

LUGGAGE ARTICLE WITH ZIPPER OR OTHER COMPONENT LUG-TO-SHELL ATTACHMENT ARRANGEMENT

TECHNICAL FIELD

[0001] This disclosure relates to luggage articles with interlocking components and shells for secure attachment.

BACKGROUND

[0002] Many consumer goods such as luggage cases are not easily recyclable or repairable in the event that a component part fails and needs replacement. For example, items such as zippers, hinges, dividers, and soft pockets, etc. are often stitched or glued to hard side plastic shells. Such attachment methods are designed to be robust and secure, which makes the articles difficult to disassemble for recycling, repair, etc.

[0003] To ease recyclability of consumer goods, and/or enhance reparability, improved attachment methods and systems are desired that are robust and dependable, yet can easily be disassembled such as for recycling, maintenance, or personalization of the consumer goods.

SUMMARY

[0004] In various embodiments, a luggage article includes a shell that includes multiple recesses or lugs. A corresponding component is releasably attachable to the shell and has the other of matching spaced-apart lugs or recesses. Each of the lugs contains a receptacle therethrough. An elongated element is arranged to pass through the receptacles in the lugs to engage the lugs and the shell, thereby securing the component to the shell when the lugs are positioned within their respective recesses.

[0005] In one embodiment, a luggage article includes a first shell includes a plurality of spaced-apart recesses or lugs formed therein; a first component including the other of a plurality of corresponding spaced-apart lugs or recesses formed therein, the lugs each including a receptacle formed therein and each received in a respective one of the recesses. An elongated element is arranged to engage the receptacle of at least one of the plurality of lugs of the first shell or first component when the lugs are received in the recesses of the other of the first shell or component to secure the first component to the first shell. Such embodiments of a luggage article enable a wide variety of components to be attached to a shell of a luggage case to ease manufacturing, repair, and/or recycling of the luggage article.

[0006] Optionally in some embodiments, the plurality of spaced-apart lugs includes a first plurality of spaced-apart lugs and a second plurality of spaced-apart lugs, the plurality of spaced-apart recesses includes a first plurality of spaced-apart recesses; and the luggage article further includes: a second shell hingedly coupled to the first shell and including a second plurality of spaced-apart recesses or lugs formed therein. Each of the first plurality of spaced-apart lugs is received in a respective one of the first plurality of recesses, and each of the second plurality of spaced-apart lugs is received in a respective one of the second plurality of recesses; and a second elongated element received in the receptacle of at least one of the second plurality of lugs to secure the first component to the second shell. Such embodiments beneficially provide the ability to secure two shells of a luggage article together when the first plurality of lugs are received in the first plurality of recesses, the second plurality of lugs are received in the second plurality of recesses, and the respective first and/or second elongated elements are received in the respective receptacles of the first and/or second plurality of lugs.

[0007] Optionally in some embodiments, the elongated element includes a first elongated element and a second elongated element; the plurality of lugs includes a first plurality of lugs and a second plurality of lugs; the plurality of recesses includes a first plurality of recesses and a second plurality of recesses; the first plurality of lugs are received in the first plurality of recesses, and the first elongated element is received in the receptacle of at least one of the first plurality of lugs to secure a first portion of the first component to the first shell; and the second plurality of lugs are received in the second plurality of recesses, and the second elongated element is received in the receptacle of at least one of the second plurality of lugs to secure a second portion of the first component to the first shell. Such embodiments beneficially provide the ability to releasably secure a component to a shell of a luggage article using a single elongated element, or alternatively at least two elongated elements to secure respective first and/or second portions of a component to the luggage shell. Using at least two elongated elements may ease assembly, as each of the elongated elements can be shorter than when one elongated element is used. For example, when using multiple, shorter elongated elements each element may have fewer bends to pass through and/or less overall friction when being passed through the receptacles of the lugs.

[0008] Optionally in some embodiments, the first component is releasably secured to the first shell. Such embodiments facilitate rapid disassembly of the luggage article such as for repair, recycling, and/or disposal. For example, in some embodiments, the materials of the shell and/or component may not be of the same recycling class of materials and may be separated and/or sorted prior to recycling.

[0009] Optionally in some embodiments, the elongated element is removably received in the receptacles. Such embodiments also facilitate rapid disassembly of the luggage article such as for repair, recycling, or disposal. In such embodiments, tools may not be needed to disassemble the luggage article.

[0010] Optionally in some embodiments, the elongated element includes one or more of a pultrusion, a cord, a rope, a wire(s), or a rod. Such embodiments enable the deployment of low-cost, light weight structures to attach components to a shell of a luggage article.

[0011] Optionally in some embodiments, the recesses comprise a plurality of apertures formed around a periphery of the first shell or the second shell. Such embodiments may beneficially provide for ease of manufacturing of the shell. For example, the apertures can be formed with the shell such as by vacuum forming, press forming, or injection molding, such that few (or no) additional processing steps are needed to provide the apertures.

[0012] Optionally in some embodiments, the first component includes one or more of a zip, slide fastener, a clamp fastener, a frame, a pocket, a divider, a gusset, or a side panel. Such embodiments beneficially provide for a wide variety of possible optional components to attach to a luggage shell, thereby providing additional or different functionality. In many embodiments, a user may be able easily customize a luggage case by removing, adding, or changing a component attached to the shell.

[0013] Optionally in some embodiments, the zip or slide fastener includes teeth coupled to a tape and the lugs are stitched to the tape. In such embodiments, the benefits of the luggage articles disclosed herein may be realized by using a standard zipper tape, to which the lugs are stitched, thereby reducing, or eliminating the need to develop a special zipper tape for such embodiments, reducing cost, supply chain and/or inventory issues (e.g., special zipper tapes may not need to be sourced, stocked, etc.)

[0014] Optionally in some embodiments, the plurality of lugs snap-fit into the respective plurality of recesses. Such embodiments beneficially provide for a temporary structure to hold the component to the shell while the elongated element is being inserted into the receptacles of the lugs. Thus, a single person can easily assemble the component and the shell. Further, the snap-fit may beneficially provide greater strength, stiffness, or other structural benefits to a luggage case compared to an embodiment without snap-fit features.

[0015] Optionally in some embodiments, a portion of each of the lugs flexes relative to a portion of the shell or the first component forming the recess to snap-fit. In such embodiments, the compliance of the lugs relative to the shell or component provides the ability of the lugs to snap-fit without damage to the lugs, component, or the shell.

[0016] Optionally in some embodiments, the snap-fit locates the plurality of lugs in an installation location whereby the receptacles are positioned to receive the elongated element. In such embodiments, the location of the lugs in the installation location eases assembly of the luggage article.

[0017] Optionally in some embodiments, when the lugs are received in the recesses, the lugs pass from a first side of the shell or first component through the recesses and beyond a second, opposing side of the shell or first component. In such embodiments, the passage of the lugs through the shell or component provides for a strong and/or mechanically secure connection.

[0018] Optionally in some embodiments, the receptacle includes one or more apertures. In some embodiments, the apertures may be peripherally, fully enclosed aperture or a peripherally, partially enclosed aperture formed in the lug. A benefit of providing fully enclosed apertures may be a relatively more secure connection compared to partially enclosed apertures. A benefit of providing partially enclosed apertures may be lower weight of the assembled luggage article and/or ease of assembly.

[0019] Optionally in some embodiments, the receptacle includes a tubular bore. A tubular bore may provide a shape compatible to, such as for instance being similar or the same as, that of the elongated element, thereby easing assembly and/or reducing clearances between the receptacle and elongated element to provide for a stiff connection therebetween.

[0020] Optionally in some embodiments, the elongated element includes: an elongated body with a first end and an opposing second end, and the luggage article further includes a clip that releasably secures the first end of the elongated body to the second end of the elongated body. In such embodiments, the clip provides the benefit of securing the first and second end (e.g., tip and tail) of the elongated element to one another such that they do not interfere with the use of the luggage, and/or to prevent the elongated element from coming loose.

[0021] Optionally in some embodiments, the elongated element has a tapered end portion. In such embodiments, the tapered end portion eases insertion of the elongated element into the receptacles.

[0022] Optionally in some embodiments, the first shell includes a flange disposed about a peripheral rim thereof and the plurality of recesses are disposed in flange. In such embodiments, the peripheral rim and/or flange provide for a secure connection of the component and the shell.

[0023] Optionally in some embodiments, the plurality of lugs include a frame coupled to the first shell of the first component. In such embodiments, the frame separate from the shell and/or first component may provide additional modularity to the luggage article and/or additional rigidity or strength compared to embodiments without a separate frame.

[0024] In one embodiment, a luggage article includes a first shell including a plurality of spaced-apart recesses formed therein; a component including a plurality of corresponding spaced-apart lugs formed thereon, the lugs each including a receptacle formed therein and each received in a respective one of the recesses; an elongated element arranged to engage both the receptacle of at least one of the plurality of lugs when the lugs are received in the recesses and the shell to secure the component to the first shell. The first component includes one or more of a slide fastener, a liner, a divider panel, or a pocket. Such embodiments of a luggage article enable a wide variety of components such as pockets, zippers, gussets, etc. to be releasably attached to a shell of a luggage case to ease manufacturing, repair, and/or recycling of the luggage article.

[0025] In one embodiment, a luggage article includes a first shell including a plurality of spaced-apart recesses formed therein; a zipper component including a plurality of corresponding spaced-apart lugs formed thereon, the lugs each including a receptacle formed therein and each received in a respective one of the recesses; an elongated element arranged to engage both the receptacle of at least one of the plurality of lugs when the lugs are received in the recesses and the shell to secure the zipper component to the first shell. Such embodiments of a luggage article enable zippers to be releasably attached to a shell of a luggage case to ease manufacturing, repair, and/or recycling of the luggage article.

[0026] In one embodiment, a luggage article includes a first shell including a plurality of spaced-apart recesses formed therein; a pocket component including a rear panel with a second plurality of recesses formed therein, wherein the first plurality of and the second plurality of correspond in shape, number, orientation, or location with one another; a including a plurality of corresponding spaced-apart formed thereon, the each including a formed therein and each received in a respective one of the and one of the recesses; an elongated element arranged to engage both the receptacle of at least one of the plurality of lugs when the lugs are received in the recesses and the recesses, and the shell to secure the pocket component to the first shell. Such embodiments of a luggage article enable pockets, such as external pockets to be releasably attached to a shell of a luggage case to ease manufacturing, repair, and/or recycling of the luggage article. Such embodiments also provide additional storage compartments and/or space in the pocket that is accessible without opening the main compartment of the luggage article.

[0027] Optionally, in some embodiments, the plurality of spaced-apart recesses are formed by the gaps between adjacent lugs of the plurality of corresponding spaced-apart lugs.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0028] FIG. 1A is a perspective view of an embodiment of a luggage article.

[0029] FIG. 1B, 1C, and 1D are simplified, partial section views taken along line 1B–1B of FIG. 1A showing an example of general assembly steps of a shell (e.g., a major interior face) and component (e.g., a pocket) of an example luggage article according to the structure, methods and systems herein.

[0030] FIG. 2A is a partial section view along a vertical axis of the luggage article of FIG. 1 taken along line 2A-2A of FIG. 1, showing the engagement at top and bottom rims of opposing shells.

[0031] FIG. 2B is an enlarged detail section view of the rims of the shells at a bottom portion of the luggage article of FIG.1, taken at line 2B-2B of FIG. 2A.

[0032] FIG. 2C is a partial detail view of an attachment assembly, such as a zipper, of the luggage article of FIG. 1 taken from FIG. 2B.

[0033] FIG. 3 is a partial, exploded view of one half of the luggage article of FIG. 1.

[0034] FIG. 4 is a detail elevation view of a rim portion and associated recesses of the luggage article of FIG. 1, taken at line 4 of FIG 2B.

[0035] FIG. 5A is a partial, perspective section view of a rim portion of the luggage article of FIG. 1 taken along line 5A-5A of FIG. 4.

[0036] FIG. 5B is a partial section view of a rim portion of the luggage article of FIG. 1 taken along line 5B-5B of FIG. 4 showing recesses and an elongated element suitable for securing a lug to the shell of the luggage article of FIG. 1.

[0037] FIG. 6A is an elevation view of an inner corner portion of a rim portion of the luggage article of FIG. 1.

[0038] FIG. 6B is an elevation view of the corner region of a rim portion of FIG. 6A.

[0039] FIG. 7 is a view of an elongate element of the luggage article of FIG. 1.

[0040] FIG. 8A is a perspective view of a divider and pocket component of the luggage article of FIG. 1.

[0041] FIG. 8B is a partial, detail view of the divider of FIG. 8A taken along line 8B-8B of FIG. 8A.

[0042] FIG. 9 is a part detail view of lugs and an elongate element of the luggage article of FIG. 1.

[0043] FIG. 10A is a partial section view of the engagement of a component of the luggage article of FIG. 1 secured by the elongated element, taken along line 10A-10A of FIG. 2A.

[0044] FIG. 10B is a partial section view of engagement of a component of the luggage article of FIG. 1 secured by the elongated element, taken along line 10B-10B of FIG. 2A.

[0045] FIG. 11A is a perspective view of the luggage article of FIG. 1 in a first configuration.

[0046] FIG. 11B is a perspective view of the luggage article of FIG. 1 in a second configuration.

[0047] FIG. 12A1 is a partial, perspective, exploded view of an alternative embodiment of a shell assembly suitable for use with the luggage article of FIG. 1 incorporating a front pocket or panel mounting.

[0048] FIG. 12A2 is a detail view of the lugs on a portion of a front panel of the shell assembly of FIG. 12A1.

[0049] FIG. 12B is an internal elevation view of the shell assembly of FIG. 12A1.

[0050] FIG. 12C is an external elevation view of the shell assembly of FIG. 12A1.

[0051] FIG. 13A is a partial, perspective view of a further alternative embodiment of a shell assembly suitable for use with the luggage article of FIG. 1.

[0052] FIG. 13B is a partial, perspective, exploded view of the shell assembly of FIG. 13A.

[0053] FIG. 13C is a detail, perspective view of the shell assembly of FIG. 13A

[0054] FIG. 14A is a partial, perspective view of a yet further alternative embodiment of a shell assembly suitable for use with the luggage article of FIG. 1.

[0055] FIG. 14B is a partial, perspective, exploded view of the shell assembly of FIG. 14A.

[0056] FIG. 15A is a partial, perspective view of a yet further alternative embodiment of a shell assembly suitable for use with the luggage article of FIG. 1.

[0057] FIG. 15B is a partial, perspective, exploded view of the shell assembly of FIG. 15A.

[0058] FIG. 15C is a partial section view of the shell assembly of FIG. 15A taken along line 15C-15C of FIG 15A.

DETAILED DESCRIPTION

[0059] The improved luggage cases described herein may include one or more shells including a plurality of spaced-apart recesses or lugs formed therein for attaching a component to the shells, or for attaching the shells to one another. The component includes the other of a plurality of corresponding spaced-apart lugs or recesses formed therein. In some embodiments, the component is one or more of a slide fastener (e.g., zipper), a liner, a divider panel, or a front pocket attached to one or more of the shells. The component may also be a frame, a clamp fastener, a pocket, a gusset, and/or a sub-panel, etc. The lugs may each include a receptacle formed therein. Each lug is receivable in a respective one of the recesses. An elongated element is arranged to engage both the receptacle of at least one of the lugs when the lugs are received in the recesses to secure the component to a shell.

[0060] The luggage case includes a first shell 120 and a second shell 122 pivotally or hingedly connected to move between an open position and a closed position. Each shell 120, 122 may define a major wall 136 and a peripheral wall 130, the peripheral wall 130 defining a peripheral rim 134. The major wall 136 and the peripheral wall 130 together may define an internal compartment 138 (see, e.g., FIG. 2A), and the peripheral rim 134 may define an opening 140.

[0061] The shells 120, 122 form an internal compartment 138 when in a closed configuration. The luggage case 102 may include a divider that separates the internal compartment 138 into two or more sub-compartments. A luggage case 102 with a divider described herein may be suitable for use on many different types of luggage articles, including but not limited to hard-sided luggage cases, soft-sided luggage cases, and hybrid luggage cases.

[0062] FIG. 1 is an isometric view of a luggage case 102 in a closed configuration according to some examples of the present disclosure. The luggage case 102 may be formed from a plurality of walls (e.g., peripheral walls 130 and or major walls 136) or panels (e.g., a main panel 104, main panel 106, top panel 108, bottom panel 110, left side panel 112, right side panel 114, rear panel 116, and/or front panel 118) formed into two opposing half shells 120, 122 and defining, when the shells 120, 122 are in a closed configuration, the internal compartment 138 and storage volume in which to carry a user's belongings. As shown, the luggage case 102 includes opposing main panels 104 and 106 such as a front panel 118 and an opposing rear panel 116, opposing end panels such as a top panel 108 and an opposing bottom panel 110, and opposing side panels, such as a left side panel 112 and an opposing right side panel 114. These panels collectively define a pair of opposing shells

120, 122 that form the outer structure of the luggage case 102. The left side panel 112, right side panel 114, front panel 118 and rear panel 116 extend along the long dimension of the luggage case. As shown, a plurality of wheel assemblies 124, which may be caster-type wheel assemblies, may be coupled to at least the bottom panel 110, such as at the lower corner regions 126. When the luggage case 102 rests on a support surface (such as a floor) by the engagement of the wheel assemblies 124, the bottom panel 110 is nearest the support surface, the top panel 108 is furthest from the support surface, and the front panel 118, rear panel 116, left side panel 112, and right side panel 114 extend upwardly from the bottom panel 110 to the top panel 108.

[0063] The luggage case 102 may also include one or more carry handles 128, typically one on a side panel (for example the right-side panel 114, not shown), and another on the top panel 108 of the luggage case 102. The luggage case 102 may also include an extendable or telescopic tow handle 132 attached to or configured with at least one panel of the luggage case 102, such as to the rear panel 116.

[0064] FIGS. 1B– 1D show an example progression of steps of assembling a shell 122 and a component 206 (e.g., an external pocket) of a luggage case 102 (the shell assembly is shown and described with respect to FIG. 15A – FIG. 15C, but the example assembly method is applicable to other embodiments disclosed herein). As shown for example in FIG. 1B, the shell 122 includes a plurality of recesses 212 formed through the shell 122. The component 206 includes a plurality of spaced-apart lugs 204 that protrude from a panel of the component 206. The lugs 204 include receptacles 216 formed therethrough or therein. The number, position, and/or shape of the lugs 204 correspond to the number, position, and/or shape of the recesses 212 formed in the shell 122. In some embodiments, the recesses 212 are formed by the gaps between adjacent lugs 204 of the plurality of spaced-apart lugs 204.

[0065] In the example shown, the lugs 204 include a shape or protruding feature that resiliently engage an edge of the corresponding recesses 212 as it passes therethrough, which forms a snap or click feature that may at least temporarily hold the lug 204 of the component 206 within the recess 212 of the shell 122, such as shown for example in FIG. 1C. In some embodiments, the click or snap feature may be optional. To assemble the shell 122 with the component 206, the lugs 204 are aligned with corresponding recesses 212, and the lugs 204 are positioned through the recesses 212 until the lugs 204 click into the recesses 212. When the lugs 204 are received in the recesses 212 in an assembly position (e.g., as shown in FIG. 1C) the receptacles of the lugs 204 are disposed on an inner side of the shell 122. An elongate element 700 such as a rod, rope, wire, chain, pultrusion, etc. may

then be passed through at least one of the receptacles 216, thereby securing the lugs from being removed from the recesses, and thus attaching the shell 122 and component 206 together.

[0066] An attachment assembly 202 of the luggage article 102 will now be shown and described in greater detail. FIG. 2A shows a cross section of the luggage case 102, and FIG. 2B shows a detail view of a portion of FIG. 2A. An attachment assembly 202 is shown in an assembled state. Additional views are included in FIG. 2C, FIG. 9, FIG. 10A, and FIG. 10B. The attachment assembly 202 includes at least one of the shells 120, 122, a component 206, an elongated element 700. The example component 206 shown forms a portion of a slide fastener 210 that releasably couples the shell 120 and the shell 122 to one another (e.g., a main zipper).

[0067] As shown in FIG. 10A, the slide fastener 210 includes one or more teeth 1004 that interlock with one another to selectively couple the two halves of the slide fastener 210. The teeth 1004 are coupled to a flexible element 208 such as a zipper tape. The flexible element 208 is coupled to the main body 214 of the of the component 206. In the example shown, the flexible element 208 is attached to the main body 214 via one or more stitches 1002 (e.g., two stitches 1002 are shown in FIG. 10A and one stitch 1002 in FIG. 10B). In other examples, the flexible element 208 may be integrally formed with the main body 214 or adhered to the main body 214 via welding, adhesives, etc. For example, the flexible element 208 may include lugs 204 thereon or formed therewith.

[0068] One or more of the lugs 204 may include a protrusion 1006 extending radially away from the lug 204 wall. Similarly, the peripheral wall 130 may include a protrusion 502 on an inner face thereof extending into the internal compartment 138 of the luggage case 102.

[0069] FIG. 2C is a detail view of the luggage case 102 with the shell 122 hidden to show an attachment assembly 202 coupled to the shell 120. Similarly, FIG. 3 shows a partial, exploded view of the luggage case 102, including components of an attachment assembly 202. In FIG. 3, only one shell (the shell 120) is shown and described, for the sake of brevity. However, the attachment assembly 202 is applicable to the other shell 122, and in many embodiments, the attachment assembly 202 associated with the shell 122 may be a mirror of the attachment assembly 202 associated with the shell 120. The attachment assembly 202 includes at least one component (e.g., the shell 120 or the shell 122) including a plurality of recesses 212, another component 206 including a plurality of lugs 204 with receptacles 216 formed therethrough, and an elongated element 700 that locks lugs 204 into the recesses to couple the two components together. For example, the lugs 204 may include a lug wall 218

through which a receptacle 216 is formed. In many embodiments, the receptacle 216 is a bore, aperture, or through-hole that extends longitudinally through the lug 204. See, e.g., FIG. 10A. In other examples, the lug wall 218 may form a C-shape with the receptacle being a peripherally, partially enclosed aperture formed in the lug (e.g., the receptacle is formed by the central portion of the “C”). In the example shown in FIG. 3, the shell 120 includes a plurality of recesses 212 formed in a peripheral wall 130 thereof. In the example shown, the component 206 with the lugs 204 forms part of a zipper assembly. In other examples, the lugs 204 may be formed in the shell 120, 122 and the recess 212 in another component attachable to the shell 120, 122.

[0070] In the embodiment shown in FIG. 3, the attachment assembly 202 includes a component 206. Although two components 206 and two elongated elements 700 are shown, more or fewer components 206 and elongated elements 700 are contemplated within the present disclosure. The component 206 includes an elongated main body 214 from which a plurality of lugs 204 extend. In many embodiments, the lugs 204 extend transverse to the elongate direction of the main body 214. The lugs 204 each include a receptacle 216 formed therethrough. See, e.g., FIG. 10A and FIG. 9. The main body 214 may be formed of a flexible material, such that the main body 214 may be formed or contoured about the peripheral wall 130 of the shell 120. In other embodiments, the main body 214 may be rigid or semi-rigid and may be pre-formed to contour to the shell 120. In some embodiments, the lugs 204 may be directly mounted on the flexible element 208, rather than coupled (e.g., the lugs 204 may be integrally formed with the flexible element 208).

[0071] The example of the attachment assembly 202 shown also includes a zip assembly or slide fastener 210 including a flexible element 208 (such as a zipper tape) coupled to a plurality of zipper teeth which are selectively coupled or uncoupled via a zipper pull (not shown), both of which are coupled to the component 206.

[0072] With reference to FIGS. 2B, and 4 through 6B, the two shells 120, 122 each have a peripheral wall 130 defining a peripheral rim 134. The peripheral rim 134 in one example extends across at least the top panel 108, left side panel 112, bottom panel 110, and at least partially across the right-side panel 114. The peripheral rim 134 of the peripheral wall 130 in one example may be formed by the top edge 142 of the peripheral wall 130. In another example, the peripheral rim 134 of the peripheral wall 130 may include the top edge 142 of the peripheral wall 130 and an inner rim 144, such as may be formed by a collar. The inner rim 144 extends around at least a portion of the peripheral wall 130, and as shown in FIG. 1 and FIG. 2A extends around almost all of the peripheral wall 130. The inner rim 144 may be spaced inwardly from the peripheral wall 130 of the respective shells 120 or shell 122. The

inner rim 144 may be positioned at substantially the same height as the peripheral rim 134. For example, a top edge of the inner rim 144 may be approximately flush with, recessed from, or higher than, the top edge 142 of the peripheral wall 130.

[0073] The inner rim 144 may be spaced away from the top edge 142 of the peripheral wall 130 by a web or webs 410, ribs 406, and/or terminal walls 404 positioned at discrete locations along the peripheral wall 130 (see, e.g., FIG. 4). The inner rim 144 may be a relatively narrow band (as measured relative to the height of the peripheral wall 130) along at least a portion of its length. In one example the inner rim 144 may be relatively narrow along the opposing end top panels 108, bottom panel 110, and along the opposing left side panels 112, and right-side panels 114 of the shells 120, 122, and may be wider in the corners (see, e.g., FIG. 6B). The inner rim 144 may increase the structural integrity, such as the stiffness, of the peripheral rim 134 of the luggage shell 120, 122, and may aid in the engagement of the peripheral rims 134 of both shells 120, 122 when in the closed configuration. Reference to peripheral rim 134 herein is inclusive of the peripheral rim being formed by the top edge 142 of the peripheral wall 130, or the combination of the top edge 142 of the peripheral wall 130 and the inner rim 144.

[0074] The inner rim 144 includes a flange 402 extending into the internal compartment 138 of the luggage case 102. An inner wall 412 extends along the peripheral wall 130 away from the flange 402 (best seen in FIG. 6A and FIG. 2B). The collar and the peripheral wall 130 are connected by a plurality of terminal walls 404 extending therebetween. Interspersed between the terminal walls 404 are gaps that form the recesses 212 of the shell 120. Bulkheads 408, such as protrusions that rise from the inner rim 144 adjacent to end portions of the terminal wall 404, may be provided adjacent to the recesses 212. The bulkheads 408 may extend, at least partially, from the flange 402 toward the peripheral wall 130. Ribs 406 may also be provided that extend at least partially from the peripheral wall 130 toward the flange 402 and the inner wall 412. The ribs 406 may be disposed between the bulkheads 408, such as in a central portion of the terminal wall 404.

[0075] With reference to FIG. 5A and FIG. 5B, a rail 500 of the luggage case 102 is shown. Reference is also made to FIG. 6A, FIG. 10A, and FIG. 10B. The rail 500 is disposed between a flange 600 and a terminal wall 404 of the inner rim 144 (best seen in FIG. 6A and FIG. 10B). The rail 500 includes alternating protrusions 502 and ramps 504, both of which rise proud of the peripheral rim 134 in an inward direction toward the internal compartment 138. The ramps 504 extend further into the internal compartment 138 than the protrusions 502. The ramps 504 and the protrusions 502 alternate in position. The

protrusions 502 are substantially aligned with the recesses 212. The ramps 504 are substantially aligned with the flanges 600.

[0076] The ramps 504 may include a faceted edge with one or more facets formed thereon. In some embodiments, the ramp 504 includes one first facet 506. In some embodiments, the ramp 504 includes two or more facets. For example, as shown in FIG. 5A and FIG. 5B, the ramp 504 includes three facets, a first facet 506, a second facet 508, and a third facet 510. The first facet 506, second facet 508, and third facet 510 are arranged to aid in the insertion of the elongated element 700 into the attachment assembly 202 to secure the shells 120, 122 to the component 206. For example, the first facet 506 is disposed at an acute angle with respect to the protrusion 502. The first facet 506 begins rising from the protrusion 502 just as the rail 500 transitions in an insertion direction 512 from an area with a recess 212 to an area with a flange 600. The second end 710 may be parallel to, or at a second acute angle with respect to the protrusion 502. The second acute angle may be less than the first acute angle of the first facet 506. The second facet 508 is adjacent to the first facet 506 on one end and to the third facet 510 at an other, opposite end. Thus, the second facet 508 can act as a transition between the first facet 506 and the third facet 510. The third facet 510 may be disposed at a third acute angle with respect to the protrusion 502. The third acute angle may be the same as the first acute angle or may be another angle. In some embodiments, the facets are substantially planar. In other embodiments, one or more of the facets may be curved or irregularly shaped.

[0077] The ramps 504 and their respective facets may act as a guide to aid in alignment of the tip 704 of the elongated element 700 as it is inserted into the respective receptacles 216 of the lugs 204, and past the flanges 600. One or more of the facets, such as the third facet 510 may help to grip the elongated element 700 to reduce or prevent movement thereof in the shell 120, 122 after assembly. See, e.g., FIG. 10B. In some embodiments, the ramps 504 provide for ease of assembly of the elongated element 700 with the shell 120, 122 and the component 206 in one direction preferentially over another direction. For example, it may be easier to insert the elongated element 700 such that the tip 704 first encounters the first facet 506, then the second facet 508, and then the third facet 510, such that the tip 704 is gradually inserted and guided to the receptacle 216 of the lug 204 adjacent to a given ramp 504. The flange 600 help to retain the elongated element 700 in a proper position such that the tip 704 can engage with the receptacle 216 of each adjacent lug 204. For example, the flange 600 can prevent the elongated element 700 from bending off-track into the internal compartment 138 of the luggage case 102.

[0078] FIG. 6A and FIG. 6B show examples of corner regions of the inner rim 144. One or more flanges 600 may be disposed below the inner wall 412 and interspersed with the recesses 212. For example, the flanges 600 may be disposed into the internal compartment 138 with respect to the terminal walls 404. The positions of the flanges 600 may correspond with the positions of the terminal walls 304 and may provide a clearance for the lugs 204 to extend through the recesses 212 and past the terminal walls 404. Particularly in the corner regions, one or more guide 602 may be disposed inward to the internal compartment 138 relative to the terminal walls 404. In some embodiments, the guides 602 provide a gripping action or geometry to more tightly engage the elongated element 700 when the lugs 204 are received in the recesses 212 and the elongated element 700 is threaded into the receptacles 216 of the lugs 204.

[0079] The inner rim 144 may include a crown portion 606 in the corner regions. As shown in FIG. 6B, the crown portion 606 may be separated from the peripheral rim 134 by a clearance gap 608. The crown portion 606 may include a socket 610 formed therein. the socket 610 may be a suitably shaped to receive a removably lockable key 604 therein. For example, the key 604 may include a twist-lock or bayonet lock type of feature such that when the key is inserted into the socket 610, and twisted, the key 604 is retained in the socket 610. A portion of the key 604 may extend into the clearance 608. The key 604 includes a slot 612 or other receptacle suitable for attaching straps, buckles, or other components to the luggage case 102. For example, the key 604 may be adapted to receive retainers such as internal straps that can beneficially secure a user's belongings within the luggage case 102. The key 604 is removable from the crown portion 606, such that it can easily be removed and replaced. For example, the key 604 may be turned to disengage the key 604 from the crown portion 606 and removed from the socket 610. A new key 604 may be inserted into the socket 610 in a reverse maneuver. The arrangement of the key 604 and socket 610 also aids in rapid assembly of the luggage case 102.

[0080] The crown portion 606 being separated from the peripheral rim 134 provides a benefit of making a clearance 608 for the key 604 while maintaining the ability of the elongated element 700 to pass through a corner region of the shell 120 122 to engage the shell 120 / 122 and component 206.

[0081] With reference to FIG. 7, an example of an elongated element 700 is shown. The elongated element 700 includes a main body 702 extending longitudinally between a first end 708 and a second end 710. At either the first end 708 or the second end 710, the elongated element 700 may include a handle 706. The handle 706 is suitable for installing or removing the elongated element 700 from the luggage case 102. in some embodiments, the

handle 706 is a flag or strip of fabric adapted to be gripped by a user. In other embodiments, the handle 706 may be a rigid or semi-rigid component attached to, or integrally formed with, the main body 214. In other embodiments still, the handle 706 is optional. The main body 702 may have a tapered tip 704 that eases assembly of the elongated element 700 with the luggage case 102. For example, the tapered tip 704 helps facilitate inserting the elongated element 700 through one or more receptacles 216 formed in the lugs.

[0082] In many embodiments, the main body 702 is at least partly resilient, such that the main body 702 may be elastically bent or flexed as the elongated element 700 is installed in the luggage case 102 but does not take a plastic or permanent set or bend. In some embodiments, the elongated element 700 may be formed of an elastomeric material such as plastic. In some embodiments, the elongated element 700 may be formed of a composite material such as a glass or carbon fiber composite. In some embodiments, the elongated element 700 may be a chain, rope, cable, thread, or the like.

[0083] FIG. 8A and FIG. 8B show an example of a divider panel 800 suitable for attachment to the luggage case 102 according to the present disclosure. The divider 800 includes a component 206 with a main body 214 and a plurality of spaced apart lugs 204 extending therefrom, as described with respect to the attachment assembly 202, and spaced part around the periphery of the divider panel 800. Each of the lugs 204 includes a receptacle 216 formed therethrough. In contrast with the attachment assembly 202, where multiple components 206 are included with each shell 120, 122, the divider 800 includes one component 206 in this example. More components 206 may be included, as desired.

[0084] The main body 214 forms a closed ring with a central aperture 808. The internal compartment 138 of the luggage case 102 is accessible through the central aperture 808 when the shells 120 and 122 are separated from one another (e.g., when the main zipper is open). A flexible panel 802 is coupled to the main body 214. The flexible panel 802 includes a sheet or membrane 804, such as may be formed from fabric. A slide fastener 806 is optionally disposed in the membrane 804 to enable access through the flexible panel 802 into a portion of the internal compartment 138 of the luggage case 102 when the slide fastener 806 is opened. As such, the flexible panel 802 forms a temporary or openable divider for the luggage case 102. In other embodiments, the flexible panel 802 may not include a slide fastener 806 and may act as a non-configurable divider or liner for the luggage case 102.

[0085] To assemble the attachment assembly 202, the shells 120, 122 are placed in an open configuration, exposing the internal compartment 138 of the luggage case 102. The slide

fastener 210 is opened by sliding the closure thereof to disengage the teeth 1004 on respective sides of the slide fastener 210. The lugs 204 of the component 206 are inserted into the respective recesses 212 of the shells 120, 122. If so equipped, the protrusion 1006 of the lug 204 may snap-fit a lug into a respective recess 212. For example, the protrusion 1006 may engage the terminal wall 404 of the inner rim 144, particularly at a lower edge 1008 of the terminal wall 404, to help position and hold the lug 204 in position for the assembly of the elongated element 700. Similarly, the lug wall 218 may engage with the protrusion 502 of the shell 120, 122 if so equipped, to help hold the lug 204 in position for the assembly of the elongated element 700 with the luggage case 102. For example, the click-fit of the protrusion 1006 and/or the protrusion 502 may align the receptacles 216 of the respective lugs 204 with one another and/or with the flanges 600 and/or guides 602.

[0086] After at least one of the lugs 204 is inserted into a recess 212, the tip 704 of the elongated element 700 flexible element 208 is inserted into the receptacle 216 of the lug 204. As shown for example in FIG. 5B, the elongated element 700 is preferably inserted in the insertion direction 512, such that the ramps 504 and their respective facets (e.g., first facet 506, second facet 508, and third facet 510) can align and guide the elongated element 700 from one lug 204 to the next lug 204.

[0087] FIG. 10B shows a section view taken between recesses 212, rather than through a recess 212, as in FIG. 10A. As shown for example in FIG. 10B, the ramp 504 is disposed between the terminal wall 404 and the flange 600. The ramp 504 is offset from the terminal wall 404 by a clearance 1010. The 504 is offset from the flange 600 by a clearance 1012. In some embodiments, the ramp 504 is disposed substantially at a midpoint between the flange 600 and the terminal wall 404. The ramp 504 grips the elongated element 700 when the elongated element 700 is installed in the attachment assembly 202.

[0088] The elongated element 700 is inserted through the entire lug 204 and engages with the flange 600 or guide 602 depending on the position of the lug 204 and elongated element 700 (i.e., is the elongated element 700 in a corner or along a side of the shell 120, 122). The flange 600 or guide 602 may engage the elongated element 700 to help direct the tip 704 of the elongated element 700 to the receptacle 216 of the next lug 204. See FIG. 2B and FIG. 9 (a simplified view with the shell 120, inner rim 144, and recesses 212 hidden for clarity).

[0089] The elongated element 700 may be inserted through the respective receptacles 216 until substantially all length of the main body 702 of the elongated element 700 is received in the receptacles 216, and/or guides 602 / flanges 600. In some embodiments, one or more elongated elements 700 may be used to secure one or more components 206 to the shell 120,

122. The process may be repeated in substantially the same way with the other shell 120, 122 and the other side of the slide fastener 210. Thus, the component 206 is secured to the shells 120, 122. See, e.g., FIG. 2B. To disassemble the luggage case 102, the elongated element 700 may be pulled out of the receptacles 216 until the component 206 disengages from the shells 120, 122. For example, a user may grasp the handle 706 of the elongated element 700 and pull it to disengage the attachment assembly 202. Thus, the shell 120, 122 and other components of the luggage case 102 may be disassembled for maintenance (e.g., to replace a broken zipper) or to recycle the components.

[0090] Turning to FIG. 11A and FIG. 11B, an example of a gusset 1102 is shown. The gusset 1102 is coupled to the luggage case 102 as disclosed herein, e.g., via an attachment assembly 202. FIG. 11A shows the gusset 1102 in a first, or contracted position. FIG. 11B shows the gusset 1102 in a second or expanded position. Thus, the gusset 1102 may be used to provide expandable storage of the internal compartment 138 of the luggage case 102.

[0091] FIG. 12A1 shows an example of a shell assembly 1200 according to the present disclosure. FIG. 12A2 shows a partial detail of a portion of the attachment assembly of FIG. 12A2 including lugs 1214 and receptacles 1220 formed therein. The shell assembly 1200 includes a shell portion 1202 with an inner rim 144 suited for use with an attachment assembly 202 as described herein. The shell assembly 1200 also includes an attachment assembly 1204 suitable to releasably attach a front panel 1206 to the shell portion 1202. The front panel 1206 includes a plurality of lugs 1214. The lugs 1214 are arrayed about a rim portion 1208 of the front panel 1206. The rim portion 1208 defines a main aperture 1210 in the front panel 1206. A membrane 1212 extends between the lugs 1214. As shown for example in FIG. 12A2, the lugs 1214 each include a receptacle 1220 through which an elongated element 700 may be fitted, as described herein. The shell portion 1202 includes a plurality of recesses 1216 through which a respective lug 1214 of the plurality of lugs 1214 may be received. The recesses 1216 may be apertures that extend through the rim portion 1208.

[0092] As shown for example in FIG. 12B, the shell 120 may be assembled by inserting the respective lugs 204 through the respective recesses 1216. Then, as described with respect to the attachment assembly 202, the elongated element 700 is fitted through the receptacle 1220 in the lugs 1214 to lock the front panel 1206 to the shell portion 1202. The front panel 1206 may be separated from the shell portion 1202 by removing the elongated element 700 as described herein.

[0093] The attachment assembly 1204 may provide the benefit of enabling easy replacement of the front panel 1206 such as to replace a damaged panel, to recycle the luggage case 102, or, as shown for example in FIG. 12C, to provide a decorative element 1218 for the luggage case 102. As such, the luggage case 102 may be easily customized to a user's tastes.

[0094] Turning to FIG. 13A through FIG. 13C, an embodiment of a shell assembly 1300 including an attachment assembly 1301 is shown. The shell assembly 1300 includes a shell portion 1302, and a frame 1304 including a plurality of lugs 1310. The lugs 1310 each include a receptacle 1312 formed therethrough. In the example shown in FIG. 13B, the frame 1304 may be formed of an elastomeric or plastic material. As such, the frame 1304 may have the lugs 1310 formed integrally with the frame 1304. The receptacles 1312 may be formed integrally with the lugs 1310.

[0095] The shell assembly 1300 includes a shell portion 1302 including a main panel 1306. The panel 1306 includes a rim portion 1308. The rim portion 1308 includes a plurality of recesses 1314 formed therethrough. The recesses 1314 may be apertures that extend through the rim portion 1308. The recesses 1314 receive the respective lugs 1310 of the frame 1304. The frame 1304 may be formed in a closeable loop that extends about the rim portion 1308. As shown for example in FIG. 13C, the frame 1304 may include one or more posts 1316 at free ends thereof. The posts 1316 may receive a clip 1315 to tie the free ends of the frame 1304 to one another.

[0096] To assemble the shell assembly 1300, the lugs 1310 of the frame 1304 are inserted into the respective receptacle 1312 of the shell portion 1302. The elongated element 700 is inserted through the receptacles 1312 to releasably lock the frame 1304 to the panel 1306. The shell assembly 1300 may be disassembled by removing the elongated element 700 as described herein.

[0097] Turning to FIG. 14A and FIG. 14B, a shell assembly 1400 is shown. The shell assembly 1400 includes an attachment assembly 1401 with a shell portion 1402, a frame 1404, and a component 1418 including a plurality of lugs 1410. As opposed to the shell assembly 1300, the lugs 1410 are disposed on a component 1418 separate from the frame 1404. The component 1418 includes a main body 1416 from which the lugs 1410 extend. The frame 1404 includes a plurality of recesses 1420 disposed therethrough. The recesses 1420 may be apertures that extend through the frame 1404.

[0098] The lugs 1410 each include a receptacle 1412 formed therethrough, as disclosed herein. In the example shown in FIG. 14A, the frame 1404 may be preferably formed of a rigid or semi-rigid material such as a metal or a plastic material.

[0099] The shell assembly 1400 includes a shell portion 1402 with a main panel 1406. The panel 1406 includes a rim portion 1408. The rim portion 1408 includes a plurality of recesses 1414 formed therethrough. For example, the recess 1414 may be apertures that extend through the rim portion 1408. The frame 1304 may be formed in a closeable loop that extends about the rim portion 1408.

[0100] The recesses 1414 receive the respective lugs 1410 of the component 1418.

[0101] To assemble the shell assembly 1400, the frame 1404 may be aligned with the rim portion 1408 of the shell portion 1402 such that the recesses 1414 and the recesses 1420 are aligned. The component 1418 may be placed such that the lugs 1410 extend through both the recesses 1414 and the recesses 1420. The elongated element 700 may be fitted through the receptacles 1412 to releasably lock the frame 1404, the component 1418, and the shell portion 1402 together.

[0102] With reference to FIG. 15A through FIG. 15C, a shell assembly 1500 is shown and described. The shell assembly 1500 includes an attachment assembly 1501 suitable for use with any luggage case (such as the luggage case 102) disclosed herein. In particular, the shell assembly 1500 and attachment assembly 1501 are suitable for attaching a component 1520 to a shell 120, 122 of a luggage case. In the example shown, the shell assembly 1500 includes a shell portion 1502 selectively attachable to a component 1520 via the attachment assembly 1501. In the example shown, the component 1520 includes an exterior pocket assembly that forms a separate, enclosed and accessible compartment from the main internal compartment 138 of the luggage case. As with the example of the shell assembly 1200, the shell assembly 1500 could also be used to attach a decorative element 1218 to the luggage case.

[0103] The shell portion 1502 includes a plurality of recesses 1514 formed therein. The attachment assembly 1501 includes a frame 1504. The frame 1504 has a main body 1518 with a central aperture that forms a closed ring. In some embodiments, the main body 1518 may include a planar structure without the central aperture, although the ring shape advantageously could weigh less than a planar structure with minimal loss of strength of the frame 1504.

[0104] A plurality of lugs 1510 extend from a face of the main body 1518. Each of the lugs 1510 is adapted to be received within a respective recess 1514 of the plurality of recesses

1514. The lugs 1510 may include a tang 1522 that snaps or clicks into the recess 1514 when the lug 1510 is inserted a sufficient distance into the recess 1514. The tangs 1522 helps retain the lugs 1510 within the recesses 1514 while the elongated element 700 is routed through the respective receptacles 1512 of the lugs 1510. Additionally, or alternately, the lugs 1510 may be shaped (e.g., having a triangular profile as in the example shown) that resists removal of the lug 1510 from a respective recess 212.

[0105] The frame 1504 may also include one or more anchors 1508 (best shown on FIG. 15C) receivable in corresponding recesses 1514 formed in the shell portion 1502. The anchors 1508 may server a similar function as the key 604 described herein. For example, an anchor 1508 may be used to attach a strap, retainer, or other securement feature that can help retain a user's belongings within the luggage case.

[0106] The component 1520 includes a rear panel 1506 that includes a plurality of recesses 1516 formed therein that correspond in shape, number, orientation, and/or location with the recesses 1514 formed in the shell portion 1502. In some embodiments, the rear panel is a planar layer of material with recesses 1516. In some examples, the rear panel may be continuous other than recesses 1516. In some embodiments, the panel 1506 includes a central aperture therethrough that beneficially provides for a lighter rear panel (and thus a lighter shell and luggage article) compared to a rear panel 1506 without a central aperture.

[0107] To assemble the shell assembly 1500, the component 1520 is aligned with the shell portion 1502. The pocket, if so equipped, is opened and the frame 1504 is inserted into the pocket. The recesses 1514 of the shell portion 1502 are aligned with the corresponding recess 1516 of the rear panel 1524. The lugs 1510 are inserted through respective recesses 1514 and recess 1516 until the tang 1522, if so equipped, snaps or clicks into the shell portion 1502. The elongated element 700 is then routed through the receptacles 1512 in the lugs 1510 to releasably secure the component 1520 to the shell portion 1502.

[0108] The description of certain embodiments included herein is merely exemplary in nature and is in no way intended to limit the scope of the disclosure or its applications or uses. In the included detailed description of embodiments of the present systems and methods, reference is made to the accompanying drawings which form a part hereof, and which are shown by way of illustration specific to embodiments in which the described systems and methods may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice presently disclosed systems and methods, and it is to be understood that other embodiments may be utilized, and that structural and logical changes may be made without departing from the spirit and scope of the disclosure.

Moreover, for the purpose of clarity, detailed descriptions of certain features will not be discussed when they would be apparent to those with skill in the art so as not to obscure the description of embodiments of the disclosure. The included detailed description is therefore not to be taken in a limiting sense, and the scope of the disclosure is defined only by the appended claims.

[0109] From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention.

[0110] The particulars shown herein are by way of example and for purposes of illustrative discussion of the preferred embodiments of the present disclosure and are presented in the cause of providing what is believed to be the most useful and readily understood description of the principles and conceptual aspects of various embodiments of the invention. In this regard, no attempt is made to show structural details of the invention in more detail than is necessary for the fundamental understanding of the invention, the description taken with the drawings and/or examples making apparent to those skilled in the art how the several forms of the invention may be embodied in practice.

[0111] As used herein and unless otherwise indicated, the terms “a” and “an” are taken to mean “one,” “at least one” or “one or more.” Unless otherwise required by context, singular terms used herein shall include pluralities and plural terms shall include the singular.

[0112] Unless the context clearly requires otherwise, throughout the description and the claims, the words ‘comprise,’ ‘comprising,’ and the like are to be construed in an inclusive sense as opposed to an exclusive or exhaustive sense; that is to say, in the sense of “including, but not limited to.” Words using the singular or plural number also include the plural and singular number, respectively. Additionally, the words “herein,” “above,” and “below” and words of similar import, when used in this application, shall refer to this application as a whole and not to any particular portions of the application.

[0113] All relative, directional, and ordinal references (including top, bottom, side, front, rear, first, second, third, and so forth) are given by way of example to aid the reader’s understanding of the examples described herein. They should not be read to be requirements or limitations, particularly as to the position, orientation, or use unless specifically set forth in the claims. Connection references (e.g., attached, coupled, connected, joined, and the like) are to be construed broadly and may include intermediate members between a connection of elements and relative movement between elements. As such, connection

references do not necessarily infer that two elements are directly connected and in fixed relation to each other, unless specifically set forth in the claims.

[0114] Of course, it is to be appreciated that any one of the examples, embodiments or processes described herein may be combined with one or more other examples, embodiments and/or processes or be separated and/or performed amongst separate devices or device portions in accordance with the present systems, devices and methods.

[0115] Finally, the above discussion is intended to be merely illustrative of the present system and should not be construed as limiting the appended claims to any particular embodiment or group of embodiments. Thus, while the present system has been described in particular detail with reference to exemplary embodiments, it should also be appreciated that numerous modifications and alternative embodiments may be devised by those having ordinary skill in the art without departing from the broader and intended spirit and scope of the present system as set forth in the claims that follow. Accordingly, the specification and drawings are to be regarded in an illustrative manner and are not intended to limit the scope of the appended claims.

CLAIMS

1. A luggage article (102, 1200, 1300, 1400, 1500) comprising:

a first shell (120, 122) including a plurality of spaced-apart recesses (212, 1216, 1314, 1414, 1420, 1514) or lugs (204, 1214, 1310, 1410, 1510) formed therein;

a first component (206, 1206, 1304, 1404, 1504) including the other of a plurality of corresponding spaced-apart lugs (204, 1214, 1310, 1410, 1510) or recesses (212, 1216, 1314, 1414, 1420, 1514) formed therein, the lugs (204, 1214, 1310, 1410, 1510) each including a receptacle (216, 1220, 1312, 1412, 1512) formed therein and each lug received in a respective one of the recesses (212, 1216, 1314, 1414, 1420, 1514);

an elongated element (700) engaging the receptacle (216, 1220, 1312, 1412, 1512) of at least one of the plurality of lugs (204, 1214, 1310, 1410, 1510) of the first shell (120, 122) or first component (206, 1206, 1304, 1404, 1504) when the lugs (204, 1214, 1310, 1410, 1510) are received in the recesses (212, 1216, 1314, 1414, 1420, 1514) of the other of the first shell (120, 122) or component (206, 1206, 1304, 1404, 1504) to secure the first component (206, 1206, 1304, 1404, 1504) to the first shell (120, 122).

2. The luggage article (102, 1200, 1300, 1400, 1500) of claim 1, wherein:

the plurality of spaced-apart lugs (204, 1214, 1310, 1410, 1510) comprises a first plurality of spaced-apart lugs (204, 1214, 1310, 1410, 1510) and a second plurality of spaced-apart lugs (204, 1214, 1310, 1410, 1510),

the plurality of spaced-apart recesses (212, 1216, 1314, 1414, 1420, 1514) comprises a first plurality of spaced-apart recesses (212, 1216, 1314, 1414, 1420, 1514); and

the luggage article further comprises:

a second shell (120, 122) hingedly coupled to the first shell (120, 122) and including a second plurality of spaced-apart recesses (212, 1216, 1314, 1414, 1420, 1514) or lugs (204, 1214, 1310, 1410, 1510) formed therein, wherein:

each of the first plurality of spaced-apart lugs (204, 1214, 1310, 1410, 1510) is received in a respective one of the first plurality of recesses (212, 1216, 1314, 1414, 1420, 1514),

each of the second plurality of spaced-apart lugs (204, 1214, 1310, 1410, 1510) is received in a respective one of the second plurality of recesses (212, 1216, 1314, 1414, 1420, 1514); and

a second elongated element (700) received in the receptacle (216, 1220, 1312, 1412, 1512) of at least one of the second plurality of lugs (204, 1214, 1310, 1410, 1510) to secure the first component (206, 1206, 1304, 1404, 1504) to the second shell (120, 122).

3. The luggage article (102, 1200, 1300, 1400, 1500) of claims 1 or 2, wherein:

the elongated element (700) comprises a first elongated element (700) and a second elongated element (700);

the plurality of lugs (204, 1214, 1310, 1410, 1510) comprises a first plurality of lugs (204, 1214, 1310, 1410, 1510) and a second plurality of lugs (204, 1214, 1310, 1410, 1510);

the plurality of recesses (212, 1216, 1314, 1414, 1420, 1514) comprises a first plurality of recesses (212, 1216, 1314, 1414, 1420, 1514) and a second plurality of recesses (212, 1216, 1314, 1414, 1420, 1514);

the first plurality of lugs (204, 1214, 1310, 1410, 1510) are received in the first plurality of recesses (212, 1216, 1314, 1414, 1420, 1514),

wherein the first elongated element (700) is received in the receptacle (216, 1220, 1312, 1412, 1512) of at least one of the first plurality of lugs (204, 1214, 1310, 1410, 1510) to secure a first portion of the first component (206, 1206, 1304, 1404, 1504) to the first shell (120, 122); and

the second plurality of lugs (204, 1214, 1310, 1410, 1510) are received in the second plurality of recesses (212, 1216, 1314, 1414, 1420, 1514), and

wherein the second elongated element (700) is received in the receptacle (216, 1220, 1312, 1412, 1512) of at least one of the second plurality of lugs (204, 1214, 1310, 1410, 1510) to secure a second portion of the first component (206, 1206, 1304, 1404, 1504) to the first shell (120, 122).

4. The luggage article (102, 1200, 1300, 1400, 1500) of any of claim 1 to claim 3, wherein the first component (206, 1206, 1304, 1404, 1504) is releasably secured to the first shell (120, 122).

5. The luggage article (102, 1200, 1300, 1400, 1500) of any of claim 1 to claim 4, wherein the elongated element (700) is removably received in the receptacles (216, 1220, 1312, 1412, 1512).

6. The luggage article (102, 1200, 1300, 1400, 1500) of any of claim 1 to claim 5, wherein the elongated element (700) comprises one or more of a cord, a rope, a wire, or a rod.

7. The luggage article (102, 1200, 1300, 1400, 1500) any of claim 1 to claim 6, wherein the recesses (212, 1216, 1314, 1414, 1420, 1514) comprise a plurality of apertures formed around a periphery of the first shell (120, 122) or the second shell (120, 122).

8. The luggage article (102, 1200, 1300, 1400, 1500) of any of claim 1 to claim 7, wherein the first component (206, 1206, 1304, 1404, 1504) comprises one or more of a zip, slide fastener, a clamp fastener, a frame, a pocket, a divider, a gusset, or a side panel.
9. The luggage article (102, 1200, 1300, 1400, 1500) of any of claim 1 to claim 8, wherein at least one of the plurality of lugs (204, 1214, 1310, 1410, 1510) snap-fit into at least one of the respective plurality of recesses (212, 1216, 1314, 1414, 1420, 1514).
10. The luggage article (102, 1200, 1300, 1400, 1500) of any preceding claim, wherein when the lugs (204, 1214, 1310, 1410, 1510) are received in the recesses (212, 1216, 1314, 1414, 1420, 1514), the lugs (204, 1214, 1310, 1410, 1510) pass from a first side of the shell (120, 122) or first component (206, 1206, 1304, 1404, 1504) through the recesses (212, 1216, 1314, 1414, 1420, 1514) and beyond a second, opposing side of the shell (120, 122) or first component (206, 1206, 1304, 1404, 1504).
11. The luggage article (102, 1200, 1300, 1400, 1500) of any preceding claim, wherein the receptacle (216, 1220, 1312, 1412, 1512) comprises an aperture or a tubular bore.
12. The luggage article (102, 1200, 1300, 1400, 1500) of any preceding claim, wherein the elongated element (700) comprises:
an elongated body (702) with a first end (708, 710) and an opposing second end (708, 710), and the luggage article (102, 1200, 1300, 1400, 1500) further comprises a clip (1315) that releasably secures the first end (708, 710) of the elongated body (702) to the second end (708, 710) of the elongated body (702).
13. The luggage article (102, 1200, 1300, 1400, 1500) of any preceding claim, wherein the first shell (120, 122) comprises a flange disposed about a peripheral rim thereof and the plurality of recesses (212, 1216, 1314, 1414, 1420, 1514) are disposed in said flange.
14. The luggage article (102, 1200, 1300, 1400, 1500) of any preceding claim, wherein the plurality of lugs (204, 1214, 1310, 1410, 1510) comprise a frame coupled to the first shell (120, 122) of the first component (206, 1206, 1304, 1404, 1504).
15. The luggage article of any preceding claim, wherein the plurality of spaced-apart recesses are formed by the gaps between adjacent lugs of the plurality of corresponding spaced-apart lugs.