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54 **HOISTING HARNESS.**

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## Description

The invention concerns a lifting harness for handicapped persons comprising lifting bands for supporting the thighs of said person, lifting cords for supporting about the breast of said person and a belt to which the ends of the lifting bands and lifting cords are attached.

The object of the invention is to improve known harnesses, see e.g. DE-A-3604973, so that when the person is lifted in the harness in a sitting position the trousers can be moved down over the thighs so that the back of the person is exposed. The harness is arranged to lift the person around the breast and under the thighs without the harness pressing too hard against the breast of the person. The harness is easy to apply on a person in sitting position and the harness is also completely open from the beginning. It is not necessary to thread it on the legs of the person or breast or any other part of the person.

The characterizing features of the invention are stated in the enclosed claims and an embodiment of the invention will be described in the following with reference to the enclosed drawings.

Fig. 1 is thereby a view of the harness in flat position and fig. 2 is a view of the harness with the belt tightened around a body of an imagined person.

The harness includes a broad belt 1, which preferably has an upholstery so that it comfortably can be tightened around the breast of a human being. The tightening is carried out by two lifting straps 2, 3 each of which being connected with the first end and the second end of the belt respectively. One eye 4, 5 is attached at each end of the belt above the connecting points for the lifting straps. The belt is tightened around the breast of a person by that the first lifting strap 2 is brought through the eye 4 and is stretched while the second lifting strap 3 is brought through the eye 5 and is stretched whereby the two lifting straps 2 and 3 will be crossed against the front side of the person. The lifting straps are then extended upwards and are so long that the ends of the lifting straps will end above the head of the person. The lifting straps 2 and 3 have at least one eye 6 and 7 respectively in their free ends, but there are preferably arranged several eyes in order to adapt the lifting straps to the size of the person in question.

A first lifting cord 8 and a second lifting cord 9 are attached to the upper edge of the belt close to the fastening points for the lifting straps 2 and 3 respectively. In the shown embodiment each of the lifting cords consists of a loop so that the belt can be lifted by the two loops. The length of the loops are such that when they are stretched the lifting point is at the same level as the eyes 6 and 7 of

the lifting straps 2, 3 when they are crossed over the breast and tighten the belt. The belt will hereby not be tightened too hard on the breast of the person because the person is lifted in both the lifting straps 2 and 3 and the lifting cords 8 and 9 and the tension of the lifting cords and the lifting straps will be adapted so that at the same time the person will be held by the belt and be lifted by the belt.

In order to prevent the belt from sliding upwards and also to support the legs so that the person will be in a sitting position, two lifting bands 10 and 11 are attached to the under edge of the belt. Each of the lifting bands have a flat wide shape and the intention is that when the belt is tightened around the breast of the body, the lifting bands will be extended along the two sides of the persons downwards and under the thighs when the person is in sitting position. Therefrom the lifting bands are extended inwards and between the thighs and upwards so that the free ends of the lifting bands with an eye 12 and 13 respectively will be at the same level as the eyes 6 and 7 of the lifting straps. As can be seen the lifting bands have flat shape in the area where the lifting bands are passing under the thighs while from there and to the free end each band is formed as a sloop, which makes it possible to thread the first lifting band on the second one in the area between the thighs, see fig. 2. This secures a good grip around the thighs.

In fig. 2 the harness is shown having about the shape which it has when it is tightened to the person. The belt 1 is thus shown a bit fouled with the lifting straps being extended through eye 4 and 5 respectively and are crossed. When the harness is used the lifting straps are tightened more than what is shown in fig. 2 so that the eyes 6 and 7 will reach the level where the free ends of the lifting cords are. The lifting bands are shown in a low position, but when used the lifting bands are extended inwardly under the thighs and the ends with the eyes 12 and 13 are extended upwards to the lifting cords 8 and 9. It should be noted that the lifting band 11 is extended through the lifting band 10, both lifting bands here having a form of a loop as said above. It should also be noted that the lifting bands are extended downwards from the belt and along the both sides of the person and then under the thighs.

A preferred embodiment has been described with a reference to fig. 1 and fig. 2. Within the scope of the following claims there are other embodiments and thus it is possible to arrange several eyes in the ends of the lifting bands 10 and 11 at different distances from the ends in order to adapt the harness to the length of the person so that the legs will form a suitable angle with the body when the person is lifted. As said earlier a

person should be lifted in a sitting position having the thighs supported by the lifting bands. Also the lifting cords 8 and 9 could have several suspension eyes at different distances from the ends.

### Claims

1. Lifting harness for handicapped persons comprising lifting bands (10, 11) for supporting the thighs of said person, lifting cords (8, 9) for supporting about the breast of said person and a belt (1) to which the ends of the lifting bands and lifting cords are attached, **characterized** in that the belt is broad and is intended to be applied around the breast of the person by means of two lifting straps (2, 3), of which one (2) is attached to one end of the belt and can pass through an eye (4) at the second end of the belt, while the second lifting strap (3) is attached to the second end of the belt and can pass through a second eye (5) at the first end of the belt so that hereby the belt can be tightened around the breast by means of the two lifting straps (2, 3) being crossed over the breast and having such a length that lifting eyes (6, 7) at the end of the lifting straps can reach a position above the head of the person when the belt is tightened, whereby one lifting cord (8, 9) is attached at the belt close to the connecting point of each of the lifting straps (2, 3) and being extended upwards from the belt and having a length which corresponds to the position for the lifting eyes (6, 7) of the lifting straps (2, 3) above the head of the person when the belt is tightened, whereby one lifting band (10, 11) having one eye (12, 13) in its free end is connected to the belt close to the connecting points at the belt for the lifting cords (8, 9) respectively but being extended downwards and arranged to be placed under the thighs from the outside of the legs and inwards and being extended between the thighs and upwards so that the eyes (12, 13) will arrive to the level of the eyes (6, 7) of the lifting straps (2, 3) when the belt (1) is tightened.
2. Lifting harness according to claim 1, **characterized** in that each of the lifting straps (2, 3) has several eyes (6, 7) at different distances from its free end.
3. Lifting harness according to claim 1 or claim 2, **characterized** in that the part of the lifting band (10, 11) which supports the thigh has a broad flat form.

4. Lifting harness according to claim 3, **characterized** in that the lifting bands (10, 11) each has a loop from the flat part to the end.

5. Lifting harness according to any of the preceding claims, **characterized** in that the belt (1) has an upholstery and that the upper edge is rounded.

### Patentansprüche

1. Hebegurt für behinderte Personen, enthaltend Hebebänder (10, 11) zur Unterstützung der Oberschenkel der Person, Hebeschnüre (8, 9) zur Unterstützung um die Brust der Person und einen Gürtel (1), an dem die Enden der Hebebänder und Hebeschnüre befestigt sind, **dadurch gekennzeichnet**, daß der Gürtel breit und zum Anlegen um die Brust der Person mit Hilfe von zwei Heberiemern (2, 3) bestimmt ist, von denen einer (2) an einem Ende des Gürtels befestigt ist und durch eine Öse (4) an dem zweiten Ende des Gürtels hindurchtreten kann, während der zweite Heberiemen (3) an dem zweiten Ende des Gürtels befestigt ist und durch eine zweite Öse (5) an dem ersten Ende des Gürtels hindurchtreten kann, so daß hierdurch der Gürtel um die Brust mit Hilfe der zwei Heberiemern (2, 3) festgelegt werden kann, die über der Brust gekreuzt sind und eine solche Länge haben, daß Hebeösen (6, 7) an dem Ende der Heberiemern eine Position über dem Kopf der Person erreichen können, wenn der Gürtel festgelegt wird, wobei eine Hebeschnur (8, 9) an dem Gürtel nahe dem Verbindungspunkt jeder der Heberiemern (2, 3) angeordnet ist und sich von dem Gürtel nach oben erstreckt und eine Länge hat, die der Lage für die Hebeösen (6, 7) der Heberiemern (2, 3) über dem Kopf der Person entspricht, wenn der Gürtel festgelegt ist, wobei ein Hebeband (10, 11) mit einer Öse (12, 13) an seinem freien Ende mit dem Gürtel nahe den Verbindungspunkten an dem Gürtel für die Hebeschnüre (8, 9) verbunden ist, sich jedoch nach unten erstreckt und vorgesehen ist, von der Außenseite der Beine und einwärts unter den Oberschenkeln angeordnet zu werden und sich zwischen den Oberschenkeln und nach oben zu erstrecken, so daß die Ösen (12, 13) auf die Höhe der Ösen (6, 7) der Heberiemern (2, 3) gelangen, wenn der Gürtel (81) festgelegt ist.
2. Hebegurt nach Anspruch 1, dadurch gekennzeichnet, daß jeder der Heberiemern (2, 3) mehrere Ösen (6, 7) in verschiedenen Abständen von seinem freien Ende aufweist.

3. Hebegurt nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß der Teil des Hebebandes (10, 11), den den Oberschenkel unterstützt, eine breite flache Form hat.

4. Hebegurt nach Anspruch 3, dadurch gekennzeichnet, daß jedes der Hebebänder (10, 11) eine Schlinge vom flachen Teil bis zum Ende aufweist.

5. Hebegurt nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der Gürtel (1) gepolstert und seine Oberkante abgerundet ist.

#### Revendications

1. Harnais de levage pour personnes handicapées, caractérisé en ce qu'il comprend des bandes de levage (10, 11) pour soutenir les cuisses de ladite personne, des cordes de levage (8, 9) pour soutenir la poitrine de ladite personne et une ceinture (1) à laquelle les extrémités des bandes de levage et des cordes de levage sont attachées, caractérisé en ce que la ceinture est large et est conçue pour être appliquée autour de la poitrine de la personne au moyen de deux sangles de levage (2, 3), dont l'une (2) est attachée à une extrémité de la ceinture et peut passer à travers un oeillet (4) à la seconde extrémité de la ceinture, tandis que la seconde sangle de levage (3) est attachée à la seconde extrémité de la ceinture et peut passer à travers un second oeillet (5) à la première extrémité de la ceinture de telle façon que, par cette configuration, la ceinture puisse être ajustée autour de la poitrine au moyen des deux sangles de levage (2, 3) étant croisées sur la poitrine et ayant une longueur telle que les oeillets de levage (6, 7) à l'extrémité des sangles de levage puissent atteindre une position au-dessus de la tête de la personne quand la ceinture est ajustée, où une corde de levage (8, 9) est attachée à la ceinture près du point de fixation de chacune des sangles de levage (2, 3) et étant étendue vers le haut à partir de la ceinture et ayant une longueur qui corresponde à la position des oeillets de levage (6, 7) des sangles de levage (2, 3) au-dessus de la tête de la personne quand la ceinture est ajustée, où une bande de levage (10, 11) ayant un oeillet (12, 13) dans son extrémité libre est reliée à la ceinture près des points de fixation à la ceinture pour les cordes de levage (8, 9) respectivement mais étant étendues vers le bas et disposées pour être placées sous les cuisses par l'extérieur des jambes et vers l'intérieur et

étant étendues entre les cuisses et vers le haut de façon à ce que les oeillets (12, 13) arrivent au niveau des oeillets (6, 7) des sangles de levage (2, 3) quand la ceinture (1) est ajustée.

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2. Harnais de levage selon la revendication 1, caractérisé en ce que chacune des sangles de levage (2, 3) possède plusieurs oeillets (6, 7) à différentes distances de son extrémité libre.

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3. Harnais de levage selon la revendication 1 ou la revendication 2, caractérisé en ce que la partie de la bande de levage (10, 11) qui supporte la cuisse a une forme large et plate.

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4. Harnais de levage selon la revendication 3, caractérisé en ce que chacune des bandes de levage (10, 11) présente une boucle depuis la partie plate jusqu'à l'extrémité.

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5. Harnais de levage selon l'une quelconque des précédentes revendications, caractérisé en ce que la ceinture (1) a une garniture et en ce que le bord supérieur est arrondi.

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Fig.1

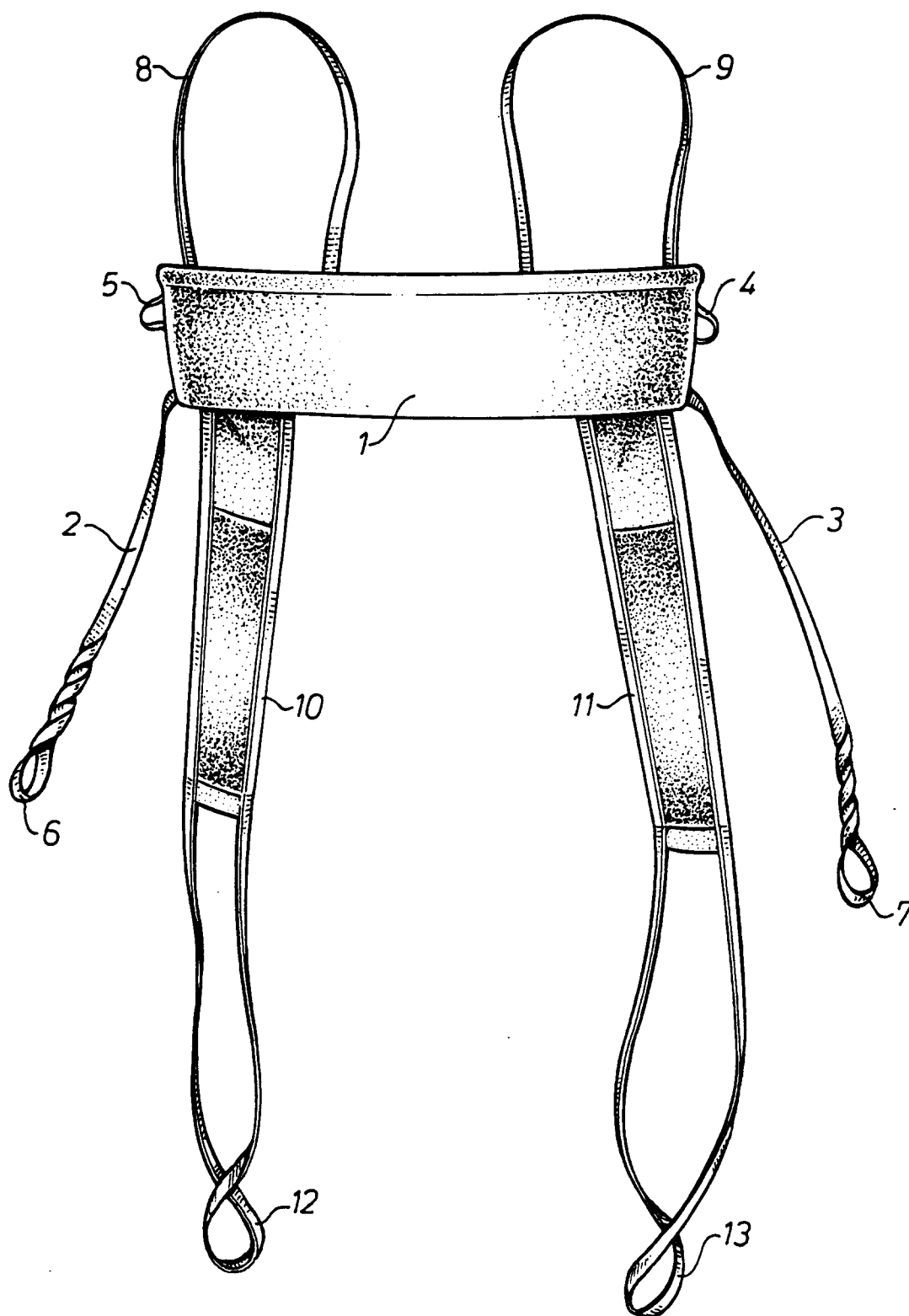


Fig. 2

