US 20120180178A1

(19) **United States**

(12) **Patent Application Publication**

Gallo

(10) **Pub. No.: US 2012/0180178 A1**

(43) **Pub. Date: Jul. 19, 2012**

(54) **ARMOR CARRIER AND METHOD**

(75) Inventor: **Massimo Alexandro Gallo**, Dallas, TX (US)

(73) Assignee: **Armorsmith Company**, Dallas, TX (US)

(21) Appl. No.: **12/272,277**

(22) Filed: **Nov. 17, 2008**

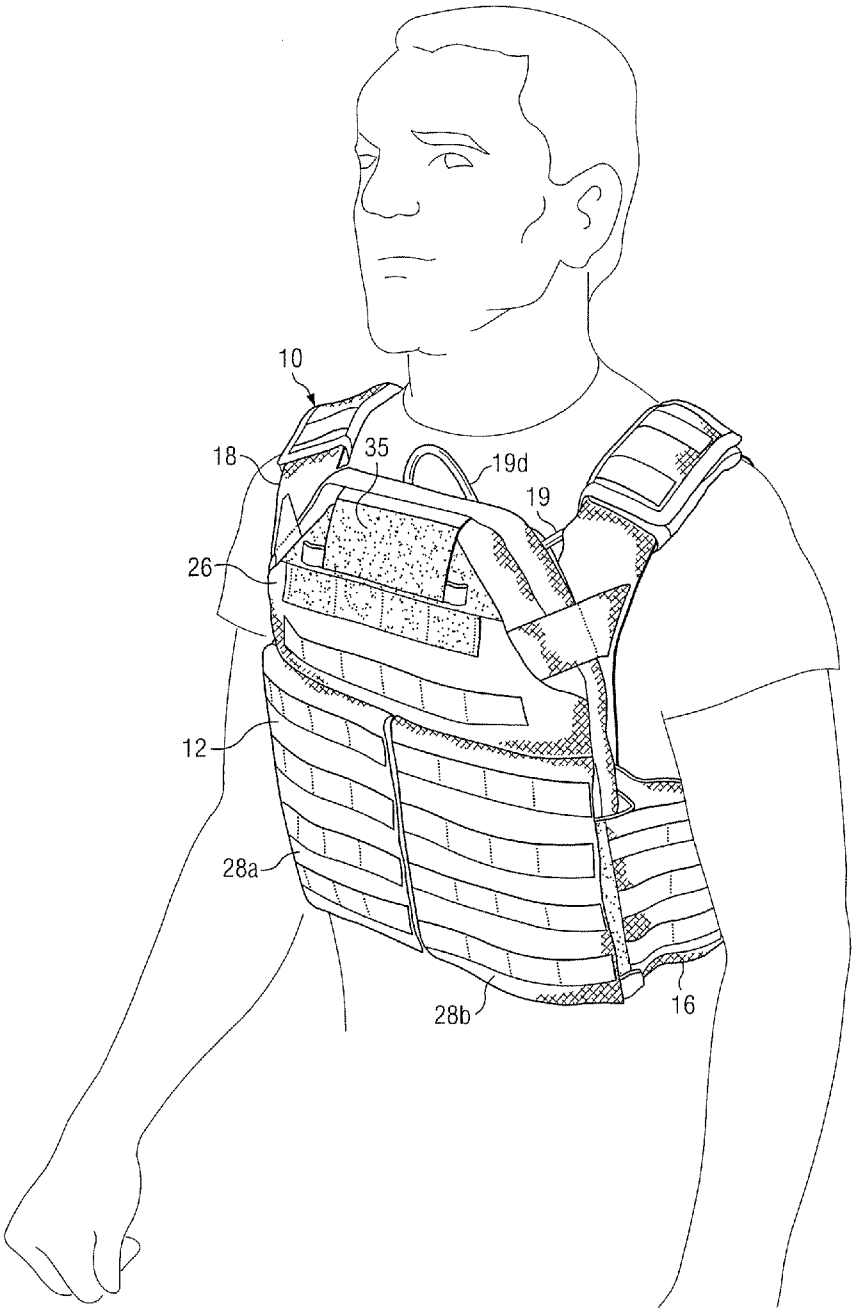
Publication Classification

(51) **Int. Cl.**
F41H 1/02 (2006.01)

(52) **U.S. Cl.** **2/2.5**

(57) **ABSTRACT**

An armor apparatus is described. In an exemplary embodiment, the armor apparatus is in the form of a vest or carrier including, in several exemplary embodiments, one or more armor plates.



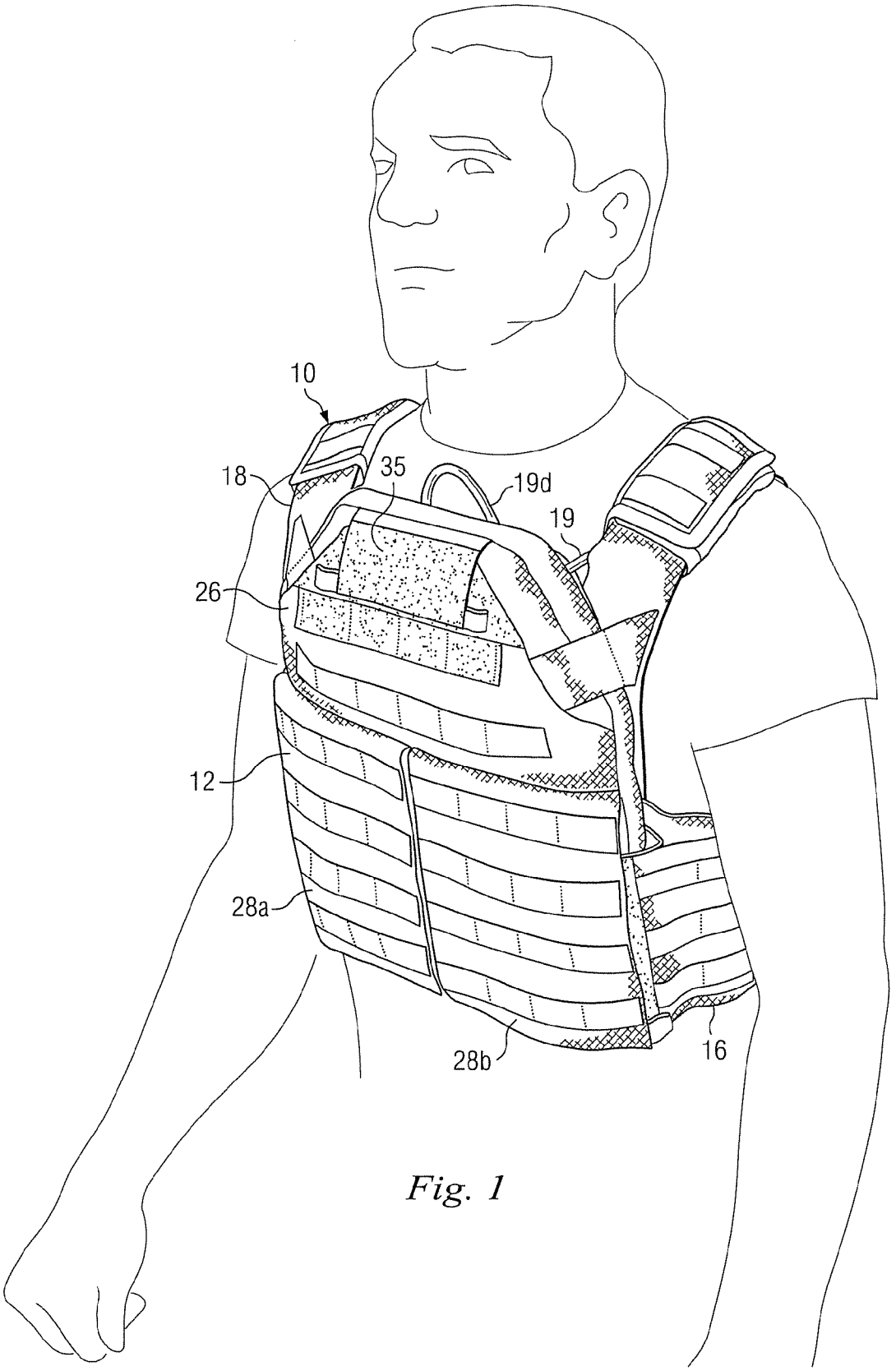


Fig. 1

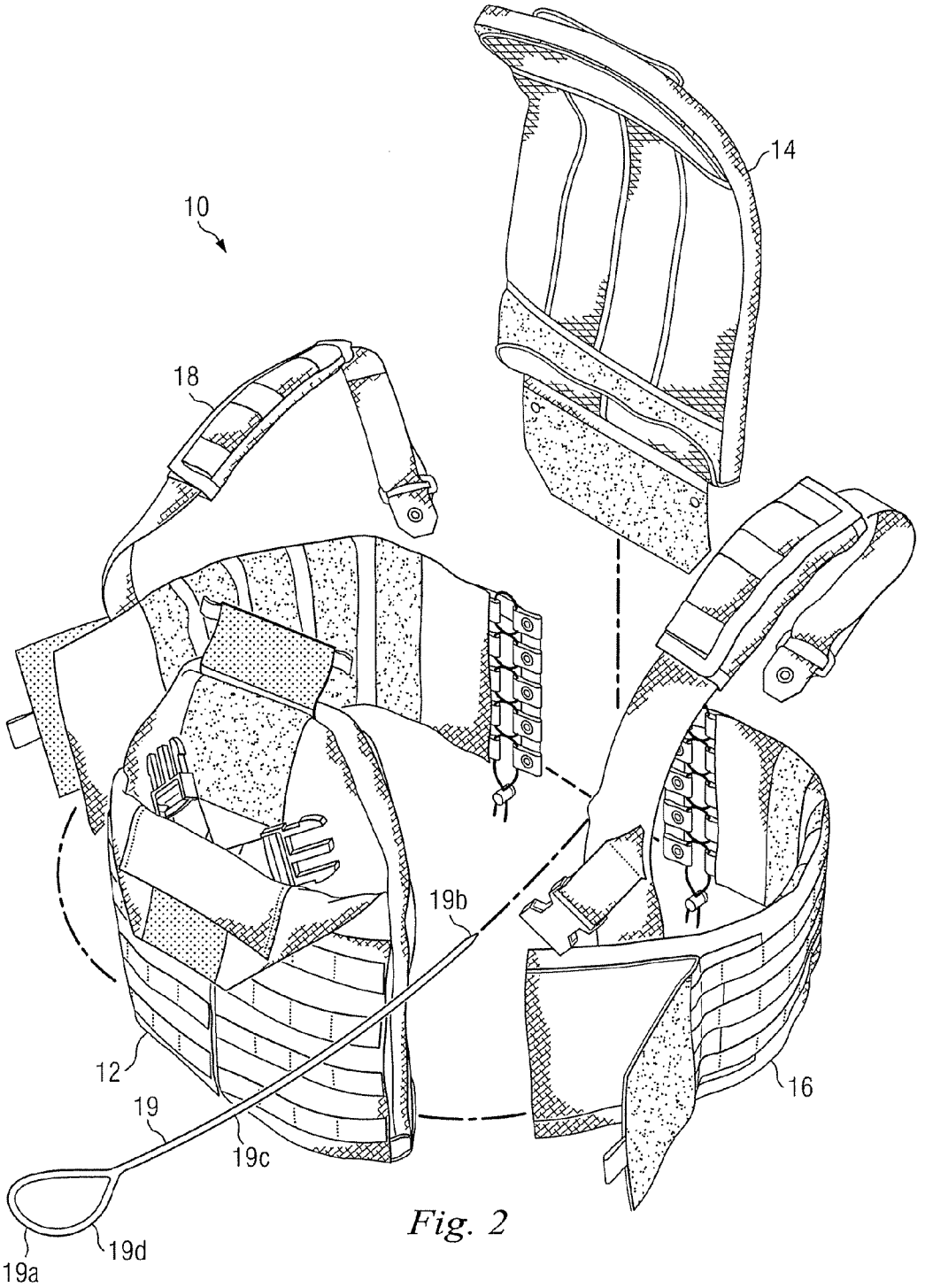
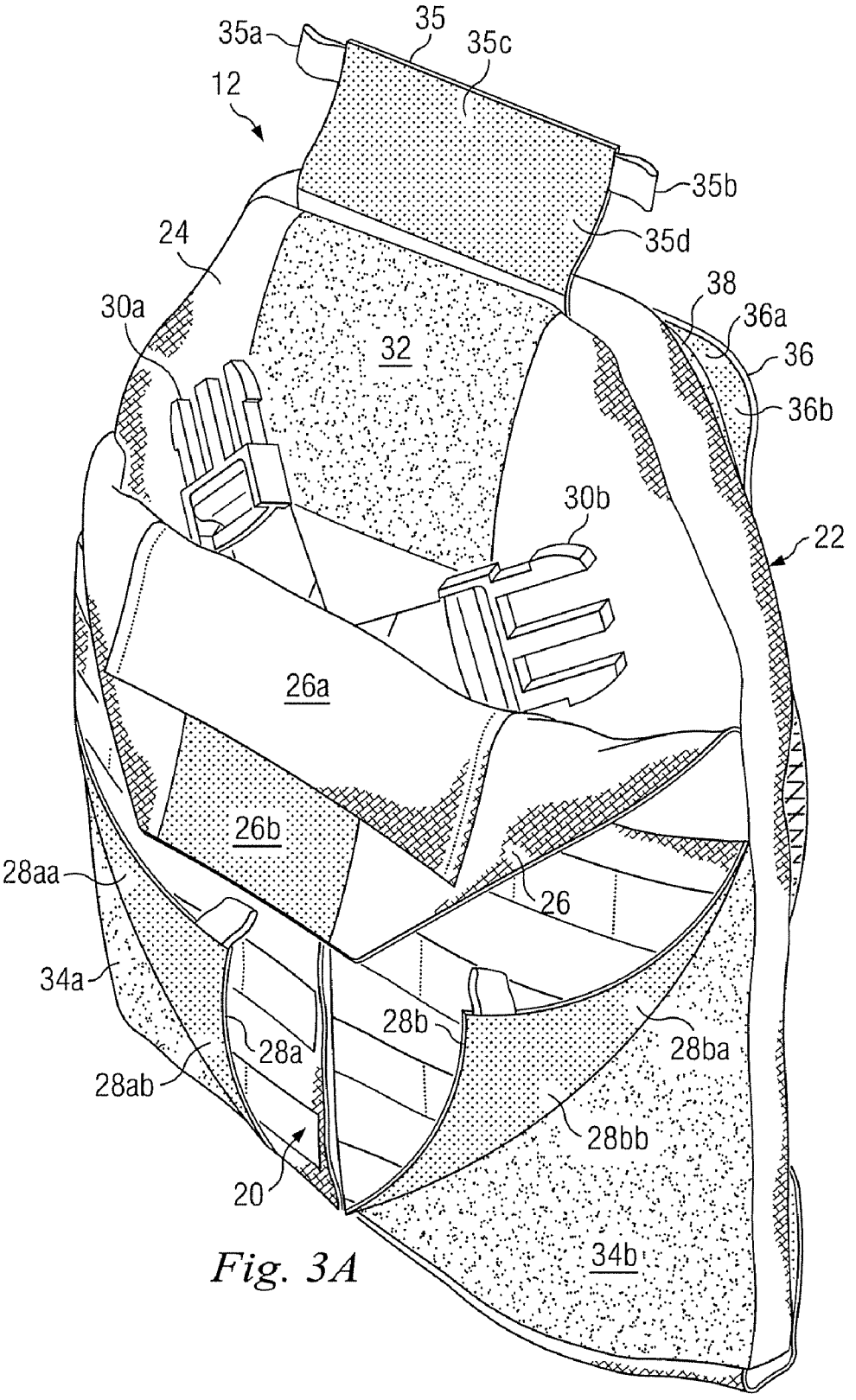


Fig. 2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35b
24
35d
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30a
36a
32
36
36b
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26b
28aa
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34a
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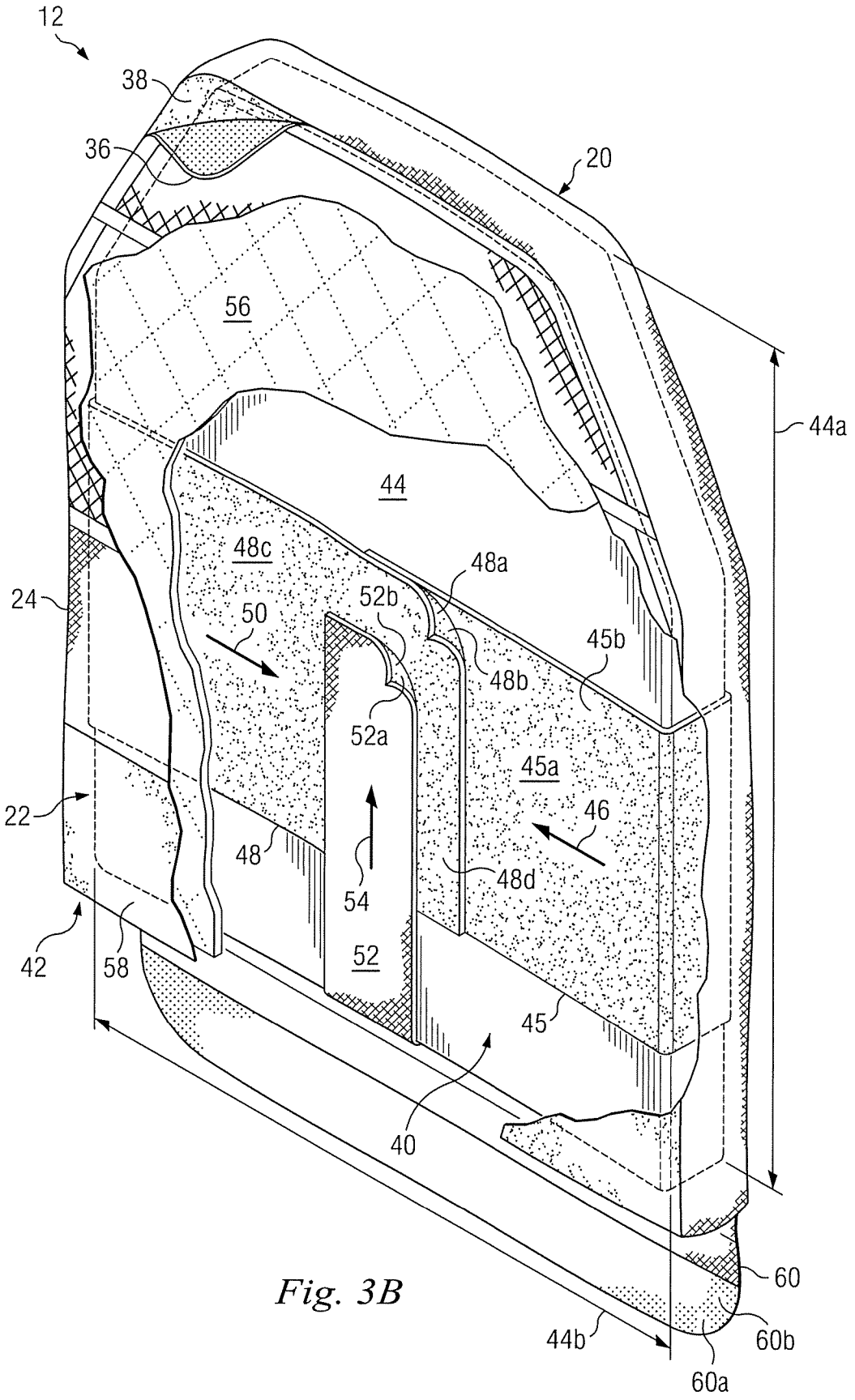
28a
28ba
28ab
28bb
20
34b

Fig. 3A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24
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45b
48b
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42
58
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40
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44b
60b
60a

Fig. 3B

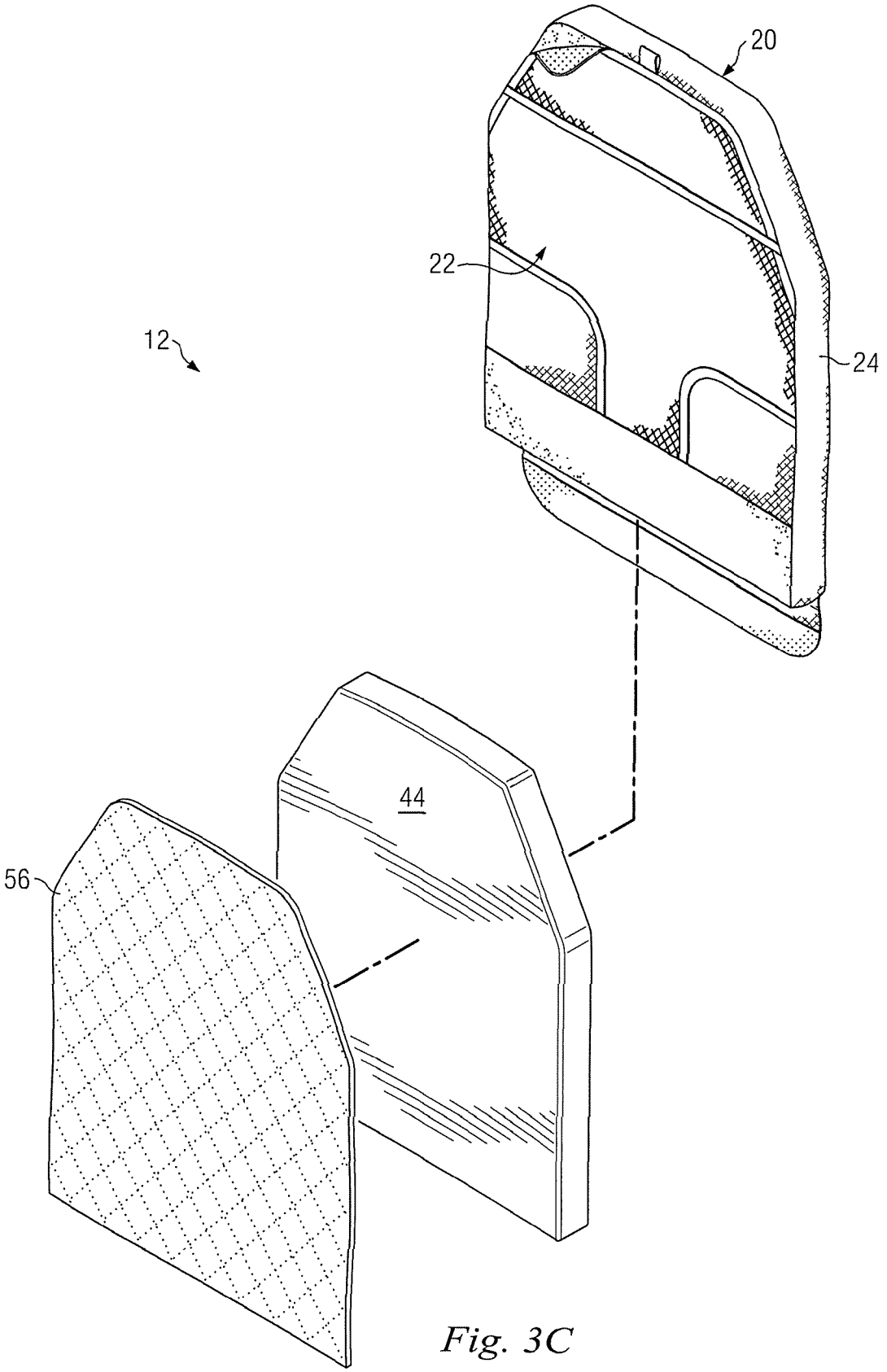
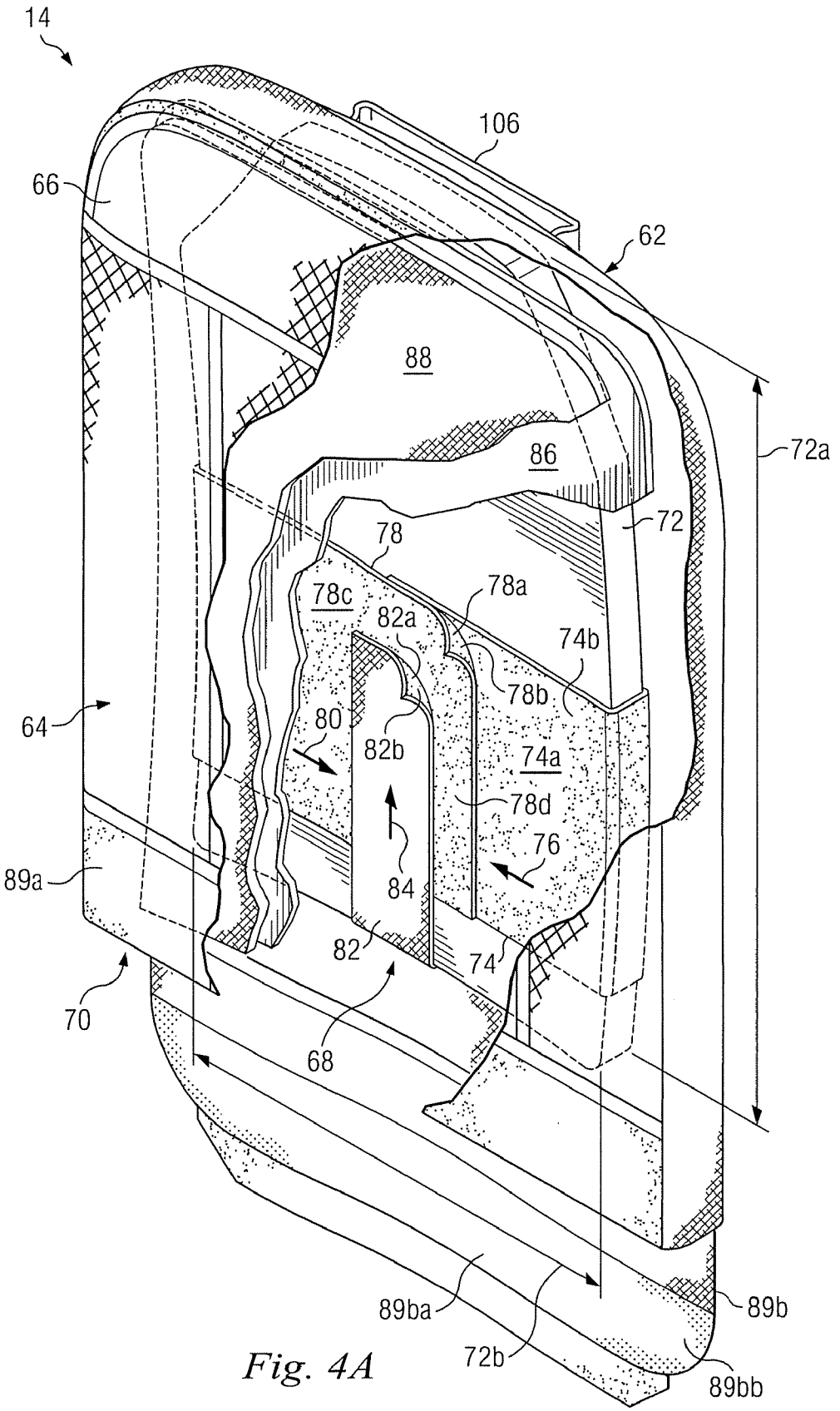


Fig. 3C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89bb

Fig. 4A

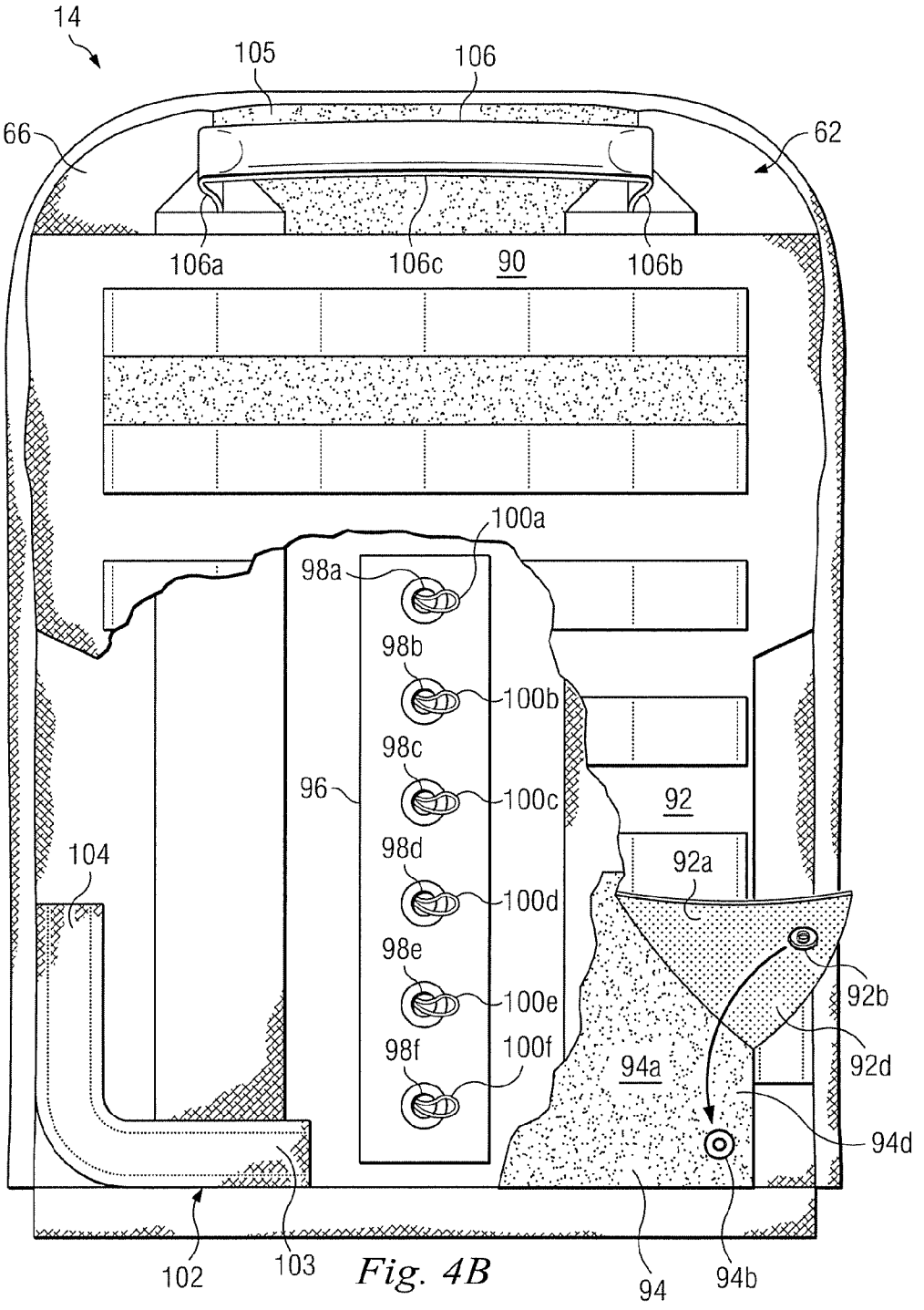
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Fig. 4B

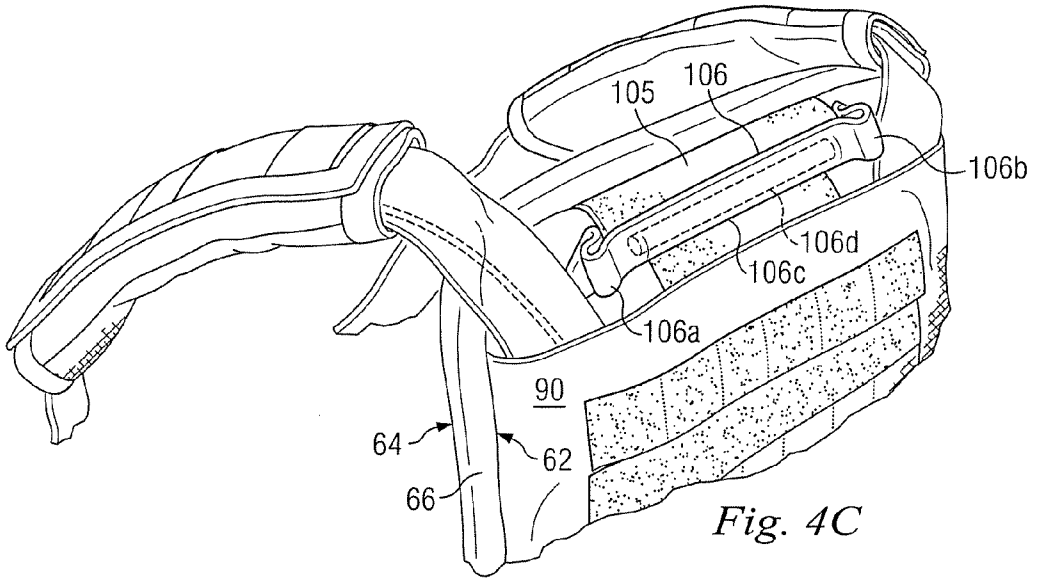
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Fig. 4C

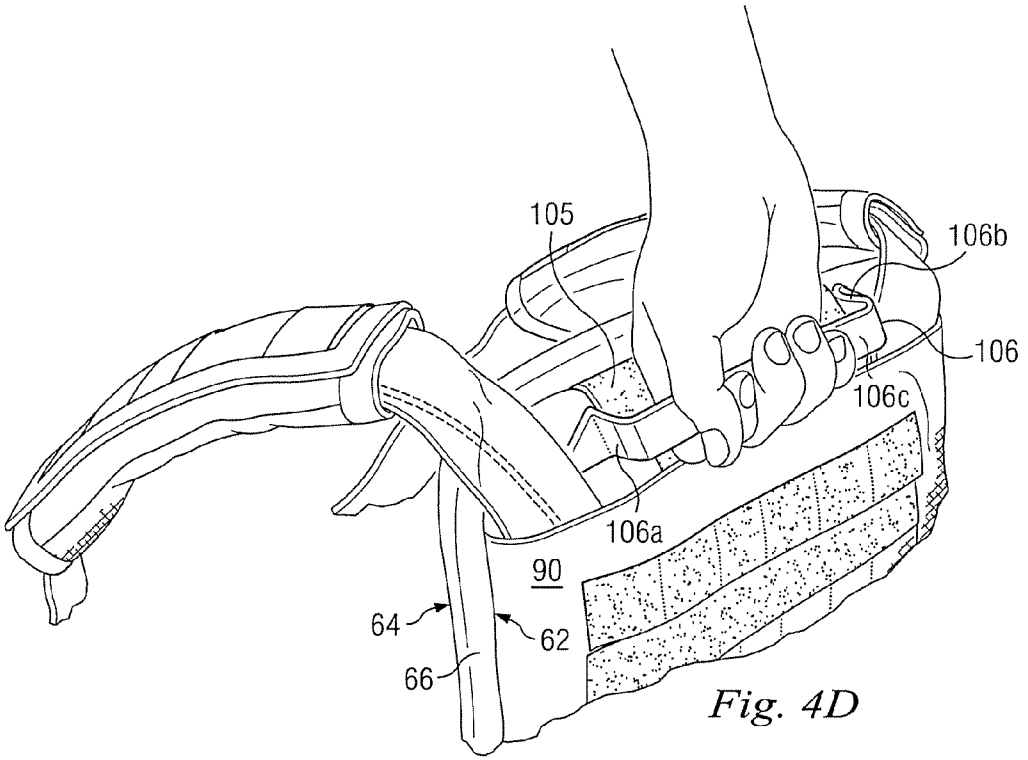
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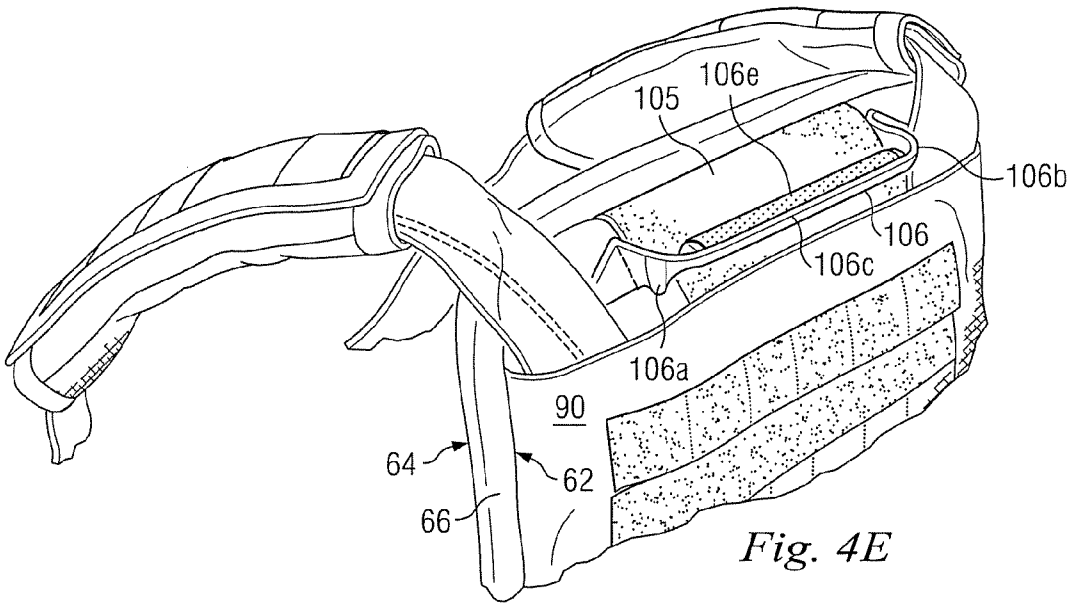
Fig. 4D



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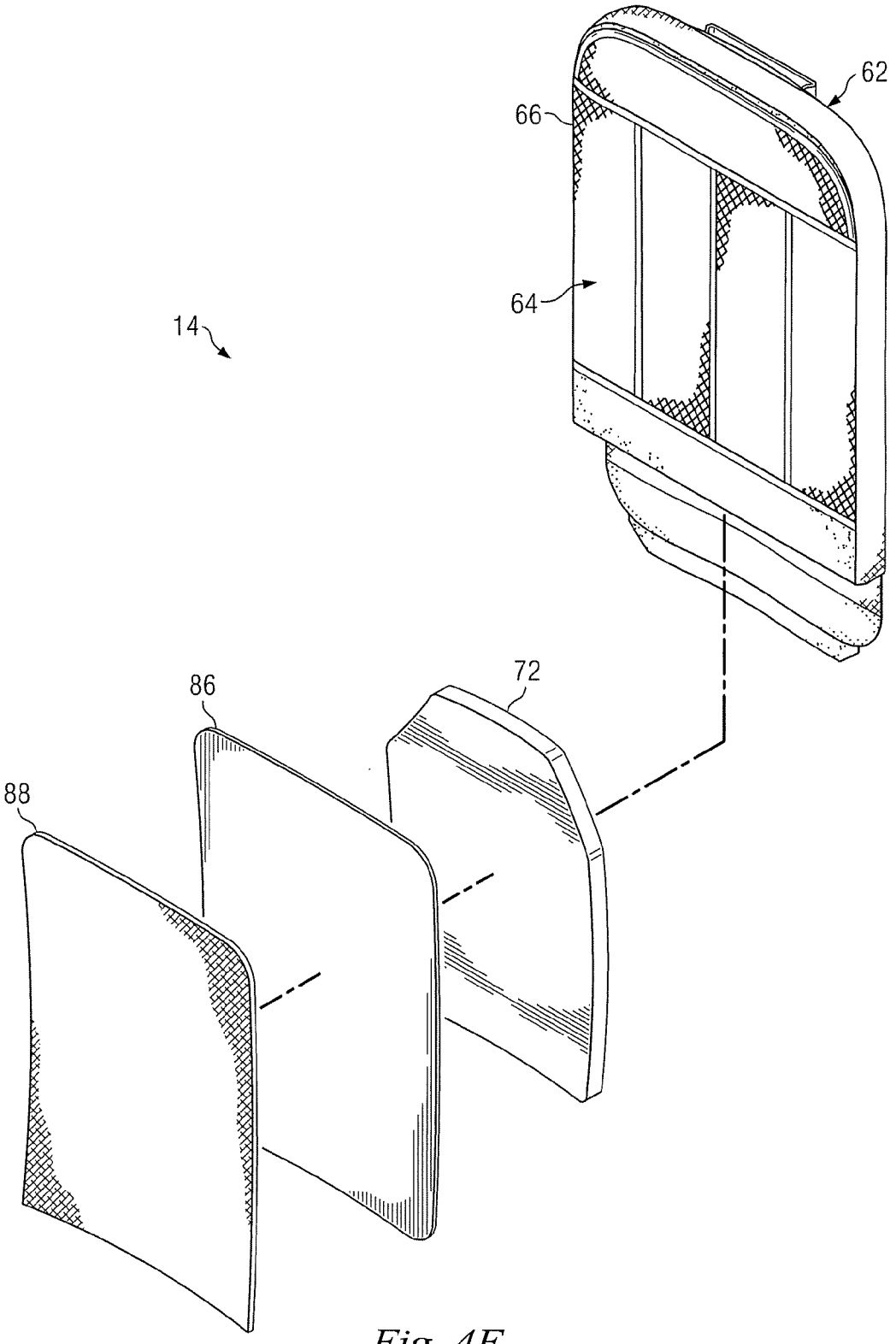
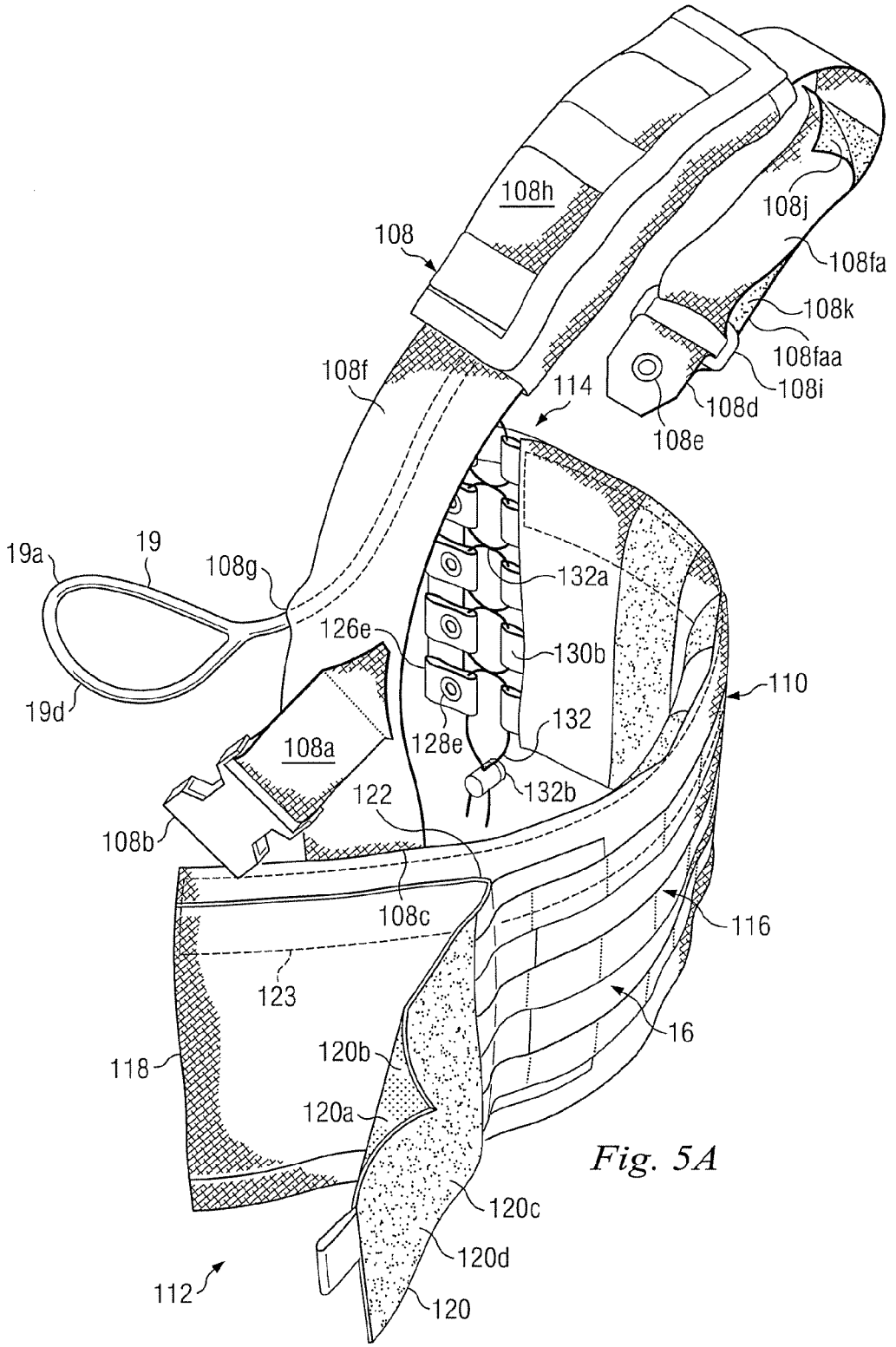


Fig. 4F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19d
132
108a
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108b
108c
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120d
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Fig. 5A

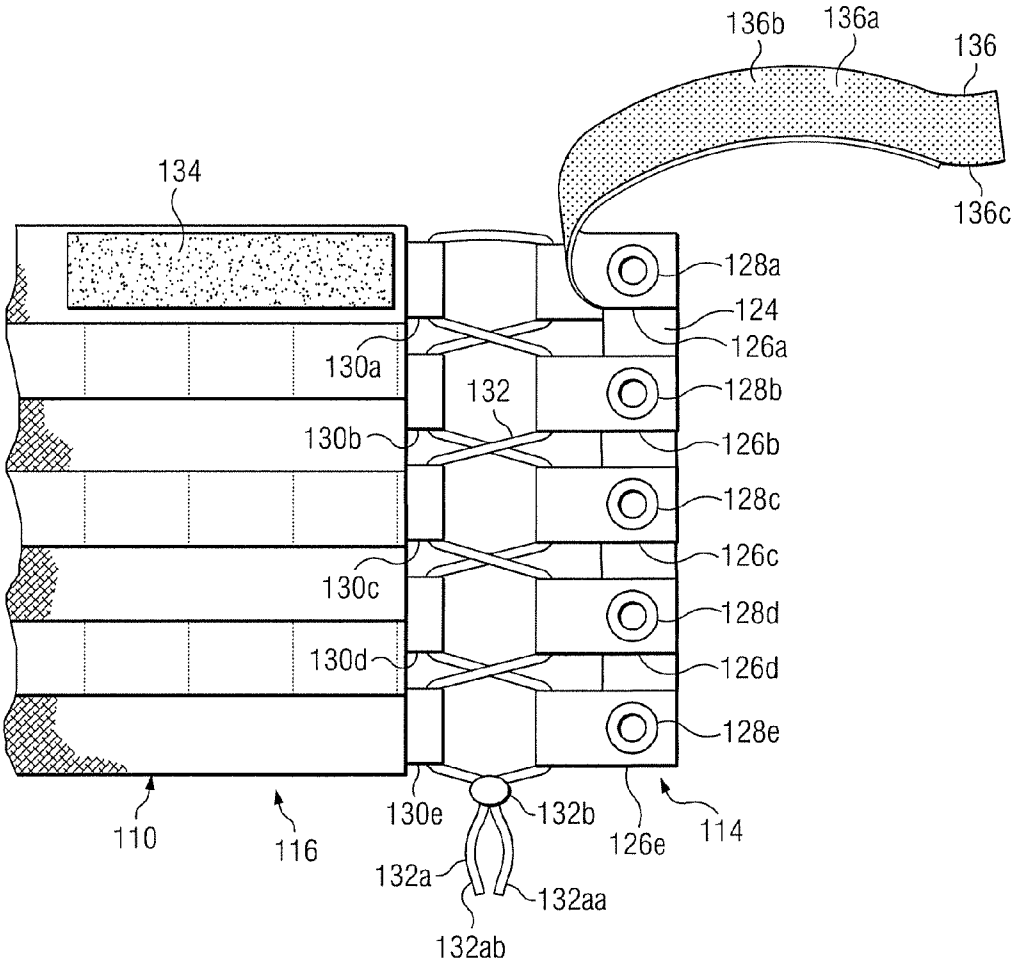
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Fig. 5B

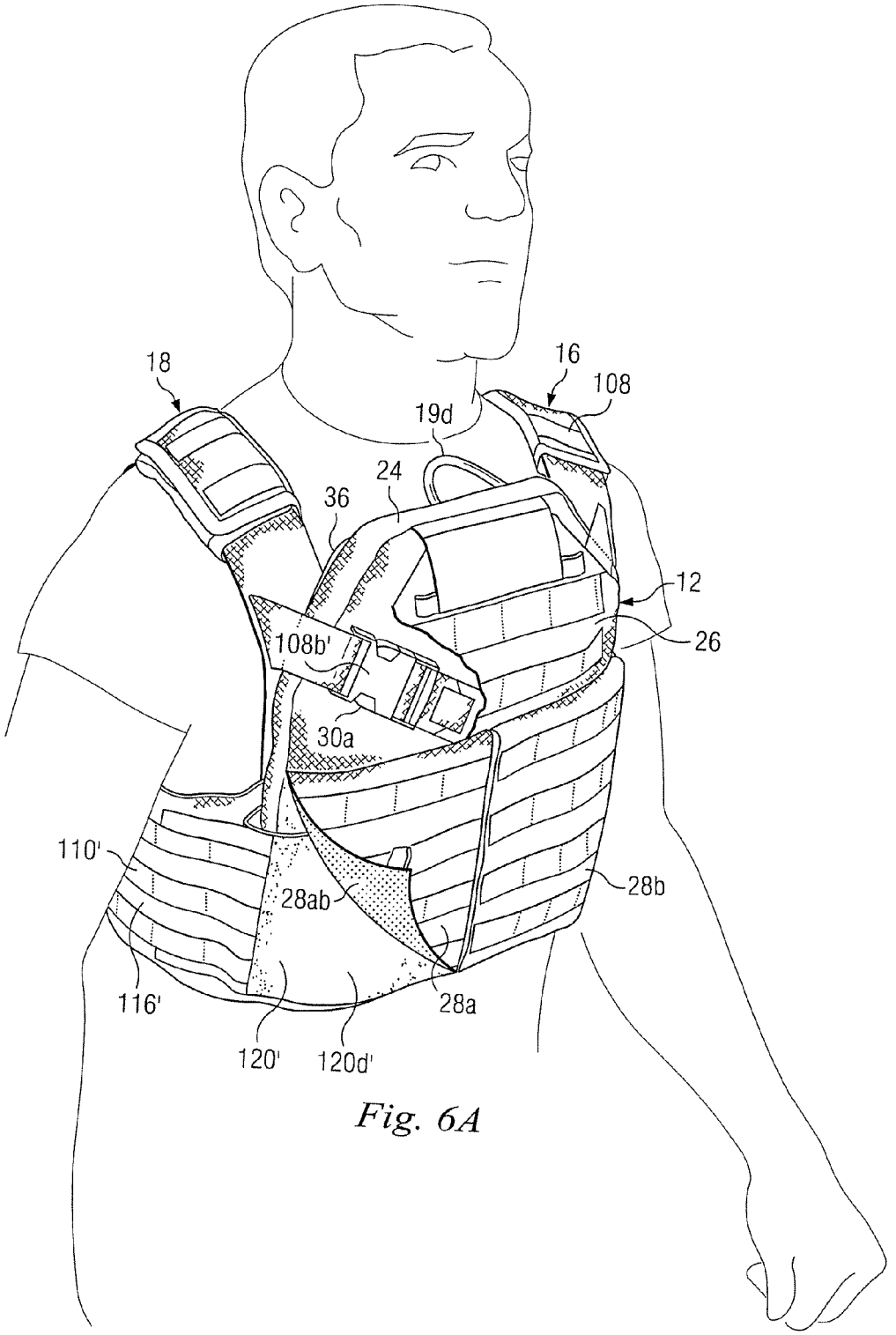
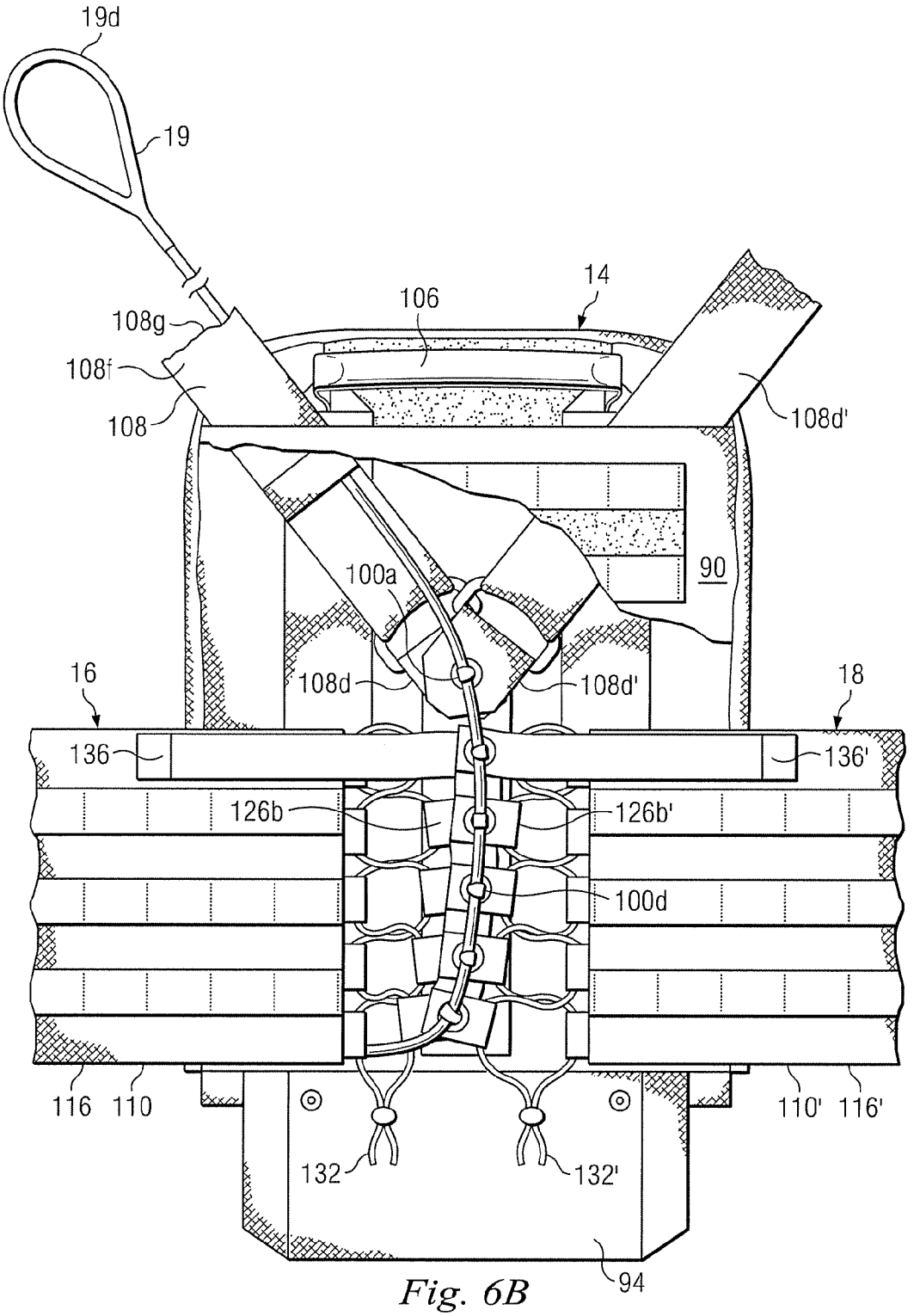


Fig. 6A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108d'
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136'
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126b'
100d
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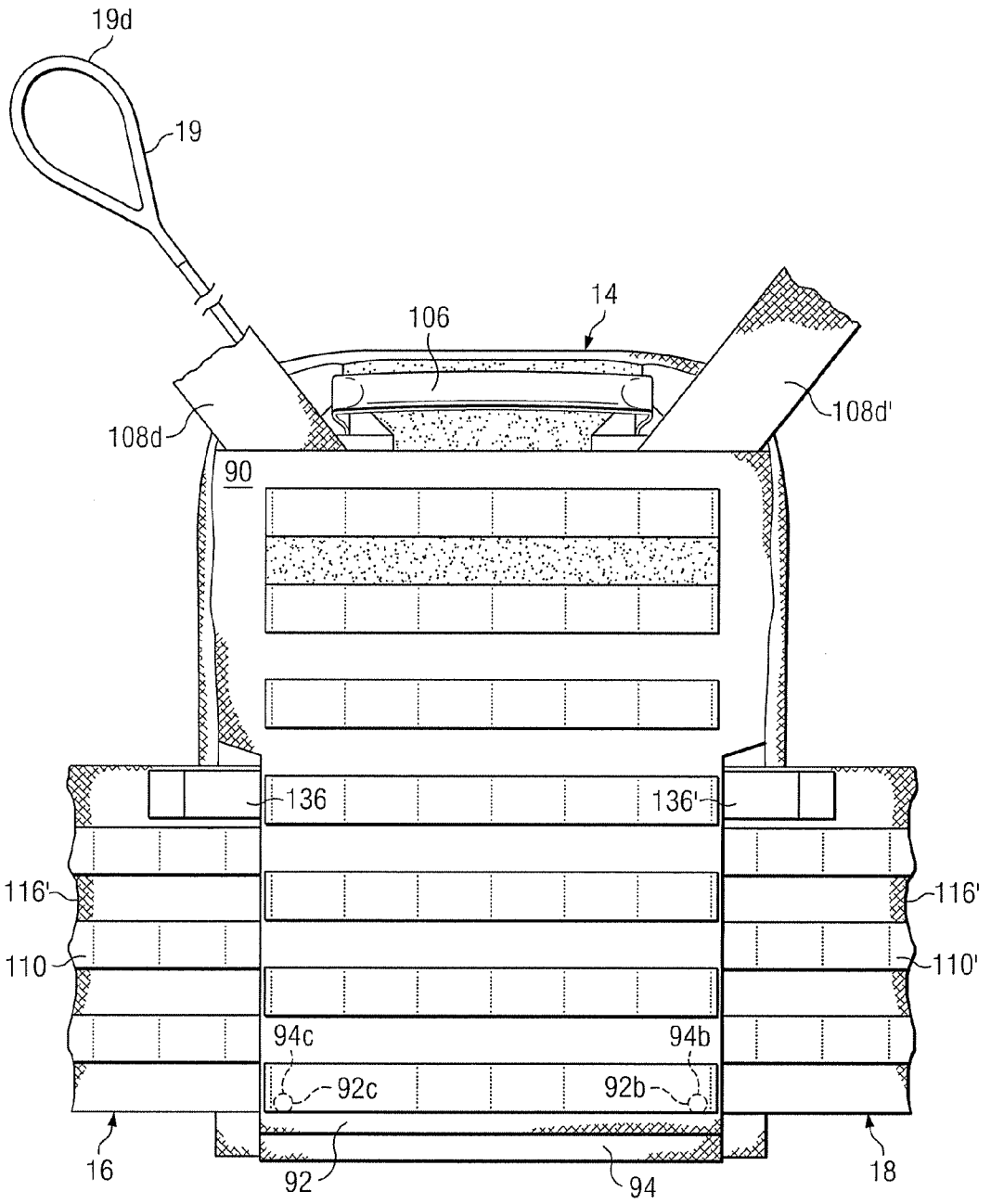
110
110'
116'
132
132'
94

Fig. 6B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94
18

Fig. 6C

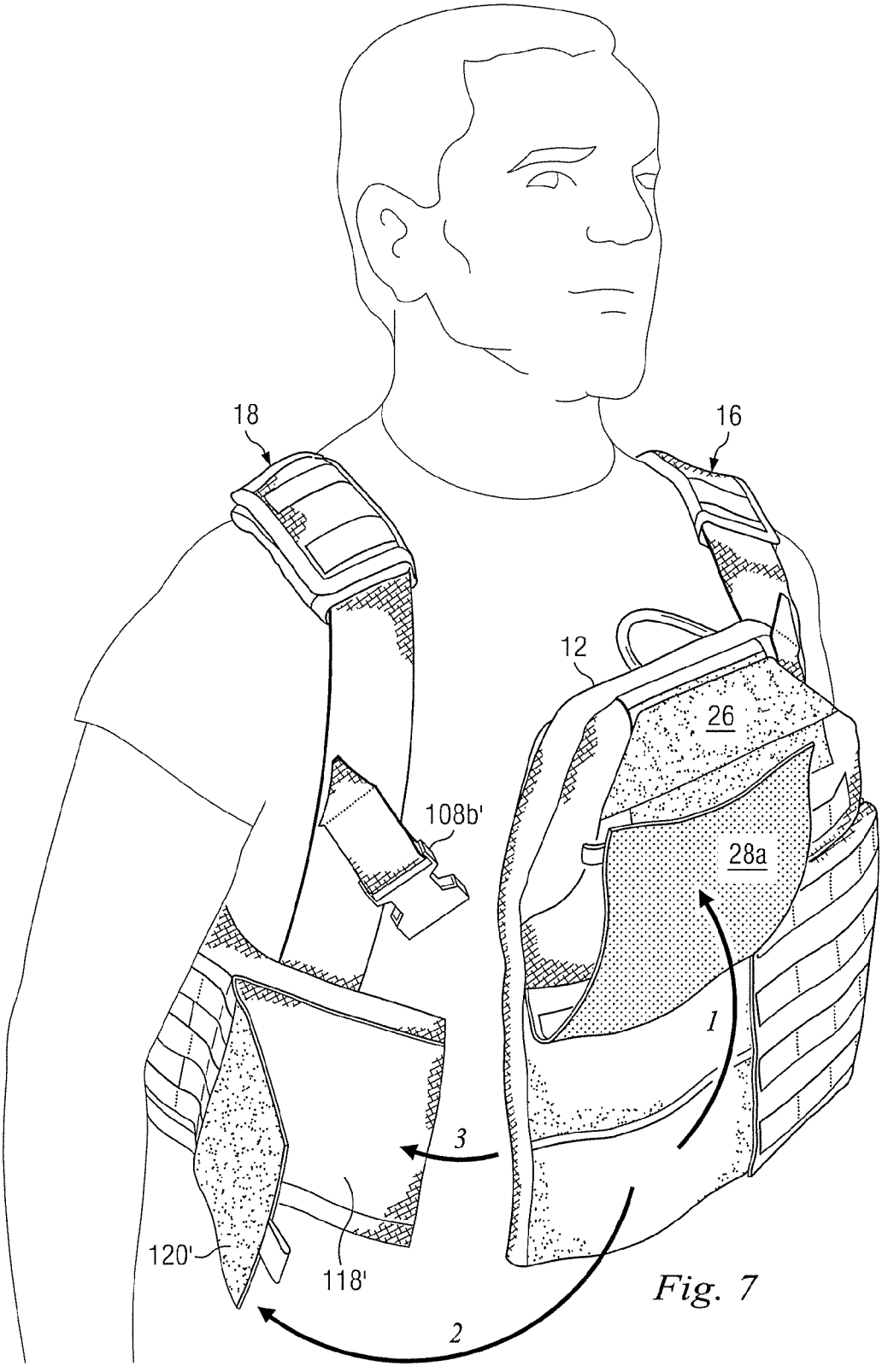
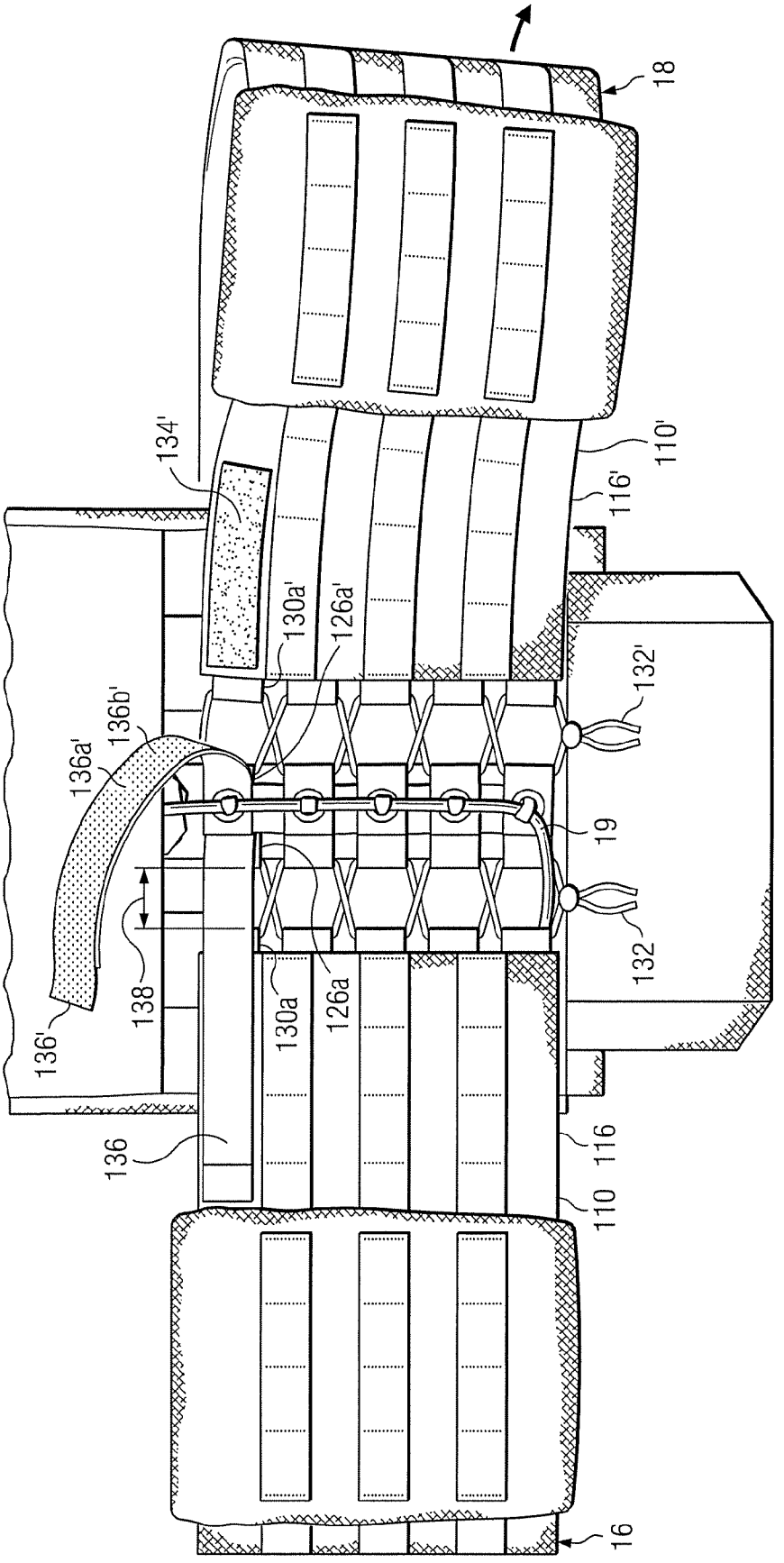


Fig. 7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116
110
16

Fig. 8

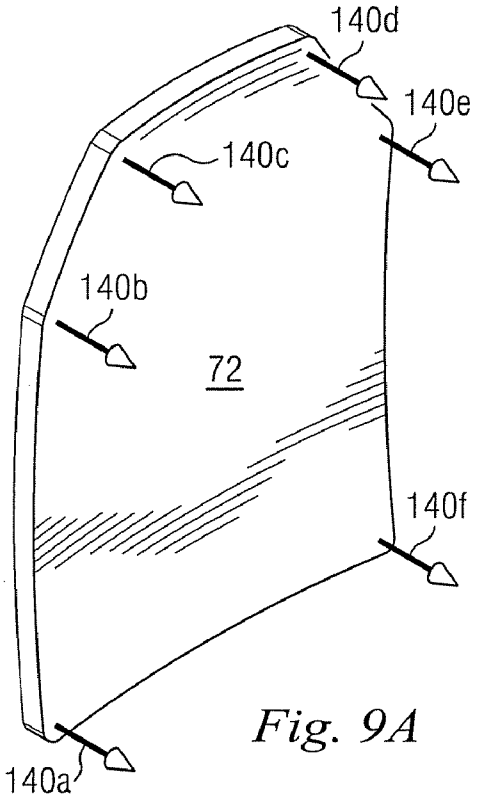
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Fig. 9A

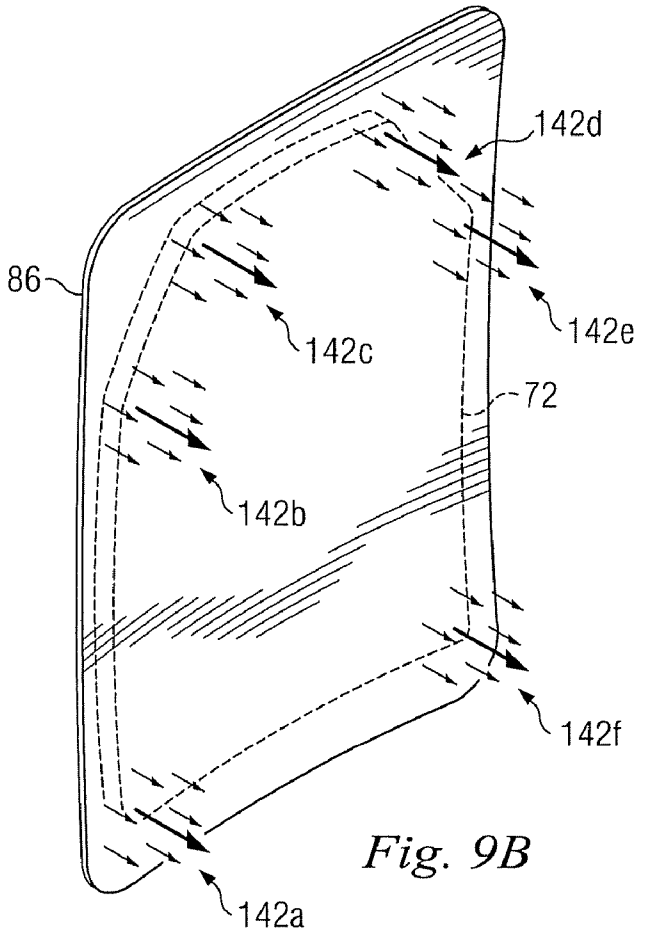
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Fig. 9B

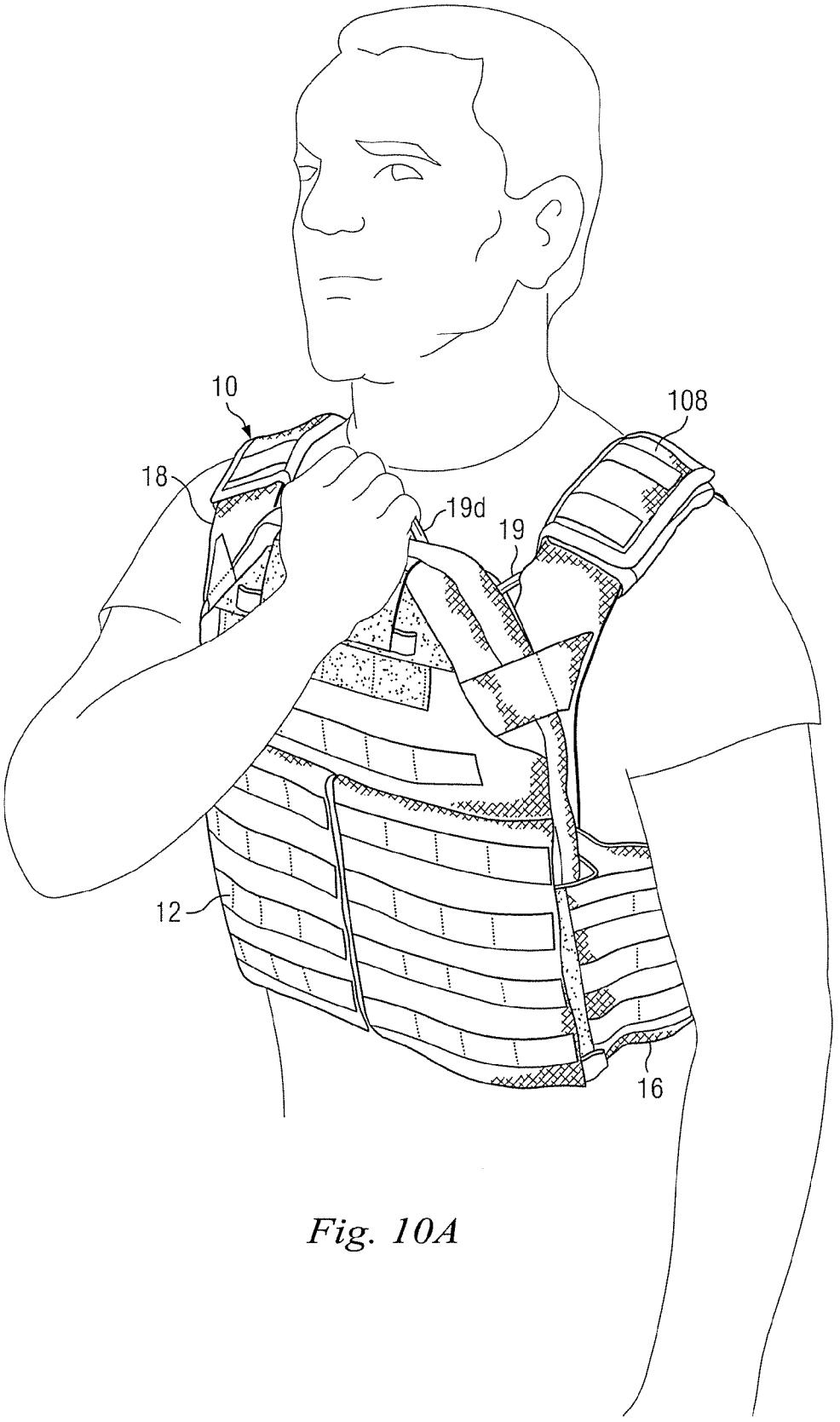


Fig. 10A

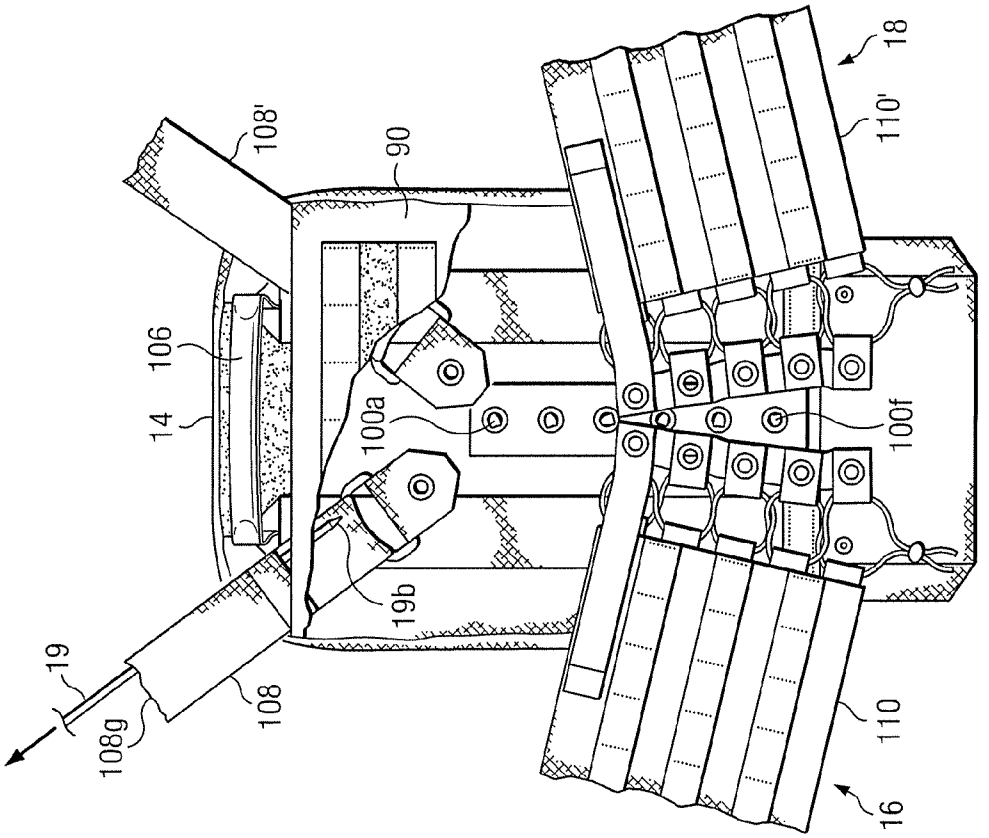


Fig. 10C

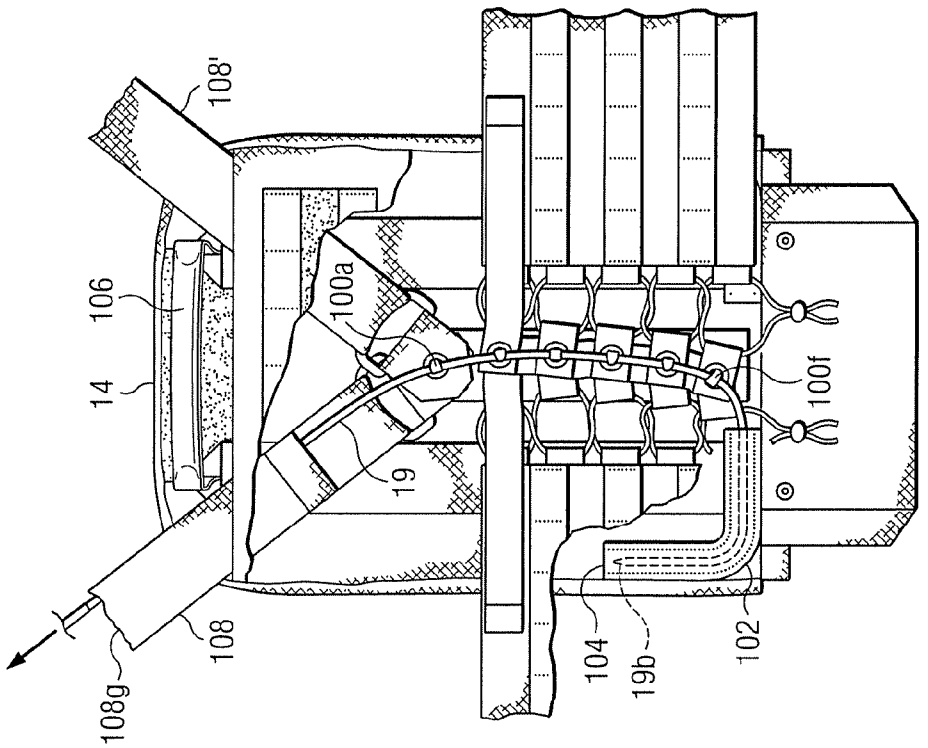


Fig. 10B

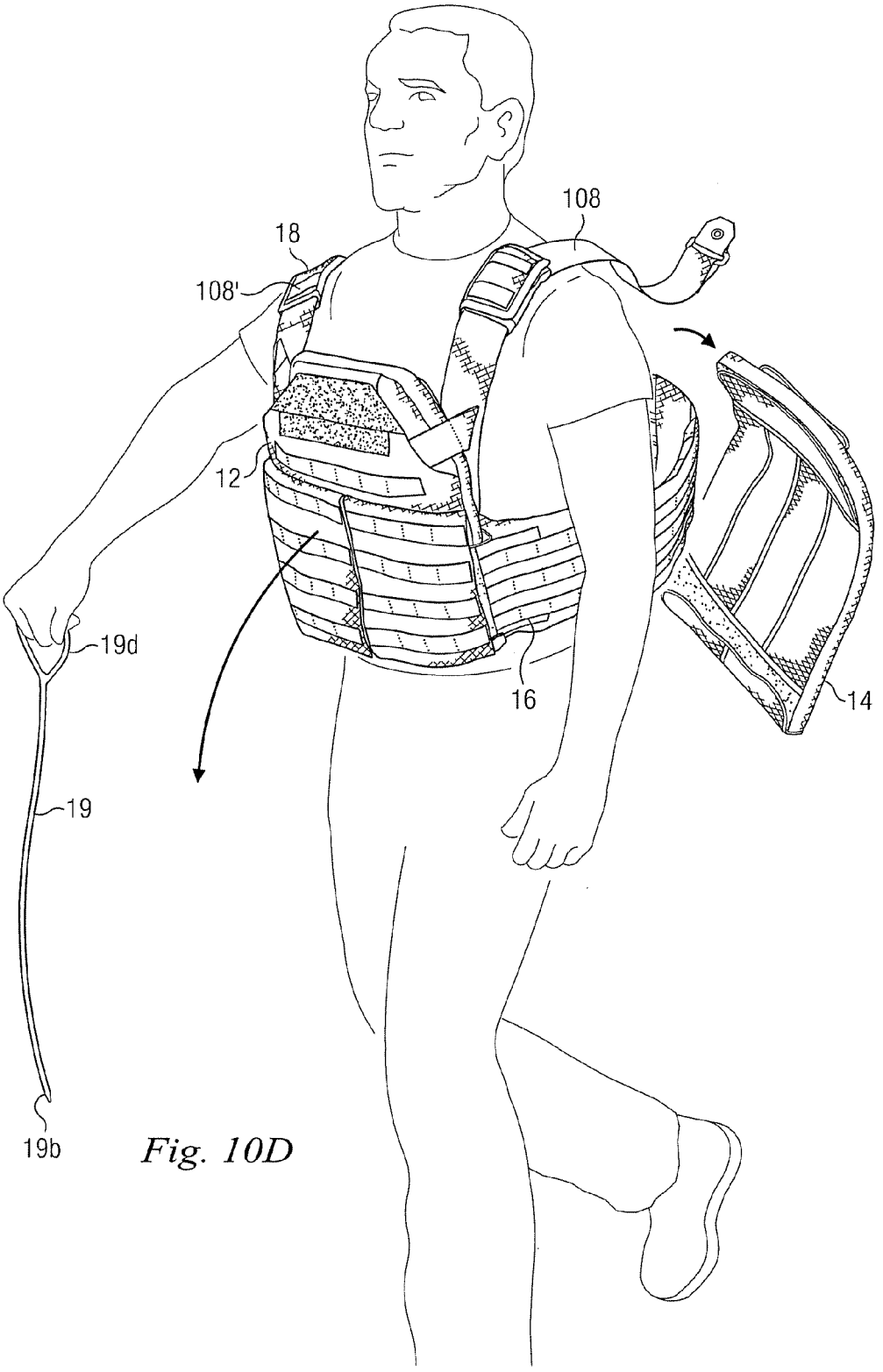
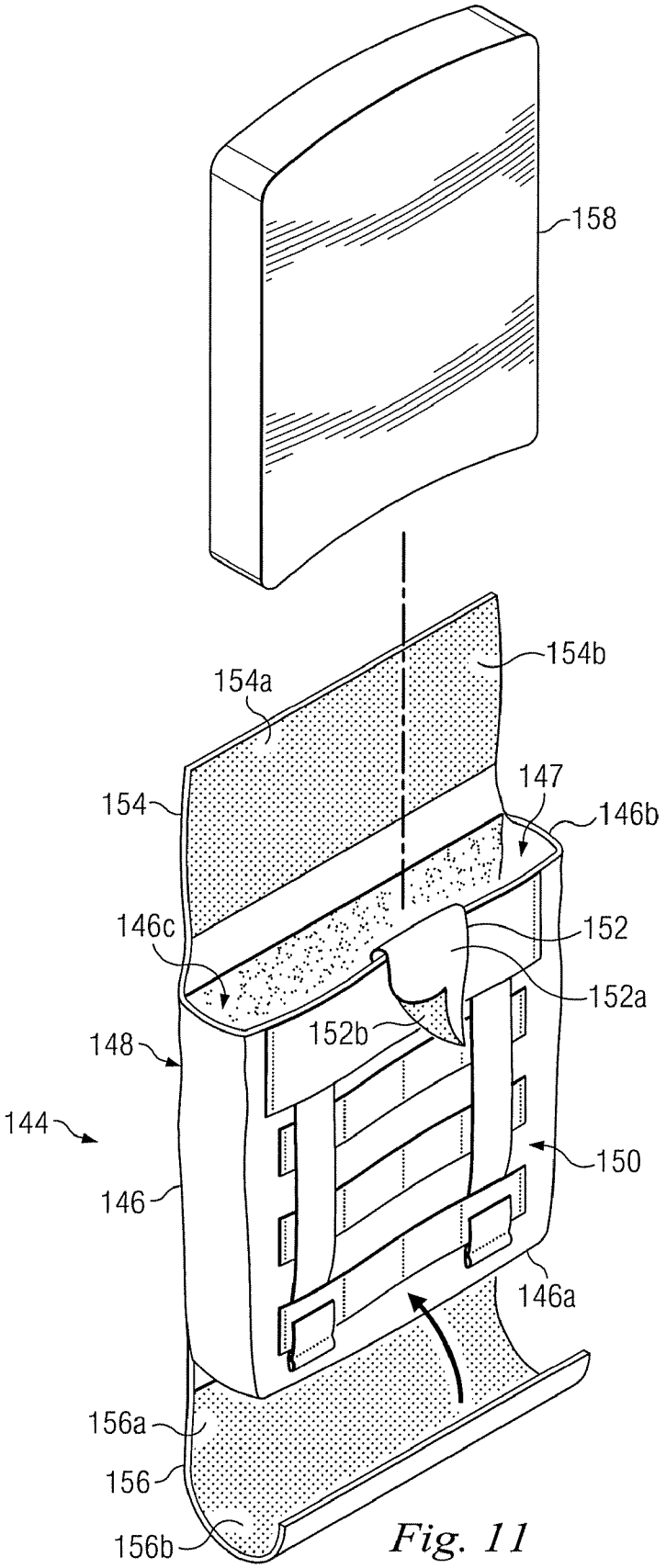


Fig. 10D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156b

Fig. 11

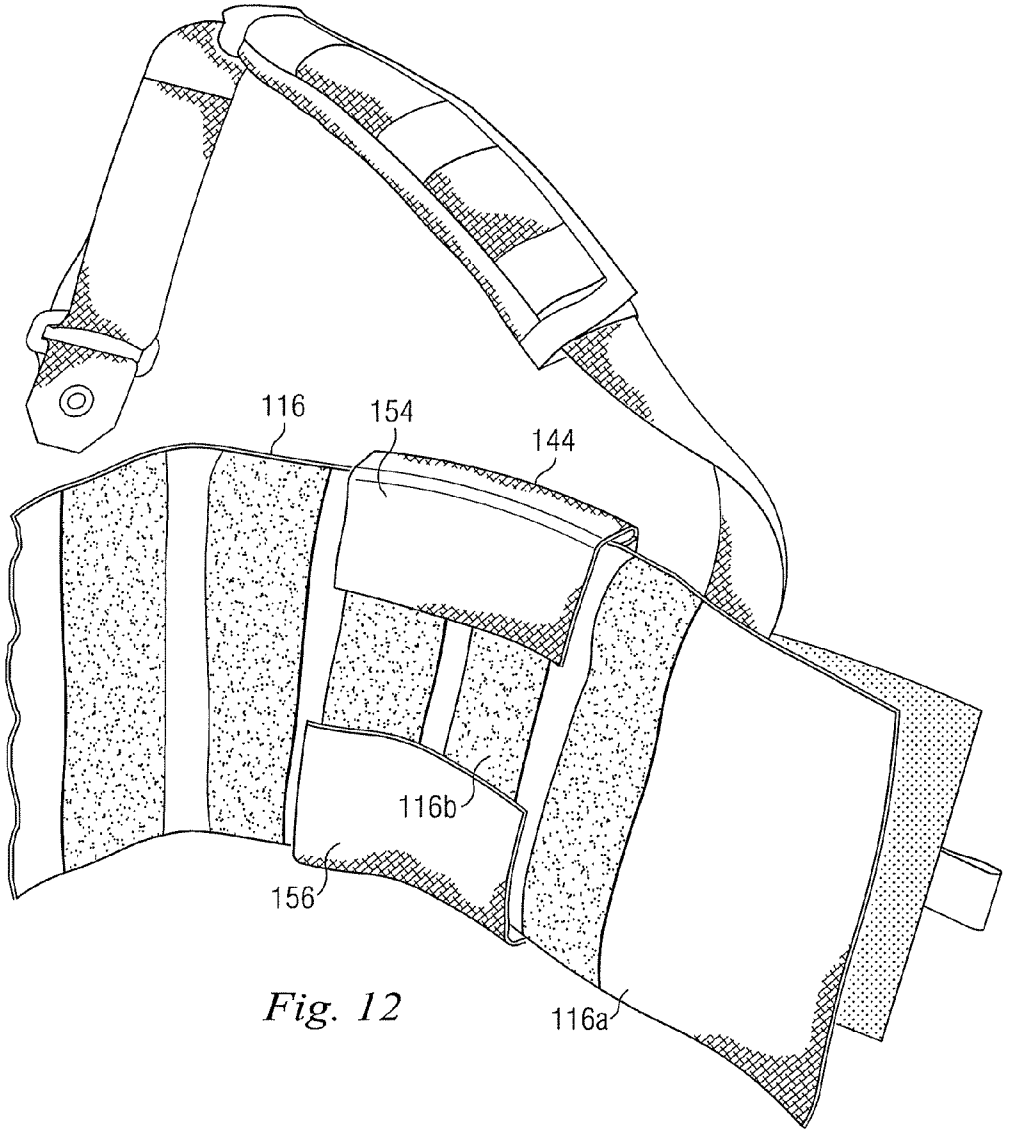
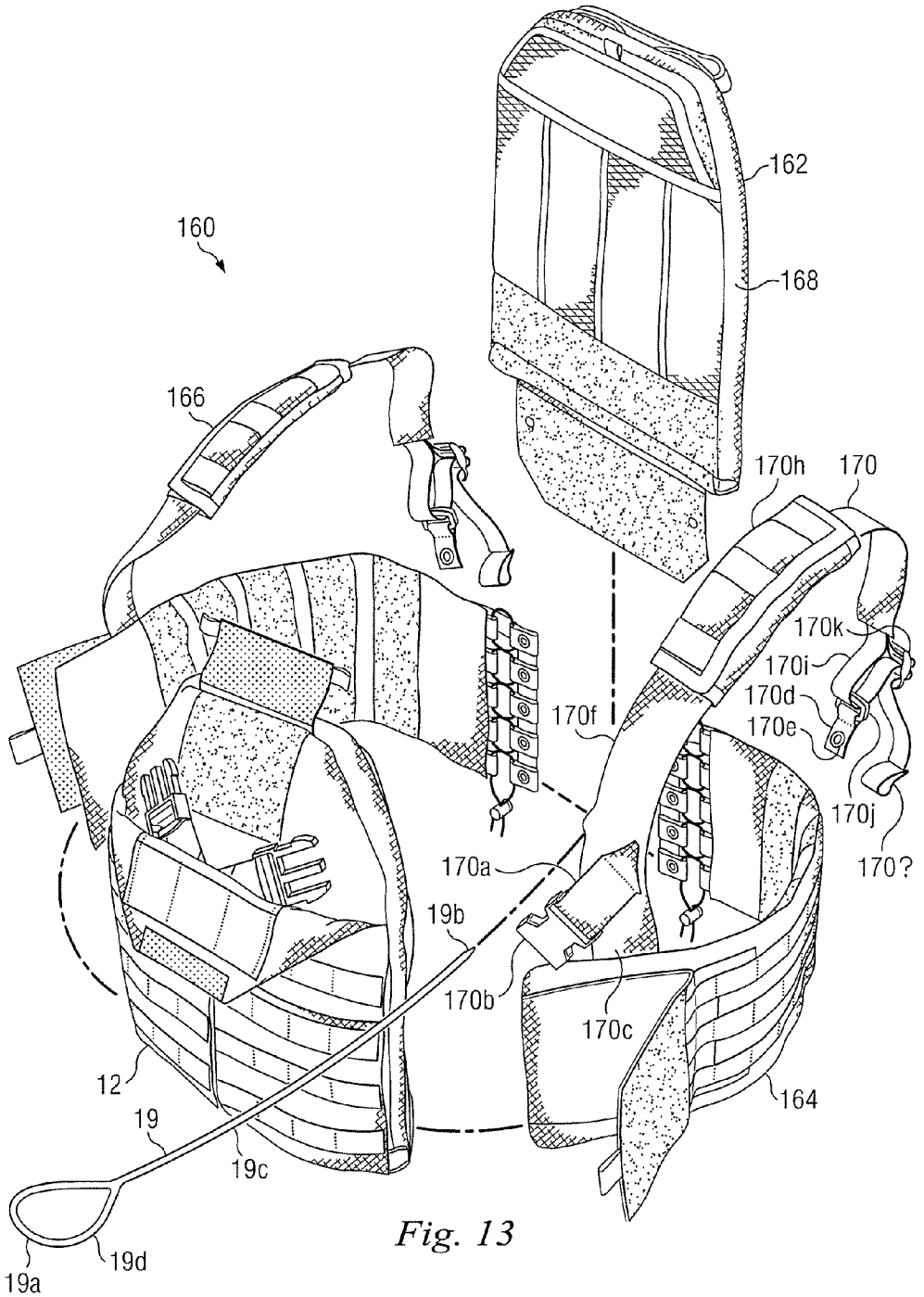


Fig. 12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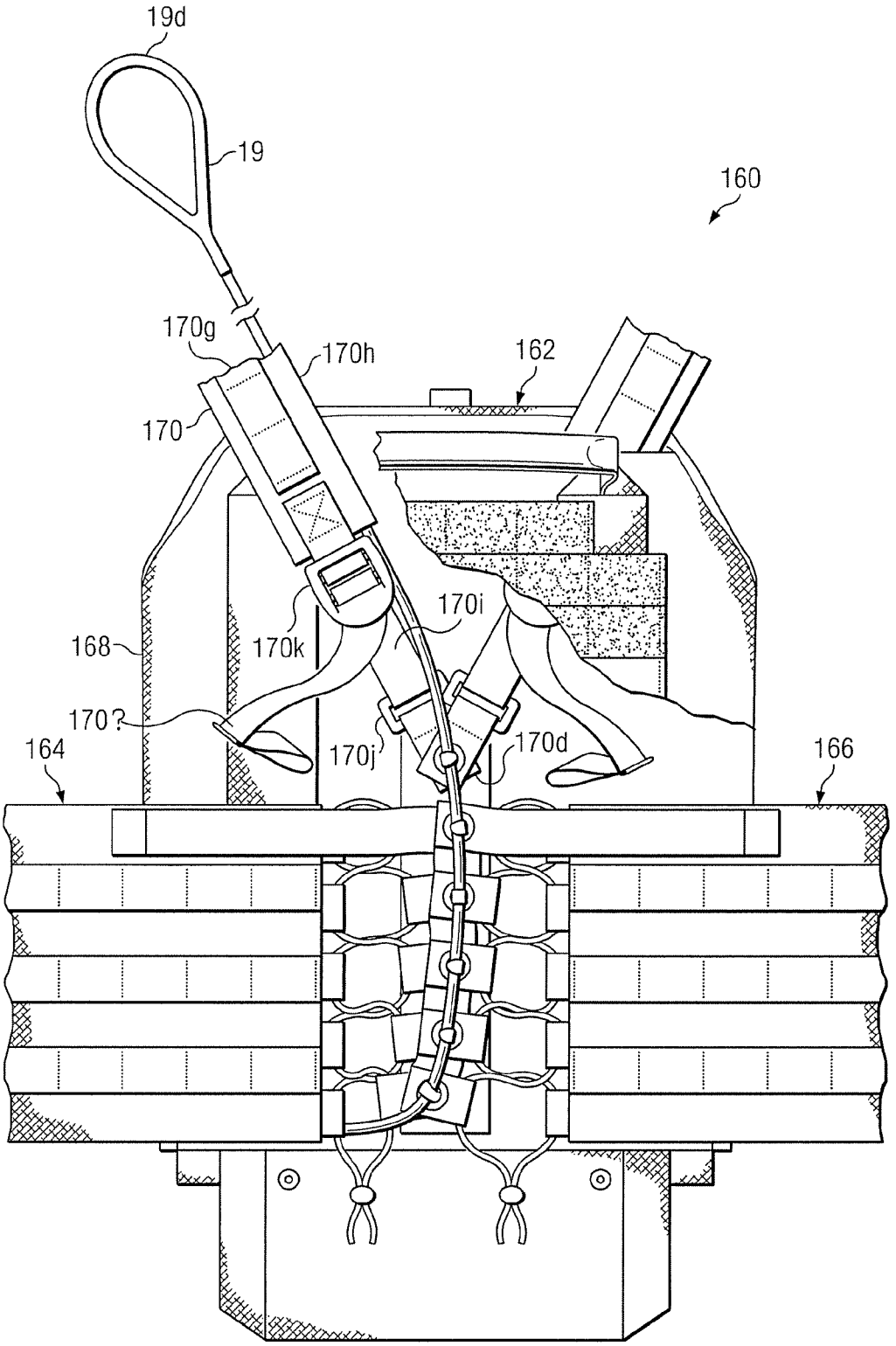
19a

Fig. 13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170k
170?
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170j
170d
166

Fig. 14

ARMOR CARRIER AND METHOD

BACKGROUND

[0001] The present disclosure relates in general to armor, and in particular to an armor apparatus in the form of, for example, a vest or carrier including, in several exemplary embodiments, one or more armor plates.

BRIEF DESCRIPTION OF THE DRAWINGS

[0002] FIG. **1** is a perspective view of a carrier according to an exemplary embodiment, the carrier being in a configuration and including a front assembly, a back assembly, a right side assembly, a left side assembly, and a cord, according to respective exemplary embodiments.

[0003] FIG. **2** is an exploded view of the carrier of FIG. **1**.

[0004] FIG. **3**A is a perspective view of the front assembly of FIGS. **1** and **2**, according to an exemplary embodiment.

[0005] FIG. **3**B is another perspective view of the front assembly of FIGS. **1** and **2**, according to an exemplary embodiment, with a portion of the front assembly cut away to depict the interior thereof.

[0006] FIG. **3**C is a partially exploded view of the front assembly of FIGS. **1** and **2**, according to an exemplary embodiment.

[0007] FIG. **4**A is a perspective view of the back assembly of FIGS. **1** and **2**, according to an exemplary embodiment, with a portion of the back assembly cut away to depict the interior thereof.

[0008] FIG. **4**B is an elevational view of the back assembly of FIGS. **1** and **2**, according to an exemplary embodiment.

[0009] FIG. **4**C is an enlarged perspective view of a portion of the back assembly of FIGS. **1** and **2**, according to an exemplary embodiment.

[0010] FIG. **4**D is a view similar to that of FIG. **4**C but depicting the portion in another operational mode, according to an exemplary embodiment.

[0011] FIG. **4**E is another enlarged perspective view of the portion of the back assembly shown in FIGS. **4**C and **4**D.

[0012] FIG. **4**F is a partially exploded view of the back assembly of FIGS. **1** and **2**, according to an exemplary embodiment.

[0013] FIG. **5**A is a perspective view of the left side assembly of FIGS. **1** and **2**, according to an exemplary embodiment.

[0014] FIG. **5**B is an elevational view of a portion of the left side assembly of FIG. **5**A, according to an exemplary embodiment.

[0015] FIG. **6**A is another perspective view of the carrier of FIGS. **1** and **2** in an assembled condition, according to an exemplary embodiment.

[0016] FIG. **6**B is an elevational view of the carrier of FIGS. **1** and **2** in the assembled condition of FIG. **6**A, according to an exemplary embodiment, the carrier including at least two anti-sag straps, and at least two flaps, according to respective exemplary embodiments.

[0017] FIG. **6**C is a view similar to that of FIG. **6**B, but depicting the two flaps removably coupled to one another, according to an exemplary embodiment.

[0018] FIG. **7** is a perspective view of the carrier of FIGS. **1** and **2** in another configuration, according to an exemplary embodiment.

[0019] FIG. **8** is a view similar to that of FIG. **6**B, but depicting one of the anti-sag straps in another configuration, according to an exemplary embodiment.

[0020] FIG. **9**A is a perspective view of an armor plate of the back assembly of the carrier of FIGS. **1** and **2**, according to an exemplary embodiment.

[0021] FIG. **9**B is a perspective view of an armor plate and a plate insert of the back assembly of the carrier of FIGS. **1** and **2**, according to respective exemplary embodiments.

[0022] FIG. **10**A is a view similar to that of FIG. **1**, but depicting the carrier in another operational mode, according to an exemplary embodiment.

[0023] FIGS. **10**B and **10**C are elevational views of the carrier of FIGS. **1** and **2**, but depicting the carrier in different operational modes, according to respective exemplary embodiments.

[0024] FIG. **10**D is a view similar to that of FIG. **10**A, but depicting the carrier in yet another operational mode, according to an exemplary embodiment.

[0025] FIG. **11** is an exploded view of a side pouch assembly according to an exemplary embodiment.

[0026] FIG. **12** is a perspective view of the side pouch assembly of FIG. **11** removably coupled to the left side assembly of FIGS. **1** and **2**, according to an exemplary embodiment.

[0027] FIG. **13** is an exploded view of a carrier according to another exemplary embodiment, the carrier including a front assembly, a back assembly, a right side assembly, a left side assembly, and a cord, according to respective exemplary embodiments.

[0028] FIG. **14** is an elevational view of the carrier of FIG. **13** in an assembled condition, according to an exemplary embodiment.

DETAILED DESCRIPTION

[0029] In an exemplary embodiment, as illustrated in FIGS. **1** and **2**, an armor apparatus, in the form of a vest or carrier, is generally referred to by the reference numeral **10** and includes a front assembly **12**, a back assembly **14**, a left side assembly **16**, a right side assembly **18**, and cord **19**. The front assembly **12** is removably coupled to each of the side assemblies **16** and **18**, which, in turn, are each removably coupled to the back assembly **14**. As shown in FIG. **2**, the cord **19** includes opposing end portions **19***a* and **19***b*, a middle portion **19***c* extending between the end portions **19***a* and **19***b*, and a loop **19***d* formed at the end portion **19***a*. In several exemplary embodiments, an operator wears the carrier **10** as a vest, with the front assembly **12** covering at least a portion of the operator's chest, the back assembly **14** covering at least a portion of the operator's back, the left side assembly **16** covering at least a portion of the operator's left side, and the right side assembly **18** covering at least a portion of the operator's right side, thereby providing armor protection to the operator, as will be described detail below.

[0030] In an exemplary embodiment, as illustrated in FIGS. **3**A, **3**B and **3**C with continuing reference to FIGS. **1** and **2**, the front assembly **12** defines an exterior side **20** and a body, or interior, side **22**, and includes a jacket **24**, an upwardly-extending flap **26** coupled to the jacket **24** on the exterior side **20**, and a pair of downwardly-extending flaps **28***a* and **28***b* coupled to the jacket **24** on the exterior side **20**. The flap **26** defines a surface **26***a*, and a fastening element, such as a Velcro hook element **26***b*, is coupled to the distal end portion of the surface **26***a*. The flaps **28***a* and **28***b* define surfaces **28***aa* and **28***ba*, respectively, to which respective fastening elements, such as respective Velcro hook elements **28***ab* and **28***bb*, are coupled. Snap-buckle elements **30***a* and **30***b* are

coupled to the jacket **24** on the exterior side **20**. A fastening element, such as a Velcro loop element **32**, is coupled to the upper portion of the jacket **24** on the exterior side **20**. Fastening elements, such as Velcro loop elements **34***a* and **34***b*, are coupled to the lower half of the jacket **24** on the exterior side **20**. The hook element **26***b* is adapted to be removably coupled to the loop element **32** to thereby removably couple the flap **26** to the jacket **24** and cover at least respective portions of the snap-buckle elements **30***a* and **30***b*, under conditions to be described below. A top flap **35** is coupled to the jacket **24**, and includes pull tabs **35***a* and **35***b*, and a fastening element, such as a Velcro hook element **35***c*, coupled to a surface **35***d*. The hook element **35***c* is adapted to be removably coupled to a fastener, such as a Velcro loop element, coupled to a surface of the flap **26**, as shown in FIG. **1**.

[0031] The front assembly **12** further includes an upwardly-extending flap **36** coupled to the jacket **24** on the body side **22**, and a fastening element, such as a Velcro loop element **38**, coupled to the upper portion of the jacket **24** on the body side **22**. The flap **36** defines a surface **36***a*, and a fastening element, such as a Velcro hook element **36***b*, is coupled to the distal end portion of the surface **36***a*. The hook element **36***b* is adapted to be removably coupled to the loop element **38** to thereby removably couple the flap **36** to the jacket **24** and cover, and/or secure in place, at least a portion of the loop **19***d* of the cord **19**, under conditions to be described below.

[0032] As shown in FIG. **3**B, an internal region **40** is defined by the jacket **24**, and an opening **42** is formed in the lower end of the jacket **24**, via which access to the internal region **40** is permitted. An armor plate **44** is disposed in the region **40**, and defines a vertical or height dimension **44***a* and a horizontal or width dimension **44***b* that is generally perpendicular to the dimension **44***a*. In an exemplary embodiment, the armor plate **44** is, includes, and/or is a part of, an enhanced small arms protective insert (ESAPI) and/or XSAPI. In several exemplary embodiments, the armor plate **44** is substantially similar to, in whole or in part, and/or includes components of, one or more armor plates, insert assemblies, armor elements, and/or insert elements disclosed in one or more of the following: (1) U.S. patent application Ser. No. 11/450,221, filed on Jun. 9, 2006; (2) U.S. patent application Ser. No. 11/586,170, filed on Oct. 25, 2006; and (3) U.S. application Ser. No. 11/771,621, filed on Jun. 29, 2007, the disclosures of which are incorporated herein by reference. In several exemplary embodiments, the armor plate **44** meets at least the Type IV ballistic performance requirement as described in NIJ-Standard-0101.04.

[0033] A flap **45** defining a surface **45***a* and including a fastening element, such as a Velcro loop element **45***b*, coupled to the surface **45***a*, is coupled to the internal surface of the jacket **24** defined by the region **40** and proximate the exterior side **20**. From its coupling to the interior surface of the jacket **24**, the flap **45** extends in a direction opposing an arrow **46**, then wraps around the right side of the armor plate **44** (as viewed in FIG. **3**B), and then extends over the armor plate **44** in the direction indicated by the arrow **46**. A flap **48** defining a surface **48***a* and including a fastening element, such as a Velcro hook element **48***b*, coupled to the surface **48***a*, is also coupled to the internal surface of the jacket **24** defined by the region **40** and proximate the exterior side **20**. The flap **48** further defines a surface **48***c*, to which a fastening element, such as a Velcro loop element **48***d*, is coupled. From its coupling to the interior surface of the jacket **24**, the flap **48** extends in a direction opposing an arrow **50**, then wraps around the left side of the armor plate **44** (as viewed in FIG. **3**B), and then extends over the armor plate **44** in the direction indicated by the arrow **50**, which direction is generally opposite the direction indicated by the arrow **46**. The hook element **48***b* is removably coupled to the loop element **45***b*, thereby removably coupling the flap **48** to the flap **45**. As a result, the flaps **45** and **48** extend over the armor plate **44**, and a gap is defined between the corresponding wrapped or curved portions of the flaps **45** and **48**, which gap is sized to correspond to the width dimension **44***b* of the armor plate **44**. As a result, the armor plate **44** is secured within the region **40** of the jacket **24**, and centered in a side-to-side direction, as viewed in FIG. **3**B.

[0034] In several exemplary embodiments, the width dimension **44***b* of the armor plate **44** is varied, and the flaps **45** and **48** accommodate the variation in the width dimension **44***b*. More particularly, if the width dimension **44***b* of the armor plate **44** is decreased, the flaps **45** and **48** extend over the armor plate **44**, and overlap, to a greater degree, and the size of the gap defined between the corresponding wrapped or curved portions of the flaps **45** and **48** decreases to correspond to the decrease in the width dimension **44***b*. As a result, the armor plate **44** continues to be secured within the region **40** of the jacket **24**, and centered in a side-to-side direction as viewed in FIG. **3**B, notwithstanding the decrease in the width dimension **44***b*. If the width dimension **44***b* of the armor plate **44** is increased, the flaps **45** and **48** extend over the armor plate **44**, and overlap, to a lesser degree, and the size of the gap defined between the corresponding wrapped or curved portions of the flaps **45** and **48** increases to correspond to the increase in the width dimension **44***b*. As a result, the armor plate **44** continues to be secured within the region **40** of the jacket **24**, and centered in a side-to-side direction as viewed in FIG. **3**B, notwithstanding the increase in the width dimension **44***b*.

[0035] A flap **52** defining a surface **52***a* and including a fastening element, such as Velcro hook element **52***b*, coupled to the surface **52***a*, is also coupled to the internal surface of the jacket **24** defined by the region **40** and proximate the exterior side **20**. From its coupling to the interior surface of the jacket **24**, the flap **52** extends in a direction opposing an arrow **54**, then wraps around the bottom end of the armor plate **44** (as viewed in FIG. **3**B), and then extends over the armor plate **44** in the direction indicated by the arrow **54**, which direction is generally perpendicular to each of the respective directions indicated by the arrows **46** and **50**. The hook element **52***b* is removably coupled to the loop element **48***d*, thereby removably coupling the flap **52** to the flap **48**. As a result, a gap is defined between the upper interior surface of the jacket **24** defined by the region **40** and the wrapped or curved portion of the flap **52**, which gap is sized to correspond to the height dimension **44***a* of the armor plate **44**. As a result, the armor plate **44** is secured within the region **40** of the jacket **24**, and positionally biased in an upward direction, as viewed in FIG. **3**B.

[0036] In several exemplary embodiments, the height dimension **44***a* of the armor plate **44** is varied, and the flap **52** accommodates the variation in the height dimension **44***a*. More particularly, if the height dimension **44***a* of the armor plate **44** is decreased, the flap **52** extends over the armor plate **44** to a greater degree, and the size of the gap defined between the wrapped or curved portion of the flap **52** and the upper internal surface of the jacket **24** defined by the region **40**

decreases to correspond to the decrease in the height dimension **44***a*. As a result, the armor plate **44** continues to be secured within the region **40** of the jacket **24**, and positionally biased in an upward direction as viewed in FIG. **3**B, notwithstanding the decrease in the height dimension **44***a*. If the height dimension **44***a* of the armor plate **44** is increased, the flap **52** extends over the armor plate **44** to a lesser degree, and the size of the gap defined between the wrapped or curved portion of the flap **52** and the upper internal surface of the jacket **24** defined by the region **40** increases to correspond to the increase in the height dimension **44***a*. As a result, the armor plate **44** continues to be secured within the region **40** of the jacket **24**, and positionally biased in an upward direction as viewed in FIG. **3**B, notwithstanding the increase in the height dimension **44***a*.

[0037] In an exemplary embodiment, in view of the foregoing, it is clear that the carrier **10** is scalable in that, for example, at least the front assembly **12** is configured to accommodate a wide range of sizes of armor plates.

[0038] A textile or fabric layer **56** is disposed in the region **40** of the jacket **24**, and is positioned between the flap **52** and the interior surface of the jacket **24** defined by the region **40** and proximate the body side **22**. The fabric layer **56** is disposed between the armor plate **44** and the body side **22**. The fabric layer **56** contacts the armor plate **44** and the interior surface of the jacket defined by the region **40** and proximate the body side **22**. In an exemplary embodiment, the fabric layer **56** is composed of Kevlar, titanium, high-modulus-polyethylene (HMPE) fiber, and/or any combination thereof. In an exemplary embodiment, the fabric layer **56** is composed of a plurality of fabric layers. In an exemplary embodiment, the fabric layer **56** is substantially similar to, in whole or in part, and/or includes components of, textile or fabric layers disclosed in one or more of the following: (1) U.S. patent application Ser. No. 11/450,221, filed on Jun. 9, 2006; (2) U.S. patent application Ser. No. 11/586,170, filed on Oct. 25, 2006; and (3) U.S. application Ser. No. 11/771,621, filed on Jun. 29, 2007, the disclosures of which are incorporated herein by reference.

[0039] As noted above, the opening **42** is formed in, and runs along, the bottom end of the jacket **24**, and permits access to the region **40** for, for example, installing the armor plate **44** within the region **40** in accordance with the foregoing, adjusting the armor plate **44**, removing the armor plate **44** from the region **40**, replacing the armor plate **44** with one or more other armor plates, disposing one or more additional armor plates in the region **40**, installing the fabric layer **56**, adjusting the fabric layer **56**, replacing the fabric layer **56** with one or more other fabric layers, disposing one or more additional fabric layers in the region **40**, etc. A fastening element, such as a Velcro loop element **58**, is coupled to, and runs along, the lower end portion of the jacket **24** on the body side **22**. A flap **60** defining a surface **60***a* and including a fastening element, such as a Velcro hook element **60***b*, coupled to the surface **60***a*, extends downward from lower end of the jacket **24** on the exterior side **20**, wraps around the lower end of the jacket **24**, and then extends upward on the body side **22** of the jacket **24**, thereby covering the opening **42**. Although not shown in FIG. **3**B, the hook element **60***b* is normally removably coupled to the loop element **58**, thereby removably coupling the flap **60** to the body side **22** of the jacket **24**, thereby securing the covering of the opening **42** by the flap **60**.

[0040] In an exemplary embodiment, as illustrated in FIGS. **4**A and **4**B with continuing reference to FIGS. **1**, **2**, **3**A and **3**B, the back assembly **14** defines an exterior side **62** and a body, or interior, side **64**, and includes a jacket **66**. An internal region **68** is defined by the jacket **66**, and an opening **70** is formed in the lower end of the jacket **66**, via which access to the internal region **68** is permitted. An armor plate **72** is disposed in the region **68**, and defines a vertical or height dimension **72***a* and a horizontal or width dimension **72***b* that is generally perpendicular to the dimension **72***a*. In an exemplary embodiment, the armor plate **72** is, includes, and/or is a part of, an enhanced small arms protective insert (ESAPI) and/or XSAPI. In several exemplary embodiments, the armor plate **72** is substantially similar to, in whole or in part, and/or includes components of, one or more armor plates, insert assemblies, armor elements, and/or insert elements disclosed in one or more of the following: (1) U.S. patent application Ser. No. 11/450,221, filed on Jun. 9, 2006; (2) U.S. patent application Ser. No. 11/586,170, filed on Oct. 25, 2006; and (3) U.S. application Ser. No. 11/771,621, filed on Jun. 29, 2007, the disclosures of which are incorporated herein by reference. In several exemplary embodiments, the armor plate **72** meets at least the Type IV ballistic performance requirement as described in NIJ-Standard-0101.04.

[0041] A flap **74** defining a surface **74***a* and including a fastening element, such as a Velcro loop element **74***b*, coupled to the surface **74***a*, is coupled to the internal surface of the jacket **66** defined by the region **68** and proximate the exterior side **62**. From its coupling to the interior surface of the jacket **66**, the flap **74** extends in a direction opposing an arrow **76**, then wraps around the right side of the armor plate **72** (as viewed in FIG. **4**A), and then extends over the armor plate **72** in the direction indicated by the arrow **76**. A flap **78** defining a surface **78***a* and including a fastening element, such as a Velcro hook element **78***b*, coupled to the surface **78***a*, is also coupled to the internal surface of the jacket **66** defined by the region **68** and proximate the exterior side **62**. The flap **78** further defines a surface **78***c*, to which a fastening element, such as a Velcro loop element **78***d*, is coupled. From its coupling to the interior surface of the jacket **66**, the flap **78** extends in a direction opposing an arrow **80**, then wraps around the left side of the armor plate **72** (as viewed in FIG. **4**A), and then extends over the armor plate **72** in the direction indicated by the arrow **80**, which direction is generally opposite the direction indicated by the arrow **76**. The hook element **78***b* is removably coupled to the loop element **74***b*, thereby removably coupling the flap **78** to the flap **74**. As a result, the flaps **74** and **78** extend over the armor plate **72**, and a gap is defined between the corresponding wrapped or curved portions of the flaps **74** and **78**, which gap is sized to correspond to the width dimension **72***b* of the armor plate **72**. As a result, the armor plate **72** is secured within the region **68** of the jacket **66**, and centered in a side-to-side direction, as viewed in FIG. **4**A.

[0042] In several exemplary embodiments, the width dimension **72***b* of the armor plate **72** is varied, and the flaps **74** and **78** accommodate the variation in the width dimension **72***b*. More particularly, if the width dimension **72***b* of the armor plate **72** is decreased, the flaps **74** and **78** extend over the armor plate **72**, and overlap, to a greater degree, and the size of the gap defined between the corresponding wrapped or curved portions of the flaps **74** and **78** decreases to correspond to the decrease in the width dimension **72***b*. As a result, the armor plate **72** continues to be secured within the region **68** of the jacket **66**, and centered in a side-to-side direction as viewed in FIG. **4**A, notwithstanding the decrease in the width

dimension **72***b*. If the width dimension **72***b* of the armor plate **72** is increased, the flaps **74** and **78** extend over the armor plate **72**, and overlap, to a lesser degree, and the size of the gap defined between the corresponding wrapped or curved portions of the flaps **74** and **78** increases to correspond to the increase in the width dimension **72***b*. As a result, the armor plate **72** continues to be secured within the region **68** of the jacket **66**, and centered in a side-to-side direction as viewed in FIG. **4**A, notwithstanding the increase in the width dimension **72***b*.

[0043] A flap **82** defining a surface **82***a* and including a fastening element, such as Velcro hook element **82***b*, coupled to the surface **82***a*, is also coupled to the internal surface of the jacket **66** defined by the region **68** and proximate the exterior side **62**. From its coupling to the interior surface of the jacket **66**, the flap **82** extends in a direction opposing an arrow **84**, then wraps around the bottom end of the armor plate **72** (as viewed in FIG. **4**A), and then extends over the armor plate **72** in the direction indicated by the arrow **84**, which direction is generally perpendicular to each of the respective directions indicated by the arrows **76** and **80**. The hook element **82***b* is removably coupled to the loop element **78***d*, thereby removably coupling the flap **82** to the flap **78**. As a result, a gap is defined between the upper interior surface of the jacket **66** defined by the region **68** and the wrapped or curved portion of the flap **82**, which gap is sized to correspond to the height dimension **72***a* of the armor plate **72**. As a result, the armor plate **72** is secured within the region **68** of the jacket **66**, and positionally biased in an upward direction, as viewed in FIG. **4**A.

[0044] In several exemplary embodiments, the height dimension **72***a* of the armor plate **72** is varied, and the flap **82** accommodates the variation in the height dimension **72***a*. More particularly, if the height dimension **72***a* of the armor plate **72** is decreased, the flap **82** extends over the armor plate **72** to a greater degree, and the size of the gap defined between the wrapped or curved portion of the flap **82** and the upper internal surface of the jacket **66** defined by the region **68** decreases to correspond to the decrease in the height dimension **72***a*. As a result, the armor plate **72** continues to be secured within the region **68** of the jacket **66**, and positionally biased in an upward direction as viewed in FIG. **4**A, notwithstanding the decrease in the height dimension **72***a*. If the height dimension **72***a* of the armor plate **72** is increased, the flap **82** extends over the armor plate **72** to a lesser degree, and the size of the gap defined between the wrapped or curved portion of the flap **82** and the upper internal surface of the jacket **66** defined by the region **68** increases to correspond to the increase in the height dimension **72***a*. As a result, the armor plate **72** continues to be secured within the region **68** of the jacket **66**, and positionally biased in an upward direction as viewed in FIG. **4**A, notwithstanding the increase in the height dimension **72***a*.

[0045] In an exemplary embodiment, in view of the foregoing, it is clear that the carrier **10** is scalable in that, for example, at least the back assembly **14** is configured to accommodate a wide range of sizes of armor plates.

[0046] A plate insert **86** is disposed in the region **68** of the jacket **66**, and is positioned between the flap **82** and the interior surface of the jacket **66** defined by the region **68** and proximate the body side **64**. The plate insert **86** is disposed between the armor plate **72** and the body side **64**. The plate insert **86** contacts the armor plate **72**. In an exemplary embodiment, the plate insert **86** is, or includes, a nylon insert. In an exemplary embodiment, the plate insert **86** is in the form of a flexible sheet. In an exemplary embodiment, the plate insert **86** is in the form of a flexible plate.

[0047] A textile or fabric layer **88** is disposed in the region **68** of the jacket **66**, and is positioned between the plate insert **86** and the interior surface of the jacket **66** defined by the region **68** and proximate the body side **64**. The fabric layer **88** is disposed between the armor plate insert **86** and the body side **64**. The fabric layer **88** contacts the plate insert **86** and the interior surface of the jacket **66** defined by the region **68** and proximate the body side **64**. In an exemplary embodiment, the fabric layer **88** is composed of Kevlar, titanium, high-modulus-polyethylene (HMPE) fiber, and/or any combination thereof. In an exemplary embodiment, the fabric layer **88** includes a rayon jacket in which one or more textile or fabric layers are disposed. In an exemplary embodiment, the fabric layer **88** is composed of a plurality of fabric layers. In an exemplary embodiment, the fabric layer **88** is substantially similar to, in whole or in part, and/or includes components of, textile or fabric layers disclosed in one or more of the following: (1) U.S. patent application Ser. No. 11/450,221, filed on Jun. 9, 2006; (2) U.S. patent application Ser. No. 11/586,170, filed on Oct. 25, 2006; and (3) U.S. application Ser. No. 11/771,621, filed on Jun. 29, 2007, the disclosures of which are incorporated herein by reference.

[0048] As noted above, the opening **70** is formed in, and runs along, the bottom end of the jacket **66**, and permits access to the region **68** for, for example, installing the armor plate **72** within the region **68** in accordance with the foregoing, adjusting the armor plate **72**, removing the armor plate **72** from the region **68**, replacing the armor plate **72** with one or more other armor plates, disposing one or more additional armor plates in the region **68**, installing the plate insert **86**, adjusting the plate insert **86**, replacing the plate insert **86** with one or more other plate inserts, disposing one or more additional plate inserts in the region **68**, installing the fabric layer **88** within the region **68** in accordance with the foregoing, adjusting the fabric layer **88**, removing the fabric layer **88** from the region **68**, replacing the fabric layer **88** with one or more other fabric layers, disposing one or more additional fabric layers in the region **68**, etc. A fastening element, such as a Velcro loop element **88***a*, is coupled to, and runs along, the lower end portion of the jacket **66** on the body side **64**. A flap **89***b* defining a surface **89***ba* and including a fastening element, such as a Velcro hook element **89***bb*, coupled to the surface **89***ba*, extends downward from lower end of the jacket **66** on the exterior side **62**, wraps around the lower end of the jacket **66**, and then extends upward on the body side **64** of the jacket **66**, thereby covering the opening **70**. Although not shown in FIG. **4**A, the hook element **89***bb* is normally removably coupled to the loop element **89***a*, thereby removably coupling the flap **89***b* to the body side **64** of the jacket **66**, thereby securing the covering of the opening **70** by the flap **89***b*.

[0049] As shown in FIG. **4**B, a fabric or textile panel **90** extends horizontally across the jacket **66** on the side **62**, and is coupled to the jacket **66** on either side thereof, thereby defining a space (not shown) between the panel **90** and the jacket **66**. A downwardly-extending flap **92** extends from the lower end portion of the panel **90**, and defines a surface **92***a*, and includes snap fasteners **92***b* and **92***c* (the snap fastener **92***c* is depicted in FIG. **6**C) coupled thereto at its distal end portion, and further includes a fastening element, such as a Velcro hook element **92***d*, coupled to the surface **92***a*. An upwardly-

extending flap **94** extends from the lower end portion of the jacket **66**, and defines a surface **94***a*, and includes snap fasteners **94***b* and **94***c* (the snap fastener **94***c* is depicted in FIG. **6**C) coupled thereto at its proximal end portion, and further includes a fastening element, such as a Velcro loop element **94***d*, coupled to the surface **94***a*.

[0050] A vertically-extending strip **96** is coupled to jacket **66** along its vertical centerline and on the exterior side **62**. Vertically-spaced holes **98***a*, **98***b*, **98***c*, **98***d*, **98***e* and **98***f* are formed in the strip **96**, and a plurality of loops **100***a*, **100***b*, **100***c*, **100***d*, **100***e* and **100***f* are coupled to the jacket **66**, extending through the holes **98***a*, **98***b*, **98***c*, **98***d*, **98***e* and **98***f*, respectively, and away from the jacket **66**. A generally L-shaped sleeve **102**, which includes a horizontally-extending portion **103** and a vertically-extending portion **104**, is coupled to the jacket **66** on the exterior side **62**, with an end of the portion **103** being positioned at or near the bottom end portion of the jacket **66** and proximate the loop **100***f*, and with the portion **104** being positioned on the left side of the jacket **66**, as viewed in FIG. **4**B. A fastening element, such as a Velcro loop element **105**, is coupled to the upper end portion of the jacket **66** on the exterior side **62**. The flap **94** extends upward and between a portion of the strip **96** and the flap **92**, which extends downwards and covers at least respective portions of the strip **96** and the flap **94**. The snap fasteners **92***b* and **92***c* of the flap **92** are removably coupled to the snap fasteners **94***b* and **94***c*, respectively, of the flap **94**, and the hook element **92***d* of the flap **92** is removably coupled to the loop element **94***d* of the flap **94**, thereby removably coupling the flap **92** to the flap **94** and covering at least respective portions of the strip **96**, the holes **98***a*, **98***b*, **98***c*, **98***d*, **98***e* and **98***f*, and the loops **100***a*, **100***b*, **100***c*, **100***d*, **100***e* and **100***f*.

[0051] In an exemplary embodiment, as illustrated in FIGS. **4**A, **4**B, **4**C, **4**D, **4**E and **4**F with continuing reference to FIGS. **1**, **2**, **3**A, **3**B and **3**C, a drag handle assembly **106** is coupled to the upper portion of the jacket **66** on the exterior side **62**, and includes handle straps **106***a* and **106***b*, corresponding ends of which are coupled to the jacket **66** on the exterior side **62**, and a sleeve **106***c* extending between, and coupled to, the respective ends of the handle straps **106***a* and **106***b* opposing the respective ends thereof coupled to the jacket **66**. A support **106***d* is disposed within the sleeve **106***c*. In several exemplary embodiments, the support **106***d* is, or includes, a rod, a tubular member, and/or any combination thereof. In an exemplary embodiment, the support **106***d* is, or includes, a carbon fiber rod. In an exemplary embodiment, the support **106***d* is, or includes, a PVC pipe. A fastening element, such as a Velcro hook element **106***e* (FIG. **4**E), is coupled to the side of the exterior of the sleeve **106***c* that faces the jacket **66**.

[0052] In an exemplary embodiment, as shown in FIG. **4**C, the hook element **106***e* is removably coupled to the loop element **105**, thereby removably coupling the sleeve **106***c*, and thus the support **106***d*, to the jacket **66** of the back assembly **14**. As a result, the sleeve **106***c* and the support **106***d* of the handle assembly **106** are secured to the jacket **66**, reducing the risk that the handle assembly **106** will interfere with the normal operation of the carrier **10**, and/or with an operator wearing the carrier **10** as a vest.

[0053] In an exemplary embodiment, as shown in FIG. **4**D, the hook element **106***e* is decoupled from the loop element **105**, thereby decoupling the sleeve **106***c*, and thus the support **106***d*, from the jacket **66** of the back assembly **14**. As a result, a gap is defined between the sleeve **106***c* and the jacket **66**, which gap permits a hand or other article to be positioned therein to facilitate the grasping of, or latching to, the sleeve **106***c* and thus the support **106***d*. When the gap is defined, if necessary, the support **106***d* is used as a drag handle, and the operator wearing the carrier **10**, or only the carrier **10** itself, is dragged by the handle assembly **106**. The support **106***d* strengthens the handle assembly **106**, enabling the handle assembly **106** to withstand the loading applied thereto when the operator wearing the carrier **10**, or only the carrier **10** itself, is dragged by the handle assembly **106**.

[0054] In an exemplary embodiment, as illustrated in FIGS. **5**A and **5**B with continuing reference to FIGS. **1**, **2**, **3**A, **3**B, **3**C, **4**A, **4**B, **4**C, **4**D, **4**E and **4**F, the left side assembly **16** includes a shoulder strap **108** and a side portion **110** coupled thereto. The shoulder strap **108** includes an end portion **108***a* having a snap-buckle receiver **108***b* coupled thereto, an end portion **108***c* that is coupled to the side portion **110**, and an end portion **108***d* having a hole **108***e* formed therethrough. A middle portion **108***f* extends between the end portion **108***d* and the end portion **108***a*, and defines an internal passage **108***g* through which at least a portion of the cord **19** is adapted to extend, under conditions to be described below. A pad **108***h* is wrapped around the middle portion **108***f* of the shoulder strap **108**. In an exemplary embodiment, anti-slip material is coupled to the middle portion **108***f*. In an exemplary embodiment, anti-slip material is coupled to the middle portion **108***f* and is positioned between the end **108***a* and the pad **108***h*. An end portion **108***fa* of the middle portion **108***f* extends through a ring **108***i*, and folds back onto itself. A fastening element, such as a Velcro hook element **108***j*, is coupled to a surface **108***faa* defined by the end portion **108***fa*, and a fastening element, such as a Velcro loop element **108***k*, is also coupled to the surface **108***faa*. The hook element **108***j* is removably coupled to the loop element **108***k*, thereby removably coupling the surface **108***faa* of the end portion **108***fa* to itself. The length of extension of the middle portion **108***f* between the end portion **108***d* and the end portion **108***a*, and thus the length of the shoulder strap **108**, is adjusted by decoupling the hook element **108***j* from the loop element **108***k*, adjusting the degree to which the end portion **108***fa* extends through the ring **108***i*, and then again removably coupling the hook element **108***j* to the loop element **108***k*.

[0055] The side portion **110** of the left side assembly **16** includes an end portion **112**, an end portion **114**, and a middle portion **116** extending therebetween. The end portion **112** is adapted to be removably coupled to the front assembly **12**, as will be described below, and includes flaps **118** and **120**, which share a pivot axis **122**. The flap **120** defines a surface **120***a* to which a fastening element, such as a Velcro hook element **120***b*, is coupled, and further defines a surface **120***c*, to which a fastening element, such as a Velcro loop element **120***d*, is coupled. A stiffening strip **123** is inserted in a region defined within the side portion **110**, extending along the top of the side portion **110**, as viewed in FIG. **5**A. In an exemplary embodiment, the strip **123** is composed of a plastic material.

[0056] In an exemplary embodiment, one or more armor plates are inserted in regions defined within the side portion **110**, and/or are coupled to the side portion **110**, with each of such armor plates being, in several exemplary embodiments, an enhanced small arms protective insert (ESAPI) and/or XSAPI, and/or substantially similar to, in whole or in part, and/or including components of, one or more armor plates, insert assemblies, armor elements, and/or insert elements disclosed in one or more of the following: (1) U.S. patent

application Ser. No. 11/450,221, filed on Jun. 9, 2006; (2) U.S. patent application Ser. No. 11/586,170, filed on Oct. 25, 2006; and (3) U.S. application Ser. No. 11/771,621, filed on Jun. 29, 2007, the disclosures of which are incorporated herein by reference.

[0057] The end portion **114** of the side portion **110** includes a vertically-extending strip **124**, and a plurality of tabs **126***a*, **126***b*, **126***c*, **126***d* and **126***e* coupled thereto. At least a portion of each of the tabs **126***a*, **126***b*, **126***c*, **126***d* and **126***e* is folded back over onto itself, thereby forming a loop portion on its left side, as viewed in FIG. **5**B. Holes **128***a*, **128***b*, **128***c*, **128***d* and **128***e* are formed through the strip **124** and the tabs **126***a*, **126***b*, **126***c*, **126***d* and **126***e*, respectively. A plurality of tabs **130***a*, **130***b*, **130***c*, **130***d* and **130***e* extend from the right end of the middle portion **116** of the side portion **110**, as viewed in FIG. **5**B. The tabs **130***a*, **130***b*, **130***c*, **130***d* and **130***e* are vertically aligned with the tabs **126***a*, **126***b*, **126***c*, **126***d* and **126***e*, respectively. At least a portion of each of the tabs **130***a*, **130***b*, **130***c*, **130***d* and **130***e* is folded back over onto itself, thereby forming a loop portion on its right side, as viewed in FIG. **5**B. A lace assembly **132** couples the tabs **126***a*, **126***b*, **126***c*, **126***d* and **126***e* to the tabs **130***a*, **130***b*, **130***c*, **130***d* and **130***e*, respectively. More particularly, the lace assembly **132** includes a line **132***a* having opposing end portions **132***aa* and **132***ab*, and a locking element **132***b* coupled to the opposing end portions **132***aa* and **132***ab*. The line **132***a* is interlockingly laced through the respective loop portions of the tabs **126***a*, **126***b*, **126***c*, **126***d*, **126***e*, **130***a*, **130***b*, **130***c*, **130***d* and **130***e*, so that the end portions **132***aa* and **132***ab* are proximate the tabs **126***e* and **130***e*. The locking element **132***b* locks the position of a portion of the end portion **132***aa* relative to a corresponding portion of the end portion **132***ab*, and vice versa, thereby preventing or at least resisting movement of the line **132***a* through the locking element **132***b*. The locking element **132***b* is adjustable, and its locking feature is releasable to selectively permit movement of the line **132***a* through the locking element **132***b* to tighten or loosen the lacing of the line **132***a*. In an exemplary embodiment, the line **132***a* is a dynamic line. In an exemplary embodiment, the line **132***a* is a flexible line. A fastening element, such as a Velcro loop element **134**, is coupled to the middle portion **116** and is vertically aligned with the tabs **126***a* and **130***a*, as viewed in FIG. **5**B. An anti-sag strap **136** defining a surface **136***a* and including a fastening element, such as a Velcro hook element **136***b*, coupled to the surface **136***a*, is coupled to the tab **126***a*. The hook element **136***b* is adapted to be removably coupled to the loop element **134** to thereby removably couple the anti-sag strap **136** to the middle portion **116**, under conditions to be described below. The hook element **136***b* includes an extension tab **136***c*, which extends from the distal end of the strap **136** and thus does not include a backing. The tab **136***c* is adapted to resist any peeling of the strap **136** off of the middle portion **116** when the strap **136** is removably coupled to the middle portion **116**, thereby facilitating keeping the strap **136** removably coupled to the middle portion **116**.

[0058] The right side assembly **18** is substantially similar to the left side assembly **16**; the right side assembly **18** and the left side assembly **16** are symmetric about a vertically-extending plane that is generally perpendicular to the front assembly **12** and the back assembly **14**, as viewed in FIGS. **1** and **2**, and the right side assembly **18** includes components and couplings that are substantially identical to the above-described components and couplings of the left side assembly **16**. Therefore, the right side assembly **18** will not be described in detail, and reference numerals used to refer to components of the right side assembly **18** that are substantially identical to the components of the left side assembly **16** will correspond to the reference numeral s used to refer to the components of the left side assembly **16**, except that the reference numerals for the right side assembly **18** will be given a prime (') designation.

[0059] In an exemplary embodiment, as illustrated in FIGS. **6**A, **6**B and **6**C with continuing reference to FIGS. **1**, **2**, **3**A, **3**B, **3**C, **4**A, **4**B, **4**C, **4**D, **4**E, **4**F, **5**A and **5**B, when the carrier **10** is an assembled condition, the front assembly **12** is removably coupled to each of the left side assembly **16** and the right side assembly **18**. More particularly, the snap-buckle elements **30***a* and **30***b* are removably coupled to the snap-buckle receivers **108***b*' and **108***b*, respectively, thereby removably coupling the shoulder strap **108'** of the right side assembly **18** to the front assembly **12**, and removably coupling the shoulder strap **108** of the left side assembly **16** to the front assembly **12**. The hook element **26***b* is removably coupled to the loop element **32**, thereby removably coupling the flap **26** to the jacket **24** and covering at least respective portions of the snap-buckle elements **30***a* and **30***b*, and the snap-buckle receivers **108***b*' and **108***b*. The flap **120'** of the right side assembly **18** is disposed between the loop element **34***a* and the flap **28***a* of the front assembly **12**, the hook element **120***b*' of the flap **120'** is removably coupled to the loop element **34***a*, the hook element **28***ab* of the flap **28***a* is removably coupled to the loop element **120***d*' of the flap **120'**, and the flap **118'** is disposed against the body side **22** of the jacket **24** so that the jacket **24** is disposed between the flaps **118'** and **120'** of the right side assembly **18**. As a result, the side portion **110'** of the right side assembly **18** is removably coupled to the front assembly **12**. Likewise, the flap **120** of the left side assembly **16** is disposed between the loop element **34***b* and the flap **28***b* of the front assembly **12**, the hook element **120***b* of the flap **120** of the left side assembly **16** is removably coupled to the loop element **34***b*, the hook element **28***bb* of the flap **28***b* is removably coupled to the loop element **120***d* of the flap **120**, and the flap **118** of the left side assembly **16** is disposed against the body side **22** of the jacket **24** so that the jacket **24** is disposed between the flaps **118** and **120** of the left side assembly **16**. As a result, the side portion **110** of the left side assembly **16** is removably coupled to the front assembly **12**.

[0060] As noted above, the cord **19** extends through the internal passage **108***g* of the middle portion **108***f* of the shoulder strap **108** of the left side assembly **16**. The hook element **36***b* is removably coupled to the loop element **38**, thereby removably coupling the flap **36** to the jacket **24** on the body side **22**. At least a portion of the loop **19***d* of the cord **19** is disposed between the flap **36** and the jacket **24** on the body side **22**, with the flap **36** covering, and/or securing in place, at least a portion of the loop **19***d* of the cord **19**.

[0061] As shown in FIG. **6**B, when the carrier **10** is an assembled condition, the end portion **108***d*' of the shoulder strap **108'** of the right side assembly **18** overlaps the end portion **108***d* of the shoulder strap **108** of the left side assembly **16**, the hole **108***e* of the shoulder strap **108** of the left side assembly **16** is axially aligned with the hole **108***e*' of the shoulder strap **108'** of the right side assembly **18**, and the loop **100***a* extends through the holes **108***e* and **108***e*'. The strip **124'** of the right side assembly **18** overlaps the strip **124** of the left side assembly **16**. The tabs **126***a*', **126***b*', **126***c*', **126***d*' and **126***e*' of the right side assembly **18** overlap the tabs **126***a*, **126***b*, **126***c*, **126***d* and **126***e*, respectively, of the left side

assembly **16**. The holes **128***a*', **128***b*', **128***c*', **128***d*' and **128***e*' of the right side assembly **18** are axially aligned with the holes **128***a*, **128***b*, **128***c*, **128***d* and **128***e*, respectively, of the left side assembly **16**. The loop **100***b* extends through the axially-aligned holes **128***a*' and **128***a*, the loop **100***c* extends through the axially-aligned holes **128***b*' and **128***b*, the loop **100***d* extends through the axially-aligned holes **128***c*' and **128***c*, the loop **100***e* extends through the axially-aligned holes **128***d*' and **128***d*, and the loop **100***f* extends through the axially-aligned holes **128***e*' and **128***e*. In an exemplary embodiment, instead of the foregoing, the shoulder strap **108** of the left side assembly **16** overlaps the shoulder strap **108**' of the right side assembly **18**, and/or the strip **124** of the left side assembly **16** overlaps the strip **124**' of the right side assembly **124**.

[0062] The cord **19** extends from the internal passage **108***g* and through the loop **100***a* so that the cord **19** is positioned between a portion of the loop **100***a* and the end portion **108***d*' of the shoulder strap **108**' of the right side assembly **18**. The cord **19** further extends through the loops **100***b*, **100***c*, **100***d*, **100***e* and **100***f* so that the cord **19** is positioned between respective portions of the loops and the tabs **126***a*', **126***b*', **126***c*', **126***d*' and **126***e*'. The cord **19** further extends from the loop **100***f* and into the sleeve **102**. As a result of the extension of the cord **19**, the left side assembly **16** and the right side assembly **18** are each removably coupled to the back assembly **14**. More particularly, as a result of the extension of the cord **19**, the shoulder strap **108** of the left side assembly **16** is removably coupled to the back assembly **14**, the shoulder strap **108**' of the right side assembly **18** is removably coupled to the back assembly **14**, the side portion **110** of the left side assembly **16** is removably coupled to the back assembly **14**, and the side portion **110**' of the right side assembly **18** is removably coupled to the back assembly **14**. Moreover, the anti-sag strap **136** is removably coupled to the middle portion **116** of the side portion **110** of the left side assembly **16** via the removable coupling between the hook element **136***b* and the loop element **134**. Similarly, the anti-sag strap **136**' of the right side assembly **18** is removably coupled to the middle portion **116**' of the side portion **110**' of the right side assembly **18**.

[0063] As shown in FIG. **6**C, when the carrier **10** is an assembled condition, the end portions **108***d*' and **108***d* of the shoulder straps **108**' and **108**, respectively, of the side assemblies **16** and **18**, respectively, and the loop **100***a*, are covered by the panel **90**, and thus are disposed between the jacket **66** and the panel **90**. The flap **94** extends upwards, and the flap **92** extends downwards and covers at least a portion of the flap **94**. The snap fasteners **92***b* and **92***c* of the flap **92** are removably coupled to the snap fasteners **94***b* and **94***c*, respectively, of the flap **94**, and the hook element **92***d* of the flap **92** is removably coupled to the loop element **94***d* of the flap **94**, thereby removably coupling the flap **92** to the flap **94** and covering at least respective portions of the strip **96**, the holes **98***a*, **98***b*, **98***c*, **98***d*, **98***e* and **98***f*, the loops **100***a*, **100***b*, **100***c*, **100***d*, **100***e* and **100***f*, the cord **19**, the end portion **114** of the left side assembly **16**, and the end portion **114**' of the right side assembly **18**.

[0064] In an exemplary embodiment, in operation, the carrier **10** provides an armor system that protects against a wide variety of single and multi-hit threats of high and/or low velocities. In an exemplary embodiment, the carrier **10** provides protection against a threat having a threat level that is equal to or greater than the threat level of National Institute of Justice (NIJ) Standard 0101.04 Level IV Protection, which is equivalent to the threat level of a .30 caliber bullet traveling at 878 m/s, or an M2 armor-piercing (AP) bullet traveling at 2880 ft/s. In an exemplary embodiment, the carrier **10** provides protection against a threat having a threat level that is equal to or greater than the threat level of NIJ Level III Protection, which is equivalent to the threat level of a 7.62 mm NATO bullet traveling at 847 m/s.

[0065] In an exemplary embodiment, in operation, the carrier **10** provides protection from blast threats including, but not limited to, shrapnel, fragmentation heat, overpressure, acceleration force and deceleration force. Moreover, the carrier **10** provides protection against deflection threats such as cut, stab and/or blunt attacks.

[0066] In an exemplary embodiment, the carrier **10** is used during mounted operation, such as, for example, a transportation operation, during which the operator wearing the carrier **10** removes the armor plate **44** from the front assembly **12** by decoupling the flap **60** from the jacket **24** and removing the armor plate **44** from the region **40** via the opening **42**, in accordance with the foregoing. In an exemplary embodiment, the carrier **10** is used during unmounted operation, such as, for example, an operation requiring foot travel, during which the operator wearing the carrier **10** inserts the armor plate **44** into the front assembly **12** by decoupling the flap **60** from the jacket **24**, inserting the armor plate **44** into the region **40** via the opening **42**, and removably coupling the flap **60** to the jacket **24**, in accordance with the foregoing. In an exemplary embodiment, in view of the foregoing, it is clear that the carrier **10** is scalable in that, for example, at least the number of armor plates inserted in the carrier **10** can be varied based on, for example, the specific operation during which the carrier **10** is used. In an exemplary embodiment, in view of the foregoing, it is clear that the carrier **10** is scalable in that, for example, at least the insertion location or locations (front, back, left side, right side, etc.) of the armor plate or plates can be varied based on, for example, the specific operation during which the carrier **10** is used.

[0067] In an exemplary embodiment, the modular construction of the carrier **10** permits the selective disposal of one or more armor plates in one or more of the front assembly **12**, the back assembly **14**, and the side assemblies **16** and **18**. In an exemplary embodiment, the modular construction of the carrier **10** permits the selective coupling of one or more armor plates to one or more of the front assembly **12**, the back assembly **14**, and the side assemblies **16** and **18**.

[0068] In an exemplary embodiment, as illustrated in FIG. **7** with continuing reference to FIGS. **1**, **2**, **3**A, **3**B, **3**C, **4**A, **4**B, **4**C, **4**D, **4**E, **4**F, **5**A, **5**B, **6**A, **6**B and **6**C, the carrier **10** is placed in a front-opening configuration by decoupling the flap **28***a* of the front assembly **12** from the flap **120**' of the right side assembly **18**, decoupling the flap **120**' from the jacket **24** of the front assembly **12**, decoupling the snap-buckle receiver **108***b*' from the snap-buckle element **30***a*, and then separating the right side assembly **18** from the front assembly **12**, thereby providing a gap between the right side assembly **18** and the front assembly **12** which is suitable for the removal of the carrier **10** from the operator. As a result, the removal of carrier **10** from the operator is greatly facilitated and there is no need to remove the carrier **10** from the operator by pulling the carrier **10** up over the head of the operator. In an exemplary embodiment, the carrier **10** is placed in a front-opening configuration by decoupling the left side assembly **16** from the front assembly **12** in a manner substantially similar to the above-described manner by which the right side assembly **18** is decoupled from the front assembly **12**. In an exemplary

embodiment, after placing the carrier **10** in the front-opening configuration, the operator puts on the carrier **10** in the same manner as if the operator was putting on a vest, and then the carrier **10** is placed in the closed configuration depicted in FIG. **6**A by again removably coupling the right side assembly **18** to the front assembly **12** in accordance with the foregoing, and/or removably coupling the right side assembly **16** to the front assembly **12**, in accordance with the foregoing. In an exemplary embodiment, the carrier **10** is a front opening plate carrier.

[0069] In an exemplary embodiment, as illustrated in FIG. **8** with continuing reference to FIGS. **1**, **2**, **3**A, **3**B, **3**C, **4**A, **4**B, **4**C, **4**D, **4**E, **4**F, **5**A, **5**B, **6**A, **6**B, **6**C and **7**, after an operator has put on the carrier **10**, the lace assembly **132** is adjusted to accommodate the body size of the operator by releasing the locking element **132***b* and tightening and/or loosening the line **132**. As a result of the lace assembly **132** being adjusted as desired, a dimension **138** between the tab **126***a* and the tab **130***a* is set. In an exemplary embodiment, during the operation of the carrier **10**, the side portion **110** undergoes loading from, for example, the weight of the side portion **110**, the coupling of components such as a firearm, one or more armor plates, or ammunition to the side portion **110**, and/or any combination thereof, which loading causes the side portion **110** to begin to sag. However, the anti-sag strap **136**, and its coupling to the middle portion **116** of the side portion **110**, maintains the dimension **138** or at least resists the degree to which the dimension **138** varies, thereby resisting the degree to which the side portion **110** sags. In contrast, as shown in FIG. **8** for the purpose of example, if the strap **136'** of the right side assembly **18** is decoupled from the middle portion **116'** of the side portion **110'** of the right side assembly **18**, then the dimension between the tab **126***a'* and the tab **130***a'* increases and the side portion **110'** of the right side assembly **18** sags to an appreciable degree. In an exemplary embodiment, the strip **123** of the left side assembly **16** also facilitates keeping any ammunition and armor plates coupled to the side portion **110** from sagging, while still allowing for movement because the strip **123** is not the full height of the side portion **110**.

[0070] In an exemplary embodiment, as illustrated in FIGS. **9**A and **9**B with continuing reference to FIGS. **1**, **2**, **3**A, **3**B, **3**C, **4**A, **4**B, **4**C, **4**D, **4**E, **4**F, **5**A, **5**B, **6**A, **6**B, **6**C, **7** and **8**, during operation, the carrier **10** undergoes loading from, for example, the weight of the armor plates **44** and/or **72**, the weight of other components carried by the carrier **10**, the weight of the carrier **10** itself, and/or any combination thereof. In response to this loading, the armor plate **72** applies point forces, or at least highly concentrated forces **140***a*, **140***b*, **140***c*, **140***d*, **140***e* and **140***f* against the plate insert **86**. In response, the plate insert **86** distributes the point forces **140***a*, **140***b*, **140***c*, **140***d*, **140***e* and **140***f*, and thereby applies respective force distributions **142***a*, **142***b*, **142***c*, **142***d*, **142***e* and **142***f* against the back of the operator wearing the carrier **10**, or, in other exemplary embodiments, against whatever object or objects the back assembly **14** contacts. As a result, in an exemplary embodiment, the point forces or highly concentrated forces **140***a*, **140***b*, **140***c*, **140***d*, **140***e* and **140***f* are not applied directly against the operator wearing the carrier **10**, thereby reducing the amount of discomfort experienced by the operator when wearing the carrier **10**.

[0071] In an exemplary embodiment, as illustrated in FIGS. **10**A, **10**B, **10**C and **10**D with continuing reference to FIGS. **1**, **2**, **3**A, **3**B, **3**C, **4**A, **4**B, **4**C, **4**D, **4**E, **4**F, **5**A, **5**B, **6**A, **6**B, **6**C, **7**, **8**, **9**A and **9**B, during operation, the operator wearing the carrier **10** desires to quickly release the carrier **10** from the body of the operator. That is, it is desired to quickly separate the carrier **10** from the operator wearing the carrier **10**. To this end, as shown in FIG. **10**A, the operator grabs the loop **19***d* of the cord **19**, which is secured in place between the flap **36** and the jacket **24** of the front assembly **12** on the body side **22**, and quickly pulls the loop **19***d* away from the internal passage **108***g* defined by the shoulder strap **108** of the side assembly **16**. In response to the movement of the cord **19** relative to the remainder of the carrier **10**, the side assemblies **16** and **18** are each decoupled from the back assembly **14**, thereby decoupling the front assembly **12** from the back assembly **14**.

[0072] More particularly, as shown in FIGS. **10**B and **100**, in response to the movement of the loop **19***d* of the cord **19** away from the internal passage **108***g* of the shoulder strap **108**, the end portion **19***b* of the cord **19** travels downward through the portion **104** of the sleeve **102**, then travels horizontally through the portion **103** of the sleeve **102**, and then exits the sleeve **102**, as viewed in FIG. **10**B. The end portion **19***b* of the cord **19** then travels through and out of the loops **100***f*, **100***e*, **100***d*, **100***c*, **100***b* and **100***e*, as shown in FIG. **100**. As a result, since the cord **19** no longer extends through any of the loops **100***b*, **100***c*, **100***d*, **100***e* and **100***f* of the back assembly **14**, the side portion **110** of the left side assembly **16** is decoupled from the back assembly **14**. Moreover, since the cord **19** no longer extends through the loop **100***a*, the shoulder strap **108** is decoupled from the back assembly **14**. Therefore, the left side assembly **16** is decoupled from the back assembly **14**. Similarly, the side portion **110'** of the right side assembly **18** is decoupled from the back assembly **14**, and the shoulder strap **108'** of the right side assembly **18** is decoupled from the back assembly **14**. Therefore, the right side assembly **18** is decoupled from the back assembly **14**.

[0073] As shown in FIG. **10**D, in an exemplary embodiment, after the side assemblies **16** and **18** are decoupled from the back assembly **14**, the weight of the back assembly **14** causes it to immediately fall away from the side assemblies **16** and **18** and the body of the operator. Similarly, the weight of the front assembly **12** causes it to immediately fall away from the body of the operator. Since the side assemblies **16** and **18** are still coupled to the front assembly **12**, the side assemblies fall along with the front assembly **12**. As a result, the carrier **10** is quickly and safely released from the body of the operator. In an exemplary embodiment, the carrier **10** is a releasable plate carrier.

[0074] In an exemplary embodiment, as illustrated in FIG. **11** with continuing reference to FIGS. **1**, **2**, **3**A, **3**B, **3**C, **4**A, **4**B, **4**C, **4**D, **4**E, **4**F, **5**A, **5**B, **6**A, **6**B, **6**C, **7**, **8**, **9**A, **9**B, **10**A, **10**B, **100** and **10**D, a side pouch assembly is generally referred to by the reference numeral **144** and includes a jacket **146** having a closed bottom end **146***a*, a top end **146***b*, and an opening **146***c* formed in the top end **146***b*. An internal region **147** is defined by the jacket **146**. The side pouch assembly **144** defines an exterior side **148** and a body, or interior, side **150**. A vertically-extending flap **152** is coupled to the jacket **146** on the inside surface thereof on the body side **150**. The flap **152** defines a surface **152***a*, and a fastening element, such as a Velcro hook element **152***b*, is coupled to the surface **152***a*. A flap **154** extends upward from the jacket **146** on the exterior side **148**, the flap **154** defining a surface **154***a* and including a fastening element, such as a Velcro hook element **154***b*, coupled to the surface **154***a*. A flap **156** extends downward from the jacket **146** on the exterior side **148**, the flap **156** defining a surface **156***a* and including a fastening element,

such as a Velcro hook element **156***b*, coupled to the surface **156***b*. An armor plate **158** is disposed in the region **147** and is adapted to be inserted into the region **147** via the opening **146***c*. In an exemplary embodiment, the armor plate **158** is, includes, and/or is a part of, an enhanced small arms protective insert (ESAPI) and/or XSAPI. In several exemplary embodiments, the armor plate **158** is substantially similar to, in whole or in part, and/or includes components of, one or more armor plates, insert assemblies, armor elements, and/or insert elements disclosed in one or more of the following: (1) U.S. patent application Ser. No. 11/450,221, filed on Jun. 9, 2006; (2) U.S. patent application Ser. No. 11/586,170, filed on Oct. 25, 2006; and (3) U.S. application Ser. No. 11/771,621, filed on Jun. 29, 2007, the disclosures of which are incorporated herein by reference. In several exemplary embodiments, the armor plate **158** meets at least the Type IV ballistic performance requirement as described in NIJ-Standard-0101.04. In an exemplary embodiment, to assemble the side pouch assembly **144**, the armor plate **158** is inserted into the region **147** via the opening **146***c*, and the flap **152** is folded over the top of the armor plate **158** and disposed in the region **147**, with the flap **152** being disposed between the armor plate **158** and the inside surface of the jacket **146** on the exterior side **148**. In an exemplary embodiment, the hook element **152***b* is coupled to a Velcro hoop element coupled to the inside surface of the jacket **146** on the exterior side. In an exemplary embodiment, the flap **152** is removably coupled to one or more straps and/or flaps disposed in the region **147** and coupled to the jacket **146**, and/or to the jacket **146** directly. In an exemplary embodiment, the degree to which the flap **152** extends over the armor plate **158** varies in response to any variance in the height of the armor plate **158**, with the degree of extension increasing if the height of the armor plate **158** decreases, and vice versa. In an exemplary embodiment, in view of the foregoing, it is clear that the carrier **10** is scalable in that, for example, at least the side pouch assembly **144** is configured to accommodate a wide range of sizes of armor plates.

[0075] In an exemplary embodiment, as illustrated in FIG. **12** with continuing reference to FIGS. **1**, **2**, **3**A, **3**B, **3**C, **4**A, **4**B, **4**C, **4**D, **4**E, **4**F, **5**A, **5**B, **6**A, **6**B, **6**C, **7**, **8**, **9**A, **9**B, **10**A, **10**B, **100**, **10**D and **11**, an inside surface **116***a* is defined by the middle portion **116** of the side portion **110** of the left side assembly **16**, and a fastening element, such as a Velcro loop element **116***b*, is coupled to the surface **116***a*. The side pouch assembly **144** is removably coupled to the middle portion **116** by positioning the jacket **146** on the side of the middle portion **116** opposing the surface **116***a*, folding the flap **156** over the bottom edge of the middle portion **116** and back up so that the hook element **156***b* is removably coupled to the loop element **116***b*, and folding the flap **154** over the top edge of the middle portion **116** and back down so that the hook element **154***b* is removably coupled to the loop element **116***b*. Since the flaps **154** and **156** are removably coupled to the inside surface **116***a*, and thus are disposed between the body of the operator and the middle portion **116** when the operator wears the carrier **10**, the flaps **154** and **156** are not permitted to catch on any external object during operation.

[0076] In an exemplary embodiment, instead of, or in addition to removably coupling the side pouch assembly **144** to the left side assembly **16**, one or more other side pouch assemblies that are substantially similar to the side pouch assembly **144** are removably coupled to the right side assembly **18** and/or the left side assembly **16**. In several exemplary embodiments, instead of, or in addition to the side pouch assembly **144**, one or more other side pouch assemblies are removably coupled to the left side assembly **16** and/or the right side assembly **18**, which assemblies are wider and/or taller than the assembly **144** to accommodate larger-sized armor plates. In several exemplary embodiments, instead of, or in addition to the side pouch assembly **144**, one or more other side pouch assemblies are removably coupled to the left side assembly **16** and/or the right side assembly **18**, which assemblies are less wide and/or shorter than the assembly **144** to accommodate smaller-sized armor plates.

[0077] In an exemplary embodiment, as illustrated in FIGS. **13** and **14** with continuing reference to FIGS. **1**-**12**, a carrier is generally referred to by the reference numeral **160** and includes the front assembly **12**, a back assembly **162**, a left side assembly **164**, a right side assembly **166**, and the cord **19**. The front assembly **12** is removably coupled to each of the side assemblies **164** and **166** in a manner substantially identical to the above-described manner by which the front assembly **12** is removably coupled to each of the side assemblies **16** and **18** in the carrier **10**. The side assemblies **164** and **166** are removably coupled to the back assembly **162** in a manner substantially identical to the above-described manner by which the side assemblies **16** and **18** are removably coupled to the back assembly **14** in the carrier **10**.

[0078] The back assembly **162** of the carrier **160** includes a jacket **168**, which is substantially similar to the jacket **66** of the back assembly **14** of the carrier **10**, except that the shape of the jacket **168** is substantially similar to the shape of the jacket **24** of the front assembly **12**. Moreover, the back assembly **162** of the carrier **160** includes an armor plate, plate insert, and textile or fabric layer (not shown) disposed within the jacket **168** and substantially similar to the armor plate **72**, the plate insert **86**, and the fabric layer **88**, respectively, of the back assembly **14** of the carrier **10**, except that the respective shapes of the armor plate, plate insert, and fabric layer disposed in the jacket **168** of the back assembly **162** are similar to the respective shapes of the jacket **168** of the back assembly **162**, the jacket **24** of the front assembly **12**, the armor plate **44** of the front assembly **12**, and the fabric layer **56** of the front assembly **12**. In several exemplary embodiments, the armor plate disposed in the jacket **168** of the back assembly **162** is substantially identical to the armor plate **72** of the front assembly **12**. In several exemplary embodiments, the fabric layer disposed in the jacket **168** of the back assembly **162** is substantially identical to the fabric layer **88** of the front assembly **12**. The remainder of the back assembly **162** of the carrier **160** is substantially identical to the back assembly **14** of the carrier **10** and therefore the remainder of the back assembly **162** will not be described in further detail.

[0079] The left side assembly **164** includes a shoulder strap **170**, which, in turn, includes an end portion **170***a* having a snap-buckle receiver **170***b* coupled thereto, an end portion **170***c*, and an end portion **170***d* having a hole **170***e* formed therethrough. A middle portion **170***f* extends between the end portion **170***d* and the end portion **170***a*, and defines an internal passage **170***g* through which at least a portion of the cord **19** is adapted to extend. A pad **170***h* is wrapped around the middle portion **170***f* of the shoulder strap **170**. In an exemplary embodiment, anti-slip material is coupled to the middle portion **170***f*. In an exemplary embodiment, anti-slip material is coupled to the middle portion **170***f* and is positioned between the end **170***a* and the pad **170***h*. The middle portion **170***f* includes a loop portion **170***i*, which extends through a

ring **170***j* coupled to the end portion **170***d*. A buckle **170***k* defines the loop portion **170***i*, and is adapted to be slidably adjusted, towards or away from the ring **170***j*, so that the maximum inside diameter of the loop portion **170***i* is adjusted and thus the length of the middle portion **170***f* is adjusted, thereby adjusting the overall length of the shoulder strap **170**. A free end **170***l* of the loop portion **170***i* extends from the buckle **170***k*. In an exemplary embodiment, when the carrier **160** is an assembled condition in which, inter alia, the side assemblies **164** and **166** are removably coupled to the back assembly **162**, the length of the middle portion **170***f* and thus the overall length of the shoulder strap **170** is adjusted by sliding the buckle **170***i* towards or away from the ring **170***j*; the carrier **160** does not need to be disassembled in whole or in part to effect this adjustment. In an exemplary embodiment, when the carrier **160** is an assembled condition in which, inter alia, the side assemblies **164** and **166** are removably coupled to the back assembly **162**, the length of the middle portion **170***f* and thus the overall length of the shoulder strap **170** is decreased by pulling the free end **170***l* and thus causing the buckle **170***k* to slide towards the ring **170***j*; the carrier **160** does not need to be disassembled in whole or in part to effect this decrease in the length of the shoulder strap **170**. In an exemplary embodiment, when the carrier **160** is an assembled condition in which, inter alia, the side assemblies **164** and **166** are removably coupled to the back assembly **162**, the length of the middle portion **170***f* and thus the overall length of the shoulder strap **170** is increased by sliding the buckle **170***k* away from the ring **170***j*; the carrier **160** does not need to be disassembled in whole or in part to effect this increase in the length of the shoulder strap **170**. The remainder of the left side assembly **164** is substantially similar to the left side assembly **16** of the carrier **10** and therefore the remainder of the left side assembly **164** will not be described in further detail.

[0080] The right side assembly **166** is substantially similar to the left side assembly **164**; the right side assembly **166** and the left side assembly **164** are symmetric about a vertically-extending plane that is generally perpendicular to the front assembly **12** and the back assembly **162**, as viewed in FIG. **13**, and the right side assembly **166** includes components and couplings that are substantially identical to the above-described components and couplings of the left side assembly **164**. Therefore, the right side assembly **166** will not be described in further detail.

[0081] In an exemplary embodiment, with the exception of the manner by which the respective lengths of the shoulder straps of the side assemblies **164** and **166** are adjusted, the placement of the carrier **160** in its assembled condition is substantially similar to the placement of the carrier **10** in its assembled condition and therefore the placement of the carrier **160** in its assembled condition will not be described in further detail.

[0082] In an exemplary embodiment, the operation of the carrier **160** is substantially similar to the operation of the carrier **10** and therefore the operation of the carrier **160** will not be described in further detail.

[0083] In several exemplary embodiments, instead of, or in addition to the Velcro hook and loop portions described above, other fastening elements, fasteners, and/or fastening systems are included in the carrier **10** and/or one or more of the assemblies **12**, **14**, **16** and **18**, such as, for example, clips, snap buckles, other types of buckles, tape, snap fasteners, other types of fasteners, and/or any combination thereof, to thereby provide, for example, one or more of the removable couplings described above.

[0084] In several exemplary embodiments, the carrier **10** is a front opening releasable scalable plate carrier.

[0085] A carrier has been described that includes a front assembly; a back assembly adapted to be removably coupled to the front assembly, wherein at least one of the front and back assemblies comprises a first armor plate; and a cord comprising a first position in which the front assembly is removably coupled to the back assembly; and a second position in which the front assembly is decoupled from the back assembly. In an exemplary embodiment, the carrier comprises first and second side assemblies; wherein, when the cord is in the first position, each of the first and second side assemblies is removably coupled to each of the front and back assemblies so that the front assembly is removably coupled to the back assembly; and wherein, when the cord is in the second position, each of the first and second side assemblies is decoupled from at least one of the front and back assemblies so that the front assembly is decoupled from the back assembly. In an exemplary embodiment, the back assembly comprises a first loop; wherein the first and second side assemblies comprise first and second shoulder straps, respectively, each of the first and second shoulder straps comprising a first end portion at which the strap is adapted to be removably coupled to the front assembly; a second end portion comprising a hole formed therethrough; and wherein, when the cord is in the first position, the first loop extends through each of the respective holes of the first and second shoulder straps, and the cord extends through the first loop. In an exemplary embodiment, the back assembly further comprises a second loop; wherein the first and second side assemblies comprise first and second side portions, respectively, each of the first and second side portions comprising a first end portion at which the side portion is adapted to be removably coupled to the front assembly; and a second end portion comprising a first tab and a hole formed through the first tab; and wherein, when the cord is in the first position, the second loop extends through each of the respective holes of the first and second side portions, and the cord extends through the second loop. In an exemplary embodiment, the back assembly comprises first and second loops; wherein the first side assembly comprises a first side portion, and a first shoulder strap coupled to the first side portion; wherein the second side assembly comprises a second side portion, and a second shoulder strap coupled to the second side portion; wherein each of the first and second side portions comprises a first end portion at which the side portion is adapted to be removably coupled to the front assembly; and a second end portion comprising a first tab and a hole formed through the first tab; wherein each of the first and second shoulder straps comprises a first end portion at which the strap is adapted to be removably coupled to the front assembly; a second end portion comprising a hole formed therethrough; and a third end portion at which the strap is coupled to the corresponding side portion; and wherein, when the cord is in the first position, the first loop extends through each of the respective holes of the first and second shoulder straps, the cord extends through the first loop, the second loop extends through each of the respective holes of the first and second side portions, and the cord extends through the second loop. In an exemplary embodiment, the cord comprises a first end portion, a second end portion opposing the first end portion, and a middle portion

extending between the first and second end portions; wherein the back assembly defines one or more sleeves; wherein at least one of the first and second shoulder straps defines a passage; and wherein, when the cord is in the first position, at least a portion of the second end portion of the cord is disposed in the one or more sleeves, and at least a portion of the middle portion of the cord extends through the passage defined by the at least one of the first and second shoulder straps. In an exemplary embodiment, the front assembly comprises a jacket defining a region in which the first armor plate is adapted to be disposed; wherein the carrier further comprises a closed configuration in which the cord is in the first position, the respective first end portions of the first and second side portions of the first and second side assemblies are removably coupled to the jacket of the front assembly, and the respective second end portions of the first and second shoulder straps of the first and second side assemblies are removably coupled to the jacket of the front assembly; and a front-opening configuration in which the cord is in the first position, the first end portion of the side portion of one of the first and second side assemblies is decoupled from the jacket of the front assembly, and the second end portion of the shoulder strap of the one of the first and second side assemblies is decoupled from the jacket of the front assembly, thereby providing a gap between the front assembly and the one of the first and second side assemblies. In an exemplary embodiment, the back assembly comprises a first jacket defining a first region in which the first armor plate is disposed, the first region defining an upper internal surface of the first jacket; a first flap extending within the first region and over the first armor plate in a first direction; a second flap removably coupled to first flap and extending over the first armor plate in a second direction that is generally opposite the first direction; and a third flap removably coupled to at least one of the first and second flaps and extending over the first armor plate in a third direction that is generally perpendicular to each of the first and second directions; wherein the removably coupling between the first and second flaps defines a first gap between corresponding portions of the first and second flaps that is sized to correspond to a first dimension of the first armor plate; and wherein the removably coupling between the third flap and the at least one of the first and second flaps defines a second gap between the upper internal surface of the first jacket and the third flap that is sized to correspond to a second dimension of the first armor plate, the second dimension being generally perpendicular to the first dimension; wherein the front assembly comprises a second jacket defining a second region in which a second armor plate is adapted to be disposed, the second region defining an upper internal surface of the second jacket; a fourth flap extending within the second region and adapted to extend over the second armor plate in a fourth direction; a fifth flap adapted to be removably coupled to fourth flap and extend over the second armor plate in a fifth direction that is generally opposite the fourth direction; and a sixth flap adapted to be removably coupled to at least one of the fourth and fifth flaps and extend over the second armor plate in a sixth direction that is generally perpendicular to each of the fourth and fifth directions; and wherein the carrier further comprises a first configuration in which the first armor plate is disposed in the first region and the second armor plate is not disposed in the second region; and a second configuration in which the first and second armor plates are disposed in the first and second regions, respectively; the fourth flap extends over the second armor plate in the fourth direction; the fifth flap is removably coupled to the fourth flap and extends over the second armor plate in the fifth direction that is generally opposite the fourth direction; the sixth flap is removably coupled to the at least one of the fourth and fifth flaps and extends over the second armor plate in the sixth direction that is generally perpendicular to each of the fourth and fifth directions; wherein the removably coupling between the fourth and fifth flaps defines a third gap between corresponding portions of the fourth and fifth flaps that is sized to correspond to a first dimension of the second armor plate; and wherein the removably coupling between the sixth flap and the at least one of the fourth and fifth flaps defines a fourth gap between the upper internal surface of the second jacket and the sixth flap that is sized to correspond to a second dimension of the second armor plate, the second dimension of the second armor plate being generally perpendicular to the first dimension of the second armor plate. In an exemplary embodiment, the carrier is adapted to be worn by an operator; wherein the back assembly comprises a jacket defining a region in which the first armor plate is disposed, and the back assembly defines an exterior side and an interior side, the interior side adapted to be proximate the operator when the operator wears the carrier; wherein the carrier further comprises a handle assembly coupled to the back assembly, the handle assembly comprising first and second handle straps, each of the first and second handle straps comprising first and second end portions, the first end portion being coupled to the jacket of the back assembly; a sleeve extending between, and coupled to, the respective second end portions of the first and second handle straps, the sleeve defining a passage; a support disposed in the sleeve; a first configuration in which the sleeve is removably coupled to the back assembly while the respective first end portions of the first and second handle straps are coupled to the jacket of the back assembly; and a second configuration in which the sleeve is decoupled from the back assembly while the respective first end portions of the first and second handle straps are coupled to the jacket of the back assembly, thereby permitting a gap to be defined between the sleeve and the jacket of the back assembly; a plate insert disposed in the region defined by the jacket of the back assembly, the plate insert being positioned between the first armor plate and the interior side of the back assembly; wherein, when the carrier is worn by the operator, the plate insert distributes point forces applied by the first armor plate against the operator. In an exemplary embodiment, each of the first and second side portions of the first and second side assemblies, respectively, comprises a middle portion extending between the first and second end portions; wherein the second end portion of each of the first and second side assemblies further comprises a first plurality of tabs comprising respective holes formed therethrough, wherein the first tab is one of the tabs in the first plurality of tabs; a second plurality of tabs; a lace assembly coupling the first plurality of tabs to the second plurality of tabs; an anti-sag strap coupled to the first tab and adapted to extend across the lace assembly and be removably coupled to the middle portion; and wherein the carrier comprises a configuration in which a dimension is defined across the lace assembly and between the first and second pluralities of tabs, the anti-sag strap extends across the lace assembly and is removably coupled to the middle portion; and the removable coupling between the anti-sag strap and the middle portion resists any variation in the dimension between the first and second pluralities of tabs.

[0086] A method has been described that includes providing a carrier comprising front and back assemblies, at least one of the front and back assemblies comprising an armor plate; removably coupling the front assembly to the back assembly, comprising placing a cord in a first position relative to the front and back assemblies; and decoupling the front assembly from the back assembly, comprising moving the cord from the first position to a second position relative to the front and back assemblies. In an exemplary embodiment, the carrier comprises first and second side assemblies comprising first and second shoulder straps, respectively, and first and second side portions coupled thereto, respectively; and wherein removably coupling the front assembly to the back assembly further comprises removably coupling the first and second side portions to the back assembly; removably coupling the first and second side portions to the front assembly; removably coupling the first and second shoulder straps to the back assembly; and removably coupling the first and second shoulder straps to the front assembly. In an exemplary embodiment, decoupling the front assembly from the back assembly further comprises decoupling the first and second side portions from the back assembly in response to moving the cord from the first position to the second position relative to the front and back assemblies; and decoupling the first and second shoulder straps from the back assembly in response to moving the cord from the first position to the second position relative to the front and back assemblies. In an exemplary embodiment, the method comprises placing the carrier in a front-opening configuration in which a gap between the front assembly and one of the first and second side assemblies is provided, comprising decoupling the shoulder strap of the one of the first and second side assemblies from the front assembly; and decoupling the side portion of the one of the first and second side assemblies from the front assembly. In an exemplary embodiment, the back assembly comprises a jacket defining a region in which the armor plate is disposed, the region defining an upper internal surface of the jacket; and first, second and third flaps extending within the region; wherein the armor plate defines a first dimension and a second dimension generally perpendicular thereto; and wherein the method further comprises securing the armor plate within the region, comprising extending the first and second flaps over the first armor plate; removably coupling the second flap to the first flap to thereby define a first gap between corresponding portions of the first and second flaps that is sized to correspond to the first dimension of the armor plate; extending the third flap over the armor plate; and removably coupling the third flap to at least one of the first and second flaps to thereby define a second gap between the upper internal surface of the jacket and the third flap that is sized to correspond to the second dimension of the armor plate. In an exemplary embodiment, the method comprises removably coupling a handle assembly to the back assembly, the handle assembly comprising a support; and selectively providing a gap between the back assembly and the support of the handle assembly. In an exemplary embodiment, the method comprises loading the carrier, wherein the armor plate applies one or more point forces in response to loading the carrier; and distributing the one or more point forces applied in response to loading the carrier. In an exemplary embodiment, the method comprises loading the carrier; and resisting the degree to which the first and second side portions of the first and second side assemblies, respectively, sag in response to loading the carrier.

[0087] A system has been described that includes means for providing a carrier comprising front and back assemblies, at least one of the front and back assemblies comprising an armor plate; means for removably coupling the front assembly to the back assembly, comprising means for placing a cord in a first position relative to the front and back assemblies; and means for decoupling the front assembly from the back assembly, comprising means for moving the cord from the first position to a second position relative to the front and back assemblies. In an exemplary embodiment, the carrier further comprises first and second side assemblies comprising first and second shoulder straps, respectively, and first and second side portions coupled thereto, respectively; and wherein means for removably coupling the front assembly to the back assembly further comprises means for removably coupling the first and second side portions to the back assembly; means for removably coupling the first and second side portions to the front assembly; means for removably coupling the first and second shoulder straps to the back assembly; and means for removably coupling the first and second shoulder straps to the front assembly. In an exemplary embodiment, means for decoupling the front assembly from the back assembly further comprises means for decoupling the first and second side portions from the back assembly in response to moving the cord from the first position to the second position relative to the front and back assemblies; and means for decoupling the first and second shoulder straps from the back assembly in response to moving the cord from the first position to the second position relative to the front and back assemblies. In an exemplary embodiment, the system comprises means for placing the carrier in a front-opening configuration in which a gap between the front assembly and one of the first and second side assemblies is provided, comprising means for decoupling the shoulder strap of the one of the first and second side assemblies from the front assembly; and means for decoupling the side portion of the one of the first and second side assemblies from the front assembly. In an exemplary embodiment, the back assembly comprises a jacket defining a region in which the armor plate is disposed, the region defining an upper internal surface of the jacket; and first, second and third flaps extending within the region; wherein the armor plate defines a first dimension and a second dimension generally perpendicular thereto; and wherein the system further comprises means for securing the armor plate within the region, comprising means for extending the first and second flaps over the first armor plate; means for removably coupling the second flap to the first flap to thereby define a first gap between corresponding portions of the first and second flaps that is sized to correspond to the first dimension of the armor plate; means for extending the third flap over the armor plate; and means for removably coupling the third flap to at least one of the first and second flaps to thereby define a second gap between the upper internal surface of the jacket and the third flap that is sized to correspond to the second dimension of the armor plate. In an exemplary embodiment, the system comprises means for removably coupling a handle assembly to the back assembly, the handle assembly comprising a support; and means for selectively providing a gap between the back assembly and the support of the handle assembly. In an exemplary embodiment, the system comprises means for loading the carrier, wherein the armor plate applies one or more point forces in response to loading the carrier; and means for distributing the one or more point forces applied in response to loading the carrier. In an exem-

plary embodiment, the system comprises means for loading the carrier; and means for resisting the degree to which the first and second side portions of the first and second side assemblies, respectively, sag in response to loading the carrier.

[0088] It is understood that variations may be made in the foregoing without departing from the scope of the disclosure. For example, instead of the shoulder strap **108** of the left side assembly **16**, the cord **19** may be disposed in an internal passage defined by the shoulder strap **108'** of the right side assembly **18**.

[0089] In several exemplary embodiments, the elements and teachings of the various illustrative exemplary embodiments may be combined in whole or in part in some or all of the illustrative exemplary embodiments. In addition, one or more of the elements and teachings of the various illustrative exemplary embodiments may be omitted, at least in part, and/or combined, at least in part, with one or more of the other elements and teachings of the various illustrative embodiments.

[0090] In several exemplary embodiments, any one or more of the above-described embodiments and/or variations may be composed of any one or more of the above-described materials, and/or any combination thereof. In several exemplary embodiments, any one or more of the above-described embodiments and/or variations may be in the form of any one or more of the above-described forms, and/or any combination thereof. In several exemplary embodiments, any one or more of the above-described embodiments and/or variations may have any one or more of the above-described surface structures, and/or any combination thereof. In several exemplary embodiments, any one or more of the above-described embodiments and/or variations may have any one or more of the above-described shapes, and/or any combination thereof.

[0091] Any spatial references such as, for example, "upper," "lower," "above," "below," "between," "bottom," "vertical," "horizontal," "angular," "upwards," "downwards," "side-to-side," "left-to-right," "left," "right," "right-to-left," "top-to-bottom," "bottom-to-top," "top," "bottom," "bottom-up," "top-down," etc., are for the purpose of illustration only and do not limit the specific orientation or location of the structure described above.

[0092] In several exemplary embodiments, while different steps, processes, and procedures are described as appearing as distinct acts, one or more of the steps, one or more of the processes, and/or one or more of the procedures may also be performed in different orders, simultaneously and/or sequentially. In several exemplary embodiments, the steps, processes and/or procedures may be merged into one or more steps, processes and/or procedures.

[0093] In several exemplary embodiments, one or more of the operational steps in each embodiment may be omitted. Moreover, in some instances, some features of the present disclosure may be employed without a corresponding use of the other features. Moreover, one or more of the above-described embodiments and/or variations may be combined in whole or in part with any one or more of the other above-described embodiments and/or variations.

[0094] Although several exemplary embodiments have been described in detail above, the embodiments described are exemplary only and are not limiting, and those skilled in the art will readily appreciate that many other modifications, changes and/or substitutions are possible in the exemplary embodiments without materially departing from the novel teachings and advantages of the present disclosure. Accordingly, all such modifications, changes and/or substitutions are intended to be included within the scope of this disclosure as defined in the following claims. In the claims, means-plus-function clauses are intended to cover the structures described herein as performing the recited function and not only structural equivalents, but also equivalent structures.

What is claimed is:

1. A carrier comprising:
- a front assembly;
- a back assembly adapted to be removably coupled to the front assembly, wherein at least one of the front and back assemblies comprises a first armor plate;
- and
- a cord comprising:
  - a first position in which the front assembly is removably coupled to the back assembly; and
  - a second position in which the front assembly is decoupled from the back assembly.

2. The carrier of claim **1** further comprising:
- first and second side assemblies;
- wherein, when the cord is in the first position, each of the first and second side assemblies is removably coupled to each of the front and back assemblies so that the front assembly is removably coupled to the back assembly; and
- wherein, when the cord is in the second position, each of the first and second side assemblies is decoupled from at least one of the front and back assemblies so that the front assembly is decoupled from the back assembly.

3. The carrier of claim **2** wherein the back assembly comprises a first loop;
- wherein the first and second side assemblies comprise first and second shoulder straps, respectively, each of the first and second shoulder straps comprising:
  - a first end portion at which the strap is adapted to be removably coupled to the front assembly;
  - a second end portion comprising a hole formed therethrough;
- and
- wherein, when the cord is in the first position,
  - the first loop extends through each of the respective holes of the first and second shoulder straps, and
  - the cord extends through the first loop.

4. The carrier of claim **2** wherein the back assembly further comprises a second loop;
- wherein the first and second side assemblies comprise first and second side portions, respectively, each of the first and second side portions comprising:
  - a first end portion at which the side portion is adapted to be removably coupled to the front assembly; and
  - a second end portion comprising a first tab and a hole formed through the first tab;
- and
- wherein, when the cord is in the first position,
  - the second loop extends through each of the respective holes of the first and second side portions, and
  - the cord extends through the second loop.

5. The carrier of claim **2** wherein the back assembly comprises first and second loops;
- wherein the first side assembly comprises:
  - a first side portion, and
  - a first shoulder strap coupled to the first side portion;

wherein the second side assembly comprises:
a second side portion, and
a second shoulder strap coupled to the second side portion;
wherein each of the first and second side portions comprises:
a first end portion at which the side portion is adapted to be removably coupled to the front assembly; and
a second end portion comprising a first tab and a hole formed through the first tab;
wherein each of the first and second shoulder straps comprises:
a first end portion at which the strap is adapted to be removably coupled to the front assembly;
a second end portion comprising a hole formed therethrough; and
a third end portion at which the strap is coupled to the corresponding side portion;
and
wherein, when the cord is in the first position,
the first loop extends through each of the respective holes of the first and second shoulder straps,
the cord extends through the first loop,
the second loop extends through each of the respective holes of the first and second side portions, and
the cord extends through the second loop.

6. The carrier of claim **5** wherein the cord comprises a first end portion, a second end portion opposing the first end portion, and a middle portion extending between the first and second end portions;
wherein the back assembly defines one or more sleeves;
wherein at least one of the first and second shoulder straps defines a passage; and
wherein, when the cord is in the first position,
at least a portion of the second end portion of the cord is disposed in the one or more sleeves, and
at least a portion of the middle portion of the cord extends through the passage defined by the at least one of the first and second shoulder straps.

7. The carrier of claim **6** wherein the front assembly comprises:
a jacket defining a region in which the first armor plate is adapted to be disposed;
wherein the carrier further comprises:
a closed configuration in which:
the cord is in the first position,
the respective first end portions of the first and second side portions of the first and second side assemblies are removably coupled to the jacket of the front assembly, and
the respective second end portions of the first and second shoulder straps of the first and second side assemblies are removably coupled to the jacket of the front assembly;
and
a front-opening configuration in which:
the cord is in the first position,
the first end portion of the side portion of one of the first and second side assemblies is decoupled from the jacket of the front assembly, and
the second end portion of the shoulder strap of the one of the first and second side assemblies is decoupled from the jacket of the front assembly,
thereby providing a gap between the front assembly and the one of the first and second side assemblies.

8. The carrier of claim **6** wherein the back assembly comprises:
a first jacket defining a first region in which the first armor plate is disposed, the first region defining an upper internal surface of the first jacket;
a first flap extending within the first region and over the first armor plate in a first direction;
a second flap removably coupled to first flap and extending over the first armor plate in a second direction that is generally opposite the first direction; and
a third flap removably coupled to at least one of the first and second flaps and extending over the first armor plate in a third direction that is generally perpendicular to each of the first and second directions;
wherein the removably coupling between the first and second flaps defines a first gap between corresponding portions of the first and second flaps that is sized to correspond to a first dimension of the first armor plate; and
wherein the removably coupling between the third flap and the at least one of the first and second flaps defines a second gap between the upper internal surface of the first jacket and the third flap that is sized to correspond to a second dimension of the first armor plate, the second dimension being generally perpendicular to the first dimension;
wherein the front assembly comprises:
a second jacket defining a second region in which a second armor plate is adapted to be disposed, the second region defining an upper internal surface of the second jacket;
a fourth flap extending within the second region and adapted to extend over the second armor plate in a fourth direction;
a fifth flap adapted to be removably coupled to fourth flap and extend over the second armor plate in a fifth direction that is generally opposite the fourth direction; and
a sixth flap adapted to be removably coupled to at least one of the fourth and fifth flaps and extend over the second armor plate in a sixth direction that is generally perpendicular to each of the fourth and fifth directions;
and
wherein the carrier further comprises:
a first configuration in which the first armor plate is disposed in the first region and the second armor plate is not disposed in the second region; and
a second configuration in which:
the first and second armor plates are disposed in the first and second regions, respectively;
the fourth flap extends over the second armor plate in the fourth direction;
the fifth flap is removably coupled to the fourth flap and extends over the second armor plate in the fifth direction that is generally opposite the fourth direction;
the sixth flap is removably coupled to the at least one of the fourth and fifth flaps and extends over the second armor plate in the sixth direction that is generally perpendicular to each of the fourth and fifth directions;
wherein the removably coupling between the fourth and fifth flaps defines a third gap between corresponding portions of the fourth and fifth flaps that is sized to correspond to a first dimension of the second armor plate; and

wherein the removably coupling between the sixth flap and the at least one of the fourth and fifth flaps defines a fourth gap between the upper internal surface of the second jacket and the sixth flap that is sized to correspond to a second dimension of the second armor plate, the second dimension of the second armor plate being generally perpendicular to the first dimension of the second armor plate.

9. The carrier of claim **6** wherein the carrier is adapted to be worn by an operator;

wherein the back assembly comprises a jacket defining a region in which the first armor plate is disposed, and the back assembly defines an exterior side and an interior side, the interior side adapted to be proximate the operator when the operator wears the carrier;

wherein the carrier further comprises:

a handle assembly coupled to the back assembly, the handle assembly comprising:

first and second handle straps, each of the first and second handle straps comprising first and second end portions, the first end portion being coupled to the jacket of the back assembly;

a sleeve extending between, and coupled to, the respective second end portions of the first and second handle straps, the sleeve defining a passage;

a support disposed in the sleeve;

a first configuration in which the sleeve is removably coupled to the back assembly while the respective first end portions of the first and second handle straps are coupled to the jacket of the back assembly; and

a second configuration in which the sleeve is decoupled from the back assembly while the respective first end portions of the first and second handle straps are coupled to the jacket of the back assembly, thereby permitting a gap to be defined between the sleeve and the jacket of the back assembly;

a plate insert disposed in the region defined by the jacket of the back assembly, the plate insert being positioned between the first armor plate and the interior side of the back assembly;

wherein, when the carrier is worn by the operator, the plate insert distributes point forces applied by the first armor plate against the operator.

10. The carrier of claim **6** wherein each of the first and second side portions of the first and second side assemblies, respectively, comprises a middle portion extending between the first and second end portions;

wherein the second end portion of each of the first and second side assemblies further comprises:

a first plurality of tabs comprising respective holes formed therethrough, wherein the first tab is one of the tabs in the first plurality of tabs;

a second plurality of tabs;

a lace assembly coupling the first plurality of tabs to the second plurality of tabs;

an anti-sag strap coupled to the first tab and adapted to extend across the lace assembly and be removably coupled to the middle portion;

and

wherein the carrier comprises a configuration in which:

a dimension is defined across the lace assembly and between the first and second pluralities of tabs,

the anti-sag strap extends across the lace assembly and is removably coupled to the middle portion; and

the removable coupling between the anti-sag strap and the middle portion resists any variation in the dimension between the first and second pluralities of tabs.

11. A method comprising:

providing a carrier comprising front and back assemblies, at least one of the front and back assemblies comprising an armor plate;

removably coupling the front assembly to the back assembly, comprising placing a cord in a first position relative to the front and back assemblies; and

decoupling the front assembly from the back assembly, comprising moving the cord from the first position to a second position relative to the front and back assemblies.

12. The method of claim **11** wherein the carrier further comprises first and second side assemblies comprising first and second shoulder straps, respectively, and first and second side portions coupled thereto, respectively; and

wherein removably coupling the front assembly to the back assembly further comprises:

removably coupling the first and second side portions to the back assembly;

removably coupling the first and second side portions to the front assembly;

removably coupling the first and second shoulder straps to the back assembly; and

removably coupling the first and second shoulder straps to the front assembly.

13. The method of claim **12** wherein decoupling the front assembly from the back assembly further comprises:

decoupling the first and second side portions from the back assembly in response to moving the cord from the first position to the second position relative to the front and back assemblies; and

decoupling the first and second shoulder straps from the back assembly in response to moving the cord from the first position to the second position relative to the front and back assemblies.

14. The method of claim **13** further comprising:

placing the carrier in a front-opening configuration in which a gap between the front assembly and one of the first and second side assemblies is provided, comprising:

decoupling the shoulder strap of the one of the first and second side assemblies from the front assembly; and

decoupling the side portion of the one of the first and second side assemblies from the front assembly.

15. The method of claim **13** wherein the back assembly comprises:

a jacket defining a region in which the armor plate is disposed, the region defining an upper internal surface of the jacket; and

first, second and third flaps extending within the region;

wherein the armor plate defines a first dimension and a second dimension generally perpendicular thereto;

and

wherein the method further comprises:

securing the armor plate within the region, comprising:

extending the first and second flaps over the first armor plate;

removably coupling the second flap to the first flap to thereby define a first gap between corresponding portions of the first and second flaps that is sized to correspond to the first dimension of the armor plate;

extending the third flap over the armor plate; and

removably coupling the third flap to at least one of the first and second flaps to thereby define a second gap between the upper internal surface of the jacket and the third flap that is sized to correspond to the second dimension of the armor plate.

16. The method of claim **13** further comprising:

removably coupling a handle assembly to the back assembly, the handle assembly comprising a support; and

selectively providing a gap between the back assembly and the support of the handle assembly.

17. The method of claim **13** further comprising:

loading the carrier, wherein the armor plate applies one or more point forces in response to loading the carrier; and

distributing the one or more point forces applied in response to loading the carrier.

18. The method of claim **13** further comprising:

loading the carrier; and

resisting the degree to which the first and second side portions of the first and second side assemblies, respectively, sag in response to loading the carrier.

19. A system comprising:

means for providing a carrier comprising front and back assemblies, at least one of the front and back assemblies comprising an armor plate;

means for removably coupling the front assembly to the back assembly, comprising means for placing a cord in a first position relative to the front and back assemblies; and

means for decoupling the front assembly from the back assembly, comprising means for moving the cord from the first position to a second position relative to the front and back assemblies.

20. The system of claim **19** wherein the carrier further comprises first and second side assemblies comprising first and second shoulder straps, respectively, and first and second side portions coupled thereto, respectively; and

wherein means for removably coupling the front assembly to the back assembly further comprises:

means for removably coupling the first and second side portions to the back assembly;

means for removably coupling the first and second side portions to the front assembly;

means for removably coupling the first and second shoulder straps to the back assembly; and

means for removably coupling the first and second shoulder straps to the front assembly.

21. The system of claim **20** wherein means for decoupling the front assembly from the back assembly further comprises:

means for decoupling the first and second side portions from the back assembly in response to moving the cord from the first position to the second position relative to the front and back assemblies; and

means for decoupling the first and second shoulder straps from the back assembly in response to moving the cord from the first position to the second position relative to the front and back assemblies.

22. The system of claim **21** further comprising:

means for placing the carrier in a front-opening configuration in which a gap between the front assembly and one of the first and second side assemblies is provided, comprising:

means for decoupling the shoulder strap of the one of the first and second side assemblies from the front assembly; and

means for decoupling the side portion of the one of the first and second side assemblies from the front assembly.

23. The system of claim **21** wherein the back assembly comprises:

a jacket defining a region in which the armor plate is disposed, the region defining an upper internal surface of the jacket; and

first, second and third flaps extending within the region;

wherein the armor plate defines a first dimension and a second dimension generally perpendicular thereto;

and

wherein the system further comprises:

means for securing the armor plate within the region, comprising:

means for extending the first and second flaps over the first armor plate;

means for removably coupling the second flap to the first flap to thereby define a first gap between corresponding portions of the first and second flaps that is sized to correspond to the first dimension of the armor plate;

means for extending the third flap over the armor plate; and

means for removably coupling the third flap to at least one of the first and second flaps to thereby define a second gap between the upper internal surface of the jacket and the third flap that is sized to correspond to the second dimension of the armor plate.

24. The system of claim **21** further comprising:

means for removably coupling a handle assembly to the back assembly, the handle assembly comprising a support; and

means for selectively providing a gap between the back assembly and the support of the handle assembly.

25. The system of claim **21** further comprising:

means for loading the carrier, wherein the armor plate applies one or more point forces in response to loading the carrier; and

means for distributing the one or more point forces applied in response to loading the carrier.

26. The system of claim **21** further comprising:

means for loading the carrier; and

means for resisting the degree to which the first and second side portions of the first and second side assemblies, respectively, sag in response to loading the carrier.

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