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Porter

(54) **INTEGRATED ROCKABLY RELEASED LEVERAGE SNAP FASTENING SYSTEM**

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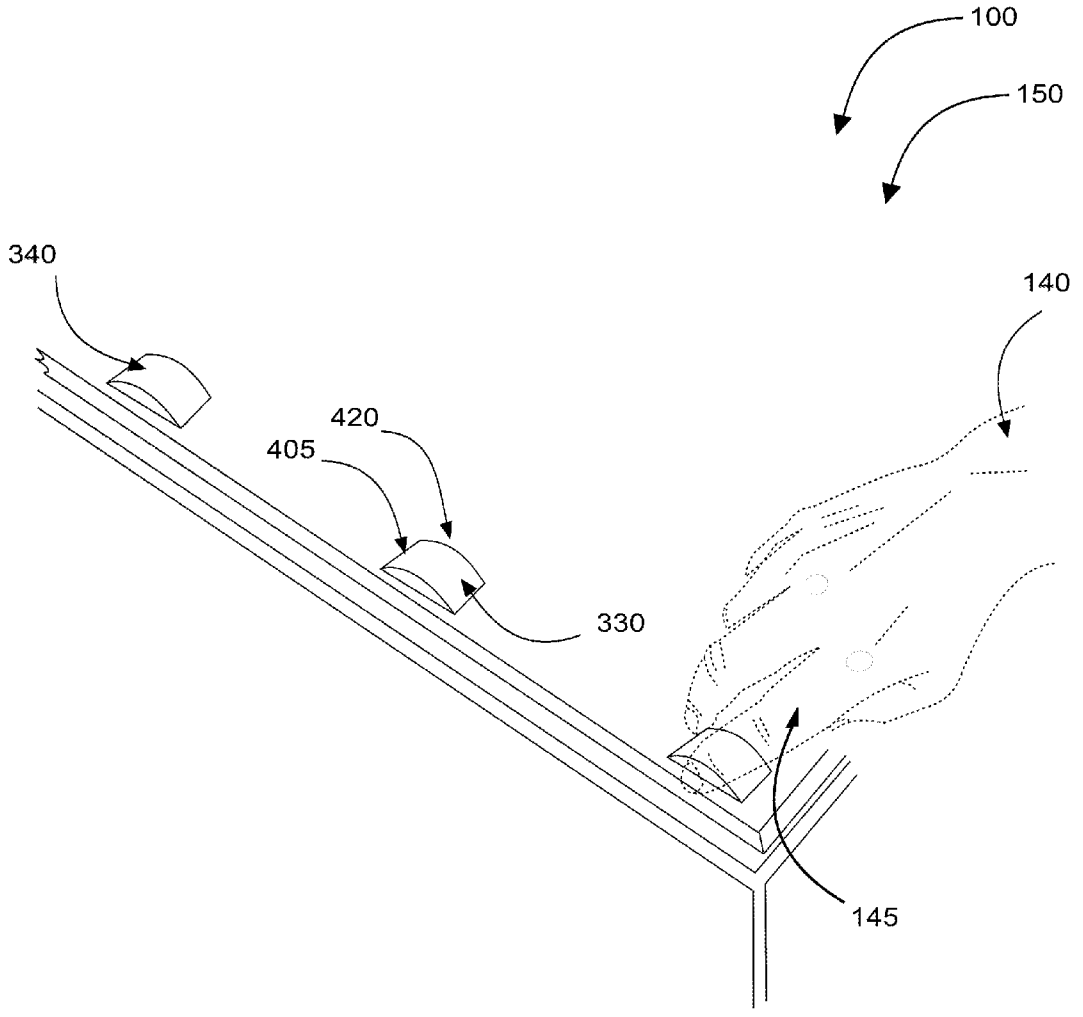
(57) **ABSTRACT**

An integrated rockably released leverage snap fastening system is disclosed herein comprising a male snap and a rockable lever snap assembly wherein the rockable lever snap assembly may be removably fastened to the male snap to hold at least one item in place. To facilitate unfastening, male snap and rockable lever snap assembly cooperatively combine to create a class 1 lever system which may reduce friction and permit a user to rockably release the snap while reducing risk of damage to an item. Various embodiments of the present invention and a method of use are discussed herein.



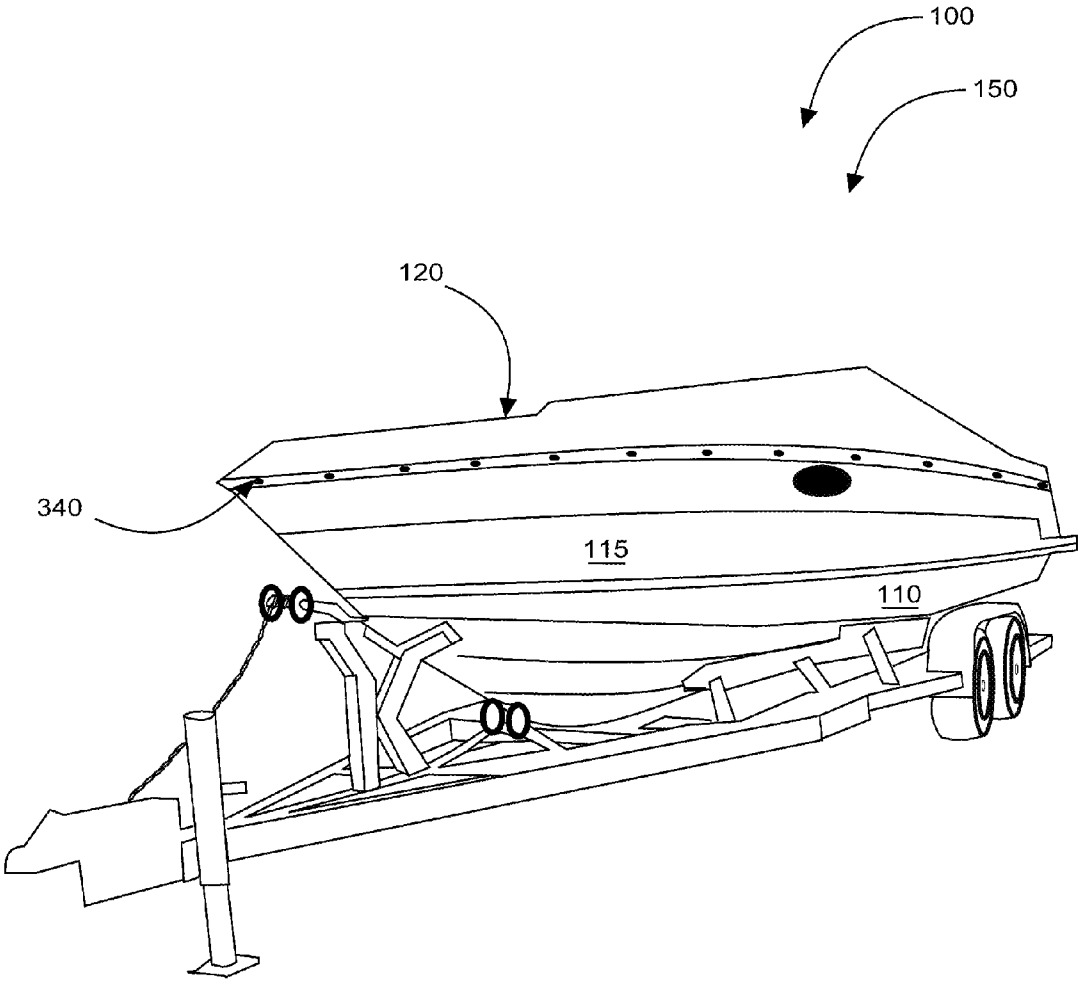


FIG. 1

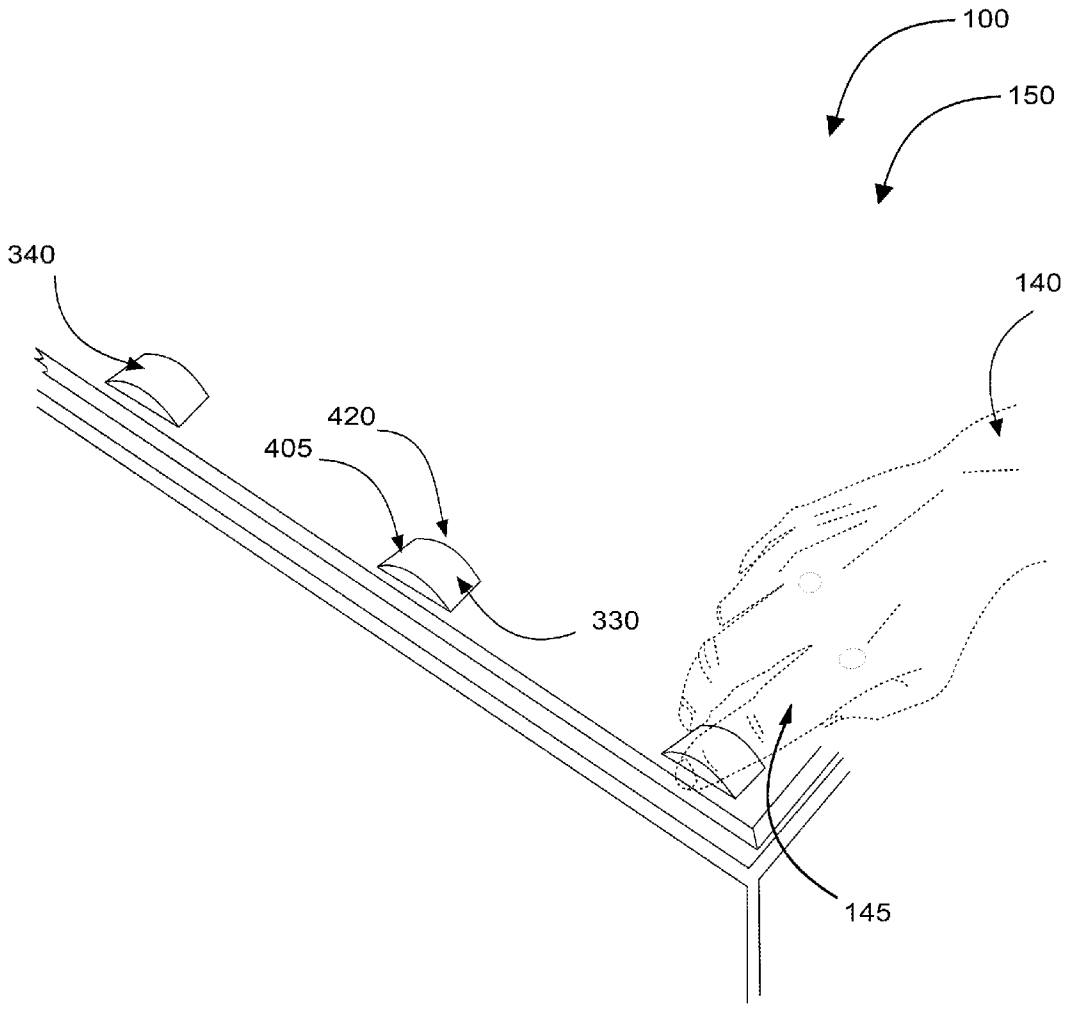


FIG. 2

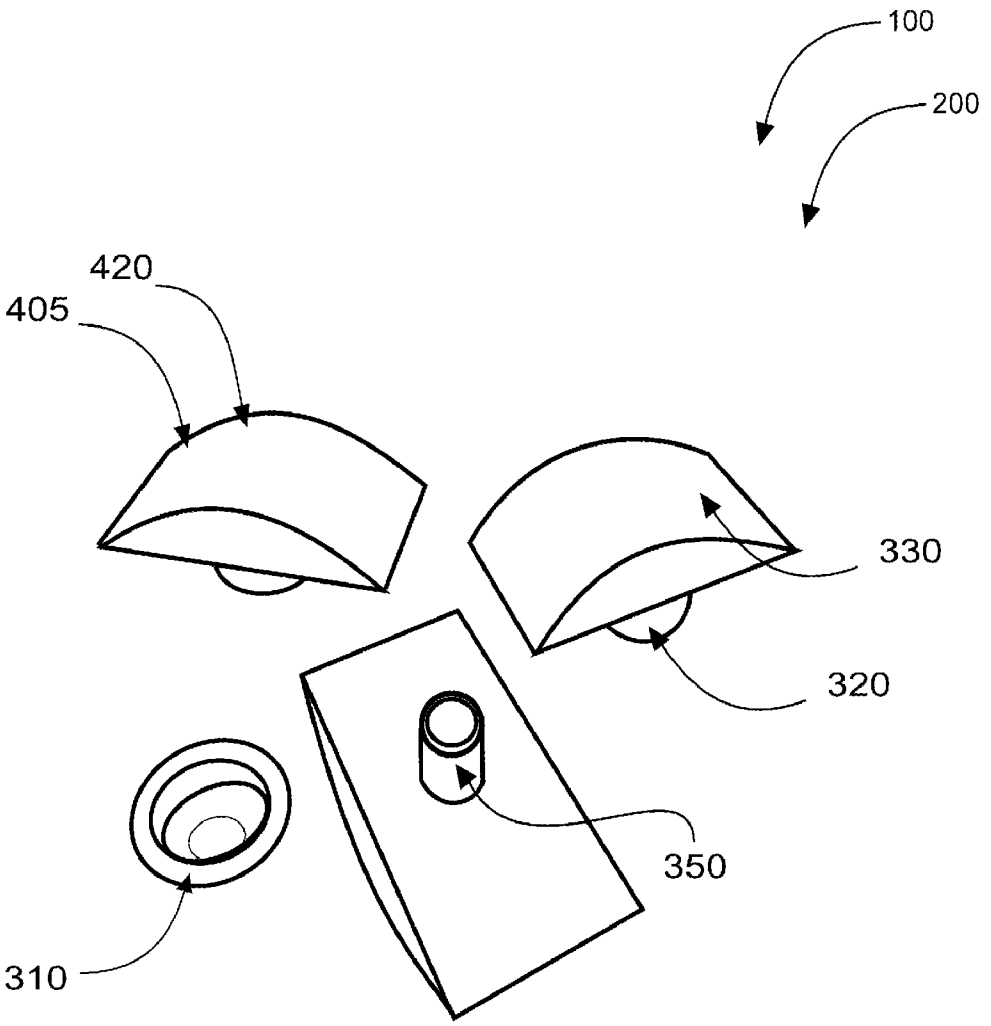


FIG. 3

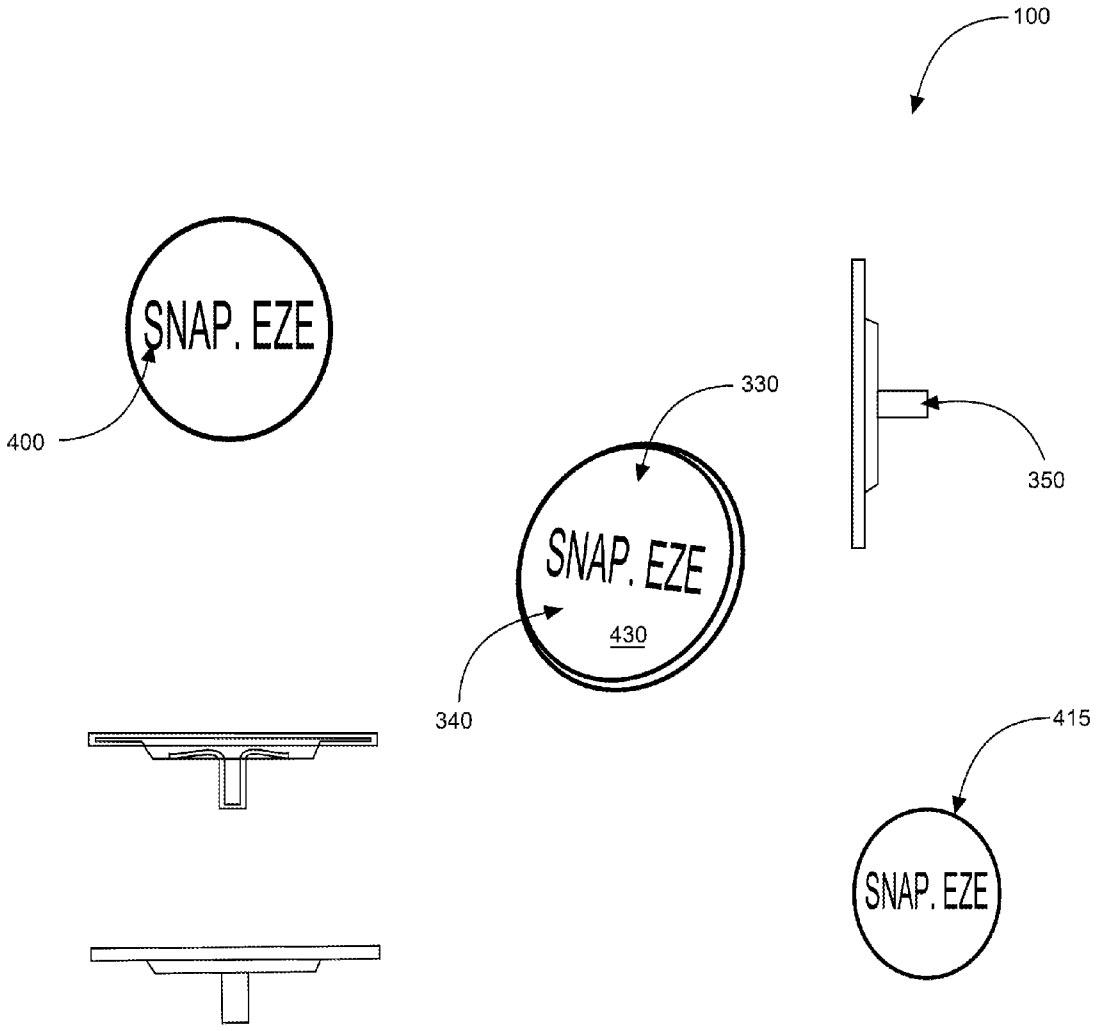


FIG. 4

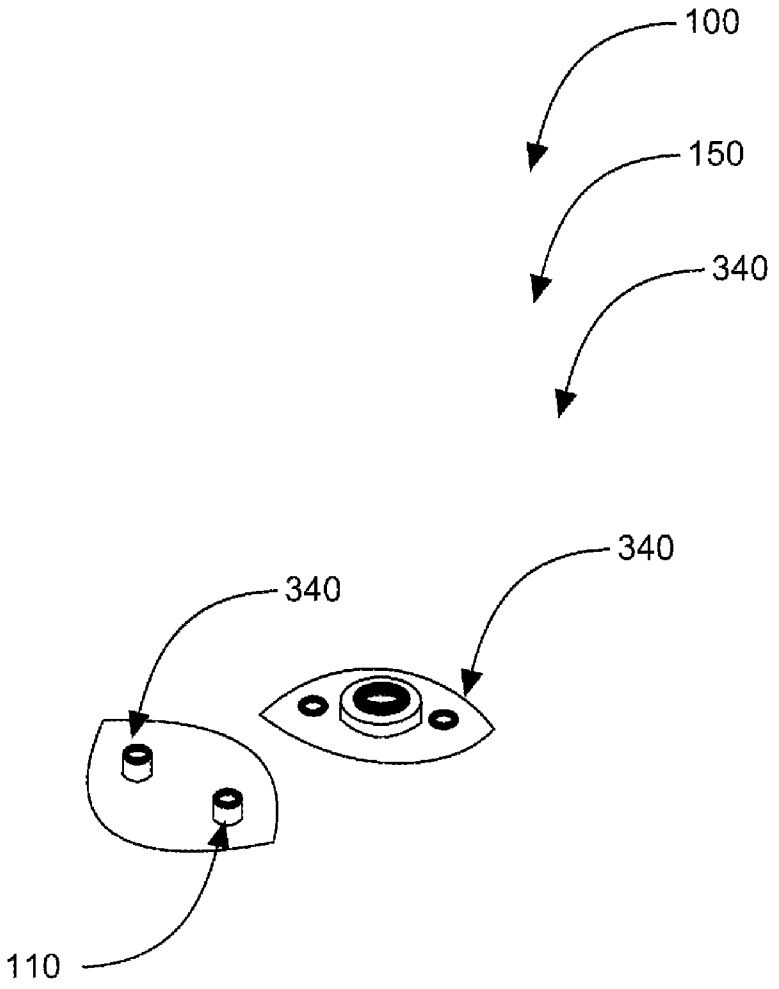


FIG. 5

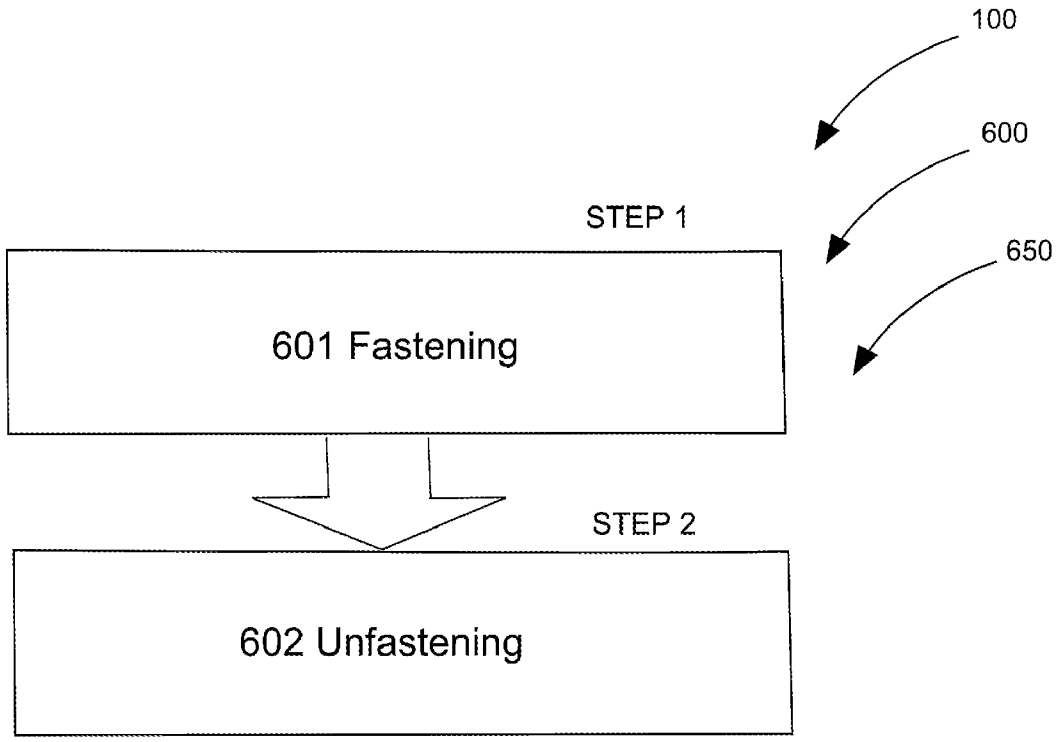


FIG. 6

INTEGRATED ROCKABLY RELEASED LEVERAGE SNAP FASTENING SYSTEM

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present application is related to and claims priority from prior provisional application Ser. No. 61/246,182, filed Dec. 2, 2009 which application is incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates generally to the field of fastening devices and more specifically relates to snaps, to an integrated rockably released leverage pressure snap fastening system.

[0004] 2. Description of the Related Art

[0005] Snaps are a fastening device used to hold devices to objects however conventional snaps are often difficult to fasten and unfasten due to inherent frictional forces. As a result an individual may have to exert an unnecessary amount of force to unfasten a snap which may lead to broken nails or further injury to the user. Snaps may be used to affix a canvas cover to a vehicle, these too by way of example, may become especially rigid and difficult to unfasten resulting from exposure to the elements. Further, a risk of using too much force when unsnapping a snap fastener may lead to damage to the cover. Struggling with snaps also may waste a user's time. Thus a need exists for an ergonomic snap that is easy to be fastened and unfastened repeatedly.

[0006] Various attempts have been made to solve the above-mentioned problems such as those found in U.S. Pat. Nos. 777,043 to McLean; 3,414,949 to Andrews; and 4,608,734 to Schiller. This prior art is representative of fastening button snaps. None of the above inventions and patents, taken either singly or in combination, is seen to describe the invention as claimed.

[0007] Ideally, a snap device/assembly should operate reliably and be manufactured at a modest expense. Thus, a need exists for an ergonomic snap that may easily be fastened and unfastened repeatedly and to avoid the above-mentioned problems.

BRIEF SUMMARY OF THE INVENTION

[0008] In view of the foregoing disadvantages inherent in the known fastening art, the present invention provides a novel snap device. The general purpose of the present invention, which will be described subsequently in greater detail, is to provide a snap with integrated leverage for facilitating the snapping and un-snapping of the snap device.

[0009] The present invention discloses an integrated rockably released leverage snap fastening system which may provide a user with an ergonomic snap assembly for quick and virtually effortless fastening and unfastening. The snap assembly comprises a female snap, a rockable surface plate, and at least one rivet (integrated or no-integrated) for securing the assembly into an integrated rockably released leverage snap. The integrated rockably released leverage snap may then be positioned on a male snap creating a class 1 lever system. In this manner, the male snap provides (is) a fulcrum and the female snap provides (is) the lever. To provide greater integrated leverage, the rockable surface plate of the integrated rockably released leverage snap may comprise an elongated, concave surface permitting a user to rock his or her thumb in a downward motion from the center of the integrated rockably released leverage snap to unfasten the female portion from the male snap(s).

[0010] The snap of the present invention preferably comprises at least two different embodiments. The first embodiment is half-moon shaped. This may allow a person to grab and pull or push the snap from virtually any direction. In this particular embodiment the integrated leverage snap top may replace a current snap top, while still retaining the current bottom if it is permanently affixed, such as on a car or boat or other such object. The tops are designed to fit a standard snap base. The user may replace or install the entire snap, both top and bottom if desired.

[0011] In another preferred embodiment, integrated leverage snap may be in the shape of an oblong ellipse. Utilizing the ellipse's additional surface area and concave shape; each end may be gently sloped upwards, allowing for a user's thumb to press against the flat middle and rock in either direction. This simple motion will release the snap. In this embodiment, both the male snap and rockable lever snap assembly must be installed for proper use. In other embodiments the system may comprise substantially circular-shaped snaps.

[0012] Furthermore, in appreciation of the various services and needs of snaps, the integrated leverage snap may be available in various sizes to accommodate user preferences and needs. The exact dimensions, materials used for construction and method of operation of integrated leverage snap may vary upon manufacturing.

[0013] The present invention holds significant improvements and serves as an integrated leverage snap system. For purposes of summarizing the invention, certain aspects, advantages, and novel features of the invention have been described herein. It is to be understood that not necessarily all such advantages may be achieved in accordance with any one particular embodiment of the invention. Thus, the invention may be embodied or carried out in a manner that achieves or optimizes one advantage or group of advantages as taught herein without necessarily achieving other advantages as may be taught or suggested herein. The features of the invention which are believed to be novel are particularly pointed out and distinctly claimed in the concluding portion of the specification. These and other features, aspects, and advantages of the present invention will become better understood with reference to the following drawings and detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The figures which accompany the written portion of this specification illustrate embodiments and method(s) of use for the present invention, integrated rockably released leverage snap fastening system, constructed and operative according to the teachings of the present invention.

[0015] FIG. **1** shows a perspective view illustrating an integrated rockably released leverage snap fastening system used to secure a tarpaulin to a boat according to an embodiment of the present invention.

[0016] FIG. **2** is a perspective view illustrating the integrated rockably released leverage snap fastening system according to an embodiment of the present invention.

[0017] FIG. **3** is a perspective view illustrating the rockable lever snap assembly and a male snap according to an embodiment of the present invention.

[0018] FIG. **4** is a perspective view illustrating different indicia and designs of the rockable surface plate according to alternative embodiments of the present invention.

[0019] FIG. **5** is a perspective view illustrating the rockable lever snap assembly comprising a female snap, a rockable surface plate, and at least one rivet accompanied by a male snap according to an embodiment of the present invention.

[0020] FIG. **6** is a perspective view illustrating a flow chart of the preferred method of use of an integrated rockably released leverage snap fastening system according to an embodiment of the present invention

[0021] The various embodiments of the present invention will hereinafter be described in conjunction with the appended drawings, wherein like designations denote like elements.

DETAILED DESCRIPTION

[0022] As discussed above, embodiments of the present invention relate to an integrated rockably released leverage snap fastening system **100** and more particularly to an improved fastening method and device for snappably securing at least one item in place.

[0023] Integrated rockably released leverage snap fastening system **100** may generally comprise male snap **310** and rockable lever snap assembly **200** wherein rockable lever snap assembly **200** may comprise female snap **320**, rockable surface plate **330**, and at least one rivet **350**, (rivet **350** may be integrated as shown in FIG. **3** or non-integrated as shown in FIG. **5**). Once assembled, user **140** may fasten integrated rockably released leverage snap **340** to male snap **310** to hold at least one item in place. To facilitate in unfastening, male snap **310** and female snap **320** jointly combine to create a class 1 lever system.

[0024] Upon placement of female snap **320** on male snap **310**, a class 1 lever system is created wherein male snap **310** may comprise a fulcrum and pivot point to which female snap **320** friction and effort required to remove by user **110** is reduced by the present levering system. Friction may be minimized when female snap **320** is rotated on male snap **310** because of less contact surface area existing between both parts in contact. As a result, the effort applied by user **140** to unfasten snap is substantially reduced, however in-contact use the system provides suitable friction means to retain an object such as a tarpaulin **120** in place. Furthermore, to provide greater integrated leverage, rockable surface plate **330** of integrated rockably released leverage snap **340** may comprise an elongated shape with a concave surface providing user **110** with greater surface area to rock via digit **145** in a downward motion from the center of integrated rockably released leverage snap **340** to unfasten female snap **320** from male snap **310**. In a class 1 lever system of the present invention, female snap **320** may comprise leverage multiplying means to frictionally reduce the force by which user **110** need apply to unfasten integrated rockably released leverage snap **340**.

[0025] Referring to the drawings by numerals of reference there is shown in FIG. **1**, a perspective view illustrating integrated rockably released leverage snap fastening system **100** in an in-use condition **150** according to one embodiment of the present invention. Integrated rockably released leverage snap fastening system **100** as illustrated is used to secure tarpaulin **120** to boat **110**. In this embodiment, boat **110** may have pre-affixed male snap snaps **160** and integrated rockably released leverage snap **340** preferably comprises rockable lever snap assembly **200** wherein said rockable lever snap assembly **200** comprises female snap **320**, rockable surface plate **330**, and at least one rivet **350**. (It should be appreciated that the present invention may be used to secure various objects other than tarpaulins **120** to objects other than boats **110** for example curtains or awnings to a deck, to a house, to a floor or ceiling, etc). As shown in FIG. **1**, rockable surface plate **330** may comprise elliptically shaped rockable plate **410** providing additional surface area for unfastening at virtually all angles without risking substantial damage (ripping or other) to tarpaulin **120**. In certain embodiments integrated rockably released leverage snap fastening system **100** may comprise a button.

[0026] Referring to FIGS. **2** and **3**, illustrating perspective views of integrated rockably released leverage snap fastening system **100** in in-use condition **150** being snappably fastened by user **140**. In an embodiment of the present invention as shown here, rockable surface plate **330** may comprise half-moon shaped rockable plate **405** and concave shaped rockable plate **420** wherein said rockable surface plate **330** is gently sloped permitting user **140** using thumb **145** to rockably release integrated rockably released leverage snap **340** while secured to male snap **310**. In this manner of use, male snap **310** operates as a fulcrum in a class 1 lever system, and rockable lever snap assembly **200** may be rockably released by applying little pressure because friction is substantially reduced by the integrated levering system. User **140** may avoid using excessive force when unfastening integrated rockably released leverage snap system **100** and may further protect items to be fastened from damage. Referring now to FIG. **3**, illustrating the basic components of integrated rockably released leverage snap system **100** comprising male snap **310** and rockable lever snap assembly **200**. As best seen here, rockable surface plate **330** may comprise different shapes such as half-moon shaped rockable plate **405**, elliptically shaped rockable plate **410**, and round shaped rockable plate **415**. In the preferred embodiment, rockable surface plate **330** comprises concave shaped rockable plate **420** providing comfortable and efficient levering means in addition to the ergonomic shape of plate.

[0027] Referring now to FIG. **4**, illustrating a perspective view of integrated rockably released leverage snap fastening system **100**. In alternative embodiments, rockable surface plate **330** may comprise different indicia **400**. As best seen in FIG. **4**, rockable lever snap assembly **200** may comprise round shaped rockable plate **415** with a logo "SNAP.EZE" on rockable plate top surface **430** of round shaped rockable plate **415**. Upon reading this specification, it should be appreciated that, under appropriate circumstances, considering such issues as user preferences, design preference, structural requirements, marketing preferences, cost, available materials, technological advances, etc., alternative embodiments comprising custom preference indicia **400**, designs such as fish, sporting goods, advertisements, of various dimensions etc., may be sufficient.

[0028] Referring to FIG. **5**, illustrating a perspective view of rockable lever snap assembly **200**. In a preferred embodiment of the present invention, rockable lever snap assembly **200** may comprise female snap **320**, rockable surface plate **330**, and at least one rivet **350** (or other suitable fastener means) for securing rockable surface plate **330** to female snap **320**. Rockable surface plate **330** further comprises at least one rivet hole **550** providing insertable securing means of rockable surface plate **330** to female snap **320** using rivet **350**. User **140** may elect to remove rockable surface plate **330** in

exchange for an alternative embodiment of rockable surface plate **330** while leaving male snap **310** installed.

[0029] Integrated rockably released leverage snap fastening system **100** may comprise male snap **310** comprising a fulcrum and rockable lever snap assembly **200** comprising female snap **320**, rockable surface plate **330**, and at least one rivet **350** (that may be a stud integral with female portion or separated from the female portion depending on manufacturing preference); wherein female snap **320** and rockable surface plate **330** may be secured together by at least one rivet **350**; wherein male snap **310** and rockable lever snap assembly **200** jointly create a class 1 lever system; and wherein male snap **310** and integrated rockably released leverage snap **340** may used to secure an item in place. In alternative embodiments, male snap **310** may have concave shape similar to rockable surface plate **330** and may be sold together with rockable lever snap assembly **200** as kit **499**. In alternative embodiments, rockable lever snap assembly **200** may be designed for pre-affixed male snap snaps **160** such as those already installed on boat **110** or vehicle **115**.

[0030] Referring now to FIG. **6**, illustrating flow chart **650** of preferred method of use **600** of integrated rockably released leverage snap fastening system **100** comprising the steps of: step one **601** fastening rockable lever snap assembly **200** to male snap **310** to secure tarpaulin **120** to vehicle **115** and other such surfaces; and unfastening rockable lever snap assembly **200** from male snap **310** which may be facilitated by a class 1 levering system means of rockable surface plate **330**. It should be noted that the steps described in the method of use can be carried out in many different orders according to user preference. Upon reading this specification, it should be appreciated that, under appropriate circumstances, considering such issues as design preference, user preferences, marketing preferences, cost, structural requirements, available materials, technological advances, etc., other methods of use arrangements such as, for example, different orders within above-mentioned list, elimination or addition of certain steps, including or excluding certain maintenance steps, etc., may be sufficient.

[0031] The embodiments of the invention described herein are exemplary and numerous modifications, variations and rearrangements can be readily envisioned to achieve substantially equivalent results, all of which are intended to be embraced within the spirit and scope of the invention. Further, the purpose of the foregoing abstract is to enable the U.S. Patent and Trademark Office and the public generally, and especially the scientist, engineers and practitioners in the art who are not familiar with patent or legal terms or phraseology, to determine quickly from a cursory inspection the nature and essence of the technical disclosure of the application.

What is claimed is new and desired to be protected by Letters Patent is set forth in the appended claims:

1. An integrated rockably released leverage snap fastening system comprising:
- at least one male snap; and
- at least one rockable lever snap assembly which is simultaneously movable;
- wherein said rockable lever snap assembly comprises at least one replaceable rockable surface plate; and
- wherein said rockable lever snap assembly is removably fastened to said male snap to hold at least one item in place;

2. The integrated rockably released leverage snap fastening system of claim **1**, wherein said male snap and said rockable lever snap assembly in combination create a class 1 lever system.

3. The integrated rockably released leverage snap fastening system of claim **1**, wherein said male snap comprises a fulcrum.

4. The integrated rockably released leverage snap fastening system of claim **1**, wherein said rockable lever snap assembly comprises a female snap, a rockable surface plate, and at least one rivet.

5. The rockable lever snap assembly of claim **4**, wherein said female snap and said rockable surface plate are secured together by at least one said rivet.

6. The rockable lever snap assembly of claim **4**, wherein said female snap and said rockable surface plate are secured together by a plurality of said rivets.

7. The rockable lever snap assembly of claim **4**, wherein said rockable surface plate is elliptically shaped.

8. The rockable lever snap assembly of claim **7**, wherein said rockable surface plate includes additional surface area suitable for levering means.

9. The rockable lever snap assembly of claim **7**, wherein said rockable surface plate is concaved.

10. The rockable lever snap assembly of claim **9** and said female snap is rockably removable from said male snap.

11. The rockable lever snap assembly of claim **4**, wherein said rockable surface plate is round.

12. The rockable lever snap assembly of claim **4**, wherein said rockable surface plate comprises indicia.

13. The integrated rockably released leverage snap fastening system of claim **1**, wherein said male snap is located on a boat body.

14. The integrated rockably released leverage snap fastening system of claim **1**, wherein said male snap is located on a land vehicle.

15. The integrated rockably released leverage snap fastening system of claim **1**, wherein said male snap is located on a non-land vehicle.

16. The integrated rockably released leverage snap fastening system of claim **1**, wherein said female snap is located on a tarpaulin.

17. The integrated rockably released leverage snap fastening system of claim **1**, wherein said male snap and said rockable lever snap assembly comprise a kit.

18. An integrated rockably released leverage snap fastening system comprising:
- at least one male snap comprising a fulcrum;
- and at least one rockable lever snap assembly comprising a female snap, a rockable surface plate, and at least one rivet;
- wherein said female snap and said rockable surface plate are secured together by said at least one of rivet; and
- wherein said male snap and said rockable lever snap assembly jointly create a class one lever system; and
- wherein said male snap and said female snap is used to hold a tarpaulin in place on a boat.

19. A method of using an integrated rockably released leverage snap fastening system comprising the steps of:
- fastening a rockable lever snap assembly to a male snap to secure a tarpaulin to a vehicle; and
- unfastening said rockable lever snap assembly from said male snap using an integrated levering means of a rockable surface plate to remove said tarpaulin from said vehicle.

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