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(54) **HYBRID BELT ASSEMBLY**

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(57) **ABSTRACT**

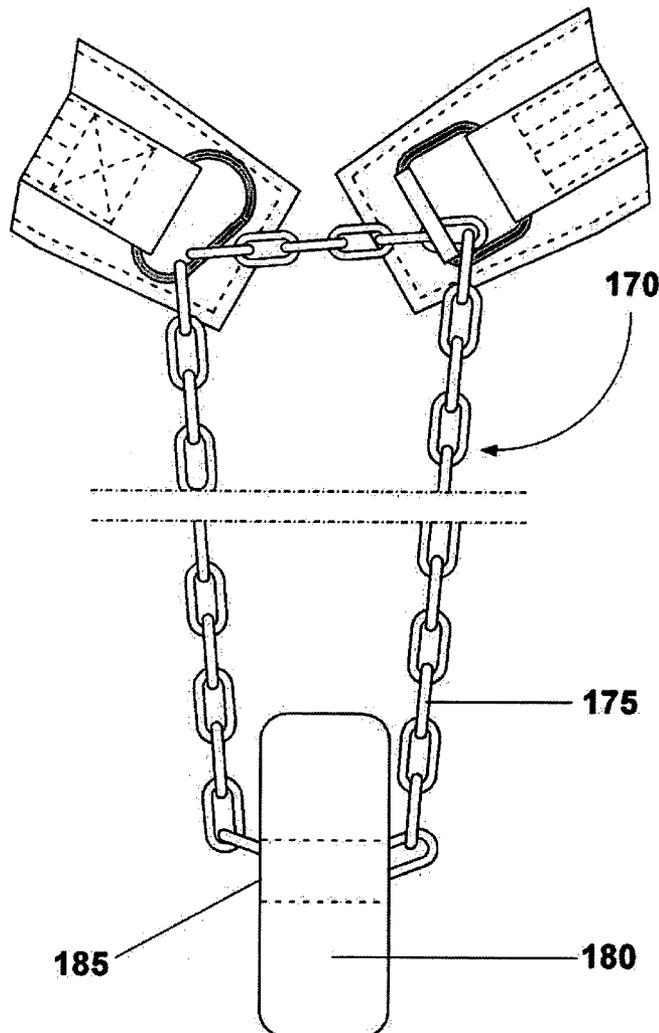
This invention comprises a body belt, a subassembly for holding, superposed on the former, a buckle disposed closely to one extremity of the body belt, a snap hook disposed closely to the other extremity, a first strap having an array of loops or hooks and having a length that is one-half the length of the body belt is superposed on the subassembly for holding and starts in proximity of the snap hook; and a second strap having an array different from the array of the first strap. The second strap, equal in size to the first strap, is superposed on and starts from an end of the subassembly for holding. The hybrid belt assembly is adaptable, when used as a dip belt, to work in conjunction with a chain-load subassembly comprising a chain and weight(s), the former being attachable to the buckle and snap hook.

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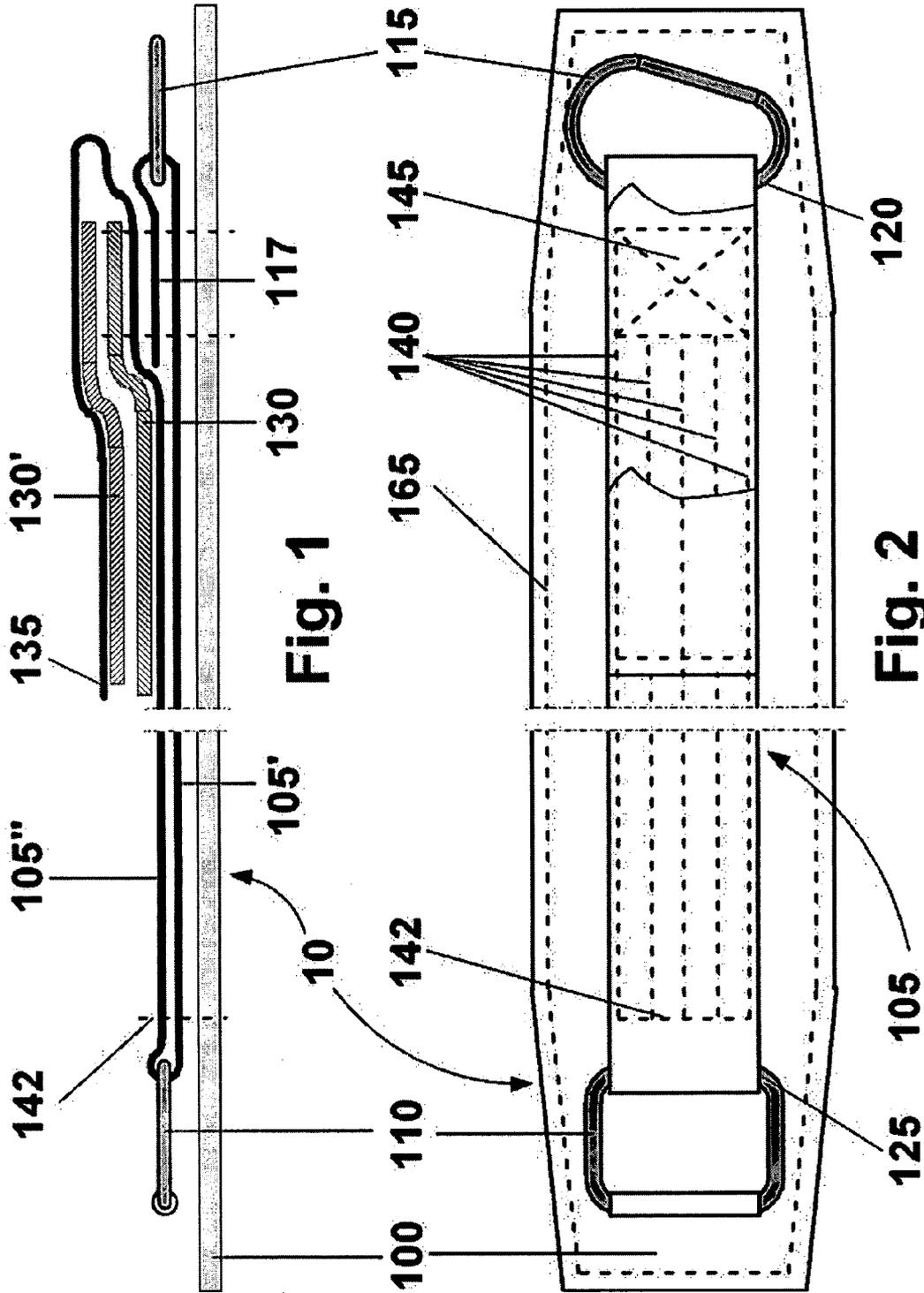
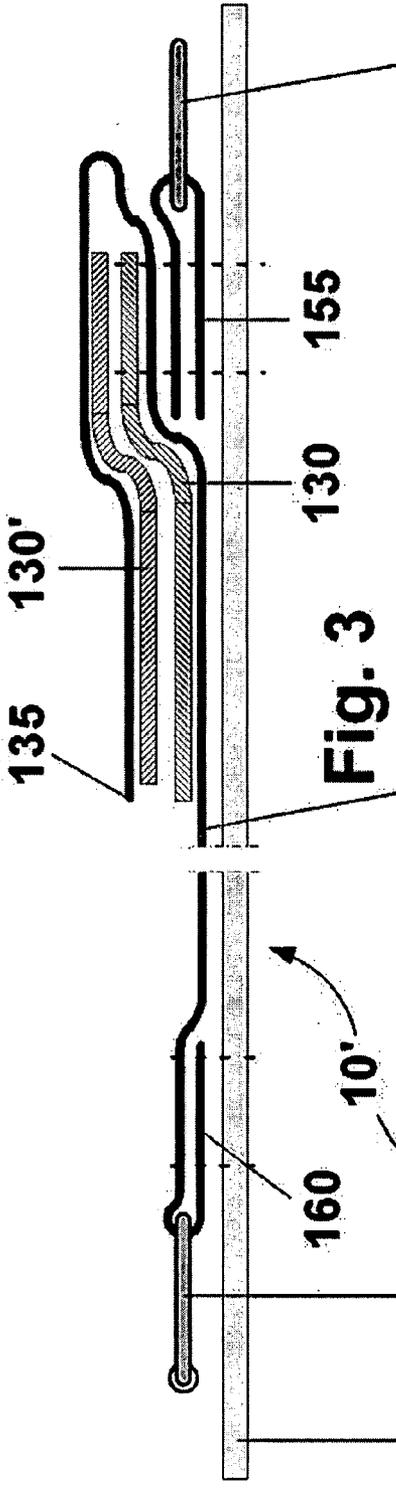
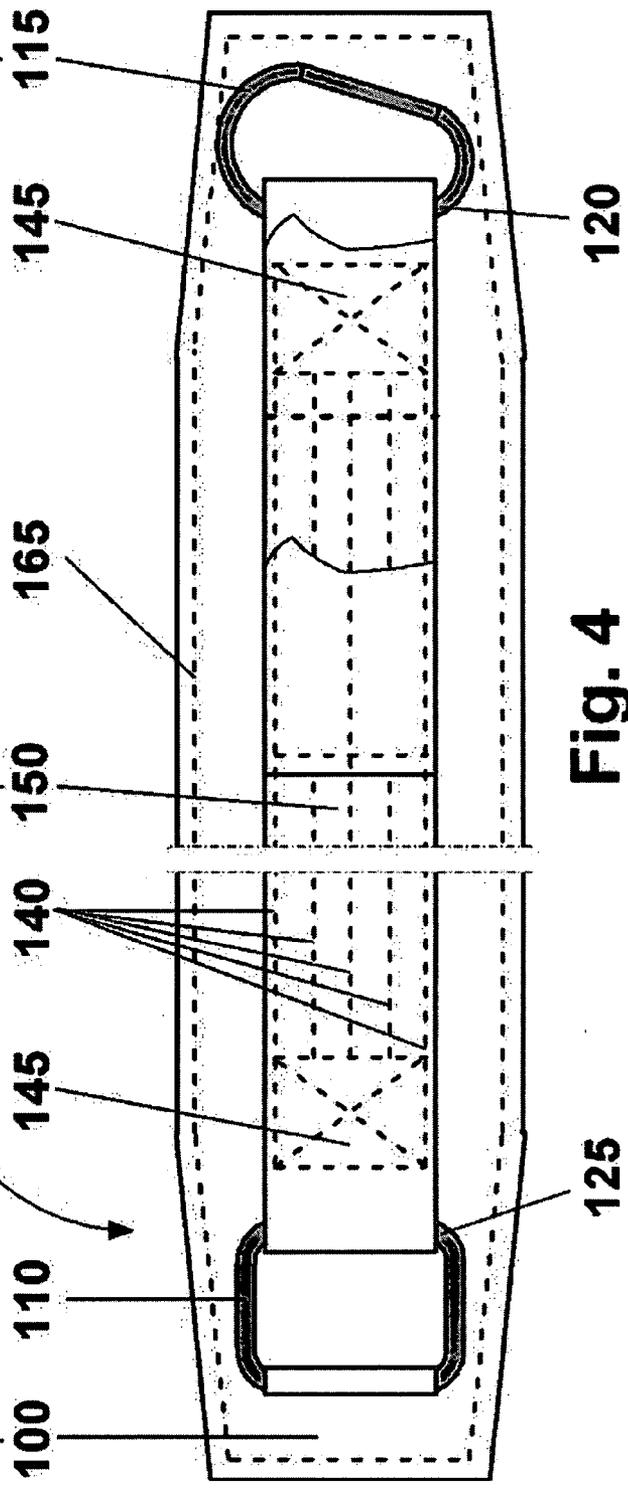


Fig. 1

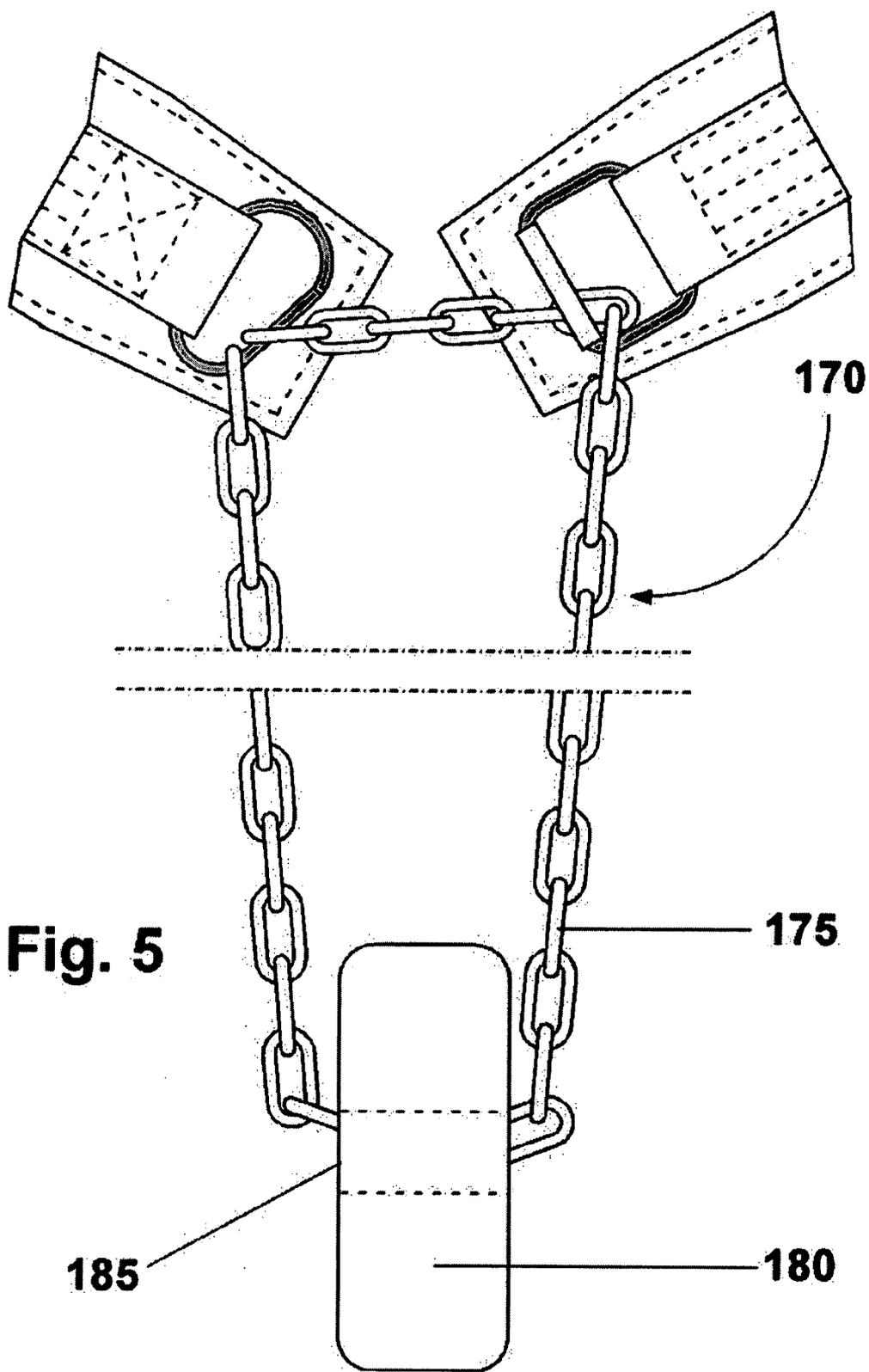
Fig. 2



**Fig. 3**



**Fig. 4**



**HYBRID BELT ASSEMBLY**

**I. BODYGROUND OF THE INVENTION**

**[0001] 1. Field of the Invention**

**[0002]** The present invention relates in general to weightlifting and dip belts and, more specifically, to a hybrid belt assembly built to be used as either as a weightlifting belt or as a dip belt.

**[0003] 2. Description of the Prior Art**

**[0004]** A weightlifting belt has two main purposes. It reduces stress on the lower body while the person is lifting and prevents body hyperextension during overhead lifts. A belt reduces low body stress by compressing the contents of the abdominal cavity. This increases the intra-abdominal pressure (IAP), providing more support in front of the bones of the lower body. Another benefit of increased IAP is a reduction in the amount of spinal shrinkage (lower body compression) a lifter may experience during circuit weight training.

**[0005]** A dip belt is used for adding weight to a user when performing dips and chin-ups, thus assisting in exercising the triceps, back and chest muscles.

**[0006]** A material that is often used for weightlifting belts is leather. A leather belt does not flex enough to be fully adjustable or comfortable to the waist. Another disadvantage resides in the fact that leather is relatively expensive when compared to man made materials, such as nylon or polypropylene. Yet another disadvantage is that leather does age, crack and become worn out rather quickly when used frequently. They also can not be easily washed without sustaining damage. A weightlifting belt of man made material is easily contoured to fit properly by molding around a user's body, thus providing superior comfort and support.

**[0007]** Hybrid belt assembly using self-engaging straps of loop-and-hook or Velcro® type, according to this invention, is continuously adjustable so that one size of hybrid belt assembly can, in general, fit many sizes properly. This fastening can hold approximately several times the average body weight, yet release easily when the exercise is over.

**[0008]** Weightlifting belts and dip belts are currently sold separately as distinct items. This applicant's convertible belt described in Canadian Patent Application No. 2,549,813 constitutes a first step in developing a belt with dual purpose: weightlifting and dipping.

**II. SUMMARY OF THE INVENTION**

**[0009]** In view of the weightlifting and dip belts that exist on the market, and of the applicant's previous design of a similar item, there is a need for an improved belt which eliminates, or at least alleviates the disadvantages of known belts.

**[0010]** An objective of the present invention is to develop a hybrid belt assembly using a cloth material, rather than leather.

**[0011]** Another objective of the present invention is to develop a hybrid belt assembly fully and continuously adjustable.

**[0012]** A further objective of the present invention is to develop a hybrid belt assembly which allows, when used as a dip belt, an easy and quick attachment of a load.

**[0013]** Yet another objective of the present invention is to develop a hybrid belt assembly, wherein the generated tensions due to the action of the tightening forces when the former is used as a lifting belt, or due to loads while it is used as a dip belt, are not applied directly to the stitching but rather indirectly via a folded web material of the belt.

**[0014]** A last objective of the present invention is to develop a hybrid belt assembly wherein use is made of a chain-load subassembly without securing features attached to it.

**[0015]** Broadly stating, the hybrid belt assembly, according to the present invention comprises

- [0016]** a subassembly for supporting;
- [0017]** a subassembly for holding, aligned with and superposed on the subassembly for supporting, the subassemblies for supporting and holding having a common longitudinal axis of symmetry;
- [0018]** a subassembly for buckling disposed closely to one extremity of the subassembly for supporting;
- [0019]** a subassembly for hooking disposed closely to another extremity of the subassembly for supporting;
- [0020]** a first subassembly for self-engaging of loop-and-hook type comprising a first strap having an array selected from either loop or hook elements and having a length that is, generally, one-half the length of the subassembly for supporting and being superposed on the subassembly for holding and starting in proximity of the subassembly for hooking;
- [0021]** a second subassembly for self-engaging of loop-and-hook type comprising a second strap having an array selected from either loop or hook elements; the first subassembly for self-engaging of loop-and-hook type having, in order to achieve a self-engagement, its array different from the array of the second subassembly for self-engaging of loop-and-hook type;
- [0022]** the second subassembly for self-engaging of loop-and-hook type being equal in width and length to the first subassembly for self-engaging of loop-and-hook type, and being superposed and starting from an end of the subassembly for holding so as to be adaptable to contact the first subassembly for self-engaging when the hybrid belt assembly is in its working positions: weightlifting belt and dip belt
- [0023]** a subassembly for stitching together the components of the hybrid belt assembly; the latter being adaptable, when used as a dip belt, to work in conjunction with a chain-load subassembly comprising a chain compatible to be used with one or more weight(s) and adaptable to be attached with its ends to the subassemblies for buckling and hooking.
- [0024]** In one aspect, the hybrid belt assembly
- [0025]** the subassembly for supporting incorporates a body support made of a flexible, non-extensible material, and has a length less than a circumference of a user's waist;

- [0026] the subassembly for holding includes a holding strap made also of a flexible, non-extensible material; the holding strap includes
- [0027] a lower holding segment, superposed on the body support; and
- [0028] an upper holding segment, superposed on the lower holding segment;
- [0029] the subassembly for buckling incorporates a buckle, rectangular in shape;
- [0030] the subassembly for hooking includes a snap hook;
- [0031] an end of the lower holding segment is folded over to a length of several inches, after being first inserted throughout the snap hook and then folded around a leg of the latter; a remainder of the lower holding segment is superposed on the body support and extends toward the buckle, wherein after being folded around a frame element of the latter, returns as an upper holding segment, superposed on the lower holding segment toward the snap hook and continues past it; a length of the upper holding segment is so chosen as to accommodate a waist size range;
- [0032] the subassembly for stitching includes a combination of several longitudinal stitching lines, a transversal stitching, and a "box and X" pattern of stitching;
- [0033] the lower and upper holding segments, together with the first strap are sewn to the body support along their several longitudinal stitching lines; the transversal stitching is used in proximity of the buckle where the several longitudinal stitching lines start extending towards the snap hook;
- [0034] the end of the lower holding segment is folded over to a length of several inches, after being first inserted throughout the snap hook and then folded around the leg of the latter, is aligned and joined by the "box and X" pattern of stitching with the following successively superposed elements: a portion of the upper holding segment, and a corresponding portion of the first strap.
- [0035] In another aspect, the hybrid belt assembly comprises, besides the body support, the snap hook, the buckle and the first and second subassemblies for self-engaging, all the same as in the previous aspect, a different subassembly for loading which incorporates
- [0036] a single holding strap aligned with and superposed on the body support; and
- [0037] a holding strap section, made from the same material as the single holding strap, but relatively shorter in length than the latter;
- [0038] the holding strap section is superposed on the body support and has its ends facing the buckle, after being folded over to an equal length on both sides by firstly inserting throughout the snap hook and secondly by folding around a leg of the latter;
- [0039] an end of the single holding strap is folded over to a length of several inches, after being first inserted throughout the buckle and then folded around a frame element of the latter;
- [0040] a remainder of the single holding strap is superposed on the body support, then extends toward the snap hook and continues past it; generally an entire length of the single holding strap is about twice the length of the body support;
- [0041] the first strap of the subassembly for self-engaging is generally equal in width to the single holding strap and has a length that is, generally, one-half the length of the body support, is superposed on the single holding strap and starts in proximity of the snap hook;
- [0042] the second strap of the second subassembly for self-engaging is generally equal in size to the first strap and starts at a point behind a tip of an end of the single holding strap, being superposed on the latter and sewn to it;
- [0043] the single holding strap together with the first strap of the first subassembly for self-engaging is usually sewn together along the several longitudinal stitching lines to the body support;
- [0044] the holding strap section, superposed on the body support and has its ends facing the buckle after being folded over to an equal length on both sides by firstly inserting throughout the snap hook and secondly by folding around a leg of the latter, together with a corresponding superposed portion of the single holding strap and the body support, are aligned and joined together by a "box and X" pattern of stitching;
- [0045] the end of the single holding strap is folded over to a length of several inches after being first inserted throughout the buckle and then folded around a frame element of the latter, is superposed on the body support and joined with the latter by a "box and X" pattern of stitching.

### III. BRIEF DESCRIPTION OF THE DRAWINGS

[0046] While the novel features of the hybrid belt assembly of the present invention are set with particularity in the appended claims, a full and complete understanding of the present invention may be had by referring to the detailed description of the preferred embodiments as subsequently described and illustrated in the accompanying drawings in which:

[0047] FIG. 1 is a diagrammatic side elevation view of a first embodiment of the present invention showing the lay-out of the holding strap;

[0048] FIG. 2 is a top view of the first embodiment of the present invention;

[0049] FIG. 3 is a diagrammatic side elevation view of a second embodiment of the present invention showing the lay-out of the holding straps;

[0050] FIG. 4 is a top view of the second embodiment of the present invention; and

[0051] FIG. 5 is a side elevation view of a hybrid belt assembly in conjunction with a chain-load subassembly.

### IV. DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0052] FIGS. 1 and 2 illustrate a first embodiment of a hybrid belt assembly 10 in accordance with the principles of this invention. Hybrid belt assembly 10 includes:

- [0053] a flexible, non-extensible body support **100** (further in the present disclosure called—body support **100**);
- [0054] a flexible non-extensible holding strap **105** (further called holding strap **105**), narrower than body support **100** and aligned with and superposed on the latter; body support **100** and holding strap **105** having a common longitudinal axis of symmetry (not shown), holding strap **105** comprising
- [0055] a lower holding segment **105'** superposed directly on body support **100**; an upper holding segment **105"** also superposed directly for contact on lower attachment segment **105'**;
- [0056] a buckle **110** rectangular in shape with roller and no tongues, disposed closely to one extremity of body support **100**;
- [0057] a snap hook **115**, disposed closely to an opposite extremity of body support **100**;
- [0058] an end **117** of lower holding segment **105'** folded over to a length of several inches, after being first inserted throughout snap hook **115** and then folded around a leg **120** of the latter; a remainder of lower holding segment **105"** being superposed on body support **100** and extending toward buckle **110**, wherein after being folded around a frame element **125** of the latter, it returns as upper holding segment **105"** superposed on lower holding segment **105'** toward snap hook **115** and then continues past it; an entire length of upper holding segment **105"** being, in general, about twice the length of body support **100**, although any length that accommodates a waist size range is considered suitable;
- [0059] a first self-engaging strap **130** of loop-and-hook or Velcro® type comprising an array of loop elements generally being equal in width to holding strap **105** and having a length that is, generally, one-half the length of body support **100**, is superposed on upper holding segment **105"** and starts in proximity of snap hook **115**;
- [0060] a second self-engaging strap **130'** of loop-and-hook or Velcro® type comprising an array of hook elements, generally equal in size to first self-engaging strap **130** and starting at a point behind a tip of an end **135** of upper holding segment **105"**, is superposed on the latter and sewn to it;
- [0061] lower and upper holding segments **105'** and **105"**, together with first self-engaging strap **130**, being usually sewn to body support **100** along their several longitudinal stitching lines **140**; a transversal stitching **142** is used in proximity of buckle **110** where longitudinal stitching lines **140** start extending towards snap hook **115**;
- [0062] end **117** of lower holding segment **105'**, folded over to a length of several inches, after being first inserted throughout snap hook **115** and then folded around leg **120** of the latter, is aligned and joined by a “box and X” pattern of stitching **145** with the following successively superposed elements: a portion of upper holding segment **105"** and a corresponding portion of first self-engaging strap **130**.
- [0063] In FIGS. **3** and **4** a second embodiment of a hybrid belt assembly **10'** is illustrated.
- [0064] Hybrid belt assembly **10'** includes the following combination:
- [0065] body support **100**;
- [0066] a flexible non-extensible single holding strap **150** (further called single holding strap **150**), narrower than body support **100**, is aligned with and superposed on the latter, with body support **100** and single holding strap having a common longitudinal axis of symmetry (not shown);
- [0067] a holding strap section **155**, made from the same or similar material as single holding strap **150**, but shorter in length than the latter;
- [0068] buckle **110** disposed closely to one extremity of body support **100**;
- [0069] snap hook **115** disposed closely to an opposite extremity of body support **100**; holding strap section **155** superposed on body support **100** and having its ends facing buckle **110**, after being folded over to an equal length on both sides by firstly inserting throughout snap hook **115** and secondly by folding around a leg **120** of the latter, an end **160** of single holding strap **150** folded over to a length of several inches, after being first inserted throughout buckle **110** and then folded around a frame element **125** of the latter; a remainder of single holding strap **150**, being superposed on body support **100** and extending toward snap hook **115**, continues past it; generally an entire length of single holding strap **150** being about twice the length of body support **100**, although any length that accommodates a waist size range is considered suitable;
- [0070] first self-engaging strap **130** of loop-and-hook or Velcro® type comprising an array of loop elements, generally being equal in width to single holding strap **150** and having a length that is, generally, one-half the length of body support **100**, is superposed on single holding strap **150** and starts in proximity of snap hook **115**;
- [0071] second self-engaging strap **130'** of loop-and-hook or Velcro® type comprising an array of hook elements, generally equal in size to first self engaging strap **130**, starts at a point behind a tip of an end **135** of single holding strap **150**, and is superposed on the latter and sewn to it;
- [0072] single holding strap **150**, together with first self-engaging strap **130**, being usually sewn together along their several longitudinal stitching lines **140** to body support **100**;
- [0073] holding strap section **155**, superposed on body support **100** and having its ends facing buckle **110** after being folded over to an equal length on both sides by firstly inserting throughout snap hook **115** and secondly by folding around a leg **120** of the latter, together with a corresponding superposed portion of single holding strap **150** and body support **100**, are aligned and joined together by a “box and X” pattern of stitching **145**;
- [0074] end **160** of single holding strap **150** folded over to a length of several inches, after being first inserted

throughout buckle **110** and then folded around a frame element **125** of the latter, and being superposed on body support **100**, is joined with the latter by "box and X" pattern of stitching **145**.

[0075] Describing in detail, body support **100** has a length less than a circumference of a user's waist. Preferably, body support **100** is constructed of knit polypropylene or heavy duty nylon webbing, or another equivalent material which is extremely durable. Each of four corners of body support **100** are angle cut, and to prevent the fraying of the latter, its entire periphery is provided with a contour stitch **165**. Alternatively, body support **100** can be provided without angle cutting. Also, the prevention of perimeter fraying of body support **100** can be obtained by other various means, for example, by applying appropriate heat.

[0076] Holding straps **105**, **150** and **155** are generally of nylon or equivalent webbing material. Nylon thread is usually used for affixing together the components of hybrid belt assemblies **10** and **10'**. Obviously, other conventional and equivalent affixing methods can be employed. Both above described embodiments are adapted to be used in conjunction with a chain-load subassembly **170** (see FIG. 5). The latter includes a chain **175** of annular chrome rings and a weight **180**.

[0077] When hybrid belt assemblies **10** and **10'** are used as dip belts, snap hook **115** is opened and a conveniently chosen annular chrome ring of one end of chain **175** is secured to the latter.

[0078] Another end of chain **175** is passed through a hole **185** in the center of weight **180**, then through buckle **110**, to be eventually secured with another conveniently chosen annular chrome ring to the same snap hook **115**. During the use as a dip belt, hybrid belt assembly **10** or **10'** sits on the hips of a user, with both ends of chain **175** secured to snap hook **115**, and with weight **180** suspended between a user's legs. The working length of chain **175** can be adjusted by selecting a convenient annular chrome ring at either or both ends of chain **175**. The fact that chain **175** is not provided with securing features at its ends means it will not be obstructed as it passes through hole **185** in the center of weight **180**.

[0079] When hybrid belt assemblies **10** and **10'** are used as weightlifting belts, the loose end of upper holding strap **105''** or the loose end of single holding strap **150** is inserted through buckle **110**, folded body and then tightened, after which self-engaging straps **130** and **130'** are superposed for contacting each other.

[0080] When hybrid belt assemblies **10** or **10'** are used as dip belts, the loose end of upper holding strap **105''** or the loose end of single holding strap **150**, without being inserted through buckle **110**, is folded body so self-engaging straps **130** and **130'** are superposed for contacting each other.

[0081] It is to be understood, that alternatively to buckle **110**, other conventional devices for buckling such as interacting, positionally adjustable buckles, or other types of devices for attaching and adjusting the working length of belts can be envisaged.

[0082] It is also to be understood that alternatively to snap hook **115**, which is used in both of the above preferred embodiments, other conventional and/or equivalent devices

such as a D or O-ring can be used. In this case, chain **175** is provided with at least one hooking feature. When chain **175** is provided at each end with a hooking feature, one hooking feature can be attached to buckle **110**, with the other hooking feature, to snap hook **115**; alternatively, other methods of attaching both ends of the chain can be contemplated.

[0083] It is also to be understood that alternatively to stitching, any other conventional or equivalent means can be used for securing the components of hybrid belt assemblies **10** and **10'**.

[0084] As required, detailed embodiments of the present invention are disclosed herein; however, it is to be understood that the disclosed embodiments are merely exemplary of the invention, which may be embodied in other forms. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for the claims and as a representative basis for teaching ones skilled in the art to variously employ the present invention.

What I claim is:

1. A hybrid belt assembly comprising

means for supporting;

means for holding, aligned with and superposed on said means for supporting, said means for supporting and said means for holding having a common longitudinal axis of symmetry;

means for buckling disposed closely to one extremity of said means for supporting;

means for hooking disposed closely to another extremity of said means for supporting;

first means for self-engaging of loop-and-hook type comprising a first strap having an array selected from the group consisting of loop and hook elements and having a length that is, generally, one-half the length of said means for supporting and being superposed on said means for holding and starting in proximity of said means for hooking;

second means for self-engaging of loop-and-hook type comprising a second strap having an array also selected from the group consisting of loop and hook elements; said first means for self-engaging of loop-and-hook type having, in order to achieve a self-engagement, its array different from said array of said second means for self-engaging of loop-and-hook type; said second means for self-engaging of loop-and-hook type being equal in width and length to said first means for self-engaging of loop-and-hook type, and being superposed and starting from an end of said means for holding so as to be adaptable to contact said first means for self-engaging when said hybrid belt assembly is in its working positions:

weightlifting belt and dip belt

means for stitching together the components of said hybrid belt assembly;

said hybrid belt assembly being adaptable, when used as a dip belt, to work in conjunction with a chain-load subassembly comprising means for chaining compat-

ible to be used with one or more weight(s) and adaptable to be attached with its ends to said means for buckling and hooking.

2. The hybrid belt assembly, as defined in claim 1, wherein

said means for supporting incorporates a body support made of a flexible, non-extensible material, and has a length less than a circumference of a user's waist;

said means for holding includes a holding strap made also of a flexible, non-extensible material; said holding strap comprising

a lower holding segment, superposed on said body support; and

an upper holding segment, superposed on said lower holding segment;

said means for buckling incorporates a buckle, rectangular in shape;

said means for hooking includes a snap hook;

an end of said lower holding segment being folded over to a length of several inches, after being first inserted throughout said snap hook and then folded around a leg of the latter; a remainder of said lower holding segment being superposed on said body support and extending toward said buckle, wherein after being folded around a frame element of the latter, returns as said upper holding segment, superposed on said lower holding segment toward said snap hook and continues past it; a length of said upper holding segment being so chosen as to accommodate a waist size range;

said means for stitching including a combination of several longitudinal stitching lines,

a transversal stitching, and a "box and X" pattern of stitching;

said lower and upper holding segments, together with said first strap being sewn to said body support along their several longitudinal stitching lines; said transversal stitching being used in proximity of said buckle where said several longitudinal stitching lines start extending towards said snap hook;

said end of said lower holding segment folded over to a length of several inches, after being first inserted throughout said snap hook and then folded around said leg of the latter, is aligned and joined by said "box and X" pattern of stitching with the following successively superposed elements: a portion of said upper holding segment, and a corresponding portion of said first strap.

3. The hybrid belt assembly, as defined in claim 1, wherein

said means for supporting incorporates a body support made of a flexible, non-extensible material, and has a length less than a circumference of a user's waist;

said means for holding includes a holding strap made also of a flexible, non-extensible material;

said holding strap comprising

a single holding strap aligned with and superposed on said body support; and

a holding strap section, made from the same material as said single holding strap, but relatively shorter in length than the latter;

said means for buckling incorporates a buckle rectangular in shape;

said means for hooking incorporates a snap hook;

said holding strap section is superposed on said body support and has its ends facing said buckle, after being folded over to an equal length on both sides by firstly inserting throughout said snap hook and secondly by folding around a leg of the latter;

an end of said single holding strap is folded over to a length of several inches, after being first inserted throughout said buckle and then folded around a frame element of the latter;

a remainder of said single holding strap is superposed on said body support, then extends toward said snap hook and continues past it; generally an entire length of said single holding strap is about twice the length of said body support;

said first strap is generally equal in width to said single holding strap and has a length that is, generally, one-half the length of said body support, is superposed on said single holding strap and starts in proximity of said snap hook;

said second strap of loop-and-hook type is generally equal in size to said first strap and starts at a point behind a tip of an end of said single holding strap and being superposed on the latter and sewn to it;

said single holding strap together with said first strap is usually sewn together along said several longitudinal stitching lines to said body support;

said holding strap section, superposed on said body support and has its ends facing said buckle after being folded over to an equal length on both sides by firstly inserting throughout said snap hook and secondly by folding around a leg of the latter, together with a corresponding superposed portion of said single holding strap and said body support, are aligned and joined together by a "box and X" pattern of stitching;

said end of said single holding strap is folded over to a length of several inches after being first inserted throughout said buckle and then folded around a frame element of the latter, and is superposed on said body support and joined with the latter by said "box and X" pattern of stitching.

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