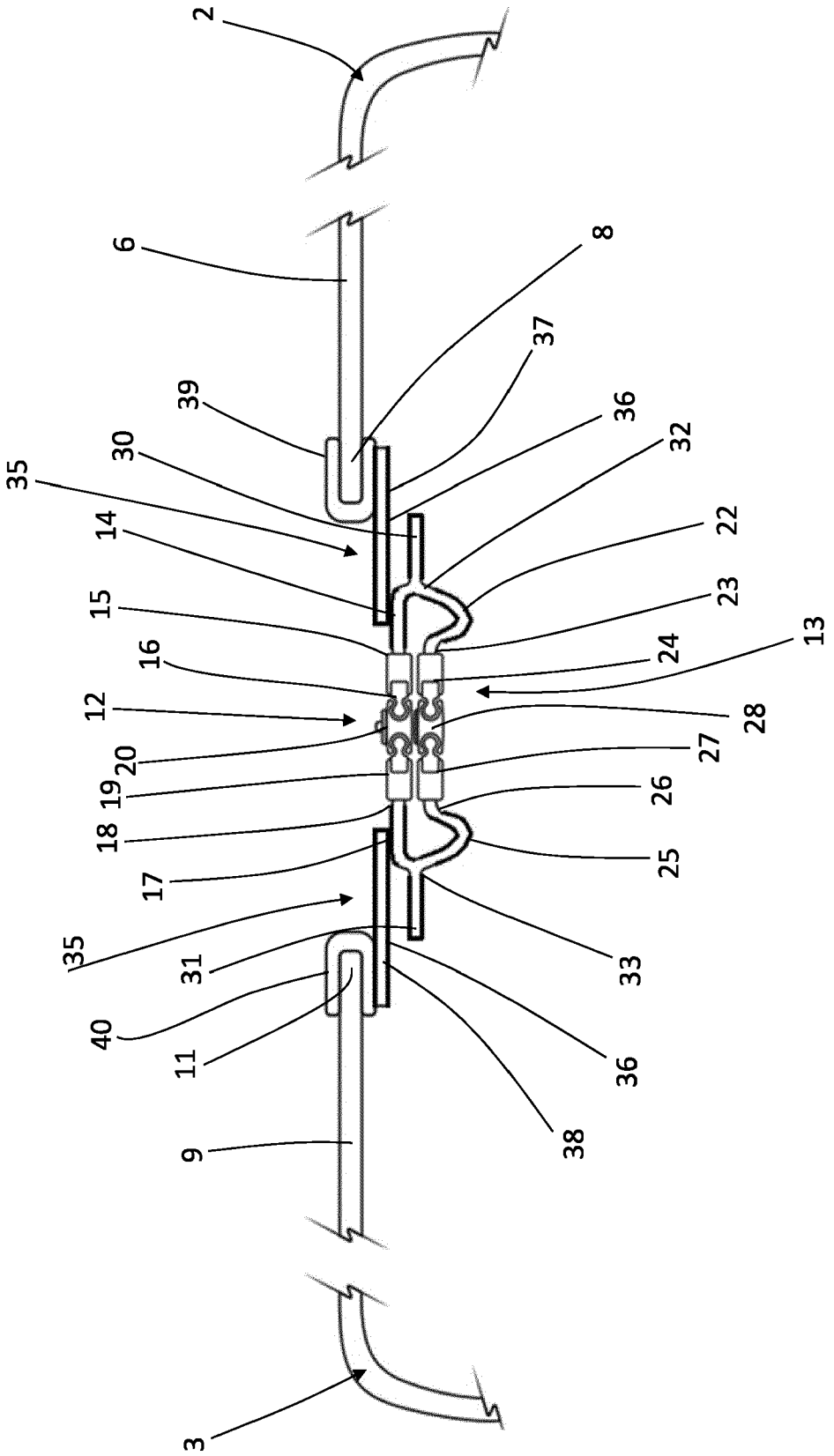
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Fig 7

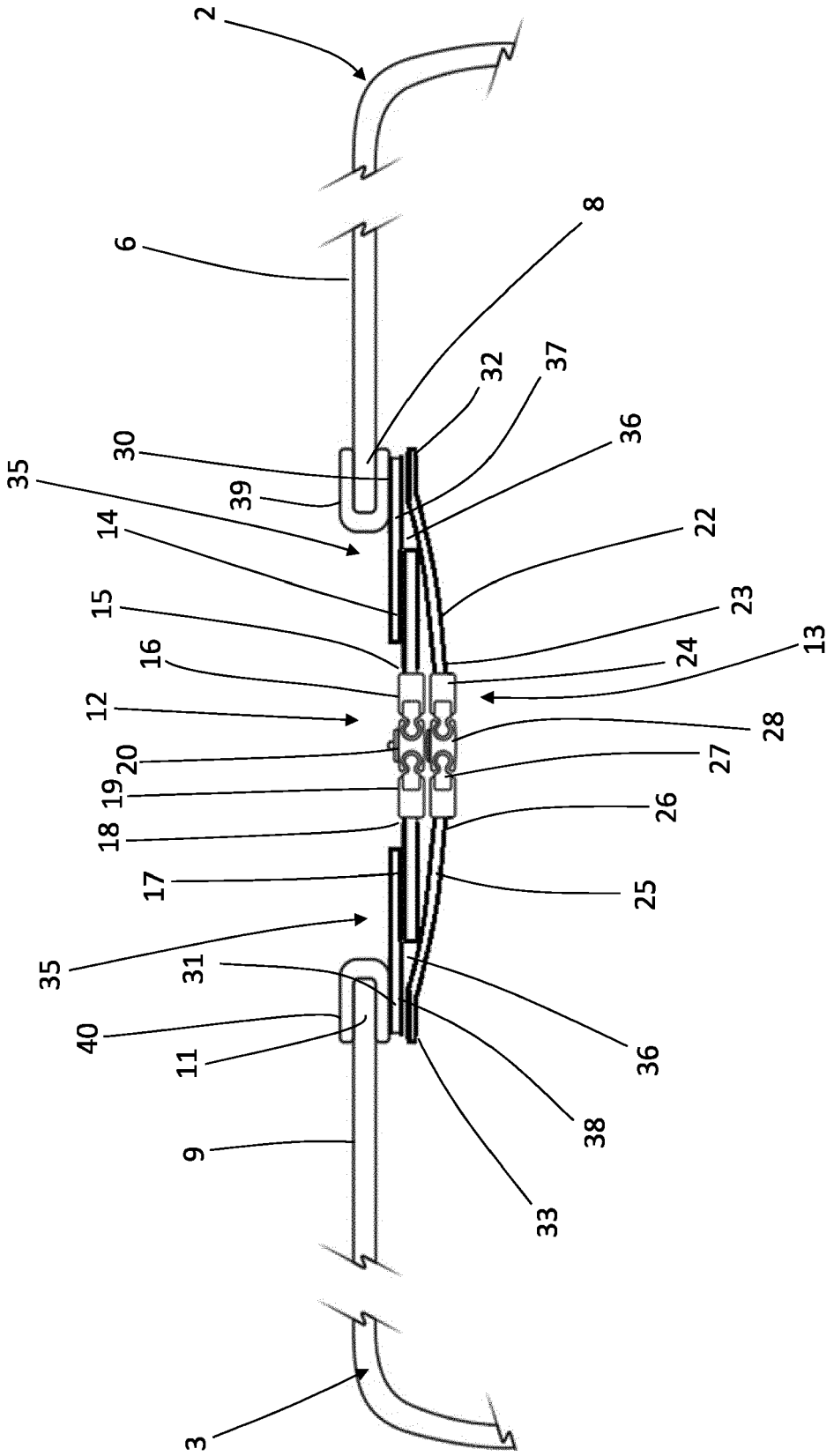
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Fig 7A

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EUROPEAN SEARCH REPORT

Application Number
EP 20 17 4778

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A45C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	16 September 2020	Longo dit Operti, T

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16-09-2020

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