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(71) Applicant : **Tornberg, Göte**
Mogatan 16
S-951 62 Lulea (SE)

(72) Inventor : **Tornberg, Göte**
Mogatan 16
S-951 62 Lulea (SE)

(74) Representative : **Onn, Thorsten et al**
AB STOCKHOLMS PATENTBYRA Box 23101
S-104 35 Stockholm (SE)

(54) Apparatus for therapeutic treatments in using pressure.

(57) The invention concerns a device (50) for therapeutic pressure treatments. Device (50) is comprised of a base member (34) for support against a fixed or moveable support (32), together with a primary pressure body (36) and another pressure body (52) which is adjustable laterally and in height.

The device (50) can in this manner be made to suit different spines and obtain the desired treatment results so that improperly rotated vertebrae causing a blockage can be mobilized and massage of the muscles is the back can be carried out.

In another embodiment two primary pressure bodies (36), together with an extra support member (37), may support an axle (38) with one or two secondary pressure bodies (40) mounted thereon.

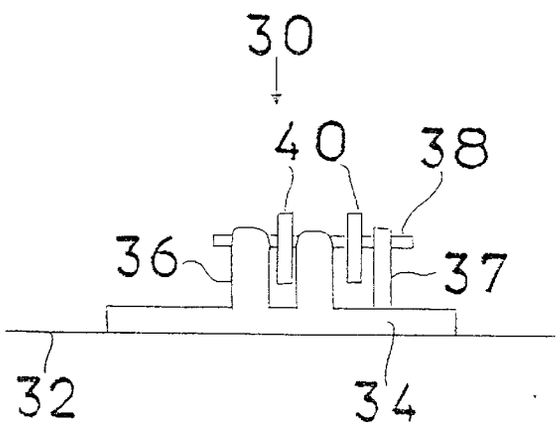

Fig.2

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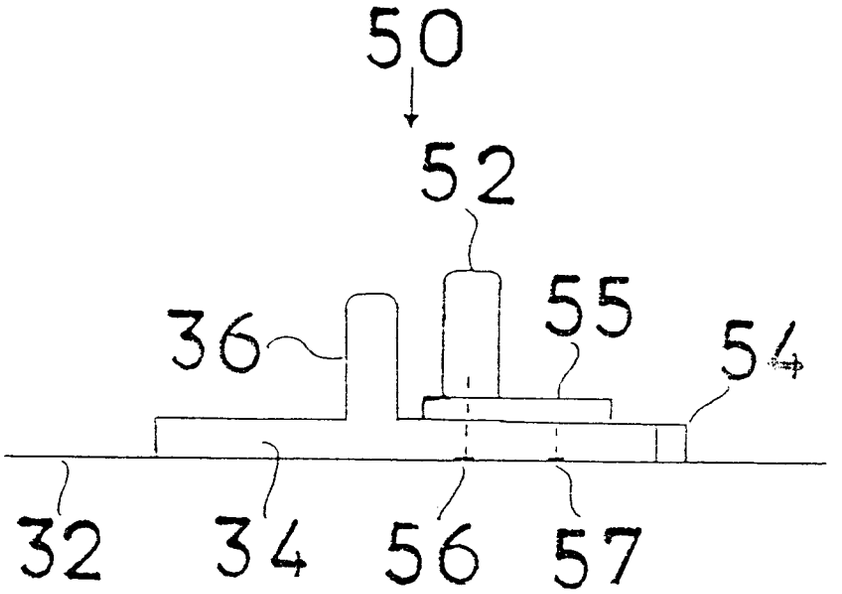

Fig. 3

The invention, in this case, concerns an apparatus for therapeutic pressure treatments of especially the human back, and also for reflexology.

Back pain can, for example, be due to one or more vertebra which have rotated around their central axis and have become fixed in a new position, which simultaneously causes muscle tension in that area. This is often called locking or blocking, and can cause local pain together with radiating pain in the distribution area of a pinched nerve. This radiating pain is called sciatica or lumbago depending on at which level in the back the pinching occurs.

The purpose of this invention is to produce a device for therapeutic pressure treatments to return a rotated vertebra to its proper position, so that the previously described pain is eliminated. The means by which this invention makes this possible are stated in the characteristics of the invention in the patent claims.

The invention comes in various forms of which an example is further explained in the descriptions of the drawings of which Fig. 1 shows a side view of the first design of the device according to the invention; Fig. 2 shows a side view of the device according to Fig. 1 when it is supplemented with two pressure rollers; Fig. 3 shows a side view of a second design of the device according to the invention; Fig 4 shows a top view of the second design of the invention and Fig. 5 shows a side view of the second design when it is supplemented with a third pressure body.

Fig. 1 shows the first design of the invention. Device 30 for therapeutic pressure treatments consists of a base member 34 together with two pymary pressure bodies 36 (preferably made of rubber or plastic) which, for example, can be formed in one piece together with the base member 34 or can be fastened to base member 34. Device 30 can, in the condition shown in fig. 1, be used for pressure treatments of a person's back if one person grips, with their hands, base member 34 on each side of the primary pressure bodies 36 and then presses these rigid pressure bodies 36 against another person's spinal column, so that the center of the spine lies midway between the two pressure bodies 36. The first person can then run device 30 up and down along the spinal column of the other person while applying pressure. Under these conditions it is suitable to use massage salve to make it slide better. Furthermore, device 30 includes an elevating body 35 which can be mounted on one of the pressure bodies 36. This elevating body 35 is removable and results in a higher pressure on one side of the spinal column, where device 30 has the elevating, body 35, when used with device 30.

In fig. 2 device 30 is shown, with reference to fig. 1, in another form. The primary pressure bodies 36 each contain a through-thickness hole (not shown) through which an axel 38 can be applied. Besides this, device 30 can be supplied with an extra support member 37 containing a hole, which can be mounted on device 30 to give extra support for the axel 38. One or two secondary pressure bodies 40 can be mounted on this axel 38, preferably made of rubber or plastic, in the manner shown in fig. 2. Device 30, in this condition, can be used in such a manner so that the secondary pressure bodies 40 press against the transverse process of the vertebrae and the overlaying muscles. Furthermore, another person than the person who receives the treatment can carry out the treatment in the manner described in connection with fig. 1.

On the bottom of base member 34 is placed an anti-slip body (not shown), for example made of rubber, and base member 34 can also be mounted on a flat body with rubber on the bottom (not shown), to obtain sufficient contact with the support 32, so that device 30 does not slip when it is used to treat one's self when one lies with their back on the device.

Assume, for example, that a person has back trouble which is due to one or more vertebrae which have rotated about their longitudinal axis and have become fastened in a new position, with simultaneous muscle tension at the same level. The apparatus as shown in fig. 2 is now used by placing device 30 on preferably a flat support 32. The person then lays on device 30 so that the center of the spine lies midway between the two pressure bodies 40. The pressure bodies 40 apply pressure on the transverse processes of the vertebrae and the overlaying muscles. The entire spine can be subject to a therapeutic pressure treatment when the person moves their body on pressure body 40 in a prone position. Furthermore, base member 34 with the rotatable pressure bodies 40 can be used separately for the treatment of another person. The person who will perform the treatment grips with their hands the outer ends of base member 34 and performs the treatment on another person. In this manner massage of even the soft tissues can be performed. Furthermore, rotatable pointed rollers (not shown) can be mounted on an axel 38 for reflexology. The bottom of the foot is then placed on a roller and rolled back and forth.

In fig. 3 is shown a second design of the invention. Similar members in fig. 3 and 4 corresponding to fig. 1 and 2 respectively, have been given the same reference numbers. That which is the main difference between device 50 and device 30 is that device 50 (fig. 3 and 4) contains a primary pressure body 36 which is fastened to the base member 34 together with an additional pressure body 52 which can be slid laterally so that the relative distance between the primary pressure bodies (36, 52) can be changed and also the height can be changed. Device 50 can be adapted to the treatment of various individual's backs, since the relative distance between these primary pressure bodise can be altered. Two other pressure bodies 40 can be mounted on the axel 38, preferably in the form

of rubber or plastic rollers, then device 50 can be used in the manner described in connection with fig. 2. Pressure body 52 can be fixed laterally with the help of a screw 56 which is applied from the bottom of the base member 34. Regulating the height of pressure body 52 is done with the help of spacer plates 55 of various thickness which are slid beneath pressure body 52 and fixed in place with a fastener (or screw) 57 which is applied from the bottom of the base member 34. An axel 38 can even be applied through the through-thickness hole in the primary pressure bodies (36, 52) and additional stability can be obtained with the help of an extra support member 37, naturally under the condition that the primary pressure bodies (36, 52) are located at the same height above the base member 34. Device 50 can even be placed between the primary pressure bodies (36, 52) with the aid of axel 38, and a screw (which is not shown) is the pressure body 58.The third pressure body 58 can even be attached to the bottom of the base member 34 using a screw from inside of the pressure body 58; this position is implied by the dashed line in fig. 5. When this third pressure body 58 is applied between pressure bodies 36, 52, then device 50 is especially suitable for performing pressure treatments on the neck. Pressure body 58 is also good for performing pressure treatments of the back when a greater pressure is desired on one side of the spine's transverse process or even to apply pressure from one side of the spine on the spinous process.

Device 50 in this form is also especially useful for treating one's self in a lying or standing position. For the treatment of another person's back, pressure body 58 is mounted on the bottom of base member 34 and fixed in position with the help of a screw (not shown).Device 50 also has three ways to set the heights of the pressure bodies (fig. 3 and 5):

1. The pressure bodies (36, 52) at the same level;
2. One pressure body (52) higher than the other pressure body (36), and
3. By mounting a third pressure body (58),(in which case the pressure bodies 36 and 52 provide only support for the third pressure body 58).

Device 50 includes even two support members 54 which are flexibly joined to the base member 34 so that they can be placed in two orientations. One orientation is when they are placed parallel with the longitudinal axis of the base element 34 (not shown),and the other orientation is when they are placed at right angles in relation to the longitudinal axis of the base member 34 (fig. 4) for contact with the support surface 32. In this latter position, device 50 obtains additional stability when it is placed on a rubber bottom (not shown), for use in the manner described above.

The devices shown in figures 1 - 5 can be mounted between two door posts so that the devices can be used for treatments of the back. In this way one can treat their own back. A support device (not shown) is fastened between the door posts for mounting the device 30, 50 between the door posts. The support device is comprised of two parts which can be displaced relative to each other so that the length of the support device can be adjusted for the distance between different door posts, and one end of the support device can be squeezed by the door. The support device also includes a mounting member (not shown) in, for example, the form of a U-shaped piece of sheet-metal into which one end of the base member 34 can be mounted with a fastening device (not shown) with which the other end of the base member 34 can be fastened so that the device 30, 50 is firmly fixed between the door posts. An extra support member from the floor (not shown) to the middle of the support device can be adjusted for different heights, as the support device also can be.

The designs shown in fig. 1 - 5 are only examples of how the invention can be realized in practice, and do not limit the invention, whose extent of protection is given in the patent claims.

Claims

1. Device 30; 50) for therapeutic pressure treatments **is characterised** in that it includes a base member (34) for support against a fixed or moveable support (32), where the fixed support, for example, could be a surface (32), two primary pressure bodies (36; 36, 52) with a space between them, which are each provided with a through-thickness hole; on the base member (34) can be mounted an extra support member (37) which contains a through-thickness hole through which an axel (38) can be mounted for support of two rotatable secondary pressure bodies (40) which with the help of the axel (38) and the primary pressure bodies (36; 36, 52) are capable of being mounted and rotated with a relative separation in such a manner that massage of the muscles in the human back together with returning vertebrae, which have improperly rotated around their longitudinal axis, back to their correct position for a person, is made possible when the center of spine (spinous process) is placed between the secondary pressure bodies (40).

2. Device (30) in connection with claim 1 **is characterised** in that the two primary pressure bodies (36) are rigidly fixed on the base member (34) with a relative separation in such a manner that massage of the muscles in the human back together with returning vertebrae, which have rotated about their longitudinal axis into an improper position, back to their correct position, is made possible for a person when the center of the spine (spinous process) is placed between the

primary pressure bodies (36).

3. Device (30) in connection with claim 2 **is characterised** in that the device (30) furthermore includes an elevating body (35) which can be fixed on one of the two primary pressure bodies (36) so that when the center of the spine (spinous process) is placed between one of the primary pressure bodies (36) and the second primary pressure body (36) which has the elevating body (35) fixed onto it, then a greater pressure is achieved on one side of the spinous process.

4. Device (50) in connection with claim 1, **is characterised** in that at least one (52) **o**f the two primary pressure bodies (36, 52) is adjustable laterally on the base member (34) to change the relative distance between the primary pressure bodies, through which the device is made to individually suit different human backs.

5. Device (50) in connection with claim 4 **is characterised** in that at least one (52) of the two primary pressure (36, 52) is adjustable in height with the help of a height regulating spacer plate (55) which can be fastened between the base member (34) and pressure body (52) so that the pressure body's (52) height is greater than the height for pressure body (36) in a direction which is at right angles relative to the base member's (34) major dimension.

6. Device (50) in connection with claim 4 **is characterised** in that it furthermore includes at least two flexibly attached support members (54) on base member (34) which can be placed in one position where they are fixed parallel to the base member's (34) longitudinal axis together with another position where they are fixed at right angles relative to the base member's (34) longitudinal axis for contact with a support surface (32).

7. The device (30; 50) in connection with claim 1, **is characterised** in that the secondary pressure bodies (40) consists of two rotatable rollers (40) on an axel (38).

8. Device (50) in connection with claim 4, **is characterised** in that a higher extra pressure body (58) can be placed between the two primary pressure bodies (36, 52) or on the bottom of the base member (34), so that when the extra pressure body (58) is pressed against one side of the transverse process of a vertebra to obtain a greater pressure than that which can be obtained using the two primary pressure bodies (36, 52).

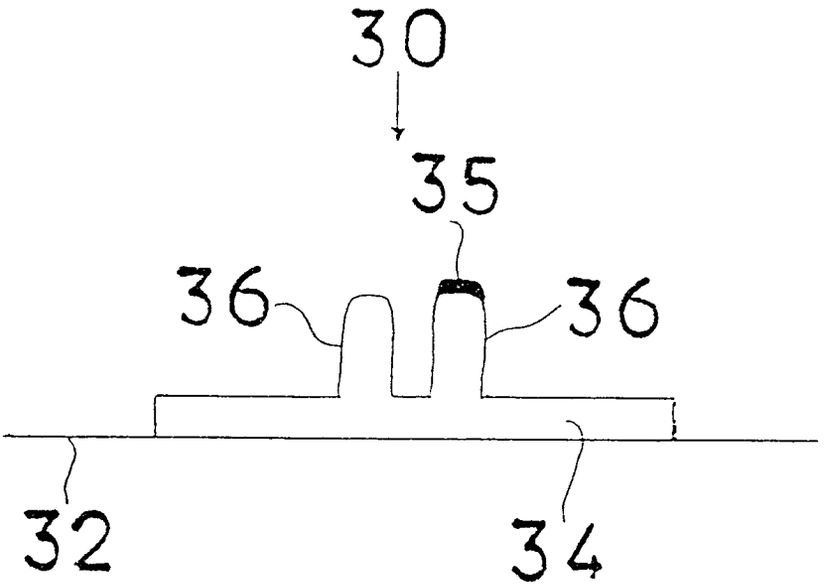

Fig.1

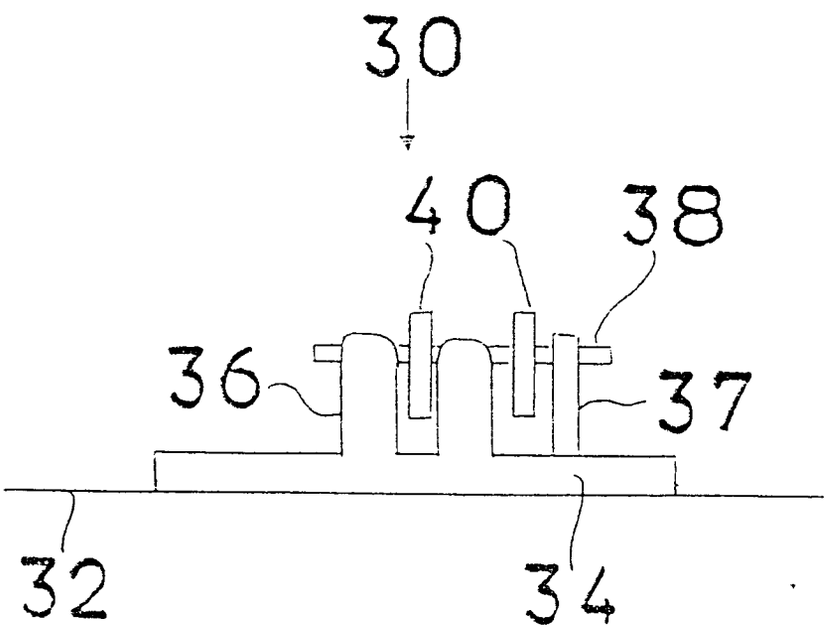

Fig.2

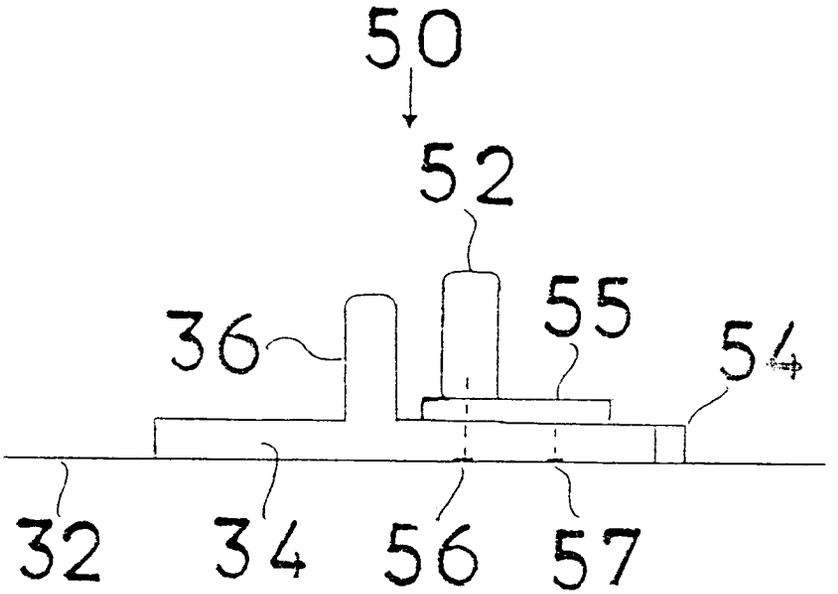

Fig. 3

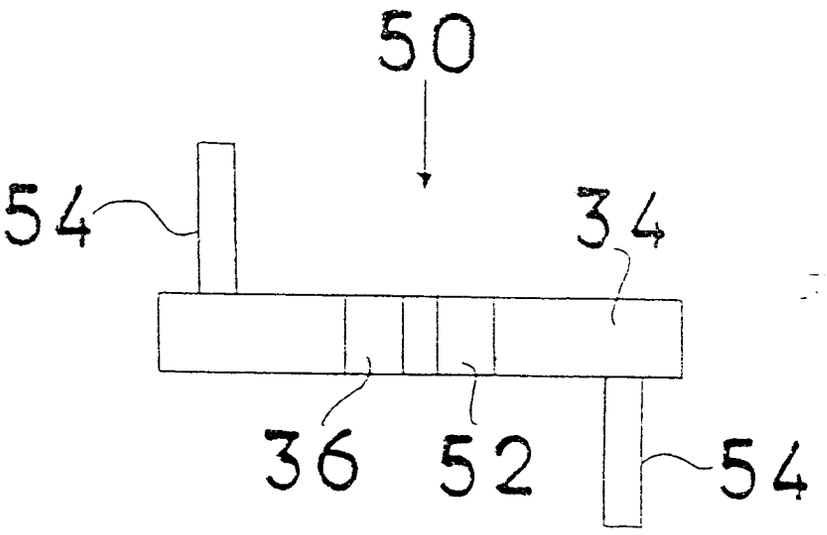

Fig. 4

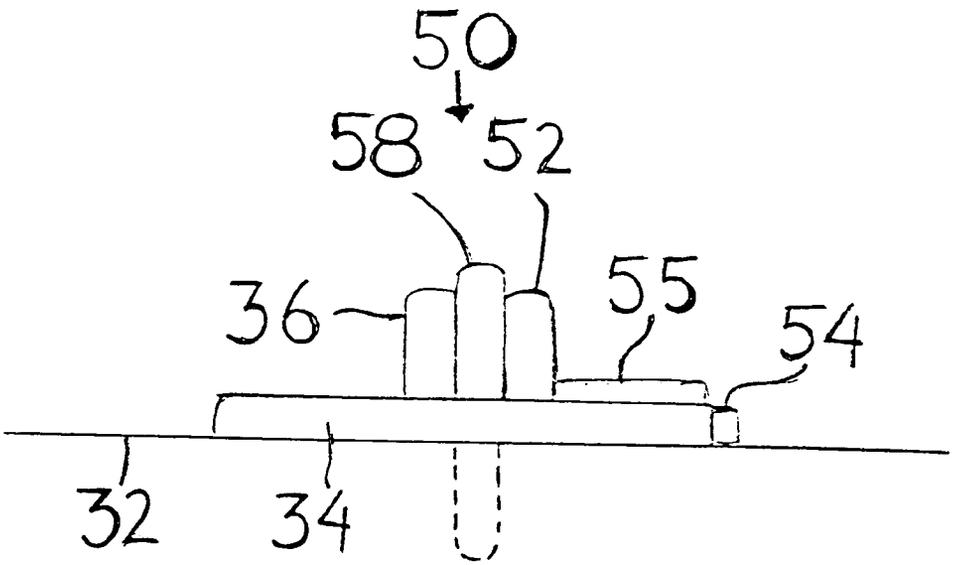

Fig. 5

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EUROPEAN SEARCH REPORT

Application Number

EP 92 85 0025

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	EP-A-0 097 283 (WILLOTT) * page 4, line 26 - page 5, line 12; figure 1 *	1,2,4	A61H15/00 A61H39/04
A	US-A-3 831 592 (LANCELLOTTI) * column 2, line 41 - column 3, line 3; figure 2 *	1,4	
A	US-A-1 984 520 (CURTIS) * page 1, right column, line 14 - line 45; figures 1-3 *	1,4,5	
A	DE-U-9 001 721 (SCHÜLER ET AL.) * claim 1; figures 1-3 *	1,2	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

A61H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	15 MAY 1992	JONES M.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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