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(54) Abdominal exercise apparatus

(57) The present invention provides for abdominal exercise apparatus (10) arranged generally to be arranged to worn over the user's shoulders and to be secured thereto in a comfortable manner by way of front support portions (30, 32) and back support portion (38) which extend respectively downwardly from central region (28). Extending laterally and forwardly from the central region (28) are a pair of arms (14,16) which are arranged to be gripped by a user when wearing the apparatus and to which weights can be releasably mounted so as to control the weight against which the user works when performing an exercise routine.

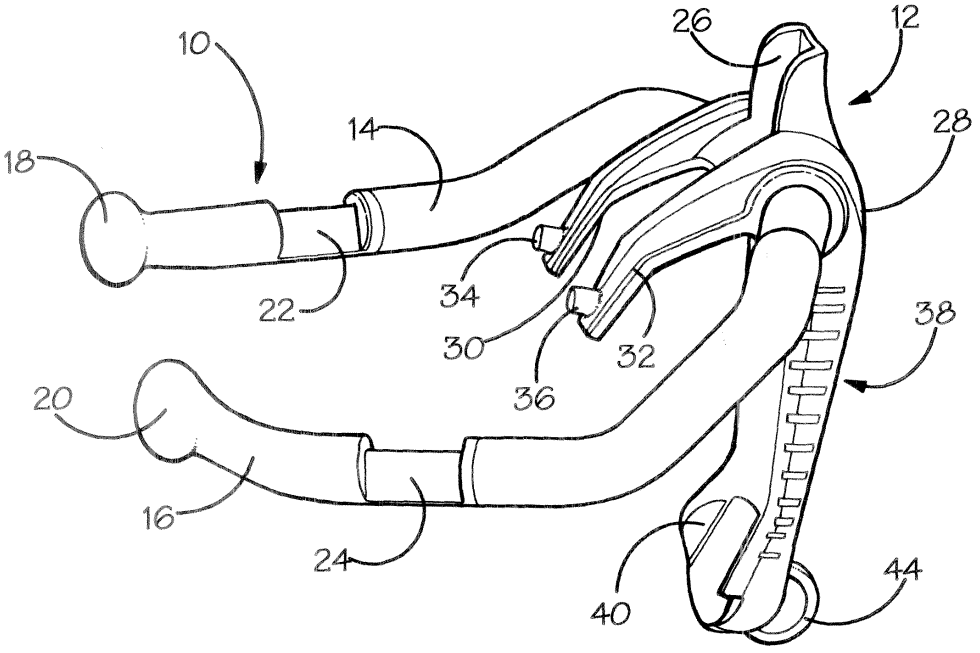

FIG.1.

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Description

[0001] The present invention relates to an abdominal exercise apparatus.

[0002] Various different exercise devices and apparatus are known and by virtue of the use of which different muscles of the human body can be exercised, whether for general fitness and muscle toning purposes, or for body-building requirements.

[0003] The core of the human body, generally comprising the abdomen, is a frequently exercised part of the human body insofar as toned abdominal muscles can prove important for achieving a desirable physique.

[0004] A variety of exercises can be performed so as to tone the abdominal muscles although somewhat disadvantageously, this generally requires a variety of different devices/apparatus leading to associated additional cost, maintenance and storage requirements.

[0005] The present invention seeks to provide for abdominal exercise apparatus having advantages over known such apparatus and, in particular, to such apparatus that can readily allow for a variety of exercises in a safe, comfortable, and importantly an efficient manner.

[0006] According to the present invention there is provided an abdominal exercise apparatus comprising a pair of arms each extending from a central region and each having weight formation towards the ends thereof, the said central region being arranged to extend over a user's shoulders and having a front portion arranged to extend in the direction of a user's breast region, and a back portion arranged for provision of a back support arranged to extend at least partially along a user's back.

[0007] The apparatus can prove advantageous insofar as the provision of the front and back supports advantageously allows not only for a variety of exercises when the user is standing in an upright position, and with or without additional weights provided to the weight engagement formations, but also when the user is lying supine thereon.

[0008] Preferably, the front portion can be arranged for the provision of weighting means which, in use, will be located in the region of a user's chest.

[0009] The exercise apparatus can further comprise a front support member readily engaged, if required, to the said front portion and upon which the weighting means can optionally be mounted.

[0010] In particular, the front support member can comprise a relatively thin chest plate arranged to be suspended from the said front portion and further, arranged for having the weighting means removably mounted thereon as required.

[0011] Further, the said back portion is advantageously arranged with engagement formations for the mounting of a back support thereon and which back support can comprise a relatively thin and optionally flexible, and resilient, back support plate.

[0012] Preferably, the said back support is arranged to extend from the said central region and is generally integral therewith.

[0013] Such features allow for a particularly simplified configuration for the apparatus and ease and comfort of use both in the upright standing position, and supine position.

[0014] The back support can be provided with an inner back supporting surface arranged to engage with the user's back and, in this manner, advantageously exhibits a curvature substantially similar to that of the human spine.

[0015] As suggested above, the back support member is advantageously arranged to support the user's back when lying supine thereon.

[0016] Further, the back support member can likewise be provided with an outer surface arranged to engage the floor surface when the user is lying supine thereon.

[0017] Preferably the outer surface has at least one region configured to allow for ease of movement of the back support over the said floor surface.

[0018] The said at least one region can advantageously include bearing means, rotatable means and, in particular, one or more castors or wheels.

[0019] In particular, the back support member comprises a flexible member.

[0020] With regard to at least one front support, this can likewise be arranged to extend from the central portion.

[0021] Preferably, respective left and right front support members are provided extending from respective left and right shoulder portions of the central region of the apparatus.

[0022] The said at least one front support member can advantageously include weight engaging formations.

[0023] With regard to the weight engaging formations outlined above, such formations can advantageously be arranged for the releasable mounting of weighting means thereon.

[0024] In particular, the weight engaging formations can comprise a plurality of hollow members arranged to receive fluid and/or particulate matter at the said weighting means.

[0025] As an alternative, the weight engaging formations can be arranged to releasably receive a plurality of hollow members each arranged to receive a fluid and/or particulate matter therein.

[0026] As a particular feature, the aforesaid hollow members can be pivotally mounted for variation in orientation relative to the apparatus and, in particular, having regard to different exercise routines.

[0027] A particular degree of flexing can advantageously be included in the arms which, in one particular embodiment, can be arranged to flex in the region of their connection to the said central region.

[0028] In one particular embodiment, the said central region is arranged to extend behind the user's neck.

[0029] As will therefore be appreciated from the above, an apparatus of the present invention can be readily employed in relation to abdominal exercises irrespective of whether the user is in an upright standing position, or a

supine position, and as will be described and as will become clear from the exercise routines as described hereinbelow.

[0030] The invention is described hereinafter, by way of example only with reference to the accompanying drawing in which:

Fig. 1 is a side perspective view of abdominal exercise apparatus according to an embodiment of the present invention;

Fig. 2 is a rear perspective view of the apparatus of Fig. 1;

Fig. 3 illustrates the embodiment of Figs. 1 and 2 during an exercise routine involving the user in an upright standing position;

Fig. 4 illustrates the apparatus of Figs. 1 and 2 when in use with the user in the supine position;

Figs. 5A and 5B comprise perspective views of abdominal exercise apparatus according another embodiment of the present invention;

Figs. 6A and 6B comprise perspective views of exercise apparatus according to yet another embodiment of the present invention;

Figs. 7A and 7B comprise perspective views of releasable weighting means for use in accordance with the present invention;

Fig. 8 is a schematic illustration of use of the embodiment of the apparatus illustrated in Figs. 5A and 5B;

Fig. 9 is a schematic illustration of use of the embodiment of the present invention according to Figs. 6A and 6B;

Figs. 10A and 10B are schematic illustrations of the use of apparatus according to the embodiment illustrated in Figs. 5A and 5B and having the weighting means of Figs. 7A and 7B mounted thereon;

Fig. 11 is a schematic illustration of use of an embodiment of the present invention such as that illustrated in Figs. 6A and and having weighting means such as that illustrated in Figs. 7A and 7B mounted thereon; and

Fig. 12. is a perspective view of exercise apparatus according to a further embodiment of the present invention.

[0031] Turning first to Fig. 1, there is provided a side perspective view of abdominal exercise appparatus according to one embodiment of the invention.

[0032] The abdominal exerciser (10) is arranged to be worn over the shoulders of a user and includes a central region 12 from which extend a pair of side arms 14, 16 extending in a sideways and forward manner as indicated.

[0033] At the ends of the side arms 14, 16 remote from the central region 12 there are provided a respective pair of handgrips 18, 20 arranged with ergonomic considerations in mind for ease and comfort of use of the apparatus.

[0034] A respective pair of indented regions 22, 24 are provided in each of the arms 14, 16 and for the releasable engagement of weight blocks thereto as will be described later. These indented weight engagement regions 22, 24 can however be provided at any appropriate location on each of the arms 14, 16 either nearer to, or more remote from, the central region 12.

[0035] The central region 12 includes a neck portion 26 arranged for ease of fit of the apparatus behind a user's neck and respective shoulder portions 28 arranged to overlie the user's shoulders and from which extend, in a forward manner, respective front supports 30, 32. The distall ends of these supports 30, 32 include engagement formations 34, 36 for the releasable mounting of weighting blocks thereon as, again, will be described later.

[0036] Extending downwardly from the central region 12 and shoulder portions 28 is a back support plate potion 38 having an inner back supporting surface 40 with a curvature arranged to fit to the human spine and an outer surface 42 (see Fig. 2) which is arranged to engage with a floor when the user is using the exercises 10 when is a supine position.

[0037] Extending outwardly from the lower regions of the outer surface 42 are a of castor wheels 44 which are provided so as to provide for ease of movement of the exerciser, and in particular the lower region of the back support plate 38 over a floor surface as required.

[0038] The full details of the configuration of the illustrated embodiment of Fig. 1 can be appreciated from Fig. 2 which comprises a perspective view from behind and below, the exerciser 10 and from which the central neck portion 26 the pair of shoulder portions 28, the outer surface 42 and the pair of castor wheels 44 can be readily appreciated.

[0039] Also seen in Fig. 2 are flexure portions 46 provided in regions where the arms 14, 16 meet the central portion 28 and which allow for flexing of the arms 14, 16 relative to the central portion 28 and front 30, 32 and back 38 supports.

[0040] Such flexing is included so as to enhance the comfort of the exerciser when in use particularly with the user in an upright standing position.

[0041] The full particulars of the illustrated embodiment of the present invention will be better understood through reference to Figs. 3 and 4 which provide illustrations of the exerciser 10 when in use in relation to two quite different exercise routines for the abdominal mus-

cles.

[0042] Turning first to Fig. 3 it will be appreciated that the exerciser can be worn by a user when in an upright standing position and with the arms 14, 16 extending behind the shoulders and upper arms of the user then providing support in which the forearms of the user can be comfortably placed with the hands gripping the respective handgrips 18, 20 (see Fig. 1).

[0043] Also illustrated in Fig. 3 are respective or weighting blocks 48 which are releasably mounted to the indented engagement formations 22, 24 (see Fig. 1) of the apparatus.

[0044] The weighting blocks can advantageously comprise hollow blocks arranged to receive fluid and/or particulate matter so as to increase the weight thereof in a readily controllable manner.

[0045] The manner of mounting of the weighting blocks 48 to the respective arms allows for the weighting blocks to depend generally vertically as illustrated in Fig. 3 or, to be pivoted through 90° in the direction of arrow A, so as to extend inwardly in a generally horizontal direction.

[0046] This generally horizontal disposition can be advantageously employed when the user is performing a floor-based exercise routine such as that to be discussed below in relation to Fig. 4.

[0047] Remaining with Fig. 3 however, the apparatus can be securely and comfortably worn by the user irrespective of the additional weight provided by the weighting blocks 48 and so to provide for a "core twist" exercise routine in which, with the feet generally stationary the user twist their trunk in a reciprocal manner whilst engaging the arms 14, 16 and handgrips 18, 20. The addition of the weights proves advantageous insofar as the amount of work required by the user to initiate, and then arrest, the generally circular motion performed by the weights so as to provide for an enhanced exercise routine. Also, the aforementioned flexure regions 46 (see Fig. 2) then allow for a still further enhanced workout session since when performing the "core twist" the user can employ each respective arm to flex the respective arms 14, 16 of the exerciser 10.

[0048] Again, the comfort of the apparatus, and ease of use, is particularly enhanced through the provision of the front 30, 32 and back 38 support members.

[0049] Turning now to Fig. 4 use of the exerciser 10 within an exercise routine generally commencing with the user in a supine position is illustrated.

[0050] Here, the outer surface 42, and the castor wheels 44 associated with the back support member engage with the floor upon which the user is lying and the arms 14, 16 extend generally vertically and, are again gripped by the user by way of the respective handgrips 18, 20.

[0051] The exercise routine to be performed comprises a so-called abdominal crunch in which the user repeatedly attempts to sit-up in a manner indicated by arrow B through use of the stomach muscles in particular.

[0052] The supporting function provided by the back support 42 allows for ease of use of the apparatus and, a particularly important feature, the castor wheels 44 allow for a reliable and smooth movement of the exerciser albeit for a relatively short distance, in the direction of arrows C as the user's torso is raised in the direction of arrow B.

[0053] Comfort, and support, for the user's back is therefore advantageously provided and no snagging of the back support member of the apparatus occurs.

[0054] As required, weighting members can be mounted to the arms 14, 16 and pivoted inwardly as discussed above in relation to Fig. 3. As an alternative, such weighting members can be engaged with the engagement formations 34, 36 or respective front support plates 30, 32 so as to provide extra weight against which the user works during the exercise routine as illustrated with reference to Fig. 4. It is a particular feature that, when used for such crunch exercising, the weights can be readily located above the user's chest region.

[0055] Again, although additional weight has been added on to the apparatus, the provision of the front 30, 32 and bark 42 supporting members maintain comfort and ease of use of the exerciser 10.

[0056] Turning now to Figs. 5A and 5B, are provided perspective views of abdominal exercise apparatus 50 according to another embodiment of the present invention.

[0057] Here the apparatus 50 comprises arms 52, 54 extending from a central neck-support region 56 and wherein respective formations 58, 62 are provided at the distal ends of each of the arms 52, 54 to allow for ready under-support of a user's forearms and whilst the central neck support 56 is located behind a user's neck. Each of the formations 58, 62 is associated with a forwardly extending handgrip 60, 64 by which the apparatus is arranged to be gripped by a user during an exercise routine.

[0058] As is best illustrated in Fig. 5A, a back portion 56A of the central neck support region 56 is arranged to extend outwardly behind a user's neck whereas, and as is best illustrated in Fig. 5B, separate downwardly extending tongues 56B, 56C are provided at a front portion of the central neck support 56. When worn by a user, the tongues 56B, 56C extend downwardly towards the users breast/chest region. If required, a degree of resilience can be provided for the arms 52, 54 with respect to the central neck support region 56 so that, during use, each of the arms 52, 54 can flex to some degree if required.

[0059] Illustration of use of the embodiment of Figs. 5A and 5B is provided hereinafter although it will of course immediately be recognised that the apparatus can be used in a manner similar to that described with regard to the preceding embodiment.

[0060] Turning now to Fig. 6A and 6B, there is provided a further view of an exercise apparatus 50 having respective side arms 52, 54 such as that illustrated within Figs. 5A and 5B but which has been adapted by the inclusion of a back-support plate 66 so as to form a yet further embodiment of the present invention.

[0061] It should be that the back-support plate 66 can be provided integral with the apparatus 50 or, alternatively, can be arranged to be releasably mounted to the central neck support region 56 of the apparatus 50.

[0062] In either case, the back-support plate 66 comprises a relatively thin and flexible downwardly extending member and arranged to offer a curvature with regard to the natural curvature of the spine.

[0063] Importantly, an outer surface of the back support plate 66 is provided with means for enhancing the ease of movement of the back support plate 66 over a floor surface when in use. In the illustrated example of Fig. 6B, such means comprise a pair of castors 68, 70.

[0064] As will be appreciated from the following discussion, the back support 66 illustrated in Fig. 6A and 6B allows for ease of movement of a user's back when performing floor exercises and in a similar manner arising in relation to the preceding embodiment and the discussions relating to Fig. 4 in particular.

[0065] With regard to Figs. 7A and 7B, there are provided perspective views of weighting means 72 which are arranged to be releasably mounted to the embodiments of the present invention as illustrated in Figs. 5A, 5B, 6A and 6B.

[0066] Each of the weighting means 72 comprises a pair of weighting elements 74, 76 which can either be solid, or in one particular embodiment can be hollow and arranged to be filled with an appropriate fluid and/or particulate matter so as to increase the weight thereof.

[0067] Further, each of the weighting means can include a variety of engagement formations 78, 80 so as to allow for the ready releasable engagement of the weighting means to the exercise apparatus.

[0068] As will be clear from the illustration of use of the present invention that follows, the weighting means 72, can be releasably engaged to the arms 52, 54 of the present invention or to the breast/chest region of the apparatus.

[0069] Such engagement for mounting the weighting means 72 in the breast/chest region or the user can either be direct to the tongues 56B, 56C illustrated in Fig. 5B or can be by way of an intermediary breast-plate member which is then in turn mounted to the aforementioned tongues 56B, 56C.

[0070] Turning to Fig. 8, there is provided a first illustration of the manner of use of the apparatus illustrated in Figs. 5A and 5B.

[0071] As will be appreciated, the apparatus is "worn" in a similar manner to that of the preceding embodiment insofar as the central neck portion 56 is located behind a user's neck and each of the arms 52, 54 extend laterally along a user's shoulders. This allows for the users to raise their forearms up and onto the support surfaces 58, 62 thereby allowing ready access to the handgrips 60, 64.

[0072] Any appropriate exercise can then be performed in a similar manner to that discussed in relation to the preceding embodiment.

[0073] Turning now to Fig. 9, there is provided an illustration of use of the embodiment of Figs. 6A and 6B and the user lying with their back supported thereon upon a floor surface. As will be appreciated, the back support plate 66 provides for ready and comfortable positioning of the user on the floor surface and also assist the user's spine in achieving and maintaining, a comfortable position. As is best illustrated in Fig. 9, each of the pair of castors 68, 70 engages with the floor surface and allows for reciprocal movement of the back support plate 66 in the direction of arrows A in Fig. 9 during an exercise routine involving so-called sit-ups or scrunches. As will be appreciated, the castors 68, 70 assist the with which the apparatus 50 and in particular the back support plate 66, can move relative to the floor surface upon which the exercise is being performed and thereby remain an appropriate comfortable position supporting the user's back during an exercise routine.

[0074] Turning now to Figs, 10A and 10B there are provided illustrations of use of the apparatus according to the embodiment of Figs. 5A and 5B but with weighting means 72 such as those illustrated in Figs. 7A and 7B mounted thereon. As with the preceding embodiments, the addition of the weighting means 72 serves to increase the amount of work to be undertaken by the user during an exercise routine thereby enhancing the benefits to be obtained by such a routine.

[0075] In addition to being mounted under each of the arms 52, 54 of the apparatus as illustrated in Figs. 10A and 10B, the weighting means 72 can likewise be mounted in the vicinity of the breast/chest region of a user. Such mounting as noted above is achieved either directly to the tongues 56B, 56C as illustrated in Fig. 5, or more preferably, by way of a breast plate member 82 illustrated in Fig. 11 and which, chile itself can be reasonably mounted to the tongues 56B, 56C illustrated with reference to Fig. 5B, is arranged to have waiting means 72 mounted thereon.

[0076] The provision of such a breast plate provides an advantageous feature for achieving an easy and quick mounting of any required weighting configuration onto the apparatus 50.

[0077] As illustrated in Fig. 11, the addition of mounted weighting means 72 in the simple illustrated manner assists in increasing the amount of work undertaken by a user when performing so called sit-ups or scrunches. It allows for the safe use of the weighting means 72 without requiring securing by use of the user's hands. Indeed the user's arms and hands can remain in engagement with the support surfaces 58, 62 and handgrips 61, 64 as required and as illustrated in Fig. 11.

[0078] As will be the embodiments in the present invention as illustrated in Figs. 5A, 5B and Figs. 6A, 6B provide for advantageously compact and readily adaptable exercise allowing for the addition of front and back support members as required for assisting with floor-based exercise routines in particular.

[0079] Turning now to Fig. 11, there is illustrated a yet further embodiment of the present invention.

[0080] Here, exercise apparatus 84 embodying the present invention has a pair of cranked tubular arms 86, 88 having a substantially right-angular configuration as illustrated and which terminate at vertically extending handgrip members 90, 92 respectively.

[0081] The central portion of the apparatus 84 includes a front region having a pair of downwardly depending tongues (only one of which 94 is visible); and having a rear portion offering a downwardly extending back support 96 with a bearing support member 98 extending therefrom.

[0082] As will be appreciated, the bearing support member 98 is employed to provide comfort for the user when lying on the floor on the apparatus 84.

[0083] Also, the bearing member 98 provides for a bearing surface allowing for ready sliding motion between the back rest 96 and the floor surface upon which an exercise routine is being conducted.

[0084] The bearing support member can comprise a rigid, or at least partially deformable member as required.

[0085] In the illustrated embodiment it will be appreciated that the bearing formation 98 comprises a substantially semi-cylindrical member offering a part-cylindrical curved bearing surface.

[0086] Adjacent each of the handgrips 90. 92 is a respective pair of forearm supports 100 or 102 which, as required, can be cushioned, and serve to provide support for a user's forearms.

[0087] With regard to the handgrip members 90, 92 these are illustrated in the substantially vertical orientation.

[0088] In one further development of the present invention, the handgrip members 90, 92 can be provided in a pivotable manner relative to the arms 86, 88 and so as to be pivoted into any appropriate vertical and/or horizontal configuration as appropriate.

[0089] That is, the handgrips 90, 92 can be pivoted forwardly from a position illustrated in Fig. 12 so as to effectively form an extension of the arms 86, 88 or can be pivoted downwardly either to the left or right as illustrated in Fig. 12 so as to extend substantially horizontally and perpendicularly from the hand regions of the arms 86, 88.

[0090] The embodiment illustrated in Fig. 12 comprises a cost effective whilst comfortable and effective, embodiment of the present invention.

[0091] It should of course be appreciated that the invention is not restricted to the details of the foregoing embodiment.

[0092] For example, any appropriate form of weight engagement formations can be provided and the exact form of the arms, front and back support members can be varied as required. Further, the weight engaging formation can be provided at any appropriate location as required.

Claims

1. An abdominal exercise apparatus comprising a pair of arms each extending from a central region and each having weight engaging formations towards the ends thereof, the said central region being arranged to extend over a user's shoulders and having a front portion arranged to extend in the direction of a user's breast region, and a back portion arranged for provision of a back support arranged to extend at least partially along a user's back.

2. Exercise apparatus as claimed in Claim 1, and wherein the front portion includes an engagement formation for a front support member arranged to extend over a user's chest region.

3. An apparatus as claimed in Claim 2, wherein the front support member is arranged to support weighting means in the region of a user's chest.

4. Exercise apparatus as claimed in any one or more of Claims 1 to 3, wherein the back portion includes an engagement formation for the mounting of a back support thereon.

5. Apparatus as claimed in Claim 1 and comprising a unitary back support member.

6. Apparatus as claimed in any one or more of the preceding claims, wherein the back support comprises a flexible and/or resilient member.

7. Apparatus as claimed in any one or more of the preceding claims wherein an outer surface of the back support has at least one region configured for ease of movement over the said floor surface.

8. Apparatus as claimed in Claim 7, wherein said at least one region includes bearing means.

9. Apparatus as claimed in Claim 7 or 8 wherein the at least one region exhibits a curved surface protrusion.

10. Apparatus as claimed in Claim 7, wherein said at least one region includes a rotatable member.

11. Apparatus as claimed in any one or more of the preceding claims, wherein the weight engaging formation is arranged for releasable mounting of weighting means thereon.

12. Apparatus as claimed in Claim 11 wherein the weight engaging formation comprises a plurality of hollow members arranged to receive fluid and/or particulate matter as the said weighting means.

13. Apparatus as claimed in any one or more of the pre-

ceding claims, wherein each of the said pair of arms is arranged to flex relative to the said central region.

14. Apparatus as claimed in any one or more of the preceding claims and including handgrip members at each of the end regions of the arms.

15. Apparatus as claimed in Claim 14 wherein the handgrip means are pivotable relative to the arms.

16. Apparatus as claimed in Claim 15 and arranged such that the pivotal motion has at least one of a vertical and a horizontal extent.

17. Apparatus as claimed in claim 16 wherein the handgrip means are pivotable through substantially ninety degrees between substantially vertical and horizontal planes and/or within a substantially horizontal plane.

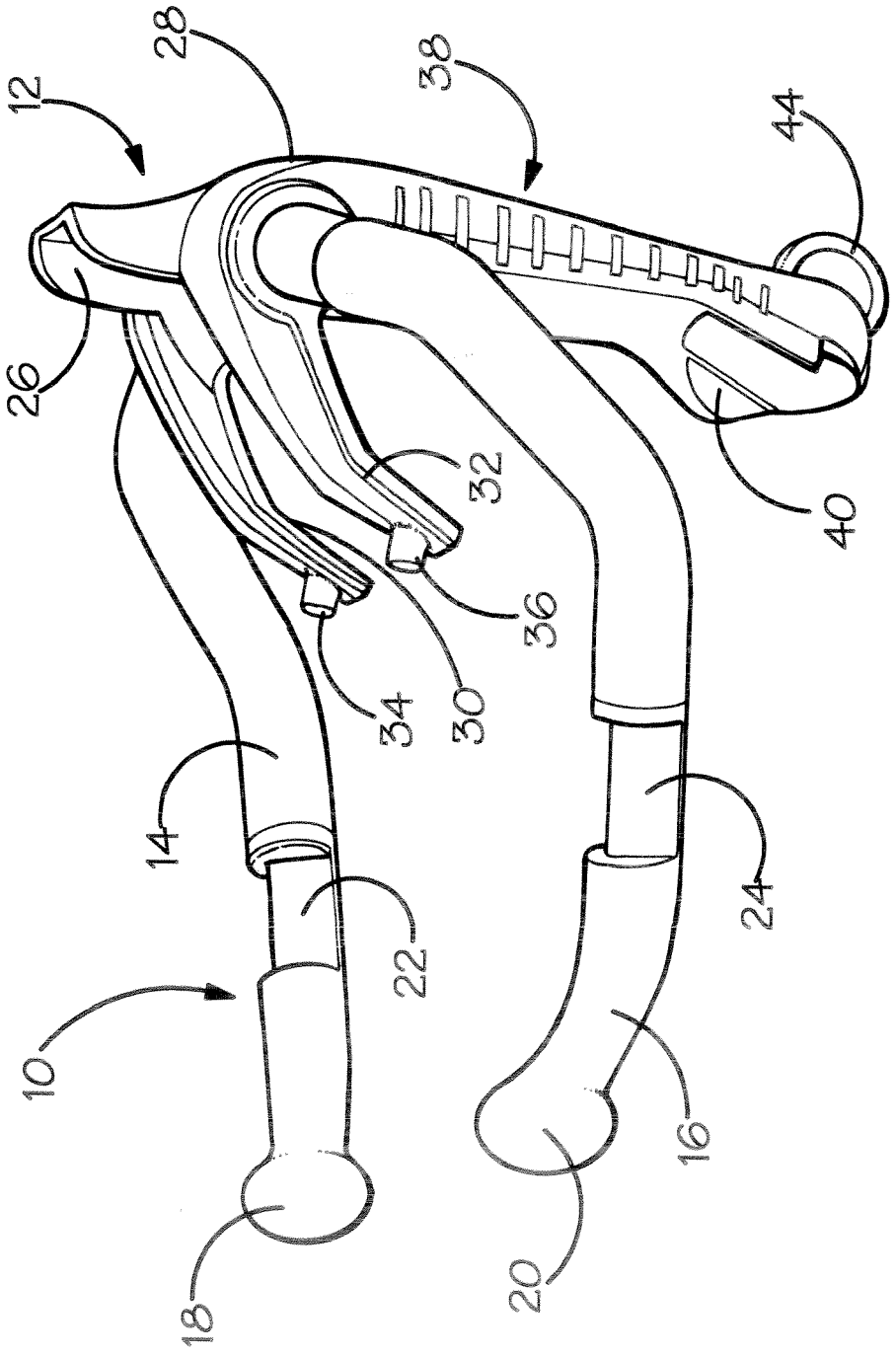


FIG.1.

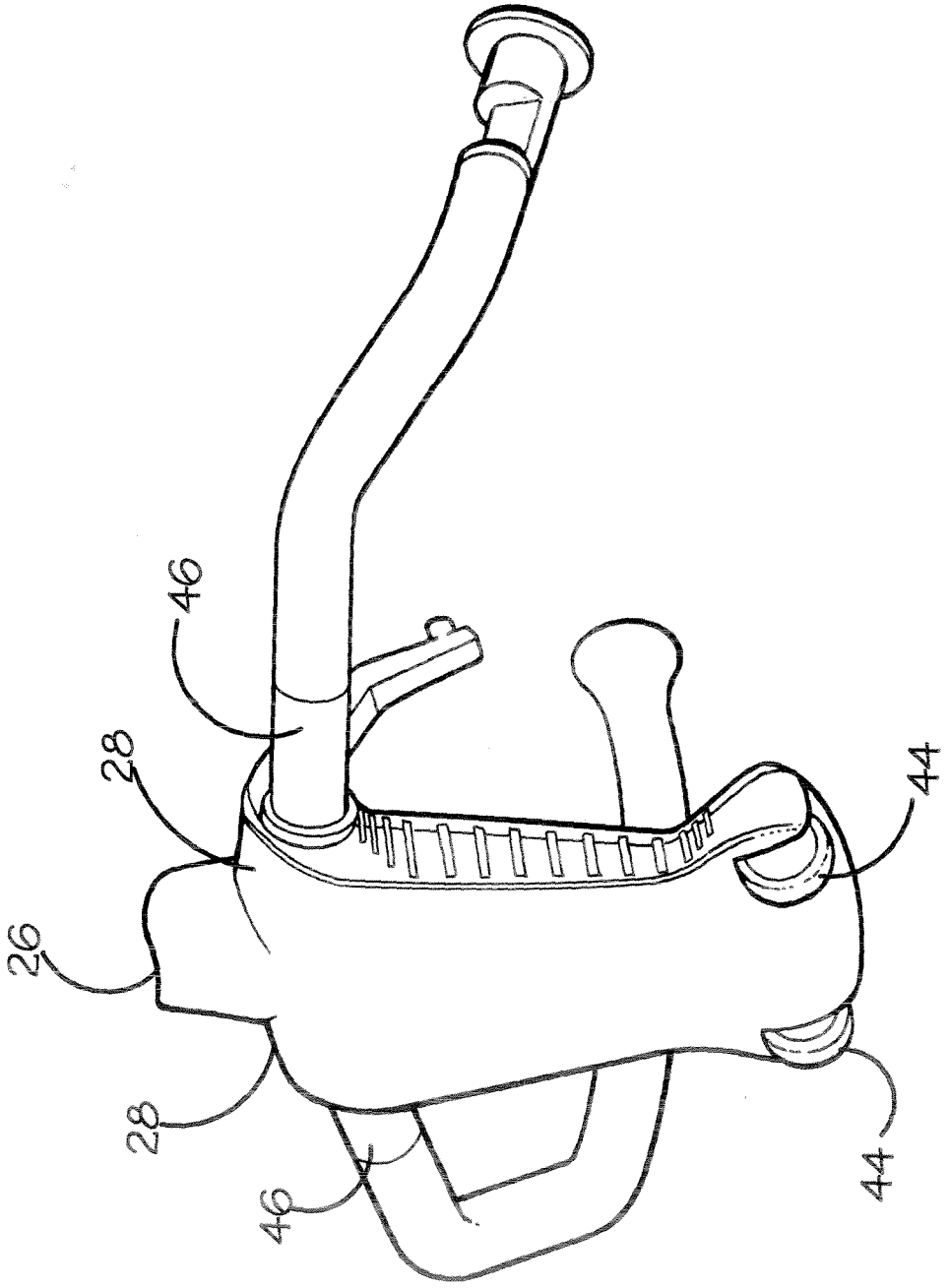


FIG.2.

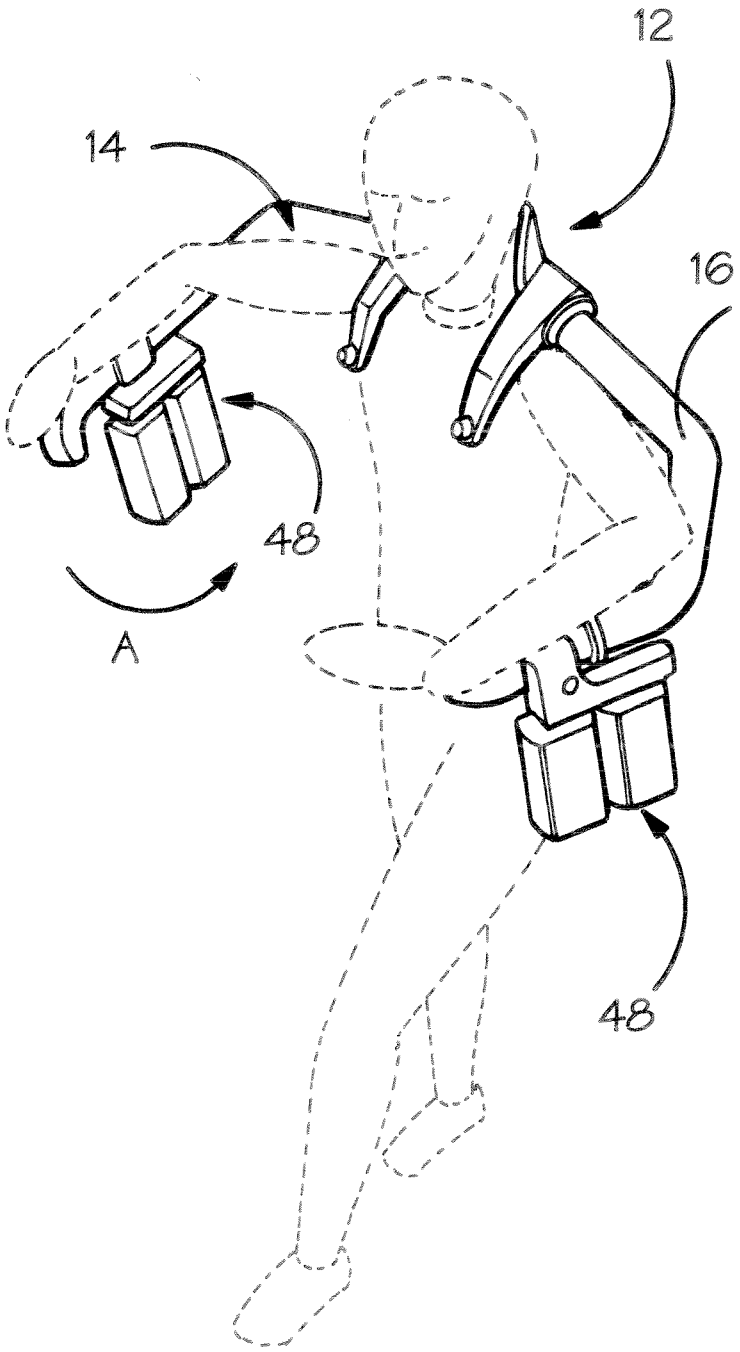


FIG.3.

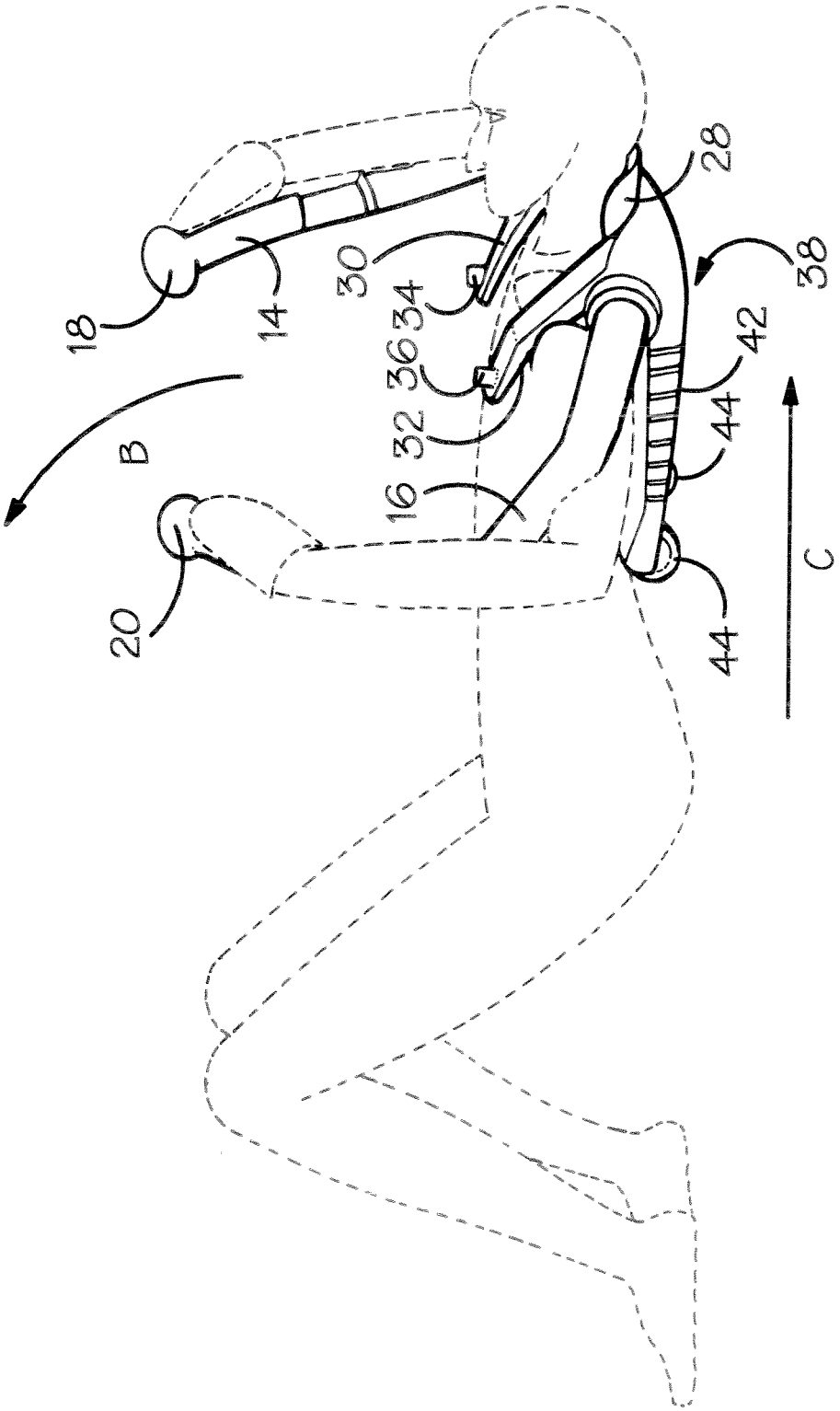
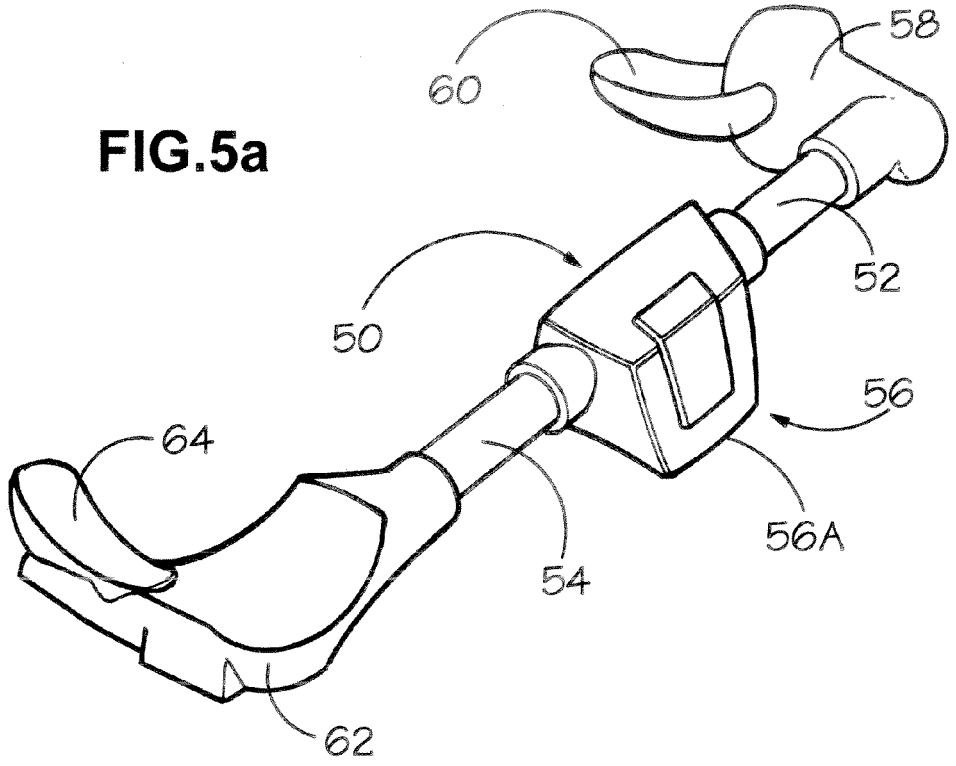


FIG.4.

FIG.5a



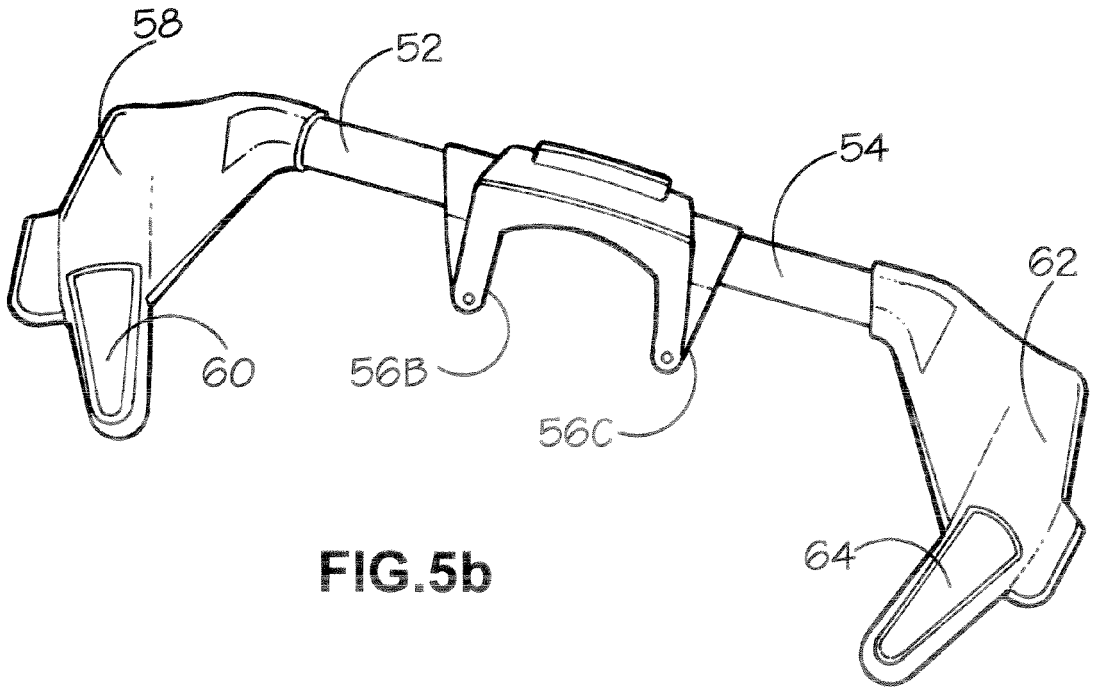


FIG.5b

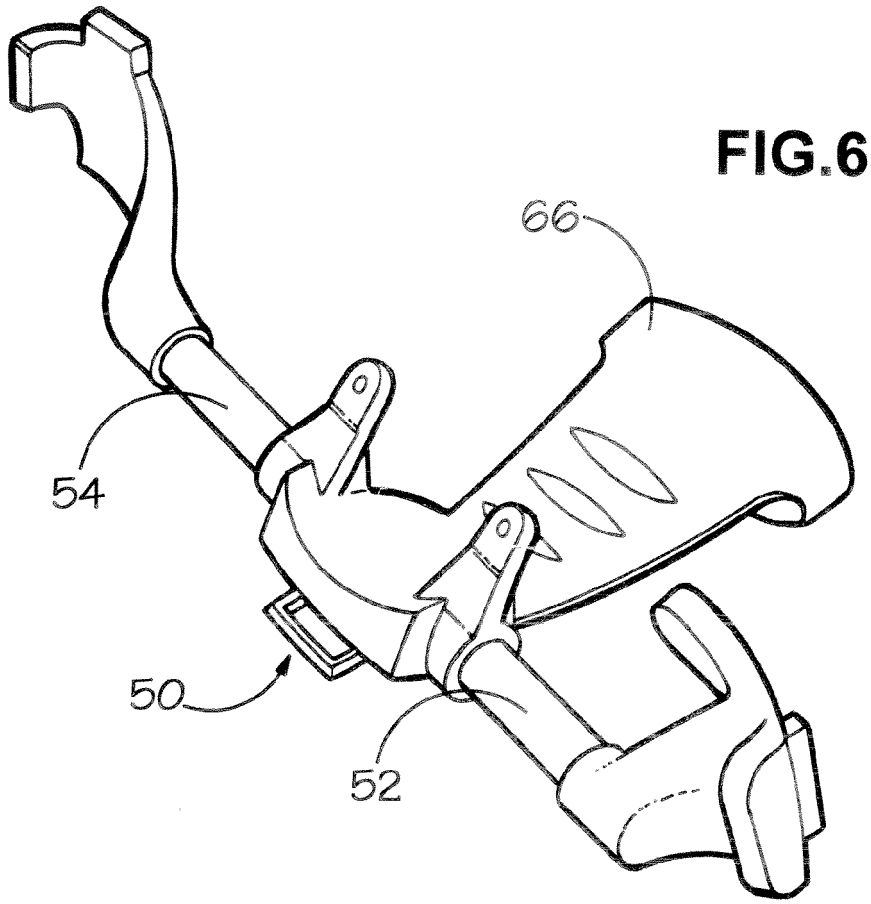


FIG.6a

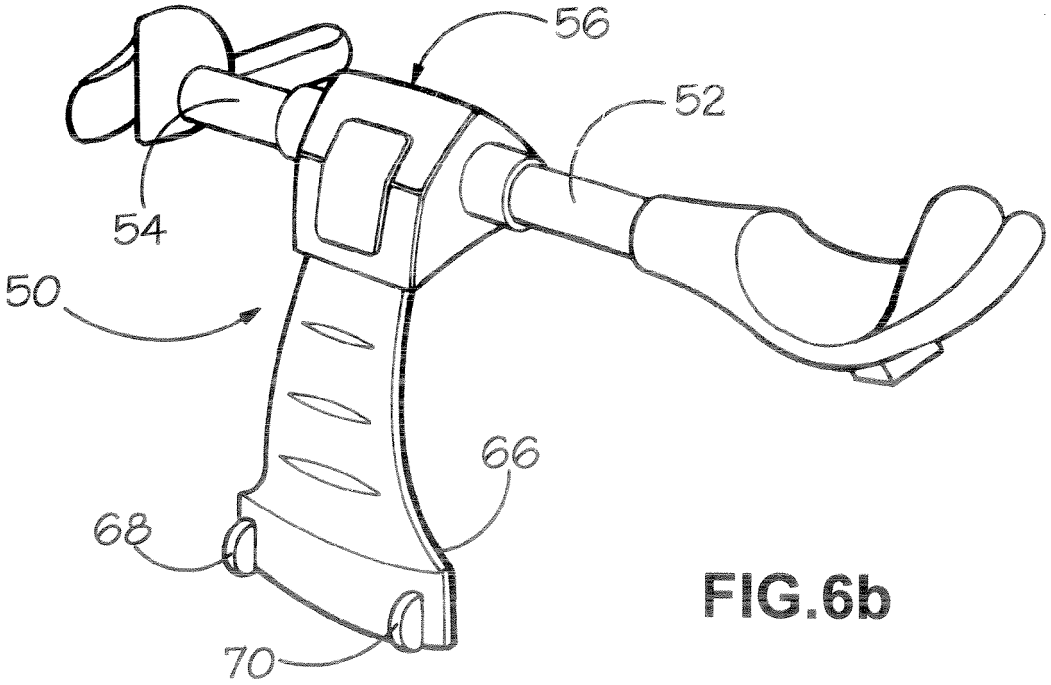


FIG.6b

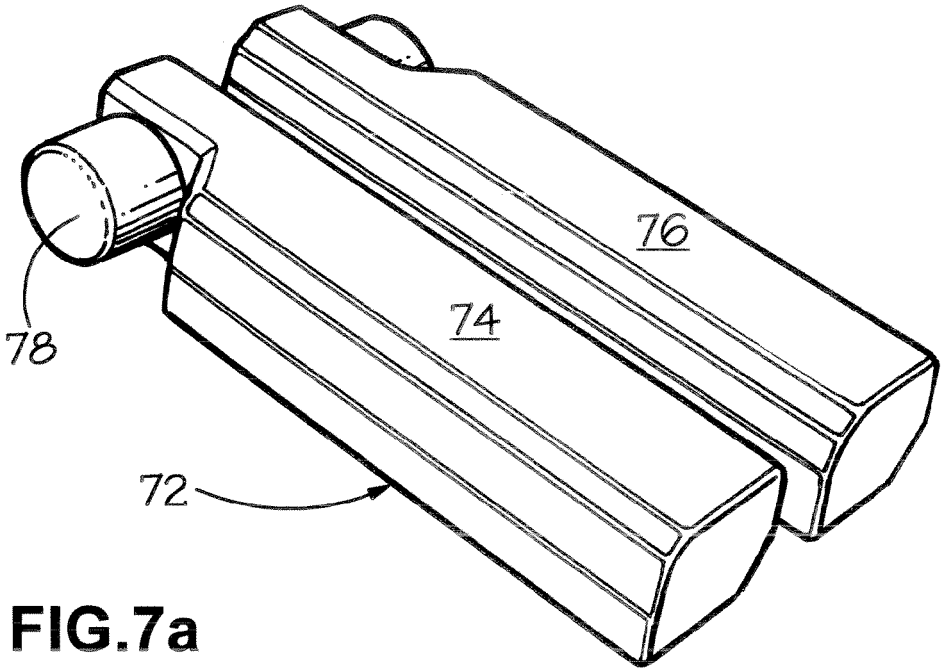


FIG.7a

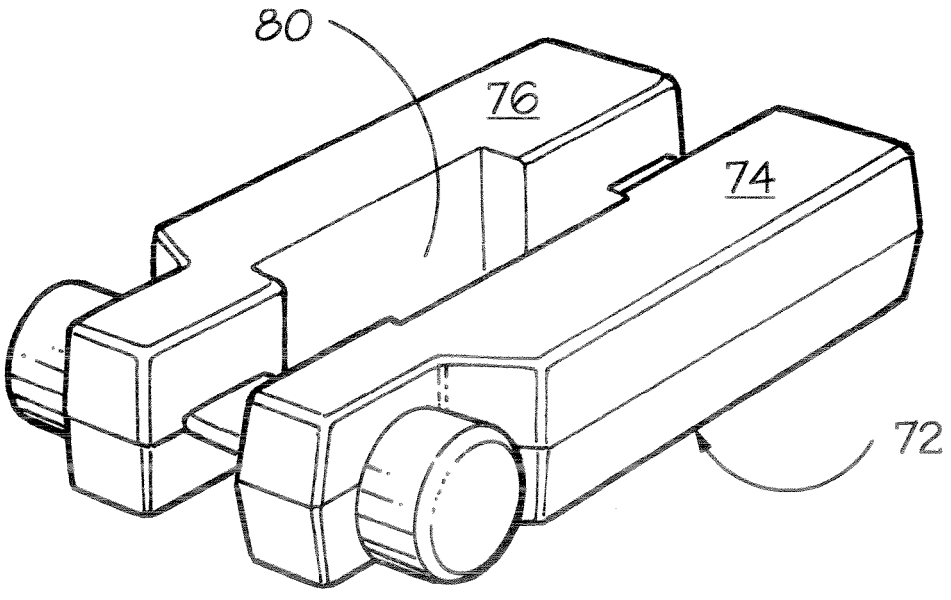


FIG.7b

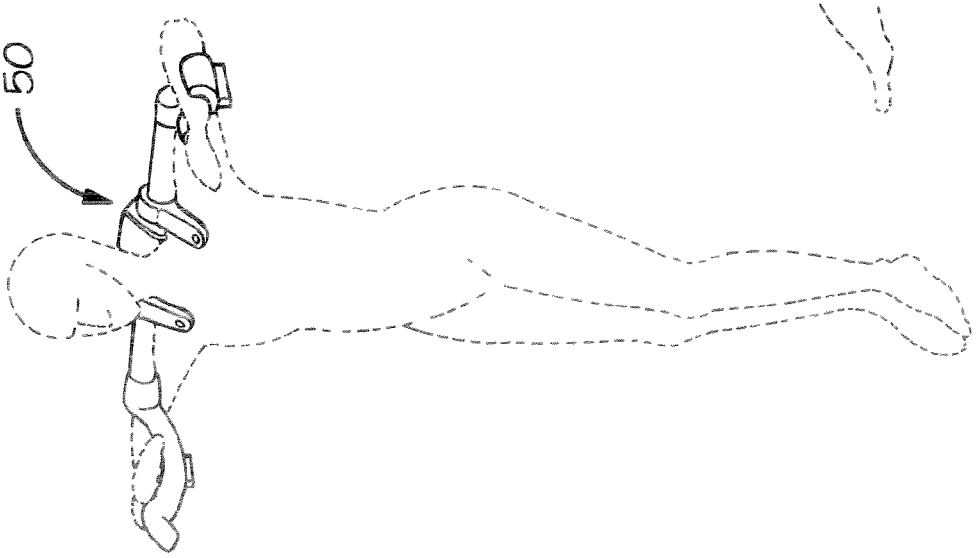


FIG.8.

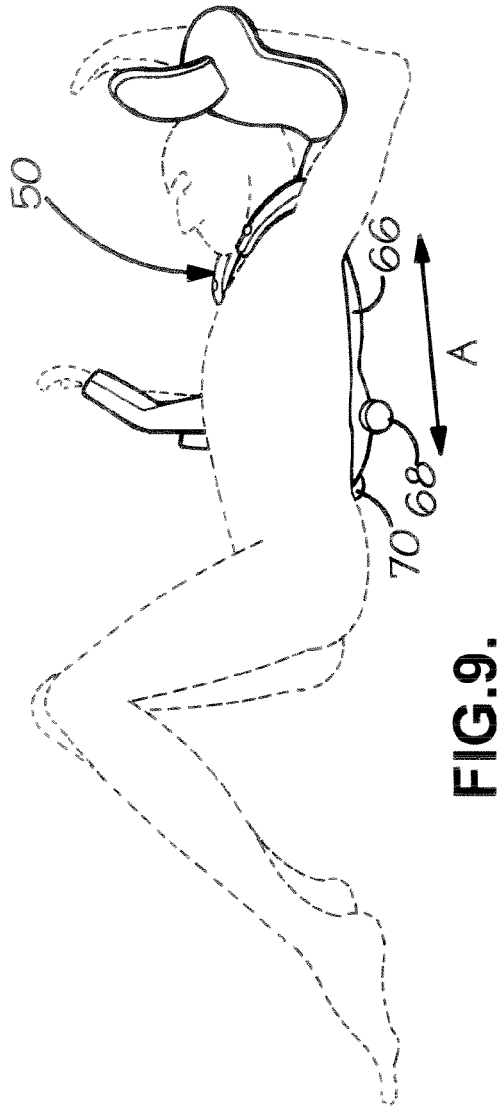


FIG.9.

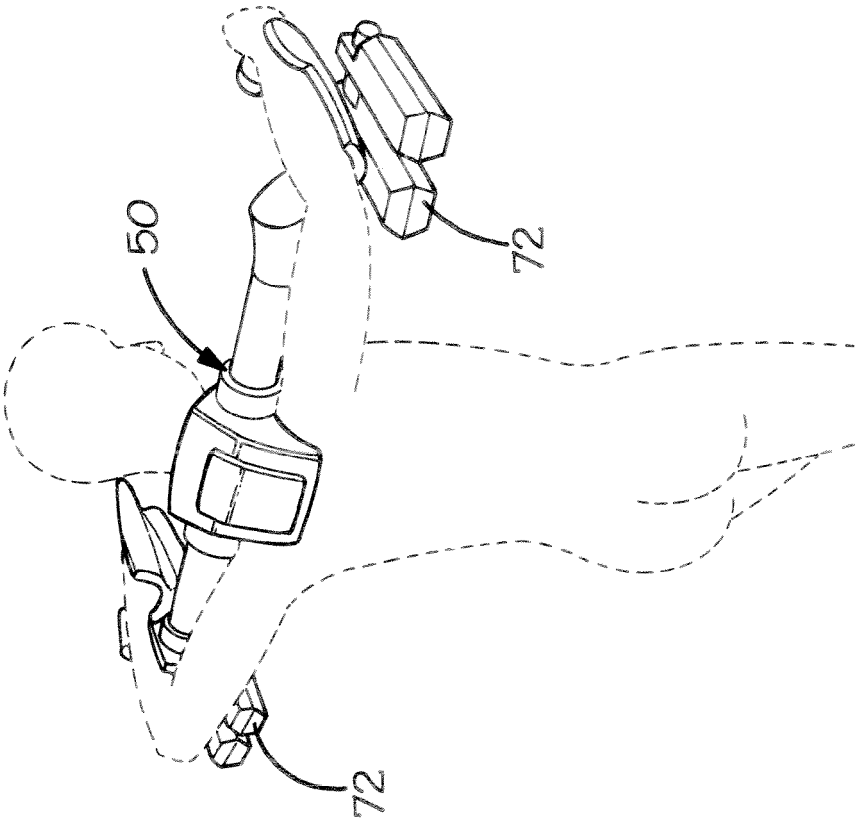


FIG.10B.

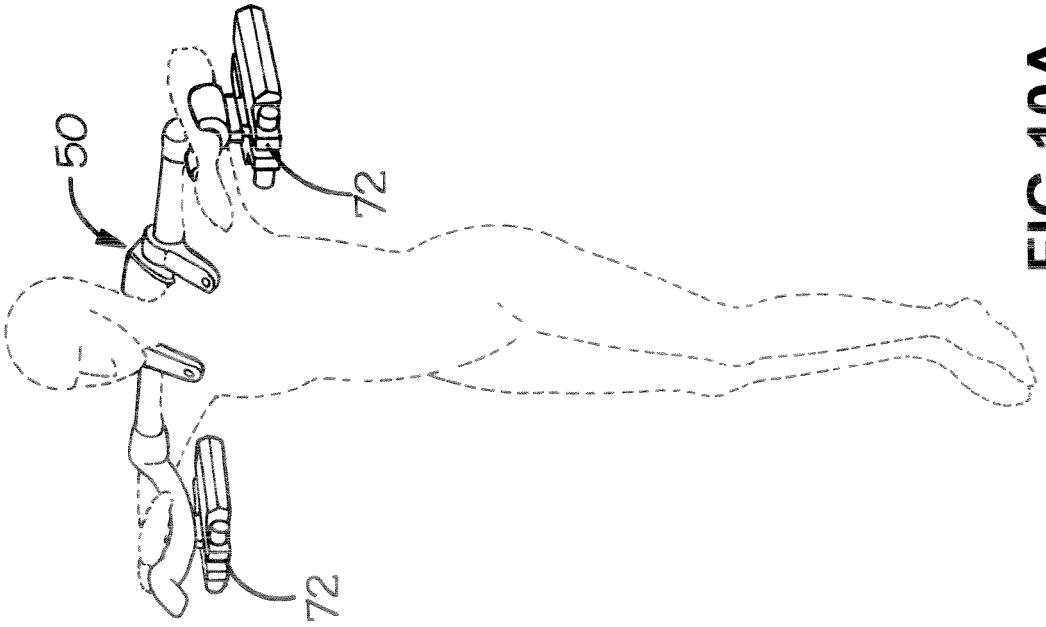


FIG.10A.

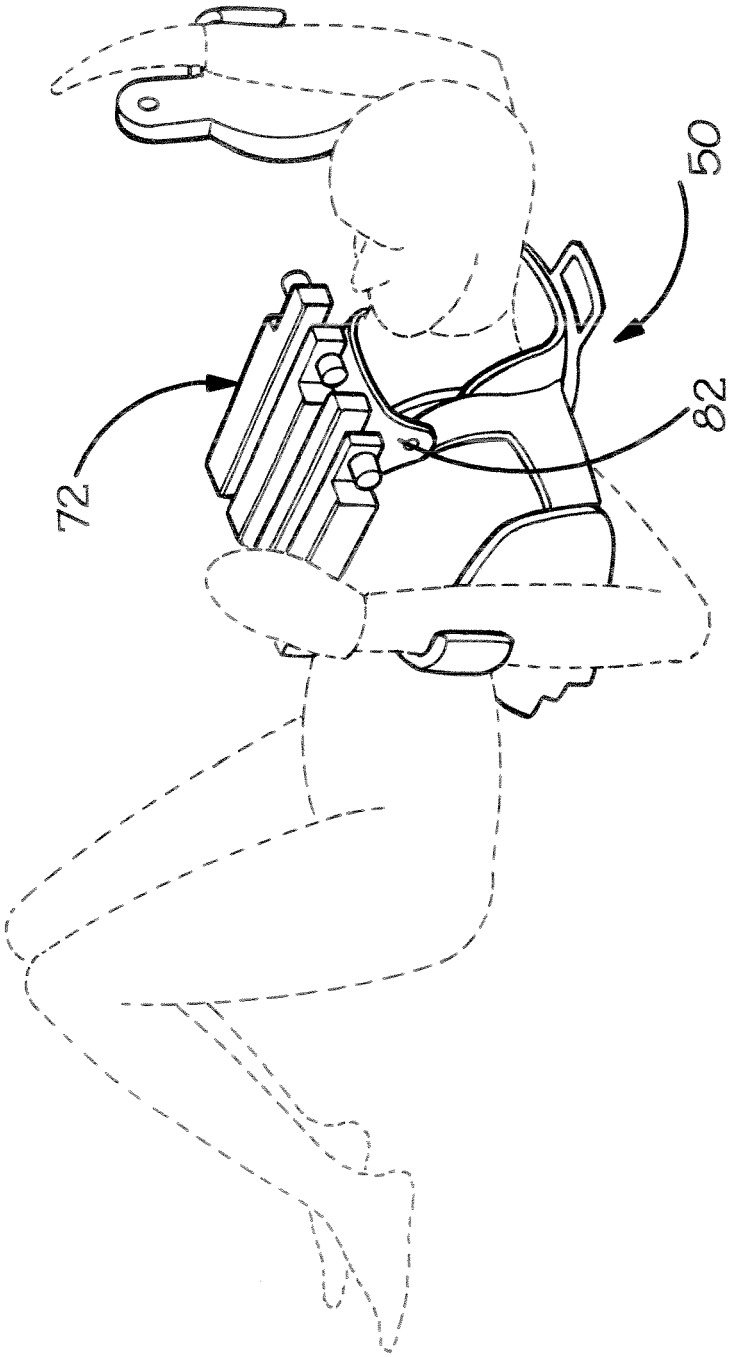


FIG.11.

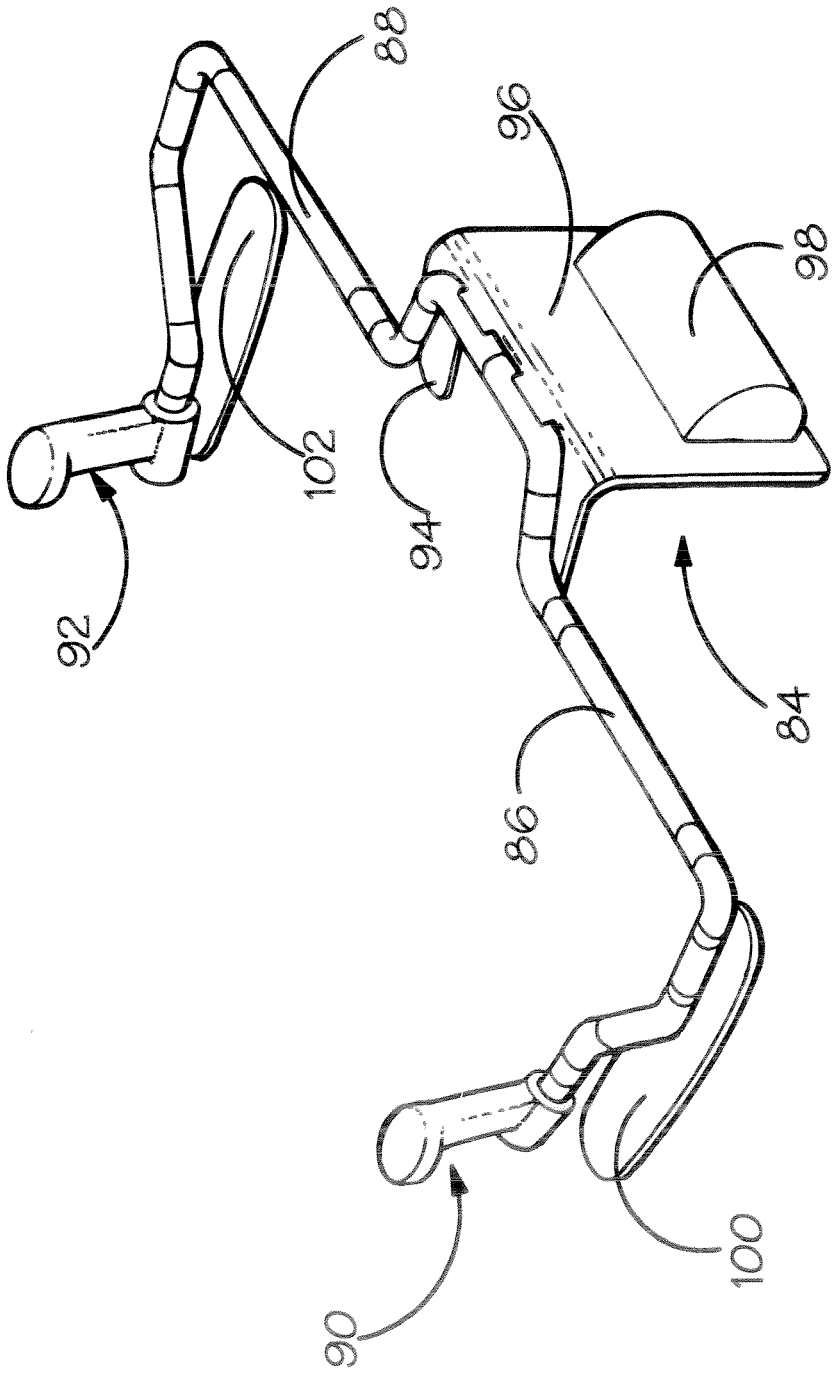


FIG.12.

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EUROPEAN SEARCH REPORT

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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TECHNICAL FIELDS SEARCHED (IPC)

A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	1 February 2010	Millward, Richard

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01-02-2010

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