



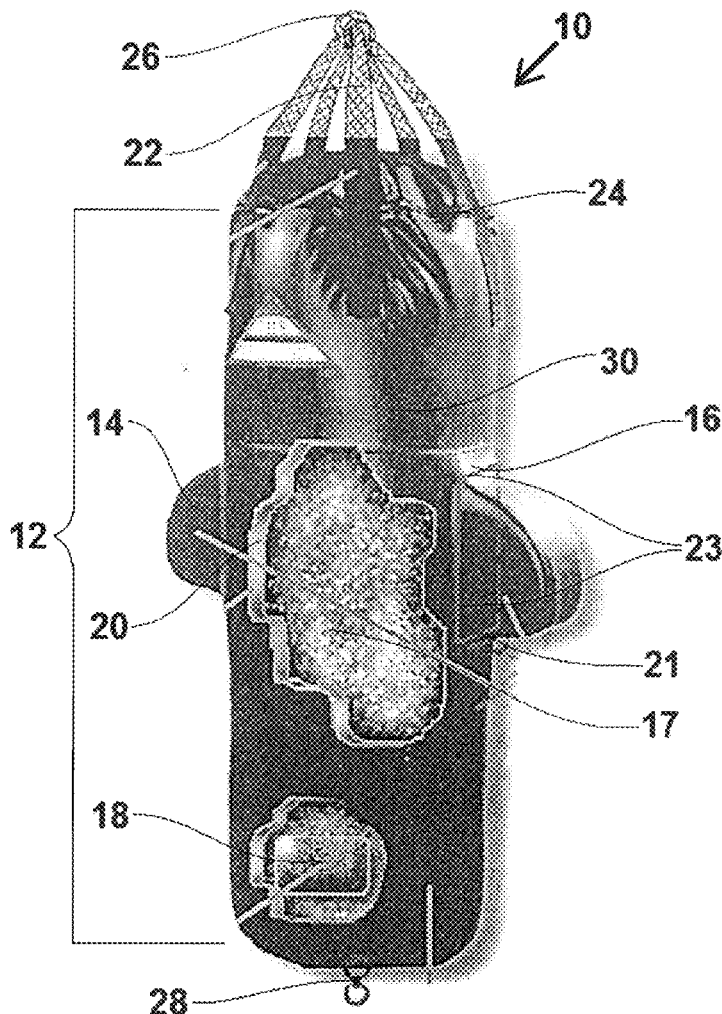
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(19) **United States**(12) **Patent Application Publication**
Howard(10) **Pub. No.: US 2018/0147470 A1**(43) **Pub. Date: May 31, 2018**(54) **HEAVY BAG WITH INTEGRATED WINGS**(52) **U.S. Cl.**(71) Applicant: **Derrick Howard**, Glen Arden, MD
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2209/10 (2013.01); *A63B 23/0355* (2013.01)(72) Inventor: **Derrick Howard**, Glen Arden, MD
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(57)

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29, 2016.**Publication Classification**(51) **Int. Cl.***A63B 69/20* (2006.01)*A63B 69/00* (2006.01)*A63B 23/035* (2006.01)

An integrated wing-shaped heavy bag is illustrated and described. The heavy bag comprises an elongated body having a hollow receiving space and at least one integrated punching/striking wing disposed at a lateral perimeter. A unitary casing facilitates integration of the wing with the elongated body through continuously transitioned adjoining edges and/or strengthening contours. A wing insert is disposed in and substantially fills a wing cavity of the heavy bag. The wing insert is secured internally to the unitary casing by a fastener which minimizes shifting of the wing insert with respect to the wing cavity and the unitary casing.



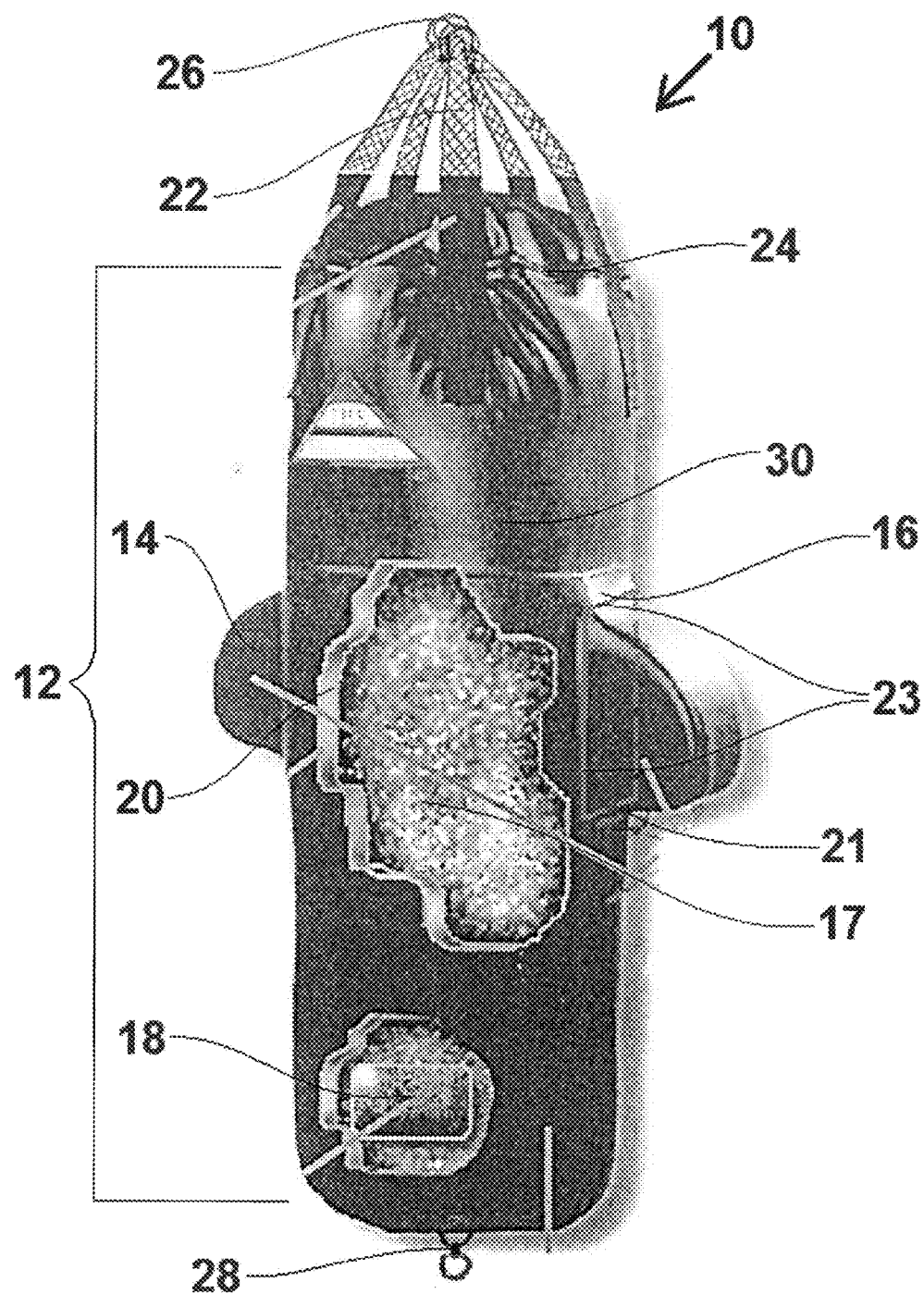


FIG. 1

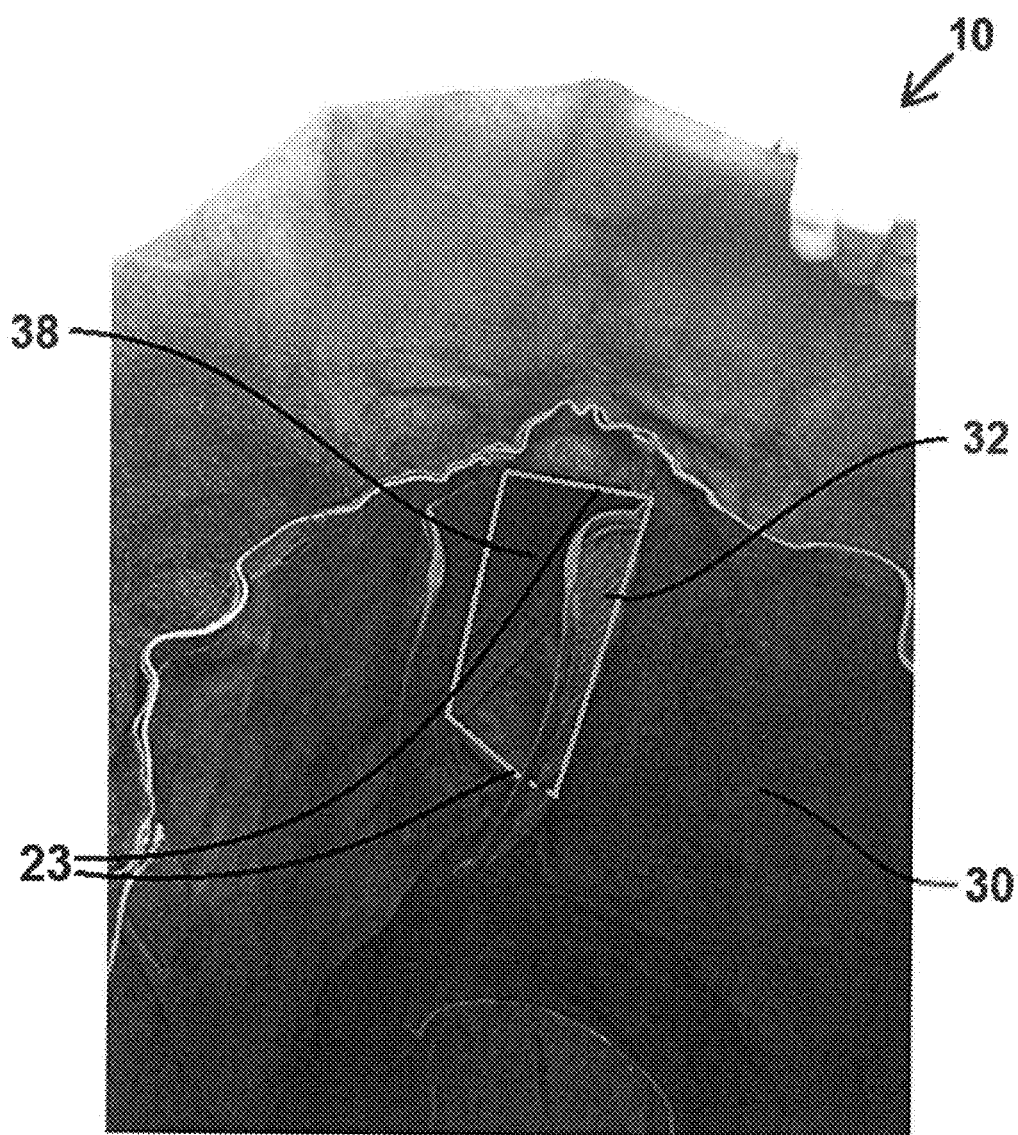


FIG. 2

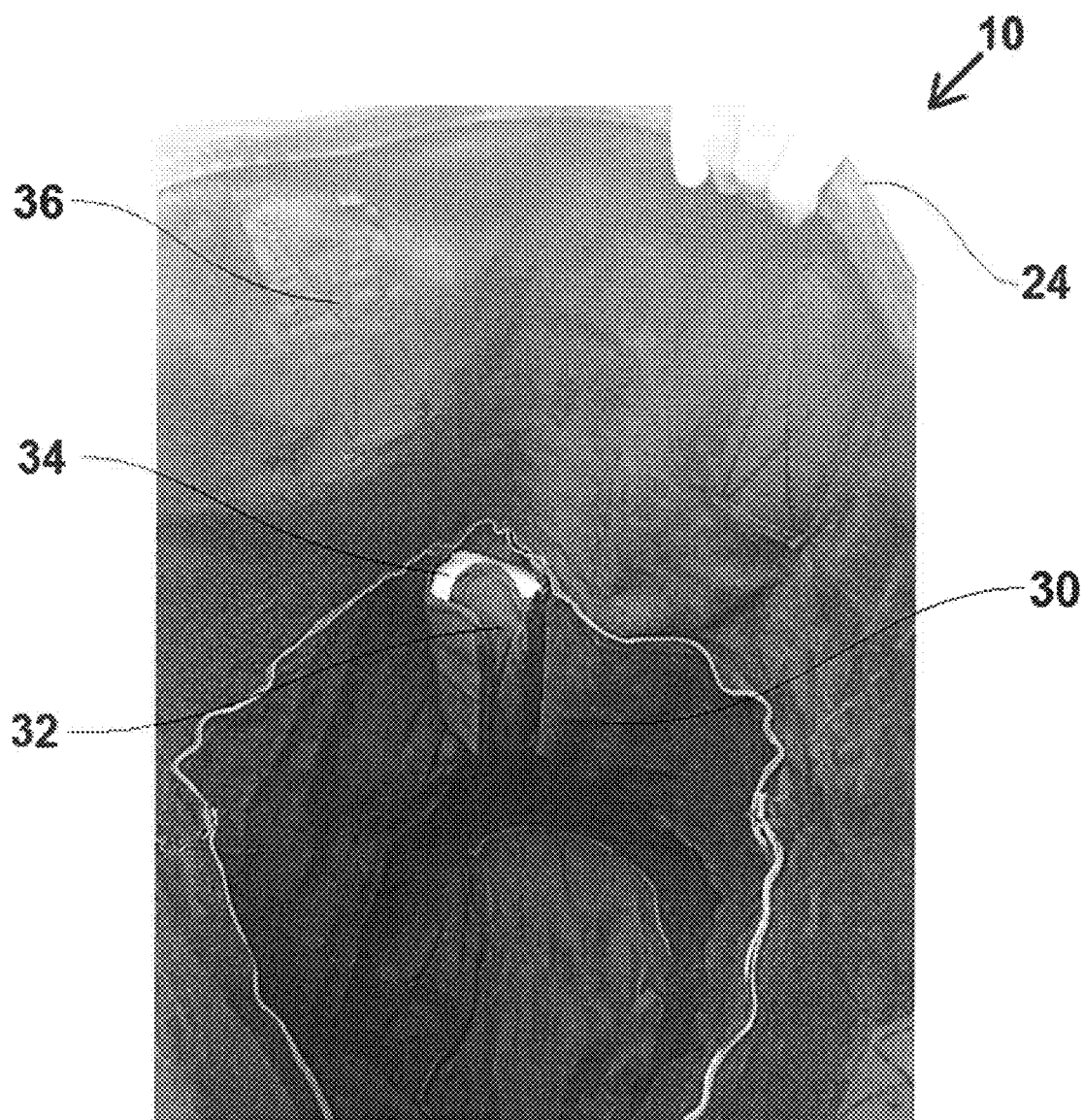


FIG. 3

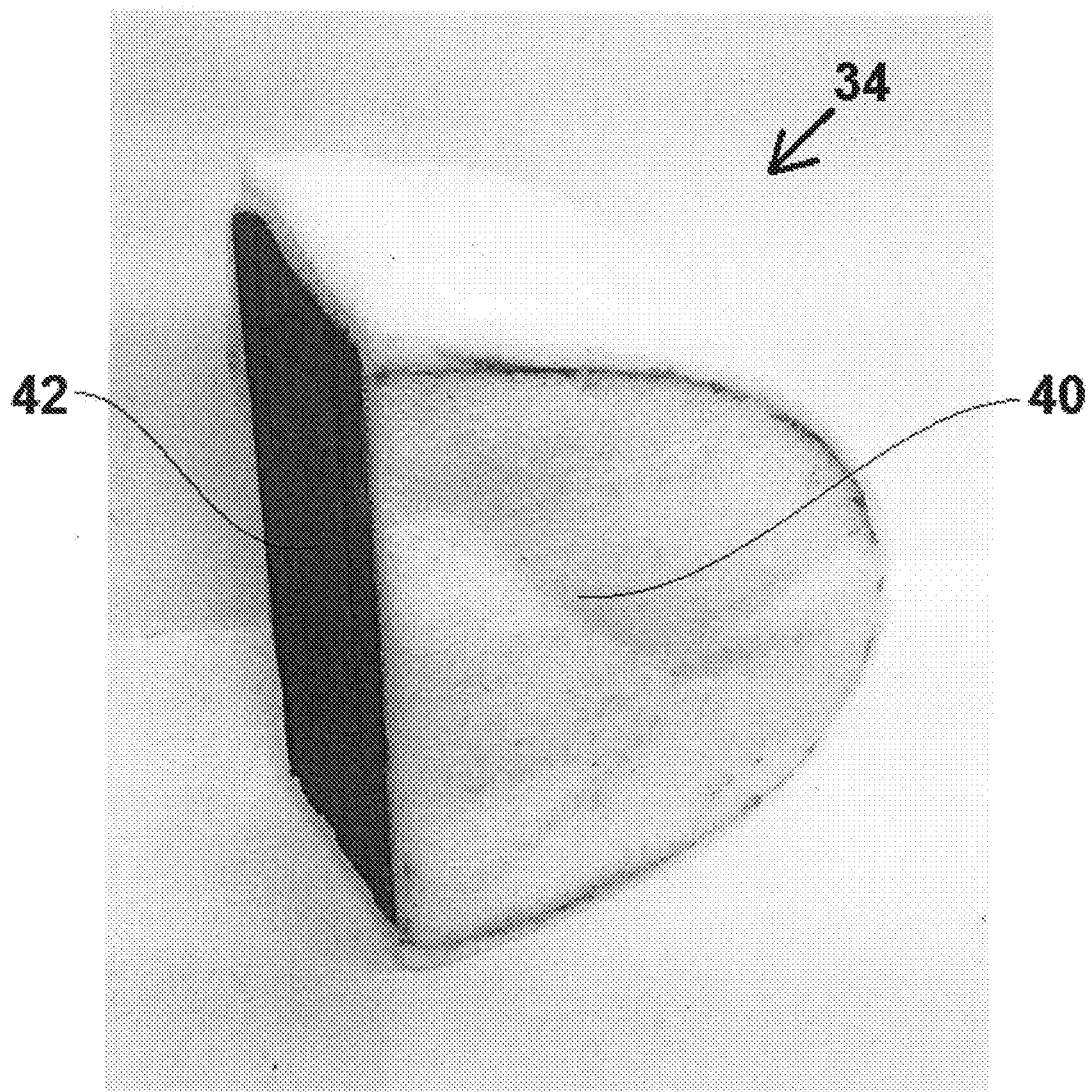


FIG. 4

HEAVY BAG WITH INTEGRATED WINGS

FIELD OF INVENTION

[0001] The invention relates generally to sports equipment used for professional and recreational training. More particularly, the invention relates to heavy bags used for training boxers, kick boxers, martial artists, and the like.

BACKGROUND OF THE INVENTION

[0002] In competitive fighting sports such as boxing, kick boxing, or martial arts, the accuracy of a fighter's punch, kick, or other attack is an important skill for the fighter to develop to become successful at his/her chosen sport. Fighters and their trainers often make use of heavy bags during training exercises to simulate the feel of the fighter striking a live opponent. Physical resistance created by striking a solid object, like a heavy bag, develops and improves the fighter's form more effectively than some other types of training exercises, such as shadowboxing. Engaging in physical contact with a heavy bag allows the fighter and/or the trainer to evaluate the amount of power or the desired technique needed to deliver a particular strike. It also allows the fighter to exhibit more realistic responses to the trainer's commands, especially when such commands are being delivered to the fighter at a rapid pace.

[0003] While heavy bags were previously used almost exclusively to train boxers, they are now a common addition to boutique gyms and, in some cases, found inside private residences. The popularity of heavy bags has grown, in part, due to the robust cardiovascular work-out that can result from their use. If performed properly, training with a heavy bag also offers the simultaneous benefit of improving bodily muscle tone.

[0004] Heavy bags are also useful to individuals who are interested in learning self-defense techniques. The properties of a typical heavy bag often approximate certain characteristics (e.g., weight, size, etc.) of a potential attacker.

[0005] While using a heavy bag for professional and recreational training is advantageous, some characteristics of conventional heavy bags, such as shape, limits the types of strikes or combinations of strikes that can be delivered to the bag by the fighter. As such, there is a recognized need in the boxing industry for a heavy bag to incorporate a tear-resistant feature which not only accommodates a larger array of training maneuvers, (e.g., upper-cuts, hooks, kicks, etc.), but is also able to withstand aggressive and extended impact from fighters without rendering the feature inoperative.

SUMMARY OF THE INVENTION

[0006] It is an object of the present invention to overcome problems associated with the existing art.

[0007] Another object of the invention is to provide a heavy bag having a tear-resistant feature that withstands aggressive or extended impact.

[0008] A further object of the invention is to provide a heavy bag shaped to improve a fighter's accuracy and technique while broadening the range of maneuvers or training exercises that can be performed in conjunction therewith.

[0009] Still another object of the invention is to provide a heavy bag having extended protrusions which maintain their integrity after repeated use.

[0010] Yet another object of the invention is to provide a novel heavy bag for professional and recreational training.

[0011] These and other objects are satisfied by an integrated wing-shaped heavy bag, comprising: an elongated body defined by a casing, the body having a hollow receiving space, at least one integrated wing further defined by said casing and having a wing cavity, wherein a wing insert is disposed in and substantially filling the wing cavity, the at least one integrated wing disposed at a lateral perimeter of the elongated body, and; at least one curved strengthening contour defining a transition from said integrated wing to the elongated body.

[0012] The foregoing and still other objects of the invention are satisfied by methods of use of a heavy bag according to the invention.

[0013] In some embodiments, the present invention contemplates a generally cylindrical heavy bag having at least one integrated, tear-resistant punching/striking wing formed on a surface of the heavy bag. The at least one integrated wing is disposed laterally relative to the central axis of the heavy bag and, in embodiments having two integrated wings, the integrated wings are preferably disposed 180° apart from one another about the circumference of the heavy bag's elongated body. The laterally disposed integrated wing allows the fighter to experience an improved degree of interaction with the heavy bag during training exercises. For example, the fighter is able to spin the bag by striking the integrated wing. The fighter is also able to practice defensive maneuvers, such as blocks, by using a surface of the integrated wing to simulate an incoming offensive attack by an opponent.

[0014] The integrated wing is generally designed to improve accuracy and form. As such, in certain embodiments it is sized to approximate dimensions of the human head. The integrated wing is also dimensioned to allow for greater flexibility in the fighter's choice of attack during training exercises, including for example, upper-cuts, hooks, combinations of punches, and other similar attacks. Furthermore, improved interaction between the bag and the fighter presents the trainer with an ability to call out a broader range of commands when training the fighter.

[0015] The invention also contemplates reinforcing the integrated wing by, for example, incorporating curved strengthening contour(s) along adjoining edges of the integrated wing and the heavy bag body. A smooth transition (as opposed to sharp angles) along upper and lower adjoining edges maximizes the heavy bag's resistance to shearing forces at such locations. Including additional stitching, reinforced backing, or other suitable strengtheners on the internal side of adjoining edges also maximizes resistance to shearing forces. Generally, for purposes of maintaining the integrity of the heavy bag, it is advantageous to increase the amount of reinforcing used on the internal side of an adjoining edge when the connection or contour of the adjoining edge approaches a tight curvature (or even an angle), as such portions may otherwise be prone to wearing, ripping, or tearing under certain conditions.

[0016] In a further embodiment, a substantially form-fitting mold is placed over the exterior of the integrated wing to absorb forces and minimize wearing, ripping, or tearing to the casing. Such reinforcement is ideal for power training, kicks, or other maneuvers that exert an upward force on the integrated wing.

[0017] The invention still further contemplates a combination of elements used to secure a wing insert substantially in place (e.g., within a hollow wing cavity of the casing). In one embodiment, the wing insert is held in place by hook and loop fastener disposed on an interior surface of the casing and proximate to where the integrated wing extends from the perimeter of the elongated body. The element(s) used to secure the wing insert within the hollow wing cavity may be any type of strap, fastener, adhesive, clamp, or other suitable device that can be used to maintain the positional integrity of the wing insert.

[0018] The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention.

[0019] As used herein, the singular forms, “a”, “an” and “the” are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the root terms “include” and/or “have”, when used in this specification, specify the presence of stated features, steps, operations, elements, and/or components, but do not preclude the presence or addition of at least one other feature, step, operation, element, component, and/or groups thereof.

[0020] As used herein, the terms “comprises,” “comprising,” “includes,” “including,” “has,” “having” or any other variation thereof, are intended to cover a non-exclusive inclusion. For example, a process, method, article, or apparatus that comprises a list of features is not necessarily limited only to those features but may include other features not expressly listed or inherent to such process, method, article, or apparatus.

[0021] For definitional purposes and as used herein “connected” includes physical, whether direct or indirect, affixed or adjustably mounted. Thus, unless specified, “connected” is intended to embrace any operationally functional connection.

[0022] In this detailed description, references to “one embodiment”, “an embodiment”, or “in embodiments” mean that the feature being referred to is included in at least one embodiment of the invention. Moreover, separate references to “one embodiment”, “an embodiment”, or “embodiments” do not necessarily refer to the same embodiment; however, neither are such embodiments mutually exclusive, unless so stated, and except as will be readily apparent to those skilled in the art. Thus, the invention can include any variety of combinations and/or integrations of the embodiments described herein.

[0023] As used herein, and unless expressly stated to the contrary, “or” refers to an inclusive-or and not to an exclusive-or. For example, a condition A or B is satisfied by any one of the following: A is true (or present) and B is false (or not present), A is false (or not present) and B is true (or present), and both A and B are true (or present).

[0024] As used herein “substantially,” “generally,” and other words of degree are relative modifiers intended to indicate permissible variation from the characteristic so modified. It is not intended to be limited to the absolute value or characteristic which it modifies but rather possessing more of the physical or functional characteristic than its opposite, and preferably, approaching or approximating such a physical or functional characteristic.

[0025] For definitional purposes and as used herein the term “integrated wing” is defined as an extension or protrusion which is disposed at an exterior surface of a heavy bag.

The term “integrated” connotes that the wing and the body of the heavy bag are formed as one continuous shape, as opposed to separate components that are joined together.

[0026] In the following description, reference is made to the accompanying drawings, which are shown by way of illustration to the specific embodiments in which the invention may be practiced. The following illustrated embodiments are described in sufficient detail to enable those skilled in the art to practice the invention. It is to be understood that other embodiments may be utilized and that structural changes based on presently known structural and/or functional equivalents may be made without departing from the scope of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027] FIG. 1 illustrates a perspective view in accordance with an embodiment of the invention.

[0028] FIG. 2 illustrates an interior perspective view in accordance with an embodiment of the invention.

[0029] FIG. 3 illustrates an interior perspective view in accordance with an embodiment of the invention.

[0030] FIG. 4 illustrates a perspective view of a wing insert in accordance with an embodiment of the invention.

DETAILED DESCRIPTION OF THE DRAWINGS

[0031] FIG. 1 illustrates a heavy bag 10 having an integrated wing 14 disposed at a lateral perimeter of an elongated body 12. The integrated wing 14 and elongated body 12 are defined by a unitary casing 30. The unitary casing 30 is preferably in the form of a protective leather cover but may also be made of canvas or other suitable materials.

[0032] The heavy bag 10 comprises an upper contour 16 and a lower contour 21, which extend from the periphery of the elongated body 12 to an upper and lower side of the integrated wing 14, respectively. The upper and lower contour (16, 21) provides a wider base for the integrated wing 14 and improves resistance to shearing forces along adjoining edges 23 of the integrated wing 14. A contour, such as (16, 21), may be incorporated at any adjoining edge 23 between the integrated wing 14 and the elongated body 12 but is especially effective along narrow adjoining edges 23, for example, the top and bottom adjoining edge 23. The continuous transition provided by the contour (16, 21) facilitates integration of the wing 14 with the elongated body 12, as no seam is necessary along the adjoining edges 23.

[0033] Nevertheless, integration of the wing 14 may also be facilitated along non-contoured adjoining edges 23 (i.e., edges 23 forming a vertex or a tight transition) by fabricating the adjoining edge 23 to connect the integrated wing 14 with the elongated body 12 in one continuously patterned section of unitary casing material (i.e., no seams along the adjoining edges 23). A unitary casing 30 that defines both the integrated wing 14 and the elongated body 12 without the need to separately cut, stitch, or attach a discrete wing portion to the elongated body 12, as an independent component, has the functional benefit of strengthening the wing portion of the heavy bag 10, especially along adjoining edges 23, where an increased amount of resistance to tearing or ripping forces is preferred.

[0034] An interior surface of the unitary casing 30 that wraps the elongated body 12 is lined with a core 20. The core 20 is in circumferential contact with the unitary casing 30 and, in some embodiments, is about 1 inch thick. The

core 20 may be comprised of either or both closed cell or open cell foam. The presence of core 20 in elongated body 12 provides the fighter with a softer and more comfortable punch during work-outs. As such, core 20 further functions as a safety layer to minimize bruises, abrasions, or strains that might otherwise result from bare-skinned or intensive contact with the heavy bag 10.

[0035] In some embodiments a filling material 17, such as shredded textile, is disposed within elongated body 12 and provides the heavy bag 10 with a solid shape and weight. The elongated body 12 may be entirely filled with filling material 17, which may comprise shredded textile 17, or sand (e.g., in the form of sand bags 18) to increase the weight of the heavy bag 10 beyond what would otherwise be expected from filling the heavy bag 10 with only shredded textile. Likewise, the overall weight of the heavy bag 10 may be adjusted up or down by varying the types and quantities of filling material 17 used to fill the hollow core of the unitary casing 30. A standard weight for the heavy bag 10 may be in the range of 75-125 pounds (i.e., roughly 34-57 kilograms). However, entirely filling the elongated body 12 with, for example, sand/sand bags 18 can provide a weight that exceeds the previously-identified weight range.

[0036] In some embodiments, the filling material 17 used to provide the heavy bag 10 with a solid shape and weight is added through an inlet/access panel 24 disposed at the top of the unitary casing 30. While in use, the access panel 24 is closed/sealed to prevent internal contents contained within the heavy bag 10 from escaping. In one embodiment, the access panel 24 is sealed with a zipper but any other suitable sealing or fastening mechanism may be used to contain the internal contents of the unitary casing 30.

[0037] In some embodiments, the heavy bag 10 includes a plurality of rings 26, which are preferably made of metal, and which are each respectively connected to a corresponding plurality of nylon straps 22. Rings 26 may be used to mount the heavy bag 10 to a stand, for example. In one embodiment, the heavy bag 10 has at least five straps 22 to enhance the collective load-carrying ability of the straps 22 while also improving the collective support provided at connection points between the straps 22 and the unitary casing 30. An increased number of straps 22 improves the structural integrity of the heavy bag 10 and minimizes the potential for any one of the straps 22 to become displaced from the unitary casing 30.

[0038] At a bottom portion of the heavy bag 10 is a swivel 28 which may be used to connect, for example, a securing line to the ground. The swivel 28 permits the heavy bag 10 to rotate but minimizes swing by way of its connection to the ground. Alternatively, the swivel 28 may be disconnected from the ground such that the heavy bag 10 is only attached from the top by the plurality of rings 26.

[0039] FIG. 2 illustrates an interior surface of elongated body 12. A wing cavity 38 is provided for receiving a wing insert 34 (shown in FIG. 3). In an embodiment of the invention, a lower and/or upper adjoining edge 23 of the wing cavity 38 is reinforced on the interior surface with fabric, backing, or other material, since a sharp transition between the integrated wing 14 and the elongated body 12 may create a region in the unitary casing 30 that is susceptible to wearing or tearing. This is especially prevalent in embodiments where, for example, the lower edge of the wing cavity 38 approaches a 90°. The reinforcing material (not illustrated) resists upward and downward shearing

forces that may otherwise cause the unitary casing 30 to rip or wear proximate to sharp angular transitions in the unitary casing 30.

[0040] FIG. 3 further illustrates the interior surface of the elongated body 12. A fastener 32 is provided for securing the wing insert 34 within the wing cavity 38. In the illustrated embodiment, the fastener 32 is comprised of two flaps that are connected by hook and loop fastener, and which overlay the wing insert 34. The fastener 32 secures the wing insert 34 from inside the elongated body 12 to minimize slippage from or movement within the wing cavity 38. Without the fastener 32, the wing insert 34 may shift toward the central axis of the heavy bag 10 over time, leaving the unitary casing (which is preferably stretched tight) to have undesirable excess loose material about portions of the integrated wing 14.

[0041] Reinforced backing 36 is also applied to the straps 22 at their connection points to the unitary casing 30 to minimize tearing or ripping of the straps 22 from the unitary casing 30, which may result from extended or intensive use.

[0042] FIG. 4 illustrates a wing insert 34 removed from the wing cavity 38 of the heavy bag 10. The core of the wing insert 34 is comprised of open cell foam 40. Closed cell foam (not illustrated) may be affixed to an outward facing side of the wing insert 34 to provide a more impact absorbent structure. A rubber backing 42 is also affixed to the inward facing edge of the wing insert 34 to minimize shifting of the wing insert 34 with respect to the fastener 32 and the wing cavity 38.

[0043] Although selected embodiments of the invention have been described in the forgoing specification, it is understood by those skilled in the art that many modifications and embodiments of the invention will come to mind to which the invention pertains, having benefit of the teaching presented in the foregoing description and associated drawings. It is therefore understood that the invention is not limited to the specific embodiments disclosed herein, and that many modifications and other embodiments of the invention are intended to be included within the scope of the invention. Moreover, although specific terms are employed herein, they are used only in a generic and descriptive sense, and not for purposes of limiting the description of the invention.

I claim:

1. An integrated wing-shaped heavy bag, comprising: an elongated body defined by a casing, the body having a hollow receiving space, at least one integrated wing further defined by said casing and having a wing cavity, wherein a wing insert is disposed in and substantially filling the wing cavity, the at least one integrated wing disposed at a lateral perimeter of the elongated body, and; at least one curved strengthening contour defining a transition from the integrated wing to the elongated body.
2. The heavy bag of claim 1 where the contour provides resistance to shearing forces along an adjoining edge of the at least one integrated wing and the elongated body.
3. The heavy bag of claim 2 where a width of the contour extends an entire axial length of the adjoining edge.
4. The heavy bag of claim 1 where a fastener is disposed on an internal side of the casing for securing the wing insert in the wing cavity.

5. The heavy bag of claim 4 where the fastener is at least one of a hook and loop fastener, a strap, a clamp, or an adhesive.

6. The heavy bag of claim 5 where the fastener further comprises a flap portion which overlays and secures the wing insert in the wing cavity.

7. The heavy bag of claim 4 where an adjoining edge of the at least one integrated wing and the elongated body further comprises a reinforcing member on an internal side of the adjoining edge.

8. The heavy bag of claim 7 where the reinforcing member is a reinforced backing material.

9. The heavy bag of claim 1 where a substantially form-fitting mold removably overlays and mates with the at least one integrated wing to absorb and disburse external forces.

10. The heavy bag of claim 1 where the wing insert comprises an open cell foam core.

11. The heavy bag of claim 10 where a layer of closed cell foam is affixed to an outward facing side of the foam core.

12. The heavy bag of claim 10 where the wing insert further comprises a rubber backing on an inward facing side of the foam core to minimize shifting of the wing insert with respect to the wing cavity.

13. The heavy bag of claim 1 where the hollow receiving space is filled with a filling material.

14. The heavy bag of claim 13 where the filling material is at least one of shredded textile, sand, or sand bags.

15. The heavy bag of claim 14 further comprising an inlet for receiving the filling material to substantially fill the hollow receiving space.

16. The heavy bag of claim 15 where the inlet is sealed by a zipper.

17. The heavy bag of claim 1 where a core layer is in circumferential contact with the casing in the hollow receiving space.

18. The heavy bag of claim 1 further comprising a plurality of suspension members for suspending the elongated body from an upper mounting fixture.

19. The heavy bag of claim 18 where at least one of the plurality of suspension members is a nylon strap.

20. The heavy bag of claim 19 where the nylon strap is affixed to the elongated body using a reinforced backing.

21. The heavy bag of claim 20 where a distal end of the nylon strap is connected to a metal ring for mounting the heavy bag to the upper mounting fixture.

22. The heavy bag of claim 1 where a swivel is affixed to the elongated body at a lower portion.

23. An integrated wing-shaped heavy bag, comprising: an elongated body defined by a casing, the body having a hollow receiving space,

at least one integrated wing further defined by said casing and having a wing cavity, wherein a wing insert is disposed in and substantially filling the wing cavity, the at least one integrated wing disposed at a lateral perimeter of the elongated body, and;

a fastener disposed on an internal side of the casing for securing the wing insert in the wing cavity.

24. The heavy bag of claim 23 where an adjoining edge of the at least one integrated wing and the elongated body further comprises a reinforcing member on an internal side of the adjoining edge.

25. An integrated wing-shaped heavy bag, comprising: an elongated body defined by a casing, the body having a hollow receiving space,

at least one integrated wing further defined by said casing and having a wing cavity, wherein a wing insert is disposed in and substantially filling the wing cavity, the at least one integrated wing disposed at a lateral perimeter of the elongated body, and;

an adjoining edge of the at least one integrated wing and the elongated body, the adjoining edge further comprising a reinforcing member on an internal side.

26. A heavy bag as illustrated and described herein, and equivalents thereof.

27. Methods of use of a heavy bag according to any of the foregoing claims.

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