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(54) A MODULAR BAG SYSTEM

MODULARES BEUTELSYSTEM

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Description

Technical Field

[0001] The present invention relates to a bag, particularly a handbag, and more particularly but not exclusively a decorative bag, comprising a housing defining a storage chamber.

Background and Prior Art

[0002] Bags come in a wide variety of shapes, sizes and styles. Bags find uses in an extremely wide variety of applications, but they all have one thing in common, and that is that they have a housing defining a storage chamber.

[0003] The most common form of bag is one which has a single housing defining a single storage chamber.

[0004] However, many bags exist with multiple storage chambers each defined by their own separate housing.

[0005] However, in general, each bag is defined for a specific purpose and has its own size and dimensions and appearance. For example fashion bags such as handbags might come in a variety of styles and designs, possibly with more than one storage chamber each with its own housing.

[0006] Sometimes a bag might contain a storage chamber which is partitioned. Some bags might have a smaller storage chamber within a larger storage chamber, however each storage chamber has its own identifiable housing.

[0007] Thus, in general, an end user requires many bags according to the variety of uses or applications that they intend to use the bags in their life. For example, a person may desire both large and small bags according to the amount they wish to carry with them.

[0008] In another example a person may have two bags which perform the same function but are aesthetically different, so that the user can decide which bag they wish to use even when the purpose remains the same.

[0009] The document JPS55118615U discloses a modular bag system according to the preamble of claim 1.

Summary of the Invention

[0010] The invention relates to a modular bag system according to claim 1, providing a personal reconfigurable bag or bags.

[0011] Such bags may comprise at least two such housing portions, although two to four housing portions may be optimal for many applications.

[0012] In an embodiment, each housing portion may itself be able to form a storage chamber alone without attachment to another housing portion, allowing the modular bag to be deconstructed into a plurality of smaller bags each made from one or more housing portions.

[0013] Thus, in a further aspect the invention relates to a housing portion for a bag, the housing portion comprising releasable attachment means to enable it to be releasably attached to another such housing portion to create a single housing from the attached portions and defining a common storage chamber therebetween.

[0014] However as discussed above, although the releasable attachment means enables a common storage chamber to be formed, the attachment of the housing portion to another such housing portion does not necessarily result in a common storage chamber between the two housing portions.

[0015] As discussed above, such housing portions are preferably releasably attachable to another such housing portion to provide a linear segmented housing.

[0016] The housing portions may be of a similar size and shape, so that the positions of the housing portions in the modular bag are interchangeable. The housing portions are functionally substantially identical to each other (although they may have different appearances), so that one housing portion can be interchanged with another such housing portion and the only change is an aesthetic one. Thus, the present invention allows for the replacement of one housing portion with another, for example if one housing portion becomes worn or damaged, without needing to replace the entire bag.

[0017] Each housing portion has a first partition means at a first end of the housing portion and a second partition means at a second end of the housing portion, wherein the first and second partition means are operable between an open position and a closed position, thus allowing each end of each housing portion to be open or closed depending on its position in the assembled modular bag, such that for a terminal housing portion a partition means can be in the closed position to close the end of the modular bag and for an interior housing portion both of the partition means can be in the open position to define a common storage chamber between the housing portions or in the closed position to provide internal compartments or sub-chambers within the common chamber and when a housing portion is used on its own both partition means are operable in the closed position to close both ends of the housing portion to provide an individual storage unit.

[0018] Each housing portion, when in use in the modular bag system, may be "U" shaped and, when not in use, can be flattened into a generally square or rectangular form, wherein the flattened housing portion has a pair of opposed first edges forming the ends with which the attachment means are associated and a pair of opposed second edges, which, when the flattened housing portion is folded into the "U" shape during use, define a top opening of the storage chamber of an assembled bag, the housing portion further having an inside face which forms the interior of the housing portion and an outside face which forms the external surface of the housing portion, wherein the first and second closable partition means are fixed to the internal surface of the housing portion, such that closing the first or second partition means causes the flattened housing portion to be drawn

into the folded "U" shape.

[0019] Each of the partition means may comprise a fastening means and a gusset portion, wherein the shape of the gusset portion defines the end profile of the modular bag and thus the storage capacity of the modular bag. The gusset portions may be made from flexible material, such as fabric. Part of each gusset portion may be of tapered configuration, having a narrower portion near the second edges and a wider portion toward the middle of the first edges, such that the bag has a generally triangular or tear-drop shaped cross-section, with a narrow top when the flattened housing portion is folded into the "U" shape during use, wherein the width of the top of the bag defined between the two second edges is less than the width of the bag at the bottom. The gusset portions may have a curved free edge.

[0020] The fastening means of the partition means may be a zip fastener comprising a toothed track and two sliders to open and close the zip fastener, wherein the toothed track is substantially continuous along the first and second edges of the housing portions and the two sliders are operable to open and close both ends of the housing portion and to open and close the top opening of the housing portion.

[0021] The toothed track of the zip fastener of the partition means may be bone-shaped, the long side of the bone aligned with the first edges of the housing portion to define the closable end, and having a narrower waisted middle part, and the short, top end of the bone aligned with, and in close proximity to, the second sides of the housing portion to form a closable top of the housing portion.

[0022] The releasable attachment means provided on each end of each housing portion may be a zip fastener. Alternatively, the releasable attachment means provided on the ends of each housing portion may comprise a row of buttons on one connecting end and an array of corresponding button holes on its other connecting end so that two adjacent housing portions can be connected by attaching the buttons of one housing portion to the button holes of the other housing portion allowing the housing portions to be tiled together.

[0023] Each housing portion may comprise a different aesthetic decoration, so that the user can reposition the housing portions to create a different aesthetic effect. The aesthetic appearance may be raised 3- dimensional plastic mouldings and/or be alphanumeric characters, so that different names or words can be created by appropriate juxtaposition of the housing portions. Such a bag could also be accompanied by a selection of further housing portions, to further enable more combinations to provide very large range of aesthetic combinations.

[0024] The common storage chamber created within connected housing portions may contain an inner bag. The inner bag may provide a means for attaching adjacent housing portions. Each housing portion may be provided with a row of holes along the first edge and the inner bag is provided with an array of buttons positioned to align with the holes. The housing portions may comprise attachment points for the attachment of a carrying member. The attachment points may be openings, e.g. slits, through which passes a strap attachment portion. The strap attachment portions passing through the openings may be secured with respect to the inner bag. One or more housing portions may include a storage pocket.

[0025] In a further embodiment, a method of assembling a modular bag system of the type described above is provided, involving attaching at least two housing portions together. The method may involve the addition or removal of at least one housing portion.

[0026] The external aesthetic appearance of a housing portion can be made to be different from that of another housing portion, by separating at least two housing portions, inserting a further housing portion and/ or rearranging the connected order of the housing portions and reattaching the housing portions to create a different aesthetic effect on the exterior of the bag as a whole.

[0027] The housing portions are typically of flexible material and may be made from natural fibres, synthetic fibres, a combination of natural or synthetic fibres or other materials, such as leather that are known in the art. For example, the housing portions may be made of cotton, denim, leather or imitation leather.

[0028] The bag according to the invention is preferably expandable or contractible, by the addition or removal of further housing portions having releasable attachment means.

[0029] Such further housing portions can be designed to expand the size of the common storage chamber or can provide an additional storage chamber, so that the plurality of modular housings provide a plurality of storage chambers.

[0030] Thus, in a further aspect, the invention relates to a method of expanding or contracting the storage capacity of a bag as described herein, the method involving the addition or removal of at least one housing portion as described herein.

[0031] Typically the housing portions are releasably attachable to each other in a linear segmented manner, so that a continuous array of separate but releasably attached housing portions is provided with each housing portion either attached to one other (a terminal housing portion) or to two others (an interior housing portion).

[0032] It will be appreciated that in this arrangement the terminal housing portions must provide closed ends to the two ends of the array of housing portions in order to form the common storage chamber. Additionally, the internal housing portions must be able to provide free passage between the housing portions in order to form a common storage chamber between the housing portions, although the common storage chamber may be internally divided or compartmentalised into sub-chambers within the common chamber.

[0033] Thus, when the housing portions are arranged as a linear array, the terminal housing portions may differ from the design of the interior housing portions, to enable

the terminal housing portions to provide the ends of the segmented modular bag, forming the common chamber, whereas the internal housing portions do not provide such ends so that a common chamber can be formed.

[0034] However, in a preferred embodiment each housing portion is equally capable of being adapted to form the function of either a terminal or an interior housing portion, as desired, as this provides for increased modularity.

[0035] In such a case it is preferable that each housing portion comprises at least one releasably closable partition to form a partition dividing the length of the segmented modular bag. It will then be appreciated that forming a partition can enable a terminal housing portion to form the end of a bag from the partition. Thus, in this case, each housing portions can form a terminal housing portion by forming the closable partition.

[0036] Typically each housing portion comprises two such releasably closable partitions, each positioned at different ends of the housing portions so that both connecting sides of the housing portion can be closed or opened as desired.

[0037] In addition to forming the ends of the common chamber, additional internal partitions can be closed as desired to create more than one sub-chamber within the common storage chamber of the modular bag. This therefore provides optional compartmentalization.

[0038] The exact form of a particular bag may thus be varied at will, e.g. to modify the bag to different requirements.

[0039] Although it is not preferred, it is nevertheless possible to still have a different design of terminal housing partitions to the internal housing partitions. In this case it may still be desirable for the internal partitions to comprise at least one releasably closeable partition.

[0040] For example, with a bag comprised of three housing portions made of two terminal portions and one internal portion, one partition on the internal housing portion could be closed to provide a sub-chamber made from two housing portions and a sub-chamber made from the third housing portion.

[0041] Preferably such closable partitions are made from flexible material, such as fabric, so that when the partition is not desired it may fold away neatly.

[0042] Each housing portion is preferably of generally square or rectangular form, having a pair of opposed first edges (typically the longer edges of a rectangle) with which the attachment means are associated (e.g. in the form of a sliding clasp fastener such as a zip fastener extending along each first edge), and a pair of opposed second edges (typically the shorter edges of a rectangle) for defining a top opening to the storage chamber of an assembled bag.

[0043] The second edges can be brought into close proximity, defining a narrow slit-like top opening (or little or zero width) with generally parallel sides.

[0044] Although this arrangement can reduce the available capacity of the bag, the cross-section of the common chamber has effectively three sides of a triangle and therefore less material is necessary to form any closable partition and they can therefore fold away more neatly when not required. Such an arrangement has no horizontal bag parts where the two second edges come together that need to be folded away when the bags are connected that results in a tidy bag top with a width of effectively zero.

[0045] The housing portions may be releasably attached to each other by any of a wide variety of releasable attachment means, e.g. as are known in the art. For example, the housing portions may be releasably attached by a sliding clasp (e.g. a zip) fastener system, buttons, press studs, touch and close hook and eye (e.g. Velcro TM), a hook and loop strip system, a toggle fastening system or a combination of these. For example, each housing portion may comprises a row of buttons on one connecting end (e. g. adjacent one first edge) and a row of corresponding button holes an its other connecting end (e.g. adjacent the other first edge) so that two adjacent housing portions can be connected by attaching the buttons of one housing portion to the button holes of the other housing portion.

[0046] Each housing portion conveniently includes closure means for forming an end closure of the storage chamber of an assembled bag. The closure means may be constituted by the attachment means (performing a possible dual function) but preferably are constituted by separate elements. The closure means are suitably in the form of fastener means, such as a zip fastener system, buttons, press studs, hook and eye, hook and loop strip system, toggle fastening system, etc., with a zip fastener system being preferred. Each housing portion preferably has two closure means, for maximum flexibility, enabling closure of either end of the portion, so that the portion may function as a terminal portion at either end of an assembled bag, and also enabling compartmentalisation.

[0047] The closure means are preferably provided on gusset or flap portions of fabric, preferably flexible fabric, secured with respect to the housing portion. Operation of the closure means connects together associated gusset portions of a housing portion to form a wall or closable portion as referred to above, which may be an end wall of the storage chamber or an internal partition or dividing wall. The gusset portion is preferably of tapered configuration with the closure means associated with the free edge, having a narrower portion adjacent a top opening of the storage chamber of an assembled bag, and a wider portion spaced therefrom (adjacent the bottom of the storage chamber of an assembled bag). Having narrower portion adjacent the top opening facilitates production of a bag with a narrow (or zero width) opening as referred to above. The tapered gusset portion preferably has a curved free edge with which the closure means are associated. The form of the gusset portion may contribute to determining the cross-section of the assembled bag, with a tapered, preferably curved, gusset producing a

generally triangular, preferably teardrop, shape. This shape may also facilitate the folding down or back of the gusset portions when not required for use in forming partitions, still enabling production of a bag with a narrow slit-like top opening of little or zero width.

[0048] With generally square or rectangular housing portions, as discussed above, the closure means are preferably located extending generally parallel to the first edges, spaced slightly inwardly therefrom on associated gusset portions.

[0049] The storage chamber is desirably provided with an inner bag. Such a bag may be removable from the storage chamber to provide a further additional storage chamber usable as a separate bag.

[0050] In one particular embodiment, the inner bag provides a means for attaching adjacent housing portions. For example, each housing portion could be provided with a row of holes along the edges it connects to an adjacent housing portion. The inner bag could be provided with an array of buttons positions to align with the holes. The modular bag could then be constructed by aligning the holes from two adjacent housing portions, placing the inner bag inside and passing the buttons through the aligned holes, thus connecting the adjacent housing portions and fixing the inner bag into the common storage chamber at the same time.

[0051] The bag according to the invention also typically comprises a carrying member such as a strap, so that the bag can be conveniently carried in the hand or over the shoulder, for example.

[0052] In a further preferred embodiment, the housing portions comprise attachment points for the attachment of a carrying member. It is preferred that the attachment points enable the releasable attachment i.e. enabling separation and a subsequent re-attachment of a carrying strap. In this way, the position of the strap can be adapted to the number and location of the housing portions present.

[0053] In one particular embodiment the attachment points are merely openings, e.g. slits, through which passes a strap attachment portion. In one embodiment, such strap attachment portions may pass through such openings and be attached to an inner bag, if present. In this case the housing portions are effectively carried by the inner bag which is itself attached to the strap. Additionally such an arrangement will assist in pulling the attached housing portions together during use, improving the strength of the formed common chamber. It could also help to give the bag form if the housing portions are made of flexible material and the attachment portions are connected by a rigid connection.

[0054] Thus the carrying member is typically removably attached to the bag so that the end user can replace the strap with another one of a different design as desired. This increases the modularity of the bag design potential even further.

[0055] As discussed above, it will be appreciated that an end user can construct such a modular bag by attaching together a plurality of housing portions, as they desire. Thus in a fifth aspect, the invention relates to a method of creating a bag as described herein, the method involving attaching at least two housing portions as described herein.

[0056] In addition the bag of the present invention may include other bag features known in the art. For example one or more of the housing portions may contain an additional storage pocket (e.g. with zip closures), either internally or externally, to provide additional storage options in addition to the common storage chamber, and/or the inner bag if present.

[0057] A bag in accordance with the invention may thus provide a wide range of storage options, depending on whether or not an inner bag is present, whether the bag includes additional storage pockets, etc.

[0058] For example, consider a bag comprising two housing portions, each 15 cm long, assembled to form a 28 cm long modular bag secured together by means of buttons and button holes, allowing for a 2 cm overlap, and not including an inner bag. The bag includes zippered internal side pockets. Small items such as coins, credit cards, keys, fountain pens could be put in said zippered internal side pockets, while larger items such as, say, a 26 cm long rolled up magazine and a 20 cm long e-book reader could be placed in the common storage chamber.

[0059] The invention will now be illustrated, by way of example only, and with reference to the following figures, in which:

Figure 1 is a view of one embodiment of a modular bag according to the present invention.

Figure 1A is an end view of the modular bag shown in Figure 1 wherein the strap has been detached and the facing end unzipped to show the interior.

Figure 2 is a view of the bag shown in Figure 1 wherein an inner bag has been removed and the strap detached.

Figure 2A is a View of another embodiment of a modular bag in accordance with the invention wherein the inner bag has been removed and the strap detached.

Figure2B is a perspective cutaway view of the three housing portions of the bag shown in Figure 1, showing the interior of the common chamber thus formed.

Figure 3 is a View of the detached outer housing of the bag shown in Figure 1 showing detail of the internal components.

Figure 4 is a View of the interior of the housing of the bag shown in Figure 3.

Figure 5 is a View of the bag shown in Figure 4, wherein one housing portion has been separated from the other two housing portions.

Figure 6 is a View of the bag shown in Figure 5 wherein the housing portions form two separate storage chambers forming two bags.

Figure 7 is a view of another embodiment of a bag according to the invention.

[0060] Turning to the figures, Figure 1 shows a bag 10 according to the invention. The bag comprises three housing portions 12, 14, 16 which are connected together to form a housing having a common storage chamber (not shown). The three housing portions are constructionally and functionally similar to each other, but differ in aesthetic respects.

[0061] Each housing portion 12, 14, 16 also comprises two slits 22 to act as attachment points and allow for the passage of a strap attachment stem 24. The bag 10 also has a removable pair of straps 18, 20 for forming handles for carrying the bag. As can be seen, each end of straps 18, 20 are releasably attached to a respective attachment stem 24 by a belt buckle mechanism 26, however, the straps could be attached by any suitable attachment means.

[0062] As can be seen in Figure 1A, the bag 10 contains an inner bag 30 which is attached to the strap attachment stems 24. The strap attachment stems pass through respective slits 22.

[0063] Thus, when carried the inner bag 30 is directly supported by the straps 18, 20 and the housing portions 12, 14, 16 act as an outer common housing.

[0064] As can be seen in Figure 2 the inner bag 30 has been removed from the common storage chamber provided by the housing portions 12, 14, 16. Figure 2 also shows the straps 18, 20 detached from attachment stems 24.

[0065] Figure 2A shows an alternative embodiment of a bag, generally similar to the embodiment of Figure 1, but in which the housing portions 12, 14, 16 are releasably attached to each other by a series of buttons 27 and button holes 29.

[0066] In Figures 1A, 2 and 2A the straps 18 and 20 are shown detached from the stems 24. On assembly of the bag, the stems 24 are threaded through the appropriate slit 22 and then one strap, e.g. strap 20, is secured to the stems 24 extending from one side of the inner bag 30, e.g. the right side as seen in Figure 1A and the near side as seen in Figures 2 and 2A, with the other strap, e. g. strap 18, secured to the stems extending from the other side of the inner bag 30, e.g. the left side as seen in Figure 1A and the far side as seen in Figures 2 and 2A, so the final configuration is as shown in Figure 1, producing one handle on each side of the bag.

[0067] In a further variant of the arrangement shown in Figure 2A the inner bag 30 could have rows of buttons 27 which are passed through the button holes 29 to not only join the adjacent housing portions together but also to fix the inner bag inside the common chamber.

[0068] As can also be seen, the strap attachment stems 24 are attached to the inner bag 30 so that when the inner bag 30 is placed within the common storage chamber the strap attachment stems 24 are threaded through a respective slit 22 in one of the housing portions 12 and 16. The straps 18, 20 can then be attached to attachment stems 24 to form the modular bag 10 generally as shown in Figure 1.

[0069] Figure 2B, 3 and 4 show in greater detail how the inside of housing portions 12, 14, 16 work together to form the storage chamber. As can be seen, each housing portion 12, 14, 16 is substantially rectangular having two longer attachment edges 34, 36 (the first edges) for attachment to an adjacent housing portion, and two shorter second edges for forming a top opening to the storage chamber of an assembled bag. Each housing portion 12, 14, 16 includes attachment means in the form of a first row of zip fastener teeth 38 on a first attachment edge 34 and a corresponding second row of zip fastener teeth 40 on the second attachment edge 36. Thus, two adjacent housing portions can be releasably attached by the closing of a zip fastener made from the two rows of teeth 38 and 40 by use of a zip slider. As will be appreciated, and as shown in Figure 2A, other forms of connection to zip fasteners can be envisaged such as buttons running alone edge 34 and button holes running along edge 36.

[0070] Furthermore, each housing portion 12, 14, 16 has an inner housing portion 44 forming the interior of the housing portion, e.g. flexible leather, and inner gusset or flap portions 46 of flexible fabric, e.g. cotton. The gusset portions 46 are secured to the inner housing portion by stitching around the outer periphery. The inner, free edge of the gusset portions 46 are not secured to the inner housing portion, but carry zip fastener teeth 42 with an associated zip slider 50 (constituting closure means). The gusset portions are of tapered configuration and have a curved inner edge, being narrower adjacent the housing portion shown second edges and wider towards the centre of the housing portion, and overlay the inner housing portion in a manner that leaves uncovered a waisted, or bone-shaped region of the inner housing portion 44, as best seen in Figure 4.

[0071] The shape of the gusset portions 46 enables them to lay flat on the inner housing portion 44, and also assists in determining the cross-sectional form, of the assembled bag as well as and producing a narrow top opening, as is discussed below.

[0072] The common chamber is formed by folding the bag from the flat condition as shown in Figure 4 to bring the opposed shorter second edges into proximity with each other to define the top opening to the storage chamber of the assembled bag, e.g. as shown in Figure 1. The bag has a generally tear-drop shaped cross section as is apparent in Figure 2B, as a result of the form of the gusset portions 46, with the second edges of the housing portions defining an elongate, substantially parallel sided slit with little or no gap between the sides (a zero width top). The form and flexible nature of the gusset portions 46 assist in producing this desirable configuration, with the gusset portions 46 folding away neatly where not required.

[0073] In order to complete the common storage chamber, the terminal housing portions 12, 16 need to be closed at their ends. This is achieved by partially closing the zipper closure means constituted by the outer rows of zip fastener teeth 42 by use of slider 50 of housing

portion 16 and slider 48 of housing portion 12 until they reach the top of the bag, as shown in Figure 2B.

[0074] As will be appreciated, if all of the internal closure means comprising zip fastener teeth 42 remain open then the three housing portions 12, 14, 16 form the common storage chamber. However, the bag also allows for optional compartmentalization into sub-chambers by closure of select internal zippers 42. As shown in Figure 2B, zip slider 48 of housing portion 16 and/or zip slider 50 of housing portion 14 have been closed until they reach the top of the bag. This has the effect of dividing the common storage chamber into two sub-chambers, one formed by housing portion 16 alone and one from both housing portions 12, 14 together. Other configurations are clearly also possible, and the form of the bag may be varied by the user to suit requirements. The closure of these zippers forms the fabric 46 into a teardrop shape having effectively zero top width.

[0075] It will be appreciated that other combinations of closure of zip fastener teeth 42 can result in a variety of compartmentalization options.

[0076] It can also be seen that the width of the fabric 46 at the top portion is effectively zero, which provides for the teardrop shape cross-section in use. This allows the remainder of fabric 46 to neatly fold away when not required for compartmentalization.

[0077] As discussed, the housing portions are arranged in a linear array with housing portions 12, 16 as terminal housing portions and housing portion 14 as an inner housing portion.

[0078] Thus, each housing portion 12, 14, 16 is capable of being either an internal or a terminal housing portion, because the edges of the bag forming the edges of the common storage chamber can be formed by closing partition zippers accordingly.

[0079] Figure 5 shows the housing wherein housing portions 14 and 16 have been detached from each other.

[0080] As can be seen in Figure 6, a storage chamber can be formed from housing portion 16 alone by engaging zip sliders 48 and 50 of housing portion 16. Additionally, a second storage chamber can be formed by engaging zip slider 48 of housing portion 12 and zip slider 50 of housing portion 14.

[0081] Thus, the end result is two bags, one formed from housing portions 12 and 14 combined and a smaller bag formed from housing portion 16 alone.

[0082] As will be appreciated, the order and sequence of the housing portions 12, 14, 16 can be changed as desired by the end user as each housing portion is functionally identical.

[0083] However as each housing portion has a different aesthetic appearance, a change in the order of the housing portions creates a different aesthetic appearance of the overall resulting modular bag.

[0084] In addition it is possible for the bag to be expanded by the addition of further housing portions, to create a larger bag. The bag may also be accompanied by a selection of further housing portions which are functionally identical but have a different aesthetic appearance. In this way a far greater number of possible combinations of housing portion and therefore the resulting aesthetic appearance of the modular bag are possible.

[0085] As will also be appreciated, the modular bag 10 shown in Figure 1 is capable of being deconstructed to provide an inner bag 30 and one or more bags made from a combination of housing portions 12, 14, 16. Furthermore, removal of the inner bag effectively doubles the capacity of the modular bag. Thus the bag according to the invention provides a great versatility and allows for the modular bag to be varied in its size and appearance and even to be split into further bags.

[0086] As discussed above the bag according to the invention can provide great variety in the different appearances and sizes of bag which can be produced. For instance with 7 such bags, each one differently decorated, one can assemble a total of 63 bags (21 two-bag bags & 35 three-bag bags & the original 7 housing portions). Furthermore, the more bags one owns the greater utility you get from each bag; add just two more bags and the resultant 9 bags can give 129 bags.

[0087] Figure 7 shows another embodiment of bag 100 according to the present invention. The bag 100 is made up of three housing portions 102, 104, 106 which are functionally similar to those of 12, 14, 16 but do not possess slits 22.

[0088] The bag has a strap 108 which is attached to the housing portions 102, 106 and is adjustable by belt buckle 110. Thus the housing portions 102 and 106 are terminal housing portions, as they possess the attachment points for the strap 108, whereas the housing portion 104 is an inner housing portion.

[0089] The bag 100 also contains an inner bag 130 which is attachable to the common storage chamber provided by the housing portions by Velcro TM patches 110.

[0090] Although the bag 100 is not as versatile as the bag 10 shown in Figures 1 to 6, it is nevertheless capable of being expanded or contracted, providing a variety of aesthetic variations and of providing a separate inner bag 130.

[0091] A bag in accordance with the invention may be modified in various ways. For instance, a bag may include storage pockets on the interior and/or exterior of one or more housing portions, to provide additional storage options in addition to the common storage chamber. The storage pockets may include closure means, such as a zip fastener, etc.

Claims

1. A modular bag system for providing personal reconfigurable bag or bags, the system comprising at least one housing portion (12, 14, 16), wherein
each housing portion of the modular bag system has ends (34, 36) provided with attachment means (38, 40) such that any one housing portion can be at-

tached to any other housing portion in an end-to-end linear manner allowing a continuous sequence of connected housing portions, such that each housing portion can be attached to one other housing portion, defining a terminal housing portion (12,16), or to two others, defining an interior housing portion (14),
and wherein the attachment means (38, 40) are releasable enabling separation and a subsequent reattachment of the housing portions to one another,
wherein the housing portions when attached are capable of forming a common storage chamber, allowing the storage space provided by the modular bag system to be expandable, by the addition of further housing portions having releasable attachment means,
and wherein each housing portion is capable of forming an individual storage unit when not attached to another housing portion, allowing the modular bag to be deconstructed into a plurality of smaller bags each made from one or more housing portions,
characterised in that each housing portion has a first partition means (48) at a first end of the housing portion and a second partition means (50) at a second end of the housing portion, wherein the first and second partition means are operable between an open position and a closed position, thus allowing each end of each housing portion to be open or closed depending on its position in the modular bag, such that for a terminal housing portion (12) a partition means (48) can be in the closed position to close the end of the modular bag and for an interior housing portion (14) both of the partition means (48, 50) can be in the open position to define a common storage chamber between the housing portions or in the closed position to provide internal compartments or sub-chambers within the common chamber and when a housing portion (12) is used on its own both partition means (48, 50) are operable in the closed position to close both ends of the housing portion to provide an individual storage unit.

2. A modular bag system according to claim 1, wherein the housing portions are of a similar size and shape, so that the positions of the housing portions in the modular bag are interchangeable.

3. A modular bag system according to any preceding claim, wherein each housing portion, when in use in the modular bag system, is "U" shaped and, when not in use, can be flattened into a generally square or rectangular form, wherein
the flattened housing portion has a pair of opposed first edges forming the ends with which the attachment means are associated and
a pair of opposed second edges, which, when the flattened housing portion is folded into the "U" shape during use, define a top opening of the storage chamber of an assembled bag, the housing portion further having
an inside face which forms the interior of the housing portion and
an outside face which forms the external surface of the housing portion, wherein
the first and second closable partition means are fixed to the internal surface of the housing portion, such that closing the first or second partition means causes the flattened housing portion to be drawn into the folded "U" shape.

4. A modular bag system according to any preceding claim, wherein each of the partition means comprises a fastening means and a gusset portion, wherein the dimensions of the gusset portion defines the end profile of the modular bag and thus the storage capacity of the modular bag.

5. A modular bag system according to claim 4, wherein the gusset portions are made from flexible material, such as fabric.

6. A modular bag system according to claim 4 or 5, wherein part of each gusset portion is of tapered configuration, having a narrower portion near the second edges and a wider portion toward the middle of the first edges, such that the bag has a generally triangular or tear-drop shaped cross-section, with a narrow top when the flattened housing portion is folded into the "U" shape during use, and the width of the top of the bag defined between the two second edges is less than the width of the bag at the bottom.

7. A modular bag system according to claim 4,5 or 6, wherein the gusset portions have a curved free edge.

8. A modular bag system according to claims 4 to 7, wherein the fastening means of the partition means is a zip fastener.

9. A modular bag system according to claim 8, wherein the zip fastener of the partition means comprises a toothed track and two sliders to open and close the zip fastener, wherein the toothed track is substantially continuous along the first and second edges of the housing portions and the two sliders are operable to open and close both ends of the housing portion and to open and close the top opening of the housing portion.

10. A modular bag system according to claim 9, wherein the toothed track of the zip fastener of the partition means is bone-shaped, the long side of the bone aligned with the first edges of the housing portion to define the closable end, and having a narrower waisted middle part, and the short, top end of the bone aligned with, and in close proximity to, the second sides of the housing portion to form a closable

top of the housing portion.

11. A modular bag system according to any preceding claim, wherein the releasable attachment means provided on each end of each housing portion is a zip fastener.

12. A modular bag system according to claims 1 to 11, wherein each housing portion comprises a row of buttons on one connecting end and an array of corresponding button holes on its other connecting end so that two adjacent housing portions can be connected by attaching the buttons of one housing portion to the button holes of the other housing portion allowing the housing portions to be tiled together.

13. A modular bag system according to any preceding claim, wherein each housing portion may comprise an alphanumeric character, so that different names or words can be created by appropriate juxtaposition of the housing portions.

14. A modular bag system according to any one of the preceding claims, wherein the storage chamber contains an inner bag.

15. A modular bag system according to claim 14, wherein the inner bag provides a means for attaching adjacent housing portions.

16. A modular bag system according to any of the preceding claims, wherein the housing portions comprise attachment points for the attachment of a carrying member, wherein the attachment points are openings, e.g. slits, through which passes a strap attachment portion, wherein the strap attachment portions passing through the openings are secured at one end to the inner bag and further connected at the other end to a strap for carrying the bag.

Patentansprüche

1. Modulares Beutelsystem zum Bereitstellen von (einem) persönlich rekonfigurierbaren Beutel(n), wobei das System mindestens einen Gehäuseabschnitt (12, 14, 16) umfasst, wobei jeder Gehäuseabschnitt des modularen Beutelsystems Enden (34, 36) aufweist, die mit Befestigungsmitteln (38, 40) ausgestattet sind, so dass jeder Gehäuseabschnitt auf lineare Endean-Ende-Art an jedem anderen Gehäuseabschnitt befestigt werden kann, wodurch eine kontinuierliche Abfolge verbundener Gehäuseabschnitte gestattet wird, so dass jeder Gehäuseabschnitt an einem anderen Gehäuseabschnitt, der einen Endgehäuseabschnitt (12, 16) definiert, oder zwei andere, die einen Innengehäuseabschnitt (14) definieren, befestigt werden kann, und wobei die Befestigungsmittel (38, 40) lösbar sind, um eine Trennung und ein nachfolgendes erneutes Befestigen der Gehäuseabschnitte aneinander zu ermöglichen, wobei die Gehäuseabschnitte, wenn sie befestigt sind, in der Lage sind, eine gemeinsame Aufbewahrungskammer zu bilden, was gestattet, dass der durch das modulare Beutelsystem bereitgestellte Aufbewahrungsraum durch das Hinzufügen weiterer Gehäuseabschnitte, die lösbare Befestigungsmittel aufweisen, erweiterbar ist, und wobei jeder Gehäuseabschnitt, wenn er nicht befestigt ist, in der Lage ist, eine individuelle Aufbewahrungseinheit zu bilden, was gestattet, dass der modulare Beutel in eine Vielzahl kleinerer Beutel auseinandergenommen wird, die jeweils aus einem oder mehreren Gehäuseabschnitten bestehen, **dadurch gekennzeichnet, dass** jeder Gehäuseabschnitt ein erstes Unterteilungsmittel (48) an einem ersten Ende des Gehäuseabschnitts und ein zweites Unterteilungsmittel (50) an einem zweiten Ende des Gehäuseabschnitts aufweist, wobei das erste und das zweite Unterteilungsmittel zwischen einer offenen Position und einer geschlossenen Position betätigbar ist, wodurch gestattet wird, dass jedes Ende jedes Gehäuseabschnitts abhängig von seiner Position im modularen Beutel offen oder geschlossen ist, so dass für einen Endgehäuseabschnitt (12) ein Unterteilungsmittel (48) in der geschlossenen Position sein kann, um das Ende des modularen Beutels zu schließen, und für einen Innengehäuseabschnitt (14) beide Unterteilungsmittel (48, 50) in der offenen Position, um eine gemeinsame Aufbewahrungskammer zwischen den Gehäuseabschnitten zu definieren, oder in der geschlossenen Position sein können, um Innenfächer oder Unterkammern in der gemeinsamen Kammer bereitzustellen, und wenn ein Gehäuseabschnitt (12) für sich alleine verwendet wird, beide Unterteilungsmittel (48, 50) in der geschlossenen Position betrieben werden können, um beide Enden des Gehäuseabschnitts zu schließen, um eine individuelle Aufbewahrungseinheit bereitzustellen.

2. Modulares Beutelsystem nach Anspruch 1, wobei die Gehäuseabschnitte ähnlicher Größe und Form sind, so dass die Positionen der Gehäuseabschnitte im modularen Beutel austauschbar sind.

3. Modulares Beutelsystem nach einem der vorstehenden Ansprüche, wobei jeder Gehäuseabschnitt, wenn er im modularen Beutelsystem verwendet wird, "U"-förmig ist, und wenn er nicht verwendet wird, in eine allgemein quadratische oder rechtwinklige Form geglättet werden kann, wobei der geglättete Gehäuseabschnitt ein Paar gegenüberliegender erster Kanten, die Enden bilden, denen die Befestigungsmittel zugeordnet sind, und ein Paar gegenüberliegender zweiter Kanten aufweist, die, wenn der geglättete Gehäuseabschnitt während der

Verwendung in die "U"-Form gefaltet wird, eine obere Öffnung der Aufbewahrungskammer eines zusammengesetzten Beutels definieren, wobei der Gehäuseabschnitt ferner eine Innenfläche, die das Innere der des Gehäuseabschnitts bildet, und eine Außenfläche, die die äußere Oberfläche des Gehäuseabschnitts bildet, aufweist, wobei die ersten und zweiten verschließbaren Unterteilungsmittel an der inneren Oberfläche des Gehäuseabschnitts fixiert sind, so dass durch das Schließen der ersten oder zweiten Unterteilungsmittel bewirkt wird, dass der geglättete Gehäuseabschnitt in die gefaltete "U"-Form gezogen wird.

4. Modulares Beutelsystem nach einem der vorstehenden Ansprüche, wobei jedes der Unterteilungsmittel ein Sicherungsmittel und einen Keilabschnitt umfasst, wobei die Abmessungen des Keilabschnitts das Endprofil des modularen Beutels und somit die Aufbewahrungskapazität des modularen Beutels bestimmt.

5. Modulares Beutelsystem nach Anspruch 4, wobei die Keilabschnitte aus flexiblem Material, wie Gewebe, bestehen.

6. Modulares Beutelsystem nach Anspruch 4 oder 5, wobei ein Teil jedes Keilabschnitts eine sich verjüngende Konfiguration aufweist, mit einem schaleren Abschnitt nahe der zweiten Kanten und einem breiteren Abschnitt zur Mitte der ersten Kanten, so dass der Beutel einen allgemein dreieckigen oder tropfenförmigen Querschnitt mit einer schmalen Oberseite, wenn der geglättete Gehäuseabschnitt während der Verwendung in die "U"-Form gefaltet wird, aufweist, und wobei die Breite der Oberseite des Beutels, die zwischen den beiden zweiten Kanten definiert ist, kleiner als die Breite des Beutels an der Unterseite ist.

7. Modulares Beutelsystem nach Anspruch 4, 5 oder 6, wobei die Keilabschnitte eine gekrümmte freie Kante aufweisen.

8. Modulares Beutelsystem nach Ansprüchen 4 bis 7, wobei die Sicherungsmittel der Unterteilungsmittel eine Reißverschlusssicherung sind.

9. Modulares Beutelsystem nach Anspruch 8, wobei die Reißverschlusssicherung der Unterteilungsmittel eine gezahnte Bahn und zwei Schieber zum Öffnen und Schließen der Reißverschlusssicherung umfasst, wobei die gezahnte Bahn im Wesentlichen entlang der ersten und zweiten Kanten der Gehäuseabschnitte durchgängig ist und die beiden Schieber betrieben werden können, um beide Enden des Gehäuseabschnitts zu öffnen und zu schließen und um die obere Öffnung des Gehäuseabschnitts zu öffnen und zu schließen.

10. Modulares Beutelsystem nach Anspruch 9, wobei die gezahnte Bahn der Reißverschlusssicherung der Unterteilungsmittel knochenförmig ist, wobei die lange Seite des Knochens auf die ersten Kanten des Gehäuseabschnitts ausgerichtet ist, um das verschließbare Ende zu definieren, und mit einem schmaleren taillierten Mittelteil, und wobei das kurze, obere Ende des Knochens auf die zweiten Seiten des Gehäuseabschnitts ausgerichtet ist und sich in enger Nähe dazu befindet, um eine verschließbare Oberseite des Gehäuseabschnitts zu bilden.

11. Modulares Beutelsystem nach einem der vorstehenden Ansprüche, wobei die lösbaren Befestigungsmittel, die an jedem Ende des Gehäuseabschnitts bereitgestellt sind, eine Reißverschlusssicherung sind.

12. Modulares Beutelsystem nach Ansprüchen 1 bis 11, wobei jeder Gehäuseabschnitt eine Reihe Knöpfe auf einem verbindenden Ende und eine Reihe entsprechender Knopflöcher auf seinem anderen verbindenden Ende umfasst, so dass zwei benachbarte Gehäuseabschnitte durch Befestigen der Knöpfe eines Gehäuseabschnitts an die Knopflöcher des anderen Gehäuseabschnitts verbunden werden können, was ein Aneinanderreihen der Gehäuseabschnitte gestattet.

13. Modulares Beutelsystem nach einem der vorstehenden Ansprüche, wobei jeder Gehäuseabschnitt ein alphanumerisches Zeichen umfassen kann, so dass durch eine angemessene Gegenüberstellung der Gehäuseabschnitte unterschiedliche Namen oder Wörter geschaffen werden können.

14. Modulares Beutelsystem nach einem der vorstehenden Ansprüche, wobei die Aufbewahrungskammer einen Innenbeutel enthält.

15. Modulares Beutelsystem nach Anspruch 14, wobei der Innenbeutel ein Mittel zum Befestigen benachbarter Gehäuseabschnitte bereitstellt.

16. Modulares Beutelsystem nach einem der vorstehenden Ansprüche, wobei die Gehäuseabschnitte Befestigungspunkte für das Befestigen eines Trageelements umfassen, wobei die Befestigungspunkte Öffnungen, z. B. Schlitze, sein können, durch die ein Streifenbefestigungsabschnitt geführt werden kann, wobei die Streifenbefestigungsabschnitte, die durch die Öffnungen geführt werden, an einem Ende des Innenbeutels gesichert und ferner am anderen Ende mit einem Streifen zum Tragen des Beutels verbunden werden.

Revendications

1. Système de sac modulaire destiné à fournir un sac ou plusieurs sacs reconfigurables personnels, le système comprenant au moins une partie de logement (12, 14, 16), chaque partie de logement du système de sac modulaire possédant des extrémités (34, 36) dotées de moyens de fixation (38, 40) de sorte qu'une quelconque partie de logement puisse être attachée à une autre quelconque partie de logement d'une manière linéaire bout à bout permettant une séquence continue de parties de logement raccordées, de sorte que chaque partie de logement puisse être attachée à une autre partie de logement, définissant une partie de logement terminale (12, 16), ou à deux autres, définissant une partie de logement intérieure (14), et lesdits moyens de fixation (38, 40) étant libérables permettant de séparer et de, de nouveau, rattacher ultérieurement, des parties de logement l'une à l'autre, lesdites parties de logement, lorsqu'elles sont attachées, étant capables de former une chambre de stockage commune, permettant à l'espace de stockage fourni par le système de sac modulaire d'être extensible, en ajoutant des parties de logement supplémentaires possédant des moyens de fixation libérables et chaque partie de logement étant capable de former une unité de stockage individuelle lorsqu'elle n'est pas attachée à une autre partie de logement, permettant au sac modulaire d'être désassemblé en une pluralité de sacs plus petits fabriqués chacun à partir d'une ou de plusieurs parties de logement, **caractérisé en ce que** chaque partie de logement possède un premier moyen de séparation (48) au niveau d'une première extrémité de la partie de logement et un second moyen de séparation (50) au niveau d'une seconde extrémité de la partie de logement, lesdits premier et second moyens de séparation pouvant être utilisés entre une position ouverte et une position fermée, permettant ainsi à chaque extrémité de chaque partie de logement d'être ouverte ou fermée en fonction de sa position dans le sac modulaire, de sorte que, pour une partie de logement terminale (12), un moyen de séparation (48) puisse être dans la position fermée pour fermer l'extrémité du sac modulaire et pour une partie de logement intérieure (14), les deux moyens de séparation (48, 50) puissent être dans la position ouverte pour définir une chambre de stockage commune entre les parties de logement ou dans la position fermée pour fournir des compartiments internes ou des sous-chambres à l'intérieur de la chambre commune et lorsqu'une partie de logement (12) est utilisée seule, les deux moyens de séparation (48, 50) pouvant être utilisés dans la position fermée pour fermer les deux extrémités de la partie de logement afin de fournir une unité individuelle de stockage.

2. Système de sac modulaire selon la revendication 1, lesdites parties de logement étant d'une taille et d'une forme similaires afin que les positions des parties de logement dans le sac modulaire soient interchangeables.

3. Système de sac modulaire selon l'une quelconque des revendications précédentes, chaque partie de logement, lors de l'utilisation dans le système de sac modulaire, étant en forme de "U" et, lorsqu'elle n'est pas utilisée, pouvant être aplatie en une forme généralement carrée ou rectangulaire, ladite partie de logement aplatie possédant une paire de premiers bords opposés formant les extrémités auxquelles sont associés les moyens de fixation et une paire de seconds bords opposés qui, lorsque la partie de logement aplatie est repliée en forme de "U" durant l'utilisation, définissent une ouverture supérieure de la chambre de stockage d'un sac assemblé, ladite partie de logement possédant en outre une face interne qui forme l'intérieur de la partie de logement et une face externe qui forme la surface externe de la partie de logement, lesdits premier et second moyens de séparation pouvant être attachés au la surface interne de la partie de logement, de sorte que la fermeture des premier ou second moyens de séparation amène la partie de logement aplatie à prendre la forme en «U» pliée.

4. Système de sac modulaire selon l'une quelconque des revendications précédentes, chacun des moyens de séparation comprenant un moyen de fermeture et une partie de soufflet, lesdites dimensions de la partie de soufflet définissant le profil d'extrémité du sac modulaire et donc la capacité de stockage du sac modulaire.

5. Système de sac modulaire selon la revendication 4, lesdites parties de soufflet étant fabriquées à partir d'un matériau souple, tel qu'un tissu.

6. Système de sac modulaire selon la revendication 4 ou 5, une partie de chaque partie de soufflet étant de configuration effilée, possédant une partie plus étroite près des seconds bords et une partie plus large vers le milieu des premiers bords, de sorte que le sac possède une section transversale généralement triangulaire ou en forme de goutte, avec un sommet étroit lorsque la partie de logement aplatie est pliée en une forme en "U" durant l'utilisation et que la largeur du sommet du sac définie entre les deux seconds bords soit inférieure à la largeur du sac au niveau du fond.

7. Système de sac modulaire selon la revendication 4, 5 ou 6, lesdites parties de soufflet possédant un bord libre incurvé.

8. Système de sac modulaire selon les revendications 4 à 7, ledit moyen de fermeture des moyens de séparation étant une fermeture à glissière.

9. Système de sac modulaire selon la revendication 8, ladite fermeture à glissière des moyens de séparation comprenant une voie dentée et deux curseurs pour ouvrir et fermer la fermeture à glissière, ladite voie dentée étant sensiblement continue le long des premier et second bords des parties de logement et lesdits deux curseurs pouvant être utilisés pour ouvrir et fermer les deux extrémités de la partie de logement et pour ouvrir et fermer l'ouverture supérieure de la partie de logement.

10. Système de sac modulaire selon la revendication 9, ladite voie dentée de la fermeture à glissière des moyens de séparation étant en forme d'os, le long côté de l'os étant aligné avec les premiers bords de la partie de logement pour définir l'extrémité pouvant être fermée, et possédant une partie médiane étranglée plus étroite et l'extrémité supérieure courte de l'os étant alignée avec les seconds côtés de la partie de logement et à proximité immédiate de ceux-ci pour former le sommet pouvant être fermé de la partie de logement.

11. Système de sac modulaire selon l'une quelconque des revendications précédentes, ledit moyen de fixation libérable disposé sur chaque extrémité de chaque partie de logement étant une fermeture à glissière.

12. Système de sac modulaire selon les revendications 1 à 11, chaque partie de boîtier comprenant une rangée de boutons sur une extrémité de raccord et un réseau de trous pour boutons correspondants sur son autre extrémité de raccord afin que deux parties de logement adjacentes puissent être raccordées en attachant les boutons d'une partie de logement aux trous pour boutons de l'autre partie de logement permettant aux parties de logement d'être assemblées ensemble.

13. Système de sac modulaire selon l'une quelconque des revendications précédentes, chaque partie de logement pouvant comprendre un caractère alphanumérique afin que différents noms ou mots puissent être créés par une juxtaposition appropriée des parties de logement.

14. Système de sac modulaire selon l'une quelconque des revendications précédentes, ladite chambre de stockage contenant un sac interne.

15. Système de sac modulaire selon la revendication 14, ledit sac interne fournissant un moyen permettant d'attacher des parties de logement adjacentes.

16. Système de sac modulaire selon l'une quelconque des revendications précédentes, lesdites parties de logement comprenant des points d'attache pour attacher un élément de support, lesdits points d'attache étant des ouvertures, par exemple des fentes, à travers lesquelles passe une partie d'attache de sangle, lesdites parties d'attache de sangle passant à travers les ouvertures étant fixées au niveau d'une extrémité au sac interne et étant en outre raccordées au niveau de l'autre extrémité à une sangle pour porter le sac.

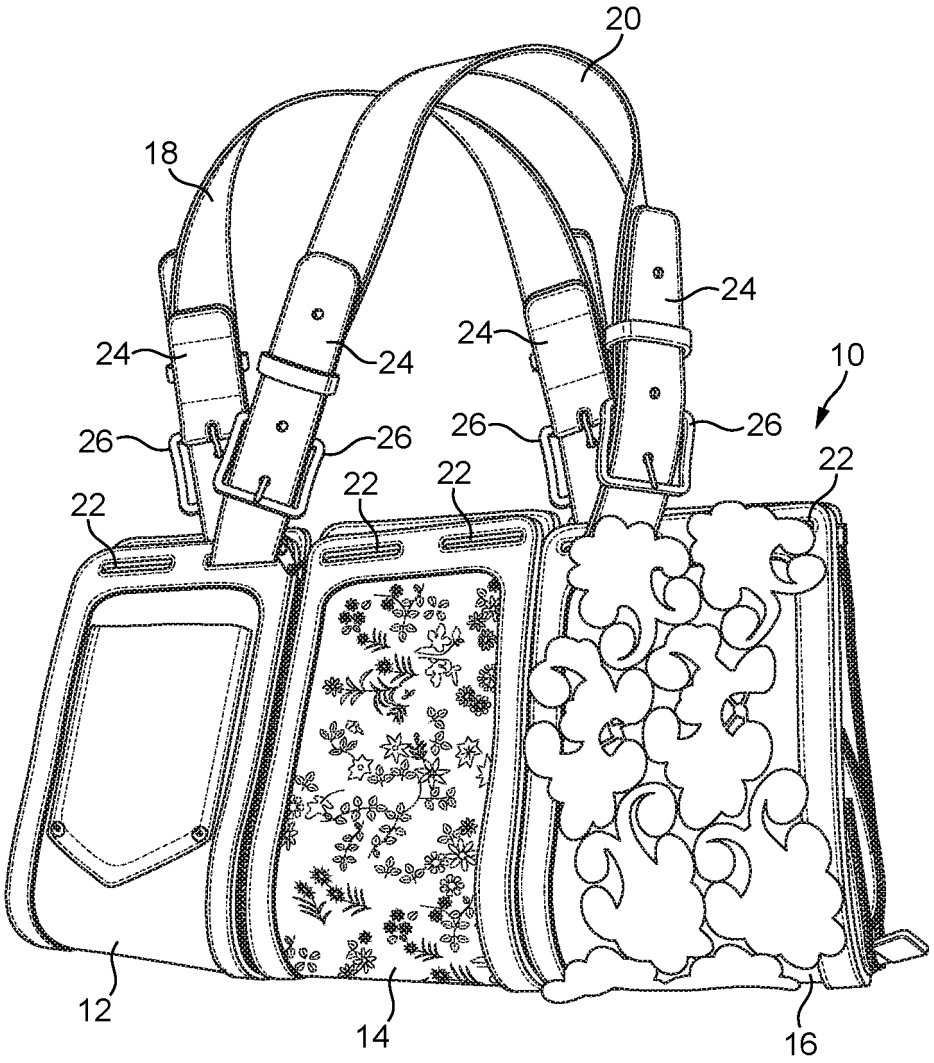

FIG. 1

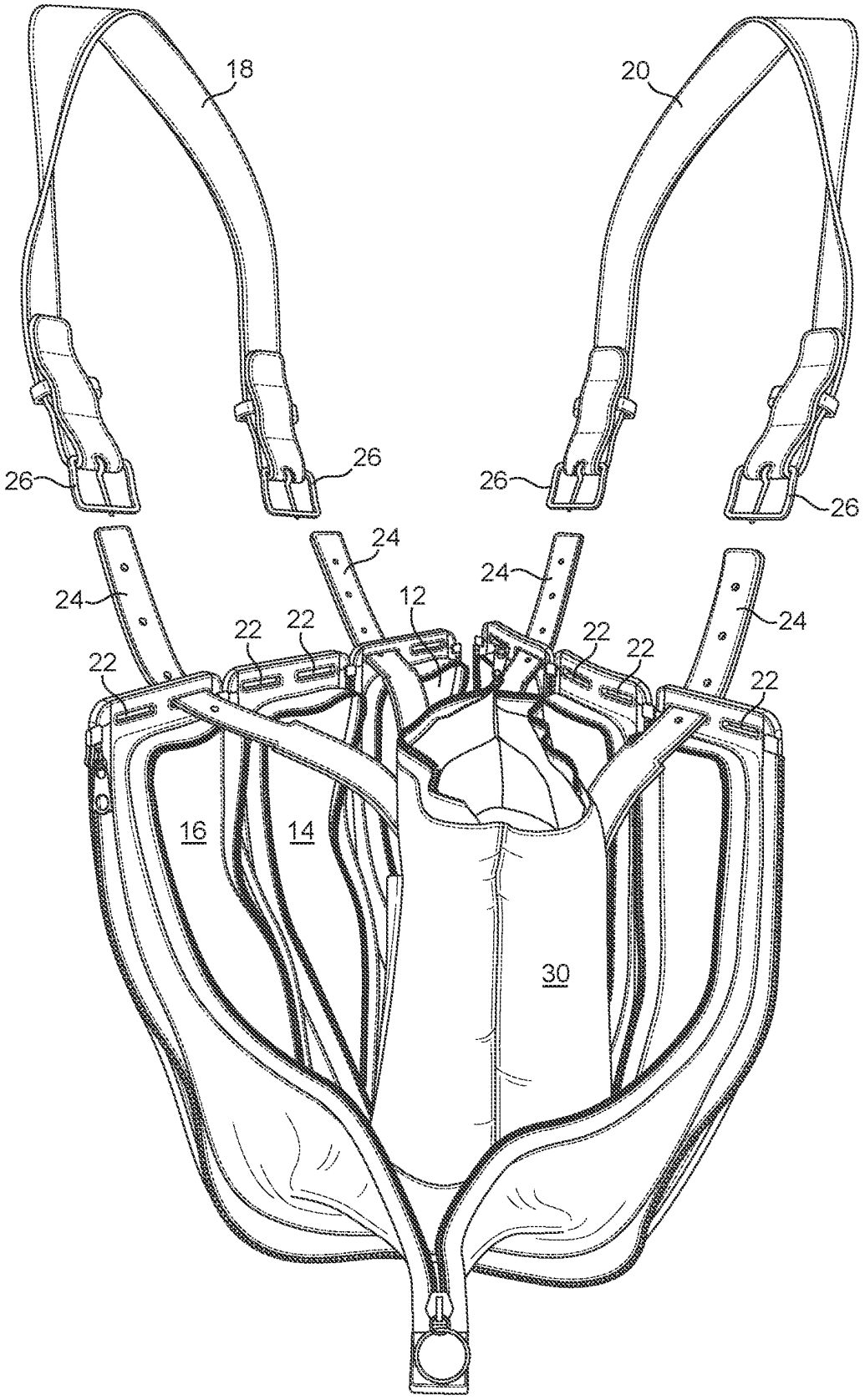

FIG. 1A

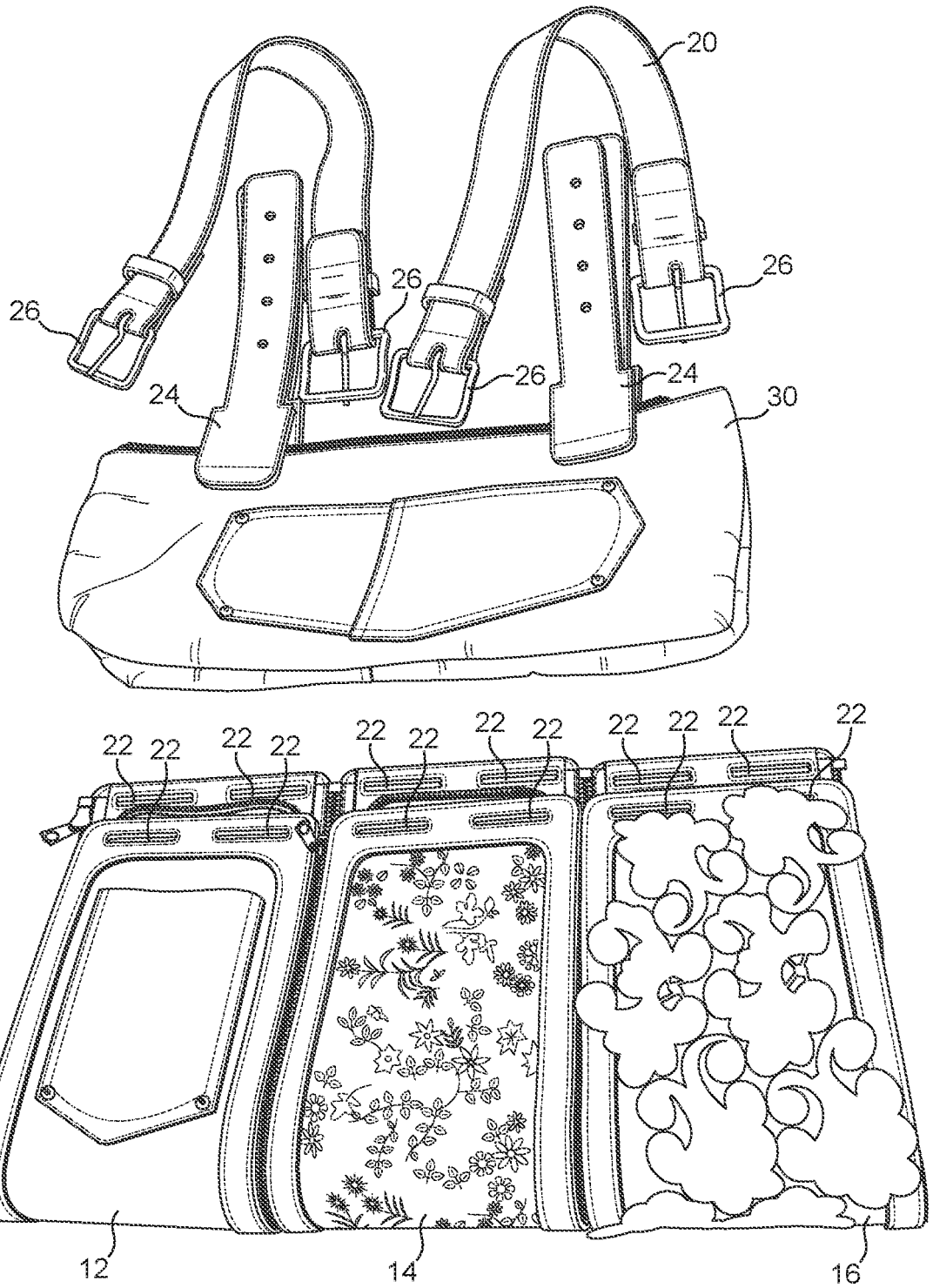

FIG. 2

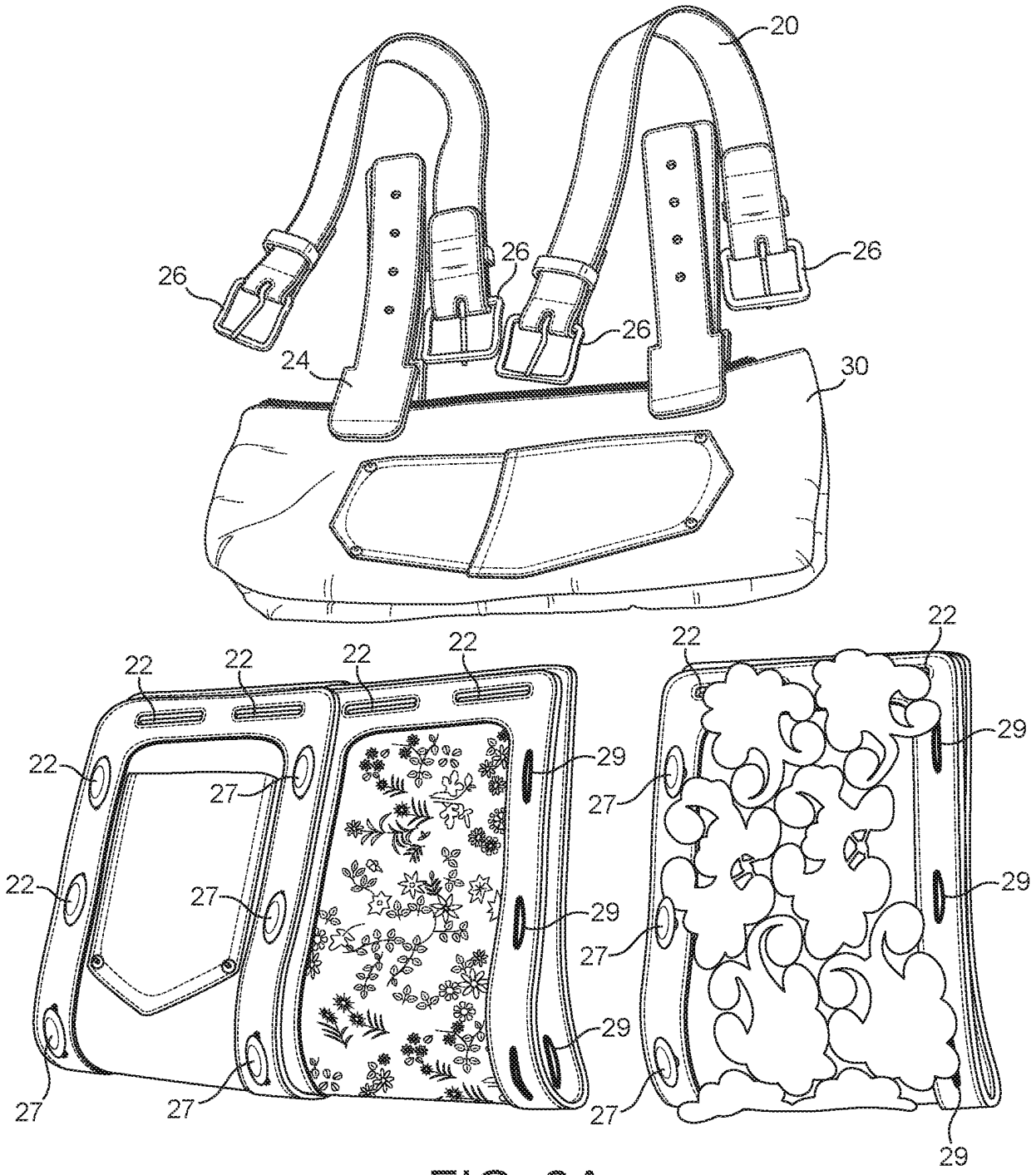
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FIG. 2A

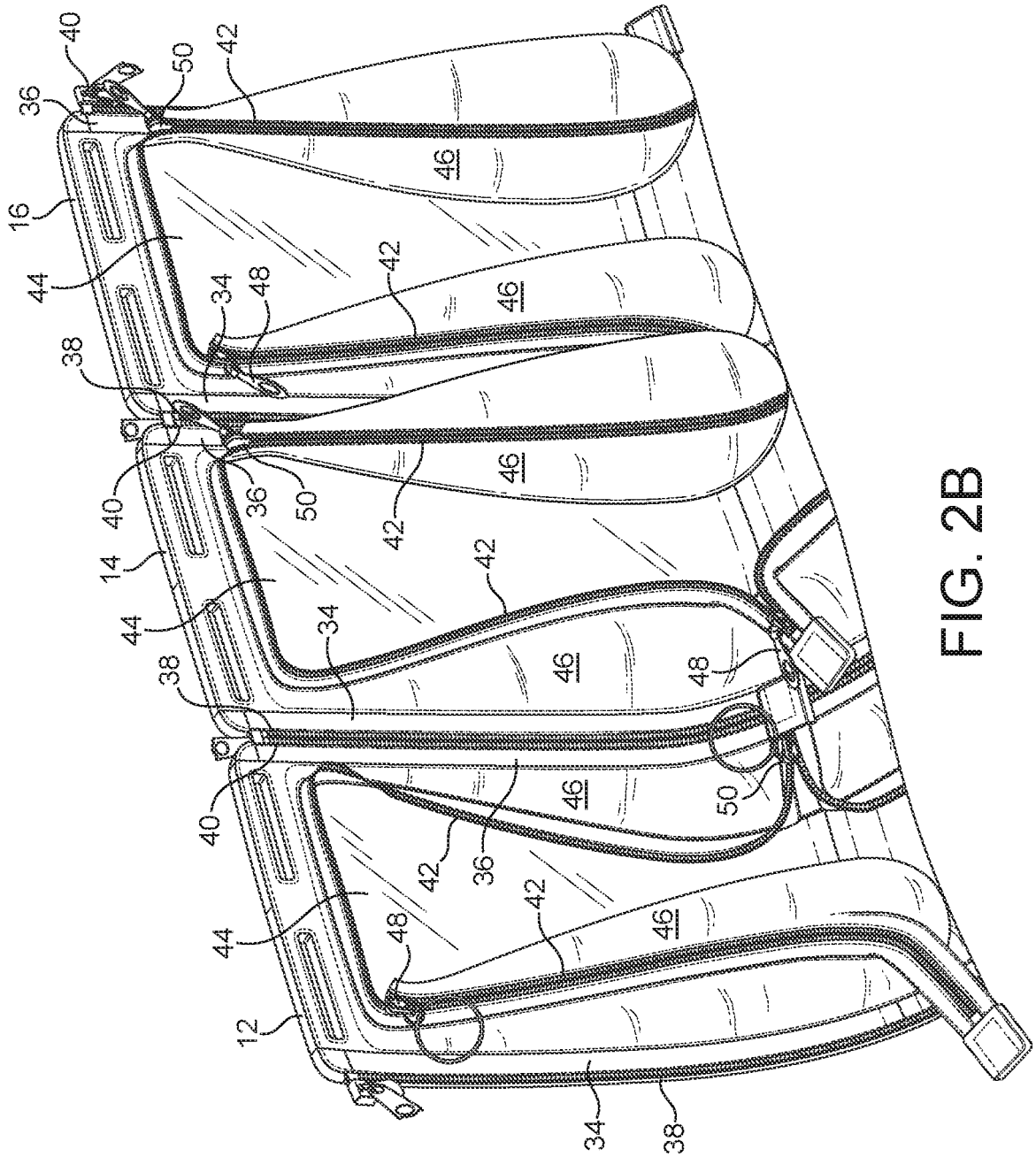

FIG. 2B

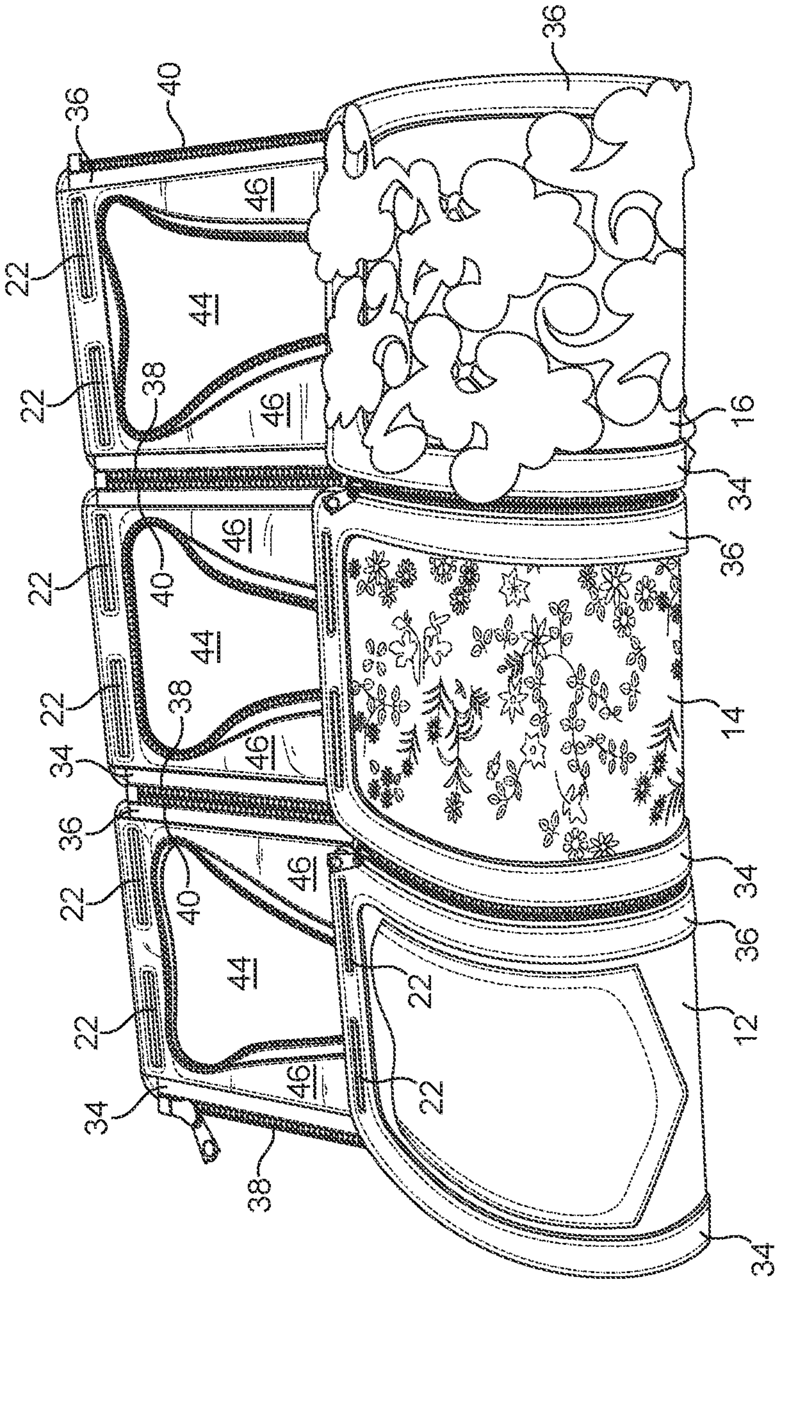
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FIG. 3

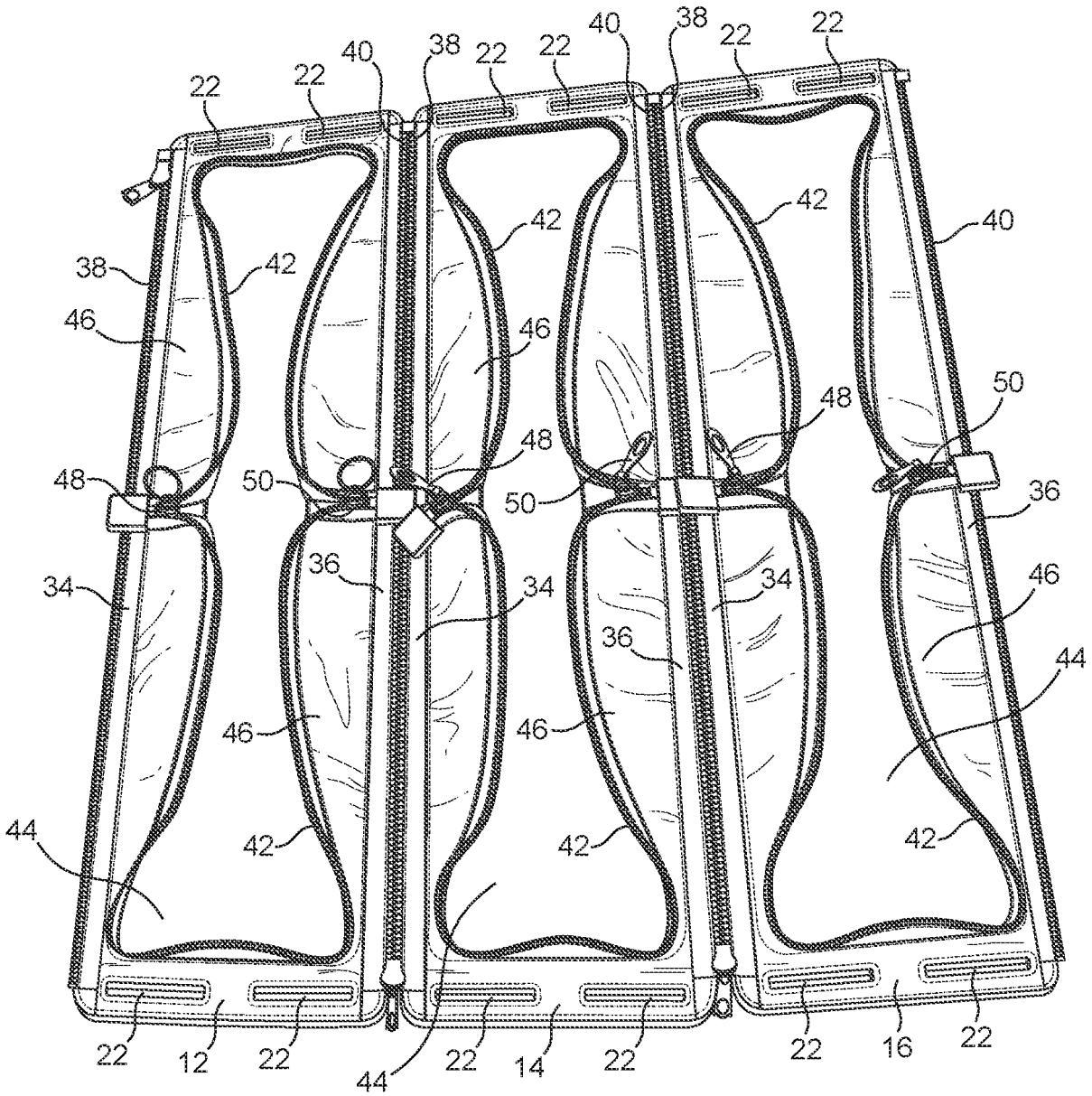
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FIG. 4

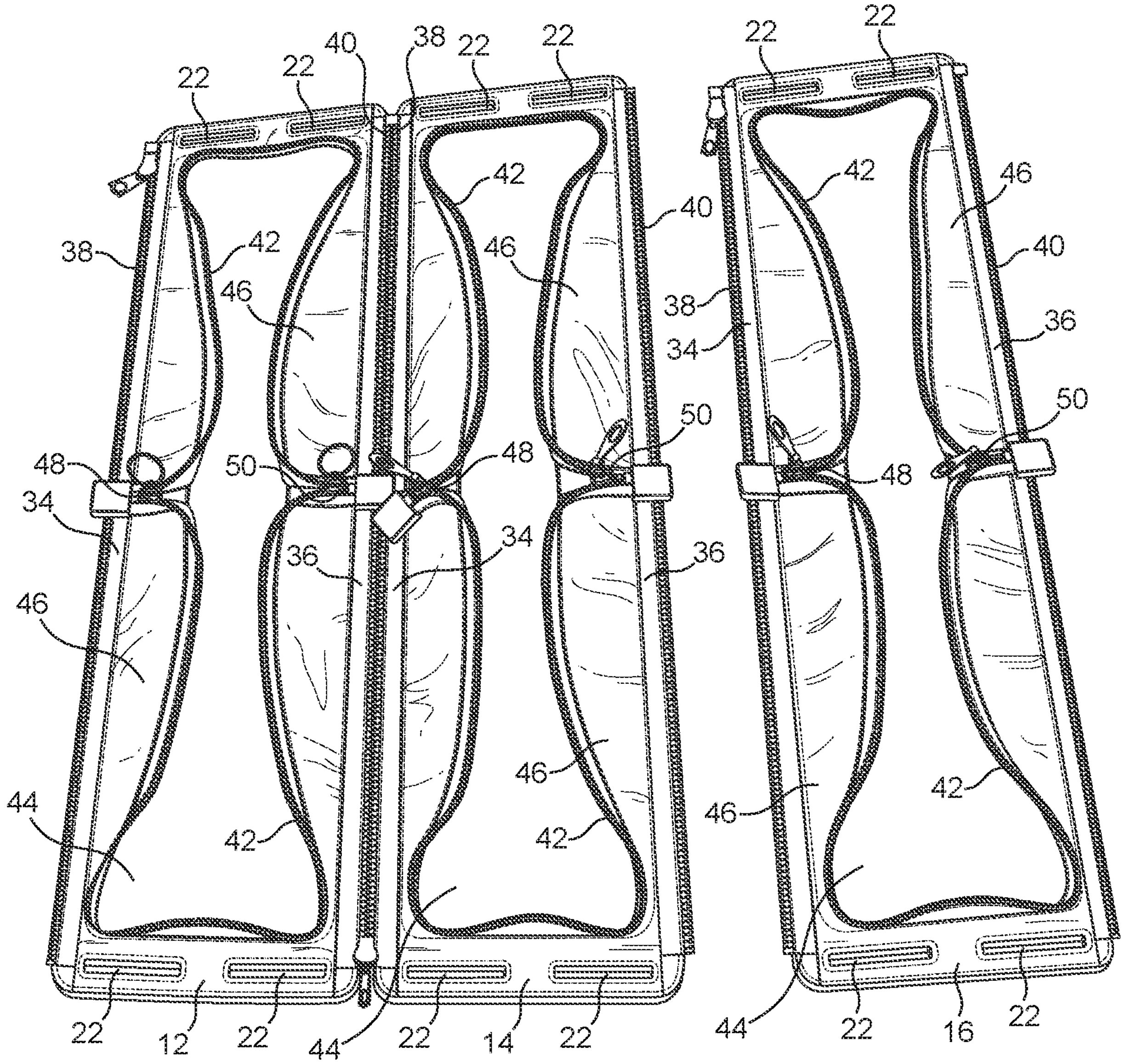
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FIG. 5

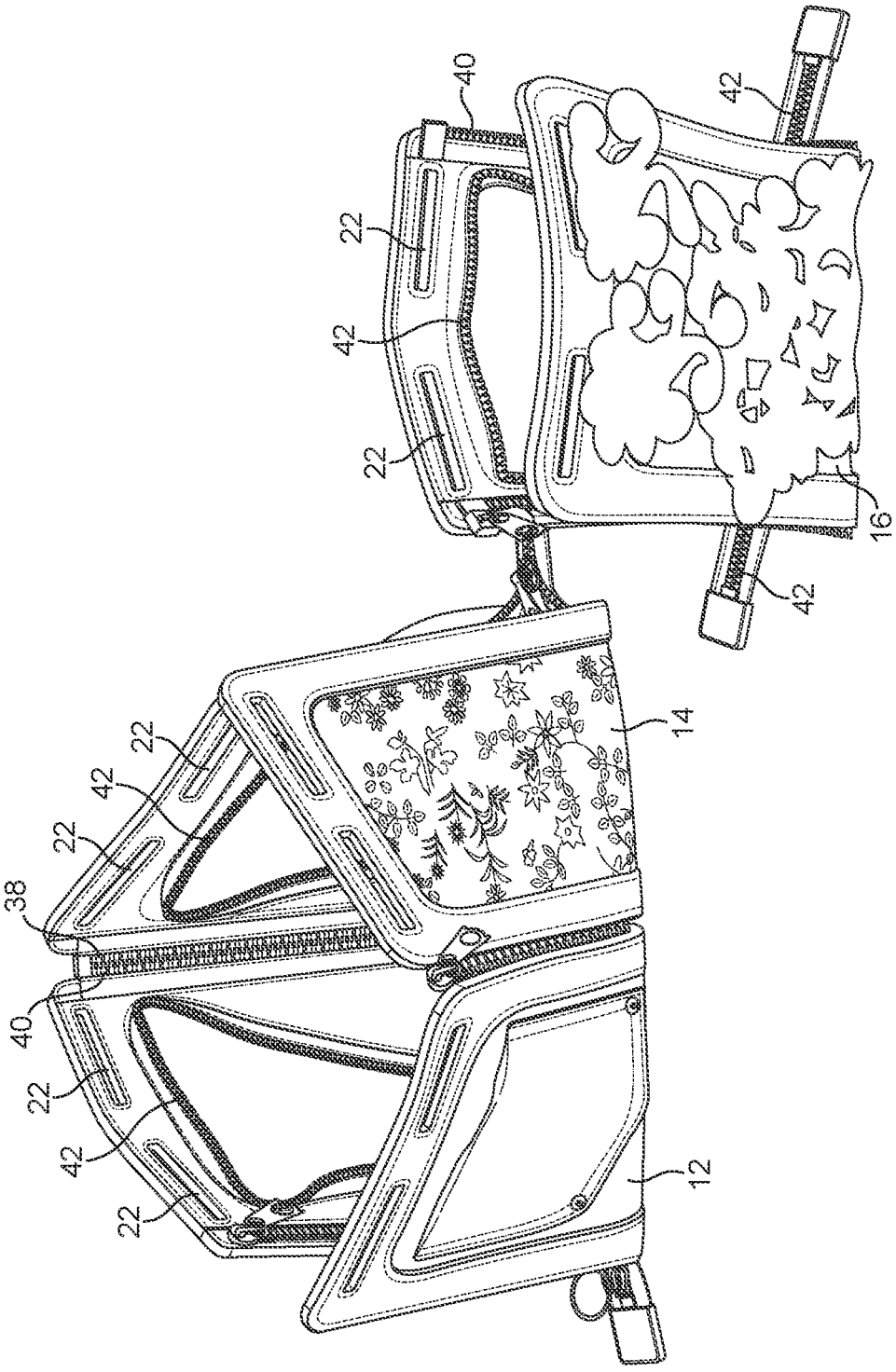

FIG. 6

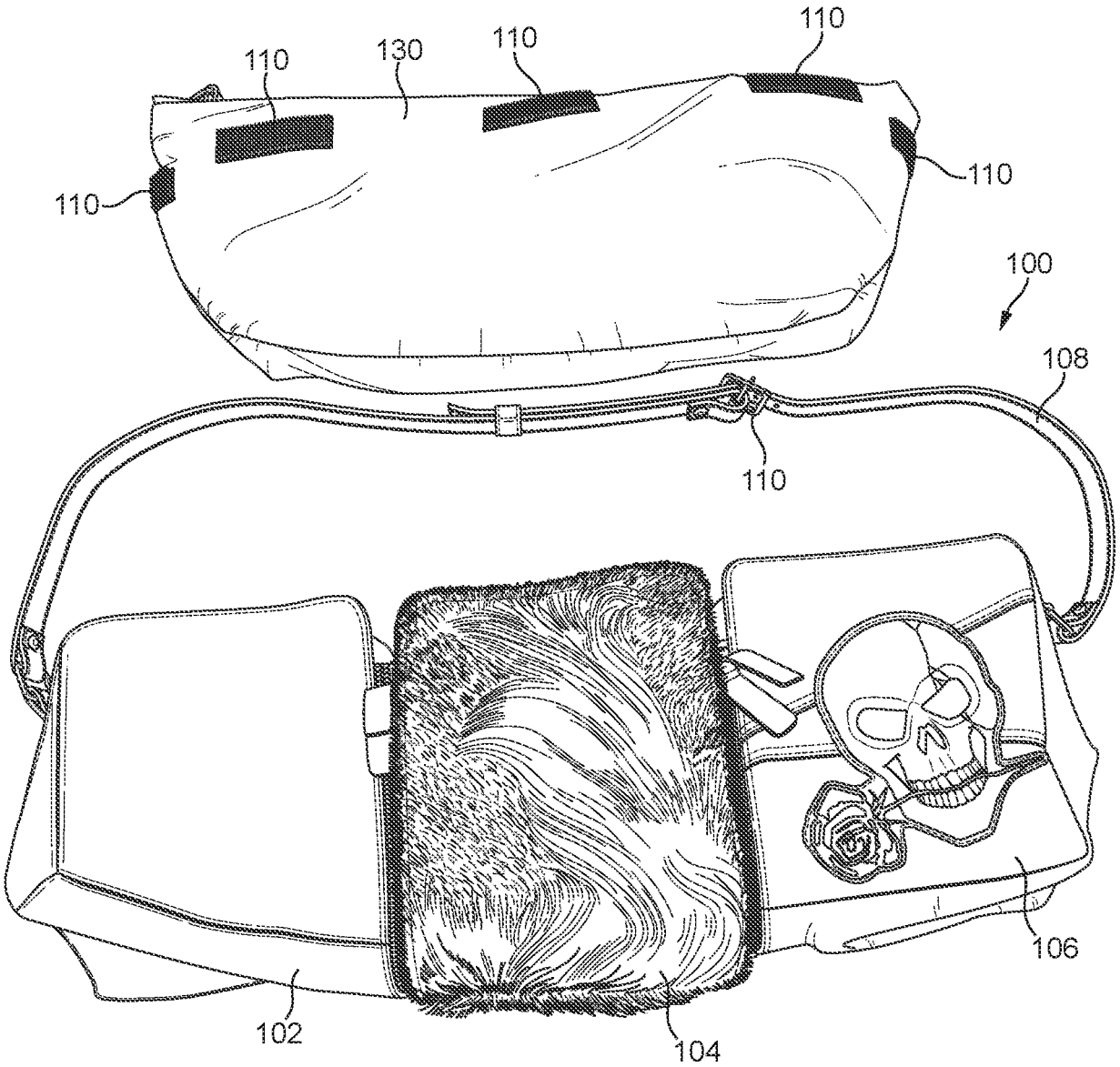

FIG. 7

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP S55118615 U **[0009]**