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(56) Related Art
US 4504050
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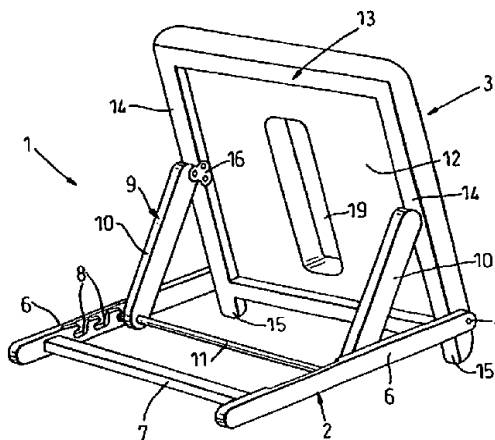
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(54) Title: HEAD SUPPORT ASSEMBLY



(57) Abstract

A support assembly (1) comprises a head support member (3) mounted on a base (2) which is adapted to stand on a raised horizontal work surface (31), the head support member (3) being adapted to present to a person undergoing treatment a head support surface (17) which is inclined, in use, at an acute angle to the vertical and so as to face upwardly and outwardly from the work surface, the head support surface being provided with a breathing aperture (19), and the support assembly (1) comprising a clamping means (24, Figure 8) or a stop means (15; 15') operative in use to prevent the base from sliding on the work surface (6) away from the user, the clamping means (24), when present, being adapted to clamp the base to the work surface, and the stop means (15), when present, being adapted to engage with an edge (30) of the work surface. The support assembly provides stable, comfortable treatment support for patients in prone sitting and is portable, adjustable and easy to use.

ABSTRACT**HEAD SUPPORT ASSEMBLY**

A support assembly (1) comprises a head support member (3) mounted on a base (2) which is adapted to stand on a raised horizontal work surface (31), the head support member (3) being adapted to present to a person undergoing treatment a head support surface (17) which is inclined, in use, at an acute angle to the vertical and so as to face upwardly and outwardly from the work surface, the head support surface being provided with a breathing aperture (19), and the support assembly (1) comprising a clamping means (24, Figure 8) or a stop means (15; 15') operative in use to prevent the base from sliding on the work surface (6) away from the user, the clamping means (24), when present, being adapted to clamp the base to the work surface, and the stop means (15), when present, being adapted to engage with an edge (30) of the work surface.

The support assembly provides stable, comfortable treatment support for patients in prone sitting and is portable, adjustable and easy to use.



HEAD SUPPORT ASSEMBLY

The present invention relates to a portable head support assembly and particularly, but not exclusively, to a head support assembly for engagement by the front of the head of a seated person. The person may
5 be undergoing physiotherapy.

Physiotherapy couches or plinths are known which are provided with an elongate breathing hole to allow a patient to lie face downwards during treatment, with the patient's nose and mouth positioned over the hole.

Many people, however, require neck, shoulder and/or thoracic treatment eg massage, mobilisations etc, but are unable to lie prone on such a
10 conventional plinth. This may be for a variety of reasons, eg

- i. the elderly or anyone who is unable to climb up on to a plinth;
- ii. severe osteoarthritis/rheumatoid arthritis;
- iii. heart or breathing problems;
- 15 iv. severely disabled.

The use of pillows on a table is not satisfactory as making a breathing space is difficult, the pillows tend to move gradually away and the patient ends up very flexed, hot and uncomfortable. Consequently they are unable to relax properly, their muscles become tense and stiff, and the
20 treatment difficult and less effective.

US 4504050 discloses a head support assembly comprising a base having a slot at each corner to allow the base to be permanently mounted to a work surface. A movable face plate is moveably mounted between a pair of arms upstanding from the base.



I consider that there is a need for a stable, comfortable treatment support for patients in prone sitting and which is preferably portable, adjustable and easy to use.

According to one aspect of the invention a support assembly comprises a
 5 head support member mounted on a base which is adapted to stand on a raised horizontal work surface, the head support member being adapted to present to a person undergoing treatment a head support surface which is inclined, in use, at an acute angle to the vertical and so as to face upwardly and outwardly from the work surface, the head support surface
 10 being provided with a breathing aperture, and the support assembly comprising a stop means operative in use to prevent the base from sliding on the work surface away from the user, and the stop means, comprising a pair of laterally-spaced stop members adapted to engage with an edge of the work surface.

15 Thus the head support assembly can be supported on a table near the edge of the table top, and a patient can sit in a chair at the table with his or her forehead supported by the head support surface, the patient's head being inclined downwardly, and with the patient's nose and mouth positioned over the breathing aperture.

20 The head support surface is preferably cushioned, conveniently by padding such as foam padding.

The padding is preferably covered with a washable cover, such as leather cloth, to enable the cover to be wiped down for hygiene purposes.

25 The breathing aperture can be a hole or a cut-out extending from the margin of the head support surface, and is preferably elongated in the



vertical direction to assist in accommodating different head heights resulting in part from different heights of chairs and table tops. Alternatively, or in addition, the vertical position of the head support member relative to the base may be made adjustable.

- 5 The angle of the inclination of the head support surface relative to the vertical is preferably made adjustable, conveniently by pivoting the head support member relative to the base and preferably by providing an adjustable stay connecting the head support member and base at positions spaced from the pivotal connection.

- 10 Said angle of inclination is preferably in the range 45° to 60° in use.

Preferably the assembly is adapted to be folded to a compact size, in which case said pivotal connection can facilitate folding of the support member relative to the base.

The stop means may depend from the base or from the support member.

- 15 When the assembly is made foldable, then desirably the stop means is arranged to be retractable on folding of the assembly so that the stop means does not project substantially below the underside of the base in the folded condition of the assembly.

- 20 In one preferred arrangement in which the support member is pivotally connected to the base, the stop means comprises one or more downward projections integral with the support member, the arrangement being such that on folding of the support member relative to the base, the projections are retracted upwardly of the underside of the base.



Alternatively, the stop means may comprise a pair of laterally spaced-apart claw members which are arranged to be retracted on folding of the assembly. Retraction would be accomplished by suitable links and/or by resilient means.

- 5 The stop means may, however, comprise a pair of pivoted arms that have to be pivoted by the user to a retracted condition.

The base is preferably in the form of a skeletal framework and is desirably provided with feet or pads designed to avoid scratching of the tabletop.

- 10 The support member can be in the form of a panel with a surrounding framework.

Two elongate pads may be employed to provide said head support surface, the pads being spaced-apart to define the breathing aperture.

- 15 It can be arranged that in the folded condition of the assembly the support member is received at least in part between side frame members of the base, in order to reduce the thickness of the folded assembly.

Some support assemblies in accordance with the invention will now be described, by way of example only, with reference to the accompanying schematic drawings in which:-

- 20 **Figure 1** is a rear perspective view of a first support assembly in an operative condition,

Figure 2 is a front perspective view of the support assembly of **Figure 1** in an operative condition,



Figure 3 is a rear perspective view of the assembly of Figure 1 in an operative condition,

Figure 4 is a side elevation of the assembly in a folded condition,

5 Figure 5 is a schematic perspective view of a second support assembly in an operative condition, and with the supports pads being shown in broken outline,

Figure 6 is a partial view of a modification of the assembly of Figure 5 showing a pivoted stop arm, the stop arm being shown in the operative position,

10 Figure 7 is a view on the arrow A in Figure 6, and showing in dotted outline the retracted position of the stop arm, and

Figure 8 is a view similar to Figure 7 of a further modification of the assembly of Figure 5 and showing one of a pair of clamps.

15 The framework of the support assembly of figures 1 to 4 is constructed largely in wood but it will be appreciated that other materials may be used. In particular metal frameworks, such as wire frameworks may be employed.

20 With reference to Figure 1, the assembly 1 comprises a base 2 adapted to stand on a horizontal work surface, usually a table top, and a generally planar head support member 3, mounted on the base by way of a pair of horizontal pivot pins 4 which enable the assembly to be folded to the condition shown in Figure 4, and which also enable the inclination of the support member 3 to the vertical to be adjusted.



- Base 2 is a flat wooden framework comprising parallel side members 6 rigidly connected by a cross-member 7, the inner faces of the side members 6 being formed with a series of ratchet recesses 8 which open upwards to provide a selection of positions for the lower end of an
- 5 adjustable stay structure 9 which comprises parallel stay arms 10 connected by a rod 11, the protruding free ends of which are engageable with the recesses 8.

Typically the support member 3 can be positioned at angles of 45° to 65° to the vertical.

- 10 The head support member 3 comprises a flat board 12 of approximately 48cm x 54cm secured to a reinforcing rectangular framework 13, the side members 14 of which are extended downwards below the side members 6 of the base 2 to define a pair of laterally spaced-apart stops 15.

- When the base 2 is mounted on a table top adjacent to the edge thereof,
- 15 the stops 15 can be abutted with the edge of the table top to locate the assembly in position so as to resist pressure applied to the head support member 3 in the direction towards the table.

The lateral spacing of the stops 15 enables the assembly to be used on a table top having a curved edge in plan, such as an oval table.

- 20 The underside of the basal side members 6 are provided with suitable pads, such as rubber pads to prevent the base 2 from scratching the table top. Similarly, the stops 15 may be provided with rubber pads to avoid any possibility of damage to the edge of a table.



The stay arms 10 are each pivotally connected to the side members 14 by a respective hinge bracket 16.

The upwardly and outwardly facing head support surface 17, Figure 2, of the head support member 3 is padded with an upholstery foam and is covered by leather cloth 18.

A vertically elongated breathing hole 19 is provided in the head support member 3 and extends for over half of the full height thereof, to accommodate different positions of the patient's nose and mouth according to the height of the patient, the height of the table top and the height of the chair on which the patient is seated.

As shown in Figures 1 to 3, the outer surface 17 of the head support member 3 extends in use at an acute angle to the vertical when the base 2 is resting on a horizontal table top. In this condition surface 17 faces upwardly and outwardly from the tabletop. This enables a patient, seated on a chair which is facing the table, to place his or her forehead against the upper part of the head support surface 17. In this position the patient's neck will be bent forwards and the head will be firmly supported, the downward component of force on the support assembly being borne by the engagement between the base 2 and the table top, and the horizontal component of force being borne by the engagement between stops 15 and the edge of the table top.

The resulting head position and support provided to the head enables effective massage and mobilisations etc to be performed by a physiotherapist standing behind the chair on which the patient is seated.



It will be appreciated that the assembly is readily portable in the folded condition of Figure 4, is light in weight and can be used on almost any table top to provide a firm head support which can be taken to the home of the patient where a chair and suitable table will generally be available.

- 5 A suitable carrying bag can be provided to receive the folded assembly.



In a modification, not illustrated, the stops 15 may be separate members, such as claw members, which are pivotally carried by the frame 2, but can be retracted upward when the assembly is folded to limit the overall height of the folded assembly.

- 10 In Figures 5 to 8 parts corresponding to those of the assembly of Figures 1 to 4 have been given corresponding reference numerals.



- 15 The second support assembly shown in Figure 5 employs a metal framework 6, 7 for the base 2, and a metal framework 13 supports a pair of laterally spaced-apart upholstered pads 18', the slot 19' defined between the adjacent edges of the pads 18' providing a breathing aperture.

In the embodiment of Figure 5 fixed, laterally spaced-apart stops 15 are employed, the stops 15 being in the form of plastics pegs carried by one end of the frame members 6, which are of angle-section.

- 20 In the modification of Figures 6 and 7 a pair of stop arms 15' are pivoted on the pivot pins 4 that connect frames 2 and 3, the operative position of each stop arm 15' being determined by engagement of each stop arm 15' with a respective abutment pin 21 fixedly carried by the end of the



respective sideframe member 14. Stop arms 15' engage at laterally-spaced positions with the edge 30 of tabletop 31.

As shown in Figure 7, each stop arm 15 can be manually pivoted to a retracted position shown at 15''.

5



THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A support assembly including a head support member mounted on a base which is adapted to stand on a raised horizontal work surface, the head support member being adapted to present to a person undergoing treatment a head support surface which is inclined, in use, at an acute angle to the vertical and so as to face upwardly and outwardly from the work surface, the head support surface being provided with a breathing aperture, and the support assembly including a stop means operative in use to prevent the base from sliding on the work surface away from the user, and the stop means including a pair of laterally spaced stop members adapted to engage with an edge of the work surface.
2. A support assembly as claimed in claim 1, wherein the breathing aperture includes a hole or cut-out in the head support surface.
3. A support assembly as claimed in claim 2, wherein the breathing aperture is elongated in the vertical direction.
4. A support assembly as claimed in claim 3, in which the breathing aperture is an elongated hole which extends for over half the full height of the head support surface, in use.
5. A support assembly as claimed in any one of claims 1, 2 or 3, wherein the vertical position of the head support member is adjustable.
6. A support assembly as claimed in any one of the preceding claims wherein the angle of inclination of the head support surface relative to the vertical is made adjustable by pivoting the head support member relative to the base.
7. A support assembly as claimed in claim 6, provided with an adjustable stay connecting the head support member and the base at positions spaced from the pivotal connection.



8. A support assembly as claimed in claim 6 or 7, adapted to be folded to a compact size, wherein said pivotal connection facilitates folding of the support member relative to the base.

9. A support assembly as claimed in any one of claims 1 to 8, wherein the stop means is retractable on folding of the assembly so that the stop means do not then project substantially below the base.

10. A support assembly as claimed in claim 9, wherein the stop means include one or more downward projections integral with the support member, and so arranged that on folding of the support member relative to the base, the projections retract upwardly of the underside of the base.



11. A support assembly as claimed in claim 9, wherein the stop means include a pair of laterally spaced-apart claw members which are arranged to be retracted on folding of the assembly.

12. A support assembly as claimed in any one of claims 1 to 11, wherein the base is in the form of a skeletal framework.



13. A support assembly as claimed in claim 12, wherein the base is provided with feet or pads which avoid scratching of the work surface.

14. A support assembly as claimed in any one of claims 1 to 13, wherein the support member includes a panel with surrounding framework.

15. A support assembly as claimed in any one of claims 1 to 14, wherein the head support surface is cushioned.

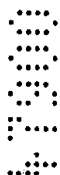


16. A support assembly as claimed in claim 15, wherein the head support surface is cushioned by padding covered with a washable cover.

DATED this 9th day of May 2002

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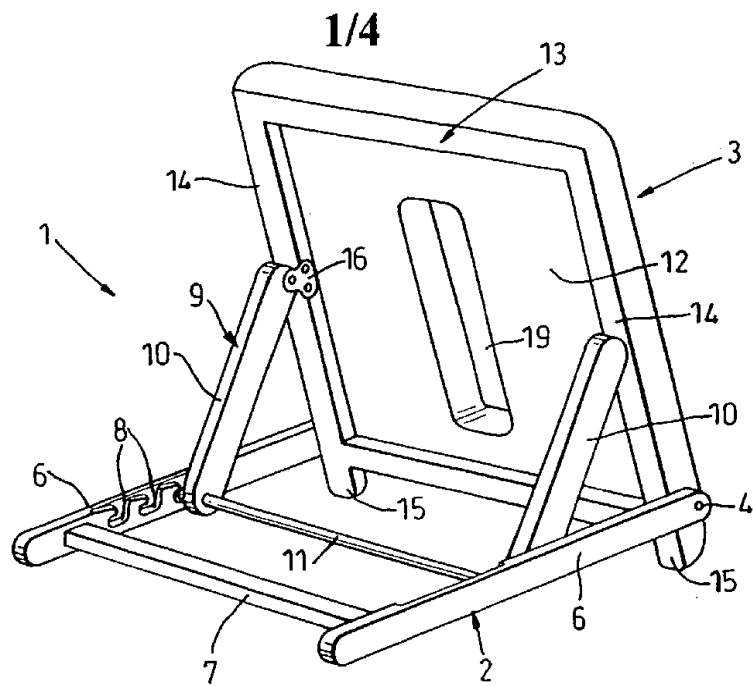


Fig. 1

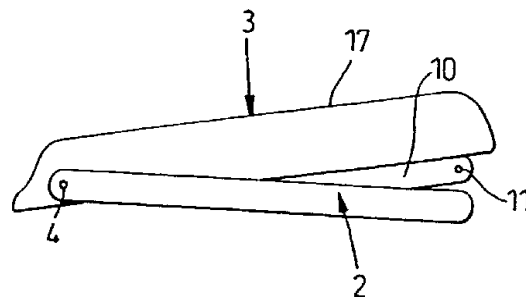
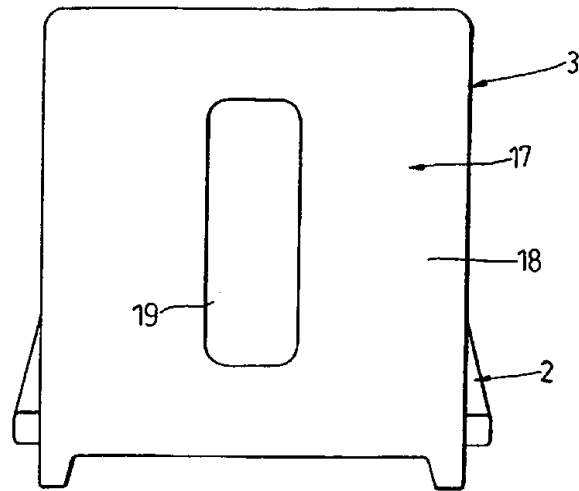
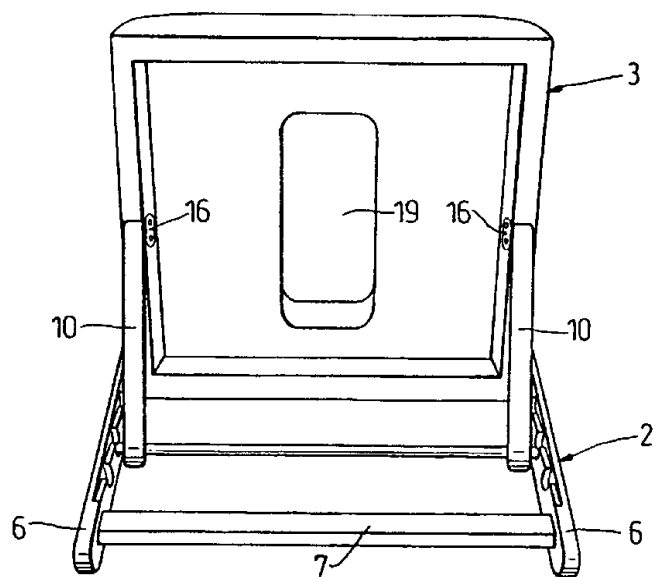
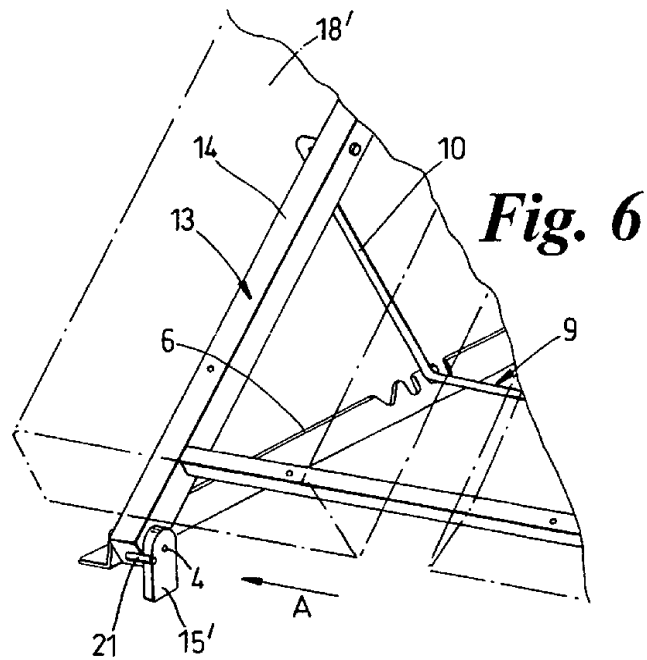
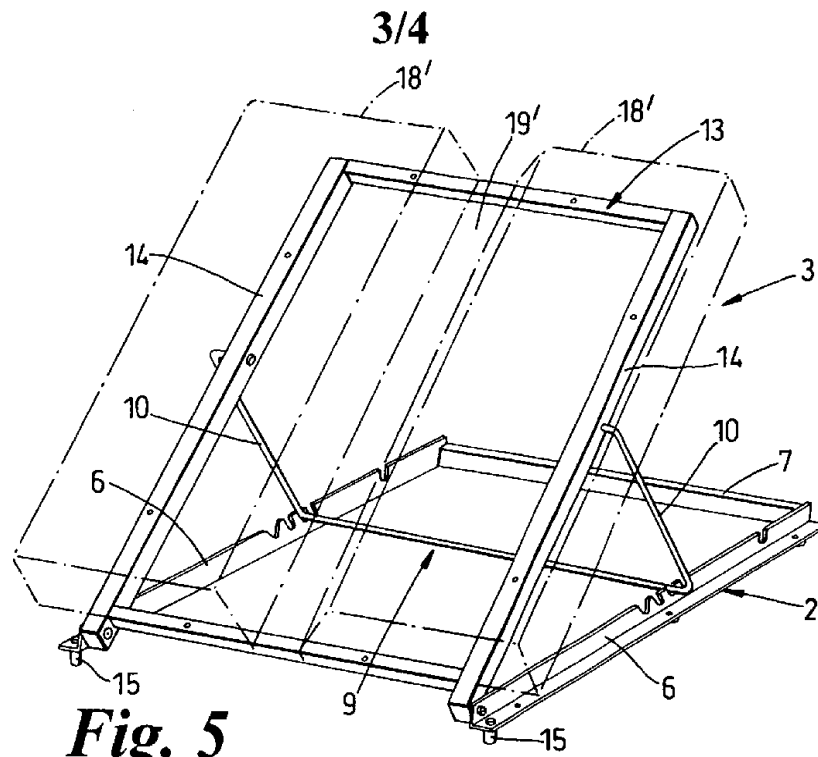


Fig. 4

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*Fig. 2**Fig. 3*



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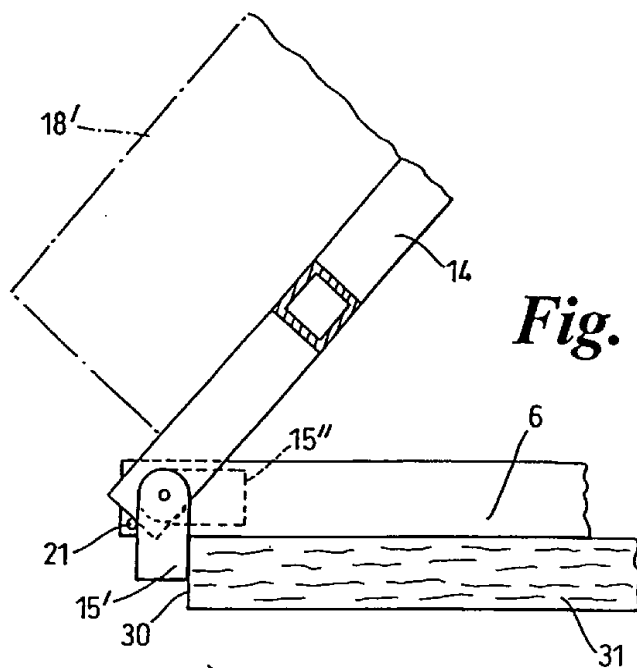


Fig. 7