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(54) **HAND SUPPORT APPARATUS, SYSTEM, AND METHOD OF USE FOR ENHANCING UPPER BODY EXERCISE**

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A63B 21/00	(2006.01)
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(52) **U.S. Cl.**

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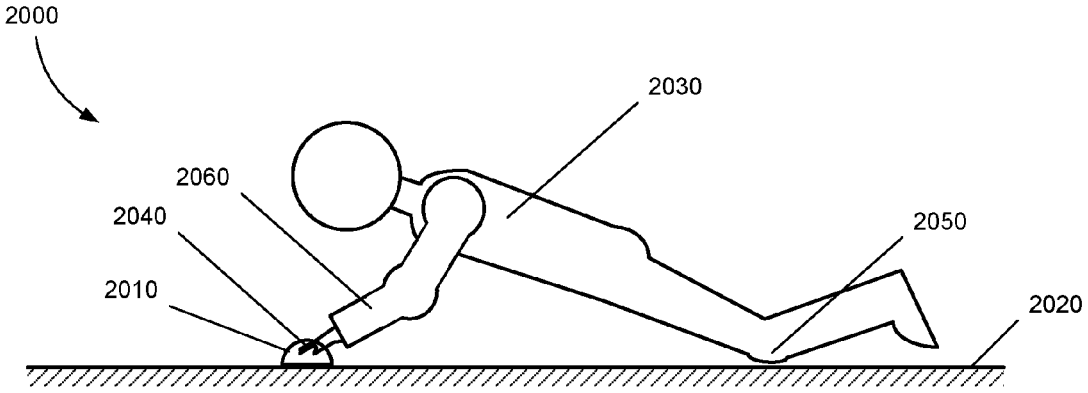
(57) **ABSTRACT**

Apparatuses, systems, and methods of use are disclosed for enhancing upper body exercise. An apparatus includes a domed hand support section, the domed hand support section having a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand while the user's hand is held in a naturally curved open-position. The apparatus also includes a surface engagement section secured to an underside of the domed hand support section and configured to engage a supporting surface. When the surface engagement section is deployed on the supporting surface and the palm, thumb, and fingers of the user's hand are placed in the plurality recesses on the domed hand support section, the domed face supports the user's hand in the naturally curved open position while the user exerts force against the domed hand support section and that is at least partially directed toward the supporting surface.



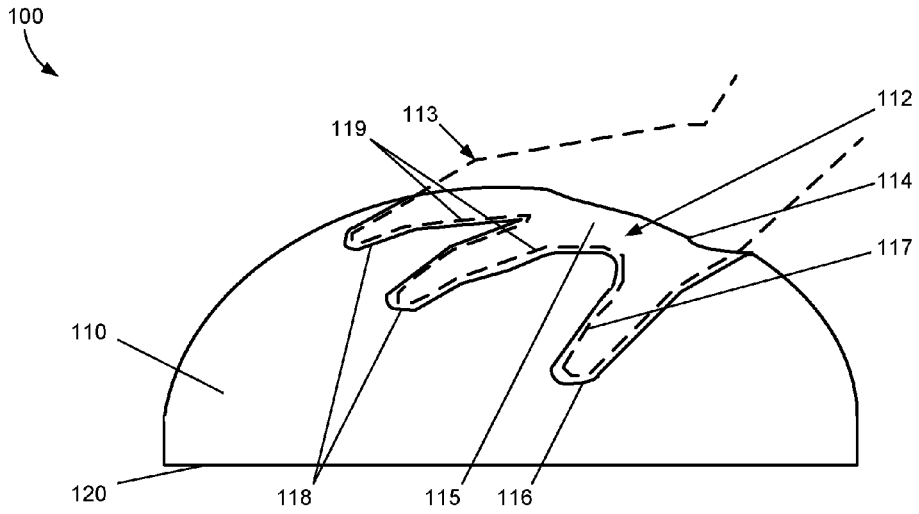

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FIG. 1

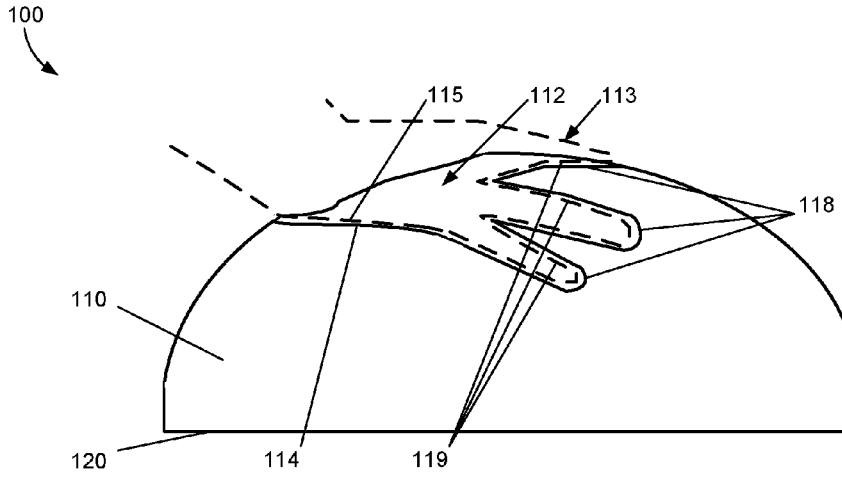
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FIG. 2

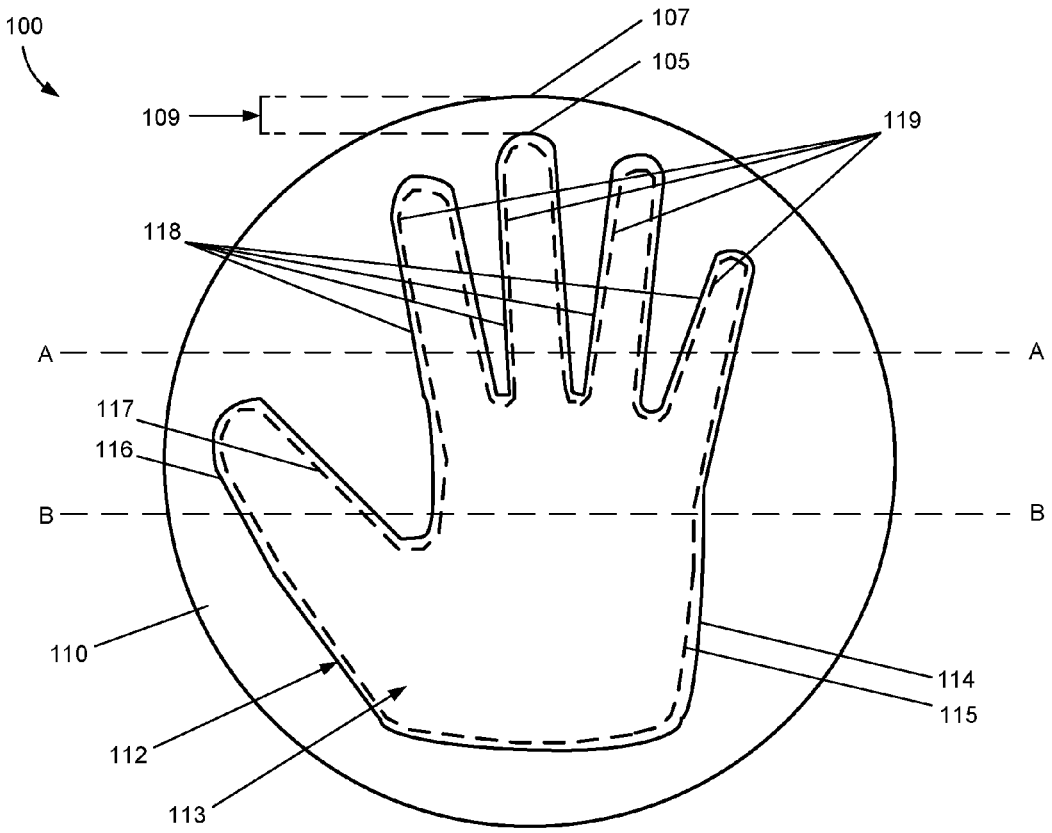

FIG. 3

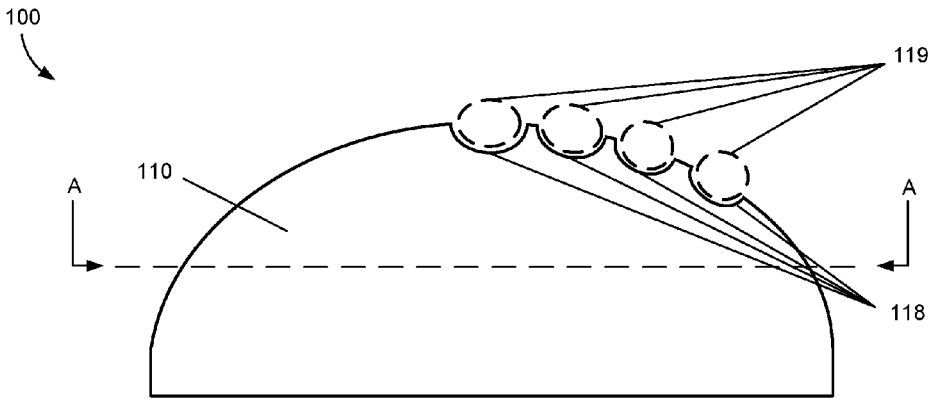

FIG. 4

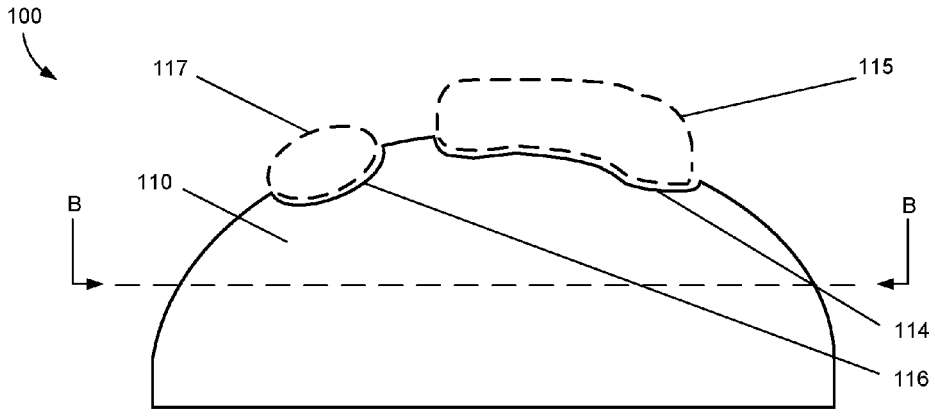

FIG. 5

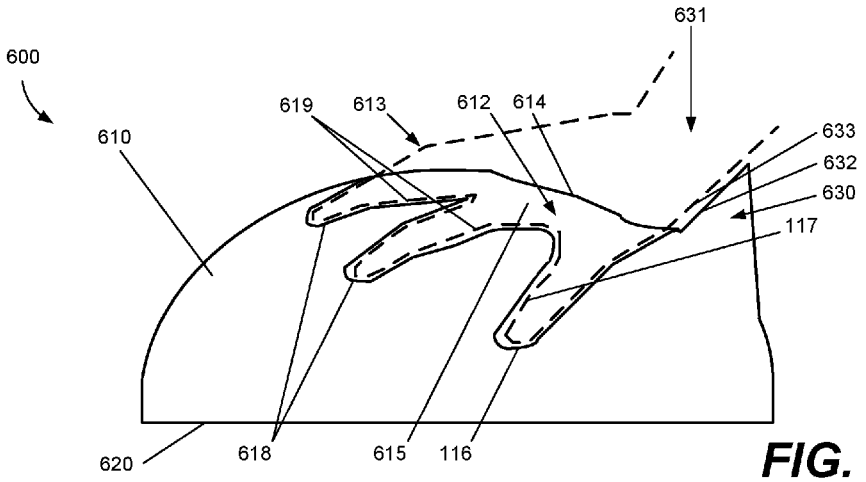
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FIG. 6

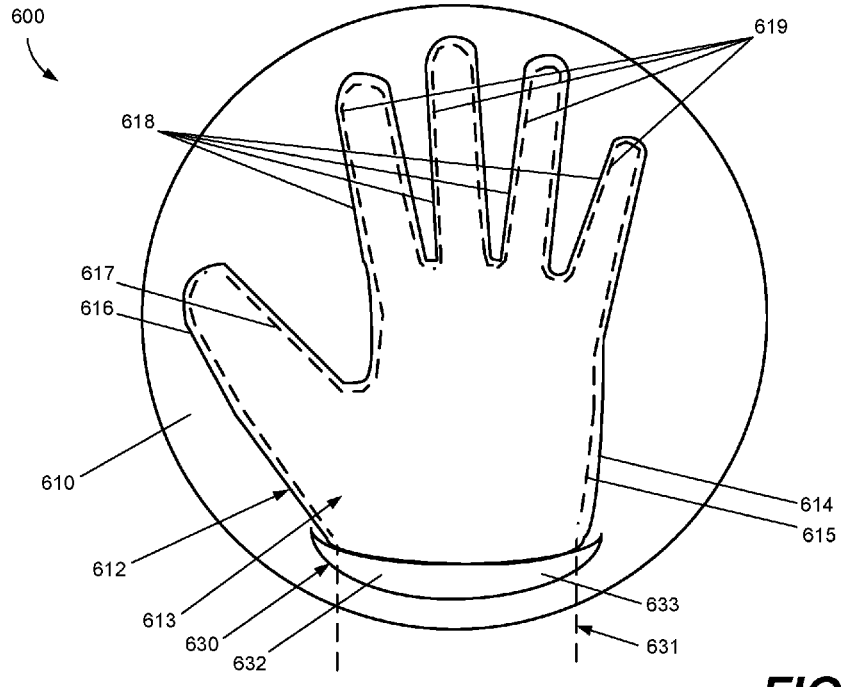
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FIG. 7

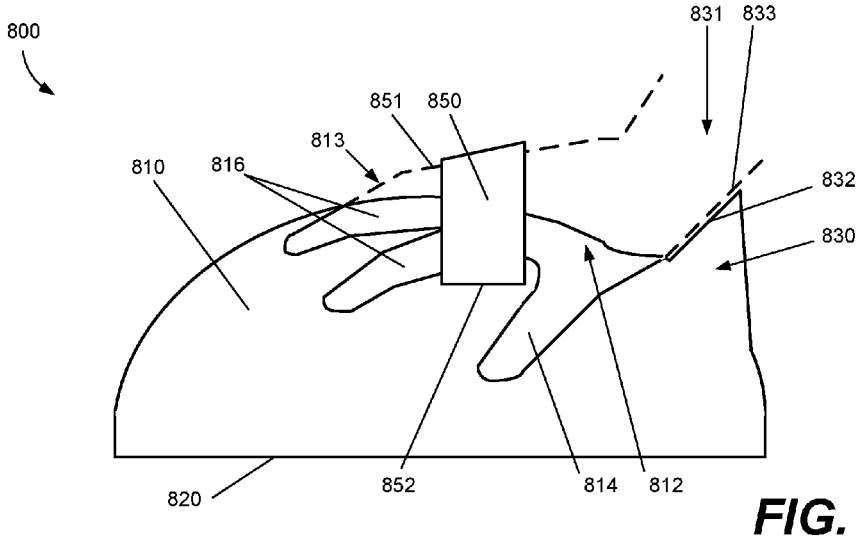
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FIG. 8

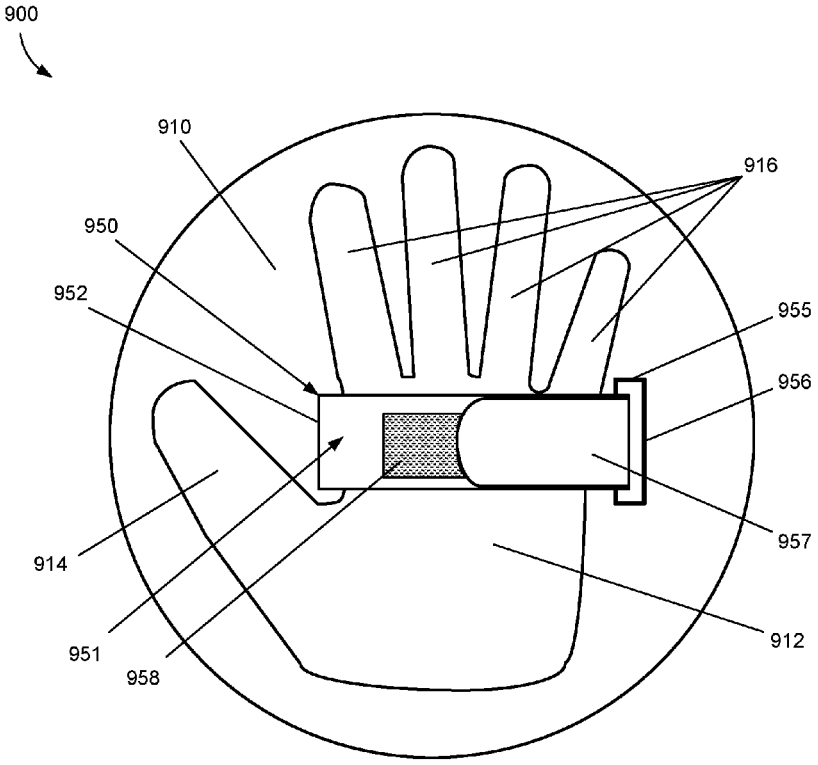
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FIG. 9

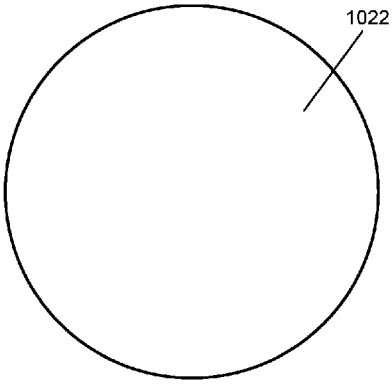
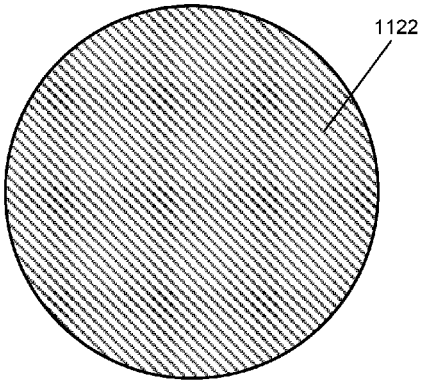


FIG. 10



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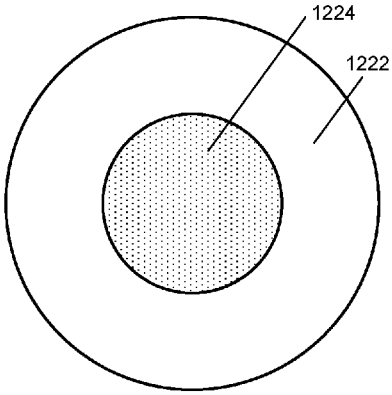

FIG. 12

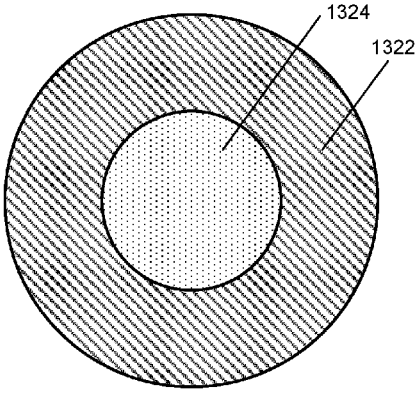

FIG. 13

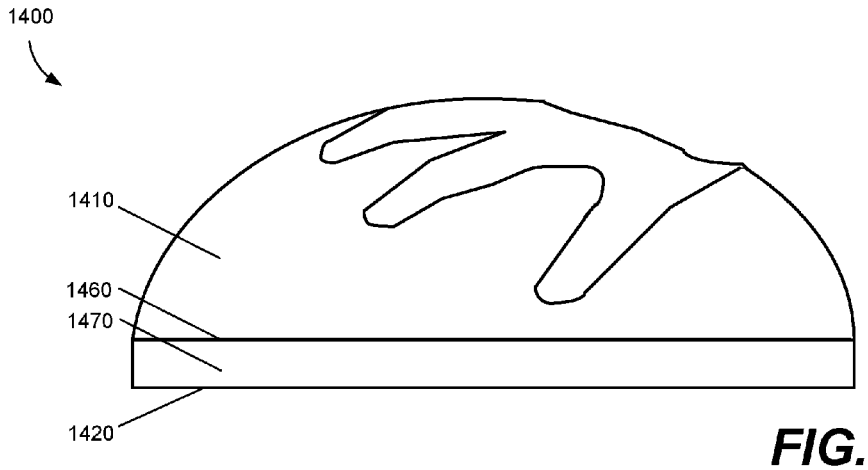
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FIG. 14

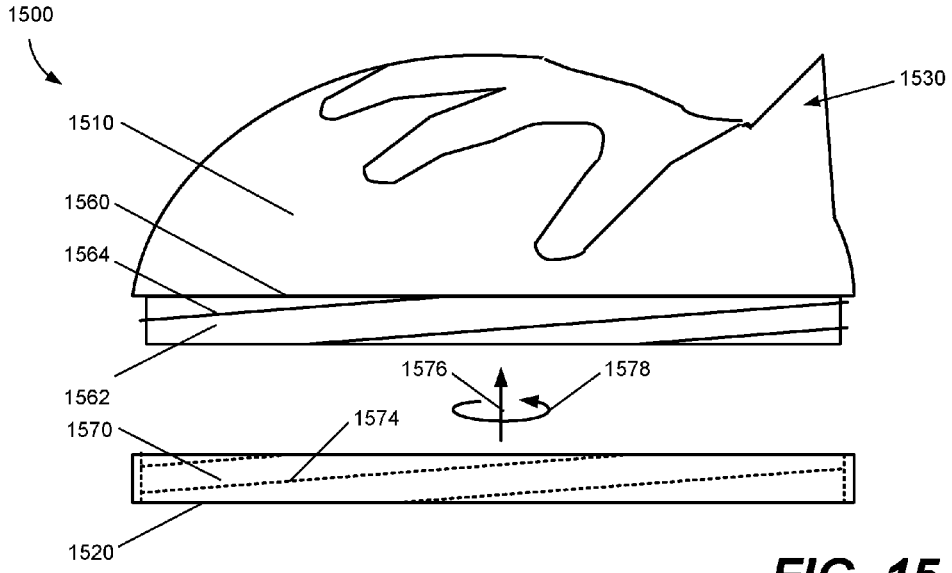
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FIG. 15

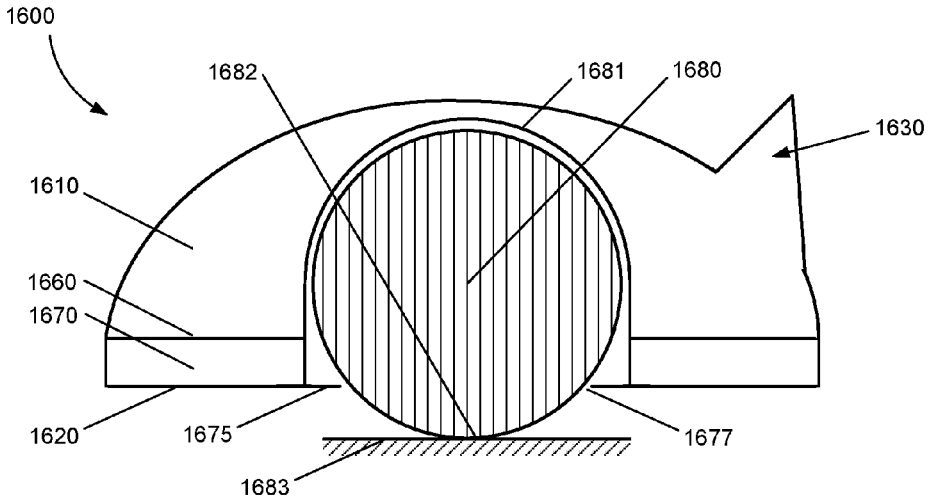
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FIG. 16

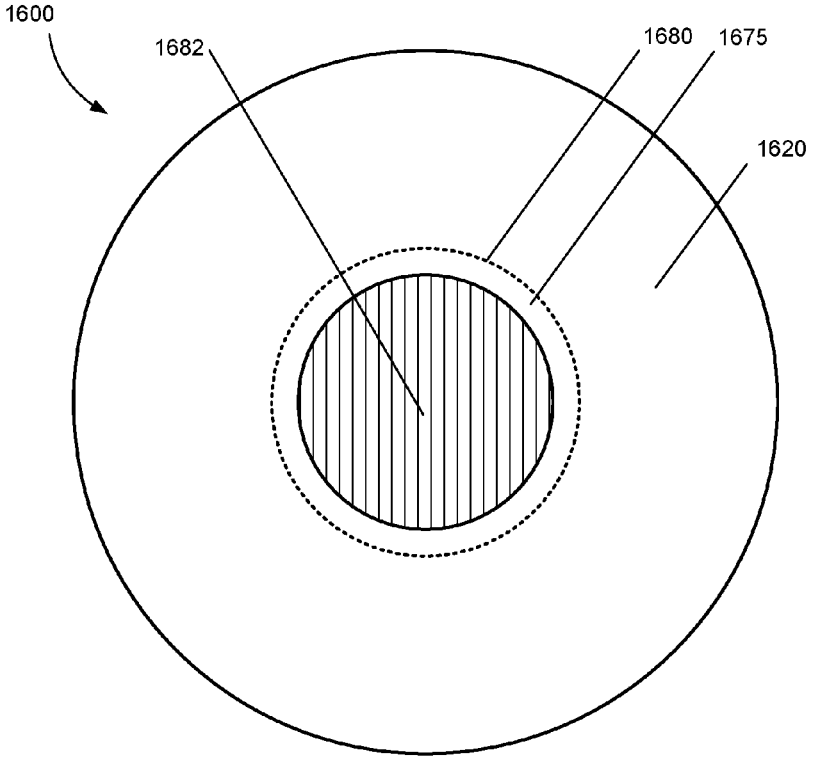
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FIG. 17

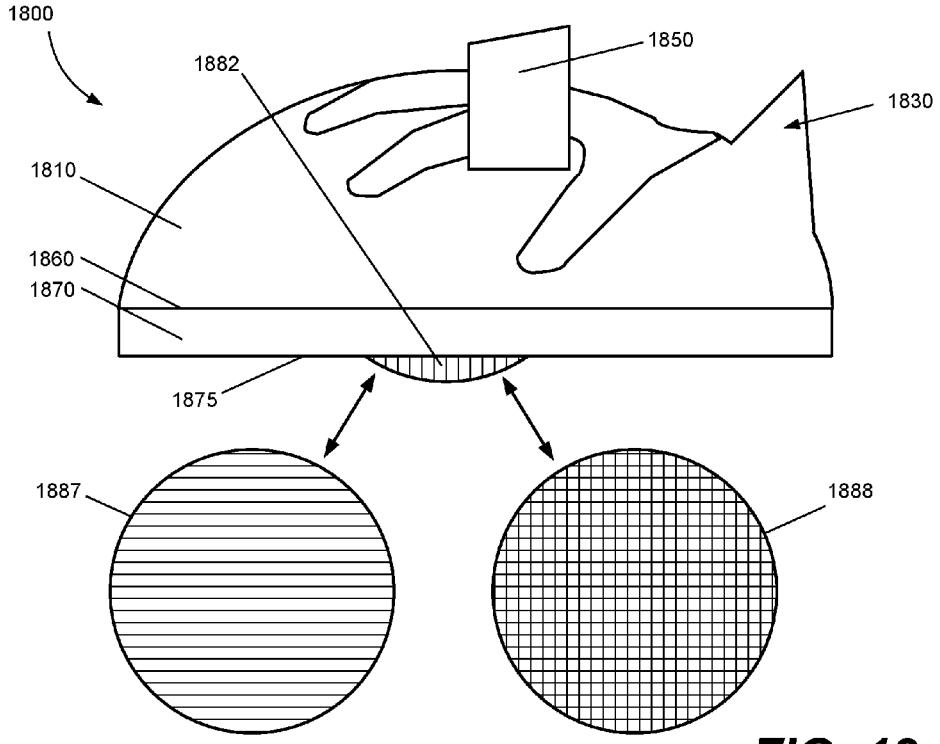
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FIG. 18

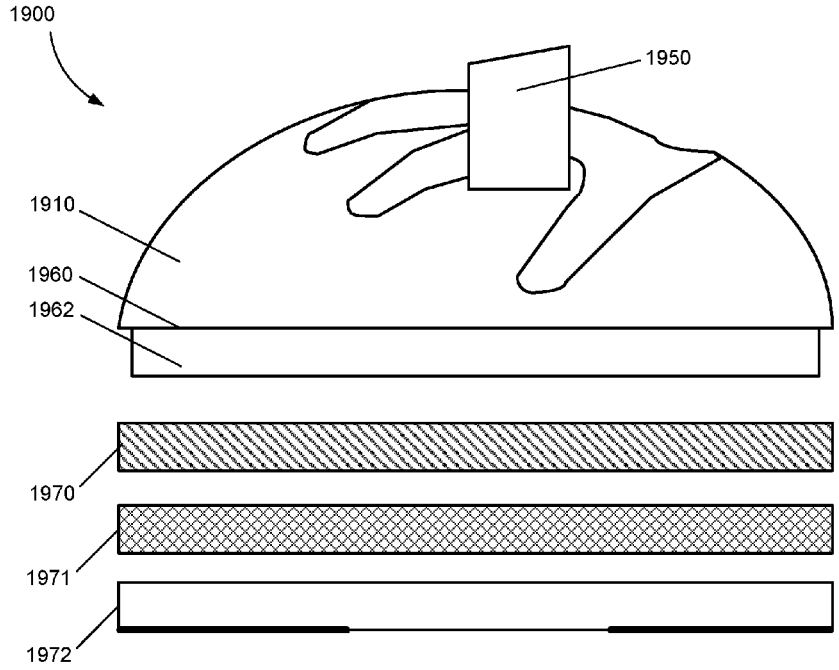
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FIG. 19

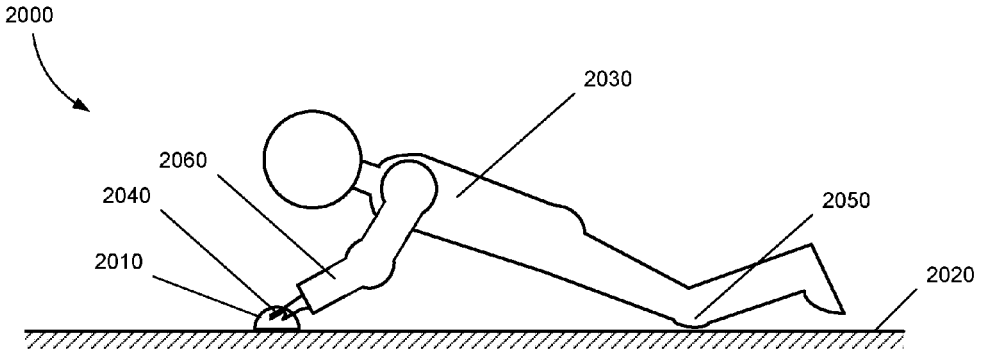
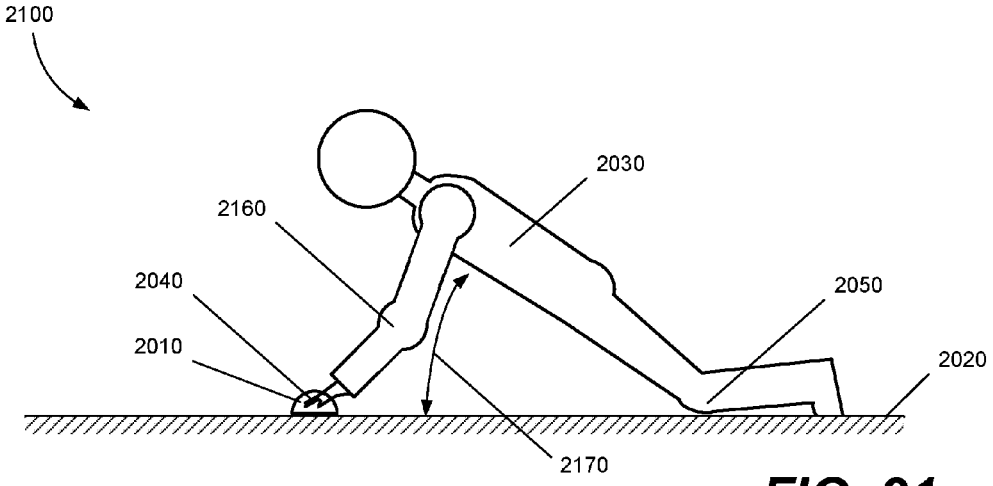


FIG. 20



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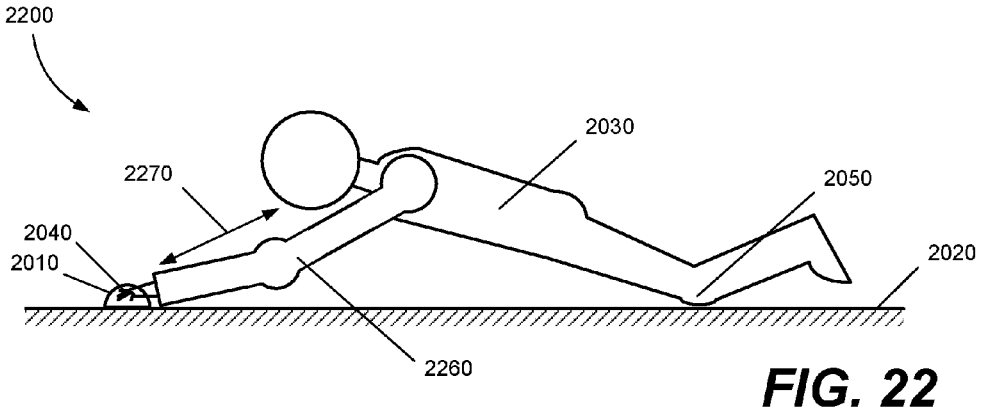

FIG. 22

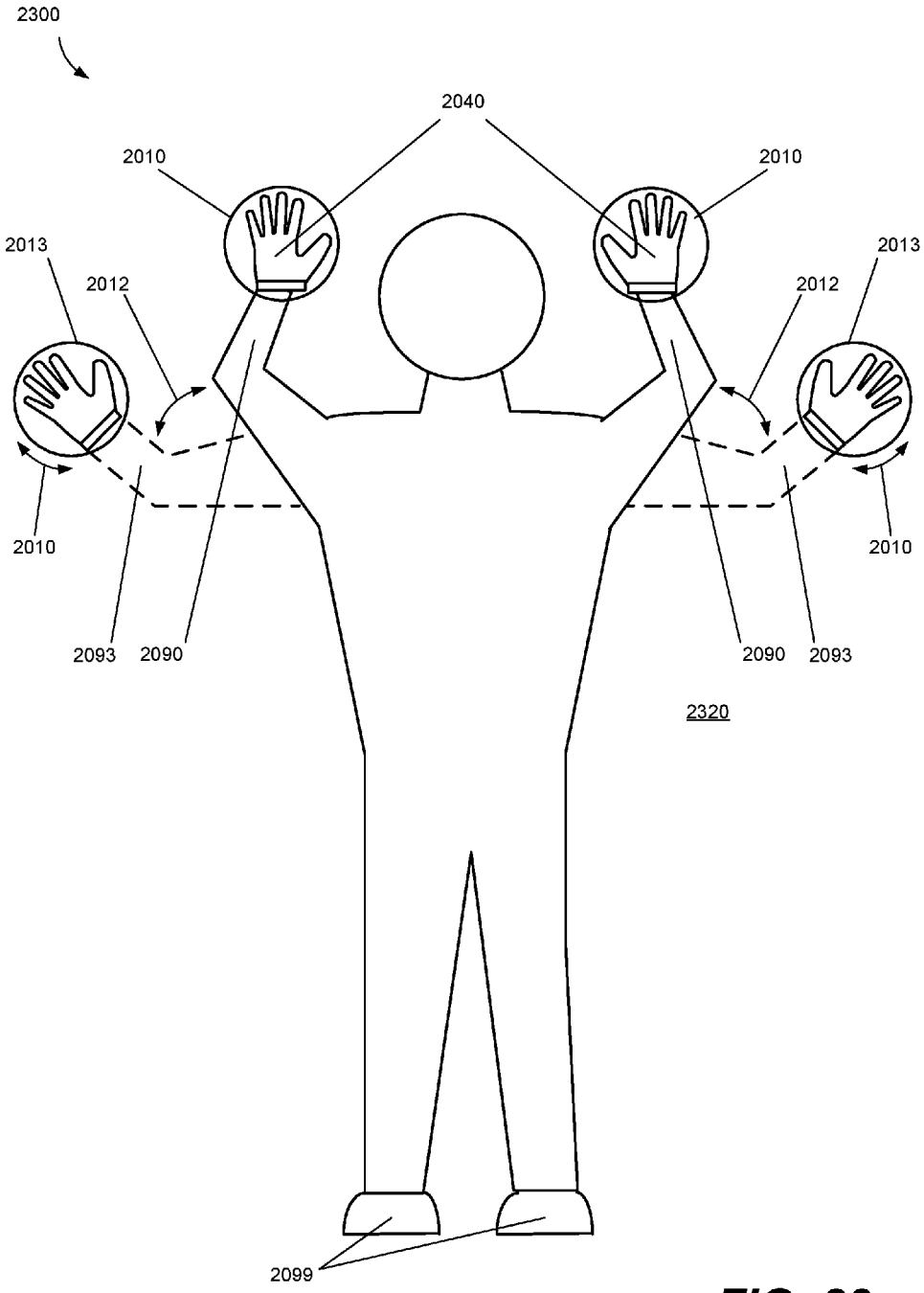
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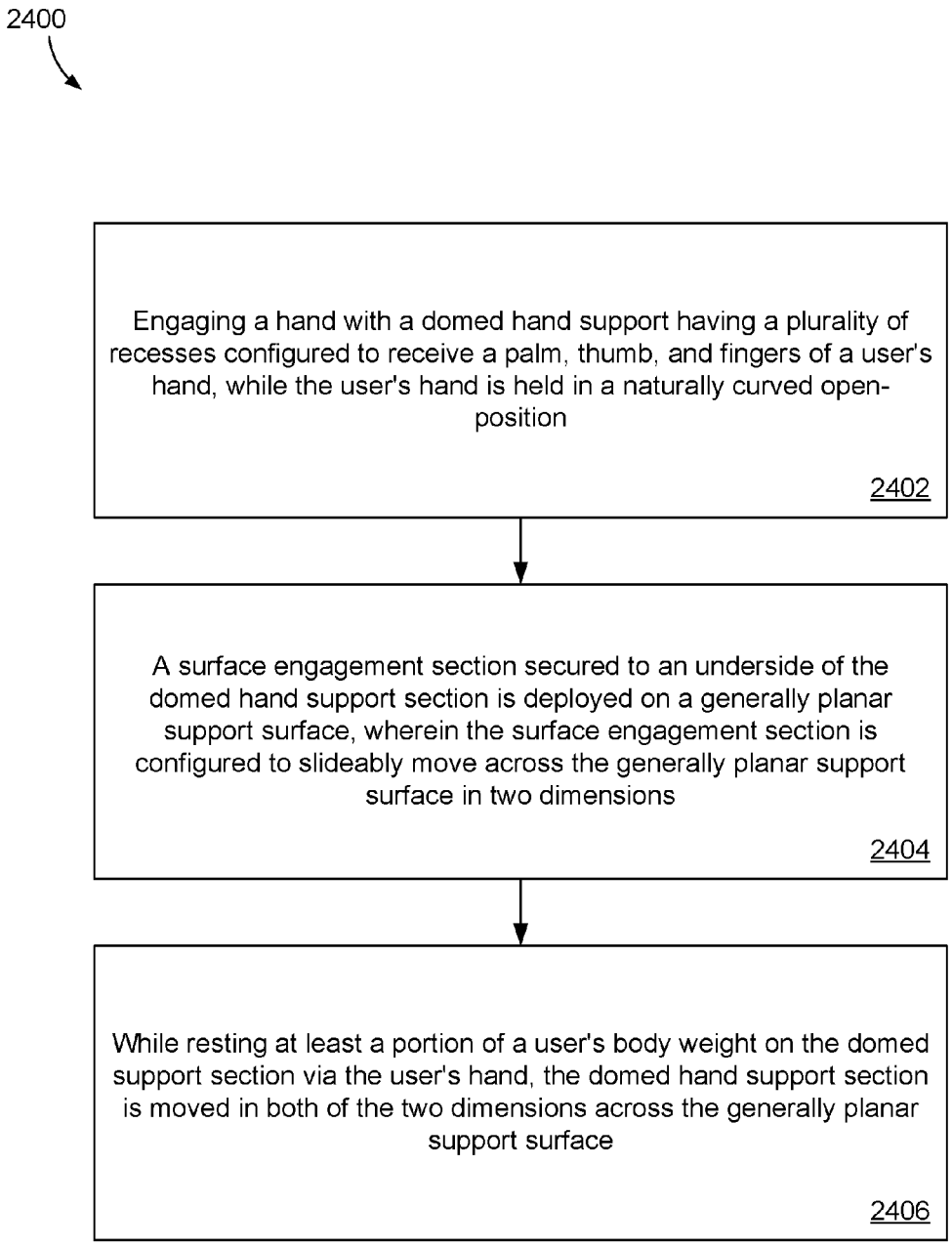
FIG. 23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Engaging a hand with a domed hand support having a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand, while the user's hand is held in a naturally curved open-position
2402
A surface engagement section secured to an underside of the domed hand support section is deployed on a generally planar support surface, wherein the surface engagement section is configured to slideably move across the generally planar support surface in two dimensions
2404
While resting at least a portion of a user's body weight on the domed support section via the user's hand, the domed hand support section is moved in both of the two dimensions across the generally planar support surface
2406

FIG. 24

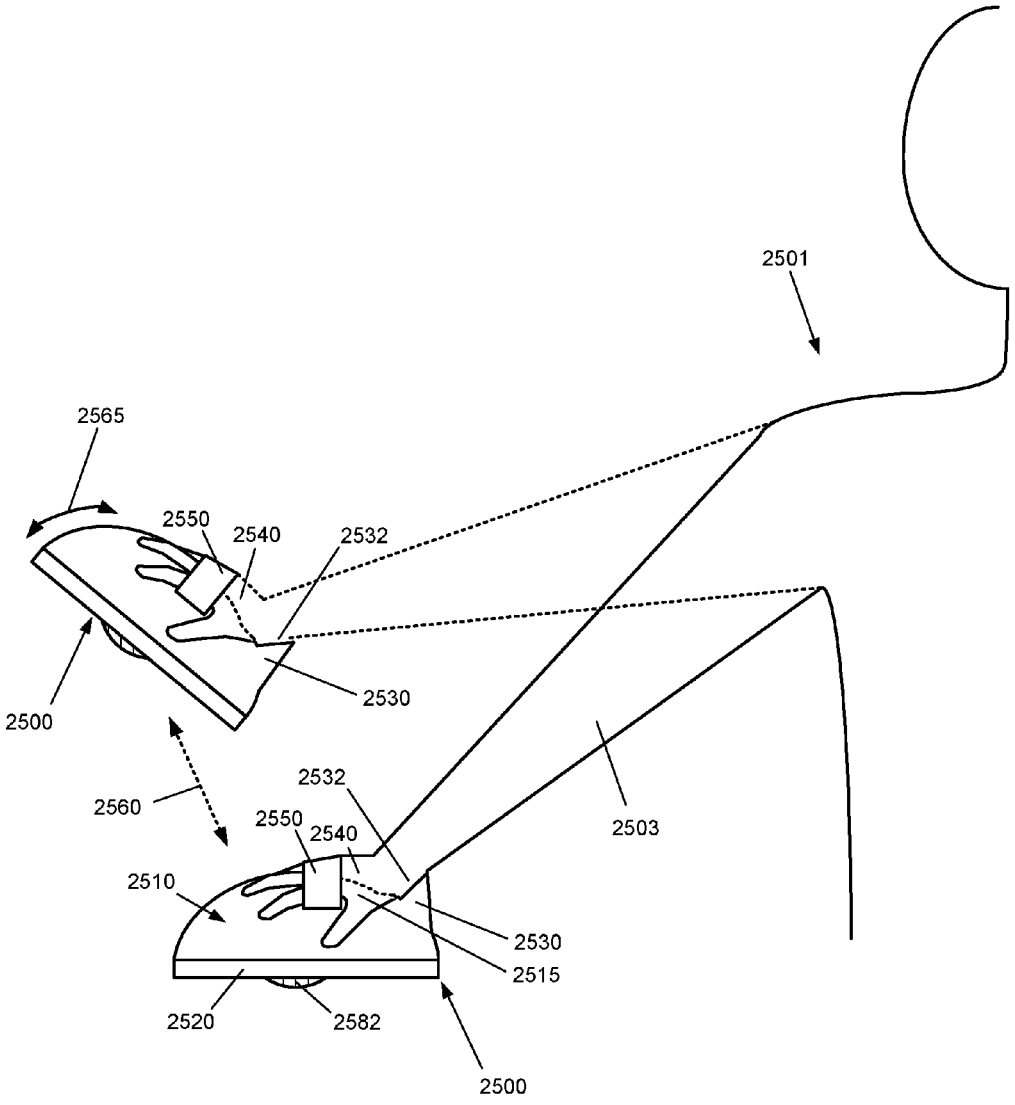
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FIG. 25

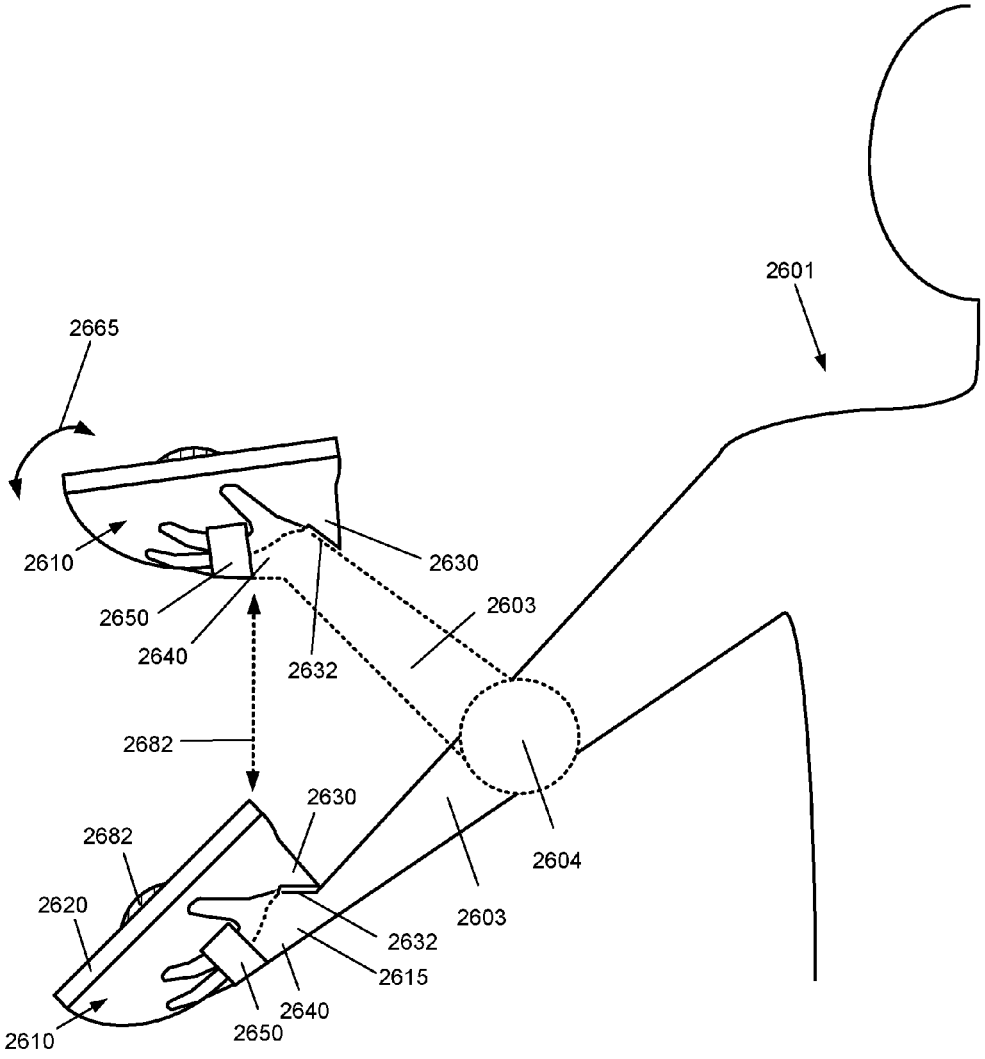
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FIG. 26

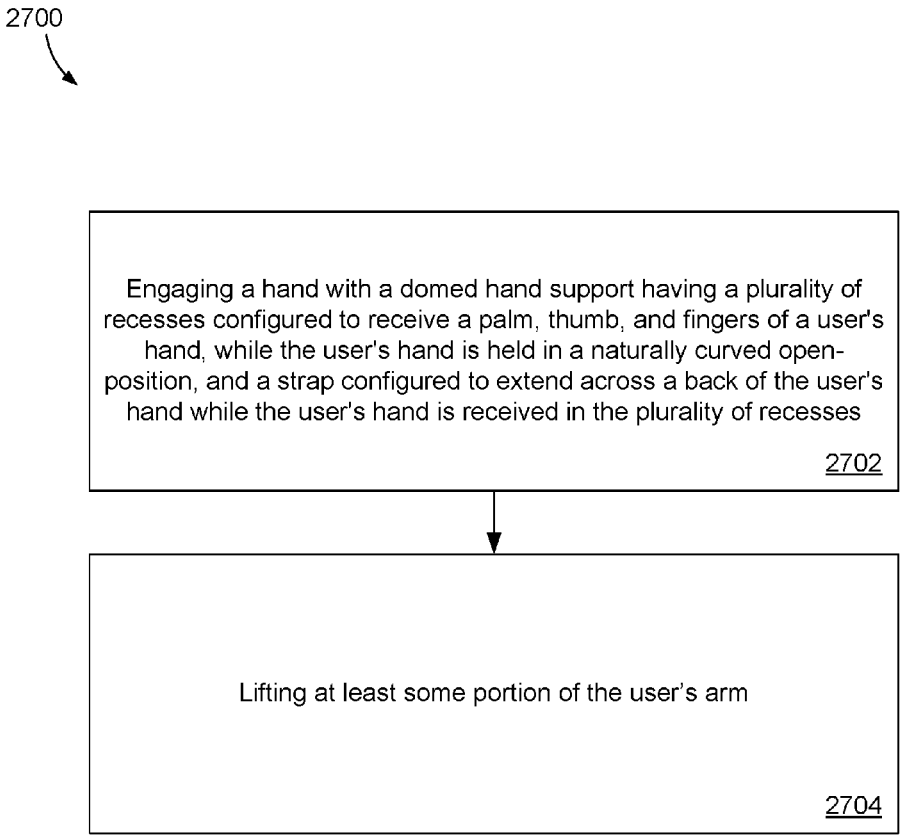
2700
Engaging a hand with a domed hand support having a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand, while the user's hand is held in a naturally curved open-position, and a strap configured to extend across a back of the user's hand while the user's hand is received in the plurality of recesses
2702
Lifting at least some portion of the user's arm
2704

FIG. 27

HAND SUPPORT APPARATUS, SYSTEM, AND METHOD OF USE FOR ENHANCING UPPER BODY EXERCISE

PRIORITY CLAIM

[0001] The present application claims the priority and benefit of U.S. Provisional Patent Application Ser. No. 62/323,865 entitled "HAND SUPPORT APPARATUS, SYSTEM, AND METHOD OF USE FOR ENHANCING UPPER BODY EXERCISE," filed on Apr. 18, 2016

BACKGROUND

[0002] People spend a great deal of money on bulky upper body fitness machines, weight benches, and barbells, or continually pay for fitness club memberships to use such equipment. However, much of the benefit that can be gained from using such devices can be achieved by doing push-ups: resting the palms of one's hands and toes or knees on the floor and lifting one's body up and down to directly work the arm, shoulder, and chest muscles, while also indirectly working abdominal, back, neck, and other muscles.

[0003] However, all the force is necessarily directed through the person's hands and wrists, and, thus, can painfully overuse some muscles. Splaying out one's fingers and palm, and then repeatedly pressing a significant portion of one's body weight against one's hands, can strain the base of the palm, thumb, and fingers; pronating one's wrists can painfully strain one's wrists and forearms. Also, performing push-ups on a hard floor may be hard on the surfaces of the person's palm, thumb, and fingers. While one can perform push-ups with one's hands balled into fists, many find this too painful on the knuckles. Further, while holding one's hands in fists alleviates the wrist pain caused by pronating one's wrists against the ground, this position forces different strains on the wrist by requiring the user to balance on his or her fists to maintain his or her wrists in an upright position. Unfortunately, if the user fails to maintain his or her wrists in an upright position and rolls his or her wrists, serious wrist and arm injuries may result.

[0004] In an attempt to facilitate reaping the benefits of push-ups without straining the hands, fingers, and wrist, various devices have been created. Standard push-up handles have a base that rests on the floor with an upraised handle that extends parallel to the ground. Using such push-up handles, instead of the user splaying out his or her hands on the ground, the user grips the handles the way that one would use a barbell and lifts his or her body off the ground. The push-up handles may alleviate strain caused by splaying one's fingers and remove the strain caused by pronating one's wrist. On the other hand, use of the push-up handles still places strain on the wrists by requiring the user to hold his or her wrists in an upright position, and gripping the handles may still be uncomfortable for the user.

[0005] Conventional push-up handles are stationary devices and, thus, only facilitate standard up-and-down push-ups. Other floor-based exercise devices enable users to lift their bodies and slide their hands laterally to their bodies to work additional muscles. Some such devices include a reduced-friction sliding board and require the user to wear slideable mitts or gloves. However, such devices not only involve the user splaying out the fingers and pronating the wrists, but also involve somewhat narrow boards that limit the scope of movement. Other devices include a rigid, space-consuming base that supports slideable handles. While these devices eliminate splaying the fingers and pronating the wrists, they have a strictly restricted range of movement, still involve gripping handles, and consume space. Ab wheels allow a user to work other muscles by extending the arms upwardly from the shoulder. Nonetheless, such rolling devices still require tightly gripping the handles and do not provide the benefits of exercises that involve lateral movement.

[0006] People also may benefit from upper body exercises, such as curls and lateral raises, that may be performed with dumbbells or kettle bells. However, as users develop different muscles, they will need multiple sets of dumbbells or kettle bells of various weights which both consume storage space and require the user to drag out each of the weights to exercise. Alternatively, a user may have a set of dumbbell handles with removable plates that allow the user to adjust the weight of the dumbbells. Unfortunately, the user still has to drag out pairs of various weight plates, and also has to remove or install weight plates at both ends of each dumbbell to adjust the weights, which may be inconvenient.

[0007] It thus would be a significant advance in the art to provide a fitness aid that facilitates upper body exercise without undesirable muscle strains that result from push-ups with or without handle-based devices, that permit a full range of movement, and that do not consume much storage space. It would also be beneficial to provide the capability of dumbbells or kettle bells without the need for multiple dumbbells, kettle bells, or pairs of weight plates.

SUMMARY

[0008] Apparatuses, systems, and methods of use are disclosed for enhancing upper body exercise. An apparatus includes a domed hand support section. The domed hand support section has a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand while the user's hand is held in a naturally curved open-position. The apparatus also includes a surface engagement section secured to an underside of the domed hand support section and configured to engage a supporting surface. When the surface engagement section is deployed on the supporting surface and the palm, thumb, and fingers of the user's hand are placed in the plurality recesses on the domed hand support section, the domed face supports the user's hand in the naturally curved open position while the user exerts force against the domed hand support section and that is at least partially directed toward the supporting surface.

[0009] In another embodiment, an apparatus includes a domed hand support section. The domed hand support section has a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand while the user's hand is held in a naturally curved open-position. The apparatus further includes a wrist brace extending outwardly from the domed hand support section proximate an edge of the recess configured to receive the palm of the user. As a result, while the user exerts force against the domed hand support section, the wrist brace supportively engages an underside of a wrist of the user. The apparatus also includes a surface engagement section secured to an underside of the domed hand support section and configured to engage a supporting surface. When the surface engagement section is deployed on the supporting surface and the palm, thumb, and fingers of the user's hand are placed in the plurality recesses on the domed hand support section, the domed face

supports the user's hand in the naturally curved open position while the user exerts force against the domed hand support section and that is at least partially directed toward the supporting surface.

[0010] In a further embodiment, an apparatus includes a domed hand support section. The domed hand support section has a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand while the user's hand is held in a naturally curved open-position. The apparatus further includes a strap configured to extend across the recess configured to receive the palm of the user's hand and to maintain the palm of the user's hand within the recess configured to receive the palm. The apparatus also includes a surface engagement section secured to an underside of the domed hand support section and configured to engage a supporting surface. When the surface engagement section is deployed on the supporting surface and the palm, thumb, and fingers of the user's hand are placed in the plurality recesses on the domed hand support section, the domed face supports the user's hand in the naturally curved open position while the user exerts force against the domed hand support section and that is at least partially directed toward the supporting surface.

[0011] In a still further embodiment, an apparatus includes a domed hand support section. The domed hand support section having a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand while the user's hand is held in a naturally curved open-position. The apparatus also includes a wrist brace extending outwardly from the domed hand support section proximate an edge of the recess configured to receive the palm of the user. As a result, while the user exerts force against the domed hand support section, the wrist brace supportively engages an underside of a wrist of the user. The apparatus further includes a strap configured to extend across the recess configured to receive the palm of the user's hand and to maintain the palm of the user's hand within the recess configured to receive the palm. The apparatus also includes a surface engagement section secured to an underside of the domed hand support section and configured to engage a supporting surface. When the surface engagement section is deployed on the supporting surface and the palm, thumb, and fingers of the user's hand are placed in the plurality recesses on the domed hand support section, the domed face supports the user's hand in the naturally curved open position while the user exerts force against the domed hand support section and that is at least partially directed toward the supporting surface.

[0012] Another embodiment includes a system configured to assist a user in performing physical exercise. The apparatus includes a domed hand support section. The domed hand support section has a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand while the user's hand is held in a naturally curved open-position. The system additionally includes a strap configured to extend across the recess configured to receive the palm of the user's hand and to maintain the palm of the user's hand within the recess configured to receive the palm. The system also includes a surface engagement system securable to an underside of the domed hand support section and configured to engage a supporting surface, the surface engagement system including a plurality of interchangeable weighted members. When the surface engagement system is deployed on the supporting surface and the palm, thumb, and fingers of the user's hand are placed in the plurality recesses on the domed hand support section, the domed face supports the user's hand in the naturally curved open position while the user exerts force against the domed hand support section face and that is at least partially directed toward the supporting surface. Also, when the domed hand support is lifted using different members of the plurality of interchangeable weighted members, a resistance resulting from lifting the domed hand support is changed.

[0013] Additionally, a method of performing upper body exercise is disclosed for using an apparatus according to the present disclosure. A hand is engaged with a domed hand support section, the domed hand support section having a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand while the user's hand is held in a naturally curved open-position. A surface engagement section secured to an underside of the domed hand support section is deployed on a generally planar support surface. The surface engagement section is configured to slideably move across the generally planar support surface in two dimensions; also, while resting at least a portion of a user's body weight on the domed support section via the user's hand, moving the domed hand support section in both of the two dimensions across the generally planar support surface.

[0014] Also, a method of performing upper body exercise using an apparatus is disclosed for using an apparatus according to the present disclosure. A hand is engaged with a domed hand support section of the apparatus. The domed hand support section has a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand. While the user's hand is held in a naturally curved open-position and a strap configured to extend across a back of the user's hand while the user's hand is received in the plurality of recesses. At least some portion of the user's arm is lifted. A mass of the apparatus provides resistance to the lifting while the user's hand is held in the naturally curved open-position.

[0015] Other apparatuses, systems, and methods are further described in detail below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] FIGS. **1** and **2** are side elevation views of an embodiment of a hand support apparatus according to the present disclosure;

[0017] FIG. **3** is a top view of an embodiment of a hand support apparatus according to the present disclosure;

[0018] FIG. **4** is a cross-sectional view of the embodiment of the hand support apparatus as shown in FIG. **3** taken along axis A-A;

[0019] FIG. **5** is a cross-sectional view of the embodiment of the hand support apparatus as shown in FIG. **3** taken along axis B-B;

[0020] FIG. **6** is a side elevation view of an embodiment of a hand support apparatus featuring a wrist brace according to the present disclosure;

[0021] FIG. **7** is a top view of an embodiment of a hand support apparatus featuring a wrist brace according to the present disclosure;

[0022] FIG. **8** is a side elevation view of an embodiment of a hand support apparatus featuring a wrist brace and a support strap according to the present disclosure;

[0023] FIG. **9** is a top view of an embodiment of a hand support apparatus featuring a support strap according to the present disclosure;

[0024] FIGS. **10-13** are bottom views of alternate forms of a surface engagement section of the apparatus according to embodiments of the present disclosure;

[0025] FIG. **14** is a side elevation view of an embodiment of a hand support apparatus in which a domed support member and a surface engagement section are removably attached according to an embodiment of the present disclosure;

[0026] FIG. **15** is an exploded view of an embodiment of a hand support apparatus in which a domed support member and a surface engagement section are removably attached according to an embodiment of the present disclosure;

[0027] FIG. **16** is a cross-sectional view of an embodiment of a hand support apparatus in which a domed support member includes a recess configured to partially receive a spherical bearing and a surface engagement section configured to retain the spherical bearing according to an embodiment of the present disclosure;

[0028] FIG. **17** is a bottom view of a surface engagement section including a flange configured to retain the spherical bearing within the apparatus according to an embodiment of the present disclosure;

[0029] FIG. **18** is a side elevation view of an embodiment of a system including a hand support apparatus and interchangeable spherical bearings of different weights according to an embodiment of the present disclosure;

[0030] FIG. **19** is a side elevation view of an embodiment of a system including a hand support apparatus and interchangeable surface engagement sections according to an embodiment of the present disclosure;

[0031] FIGS. **20-22** are side views of a user performing exercises using embodiments of an apparatus according to the present disclosure;

[0032] FIG. **23** is a top view of a user performing exercises using an embodiment of an apparatus according to the present disclosure;

[0033] FIG. **24** is a flow diagram of a method of performing weight-bearing exercises on a support surface using embodiments of the apparatus according to the present disclosure;

[0034] FIGS. **25** and **26** are side views of a user performing a lift exercise using embodiments of the apparatus according to the present disclosure; and

[0035] FIG. **27** is a flow diagram of a method of performing a lift exercise using embodiments of the apparatus according to the present disclosure.

DETAILED DESCRIPTION

[0036] Apparatuses, systems, and methods are disclosed for enhancing upper body exercise. In various embodiments described in detail below, a user's hand is received into recesses on a domed hand support section that is configured to receive the user's palm, thumb, and fingers in a naturally open-handed position. A surface engagement section is configured to secure the domed hand support section in a stationary position or to enable the domed hand support to slide or roll to perform various surface-based exercises. Additionally, taking advantage of optional wrist braces or straps to secure the user's hand within the recesses, the user may perform various lifting exercises as described in detail below.

[0037] FIGS. **1** and **2** are side elevation views of an embodiment of an apparatus **100** according to the present disclosure. FIGS. **1** and **2** show opposite sides of the apparatus **100** which, in a particular embodiment, is a hand support device configured to facilitate weight-bearing exercises. An outline of a user's hand **113**, represented by a dashed line, is shown engaging the apparatus **100** to illustrate how the apparatus **100** may be used. The apparatus **100** generally includes a domed hand support section **110** and a surface engagement section **120**. The surface engagement section **120** is configured to rest on a supporting surface, such as a floor (not shown in FIG. **1** or **2**), while the user's hand **113** engages the domed hand support section **110**, as further described below.

[0038] The apparatus **100** includes a domed hand support section **110** that may be either permanently or releasably coupled with a surface engagement section **120**, as further described with reference to FIGS. **14-19**. In the embodiment shown in FIGS. **1** and **2**, the domed hand support section **110** may be a regular, hemispherically-shaped structure. For reasons explained below, the domed hand support section **110** should be tallest at its middle and slope downward toward the edges, but the domed hand support section **110** need not be a round or regular dome. The term "dome" is used to describe a structure that is elevated toward its middle.

[0039] The domed hand support section **110** includes a recess **112** configured to receive an underside of a user's hand **113**. Specifically, the recess **112** includes a plurality of recesses **114**, **116**, and **118**. A palm recess **114** is configured to receive a palm **115** of the user's hand **113**; a thumb recess **116** is configured to an underside of the user's thumb **117**; and one or more finger recesses **118** are configured to receive undersides of the user's fingers **119**. The embodiment of the apparatus **100** shown in FIGS. **1** and **2** includes separate finger recesses **118** for each of the four fingers (not counting the thumb as a finger) **119** of the user's hand **119**; however, other embodiments may provide combined recesses for two or more of the fingers **119**. For example, a single recess may be provided for both the third and fourth fingers of the hand **113** as counted away from the thumb (commonly termed the "ring finger" and "pinky finger," respectively); alternatively or additionally, a single recess may be provided for both the first and second fingers of the hand **113** (commonly referred to as the "index finger" and "middle finger," respectively). The disclosure is not limited to an embodiment in which separate recesses are provided for each of the fingers **119** of a user's hand **113**.

[0040] Referring again to FIGS. **1** and **2**, the palm recess **114**, the thumb recess **116**, and the finger recesses **118** are positioned across the curved surface of the domed hand support section **110** so as to receive a user's hand **113** in a relaxed, open position; in the relaxed open position, there is some natural inward curvature of the fingers **119** (i.e., the fingers **119** curve inward in the direction faced by the palm **115**). In a particular embodiment, the domed hand support section **110** is formed and/or covered with a slip-resistant material to retain the user's palm **115**, thumb **117**, and fingers **119** within the palm recess **114**, thumb recess **116**, and finger recesses **118**, respectively.

[0041] As described in the background portion of this document, one of the problems faced by a person seeking to perform conventional push-ups with his or her hands flat on the ground is the strain placed on the base of the palm and on the fingers and thumbs because the fingers and thumbs are pressed flat (i.e., beyond the fingers' naturally curved position) by the force of the body weight pressing down on

the hands. However, performing push-ups or similar exercises using embodiments according to the present disclosure, a user may press his or her weight on his or her hands without having to stress the muscles of the palm **115**, thumb **117**, and fingers **119**. Instead, embodiments according to the present disclosure, the user can perform push-ups with the fingers and thumbs remaining in curved positions, reducing strain. The curvature of the domed hand support section **110** fully engages the user's palm **115**, thumb **117**, and fingers **119** and facilitates even distribution of his or her weight across the palm **115**, thumb **117**, and fingers **119** instead of resting the weight on the edges of the palm or ends of the fingers, as may occur performing conventional, flat-handed push-ups.

[0042] FIG. **3** is a top view of an embodiment of a hand support apparatus **100** according to the present disclosure. As in FIGS. **1** and **2**, FIG. **3** shows the domed hand support section **110** formed with the palm recess **114**, thumb recess **116**, and finger recesses **118** configured to receive and contain the user's palm **115** and undersides of the user's thumb **117** and fingers **119**. As further described with reference to FIGS. **4** and **5**, the palm recess **114**, thumb recess **116**, and finger recesses **118** are curved to conform to the underside of the user's hand **113**. Further, in order to protect the user's hand **113**, the recesses **114**, **116**, and **118** of the domed hand support section **110** are configured to contain the edges of the palm **115**, thumb **117**, and fingers **119**, respectively, away from edges of the domed hand support section **110**. For example, a distal end **105** of the finger recess **118** for the middle finger is removed by a distance **109** from the adjacent edge **107** of the apparatus **100**. Thus, if the apparatus **100** is laterally moved into an obstacle (not shown in FIG. **3**), while the apparatus **100** may impact that obstacle, the user's hand **113** is protected from impacting the same obstacle.

[0043] FIGS. **4** and **5** are cross-sectional views of the embodiment of the apparatus **100** as shown in FIG. **3** taken along axis A-A and axis of B-B of FIG. **3**, respectively. FIG. **4** shows a cross-sectional view of the apparatus **100** across the finger recesses **118** formed in the domed hand support section **110**. As shown in FIG. **4**, the finger recesses **118** are curved to correspond to the curvature of the underside of the fingers **119**. The recesses **118** thus cradle and engage the fingers **119**, allowing the user's fingers **119** to securely engage the domed hand support section **110**. Similarly, FIG. **5** shows a cross-sectional view of the apparatus **100** across the palm recess **114** and the thumb recess **116** formed in the domed hand support section **110**. As shown in FIG. **5**, the palm recess **114** and the thumb recess **116**, like the finger recesses **118**, are curved to correspond to the curvature of the palm **115** and the underside of the thumb **117**. Thus, the recesses **114** and **116** cradle and engage the palm **115** and thumb **117** to securely engage the domed hand support section **110**.

[0044] FIG. **6** is a side elevation view of an embodiment of a hand support apparatus **600** featuring a wrist brace **630** according to the present disclosure. Similar to the embodiment of the apparatus **100** as described with reference to FIGS. **1-5**, the apparatus **600** includes a domed hand support section **610** and a surface engagement section **620**. An outline of a user's hand **613**, represented by a dashed line, is shown engaging the apparatus **600**. The surface engagement section **620** is configured to rest on a supporting surface, such as a floor (not shown in FIG. **6**), while the user's hand **613** engages the domed hand support section **610**, as further described below. The domed hand support section **610** may be either permanently or releasably coupled with a surface engagement section **620**, as further described with reference to FIGS. **14-19**. The domed hand support section **610** may be a regular, hemispherically-shaped structure or a different shape that is tallest at its middle, as previously described. The domed hand support section **610** includes a recess **612** configured to receive an underside of the user's hand **613**. Specifically, the recess **612** includes a plurality of recesses **614**, **616**, and **618**. A palm recess **614** is configured to receive a palm **615** of the user's hand **613**; a thumb recess **616** is configured to an underside of the user's thumb **617**; and one or more finger recesses **618** are configured to receive undersides of the user's fingers **619**. As described with reference to FIGS. **1-5**, embodiments of the apparatus **600** according to the disclosure are not limited to embodiments having individual recesses for each of the fingers **619**, but may, instead, provide recesses that may accommodate more than one finger.

[0045] In addition to incorporating the features of the apparatus **100** of FIGS. **1-5**, the apparatus **600** includes a wrist brace **630**. As shown in FIG. **6**, the wrist brace is a protrusion extending upward from the domed hand support section **610** adjacent to a point where the palm recess **614** receives the base of the palm **615** and, thus, the point where the end of the user's wrist **631** extends over the domed hand support section **610**. The wrist brace **630** extends upward from the domed support surface **610** and provides a wrist support surface **632** configured to engage and support an underside **633** of the user's wrist **631**. The wrist support surface **632** thus provides underlying support for the user's wrist **631** when the user presses his or her weight down on the apparatus **610**, thus potentially alleviating at least a portion of the wrist strain that may result from conventional, hand-on-the-floor push-ups.

[0046] FIG. **7** is a top view of an embodiment of the apparatus **610** featuring the wrist brace **630** according to the present disclosure. As described with reference to FIG. **6**, the wrist brace **630** extends upward from the domed hand support section **610** across a region where the user's wrist **631** extends over the domed support surface **610** when the user's hand **613** is positioned in the hand recess **612**. The wrist support surface **632** extends across an underside **633** of the wrist **631** to support the user's wrist **631** to alleviate wrist strain.

[0047] FIG. **8** is a side elevation view of an embodiment of an apparatus **800** featuring a wrist brace **830** and a support strap **850** according to the present disclosure. Similar to the embodiment of the apparatus **100** as described with reference to FIGS. **1-5** and the embodiment of the apparatus **600** as described with reference to FIGS. **6** and **7**, the apparatus **800** includes a domed hand support section **810** and a surface engagement section **820**. An outline of a user's hand **813**, represented by a dashed line, is shown engaging the apparatus **800**. The surface engagement section **820** is configured to rest on a supporting surface, such as a floor (not shown in FIG. **8**), while the user's hand **813** engages the domed hand support section **810**, as further described below. The domed hand support section **810** may be either permanently or releasably coupled with a surface engagement section **820**, as further described with reference to FIGS. **14-19**. The domed hand support section **810** may be a regular, hemispherically-shaped structure or a different

shape that is tallest at its middle, as previously described. The domed hand support section **810** includes a recess **812** configured to receive an underside of the user's hand **813**. Specifically, the recess **812** includes a plurality of recesses **814**, **816**, and **818**. A palm recess **814** is configured to receive a palm **815** of the user's hand **813**; a thumb recess **816** is configured to an underside of the user's thumb **817**; and one or more finger recesses **818** are configured to receive undersides of the user's fingers **819**. As described with reference to FIGS. **1-7**, embodiments of the apparatus **800** according to the disclosure are not limited to embodiments having individual recesses for each of the fingers **819**, but may, instead, provide recesses that may accommodate more than one finger.

[0048] In addition to incorporating the features of the apparatus **100** of FIGS. **1-5** and the apparatus **600** of FIGS. **6-7** (i.e., the wrist brace **830** having a wrist support surface **832** for engaging an underside **833** of a user's wrist **831**), the apparatus **800** includes a support strap **850**. The support strap **850** is configured to engage a back **851** of the user's hand (i.e., the side opposite the palm). As shown in FIG. **8**, the support strap **850** may be fixably anchored to the domed hand support section **810** at each of two ends. One end is anchored to the domed hand support section between the thumb recess **816** and a finger recess **818** for the first finger or index finger. As shown in FIG. **9**, an opposite end of the support strap **850** may be anchored adjacent the finger recess **818** that accommodates the fourth or pinky finger.

[0049] The support strap **850** may be an elastic or flexible material to enable the user to fit his or her hand **813** within the hand recess **812** and under the support strap **850**. The support strap **850** secures the user's hand **813** within the hand recess **812** to help keep the user's hand **813** within the hand recess **812** when the user exercises using the apparatus **800** as previously described, i.e., moving the apparatus **810** such that the surface engagement section **820** moves over a supporting surface (not shown in FIG. **8**). Alternatively, the support strap **850** may secure the user's hand **813** atop the domed hand support section **810** as the user lifts the user's hand **813**, enabling the user to employ the apparatus **800** as a hand weight to perform curls, lifts, or raises.

[0050] FIG. **9** is a top view of an embodiment of an apparatus **900** featuring a support strap **950** according to the present disclosure. Similar to the embodiment of the apparatus **100** as described with reference to FIGS. **1-5** and the embodiment of the apparatus **600** as described with reference to FIGS. **6** and **7**, and the apparatus **800** of FIG. **8**. The apparatus **900** includes a domed hand support section **910**. The domed hand support section **910** may be a regular, hemispherically-shaped structure or a different shape that is tallest at its middle, as previously described. The domed hand support section **910** includes a recess **912** configured to receive an underside of the user's hand (not shown in FIG. **9**). Specifically, the recess **912** includes a plurality of recesses **914**, **916**, and **918**. A palm recess **914** is configured to receive a palm of the user's hand; a thumb recess **916** is configured to an underside of the user's thumb; and one or more finger recesses **918** are configured to receive undersides of the user's fingers. As described with reference to FIGS. **1-8**, embodiments of the apparatus **800** according to the disclosure are not limited to embodiments having individual recesses for each of the fingers, but may, instead, provide recesses that may accommodate more than one finger.

[0051] Comparing the apparatus **100** of FIGS. **1-3**, the apparatus **600** of FIGS. **6** and **7**, the apparatus **800** of FIG. **8**, and the apparatus **900** of FIG. **9**, it should be appreciated that embodiments of the apparatus according to the present disclosure may include various combinations of features. For example, the apparatus **100** may include neither a wrist brace (as in the apparatus **600** of FIGS. **6** and **7** or the apparatus **800** of FIG. **8**) nor a support strap (as in the apparatus **800** of FIG. **8** or the apparatus **900** of FIG. **9**); the apparatus **600** may include a wrist brace **630**, but no support strap (as in the apparatus **800** of FIG. **8** or the apparatus **900** of FIG. **9**); the apparatus **800** may include both a wrist brace **830** and a support strap **850** (as in the apparatus **800** of FIG. **8**); or a wrist support **950** but not a wrist brace (as in the apparatus **600** of FIGS. **6** and **7** or the apparatus **800** of FIG. **8**).

[0052] FIG. **9** also illustrates an embodiment **900** in which the support strap **950** may include an adjustable body **951** to enable the user to adjust the length of the support strap **950** for the sake of comfort and/or to adjust how tightly the user's hand is secured within the hand recess **912**. The adjustable body **951** may be fixably anchored to the domed hand support section **910** at a fixed end **952** and slidably anchored to the domed hand support section **910** via a buckle **955** fixably secured to the domed hand support section **910** at an adjustable end **956**. A length of the adjustable body **951** may then be set by securing a free end **957** of the adjustable body **951** with a closure **958** fixably attached or integrated with the adjustable body **951**. The closure **958** may be a hook and loop fastener, a buckle, a set of mechanical snaps, or another closure mechanism. In embodiments in which one of the ends of the adjustable body **951** is fixably attached and the other end is slidably attached, the fixed end and adjustable end may be disposed at either end of the support strap **950** (i.e., in contrast to the embodiment of the apparatus **900** shown in FIG. **9**, the slidably attached end may be secured to the domed hand support section at a side of the user's hand adjacent the index finger with the fixed end at an opposite side of the hand). Alternatively, the adjustable body **951** may include two sections that are adjustably joined to each other via closures such as previously described.

[0053] FIGS. **10-13** are bottom views of alternate forms of surface engagement sections **1022**, **1122**, **1222**, and **1322** of the apparatus according to embodiments of the present disclosure. As described with reference to FIGS. **10-13**, embodiments of surface engagement sections **1022**, **1122**, **1222**, and **1322** of the apparatus may include surface engagement sections with solid bottoms, surface engagement sections with an opening in their surfaces, and surface engagement sections that are designed either to slide or resist sliding across a support surface. As further described below, embodiments of the apparatus also may include surface engagement sections that provide for a spherical bearing to extend therethrough to rollingly support the apparatuses above a support surface; embodiments of the apparatus may also include removably attached and/or interchangeable surface engagement sections, all as further described below.

[0054] Specifically, FIG. **10** shows a solid surface engagement section **1022**. In one embodiment, the solid surface engagement section **1022** is comprised of a material configured to slidably move across a support surface (not shown in FIG. **10**) to permit a user to perform exercises that involve sliding the apparatus over the support surface, as further

described below with reference to FIGS. **20-23**, while retaining the advantages of employing a domed hand support section in supporting the hand and fingers as previously described. The surface engagement section **1022** may be comprised of a smooth metal or plastic that slides relatively easily over a hard floor, carpet, and/or a sliding board.

[0055] FIG. **11** shows another embodiment of a solid surface engagement section **1122** comprised of a material configured to resist sliding across a support surface (not shown in FIG. **11**). The solid surface engagement section **1122** may include a textured and/or rubberized surface engagement section that prevents the solid surface engagement section **1122** from sliding across a hard surface and/or a carpet. Such an embodiment permits a user to perform exercises that do not involve sliding the apparatus over the support surface while retaining the advantages of employing a domed hand support section in supporting the hand and fingers as previously described.

[0056] FIG. **12** shows an open surface engagement section **1222** in which the surface engagement section accommodates an opening **1224**. In one embodiment, the open surface engagement section **1222** is comprised of a material configured to slidably move across a support surface (not shown in FIG. **12**) to permit a user to perform exercises that involve sliding the apparatus over the support surface, as further described below with reference to FIGS. **20-23**, while retaining the advantages of employing a domed hand support section in supporting the hand and fingers as previously described. The surface engagement section **1222** may be comprised of a smooth metal or plastic that slides relatively easily over a hard floor, carpet, and/or a sliding board. The opening **1224** may be configured to permit a spherical bearing to extend therethrough as further described below with regard to FIGS. **16-18**.

[0057] FIG. **13** shows an open surface engagement section **1322** in which the surface engagement section accommodates an opening **1324**. In one embodiment, the open surface engagement section **1322** is comprised of a material configured to resist movement across a support surface (not shown in FIG. **12**) to permit a user to perform exercises that may not involve sliding the apparatus over a support surface while retaining the advantages of employing a domed hand support section in supporting the hand and fingers as previously described. The open surface engagement section **1322** may include a textured and/or rubberized surface engagement section that prevents the open surface engagement section **1322** from sliding across a hard surface and/or a carpet. The opening **1324** may be configured to permit a spherical bearing to extend therethrough as further described below with regard to FIGS. **16-18**. By including an open surface engagement section **1324** configured to resist sliding and a spherical bearing as further described below, a user may be able to selectably allow the apparatus to roll over a surface by angling the apparatus so that the apparatus rests mainly or entirely on the spherical bearing; alternately, the user may limit the sliding of the apparatus by angling the apparatus so that the apparatus rests partly on the spherical bearing and partly on the slide-resistant open surface engagement section **1324**.

[0058] FIG. **14** is a side elevation view of an embodiment of an apparatus **1400** in which a domed support member **1410** and a surface engagement section **1420** are removably attached according to an embodiment of the present disclosure. Removable attachment of the surface engagement section **1420** facilitates assembly of the apparatus **1400**. Additionally, removable attachment of the surface engagement section **1420** allows for attachment of different surface engagement sections or interchangeable surface engagement sections, as described with reference to FIGS. **10-13** and as further described below. In one embodiment, the surface engagement section **1420** includes a surface engagement section **1470** that joins to the domed hand support section **1410** at a joint or seam **1460**. The surface engagement section **1470** may be coupled to the domed hand support section **1410**, for one example, as described below with reference to FIG. **15**.

[0059] FIG. **15** is an exploded view of an embodiment of a hand support apparatus **1500** in which a domed hand support section **1510** and a surface engagement section **1520** are removably attached according to an embodiment of the present disclosure. As shown in FIG. **15**, the domed hand support section **1510** includes a sleeve **1562** configured to be received within the surface engagement section **1570**. The sleeve **1562** includes outwardly-facing threads **1564** configured to engage inwardly-acing threads **1574** within the surface engagement section (although it should be understood that the surface engagement section **1570** may support a sleeve that provides outwardly-facing threads that could be received by inwardly-facing threads included within the domed hand support section **1510**). The domed hand support section **1510** and the surface engagement section **1570** may be secured to each other by moving the surface engagement section in a direction **1576** toward the domed hand support section **1510** and then twisted in a direction **1578** to engage the inwardly-facing threads **1574** of the surface engagement section with the outwardly-facing threads **1564** of the sleeve **1562** of the domed hand support section **1510**, causing the domed hand support section **1510** and the surface engagement section **1570** to be joined together at a seam **1560**. The process may be reversed and/or repeated as desired to secure different surface engagement sections (not shown in FIG. **15**) to the domed hand support section **1510**, to install or replace spherical bearings (also not shown in FIG. **15**) within the domed hand support section **1510** or to remove the same, as further described below. The domed hand support section **1510** includes a wrist brace **1530** as previously described with reference to FIGS. **6** and **7**.

[0060] FIG. **16** is a cross-sectional view of an embodiment of a hand support apparatus **1600** in which a domed support member **1610** includes a recess **1681** configured to partially receive a spherical bearing **1680** and a surface engagement section **1670** configured to retain the spherical bearing **1680** so as to enable the spherical bearing **1680** to partially extend beyond a surface of a surface engagement section **1620**. An object of the partially-extended spherical bearing is to enable the spherical bearing **1680** to roll across a support surface **1683** to facilitate exercises in which a user rolls the apparatus **1600** over the support surface. The domed hand support section **1610** includes a wrist brace **1630** as previously described with reference to FIGS. **6** and **7**.

[0061] The recess **1681** is configured to rollably receive the spherical bearing **1680** to allow easy rolling of the spherical bearing within the domed support member **1610** so that, as lateral forces are applied to the apparatus **1600**, the apparatus may move in any direction relative to a plane defined by the support surface **1683**. The surface engagement section **1670** includes an open surface engagement section **1620** that includes an opening **1677** through which

the spherical bearing **1680** may extend to present a rolling surface **1682** against the support surface **1683**. According to a particular embodiment, the surface engagement section **1670** provides a flange **1675** that defines the opening **1677** as having a width that is smaller than a diameter of the spherical bearing **1680** such that the spherical bearing **1680** may partially extend through the opening **1677** but not fall through the opening **1677**. Also in a particular embodiment, the flange **1675** may be sized so that when the surface engagement section **1670** is secured to the domed hand support section **1610** at a joint **1660**, the spherical bearing **1680** is confined within the recess **1681** such that the spherical bearing **1680** is permitted to roll within the recess **1681** but with limited vertical movement transverse to the surface engagement section **1620** so that the spherical element **1680** does not "wiggle" transverse to the surface engagement section **1620**.

[0062] FIG. **17** is a bottom view of the surface engagement section **1620** including the flange **1675** configured to retain the spherical bearing **1680** within the apparatus according to an embodiment of the present disclosure. As described with reference to FIG. **16**, the flange **1675** contains the spherical bearing **1680** (whose diameter is partially covered by the surface engagement section **1620** and thus is represented by a dashed line) but allows the rolling surface **1682** of the spherical bearing to extend therethrough, thus enabling the rolling surface **1682** to engage a support surface (not shown in FIG. **17**).

[0063] FIG. **18** is a side elevation view of an embodiment of a system **1800** including an apparatus having interchangeable spherical bearings **1882**, **1887**, and **1888** according to an embodiment of the present disclosure. The interchangeable spherical bearings **1882**, **1887**, and **1888** may have different weights. An object of the interchangeable spherical bearings **1882**, **1887**, and **1888** is to enable a user to engage the system **1800** for rolling exercises as described in this disclosure as well as to use the system to provide adjustable hand weights. To change the weight, a user could use processes as described with reference to FIG. **15** to remove a surface engagement section **1870** from the domed hand support section **1810** so as to remove and/or replace one of the spherical bearings **1882**, **1887**, and **1888** with another of the spherical bearings **1882**, **1887**, and **1888** and reassemble the surface engagement section **1670** and the domed hand support section **1810** at the joint **1860**. The embodiment of the system **1800** desirably may include a support strap **1850** to facilitate the user being able to grip the system **1800** while using the system **1800** as hand weights. The domed hand support section **1810** includes a wrist brace **1830** as previously described with reference to FIGS. **6** and **7**.

[0064] FIG. **19** is a side elevation view of an embodiment of a system **1900** including an apparatus having interchangeable surface engagement sections **1970**, **1971**, and **1972** according to an embodiment of the present disclosure. The different interchangeable surface engagement sections **1970**, **1971**, and **1972** may have different weights so as to provide adjustable hand weights, as previously described with reference to FIG. **18**. Inclusion of a support strap **1950** would support the use of the system **1900** as hand weights, as previously described. The domed hand support section **1810** does not include a wrist brace as previously described with reference to FIGS. **6** and **7**, and as included in the apparatus of FIGS. **15**, **16**, and **18**; however, it should be appreciated that a wrist brace could be included in any of the embodiments described herein.

[0065] The different interchangeable surface engagement sections **1970**, **1971**, and **1972** also may include different solid or open surface engagement section surfaces to facilitate sliding the system **1900** over a support surface (not shown in FIG. **19**), resist sliding the system **1900** over a support surface, or to accommodate a spherical bearing (also not shown in FIG. **19**) to permit rolling the system **1900** over the support surface. To change between the different interchangeable surface engagement sections **1970**, **1971**, and **1972**, a user could use processes as described with reference to FIG. **15** to remove one of the interchangeable surface engagement sections **1970**, **1971**, and **1972** and attach another of the interchangeable surface engagement sections **1970**, **1971**, and **1972** with the domed hand support section **1910** at the joint **1960**.

[0066] FIGS. **20-22** are side views of a user performing exercises using embodiments of an apparatus **2010** according to the present disclosure. In a position **2000** as shown in FIG. **20**, a user engages his hand **2040** with the apparatus **2010** as previously described. In one implementation, resting his knees **2050** on a support surface **2020**, the user holds his arms in retracted position **2060** so that his torso **2030** is low to the support surface **2020**. In a position **2100** of FIG. **21**, the user holds his arms in an extended position **2160**, moving his torso **2030** up and down along directions **2170** away from and toward the support surface **2020**. Please note that, because embodiments of the apparatus may be slideable, the user may move the apparatuses along the support surface **2020** in directions both across and transverse to the figure. Specifically, in a position **2200** as shown in FIG. **22**, the user may extend his arms in an over-the-shoulder position **2260**, pressing his arms forward and back along directions **2270**, using the apparatus **2010** to facilitate sliding motion along the direction **2270**.

[0067] FIG. **23** is a top view of a user in a position **2300** performing exercises using an embodiment of an apparatus according to the present disclosure. Because the apparatus **2010** enables a full range of movement across a plane defined by a support surface **2320**, in contrast to ab wheels and fixed-track exercise devices, once the user has his hands **2040** placed within the apparatus **2010**, the user can move his arms from a forward-and-out position **2090** to an outward position **2091**, and other positions in between. As such, a user may perform exercises in a range of motion like a gymnast using suspended rings. In other words, a slideable apparatus enables a user to engage his or her hands with the recesses on the domed hand support apparatuses, rest at least a portion of his or her weight on the domed hand support apparatuses, and move the apparatuses over a generally planar support surface in each or both of two dimensions across the support surface **2320**.

[0068] FIG. **24** is a flow diagram of a method **2400** of performing a weight-bearing exercise using embodiments of the apparatus according to the present disclosure. At **2402**, a hand is engaged with a domed hand support having a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand, while the user's hand is held in a naturally curved open-position. At **2404**, a surface engagement section secured to an underside of the domed hand support section is deployed on a generally planar support surface, wherein the surface engagement section is config-

ured to slideably move across the generally planar support surface in two dimensions. At **2406**, while resting at least a portion of a user's body weight on the domed support section via the user's hand, the domed hand support section is moved in both of the two dimensions across the generally planar support surface.

[0069] FIGS. **25** and **26** are side views of a user performing a lift exercise using embodiments of the apparatus according to the present disclosure. Specifically, FIG. **25** shows a user **2501** employing an apparatus **2500** to perform a lateral-type lifting exercise. The user **2501** engages his or her hand **2515** with the domed hand support section **2510** in the provided recesses as previously described throughout this application. In a particular embodiment, the domed hand support section **2510** supports a strap **2550** that engages a back **2540** of the user's hand, and a wrist brace **2530** engages an underside of the user's wrist **2532**. As in performing other exercises, the domed hand support section **2510** supports the user's hand **2515** in a naturally-curved position throughout performance of the exercises; the strap **2550** and/or the wrist brace **2530** secure the domed hand support section **2510** to the user's hand **2515** throughout the exercise. As previously described with specific reference to FIGS. **18** and **19**, the surface engagement section **2520** may be removable to enable interchange with differently-weighted surface engagement sections **2520** and/or to permit insertion or interchange of differently-weighted spherical bearings **2582** to change the level of resistance involved in the lift exercise depicted in FIG. **25**.

[0070] When the user **2501** lifts his or her arm **2503** in an upward direction **2560**, the user **2501** exercises various muscles in the user's arm **2503** or in other parts of the user's upper body. Weight of the apparatus **2500** provides resistance. As the apparatus **2500** is raised in the upward direction **2560**, secured to the user's hand **2515** as previously described, the apparatus **2500** rotates along a curve **2565** corresponding with natural rotation of the user's hand **2515** during the movement of the arm **2503**. The weight of the apparatus **2500** may be changed by interchanging differently-weighted surface engagement sections **2520** and/or differently-weighted spherical bearings **2582**, thereby changing the resistance encountered by the user **2501** in raising the apparatus **2500**.

[0071] FIG. **26** shows a user **2601** employing an apparatus **2600** to perform a different lifting exercise popularly termed a "curl." In contrast to the lifting exercise depicted in FIG. **25** in which the arm **2503** is lifted with the hand **2515** facing in a generally palm-down direction, the curl of FIG. **26** involves the user **2601** lifting the user's lower arm **2603** (i.e., the forearm below the elbow **2604**) with the user's hand **2615** facing in a palm-up direction. The user **2601** engages his or her hand **2615** with the domed hand support section **2610** in the provided recesses as previously described throughout this application. In a particular embodiment, the domed hand support section **2610** supports a strap **2650** that engages a back **2640** of the user's hand, and a wrist brace **2630** engages an underside of the user's wrist **2632**. As in performing other exercises, the domed hand support section **2610** supports the user's hand **2615** in a naturally-curved position throughout performance of the exercises; the strap **2650** and/or the wrist brace **2630** secure the domed hand support section **2610** to the user's hand **2615** throughout the exercise. As previously described with specific reference to FIGS. **18** and **19**, the surface engagement section **2620** may be removable to enable interchange with differently-weighted surface engagement sections **2620** and/or to permit insertion or interchange of differently-weighted spherical bearings **2682** to change the level of resistance involved in the lift exercise depicted in FIG. **26**.

[0072] When the user **2601** lifts his or her arm **2603** in an upward direction **2660**, the user **2601** exercises various muscles in the user's arm **2603** or in other parts of the user's upper body. Weight of the apparatus **2600** provides resistance. As the apparatus **2600** is raised in the upward direction **2660**, secured to the user's hand **2615** as previously described, the apparatus **2600** rotates along a curve **2665** corresponding with natural rotation of the user's hand **2615** during the movement of the arm **2603**. The weight of the apparatus **2600** may be changed by interchanging differently-weighted surface engagement sections **2620** and/or differently-weighted spherical bearings **2682**, thereby changing the resistance encountered by the user **2601** in raising the apparatus **2600**.

[0073] FIG. **27** is a flow diagram **2700** of a method of performing a lift exercise using embodiments of the apparatus according to the present disclosure. The method may be adapted for performing any lift-type exercise, such as lateral lifts or curls as previously described with reference to FIGS. **25** and **26**. In the flow diagram, at **2702**, a user's hand is engaged with a domed hand support section having a plurality of recesses configured to receive a palm, thumb, and fingers of the user's hand, while the user's hand is held in a naturally curved open-position, and a strap configured to extend across a back of the user's hand while the user's hand is received in the plurality of recesses. At **2704**, at least a portion of the user's arm is lifted. Examples of both steps are illustrated and described with reference to FIGS. **25** and **26**.

[0074] While the disclosure has been has been set forth herein in reference to specific aspects, features and illustrative aspects, it will be appreciated that the utility of the disclosure is not thus limited, but rather extends to and encompasses numerous other variations, modifications and alternative aspects, as will suggest themselves to those of ordinary skill in the field of the present disclosure, based on the description herein. Any of various elements or features recited herein is contemplated for use with other features or elements disclosed herein, unless specified to the contrary. Correspondingly, the invention that may be hereinafter claimed is intended to be broadly construed and interpreted, as including all such variations, modifications and alternative aspects, within its spirit and scope.

What is claimed is:

1. An apparatus configured to assist a user in performing physical exercise, the apparatus comprising:

a domed hand support section, the domed hand support section having a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand while the user's hand is held in a naturally curved open-position; and

a surface engagement section secured to an underside of the domed hand support section and configured to engage a supporting surface,

wherein when the surface engagement section is deployed on the supporting surface and the palm, thumb, and fingers of the user's hand are placed in the plurality recesses on the domed hand support section, the domed face supports the user's hand in the naturally curved open while the user

exerts force against the domed hand support section face and that is at least partially directed toward the supporting surface.

2. The apparatus of claim **1**, wherein the plurality of recesses includes:

a first recess configured to receive the palm of the user's hand;

a second recess configured to receive the thumb of the user's hand; and

a third recess configured to receive the fingers of the user's hand.

3. The apparatus of claim **2**, wherein the third recess is configured to separately engage one or more of the user's fingers from others of the user's fingers.

4. The apparatus of claim **1**, wherein each of the plurality of recesses are contained within an outer perimeter of the domed hand support section, such that edges of the palm, thumb, and fingers of the user's hand are confined within the outer perimeter of the domed hand support section such that the outer perimeter of the domed hand support section may collide with an object without the edges of the palm, thumb, and fingers of the user's hand striking the object.

5. The apparatus of claim **1**, further comprising a strap configured to extend across the recess configured to receive the palm of the user's hand and to maintain the palm of the user's hand within the recess configured to receive the palm.

6. The apparatus of claim **1**, wherein the surface engagement section is comprised of a slip-resistant material.

7. The apparatus of claim **1**, wherein the surface engagement section is comprised of a slidable material configured to facilitate sliding of the surface engagement section over a support surface.

8. The apparatus of claim **1**, wherein the domed hand support section includes a recess configured to partially and rollably receive a spherical bearing, such that the spherical bearing partially extends outwardly from the domed hand support section and through the surface engagement section, such that the spherical bearing rollably supports the surface engagement section above the supporting surface.

9. An apparatus configured to assist a user in performing physical exercise, the apparatus comprising:

a domed hand support section, the domed hand support section having a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand while the user's hand is held in a naturally curved open-position;

a wrist brace extending outwardly from the domed hand support section proximate an edge of the recess configured to receive the palm of the user, such that while the user exerts force against the domed hand support section, the wrist brace supportively engages an underside of a wrist of the user; and

a surface engagement section secured to an underside of the domed hand support section and configured to engage a supporting surface,

wherein when the surface engagement section is deployed on the supporting surface and the palm, thumb, and fingers of the user's hand are placed in the plurality recesses on the domed hand support section, the domed face supports the user's hand in the naturally curved open while the user exerts force against the domed hand support section face and that is at least partially directed toward the supporting surface.

10. The apparatus of claim **9**, wherein the plurality of recesses includes:

a first recess configured to receive the palm of the user's hand;

a second recess configured to receive the thumb of the user's hand; and

a third recess configured to receive the fingers of the user's hand.

11. The apparatus of claim **20**, wherein the third recess is configured to separately engage one or more of the user's fingers from others of the user's fingers.

12. The apparatus of claim **9**, wherein each of the plurality of recesses are contained within an outer perimeter of the domed hand support section, such that edges of the palm, thumb, and fingers of the user's hand are confined within the outer perimeter of the domed hand support section such that the outer perimeter of the domed hand support section may collide with an object without the edges of the palm, thumb, and fingers of the user's hand striking the object.

13. The apparatus of claim **9**, further comprising a strap configured to extend across the recess configured to receive the palm of the user's hand and to maintain the palm of the user's hand within the recess configured to receive the palm.

14. The apparatus of claim **9**, wherein the surface engagement section is comprised of a slidable material configured to facilitate sliding of the surface engagement section over a support surface.

15. The apparatus of claim **9**, wherein the domed hand support section includes a recess configured to partially and rollably receive a spherical bearing, such that the spherical bearing partially extends outwardly from the domed hand support section and through the surface engagement section, such that the spherical bearing rollably supports the surface engagement section above the supporting surface.

16. An apparatus configured to assist a user in performing physical exercise, the apparatus comprising:

a domed hand support section, the domed hand support section having a plurality of recesses configured to receive a palm, thumb, and fingers of a user's hand while the user's hand is held in a naturally curved open-position;

a strap configured to extend across the recess configured to receive the palm of the user's hand and to maintain the palm of the user's hand within the recess configured to receive the palm; and

a surface engagement section secured to an underside of the domed hand support section and configured to engage a supporting surface,

wherein when the surface engagement section is deployed on the supporting surface and the palm, thumb, and fingers of the user's hand are placed in the plurality recesses on the domed hand support section, the domed face supports the user's hand in the naturally curved open while the user exerts force against the domed hand support section face and that is at least partially directed toward the supporting surface.

17. The apparatus of claim **16**, wherein the plurality of recesses includes:

a first recess configured to receive the palm of the user's hand;

a second recess configured to receive the thumb of the user's hand; and

a third recess configured to receive the fingers of the user's hand.

18. The apparatus of claim **16**, wherein each of the plurality of recesses are contained within an outer perimeter of the domed hand support section, such that edges of the palm, thumb, and fingers of the user's hand are confined within the outer perimeter of the domed hand support section such that the outer perimeter of the domed hand support section may collide with an object without the edges of the palm, thumb, and fingers of the user's hand striking the object.

19. The apparatus of claim **36**, wherein the surface engagement section is comprised of a slidable material configured to facilitate sliding of the surface engagement section over a support surface.

20. The apparatus of claim **36**, wherein the domed hand support section includes a recess configured to partially and rollably receive a spherical bearing, such that the spherical bearing partially extends outwardly from the domed hand support section and through the surface engagement section, such that the spherical bearing rollably supports the surface engagement section above the supporting surface.

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