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(51) INT CL:
A63B 55/53 (2015.01) ***E05D 1/02*** (2006.01)

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(58) Field of Search:
INT CL **A63B, E05D, F16C**
Other: **EPODOC, WPI.**

(54) Title of the Invention: **Golf bags with a stabilization and reinforcement system and methods to manufacture golf bags with the stabilization and reinforcement system**
Abstract Title: **Golf bag with extensible stand and flexible one-piece hinge**

(57) A golf bag comprises a body having top 214 and bottom 212 portions, the bottom portion defines a bottom side portion 234 of the body. A stay 216 has a first end 230 which engages the top portion of the bag. A slot 262 is formed along the bottom side portion of the body which engages with a flexible one-piece hinge 210. The hinge comprises an insert portion 228 and a receiving potion 226 formed opposite the insert portion. A bending portion is formed between the insert portion and the receiving portion for relative orientation. The insert portion engages with the slot of the bottom side portion of the body and the receiving portion engages with a second end 232 of the stay. The insert portion may comprise at least one hole 275 configured to receive a securing member 285 for securing the insert portion to the body. The bending portion may be of reduced thickness to the insert/ receiving portions and/or define one or more cut-outs. A one-piece flexible hinge and a method of manufacturing a golf bag having a one-piece flexible hinge are also envisaged.

Fig. 21

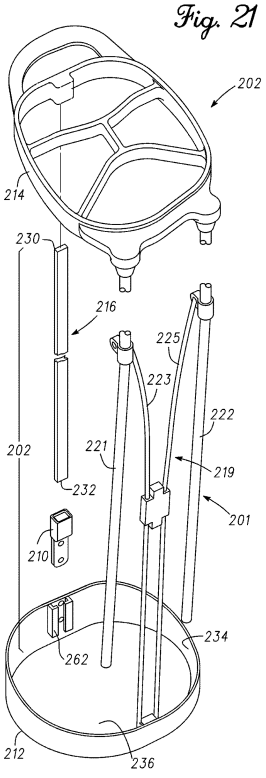
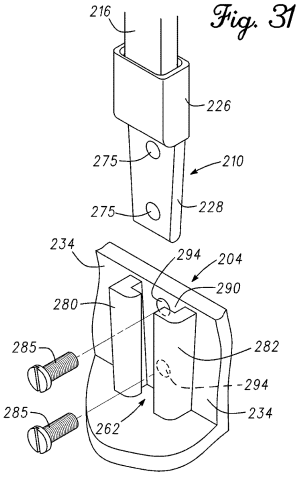


Fig. 31



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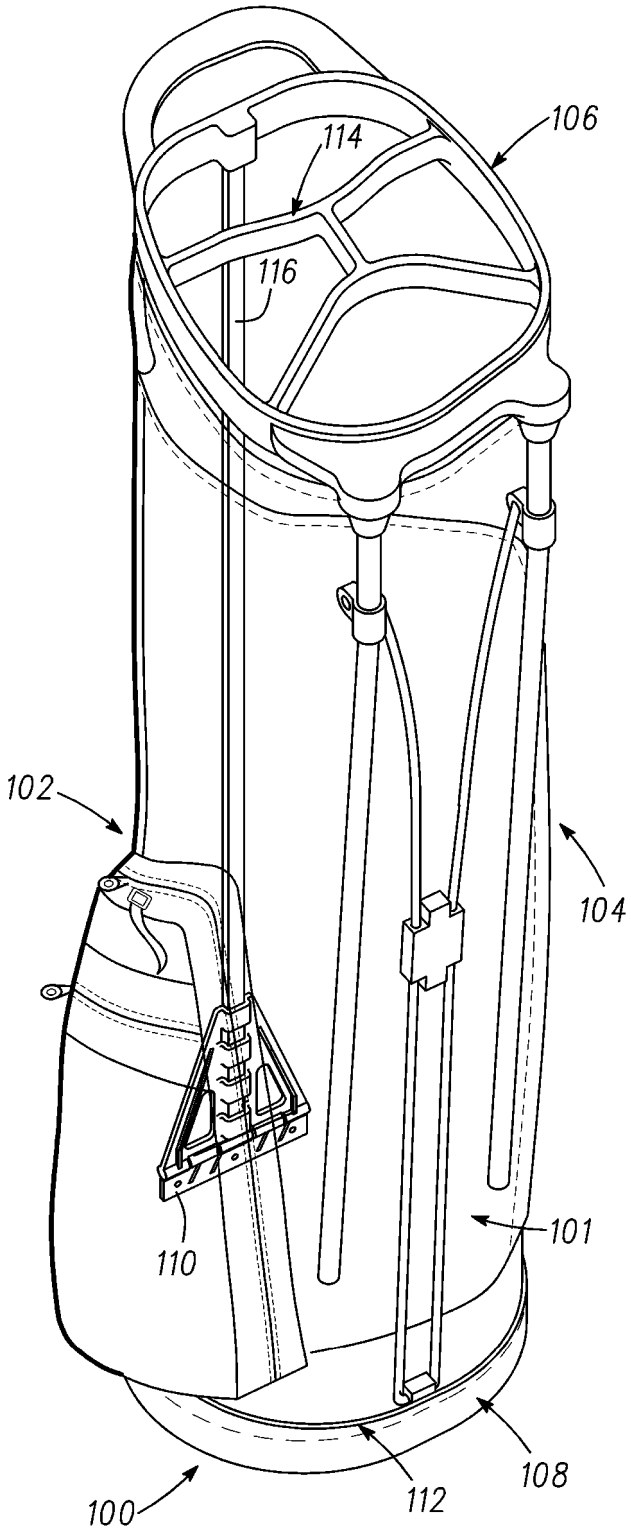
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Fig. 1

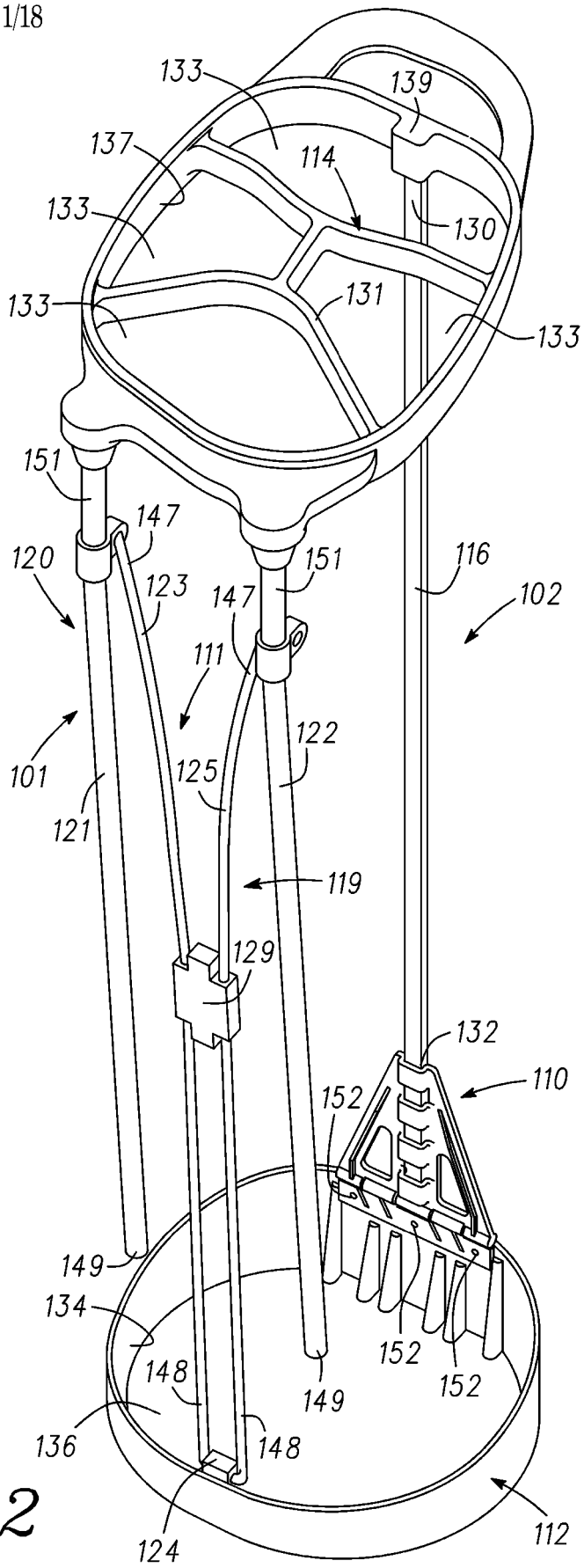
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Fig. 2

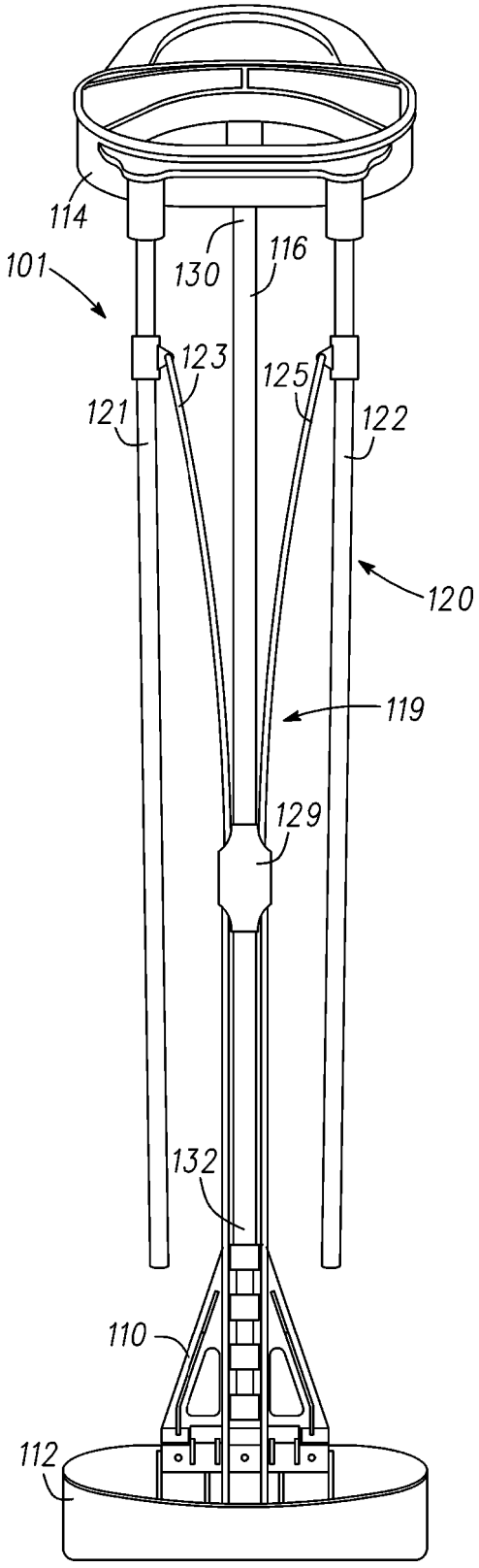
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Fig. 3

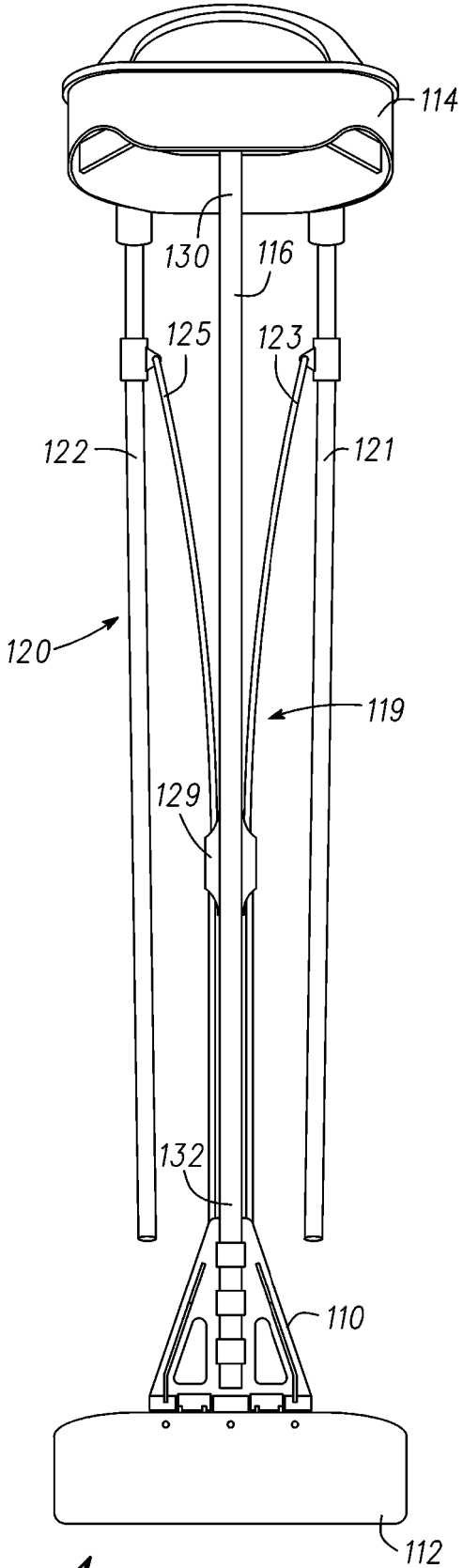
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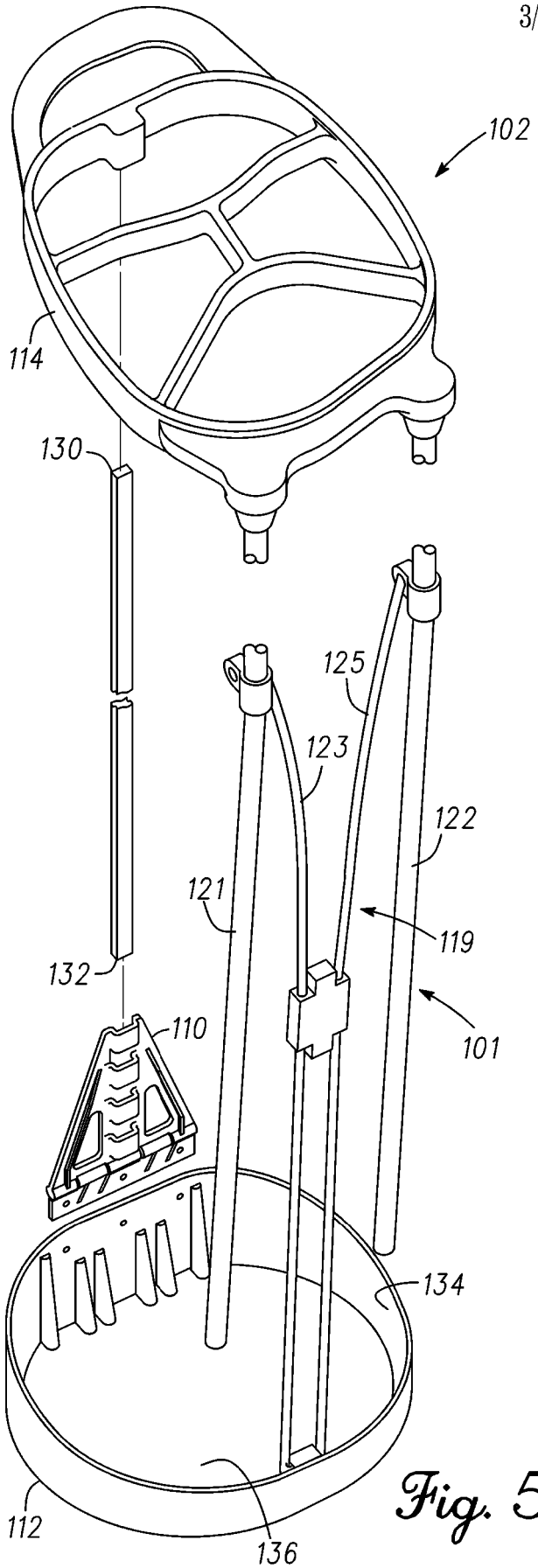
Fig. 4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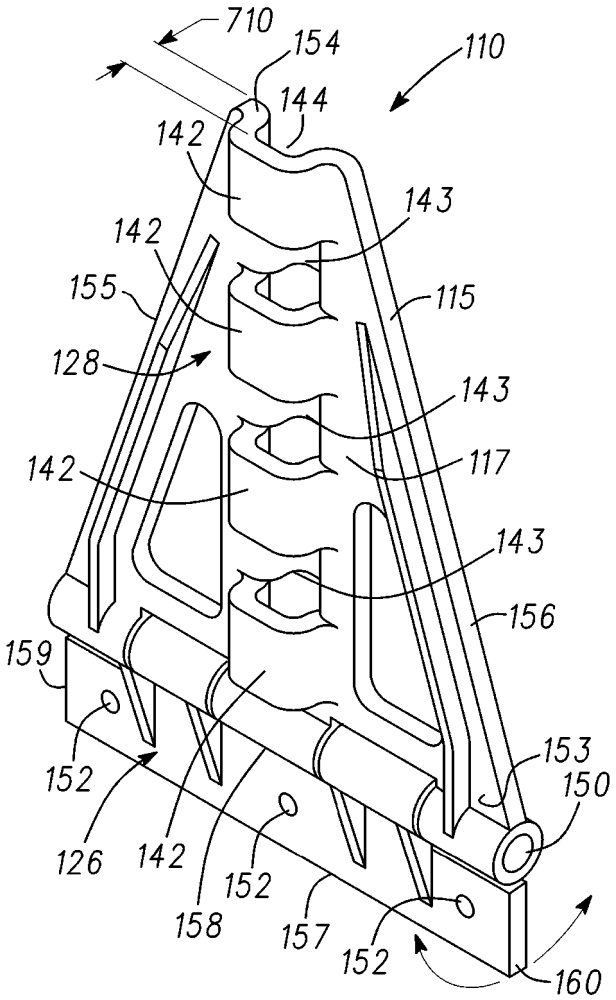
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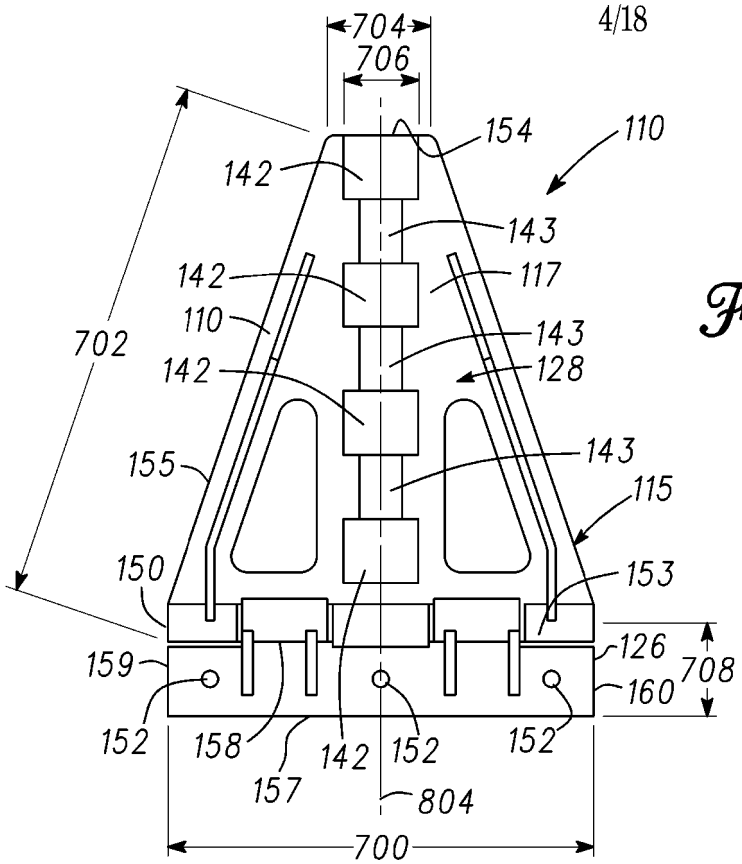
Fig. 6



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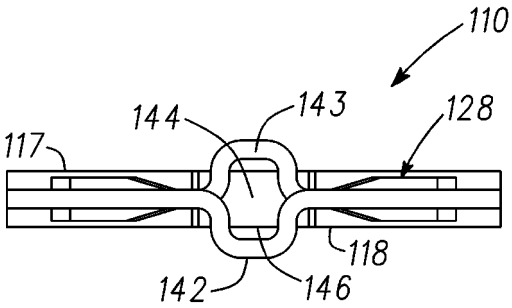

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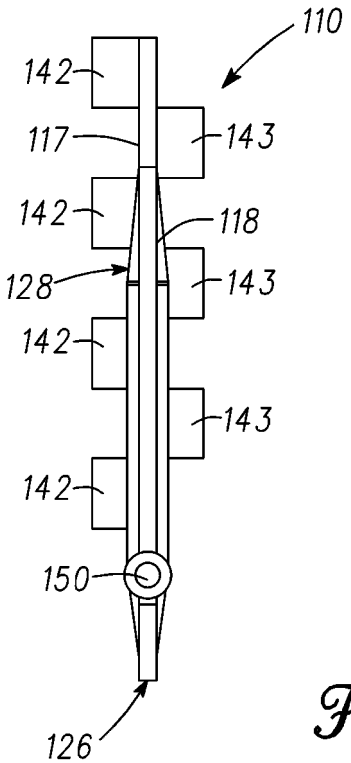

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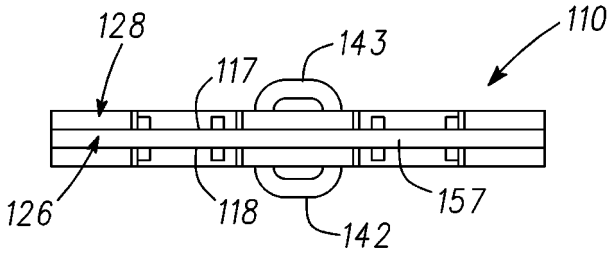

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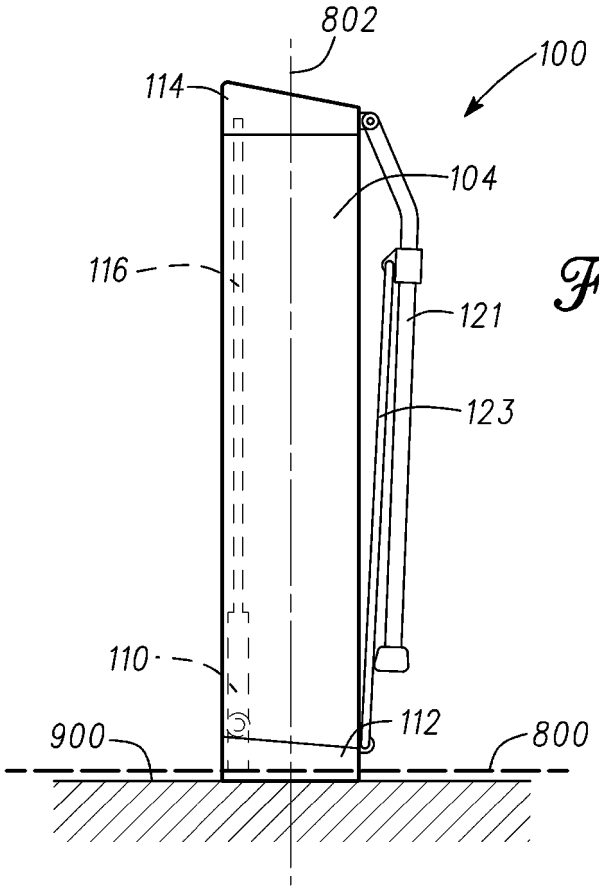
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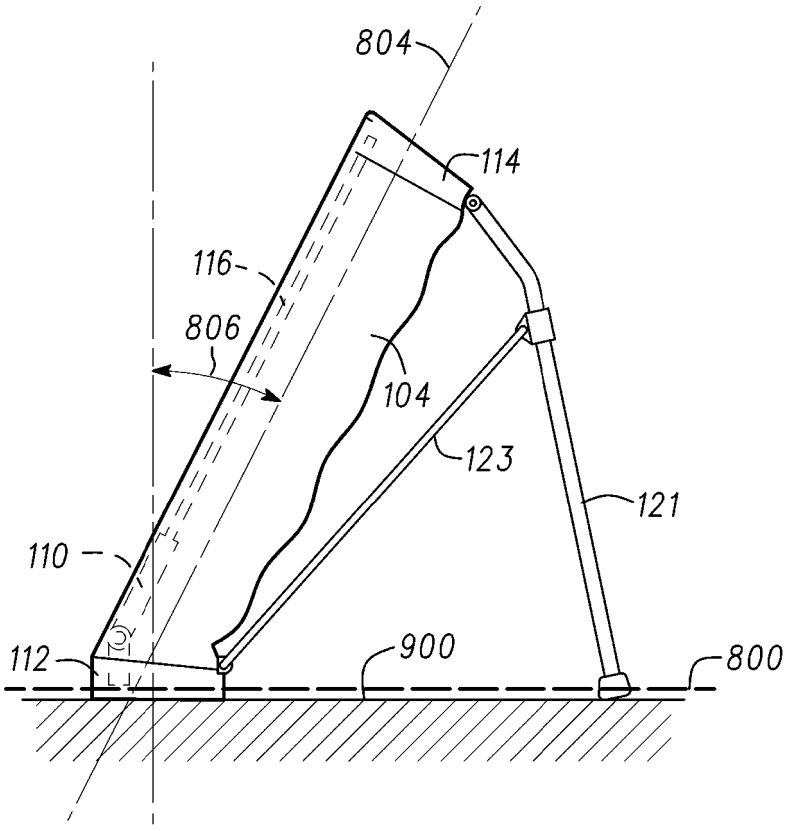
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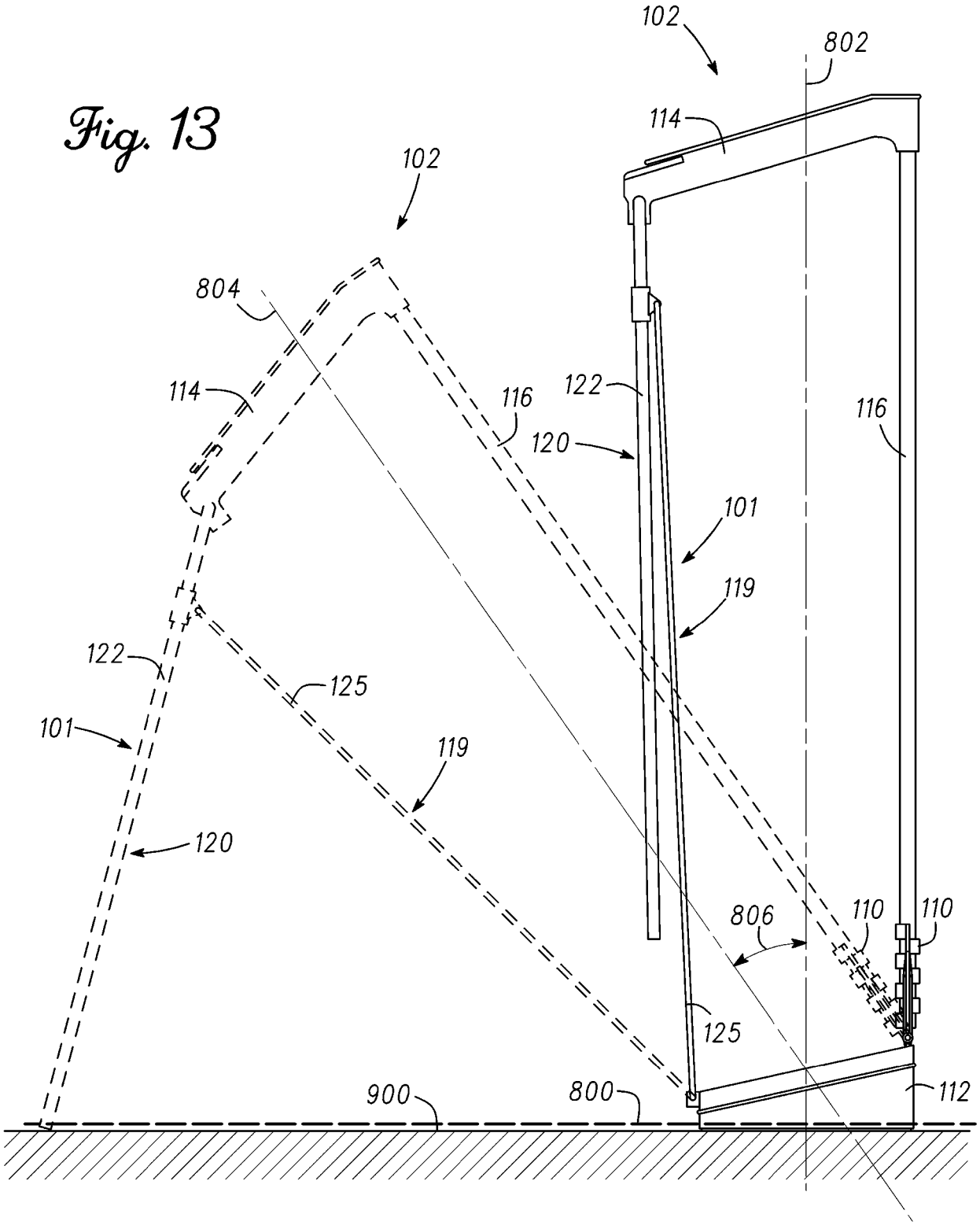
Fig. 12

Fig. 13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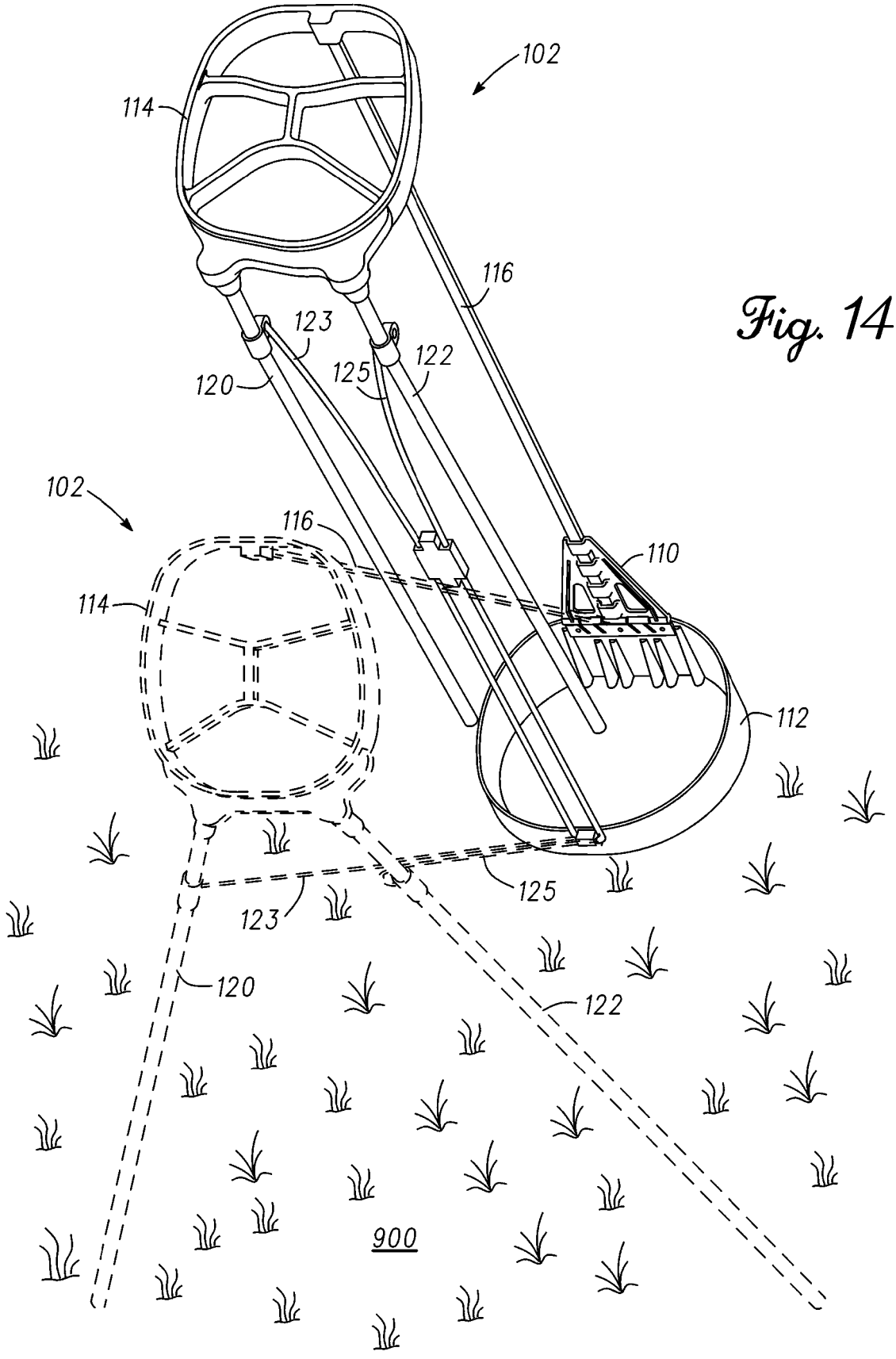
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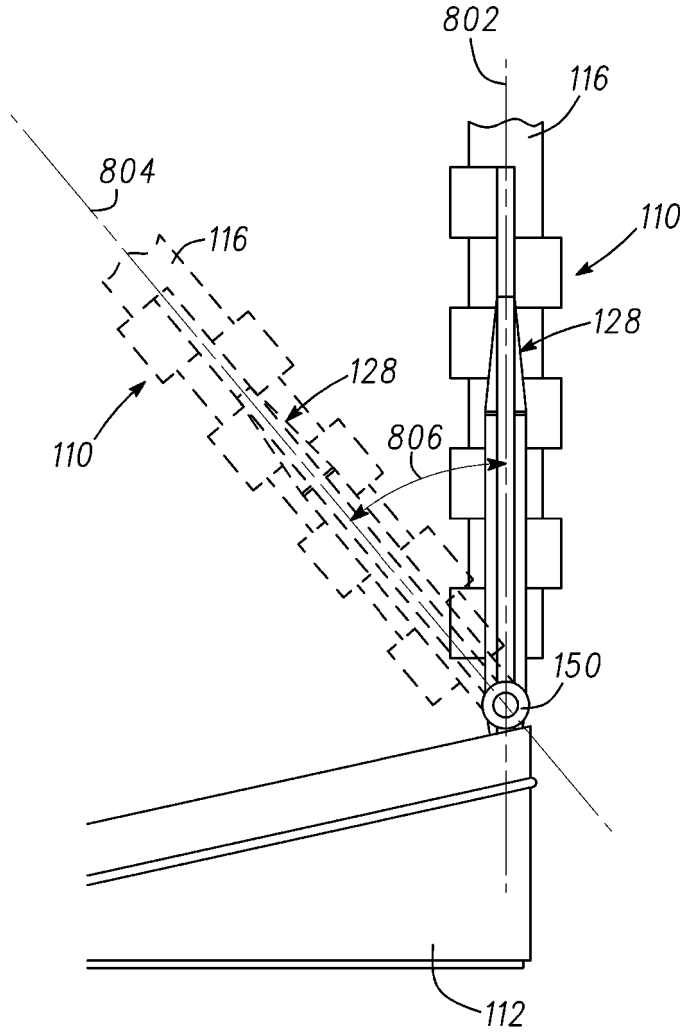

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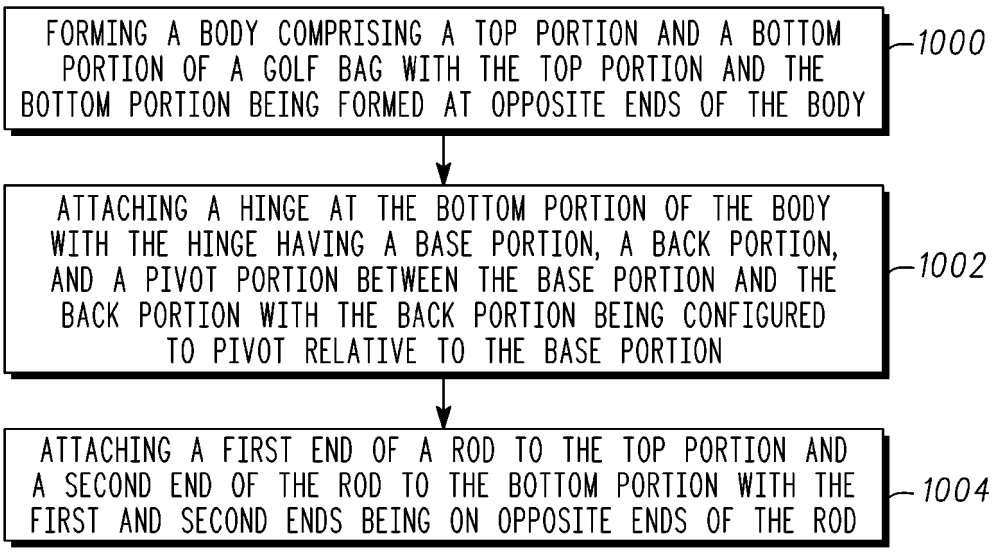
FORMING A BODY COMPRISING A TOP PORTION AND A BOTTOM PORTION OF A GOLF BAG WITH THE TOP PORTION AND THE BOTTOM PORTION BEING FORMED AT OPPOSITE ENDS OF THE BODY
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ATTACHING A HINGE AT THE BOTTOM PORTION OF THE BODY WITH THE HINGE HAVING A BASE PORTION, A BACK PORTION, AND A PIVOT PORTION BETWEEN THE BASE PORTION AND THE BACK PORTION WITH THE BACK PORTION BEING CONFIGURED TO PIVOT RELATIVE TO THE BASE PORTION
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ATTACHING A FIRST END OF A ROD TO THE TOP PORTION AND A SECOND END OF THE ROD TO THE BOTTOM PORTION WITH THE FIRST AND SECOND ENDS BEING ON OPPOSITE ENDS OF THE ROD
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Fig. 16

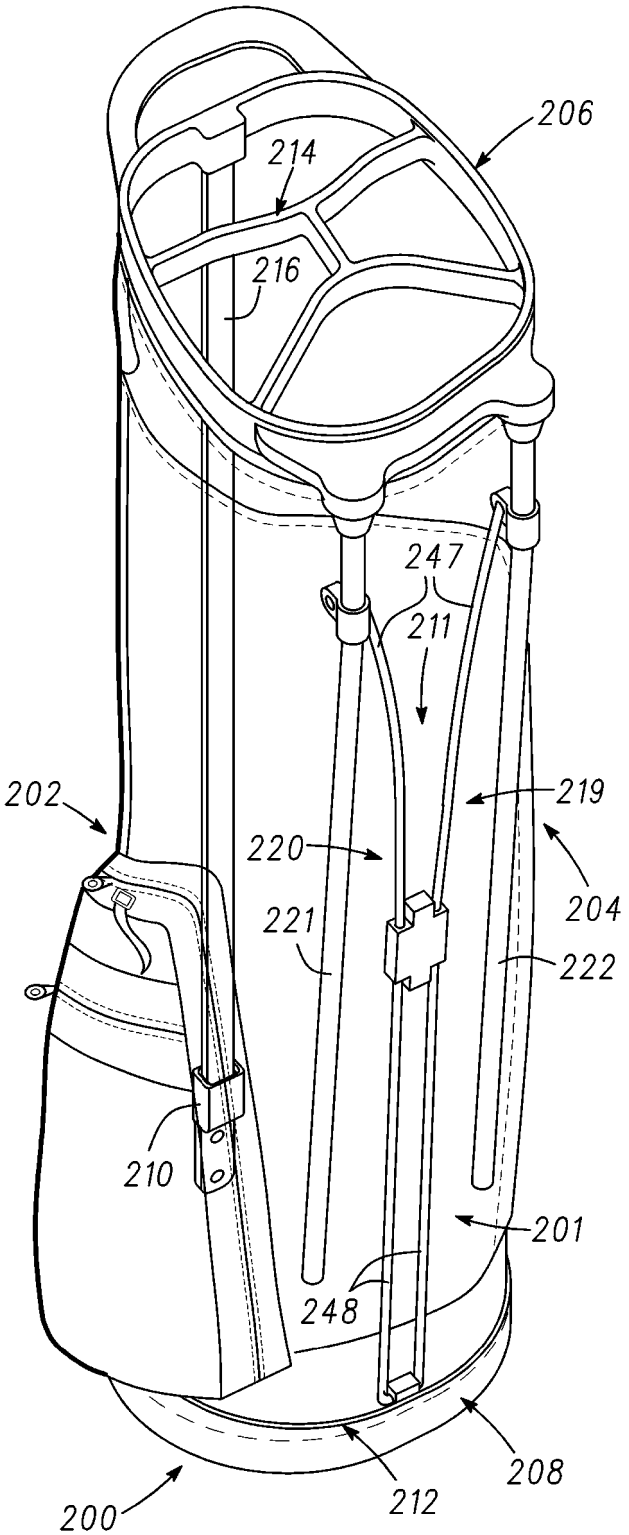
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Fig. 17

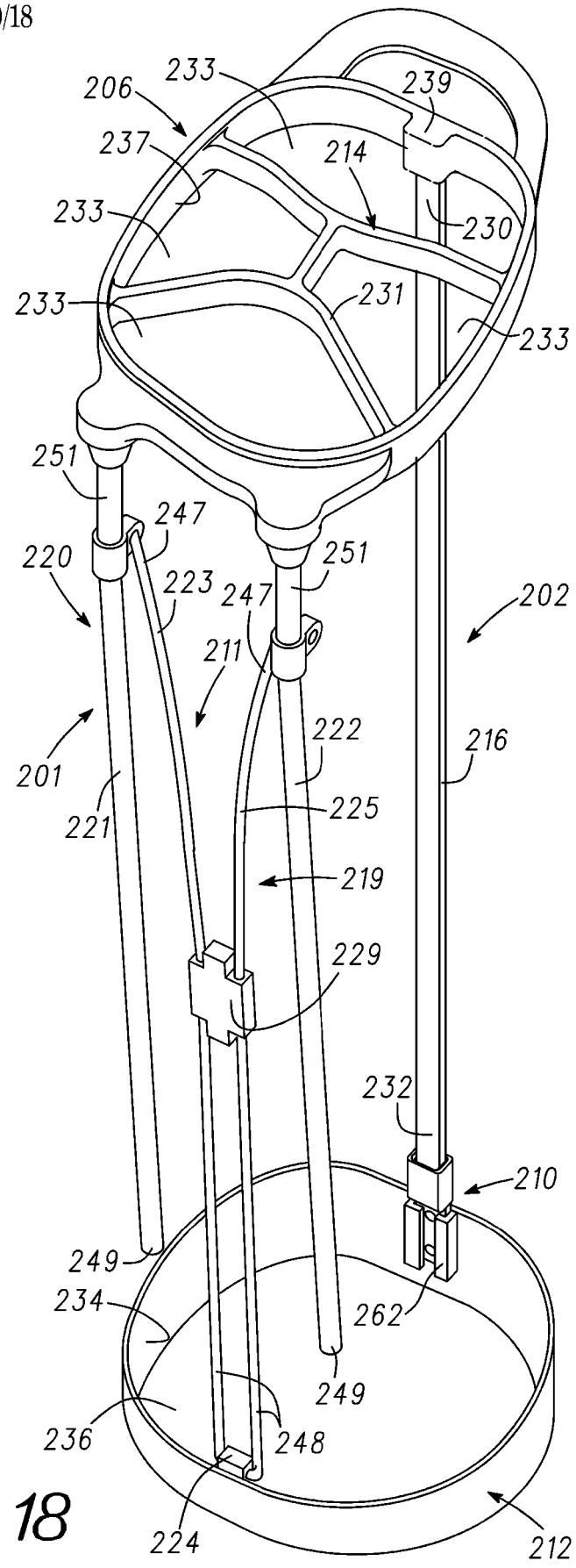
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Fig. 18

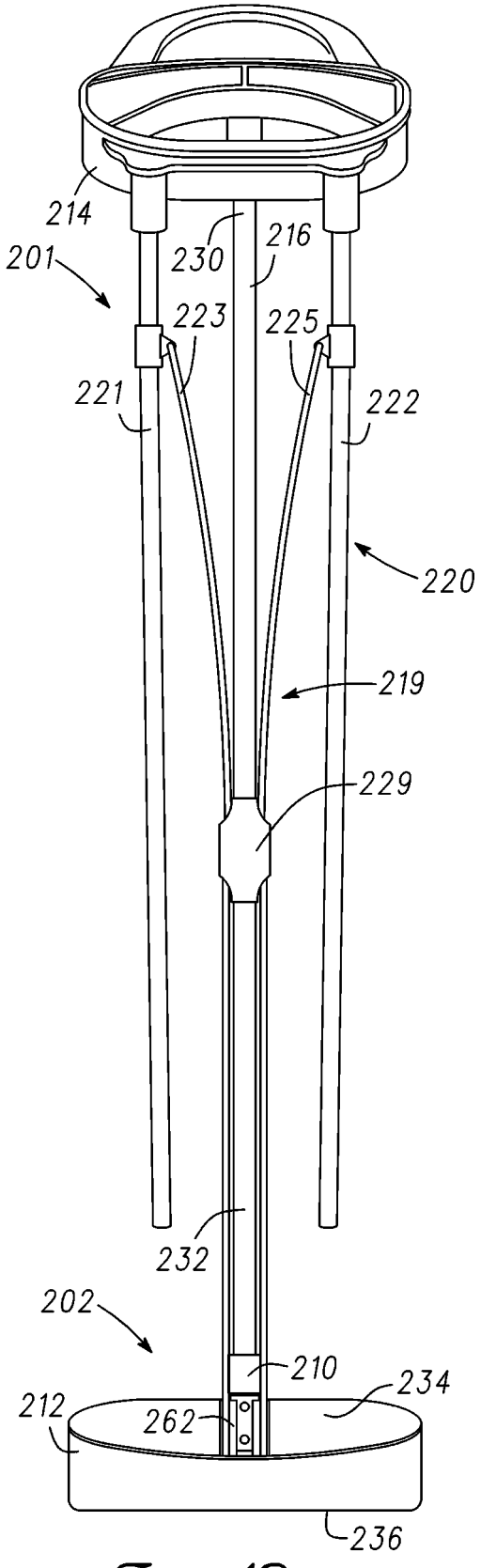
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Fig. 19

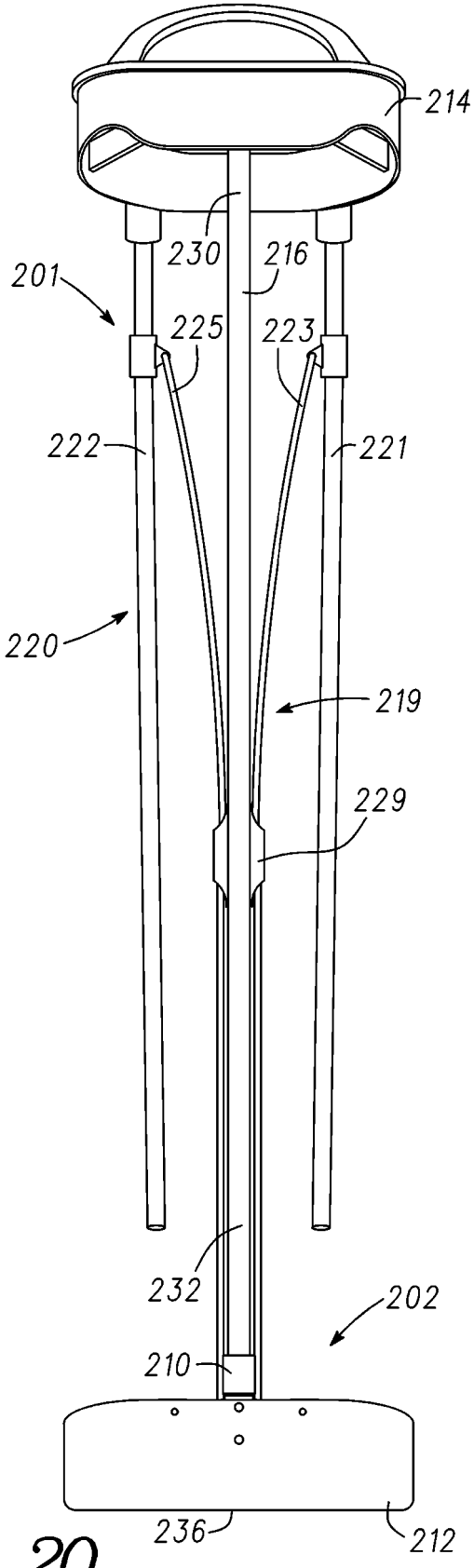
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Fig. 20

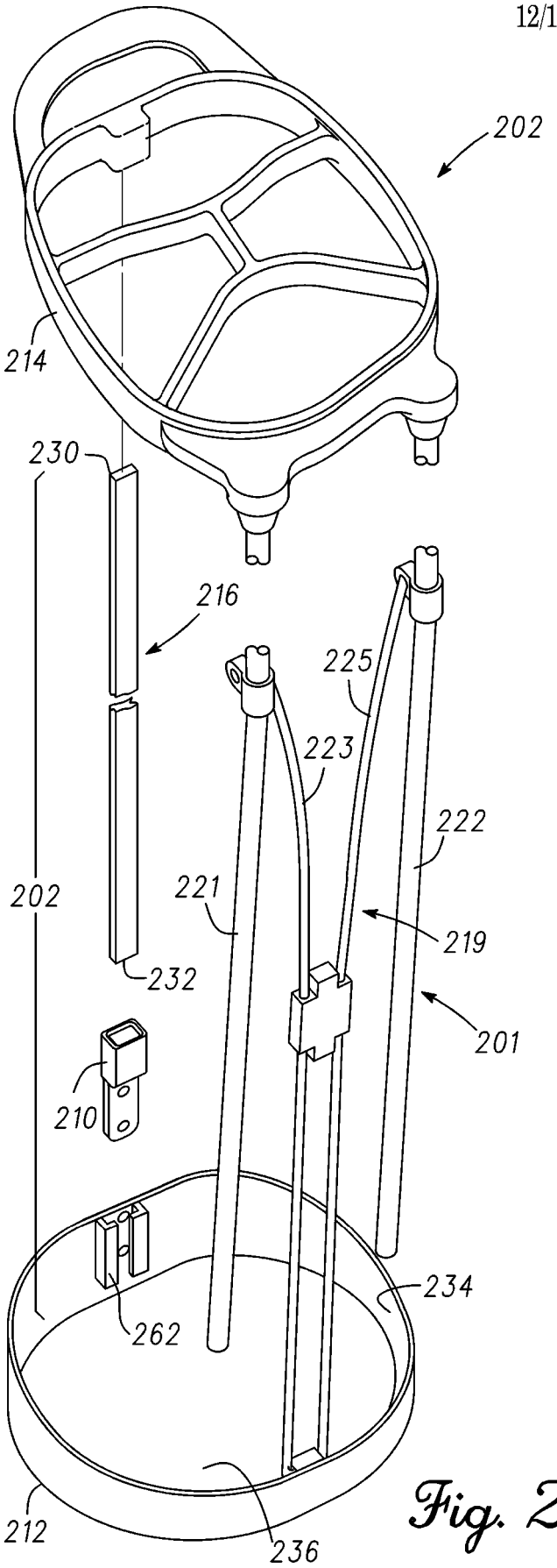
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Fig. 21

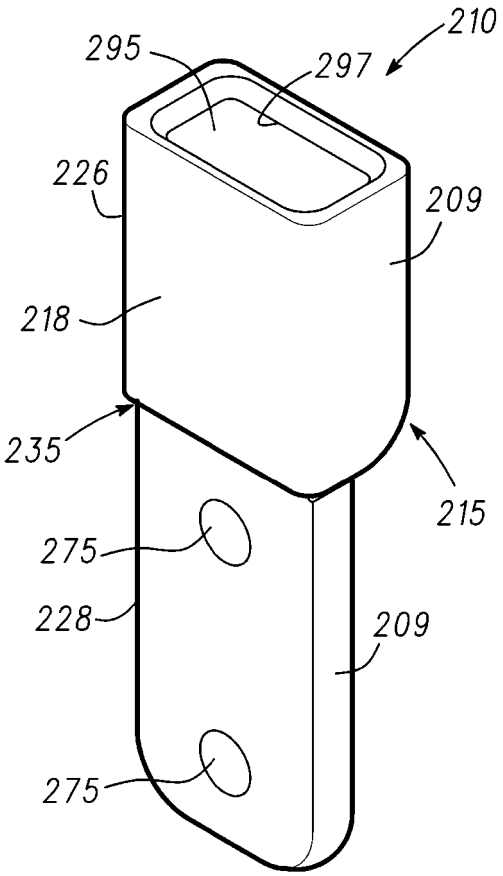
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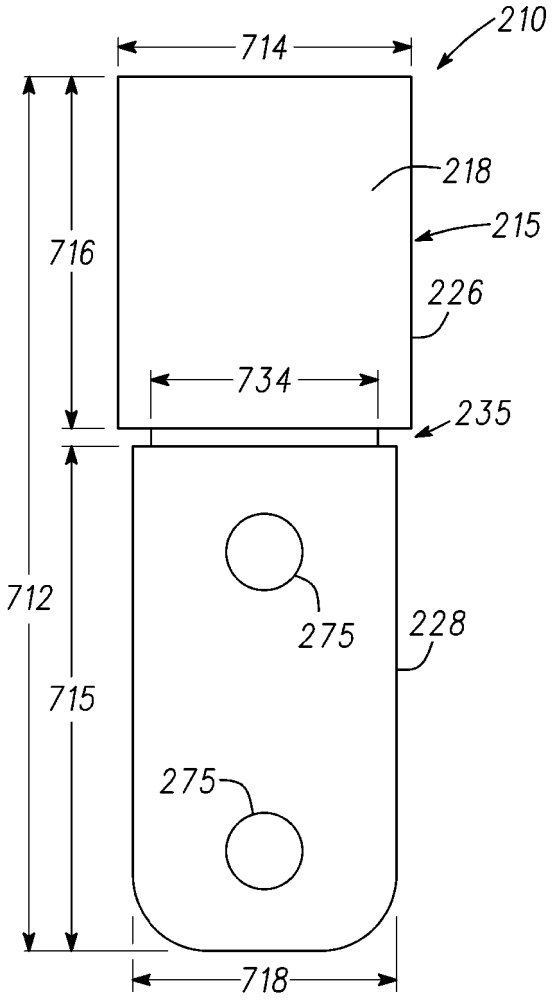
Fig. 22



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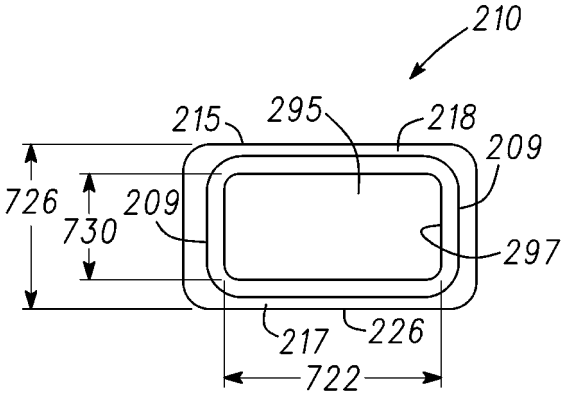

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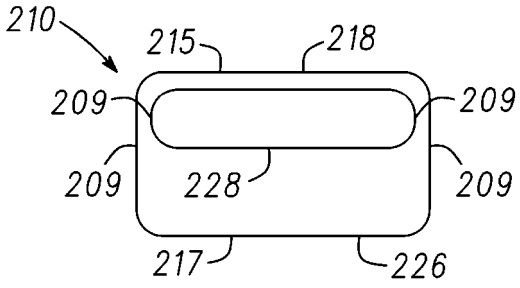

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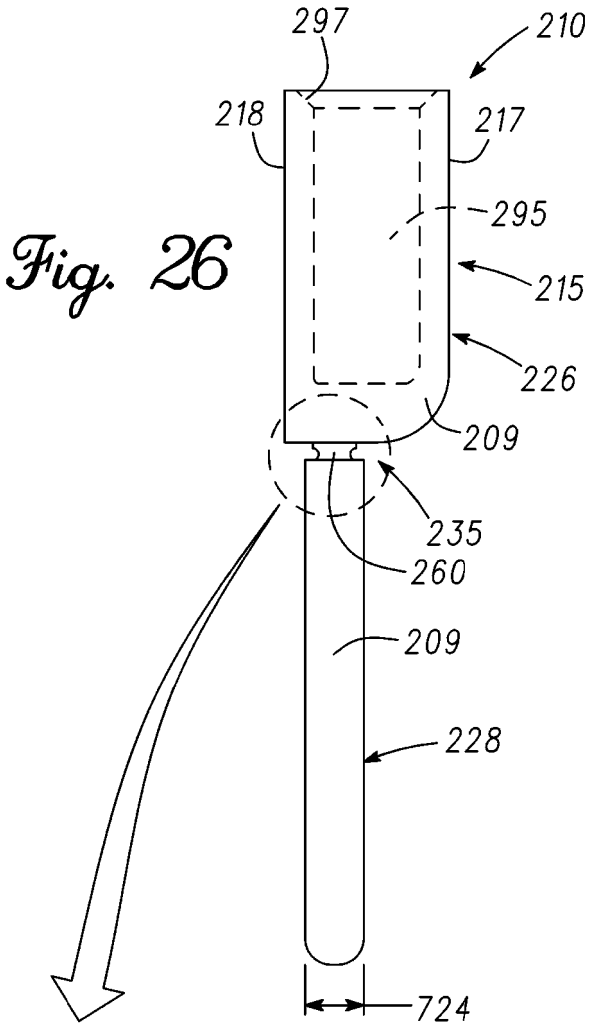

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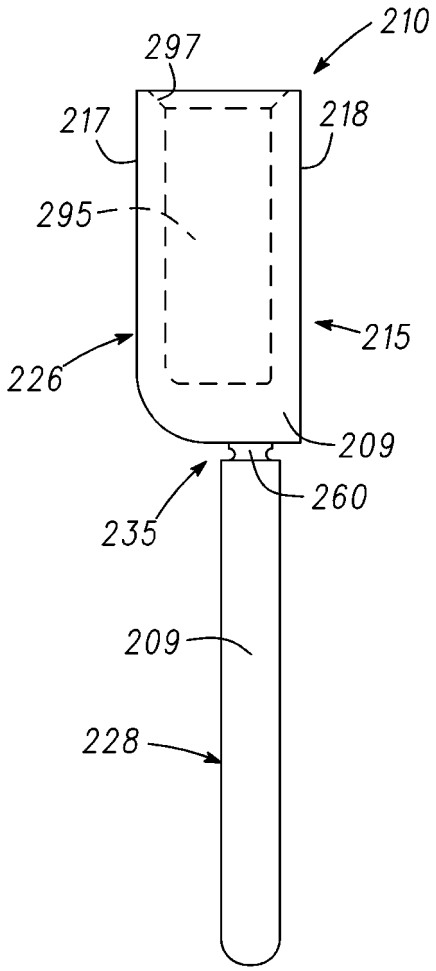

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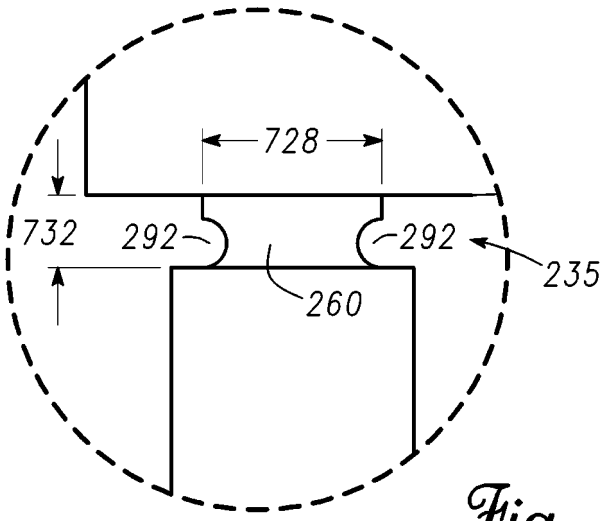
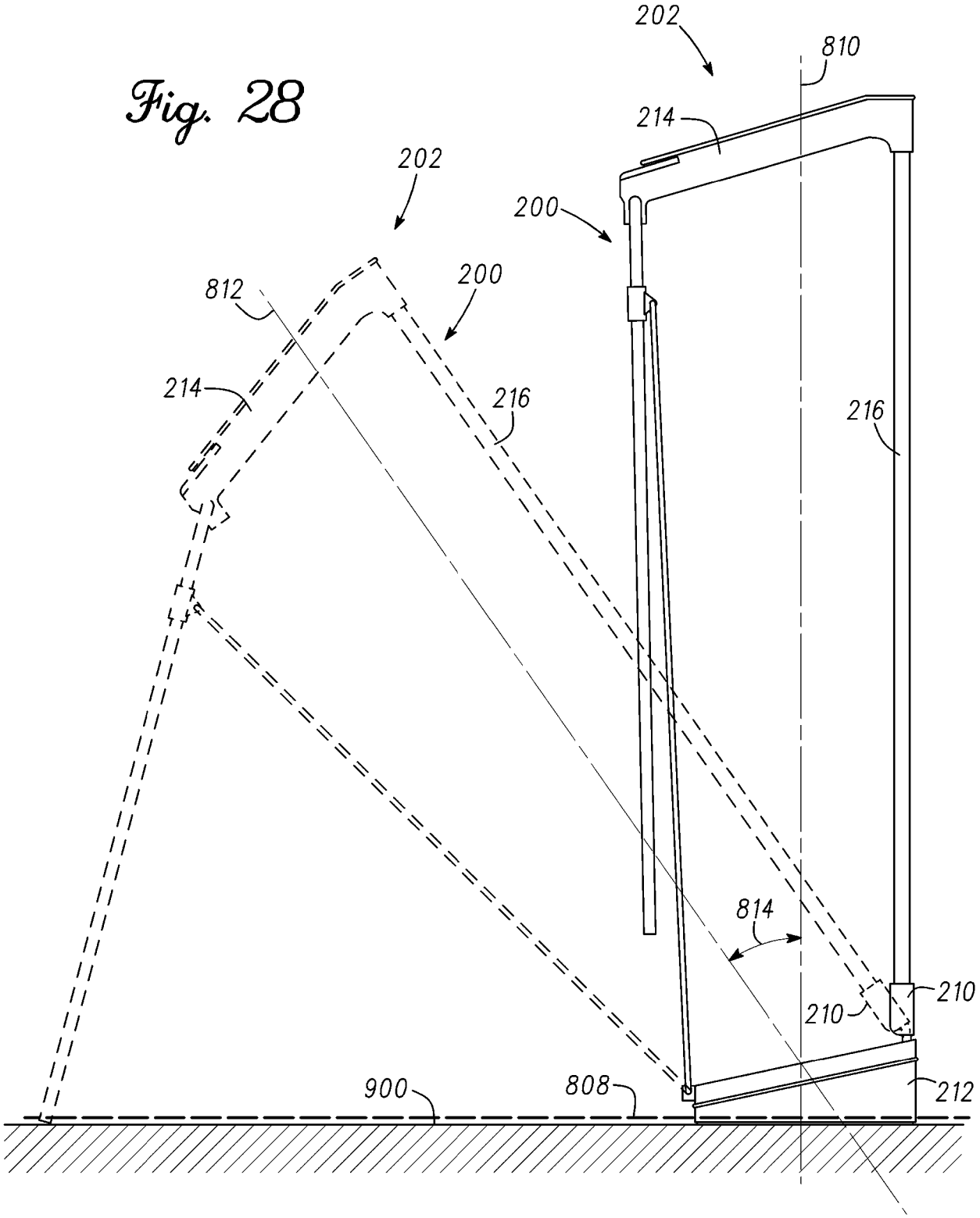
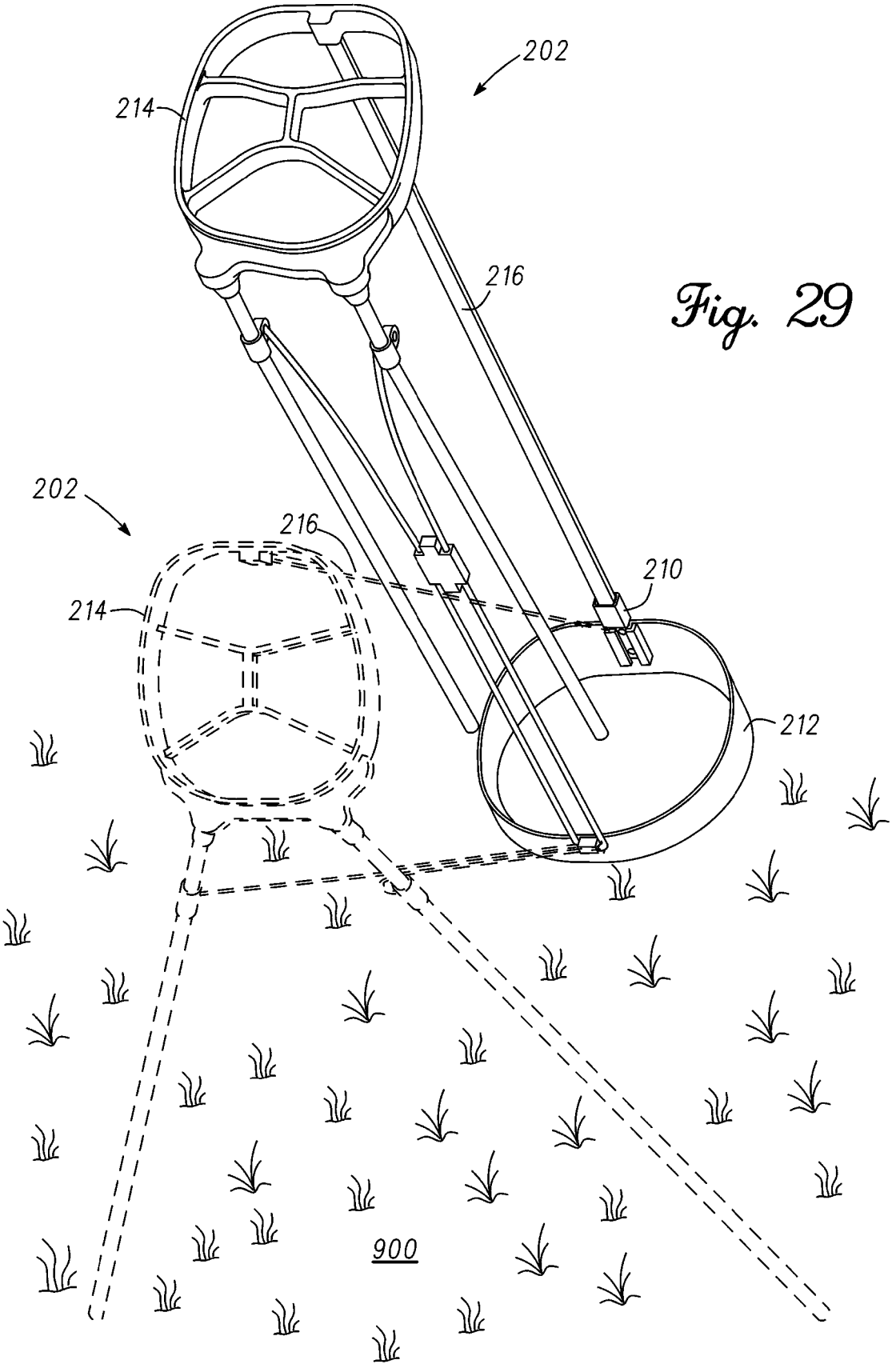


Fig. 34

Fig. 28





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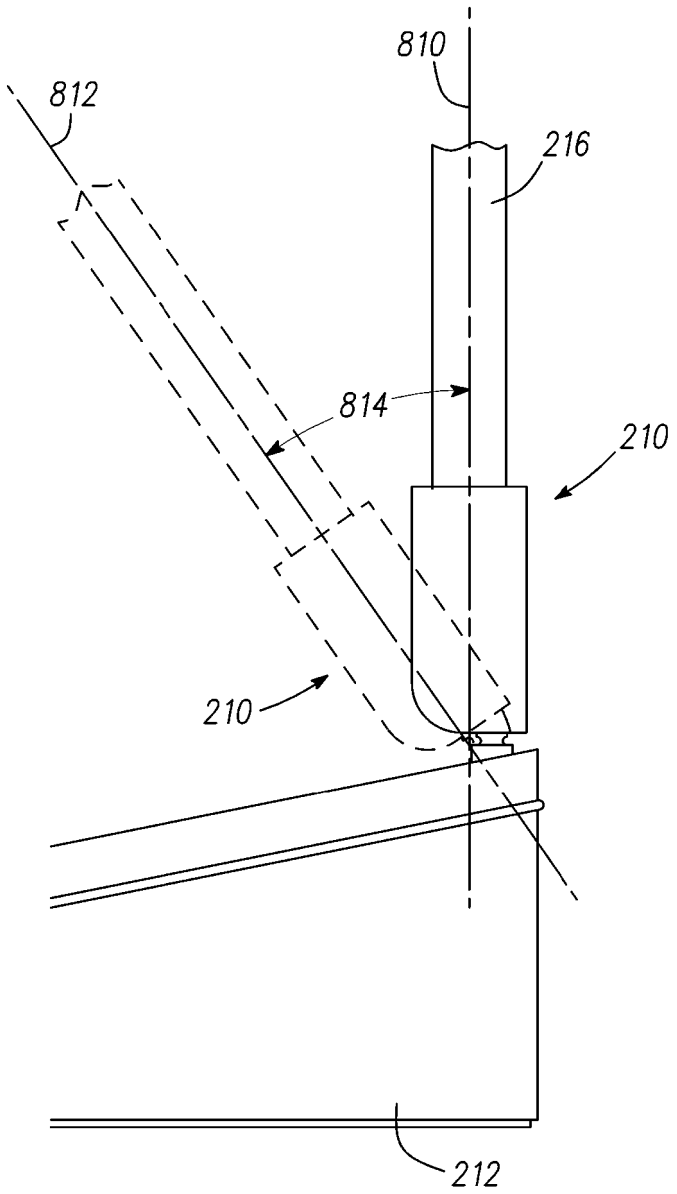
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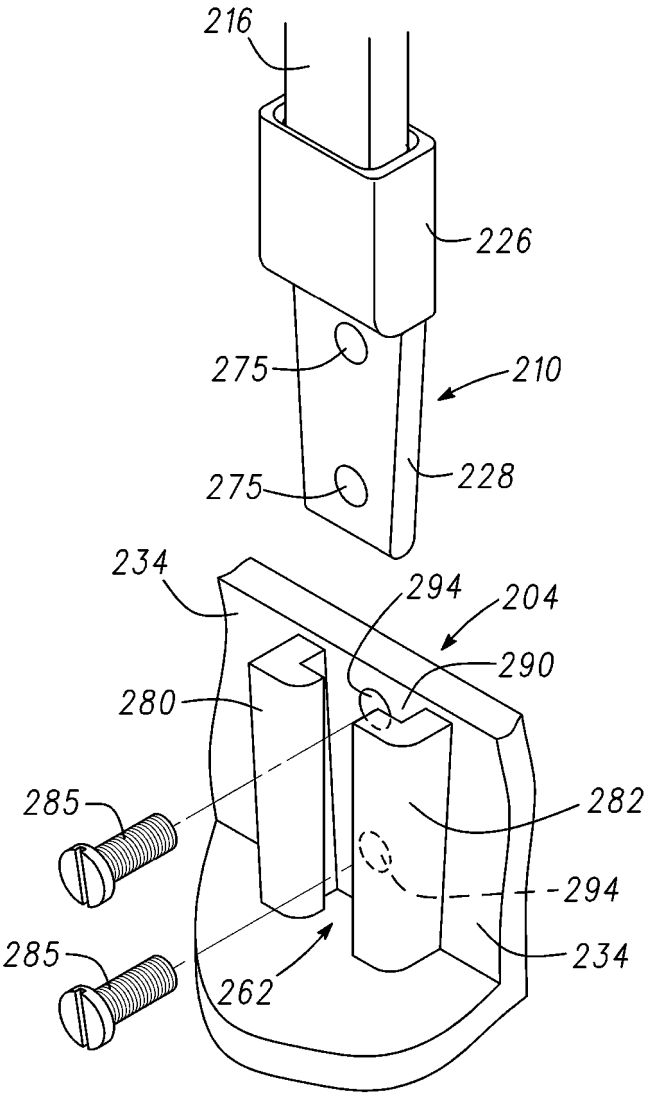
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Fig. 31

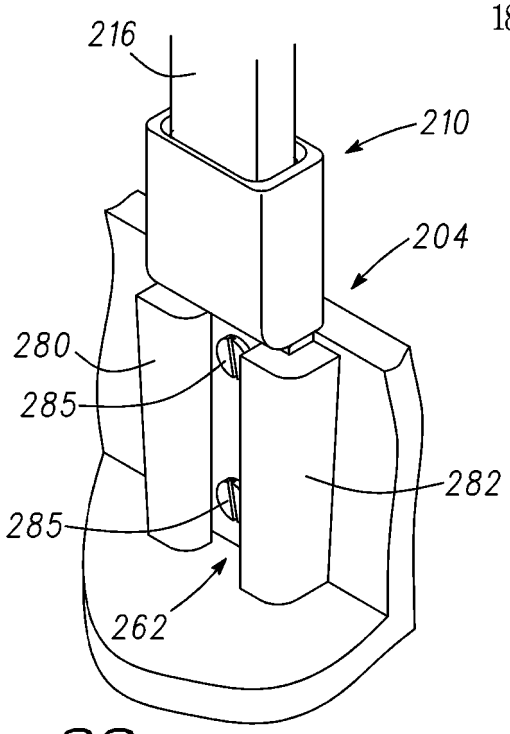


Fig. 32

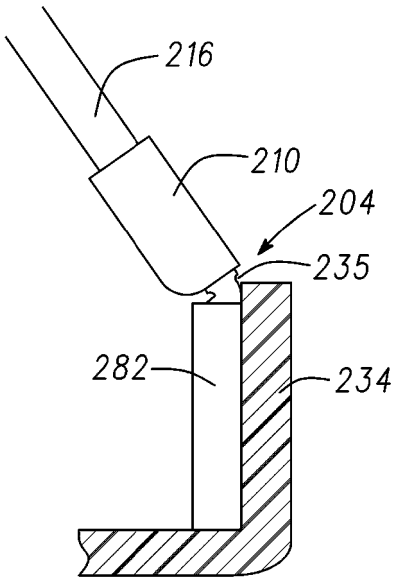
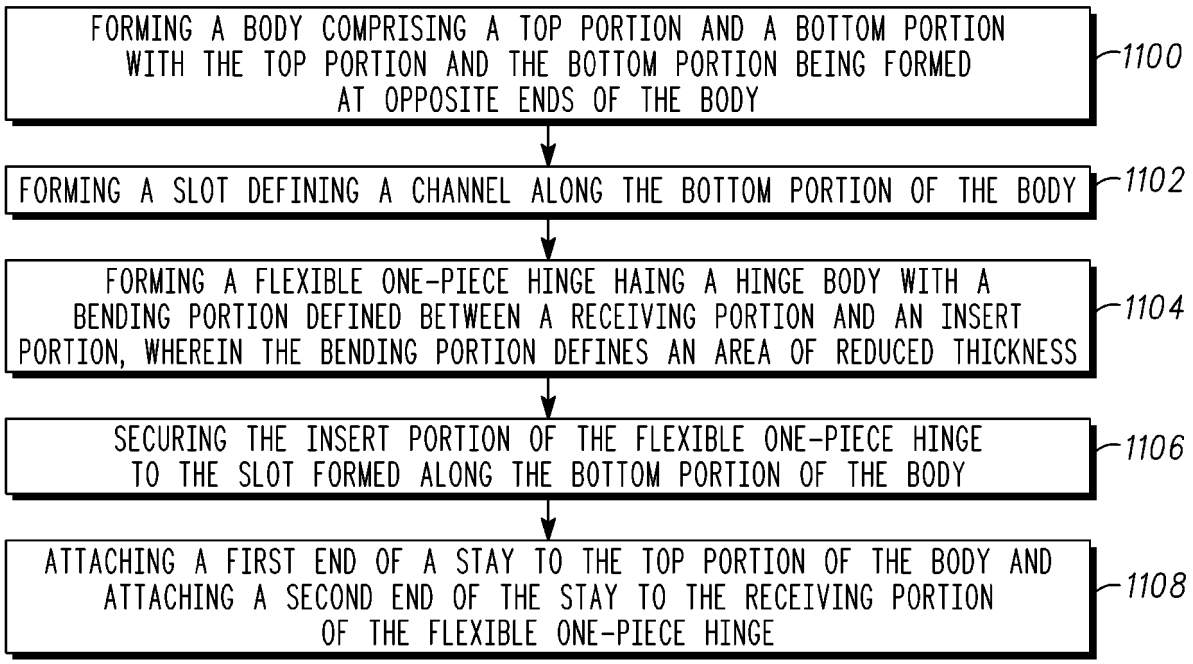


Fig. 33

Fig. 35



GOLF BAGS WITH A STABILIZATION AND REINFORCEMENT SYSTEM AND METHODS TO MANUFACTURE GOLF BAGS WITH THE STABILIZATION AND REINFORCEMENT SYSTEM

[0001] The present disclosure relates to golf bags with an extensible bag stand, and in particular to golf bags having an extensible bag stand with a stabilization and reinforcement system.

[0002] Most golf bags may be in the form of a tubular fabric or leather container having a generally cylindrical configuration with a closed bottom end and an open top end through which golf clubs are inserted into and removed from the golf bag. Although golf bags are manufactured in a variety of sizes and materials so as to better suit various intended uses, golf bags are conventionally grouped into two basic classes. The first class of golf bags are relatively larger and heavier golf bags designed to be carried by a pull cart or transported by a golf cart, while the second class of golf club bags are generally smaller and lighter golf bags designed to be carried by the individual during play.

[0003] The second class of golf bags are usually referred to as "carry bags" which are carried by the individual using a carrying strap that may be used to lift and carry the golf bag. Many of these types of carry bags have an extensible bag stand devised for supporting the golf bag in a substantially upright angular position whenever the individual sets down the golf bag on a surface. A widely used and well known extensible golf bag stand has been devised for demountable attachment to the side of golf bags and is disclosed in U.S. Patent No. 4,834,235 which describes a golf bag stand having a pair of legs with one end pivotally attached to one portion of the golf bag and another end engaged to a retraction mechanism. The retraction mechanism is configured to operate with a toggle mechanism that causes the retraction mechanism to retract and collapse the pair of legs from a deployed position to a retracted position whenever the golf bag is lifted and carried by the individual. In addition, such carry bags having an extensible bag stand may include a stabilization system that allows the closed bottom end of the golf bag to remain substantially flat and along the same plane when the golf bag is placed from a substantially upright position when initially placed on a surface to a substantially upright angled position after the pair of legs of the extensible bag stand have been

deployed. Known stabilization systems that allow the closed bottom end of the golf bag to remain on the same plane between the substantially upright position to the substantially upright angled position may include a bottom portion disposed adjacent or proximate to the closed bottom end of the golf bag and an top portion disposed adjacent or proximate to the open top end of the golf bag. The stabilization system further includes a flexible stay having a first end engaged to the top portion and a second end disposed within a pocket formed by the fabric of the golf bag adjacent or proximate to the bottom portion located along the closed bottom end of the golf bag. In addition, the stabilization system allows the closed bottom end of the golf bag to flex slightly when the golf bag is placed on a surface and the extensible bag stand is deployed such that the golf bag assumes a substantially upright angled position. However, the flexible stay can become loose or disengaged from the fabric pocket at times, which can require the individual to take the time to adjust or reinsert the flexible stay back into the fabric pocket.

[0004] Accordingly, in a first aspect, the present invention provides a bag according to Claim 1. In a further aspect, the present invention provides a flexible one-piece hinge according to Claim 12. In a yet further aspect, the present invention provides a method according to Claim 16.

[0005] Preferably, the bending portion defines one or more cut-outs, wherein the one or more cut-outs comprise at least one of a channel, a recess, a hole, a cut-away, or a cavity.

[0006] Preferably, the bending portion defines an area of reduced thickness having a first thickness that is greater than a second thickness defined by the receiving portion or a third thickness defined by the insert portion.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. **1** is perspective view of a first embodiment of a golf bag having an extensible bag stand showing the stabilization and reinforcement system;

[0008] FIG. **2** is an elevated perspective view of the extensible bag stand with the stabilization and reinforcement system of FIG. **1**;

[0009] FIG. **3** is a front view of the extensible bag stand with the stabilization and reinforcement system of FIG. **1**;

[0010] FIG. **4** is a rear view of the extensible bag stand with the stabilization and reinforcement system of FIG. **1**;

[0011] FIG. **5** is an exploded view of the extensible bag stand with the stabilization and reinforcement system of FIG. **1**;

[0012] FIG. **6** is a perspective view of a hinge used in the stabilization and reinforcement system of FIG. **1**;

[0013] FIG. **7** is a front view of the hinge of FIG. **6**;

[0014] FIG. **8** is a top view of the hinge of FIG. **6**;

[0015] FIG. **9** is a bottom view of the hinge of FIG. **6**;

[0016] FIG. **10** is a side view of the hinge of FIG. **6**;

[0017] FIG. **11** is an illustration showing the golf bag with the extensible bag stand of FIG. **1** in a substantially upright position;

[0018] FIG. **12** is an illustration showing the golf bag with the extensible bag stand of FIG. **1** in an angled position;

[0019] FIG. **13** is a side view showing a sequence of the extensible bag stand of FIG. **1** in a substantially upright position to an angled position in phantom;

[0020] FIG. **14** is a perspective view showing the sequence of the extensible bag stand shown in FIG. **13**;

[0021] FIG. **15** is an enlarged view showing the pivoting action of the hinge when the extensible bag stand of FIG. **1** is placed from a substantially upright position to an angled position;

[0022] FIG. **16** is a flow chart illustrating a method for manufacturing a golf bag with the extensible bag stand having the stabilization and reinforcement system of FIG. **1**;

[0023] FIG. **17** is a perspective view of a second embodiment of a golf bag having an extensible bag stand showing another stabilization and reinforcement system:

[0024] FIG. **18** is an elevated perspective view of the extensible bag stand with the stabilization and reinforcement system of FIG. **17**;

[0025] FIG. **19** is a front view of the extensible bag stand with the stabilization and reinforcement system of FIG. **17**;

[0026] FIG. **20** is a rear view of the extensible bag stand with the stabilization and reinforcement system of FIG. **17**;

[0027] FIG. **21** is an exploded view of the extensible bag stand with the stabilization and reinforcement system of FIG. **17**;

[0028] FIG. **22** is a perspective view of a flexible one-piece hinge used in the stabilization and reinforcement system of FIG. **17**;

[0029] FIG. **23** is front view of the flexible one-piece hinge of FIG. **22**;

[0030] FIG. **24** is a top view of the flexible one-piece hinge of FIG. **22**;

[0031] FIG. **25** is a bottom view of the flexible one-piece hinge of FIG. **22**;

[0032] FIG. **26** is a side view of the flexible one-piece hinge of FIG. **22**;

[0033] FIG. **27** is an opposing side view of the flexible one-piece hinge of FIG. **22**;

[0034] FIG. **28** is a side view sequence of the extensible bag stand of FIG. **17** in a substantially upright position to an angled position shown in phantom;

[0035] FIG. **29** is a perspective view showing the sequence of the extensible bag stand shown in FIG. **27**;

[0036] FIGS. **30** and **31** illustrate a sequence for securing the flexible one-piece hinge to the golf bag;

[0037] FIG. **32** is an enlarged view showing the pivot of the flexible one-piece hinge when the extensible bag stand of FIG. **17** is placed from a substantially upright position to an angled position;

[0038] FIG. **33** is an enlarged view of the flexible one-piece hinge shown in FIG. **26**;

[0039] FIG. **34** is an enlarged view of the bending portion of the flexible one-piece hinge shown in FIG. **26**; and

[0040] FIG. **35** is a flow chart illustrating a method for manufacturing the golf bag having the stabilization and reinforcement system of FIG. **17**.

[0041] Corresponding reference characters indicate corresponding elements among the various views of the drawings. The headings used in the figures do not limit the scope of the claims.

DESCRIPTION

[0042] As described herein, golf bags having an extensible bag stand with a stabilization and reinforcement system, and methods of manufacturing such golf bags with the stabilization and reinforcement system are configured to provide stability and structural reinforcement as the golf bag is placed from a substantially upright position when initially placed on a surface to an angular position when the extensible bag stand is deployed. The stabilization and reinforcement system includes a stay having a first end engaged to a top portion located adjacent or proximate the open top end of the golf bag, and a second end engaged to a bottom portion located adjacent or proximate the closed bottom end of the golf bag. In some embodiments, the second end of the stay is engaged to a mechanical two-piece hinge secured to the bottom portion that establishes a secure connection with a pivot point that allows the stay to pivot while the bottom portion and the closed bottom end of the golf bag maintain a substantially parallel orientation relative to the surface. In some embodiments, the second end of the stay is engaged to a flexible one-piece hinge that also allows the stay to pivot while the bottom portion and the closed portion end of the golf bag maintain a substantially parallel orientation relative to the surface.

[0043] Referring to the drawings, embodiments of golf bags are illustrated and generally indicated as **100** and **200** in FIGS. **1**-**35**. In a first embodiment shown in FIGS. **1**-**16**, a golf bag, designated **100**, includes a body **104** defining an open top end **106** and a closed bottom end **108**. As shown, the body **104** includes an extensible bag stand **101** for supporting the body **104** in an angular position when an individual sets down the golf bag **100** on a surface **900** (FIGS. **11**-**14**). Referring to FIG. **2**, the extensible bag stand **101** includes a retraction mechanism **111** having an upper end **147** connected to a plurality of legs **120** and a lower end **148** connected to a toggle switch mechanism **124** for retracting the plurality of legs **120** when the extensible bag stand **101** is placed from the deployed position to the retracted position. In one embodiment, the plurality of legs may be a first leg **121** and a second leg **122**.

[0044] As used herein the term “deployed position” shall mean the position of the plurality of legs **120** being substantially deployed outwardly from the body **104** when the individual sets the golf bag **100** down such that the plurality of legs **120** contact the surface **900**, wherein the term “retracted position” shall mean the position

of the plurality of legs **120** being substantially retracted inwardly towards the body **104** such that the plurality of legs **120** no longer contact the surface **900** as the individual lifts up the golf bag **100**.

[0045] The retraction mechanism **111** for the extensible bag stand **101** may be a spring wire **119** made of a resilient metallic material that bias the plurality of legs **120** outwardly when the body **104** is placed in the deployed position and then retracts the plurality of legs **120** inwardly to the retracted position whenever the body **104** is lifted off surface **900**. The spring wire **119** may be a single wire arrangement or a plurality of wires. Alternatively, the spring wire **119** may be made from any other resilient material, such as plastic or a metallic composite, capable of repeatedly applying a bias to the plurality of legs **120** in either the deployed position or the retracted position by the extensible bag stand **101**.

[0046] As shown, one example of the spring wire **119** may be first and second wires **123** and **125** that engage the respective pair of legs **121** and **122**. Specifically, the upper end **147** of the first and second wires **123** and **125** engage a respective leg **121** and **122**, while the lower end **148** of the first and second wires **123** and **125** engage the toggle switch mechanism **124** that forms a part of the extensible bag stand **101** for causing either the deployed position or the retracted position of the plurality of legs **120** by the extensible bag stand **101**. In some embodiments, the first and second wires **123** and **125** may be secured together through a coupler **129**.

[0047] As further shown, the pair of legs **121** and **122** each define a first end **149** configured to support the body **104** in a substantially upright position on the surface **900** as well as a second end **151** that may be pivotally engaged to an top portion **114** attached proximate or adjacent to the open top end **106** of the golf bag **100**. The pivotal engagement of each second end **151** to the top portion **114** may be a pin and socket arrangement which allows movement of the plurality of legs **120** along a two-dimensional plane or a ball and socket arrangement that allows movement of the plurality of legs **120** along a three-dimensional plane. In one embodiment, the structure and operation of the extensible bag stand **101** may be the extensible bag stand disclosed in U.S. Patent No. 4,834,235, which is incorporated by reference in its entirety. However, the apparatus, articles of manufacture, and methods described herein are not limited in this regard.

[0048] Referring to FIGS. **2-5**, in one embodiment the extensible bag stand **101** includes a stabilization and reinforcement system **102** that provides a means for reinforcing the structure of the golf bag **100** as well as stabilize the golf bag **100** when the golf bag **100** is placed from a substantially upright position when initially set on the surface **900** to an angular position when the extensible bag stand **101** places the golf bag **100** in the deployed position. As shown, the stabilization and reinforcement system **102** includes a bottom portion **112** engaged to the top portion **114** through a stay **116**. The stay **116** defines a first end **130** configured to engage a receptacle **139** formed along a side portion **137** of the top portion **114** to secure the stay **116** therein and a second end **132** configured to engage a hinge **110** that is engaged to the bottom portion **112** for permitting the stay **116** to pivot when the golf bag **100** is placed in the deployed position. In some embodiments, the first end **130** of the stay **116** may be formed integral with the top portion **114**. In some embodiments, the stay **116** may be elongated such that the stay **116** extends substantially the length of the body **104**. In addition, the stay **116** may be made from a flexible material that permits the stay **116** to bend or flex under stress.

[0049] As shown in FIG. **2**, the top portion **114** forms a divider **131** that is configured to form a plurality of openings **133** for permitting one or more golf clubs (not shown) to be inserted through the open top end **106** of the elongated tubular body **104**. The bottom portion **112** includes a side portion **134** that surrounds a lower portion **136**. In one arrangement, the toggle switch mechanism **124** is secured to one part of the side portion **134** and the hinge **110** is secured to an opposing part of the side portion **134** along the bottom portion **112**.

[0050] Referring to FIGS. **6-10**, the hinge **110** includes a hinge body **115** having a base portion **126** and a back portion **128** with a pivot portion **150** formed between the base and back portions **126** and **128** that permits the back portion **128** to pivot relative to the base portion **126**. The hinge body **115** defines a front surface **117** and a rear surface **118**. As further shown, the back portion **128** defines a generally triangular configuration forming a bottom side **153** and a top side **154** bounded by a first side **155** and an opposing second side **156**, while the base portion **126** defines a generally rectangular configuration forming a bottom side **157** and a top side **158** bounded by a third side **159** and an opposing fourth side **160**. Although the above example may describe and the figures may depict a particular shape for the back portion **128** of the hinge **110**, the apparatus, systems, methods, and article

of manufacture described herein may be include a back portion **128** of the hinge **110** may be other suitable shapes (e.g., rectangular configuration, lock-step configuration, U-shaped configuration, etc.).

[0051] Referring to FIGS. **6** and **7**, the base portion **126** forms a plurality of openings **152** configured to receive a respective plurality of screws (not shown) that secure either the front surface **117** or rear surface **118** of the hinge body **115** to the bottom portion **112**. In one embodiment shown in FIG. **2**, the rear surface **118** of the hinge body **115** may be secured proximate or adjacent to a lip **145** formed along the edge of the side portion **134** defined by the bottom portion **112**.

[0052] As shown in FIGS. **6-10**, the back portion **128** of the hinge **110** defines a center spine **144** that forms a plurality of first raised portions **142** in juxtaposition with a respective plurality of second raised portions **143**. Referring to FIG. **10**, the plurality of first raised portions **142** extends outwardly from the front surface **117** and the plurality of second raised portions **143** extends outwardly from the rear surface **118** in alternate opposing fashion relative to each other to collectively form a central channel **146** (FIG. **8**) along a latitudinal axis **804** (FIG. **7**) of the central spine **144**. In one embodiment, the central channel **146** is configured to receive and secure the distal end **132** of the stay **116** therein.

[0053] Referring specifically to FIGS. **6** and **7**, in one embodiment the back portion **128** of the hinge **110** may have dimensions in which the first and second sides **155** and **156** have a length **702** of **4.5** inches, the top side **154** has a length **704** of **1** inch, and the bottom side **153** has a length **700** of **4** inches, the top side **154** has a thickness **710** of **0.25** inches, and the center spine **144** formed by the back portion **128** has an inner diameter **706** of **0.5** inches. In one embodiment, the base portion **126** may have dimensions in which the third side **159** has a length **708** of **0.875** inches and fourth side **160** has the same length **708** of **0.875** inches. In some embodiments, length **700** may be between **2** inches and **6** inches, length **702** may be between **2** inches and **7** inches, the length **704** may be between **0.5** inches and **1.5** inches, the inner diameter **706** may be between **0.25** inches and **1** inches, the length **708** is between **2.5** inches and **.5** inches, and the thickness **710** may be between **.125** inches and **1** inches. Though particular dimensions for the invention are listed above, the dimensions are not limited in this regard.

[0054] While the above examples may describe and the figures may depict the apparatus, systems, methods, and articles of manufacture with multiple

components as separate parts, two or more of these components may be a single integral part. In one example, the hinge **110** and the bottom portion **114** may be a single integral part. In another example, the hinge **110** and the stay **116** may be a single integral part. In yet another example, the top portion **112** and the stay **116** may be a single integral part. The apparatus, systems, methods, and articles of manufacture described herein are not limited in this regard.

[0055] Referring to FIGS. **11** and **12**, the golf bag **100** is shown in a substantially upright position (FIG. **11**) with the extensible bag stand **101** in the retracted position and in a substantially angular upright position (FIG. **12**) with the extensible bag stand **101** in the deployed position. As shown in FIG. **11**, when the golf bag **100** is set on the surface **900** in the substantially upright position the upper and bottom portions **112** and **114** of the stabilization and reinforcement system **102** are substantially aligned in parallel with longitudinal axis **800** and the stay **116** is substantially aligned in parallel with latitudinal axis **802**. When the extensible bag stand **101** is in the deployed position as shown in FIG. **12**, the top portion **114** and stay **116** is aligned along center axis **804**, which is offset by a range of motion **806** from the latitudinal axis **802**, while the bottom portion **112** remains substantially aligned in parallel along longitudinal axis **800** due to the swiveling operation of the hinge **110** in which the back portion **128** rotates relative to the stationary base portion **126** along the pivot portion **150**.

[0056] Referring to FIGS. **13** and **14**, the stabilization and reinforcement system **102** is illustrated when the extensible bag stand **102** is in the retracted position and in the deployed position (shown in phantom). As noted above, when the extensible bag stand **101** is in the retracted position the stay **116** is substantially parallel with the latitudinal axis **802** and substantially perpendicular with the longitudinal axis **800**, while the extensible bag stand **101** is in the deployed position the stay **116** is substantially parallel with the center axis **804**, which forms a range of motion **806** relative to the latitudinal axis **802**. For example, the range of motion **806** may be between **45** degrees to **90** degrees. In addition, the bottom portion **112** remains substantially parallel with the longitudinal axis **800** regardless of whether the extensible bag stand **101** is in the retracted or deployed position since the pivot portion **150** of the hinge **110** allows the back portion **128** to pivot relative to the stationary base portion **126** as illustrated in FIG. **15**. As such, the arrangement of the stay **116** having the first end **130** secured to the top portion **114** and the second end

132 engaged to the hinge **110** stabilizes the golf bag **100** when the extensible bag stand **101** is in the deployed position, while also providing a frame that structurally reinforces the golf bag **100**. The pivot portion **150** may be any structural arrangement that permits the back portion **128** to pivot relative to the base portion **126**.

[0057] Referring to FIG. **16**, a flow chart is shown illustrating a method for manufacturing the golf bag **100** having the extensible bag stand **101** with the stabilization and reinforcement system **102**. At block **1000**, forming a body **104** comprising a top portion **114** and a bottom portion **112** with the top portion **114** and bottom portion **112** being formed at opposite ends of the body **104**. At block **1002**, attaching a hinge **110** to the bottom portion **112** of the body **104** with the hinge **110** having a base portion **126**, a back portion **128**, and a pivot portion **150** between the base portion **126** and the back portion **128** with the back portion **128** being configured to pivot relative to the base portion **126**. At block **1004**, attaching a first end **130** of a stay **116** to the top portion **114** and a second end **132** of the stay **116** to the bottom portion **112** with the first and second ends **130** and **132** being on opposite ends of the stay **116**. In some embodiments, one or more first raised portions **142** and one or more second raised portions **143** may be formed on the back portion **128** of the hinge **110** to form a channel **146** to receive a portion proximate to the first end **130** of the stay **116**. In some embodiments, at least one of the one or more first raised portions **142** may be formed in opposing juxtaposition relative to at least one or more second raised portions **143** to form the channel **146**. In addition, the back portion **128** and base portion **126** of the hinge **110** may be configured to form an angle of about **180** degrees when the golf bag **100** is in a substantially upright position and an angle less than **180** degrees when the golf bag is in an angled position.

[0058] While a particular order of actions is illustrated in FIG. **16**, these actions may be performed in other temporal sequences. For example, two or more actions depicted in FIG. **16** may be performed sequentially, concurrently, or simultaneously. Alternatively, two or more action depicted may be performed in reverse order. Further one or more actions in FIG. **16** may not be performed at all. The apparatus, methods, and articles of manufacture described herein are not limited in this regard.

[0059] Referring to FIGS. **17-35**, a second embodiment of the golf bag, designated **200**, is illustrated. In general as shown in FIG. **17**, the golf bag **200** includes a body **204** defining an open top end **206** and a closed bottom end **208**. As shown, the body **204** includes an extensible bag stand **201** for supporting the body **204** in a substantially angular position when an individual sets down the golf bag **200** on the surface **900** (FIGS. **28** and **29**). Referring to FIGS. **17** and **18**, the extensible bag stand **201** includes a retraction mechanism **211** having an upper end **247** connected to a plurality of legs **220** and a lower end **248** connected to a toggle switch mechanism **224** for retracting the plurality of legs **220** when the extensible bag stand **201** is placed from the deployed position to the retracted position as shown in FIG. **28**. In one embodiment, the plurality of legs may be a first leg **221** and a second leg **222**.

[0060] Similar to the retraction mechanism **111** for golf bag **100**, the extensible bag stand **201** for golf bag **200** may be a spring wire **219** made of a resilient metallic material that bias the plurality of legs **220** outwardly when the body **204** is placed in a deployed position and then retracts the plurality of legs **220** inwardly to the retracted position whenever the body **204** (FIG. **17**) is lifted off surface **900** (FIGS. **28** and **29**). The spring wire **219** may be a single wire arrangement or a plurality of wires. Alternatively, the spring wire **219** may be made from any other resilient material, such as plastic or metallic composite, capable of repeatedly applying a bias to the plurality of legs **220** in either the deployed position or the retracted position by the extensible bag stand **201**.

[0061] As shown specifically in FIGS. **18 – 20**, one example of the spring wire **219** may be first and second wires **223** and **225** that engage the respective pair of legs **221** and **222**. Specifically, the upper end **247** of the first and second wires **223** and **225** engage a respective leg **221** and **222**, while the lower end **248** of the first and second wires **223** and **225** engage the toggle switch mechanism **224** that forms a part of the extensible bag stand **201** for causing either the deployed position or the retracted position of the plurality of legs **220** by the extensible bag stand **201**. In some embodiments, the first and second wires **223** and **225** may be secured together through a coupler **229**.

[0062] As further shown, the pair of legs **221** and **222** each define a first end **249** configured to support the body **204** in a substantially upright position on the surface **900** (FIGS. **28** and **29**) as well as a second end **251** that may be pivotally

engaged to a top portion **214** attached proximate or adjacent to the open top end **206** of the golf bag **200**. The pivotal engagement of each second end **251** to the top portion **214** may be a pin and socket arrangement which allows movement of the plurality of legs **220** along a two-dimensional plane or a ball and socket arrangement that allows movement of the plurality of legs **220** along a three-dimensional plane. In one embodiment, the structure and operation of the extensible bag stand **201** may be the extensible bag stand disclosed in U.S. Patent No. 4,834,235, which is incorporated by reference in its entirety. However, the apparatus, articles of manufacture, and methods described herein are not limited in this regard.

[0063] Referring to FIGS. **17-21**, in one embodiment the extensible bag stand **201** includes a stabilization and reinforcement system **202** that provides a means for reinforcing the structure of the golf bag **200** as well as stabilize the golf bag **200** when the golf bag **200** is placed from a substantially upright position when initially set on the surface **900** (FIGS. **28** and **29**) to an angular position when the extensible bag stand **201** places the golf bag **200** in the deployed position. As shown, the stabilization and reinforcement system **202** includes a bottom portion **212** engaged to the top portion **214** of the golf bag **200** through a stay **216**. As shown in FIGS. **18-20**, the stay **216** defines a first end **230** configured to engage a receptacle **239** formed along a side portion **237** of the top portion **214** to secure the stay **216** therein and a second end **232** configured to engage a flexible one-piece hinge **210** that is engaged to the bottom portion **212** of the golf bag **200** for permitting the stay **216** to pivot when the golf bag **200** is placed in the deployed position. In some embodiments, the first end **230** of the stay **216** may be formed integral with the top portion **214**. In some embodiments, the stay **216** may be elongated such that the stay **216** extends substantially the length of the body **204**. In addition, the stay **216** may be made from a flexible material that permits the stay **216** to bend or flex under stress.

[0064] Referring back to FIG. **18**, the top portion **214** forms a divider **231** that is configured to form a plurality of openings **233** for permitting one or more golf clubs (not shown) to be inserted through the open top end **206** of the body **204**. The bottom portion **212** includes a side portion **234** that surrounds a lower portion **236**. In one arrangement, the toggle switch mechanism **224** is secured to one part of the side portion **234** and the flexible one-piece hinge **210** is secured to an opposing part of the side portion **234** proximate the bottom portion **212**. As shown in FIGS. **18**, **19**,

21, 31 and **32**, the side portion **234** of the golf bag **200** includes a slot **262** defining a channel **290** configured to engage the flexible one-piece hinge **210** as shall be discussed in greater detail below. As shown specifically in FIG. **31**, in some embodiments the slot **262** includes a first rail **280** and an opposing second rail **282** molded or secured to the side portion **234** of the golf bag **200** to form channel **290**.

[0065] Referring to FIGS. **22-27**, in one embodiment the flexible one-piece hinge **210** includes a hinge body **215** that defines a side surface **209**, a front surface **217**, and a rear surface **218**. In addition, the hinge body **215** defines a receiving portion **226** and an insert portion **228** with a bending portion **235** (FIGS. **22**, **23**, **26** and **27**) formed between the receiving and insert portions **226** and **228**. The bending portion **235** is configured to bend and allow the receiving portion **226** to be oriented at an angle relative to the insert portion **228** when the golf bag **200** is placed from a substantially upright position when initially set on the surface **900** to an angular position as the extensible bag stand **201** places the golf bag **200** in the deployed position as shown in FIGS. **28** and **29**. In this manner, the receiving portion **226** is bent from the first longitudinal axis **810** wherein the receiving portion **226** is aligned with the insert portion **228** to the second longitudinal axis **812** wherein the receiving portion **226** is not aligned with the insert portion **228**.

[0066] Referring back to FIGS. **22**, **23** and **31**, in some embodiments the insert portion **228** defines a pair of holes **275** configured to be aligned with a respective pair of holes **294** (FIG. **31**) defined by the side portion **234** of the golf bag **200** when engaging the flexible one-piece hinge **210** to the side portion **234**. As shown in FIGS. **31** and **32**, to engage the flexible one-piece hinge **210** to the body **204**, a pair of screws **285** may be inserted through the respectively aligned holes **275** and **294** to secure the insert portion **228** of the flexible one-piece hinge **210** to the side portion **234** of the golf bag **200**.

[0067] As shown in FIGS. **26**, **27**, **33** and **34**, in some embodiments the bending portion **235** is configured to define an area of reduced thickness **260** in which the thickness of the bending portion **235** is less relative to the thickness of the receiving portion **226** and the thickness of the insert portion **228**, respectively. As shown in FIGS. **28** and **30**, the area of reduced thickness **260** (FIG. **34**) in combination with the inherent flexibility of the material that comprises the flexible one-piece hinge **210**, allows the receiving portion **226** to be oriented from a first longitudinal axis **810** to a second longitudinal axis **812** such that an angle **814** is

formed between the respective axes **810** and **812** when the flexible one-piece hinge **210** is secured to the side portion **234** of the body **204** as the golf bag **200** is placed in a substantially angular position shown in FIGS. **28** and **29**.

[0068] In some embodiments as shown in the enlarged view of FIG. **34**, the bending portion **235** may also define one or more cut-outs **292** that also reduces the thickness of the bending portion **235** and facilitates the bending of the flexible one-piece hinge **210** along the bending portion **235** as described above. For example, the one or more cut-outs **292** may define at least one of a channel, a recess, hole, a cut-away and/or a cavity. In addition, the one or more cut-outs **292** may be formed along the front surface **217** and/or back surface **218** of the bending portion **235**, although the one or more cut-outs **292** may also be formed along the side surface **209** of the bending portion **235**. In some embodiments, the cut-outs **292** may be created by removing one or more portions of the hinge body **215** during manufacture along of the bending portion **235**. In other embodiments, the flexible one-piece hinge **210** may be molded using a conventional molding process to form the cut-outs **292** rather than removing one or more portions of the hinge body **215** to accomplish the same. The apparatus, systems, methods, and articles of manufacture of the flexible one-piece hinge **210** are not limited in this regard.

[0069] Referring to FIGS. **24**, **26** and **27**, the receiving portion **226** of the flexible one-piece hinge **210** defines an opening **297** in communication with a cavity **295**. The cavity **295** is configured to receive the second end **232** of the stay **216** therein as shown back in FIG. **18**. In some embodiments, the second end **232** may have an adhesive material applied thereto to secure the stay **216** within the receiving portion **226**. In some embodiments, the second end **232** may be secured to the receiving portion **226** through a screw or other mechanical attachment means, while in other embodiments the second end **232** of the stay **216** may be freely disposed within the cavity **295**. The apparatus, systems, methods, and articles of manufacture of the flexible one-piece hinge **210** are not limited in this regard.

[0070] Referring to FIG. **35**, a flow chart is shown illustrating a method for manufacturing the golf bag **200** having the extensible bag stand **201** with the stabilization and reinforcement system **202**. At block **1100**, forming a body **204** comprising a top portion **214** and a bottom portion **212** with the top portion **214** and bottom portion **212** being formed at opposite ends of the body **204**. At block **1102**, forming a slot **262** defining a channel **290** along the bottom portion **212** of the body

204. At block **1104**, forming a flexible one-piece hinge **210** having a hinge body **215** with a bending portion **235** defined between a receiving portion **226** and an insert portion **228**, wherein forming the bending portion **235** includes forming an area of reduced thickness **260**. At block **1106**, securing the insert portion **228** of the flexible one-piece hinge **210** into the slot **262**. At block **1108**, attaching a first end **230** of a stay **216** to the top portion **214** of the golf bag **200** and attaching a second end **232** of the stay **216** to the receiving portion **226** of the flexible one-piece hinge **210**.

[0071] While a particular order of actions is illustrated in FIG. **35**, these actions may be performed in other temporal sequences. For example, two or more actions depicted in FIG. **35** may be performed sequentially, concurrently, or simultaneously. Alternatively, two or more action depicted may be performed in reverse order. Further one or more actions in FIG. **35** may not be performed at all. The apparatus, methods, and articles of manufacture described herein are not limited in this regard.

[0072] In some embodiments, the hinge body **215** may be made from at least one of a flexible material, such as a polyethylene material, a flexible plastic material, and/or an organic or inorganic rubber material, that allows the bending portion **235** to flex or otherwise bend in response to the golf bag **200** being placed in a substantially angular position.

[0073] In some embodiments, the flexible one-piece hinge **210** may have the following dimensions as shown in FIGS. **22**, **24** and **34**. The receiving portion **226** of the flexible one-piece hinge **210** may have a width **714** of 2.00 cm, a length **716** of 2.50 cm, and a thickness **726** of 1.00 cm, while the insert portion **228** may have a length **715** of 3.5 cm, a width **718** of 1.80 cm, and a thickness **724** of 0.35 cm. In addition, the opening **297** of the receiving portion **226** may have a length **722** of 1.60 cm and a width **730** of 0.60 cm. The bending portion **235** of the flexible one-piece hinge **210** may have a length **732** of 0.25 cm, a width **734** of 1.60 cm, and a thickness **728** of 1.40 cm. Finally, the flexible one-piece hinge **210** may have an overall length **712** of 6.25 cm.

[0074] While the figures may depict a top portion of a golf bag with a particular number of dividers and openings to receive one or more golf clubs, the apparatus, methods, and articles of manufacture described herein may include a top portion with more or less dividers or openings to receive golf clubs (e.g., a three-way top, a five-way top, a six-way top, a fourteen-way top, etc.). Although the figures

may depict an extensible bag stand with a particular number of deployable legs, the apparatus, systems, methods, and articles of manufacture described herein may include an extensible bag stand with more or less deployable legs.

[0075] Further, while the figures may depict a particular type of bottom portion of a golf bag (e.g., the height of the bottom portion decreases in a linear manner from one end to the opposite end), the apparatus, systems, methods, and articles of manufacture may be applicable to other type of bottom portions (e.g., the height of the bottom portion decreases in a non-linear manner (e.g., lock step). Although the above examples may be describe and the figures may depict a carry golf bag, the apparatus, systems, methods, and articles of manufacture described herein may be applicable to cart golf bags, travel bags for golf bags, or other suitable type of bags (e.g., luggage, etc.). Alternatively, the apparatus, systems, methods, and articles of manufacture described herein may be applicable to tripods for cameras, camcorders, and/or other electronic devices.

[0076] It should be understood from the foregoing that, while particular embodiments have been illustrated and described, various modifications can be made thereto without departing from the spirit and scope of the invention as will be apparent to those skilled in the art. Such changes and modifications are within the scope and teachings of this invention as defined in the claims appended hereto.

CLAIMS

1. A bag comprising:

a body with a top portion at one end of the body and a bottom portion at the opposite end of the body, the bottom portion defines a bottom side portion of the body;

a stay having a first end and a second end, the first end of the stay is engaged to the top portion of the body;

a slot formed along the bottom side portion of the body; and

a flexible one-piece hinge engaged to the slot, the flexible one-piece hinge comprising:

an insert portion;

a receiving portion formed opposite the insert portion; and

a bending portion formed between the insert portion and the receiving portion for orienting the receiving portion at an angle relative to the insert portion,

wherein the insert portion is engaged to the slot and the receiving portion is engaged to the second end of the stay.

2. The bag of claim 1, wherein the slot comprises a first rail and a second rail that collectively form a channel configured to receive the insert portion therein.

3. The bag of any one of claims 1-2, wherein the receiving portion forms an opening in communication with a cavity configured to receive the second end of the stay therein.

4. The bag of any one of claims 1-3, wherein the insert portion defines at least one hole configured to receive a respective securing member for securing the insert portion to the bottom side portion of the body.

5. The bag of any one of claims 1-4, wherein the stay is disposed substantially longitudinally along the bag.

6. The bag of any one of claims 1-5, wherein the flexible one-piece hinge comprises at least one of a polyethylene material, a flexible plastic material, or an organic or inorganic rubber material.

7. The bag of any one of claims 1-6, wherein the flexible one-piece hinge is a unitary piece.

8. The bag of any one of claims 1-7, wherein the bending portion is configured to bend and orient the receiving portion from a first axis in which the receiving portion is aligned with the insert portion to a second axis in which the receiving portion is not aligned with the insert portion.

9. The bag of any one of claims 1-8, wherein the bending portion defines an area of reduced thickness having a first thickness that is greater than a second thickness defined by the receiving portion or a third thickness defined by the insert portion.

10. The bag of any one of claims 1-9, wherein the bending portion defines one or more cut-outs.

11. The bag of claim 1, wherein the bending portion defines one or more cut-outs, and wherein the one or more cut-outs comprise at least one of a channel, a recess, a hole, a cut-away, or a cavity.

12. A flexible one-piece hinge comprising:

a receiving portion;

an insert portion formed opposite the receiving portion; and

a bending portion formed between the receiving portion and the insert portion, the bending portion is configured to bend and allow the receiving portion to be oriented from a first angle wherein the receiving portion is aligned with the insert portion to a second angle, wherein the receiving portion is not aligned with the insert portion.

13. The flexible one-piece hinge of claim 12, wherein a thickness of the bending portion is less than respective thicknesses of the insert portion and the receiving portion.

14. The flexible one-piece hinge of any one of claims 12-13, and wherein the bending portion defines one or more cut-outs.

15. The flexible one-piece hinge of any one of claims 12-13, wherein the bending portion defines one or more cut-outs, wherein the one or more cut-outs comprise at least one of a channel, a recess, a cut-away, or a cavity.

16. A method for manufacturing a golf bag comprising:

forming a golf bag body comprising:

a top portion;

a bottom portion formed at the opposite end of the golf bag body; and

a side portion formed along the periphery of the bottom portion;

forming a flexible one-piece hinge comprising:

an insert portion;

a receiving portion forming an opening in communication with a cavity; and

a bending portion defined between the insert portion and the receiving portion, wherein the bending portion is configured to be bent relative to the insert portion;

attaching a first end of a stay to the top portion of the golf bag body; and

inserting a second end of the stay through the opening and into the cavity of the receiving portion of the flexible one-piece hinge.

17. The method of claim 16, wherein forming the bending portion comprises:

forming a first thickness of the bending portion that is less than a second thickness of the insert portion and a third thickness of the receiving portion.

18. The method of any one of claims 16-17, wherein forming the bending portion comprises forming one or more cut-outs that reduces a thickness of the bending portion relative to thicknesses of the receiving portion and the insert portion.

19. The method of any one of claims 16-18, wherein forming the side portion of the golf bag body comprises forming a slot defining a channel configured to receive the insert portion of the flexible one-piece hinge therein.

20. The method of any one of claims 16-18, wherein forming the side portion of the golf bag body comprises forming a slot defining a channel configured to receive the insert portion of the flexible one-piece hinge therein, wherein the slot is formed by a first rail and a second rail extending outwardly from the side portion of the golf bag body.

21. A bag substantially as any one embodiment herein described with reference to the accompanying drawings.

22. A flexible one-piece hinge as any one embodiment herein described with reference to the accompanying drawings.

23. A method for manufacturing a golf bag as any one embodiment herein described with reference to the accompanying drawings.

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Intellectual Property Office

Application No:	GB1418136.6	**Examiner:**	Mr Solomon Williams-Wadley
Claims searched:	1-23	**Date of search:**	30 March 2015

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-11, 16-21	US 2013/0032499 A1 (LOUDENSLAGER) See whole document.
X	1-11, 16-20.	US 2007/0246384 A1 (SHIAO) See EPODOC&WPI abstracts and figures.
X,A	X:12-15 A:1-11, 16-20.	US 3746600 A (CIRCELLI) See description and figures 2-3.
X,A	X:12-15. A:1-11, 16-20.	US 3859955 A (PITNEY BOWES INC) See EPODOC&WPI abstracts and figures 2-3.
X,A	X:12-15. A:1-11, 16-20.	US 3032808 A (AMERACE CORP) See description and figures 2-5.
X,A	X:12-15. A:1-11, 16-20.	GB 2237188 A (MANGAR AIDS LTD) See EPODOC&WPI abstracts and figures 3-4.
X,A	X:12-15. A:1-11, 16-20.	US 3787922 A (FLEX O LATERS INC) See description and figure 5.
X,A	X:12-15. A:1-11, 16-20.	US 3525493 A (BEST STAMP) See description and figure 3.
X,A	X:12-15. A:1-11, 16-20.	DE 10164152 A1 (AHLMANN) See EPODOC&WPI abstracts and figures 2-3.
X,A	X:12-15. A:1-11, 16-20.	US 7427204 B1 (MANGONE) See EPODOC&WPI abstracts and figures 1-2, and 5.
X,A	X:12-15. A:1-11, 16-20.	US 4305206 A (ROE INT INC) See EPODOC&WPI abstracts and figures 1-3, and 5-6.

Intellectual Property Office

A	1-20	CN 102441261 A (CHENTERLON INC) See whole document.

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC[X] :

Worldwide search of patent documents classified in the following areas of the IPC

A63B; E05D; F16C

The following online and other databases have been used in the preparation of this search report

EPODOC, WPI.

International Classification:

Subclass	Subgroup	Valid From
A63B	0055/53	01/01/2015
E05D	0001/02	01/01/2006