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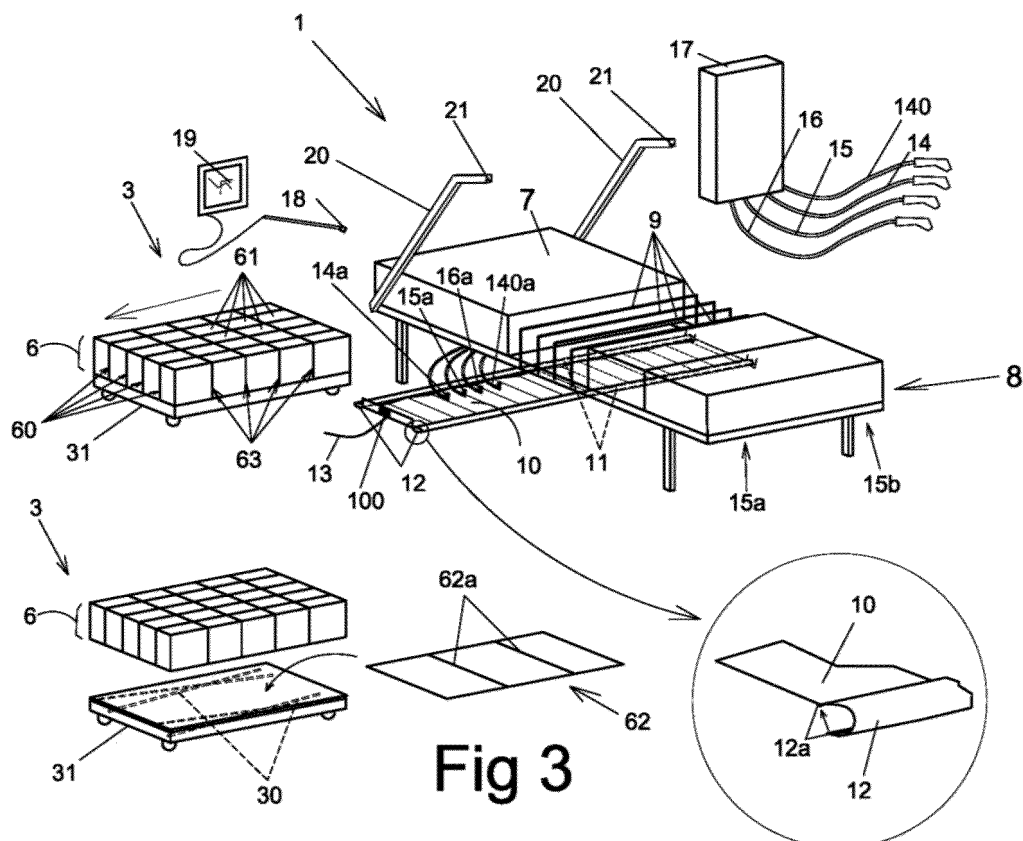
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(54) BED FOR BEDRIDDEN PERSONS

(57) Bed (1) for bedridden persons, comprising sections (3, 4, 5) provided with independent mattresses (6, 7, 8), where said sections include a removable lumbar section (3), positioned to cover the lumbar area and

the start of the legs of the person, equipped with a lumbar mattress (6); and comprising fixed supports (9) spaced apart and interspersed in open-top cavities (60) of the lumbar mattress (6).

**Fig 3**

Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a bed for bedridden persons, suitable for use in hospitals, geriatric centers, and even at home, to facilitate the care and handling of such individuals. It can also be used by persons without such issues.

BACKGROUND OF THE INVENTION

[0002] Currently, there are hospital beds designed to facilitate the care and increase the comfort of bedridden persons, such as elderly or post-surgery patients. These beds are mainly used in hospitals and nursing homes, and feature adjustable sections (primarily the head section, although modern versions also allow adjustment of the leg section with angulation at the knee area). When adjusting the head section, which is the most significant movement, an undesirable effect occurs where the occupant is pushed forward, often increasing their pain and making it difficult to change bedding or perform cleaning. Moreover, this configuration lacks features that facilitate tasks such as washing or changing diapers, which are very painful for individuals with hip fractures or elderly persons with mobility issues, and can be strenuous for caregivers.

DESCRIPTION OF THE INVENTION

[0003] The bed for bedridden persons of the invention comprises, in its simplest version, sections provided with independent mattresses, where these sections include a removable lumbar section that covers the lumbar area and the start of the legs of the person, equipped with a lumbar mattress. It also includes fixed supports spaced apart (i.e., with enough distance to allow access between them), interspersed in open-top cavities of the lumbar mattress, preferably configured as parallel bars.

[0004] This way, the lumbar section can be removed, leaving the bedridden person supported on the fixed supports, with the space between the supports allowing caregivers to perform various tasks (washing, cleaning, therapeutic manipulations, etc.), providing the additional advantage that the bedridden person does not need to be moved or turned, thus avoiding pain and also speeding up their potential recovery by minimizing friction and movement.

[0005] This not only relieves the caregiver's workload but also prevents further complications for bedridden persons, such as infections, pressure ulcers, or sores.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006]

Figure 1 shows a general view of the bed of the

invention with the lumbar section in place.

Figure 2 shows a view similar to Figure 1, where the lumbar section descends to be removed laterally, allowing space for caregiver tasks while the bedridden person remains supported by the spaced bars that form the fixed supports.

Figure 3 shows a view similar to Figure 2, highlighting the lateral removal of the lumbar section and the placement of a waterproof sheet to collect water splashes during the bedridden person's washing. It also shows a detail of the lumbar section with lifted quadrants, revealing the lower tray, and a detail of the hem of the waterproof sheet.

Figure 4 shows a view depicting the removal of a quadrant from the lumbar section to minimize contact in that area of the bedridden person once the lumbar section is placed back in the bed.

Figure 5 shows a view similar to Figure 1, with the lumbar section placed in functional position and the quadrant removed.

Figure 6 shows a sectional detail of the bed in the lumbar section, illustrating the positioning of the bars between the quadrants of the lumbar section when the lumbar section is in the bed.

Figure 7 shows a lateral view of the bed of the invention, with the lower section raised in its central part for increased leg comfort.

DESCRIPTION OF A PRACTICAL EMBODIMENT OF THE INVENTION

[0007] The bed (1) for bedridden persons of the invention comprises sections (3, 4, 5) provided with independent mattresses (6, 7, 8), where said sections include a removable lumbar section (3), positioned to cover the lumbar area and the start of the legs of the person, equipped with a lumbar mattress (6), and comprising spaced fixed supports (9) interspersed in open-top cavities (60) of the lumbar mattress (6) (see figs. 6 and 7).

[0008] The removable lumbar section (3) preferably includes a lifting and lowering mechanism (30) (such as scissors, screws, cylinders, etc.) (see fig. 3), allowing it to lower below the bed frame to be removed laterally. The lumbar section (3) also preferably includes a rolling base (31) to facilitate complete lateral removal, enabling easier occupant manipulation and the cleaning or changing of bed covers.

[0009] In this embodiment, the fixed supports (9) comprise transverse bars attached to the bed frame, located in transverse cavities (60) of the lumbar mattress (6). This configuration allows free access from both sides and from above, for caregivers' hands, hoses, cameras, or

other auxiliary elements.

[0010] The lumbar mattress (6) is preferably divided into independent quadrants (61) by the cavities (60) and by a second set of cavities (63) (in this case, longitudinal) crossing the former (see fig. 3). This allows the removal (see figs. 4 and 5) or lowering, for example, via independent hydraulic cylinders, of specific quadrants in areas where the bedridden person might have pain due to pressure sores, injuries, or similar issues. The quadrants remain grouped by the sheet covering them all, either collectively or in rows, and/or by the arrangement of lateral fastenings between them, for example, using hook-and-loop fasteners, snaps, or similar, not illustrated. In areas with sores or pain, the sheet will create a gap below the person's skin, avoiding contact and thus preventing pain.

[0011] An additional feature involves the inclusion of a tray (62) (see fig. 3) at the base of the lumbar section (3) (beneath its quadrants) to collect any dirt. Ideally, this tray is foldable with intermediate joints (62a) for easier placement and cleaning.

[0012] An important additional feature of the invention involves the provision of a holder for a waterproof sheet (10) that can be installed in the lumbar area during the bedridden person's washing, with the lumbar mattress removed, to prevent water from falling (see figs. 3 and 4). In this specific example, the holder for the waterproof sheet (10) comprises lateral transverse points (11), while the waterproof sheet (10) includes hems (12) open at their ends to insert these points (11), with a pull tab (13) to remove the waterproof sheet (10) after use. The sheet is preferably designed in a zigzag extensible form, so that the bag extends when the lumbar section (3) is removed. It is also preferred that the edges of the hems (12) comprise separable joints (12a) - see fig. 3 - (e.g., hook-and-loop fasteners) to facilitate both extending the waterproof sheet (10) and storing it.

[0013] An additional useful feature involves the provision of initial cleaning hoses, including a first water hose (14), a first suction hose (15), a first hot air hose (16), and a first soap hose (140), connected to a supply cabinet (17) for cleaning the upper part of the person. Alternatively, a second set of hoses may include a second water hose (14a), a second suction hose (15a), a second hot air hose (16a), and a second soap hose (140a), all installed on the waterproof sheet (10) to clean the lower part of the person.

[0014] The water hoses (14, 14a) provide warm water, which may include soap via the soap hoses (140, 140a), while the suction hoses (15, 15a) are used to remove residue, and the hot air hoses (16, 16a) for drying. Thus, it is possible to clean the bedridden person without even touching them, reducing pain. The supply cabinet (17) can, for example, be centrally shared between two beds in a hospital or nursing home room and can also be used to store the waterproof sheet (10).

[0015] A camera (18) and a screen (19) may also be included to check whether the person is thoroughly clean

or if they have sores, again without touching them, by accessing through the fixed supports (9). The camera can be mounted on a handle (18a) to reach any area of interest through a window (100) in the waterproof sheet (10).

[0016] Additionally, the bed comprises an upper section (4) with an upper mattress (7), and a lower section (5) with a lower mattress (8), each with independent sheets that, for example, can feature zippers or any means that facilitate their replacement, ideally inserting new sheets beneath existing ones and then removing the latter. The lower section (5) (and its mattress (8)) may be a single piece or comprise two longitudinal halves (15a, 15b), with an elevatable central joint (15c) (see fig. 7) and mechanisms for elevation (screws, cylinders, gears, etc.) to improve leg comfort.

[0017] Finally, the bed may also include arms (20) at the head, extending forward in this example, with attachments (21) (handles, pulleys, etc.) for exercising.

[0018] Having sufficiently described the nature of the invention, as well as its practical implementation, it should be noted that the features indicated above and represented in the accompanying drawings are subject to modifications as long as they do not alter the fundamental principle.

Claims

1. A bed (1) for bedridden persons, **characterized in that** it comprises sections (3, 4, 5) provided with independent mattresses (6, 7, 8), where said sections include a removable lumbar section (3), positioned to cover the lumbar area and the start of the legs of the person, equipped with a lumbar mattress (6); and comprising spaced fixed supports (9) interspersed in open-top cavities (60) of the lumbar mattress (6).
2. The bed (1) for bedridden persons according to claim 1, wherein the removable lumbar section (3) comprises a lifting and lowering mechanism (30).
3. The bed (1) for bedridden persons according to claim 2, wherein the removable lumbar section (3) comprises a rolling base (31).
4. The bed (1) for bedridden persons according to any of the preceding claims, wherein the fixed supports (9) comprise transverse bars attached to the bed structure, located in transverse cavities (60) of the lumbar mattress (6).
5. The bed (1) for bedridden persons according to any of the preceding claims, wherein the lumbar mattress (6) is divided into independent quadrants (61) by the cavities (60), and by a second set of cavities (63) crossing the former.

6. The bed (1) for bedridden persons according to any of the preceding claims, further comprising a tray (62) at the base of the lumbar section (3).
7. The bed (1) for bedridden persons according to any of the preceding claims, further comprising a waterproof sheet (10) installable in the lumbar area, and a holder for said waterproof sheet (10). 5
8. The bed (1) for bedridden persons according to claim 7, wherein the holder for the waterproof sheet (10) comprises lateral transverse points (11); and wherein the waterproof sheet (10) includes hems (12) open at their ends for insertion of the points (11), and a pull tab (13) for removing the waterproof sheet (10). 10 15
9. The bed (1) for bedridden persons according to claims 7 or 8, wherein the waterproof sheet (10) comprises a zigzag extensible configuration. 20
10. The bed (1) for bedridden persons according to claim 9 in relation to claim 8, wherein the edges of the hems (12) comprise separable joints (12a).
11. The bed (1) for bedridden persons according to any of the preceding claims, further comprising a first set of cleaning hoses, comprising a first water hose (14), a first suction hose (15), a first hot air hose (16), and a first soap hose (140), connected to a supply cabinet (17). 25 30
12. The bed (1) for bedridden persons according to any of the preceding claims, further comprising a second set of cleaning hoses, comprising a second water hose (14a), a second suction hose (15a), a second hot air hose (16a), and a second soap hose (140a) installed in the waterproof sheet (10). 35
13. The bed (1) for bedridden persons according to any of the preceding claims, further comprising a camera (18) and a screen (19). 40
14. The bed (1) for bedridden persons according to any of the preceding claims, further comprising an upper section (4) and a lower section (5) with independent sheets. 45
15. The bed (1) for bedridden persons according to claim 14, wherein the lower section (5) is either a single piece or comprises two longitudinal halves (15a, 15b), with an elevatable central joint (15c) and means for elevation. 50
16. The bed (1) for bedridden persons according to any of the preceding claims, further comprising arms (20) at the head, extending forward, with attachments (21) for exercising. 55

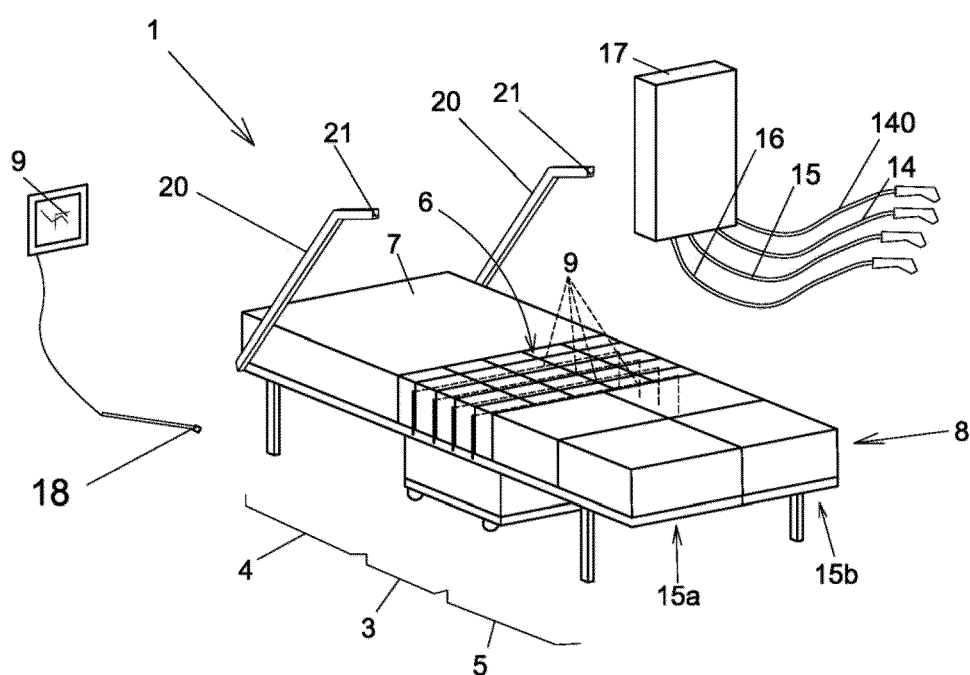
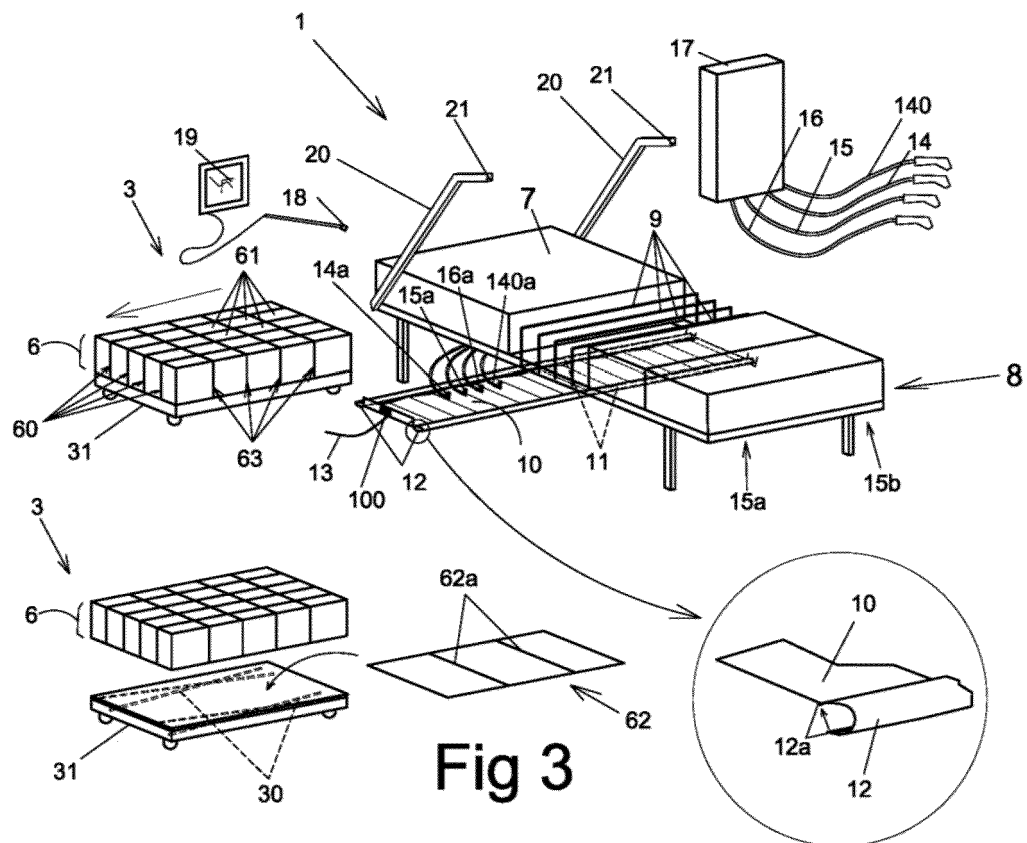
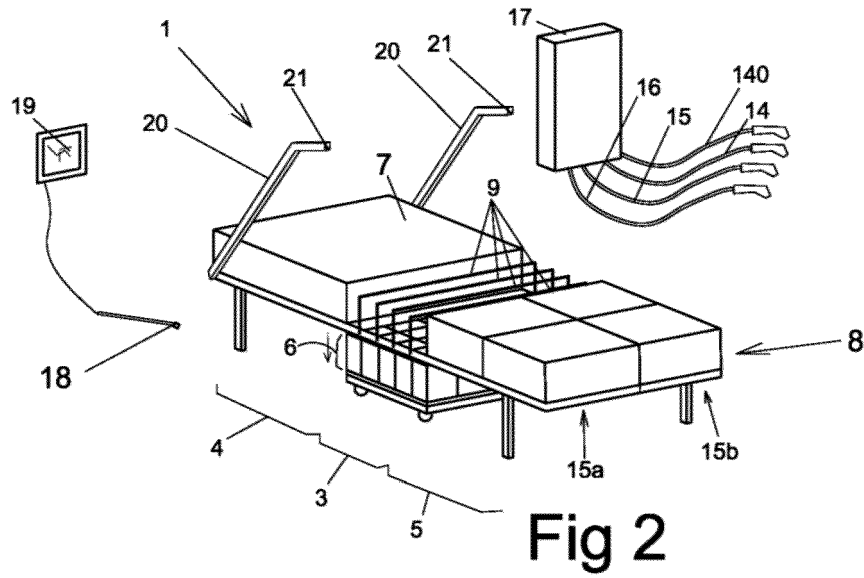


Fig 1



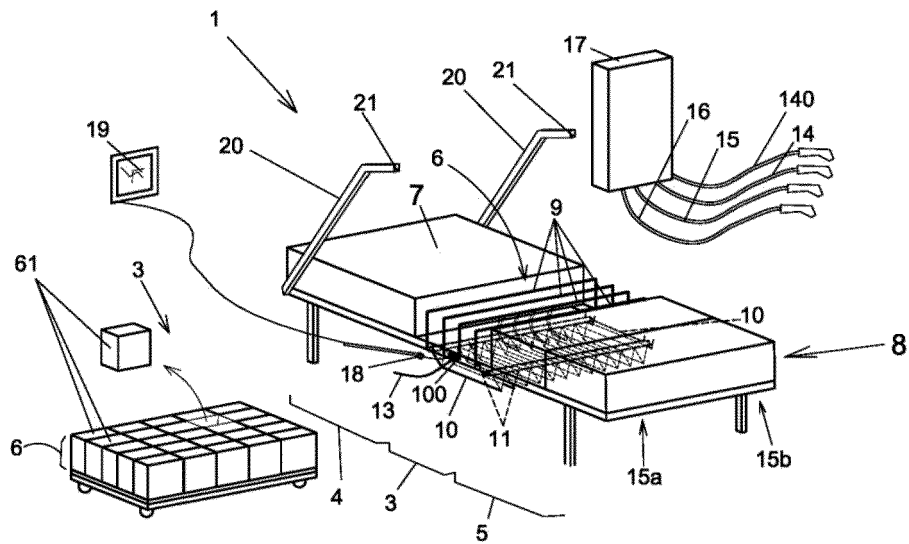


Fig 4

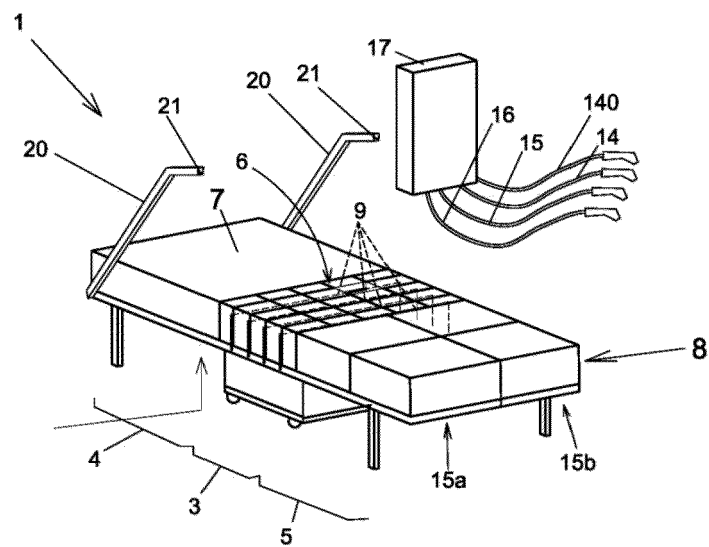


Fig 5

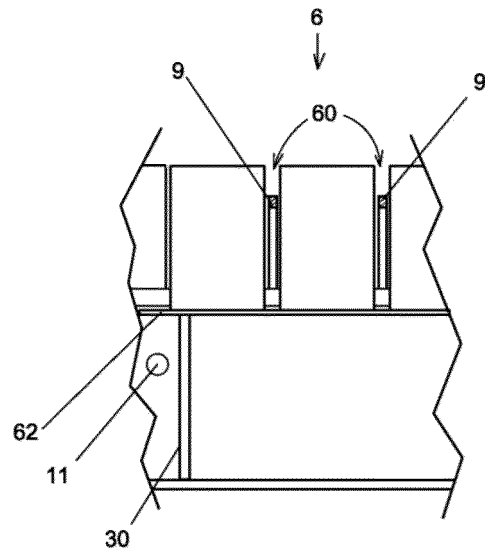


Fig 6

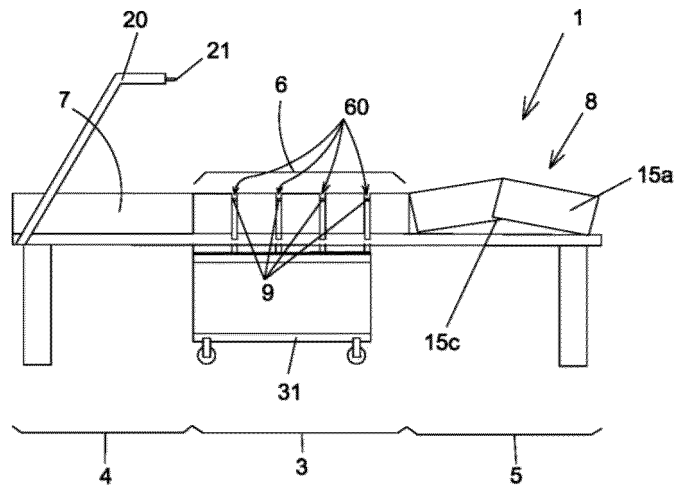


Fig 7



EUROPEAN SEARCH REPORT

Application Number

EP 24 38 3070

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			A61G
Place of search			Examiner
The Hague			Petzold, Jan
Date of completion of the search			
4 March 2025			
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

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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