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(54) Exercise apparatus

(57) The present invention provides for exercise apparatus comprising a backrest pivotally coupled in a region of a first end to a support frame and resiliently biased to extend in an at least partially upward direction therefrom, a legrest pivotally coupled in a region of a first end to the said support frame and resiliently biased to extend in an at least partially upward direction the said support being arranged for stable location of the apparatus on a floor, and the apparatus further being arranged to present a seat portion for a user in the region of the said first ends of the backrest and the legrest and so that, when sat on the apparatus, a user can exercise their legs and/or abdomen as required.

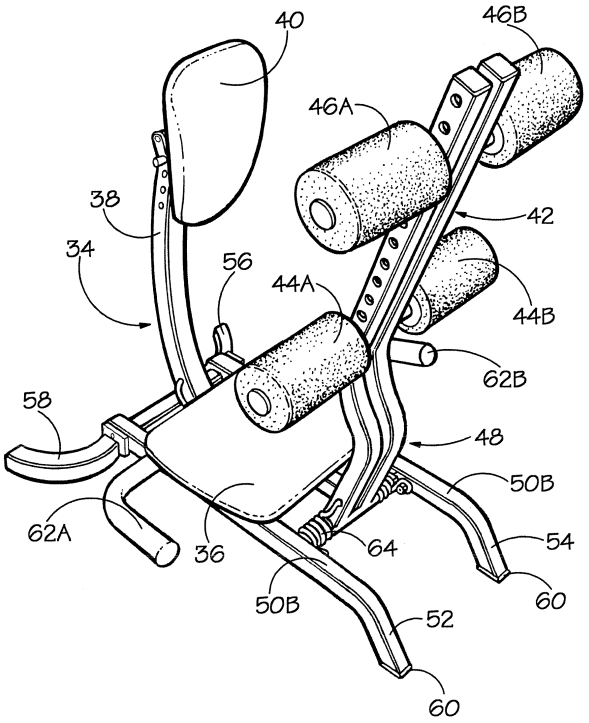

FIG.7.

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Description

[0001] The present invention relates to apparatus for use in exercise routines, and in particular for the legs and abdomen.

[0002] Various forms of exercise apparatus are commonly known for use in exercising various parts of the human body, for example, for enhanced level of fitness and body toning.

[0003] This includes exercise apparatus for exercising the human legs and abdomen and a wide variety of such generally complex apparatus is commonly available in public and private gymnasiums.

[0004] It has also become increasingly popular to exercise within the domestic environment for possibly more efficient, time-saving and cost effective exercise routines.

[0005] However, much of the known exercise apparatus is not generally suited to a domestic environment and can prove unnecessarily complex and bulky such that known apparatus is not readily stored in a space-saving and tidy manner when not in use.

[0006] Various forms of leg and abdomen exercise apparatus include frame structures which are bulky, not readily disassembled and can prove unsightly when used and stored within a domestic environment.

[0007] The present invention seeks to provide for exercise apparatus, particularly for the abdomen and/or legs, having advantages over known such apparatus.

[0008] In particular, the present invention seeks to provide for exercise apparatus, such as for the abdomen and/or legs and which is relatively simple in structure and operation and also for maintenance purposes, whilst nevertheless enhancing the range and nature of the exercise routines available to different users and which, as a further advantage, can prove particularly compact and relatively easily stored when not in use.

[0009] According to one aspect of the present invention there is provided exercise apparatus comprising a backrest pivotally coupled in a region of a first end to a support and resiliently biased to extend in an at least partially upward direction therefrom, a legrest pivotally coupled in a region of a first end to the said support and resiliently biased to extend in an at least partially upward direction the said support being arranged for stable location of the apparatus on a floor, and the apparatus further being arranged to present a seat portion for a user in the region of the said first ends of the backrest and the legrest.

[0010] Through the provision of such a floor-mountable and stable exercise apparatus presenting both resiliently biased back and legrests which, if required, can pivot in a jack-knife manner, the apparatus of the present invention advantageously provides for a simple, compact and readily stored apparatus for providing a full scope of exercises relevant to the abdomen and/or legs.

[0011] As may be required, the apparatus can be simply moved from its position of use and stored as required.

[0012] Preferably, the backrest can be arranged to extend at an angle to the said legrest.

[0013] It should be appreciated that, in order to assist storage, at least one of the backrests and the legrests can, if required, be moved, and held in a position, against any resilience arising within the apparatus.

[0014] In one embodiment, the backrest and legrest can be arranged to pivot about a common fulcrum.

[0015] In such a manner, the backrest and legrest can advantageously be resiliently and pivotally coupled together with the pivot coupling being mounted to the said support.

[0016] In accordance with another arrangement, each of the backrest and the legrest is resiliently pivotally coupled to the support and extend partially upwardly, in at least slightly different directions therefrom and/or from different locations thereon.

[0017] The seat portion can advantageously be located between the respective first ends of the backrest and legrest.

[0018] As will be appreciated, from a side view the backrest and legrest of the present invention can extend upwardly in a generally V-shaped configuration.

[0019] Preferably, the support includes handles to be gripped by a user during an exercise routine. The handles can comprise a pair of handles extending from respective sides of the said support, and preferably in the region of the seat portion.

[0020] In one arrangement, the seat portion can be provided for the user solely by way of the adjacent first ends of the backrest and the legrests.

[0021] In accordance with another embodiment, and particularly where the backrest and the legrests are pivotally coupled to the support, an upwardly facing portion of the support between the said first ends of the backrest and the legrest can comprise a seat portion for the apparatus.

[0022] Also, such a region of support can be provided with an appropriate cushion as required.

[0023] In particular, if a cushion member is provided on the back rest, it can advantageously comprise at least one roller cushion member arranged to take during use the apparatus so as to ease the manner in which the user's back can move relative to the backrest. Any appropriate cushion means can be provided on one particular embodiment employing an arcuate cradle supporting aligned pairs of roller cushions.

[0024] It is a particular feature of the present invention that the seat portion is presented at a raised location above the floor upon which the apparatus is to be supported.

[0025] Advantageously, the pivotal connection of each of the back and legrests is such that each can be pivoted against the resilient bias at least to a substantially horizontal position.

[0026] Preferably, the said backrest and the legrest can be pivoted against the resilient bias to a position beyond horizontal such that each slopes downwardly away

from the seat portion.

[0027] Through the provision of such a range of pivotal motion, the apparatus, while retaining its compact and efficient construction, can advantageously provide for a wide range of possible exercises.

[0028] As will be appreciated, the legrest is arranged to provide support under the back of a user's thigh.

[0029] In one particular advantageous embodiment, each of the backrest and the legrest can pivot independently of the other with respect to each other, and/or with respect to the support. It should of course be appreciated that the backrest and legrest can be provided in any appropriate configuration, made from any appropriate material as required with regard to aspect of weight and comfort of the apparatus.

[0030] That is, the backrest and the legrest can comprise generally flat solid members, or can comprise frame members with, for example, webbing therebetween for support for a user's back and legs. Alternatively, the frame members can include appropriate cushion members which, if required, can be movable relative to the frame members. According to one particular advantageous embodiment, the backrest comprises an arm member pivotally engaged in a resilient manner to the said support and presenting a cushion pad for contact with a user's back. The cushion pad is advantageously mounted to the arm member in a movable manner such that its position on the arm member can be readily adjusted to best to suit the user.

[0031] Further, the legrest can comprise at least one central longitudinal arm and with leg support means extending laterally either side thereof.

[0032] Advantageously, the leg support means comprise cushion members which, if required, can be arranged to move relative to the central longitudinal arm(s).

[0033] Preferably, the relative movement of the cushion support members is in a rotatable manner so as to rotate as a user's legs are moved relative thereto generally either when climbing onto or off the apparatus and/or when using the same.

[0034] Advantageously, respective first and second pairs of the said support members are provided in a manner spaced in the longitudinal direction of the said central arm(s).

[0035] It will of course be appreciated that these laterally support members are arranged to engage under different parts of a user's legs. The said laterally extending support members are advantageously removably mounted to the longitudinal arm(s) such that their location on the said arm(s) and can be adjusted as required for comfort of the user.

[0036] The invention is described further hereinafter, by way of example only, with reference to the accompanying drawings in which:

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

Fig. 2 is a similar view of the apparatus of Fig. 1 but when in use and once having had the backrest and legrest pivoted against the bias to their maximum extent;

Fig. 3 is a schematic side view of an exercise apparatus according to, another embodiment of the present invention;

Fig. 4 is a similar view of the apparatus of Fig. 3 but when in use and once having had the backrest and legrest pivoted against the bias to their maximum extent;

Fig. 5 is a schematic illustration similar to that represented by Fig. 3 but showing the position of a user's body when located on the apparatus;

Fig. 6 is a schematic illustration similar to that of Fig. 4 but, as with Fig. 5, again showing the position of a user's body during an exercise routine and with the apparatus in the position as shown in Fig. 4;

Fig. 7 is a perspective view of apparatus according to another embodiment of the present invention; and

Figs. 8 - 10 provide three views of another embodiment of the present invention.

[0037] Turning now to the drawings reference is first made to Fig. 1 which comprises a schematic side illustration of exercise apparatus according to one embodiment of the present invention.

[0038] The exercise apparatus 10 arranged for exercising the abdomen and legs includes a floor mounted support 12 having feet 14, 16 for stable location of the apparatus 10 on a floor surface (not shown).

[0039] The support 12 is also connected to a resilient biasing element 18 operatively coupled to a partially upwardly extending backrest 20 and legrest 22.

[0040] The backrest 20 and legrest 22 are therefore effectively coupled together in a resiliently biased manner such that the backrest 20 is biased in the direction of arrow A and legrest 22 is biased in the direction of arrow B.

[0041] It is in such an orientation that a user would generally mount the apparatus effectively sitting so that their back is supported by backrest 20 and the underregion of their thighs is supported by the legrest 22.

[0042] The region of the adjacent ends of the backrest 20 and legrest 22 in the region of the fulcrum of the pivotal connection 18 thereby generally forms a seat region for the user.

[0043] In use, and once the user is sitting in the apparatus 10 as indicated above, each of the backrest 20 and the legrest 22 can be pivoted in a direction opposite to arrows A, B respectively, and against the biasing force biasing means 18.

[0044] In this manner, the user can execute an exercise routine working both their abdomen and leg muscles. As a particular advantage, the point of pivotal connection of the backrest 20 and legrest 22 is raised from the floor surface upon which the apparatus 10 is located such that, when each of the backrest 20 and legrest 22 are pivoted against the biasing force by the user to their maximum extent, i.e. in the direction of arrows C in Fig. 2, each of the backrest 20 and legrest 22 effectively extend downwardly from the seat region so as to advantageously provide a full extent to the exercise routine performed by the user.

[0045] Such configuration as illustrated in Fig. 2 allows for advantageous full stretching of the user during the exercise routine.

[0046] Turning now to Figs. 3 and 4, there is illustrated a further embodiment of the present invention in schematic side view.

[0047] Turning first to Fig. 3, the exercise apparatus 24 comprises a support frame 26 to which each of a backrest 28 and legrest 30 are pivotally connected, at separate points, and in a resilient manner so as to urge each of the backrest 28 and the legrest 30 in the directions illustrated by arrows A and B respectively.

[0048] In this illustrated example, the support frame 26 can also provide a handle 32 to be gripped by a user during an exercise routine.

[0049] As will be appreciated, the general mode of operation of the exercise apparatus is similar to that illustrated with reference to Figs. 1 and 2 although, in the embodiment of Figs. 3 and 4, the support 26 provides an upper surface 33 of the support 26 provides a seat portion, which can be readily cushioned, between the adjacent ends of the backrest 28 and legrest 30.

[0050] The pivoting of each of the backrest 28 and legrest 30 is likewise generally achieved by way of different fulcrum allowing pivoting motion against the biasing force beyond the horizontal and to the position as illustrated in Fig. 4. By way of the pivoting motion of the backrest 28 and legrest 30 in the directions of arrows C, is again advantageously possible to enhance the exercise regime available to a user.

[0051] The nature of the exercise routine is illustrated further with reference to Figs. 5 and 6 and which show the position of the human body at the two extremes of the exercise routine that can be conducted by way of the apparatus as illustrated in Figs. 3 and 4.

[0052] As will be appreciated the repetitive pivoting motion in the direction of the arrows of Fig. 5 of each of the backrest 28 and legrest 30 serves to provide for an effective exercise regime for both the user's abdomen and leg muscles.

[0053] Turning now to Fig. 7, there is provided an illustration of a further embodiment of the present invention and which is configured particularly with the comfort of the user in mind.

[0054] The embodiment of Fig. 7 comprises a "jack knife" exercise apparatus 34 of similar intended operation to the preceding embodiments. The apparatus has a cushioned seat 36, upon which the user has to sit to an exercise routine, and extending generally upwardly adjacent the portion of that seat 36 is a backrest arm 38 having removably mounted cushion pad 40 located approximately at the other end thereof.

[0055] It should be appreciated that the position of the cushion pad 40 on the arm 38 can be varied as required and so as to suit the height and generally the length of the back of the user so as to optimise comfort of the apparatus during use.

[0056] Extending from a region on the opposite side of the seat 36 is a pair of central legrest arms 42 having first 44a, 44b and second 46a, 46b respective pairs of cylindrical leg support cushions extending laterally either side thereof.

[0057] As will be appreciated, and particularly from consideration from the preceding embodiments, in use it is intended that a user sit on the seat portion 36 with their back resting against the cushion pad 40 and their legs extending upwardly such that the underside thereof engage with the cylindrical cushion pads 44A, 448; 46A, 46B.

[0058] Again, and for consistency with the preceding embodiments, each of the arms 38, 42 is pivotally mounted, in a resilient manner, to a small ground support frame 48 having generally parallel side bars 50A, 50B terminating in four leg members 52-58 having, for example, rubber feet 60 (two of which are illustrated in Fig. 7) so as to provide secure location of the apparatus upon a floor in a manner to prevent the sliding thereof from the floor surface, and also in a manner of preventing damage and/or marking of the floor.

[0059] Extending from each of the parallel side bars 50A, 50B is a pair of handles 62A, 62B which, as required, can be griped by a user when performing an exercise routine on the apparatus 34.

[0060] In this illustrated embodiment, each of the arms 38, 42 is pivotally engaged with the frame support 48 in a resilient manner by way of a coil spring 64 (only one of which is visible in Fig. 7) and which is advantageously of a suitable strength so as to provide a strong return force for the arms 38, 42 to the position shown in Fig. 7.

[0061] In use, it will therefore be appreciated that the user sits on the seat portion 36 with their back resting against the cushion pad 40 and with their legs extending upward in a manner generally aligned with the legrest arm 42 such that the undersides of their legs are supported by the cylindrical cushions 44A, 44B; 46A, 46B.

[0062] When sat on the apparatus 34 in this manner, the user can advantageously perform a variety of exercise routines.

[0063] For example, the legs can remain generally stationary as supported by the cylindrical cushions 44A, 44B; 46A, 46B and the user can perform a sit-up type exercise routine by moving the backrest 38 in a counter clockwise direction as presented in Fig. 7 and against the resilient biasing of the backrest arm 38.

[0064] Alternatively, the user's back remain generally stationary and the legs can be worked by way of an exercise routine generally serving work against the resilient bias provided by the spring 48 so as to move the arm(s) 42 in a generally clockwise direction against the biasing of that spring member 36.

[0065] Yet further, an exercise routine can be employed in which both the back and legs are moved in a reciprocal manner downwardly against the resilient biasing of the arms 38, 42, and then again upwardly as such biasing serves to return the arms 38, 42 to the position shown in Fig. 7.

[0066] It should be appreciated that in the embodiment of Fig. 7, the central arm 42 of the legrest actually comprises two separate parallel arms, the first having the cylindrical cushions 44A, 46A extending therefrom, and the second having the cylindrical cushions 44B, 46B extending therefrom.

[0067] In this manner, and with each central legrest having its own separate resilient biasing arrangement, each of the user's legs can be exercised in a alternating manner through movement of either arm against the aforementioned spring bias in a clockwise direction as presented by Fig. 7.

[0068] It should also be noted that the ease and comfort with which the apparatus can be employed is particularly enhanced through the provision of the cylindrical cushions 44A, 44B; 46A, 46B which are rotatably mounted to the central arm 42.

[0069] Each of the cushions 44A, 44B; 46A, 46B therefore serves to rotate if required during an exercise routine and so as to compensate for any relative movement between the user's legs and the legrest arms 42.

[0070] As noted, the position of each of the cylindrical cushions 44A, 44B; 46A, 46B along the longitudinal extent of the legrest arms 42 can be adjusted and varied as required so as to compensate for use of the apparatus by users of different size and having different leg lengths.

[0071] Also, one and the same user might also wish to adjust the position from which the cylindrical cushions 44A, 44B; 46A, 46B extend from the central arm 42 depending on the exercise routine being conducted.

[0072] The handles 62A, 62B provide an ergonomically located means by which the apparatus can be gripped by the user during an exercise routine so as to enhance the manner in which the core muscles of the user's body are exercised and to enhance stability of the apparatus.

[0073] Turning now to Figs 8 - 10, there are provided respectively side perspective and side elevational views of a further embodiment of the present invention and each employing consistent reference numerals.

[0074] As with the preceding embodiments, the exercise apparatus 66 includes a backrest arm 68 and a leg rest arm 70 both arranged for pivotal motion relative to a seat portion. In this embodiment, the leg rest arm 70 includes a single pair of roller cushions 72 for engaging with the underside of a user's legs during use. Turning to be back rest arm 68, this is provided with an arcuate cradle arrangement 74 having respective pairs of roller cushions 76, 78 rotatably mounted at the end thereof.

[0075] As is best seen from Figs 9 and 10, the arcuate cradle arrangement 74 is adjustably mounted to the backrest arm 68 by means of a securing pin 80 such that the height at which the arcuate cradle arrangement 74 is located on the back rest arm 68 can be adjusted to suit different users through movement in the direction of arrow D. Importantly with this embodiment, the pairs of cushions 76, 78 are attached with to the cradle arrangement before so as to ease the manner with which he uses back can move relative to be backrest arm 68 during use. If required, the arms of the arcuate cradle arrangement 74 can also be a pivotally mounted, preferably a resilient manner, to be backrest arm 68 so as to move during use in the manner indicated by arrow E in Fig. 10.

[0076] With regard to the particular illustrated embodiment of Figs 8 - 10, reference is now made to further optional, but particularly advantageous, features of the present invention. First, and as with the Fig 7 embodiment, it should be appreciated that the leg rest arm 70 can in fact be formed by two separately pivotally mounted left and right leg rests for cooperation with a user's left and right legs respectively. In one arrangement, securing means can be provided so as to secure the left and right leg rest arms together to function as a unitary member although, as noted, disengagement between the two, allows for reciprocal/alternating movement so that a user can exercise each leg in turn or, indeed, if required to concentrate exercises on one particular leg.

[0077] Further, and as with all embodiments of the present invention, the leg rest member(s) can be mounted four resilient pivotal motion by means of a resiliently mounted intermediate connecting member to which the leg rest member(s) can be releaseably engaged for example by way of a connecting pin or otherwise. The position of the leg rest member(s) relative to the intermediate connecting member can advantageously be selectively varied, from example by removal/replacement of the connecting pin with one of a series of engagement formations such that the direction of extension of the leg rest member(s) when "at rest" can be selectively varied as required. As an example, such engagement formations of the intermediate connecting member can comprise a series of apertures arrange to receive the connecting pin. Indeed, in one particular example, such selected variation of the direction to which the leg rest member(s) extend can include a substantially horizontal direction such that, for example, the cushions 46A, 46B of Fig 7, and the cushions 72 of Fig. 8 form anchor points under which a user can secure their at least partially extended legs so as to assist with a "sit-up" type exercise routine using pivotal movement of the backrest as required.

[0078] In any case, it should of course be appreciated that the invention is not restricted to the details of the foregoing embodiments.

[0079] That is, any appropriate support arrangement

can be divided for the floor-mounting of the apparatus and for the generally upwardly extending support of the backrest and legrest. Also, the backrest and legrest can be made from any appropriate material depending upon the requirements of comfort, cost and weight. Also, the means for providing the resilient bias to each of the backrest and the legrest can be provided in any appropriate manner whether by way of any appropriate spring configuration or otherwise.

[0080] As will be appreciated, when not in use, and under full influence of the biasing means, as illustrated in the drawings, the backrest and legrest generally adopt a V-shaped configuration which, through use during an exercise routine, can be moved into and out of a jackknife configuration. A compact storage configuration of the apparatus can also be achieved through manipulation of the backrest and legrest.

Claims

1. Exercise apparatus comprising a backrest pivotally coupled in a region of a first end to a support and resiliently biased to extend in an at least partially upward direction therefrom, a legrest pivotally coupled in a region of a first end to the said support and resiliently biased to extend in an at least partially upward direction the said support being arranged for stable location of the apparatus on a floor, and the apparatus further being arranged to present a seat portion for a user in the region of the said first ends of the backrest and the legrest.

2. Apparatus as claimed in Claim 1, wherein the backrest is arranged to extend at an angle to the said legrest.

3. Apparatus as claimed in Claim 1 or 2, wherein the backrest and legrest pivot about a common fulcrum.

4. Apparatus as claimed in Claim 3, wherein the backrest and legrest are resiliently and pivotally coupled together with the pivot coupling being mounted to the said support.

5. Apparatus as claimed in Claim 1 or 2, wherein each of the backrest and the legrest is resiliently pivotally coupled to the support and extend partially upwardly, in at least slightly different directions therefrom and/or from different locations thereon.

6. Apparatus as claimed in Claim 5, wherein the seat portion is located between the respective first ends of the backrest and legrest.

7. Apparatus as claimed in any one or more of Claims 1 to 6, wherein the support includes handles to be gripped by a user during an exercise routine.

8. Apparatus as claimed in any one or more of Claims 1 to 7, wherein the pivotal connection of each of the back and legrests is such that each can be pivoted against the resilient bias at least to a substantially horizontal position.

9. Apparatus as claimed in Claim 8, wherein the said backrest and the legrest can be pivoted against the resilient bias to a position beyond horizontal such that each slopes downwardly away from the seat portion.

10. Apparatus as claimed in any one or more of the preceding claims, wherein the legrest is arranged to provide support under the back of a user's thigh.

11. Apparatus as claimed in any one or more of the preceding claims, wherein the backrest comprises an arm member pivotally engaged in a resilient manner to the said support and presenting at least one cushion pad for contact with a user's back; and optionally wherein the said at least one cushion pad for contact with any user's back is movable, preferably in a rolling manner.

12. Apparatus as claimed in any one or more of the preceding claims, wherein the legrest comprises at least one central longitudinal arm and with leg support means extending laterally either side thereof; and optionally wherein the leg support means comprise cushion members; and/or optionally configured with relative movement of the cushion support members in a rotatable manner so as to rotate as user's legs are moved relative thereto.

13. Apparatus as claimed in Claim 13, 14 or 15, wherein respective first and second pairs of the said support members are provided in a manner spaced in the longitudinal direction of the said central arm(s); and/or optionally wherein the leg support means are movably mounted to the longitudinal arm(s) such that their location on the said arm(s) and can be adjusted as required.

14. Apparatus as claimed in any one or more of the preceding claims, wherein the said leg rest comprises pivotally mounted left and right members; and optionally wherein the left and right members are arranged for independent pivotal movement; and/or optionally wherein the left and right members are arranged with selectively releasable coupling means for achieving selectively unitary, or independent, pivotal movement.

15. Apparatus as claimed in any one or more of the preceding claims, wherein the leg rest is arranged to be coupled to an intermediate resiliently biased member for the said pivotal movement; and/or optionally

wherein the position of coupling of the leg rest to the said intermediate member is selectively variable.

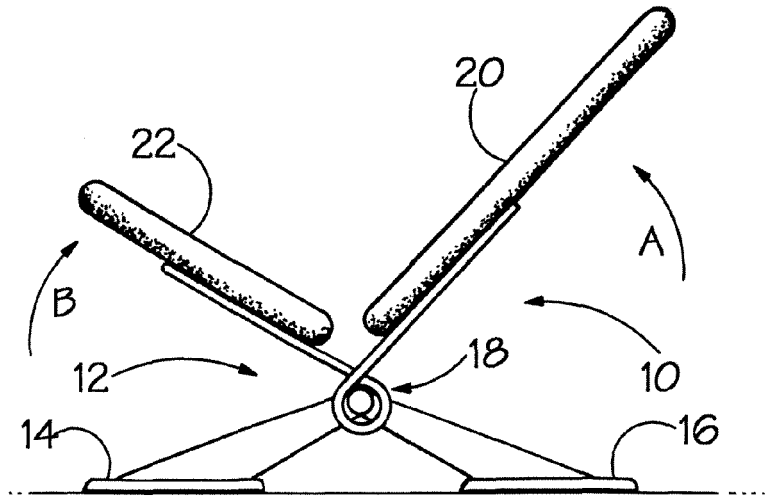
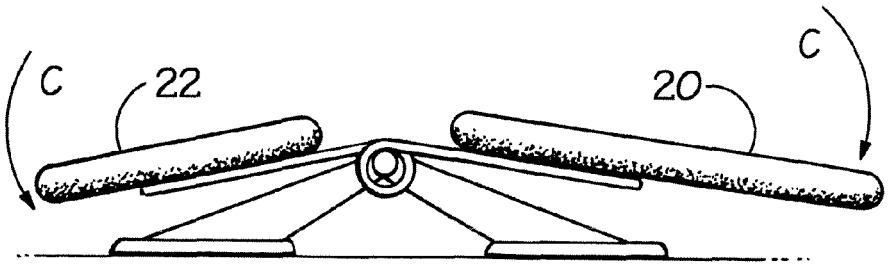


FIG.1.

FIG.2.



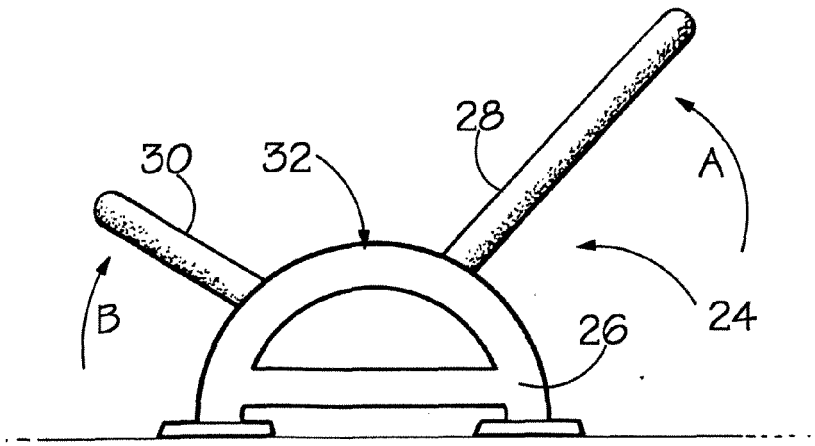


FIG.3.

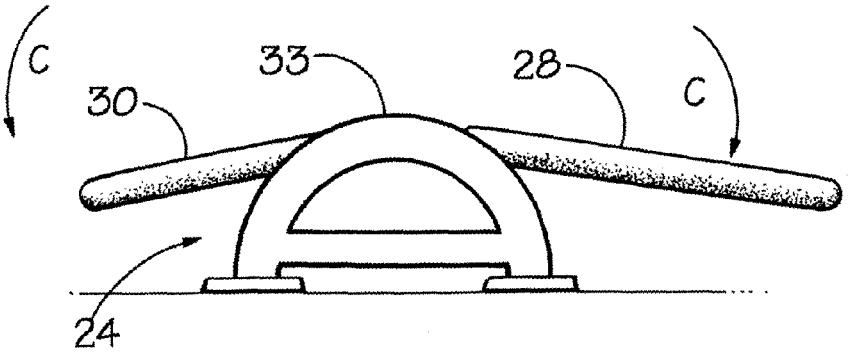
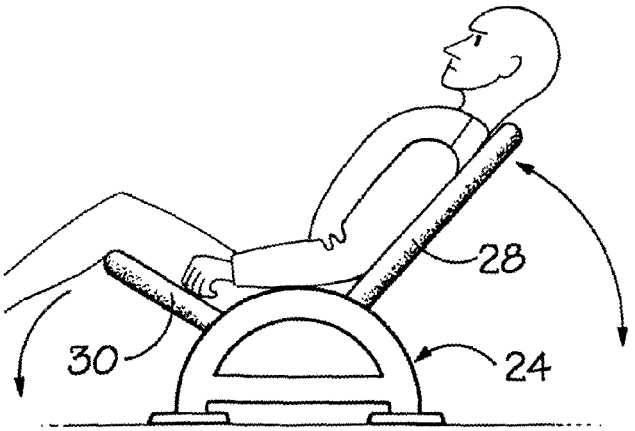


FIG.4.

FIG.5.



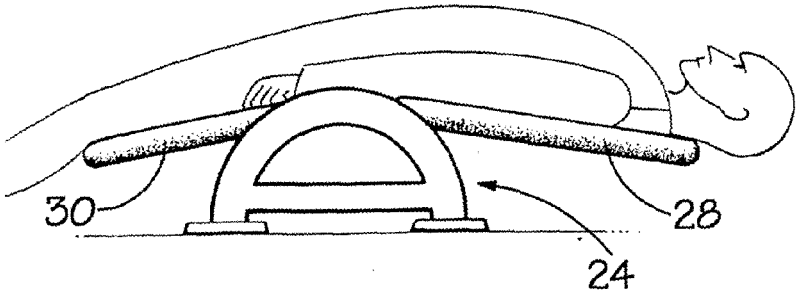


FIG.6.

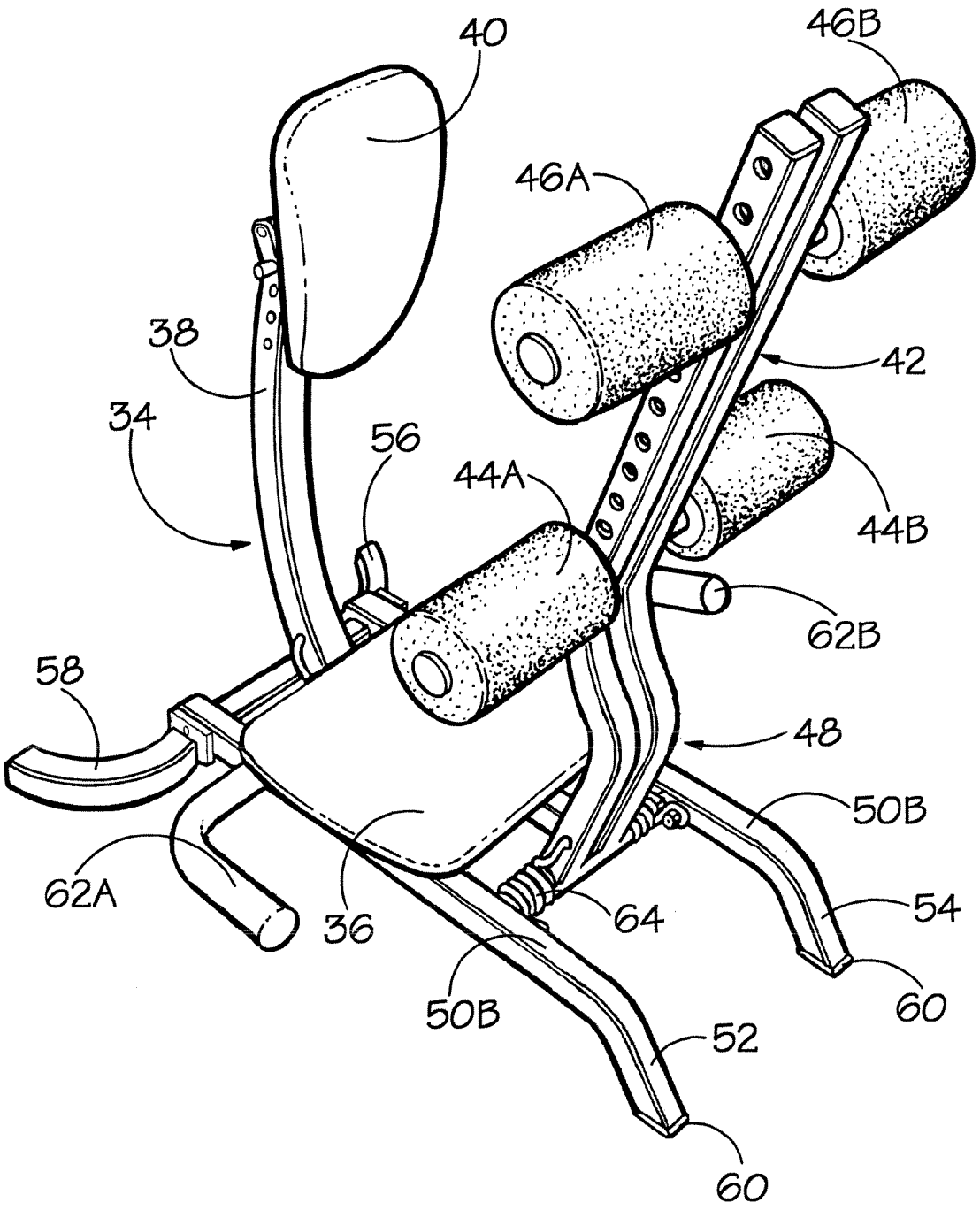

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FIG.7.

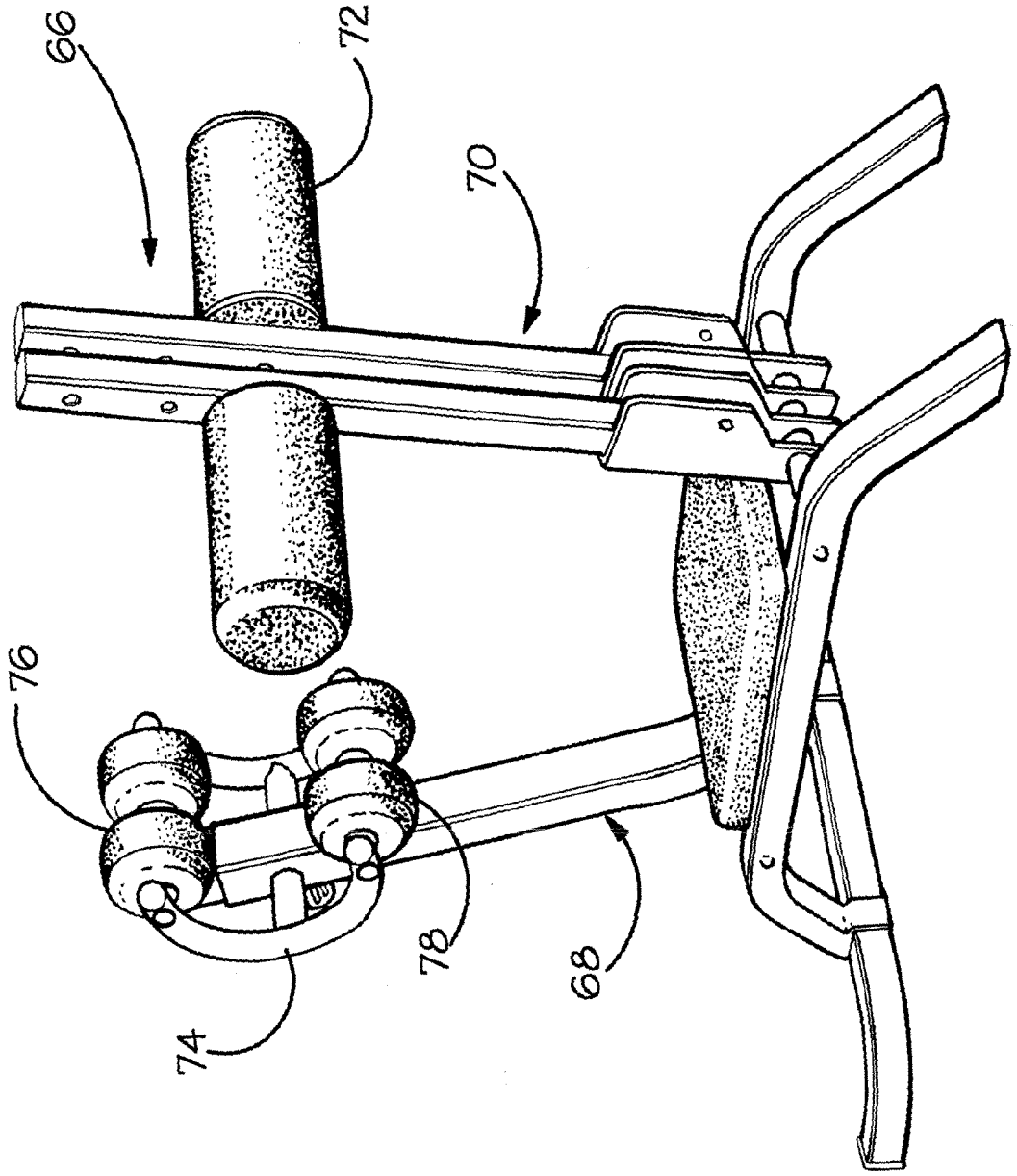

FIG.8.

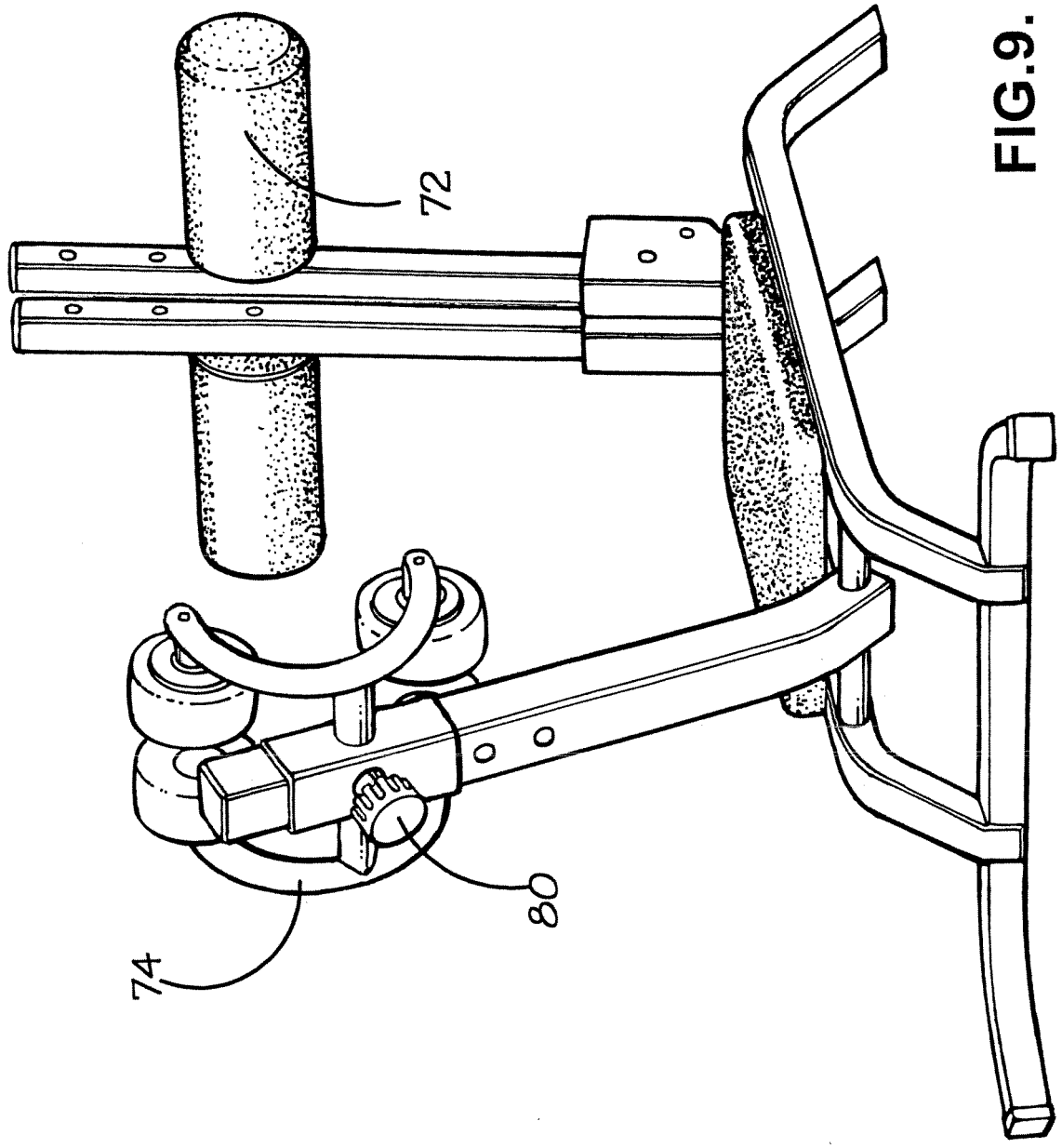

FIG.9.

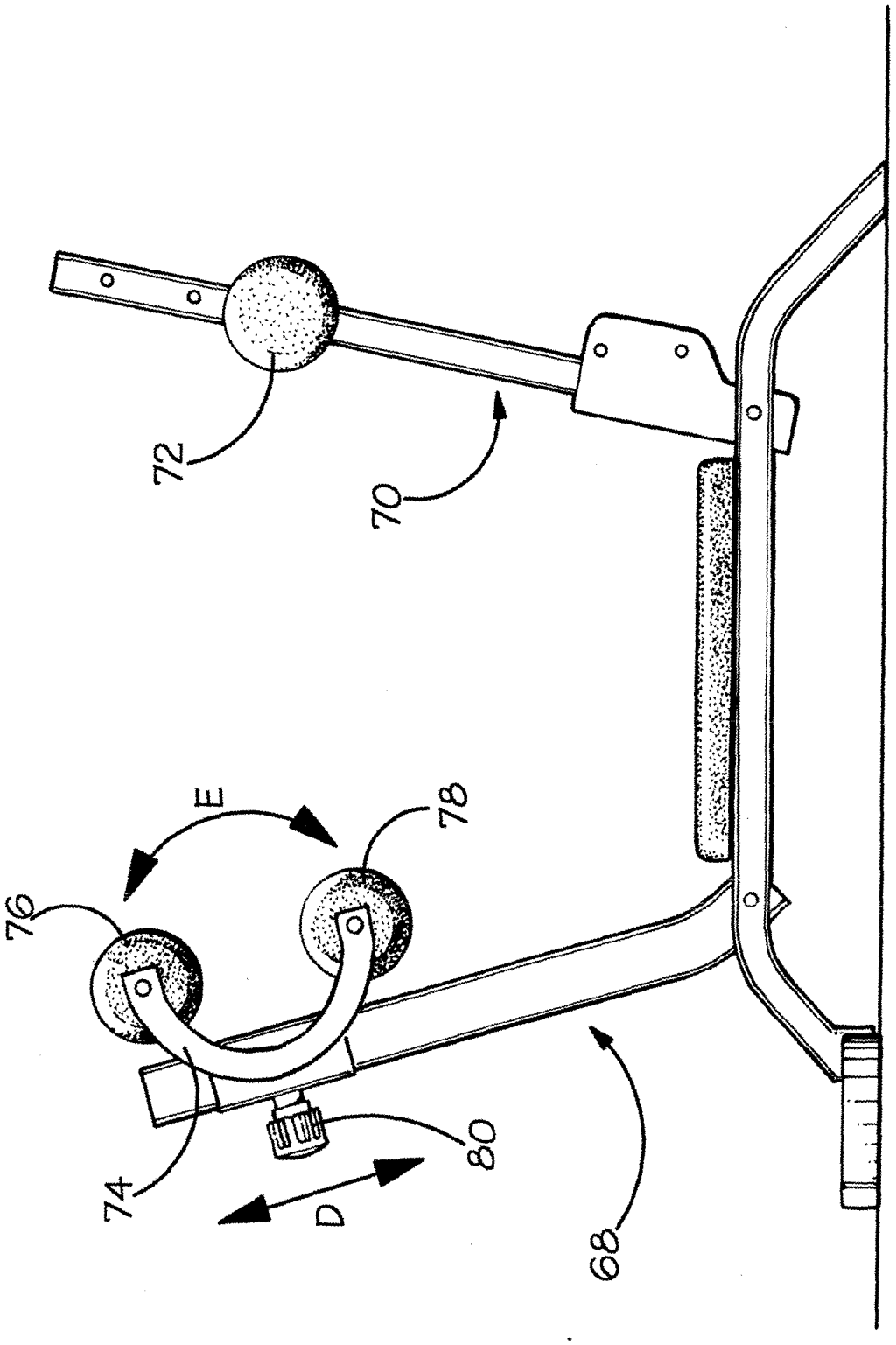

FIG.10.

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EUROPEAN SEARCH REPORT

Application Number
EP 10 16 4777

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	14 December 2010	Teissier, Sara

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 10 16 4777

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82