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(54) COMBINATION WHEELCHAIR AND WALKER

KOMBINATION VON ROLLSTUHL UND GEHHILFE

FAUTEUIL ROULANT ET DEAMBULATEUR COMBINES

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Description

The present invention relates to a chair for handicapped or elderly persons walking with difficulty.

It is well-known that the mobility of handicapped and elderly persons walking with difficulty may be improved when they may lean on and push a supporting device provided with wheels or rollers. Such known rolling supporting devices - the so-called rollators - are provided with a pair of hand grips and a braking device which may be controlled by actuating or control means arranged adjacent to the hand grips so that the user may selectively brake the wheels or rollers. Such handicapped or elderly person may also need a transporting chair provided with wheels or rollers so that he or she may be transported by another person in a sitting position. Furthermore, the handicapped or elderly person may need a wheel chair in which he or she may be transported by another person outdoors. This means that a handicapped or elderly person may require three different aids to fulfil the needs for movement and transportation. The necessity of three different aids is not only economically disadvantageous, but the transportation devices also require much storing space when they are not in use.

The present invention provides a chair which is adapted to be used by handicapped or elderly persons walking with difficulty, and which may be used more universally than the prior art chairs of that type. A wheel chair which converts into a walker is for example known from US-A-5 224 731.

Thus, the present invention provides a chair for handicapped or elderly persons walking with difficulty, as set out in claim 1.

A rollable supporting device to be pushed by the handicapped person must be very stable and this is also true for a transporting chair for indoor use. This means that a downwardly directed pressure applied to the hand grips by the user should not tilt the chair or supporting device unintentionally. In other words, the downwardly directed forces should most likely intersect the ground or floor surface inside the polygon defined by the position of the wheels or rollers.

However, in case of a wheel chair the requirements are different. A person pushing a wheel chair with a handicapped person or patient should be able to tilt the wheel chair so as to lift the front wheels in order to be able to pass kerbs, elevations in the ground surface, doorsteps and other hindrances. This means that it should be possible to apply downwardly directed forces to the hand grips intersecting the ground surface outside the polygon defined by the wheels of the wheel chair, which is outside the side of the polygon defined by the contact points of the rear wheels.

The chair according to the invention may fulfil all these requirements and may be converted from a supporting or leaning device to a wheel chair and vice versa by changing the position of at least one of the rear wheels and/or the position of the hand grips, and possibly also by changing the wheel diameter.

Thus, the wheels may comprise first and second sets of releasable wheels to be mounted in said first and second positions, respectively, the diameter of the wheel or wheels of the second set exceeding that of the first set.

The vertical projection of the hand grips falls inside the polygon defined by the wheels and is spaced substantially from the sides of the polygon in said first position of the releasably mounted wheel or wheels, while the vertical projection of the hand grips falls outside said polygon or closely adjacent to a side thereof in the second position.

When the wheels of the chair according to the invention comprise two or more sets of wheels having different diameters, the center or shaft of the releasable wheel or wheels is preferably adjustable in relation to the seat so that the vertical distance of the seat surface above the ground or floor surface may be kept substantially unchanged when a wheel or wheels of a small diameter is replaced by a wheel or wheels of larger diameter, or vice versa. Such adjustment may, for example, be obtained when each releasable wheel is mounted on a frame part which is telescopically moveable in relation to a main frame part. The telescopically moveable frame part may then be locked in predetermined positions in relation to the main frame part by means of releasable locking means.

Releasable mounting means for releasably mounting at least one of the wheels of the chair in said first and second alternative positions may, for example, comprise means for allowing mounting of the shaft of the wheel or wheels at different locations of the chair frame. In a preferred embodiment, however, at least one of the wheels of the chair is mounted on a frame part moveable in relation to a main frame part so as to position said at least one wheel in said first and second alternative positions. The moveable frame part may be displaceably mounted in the relation to the main frame part in any suitable manner, such as by guide tracks, linkage systems, etc. preferably, however, the moveable frame part is swingably mounted in relation to the main frame part. Alternatively, the center of said at least one wheel may be mounted displaceably along a track or path between said first and second alternative positions.

The wheels may additionally comprise a third set of at least one releasable wheel which may be mounted in a third position of the chair frame. As an example, the first set of wheels may be used when the chair should function as a supporting or leaning device which may be pushed by the user, the second set of wheels may be used when the chair should be converted to a transporting chair mainly for indoor use, and the third set of wheels may be used when the chair should be converted into a wheel chair where the rear wheels could be gripped and driven by the handicapped person sit-

ting in the chair.

Especially when the chair is used as a supporting or leaning device it is important that the user may brake the wheels or rollers of the chair. Therefore, the chair according to the invention preferably comprises a braking device for braking at least one of the wheels of the chair, and brake actuating means for selectively operating the braking device and being positioned at or adjacent to the hand grips. The user may then operate the braking device so that the supporting device remains stationary when desired and release the braking device when the leaning device is to be used for supporting the user while walking.

The hand grips of the chair according to the invention may be mounted on the chair frame movably between said first and second alternative positions. As an example, the frame parts on which a hand grips are mounted may be swingable or tiltable between said alternative positions. Alternatively, the hand grips may be mounted rotatably about upright or substantially vertical axes between said first and second alternative positions. As an example, the hand grips may be rotated substantially 180° between rewardly directed and forwardly directed positions.

According to the present invention the chair may comprise a braking device for braking at least one of the chair wheels and brake actuating means positioned at or adjacent to the hand grips for selectively operating the braking device, which may be maintained in and released from its actuated position. Such chair may be used not only as a chair for transporting a handicapped or elderly person by another person gripping the hand grips and pushing the chair, but also as a leaning or supporting device for a handicapped or elderly person using the device as a walking aid.

The chair frame may be made from rigidly interconnected frame parts or frame members. Alternatively, the chair frame may comprise pivotally interconnected frame parts which may be moved between a position of use and a collapsed storing position, releasable locking means being provided for locking the frame parts mutually in their position of use. When not in use the chair may then be stored in its collapsed position in which it occupies little space, only. When the chair is to be used, the frame parts may be moved into the position of use and may be releasably locked in that position.

The chair seat may then be pivotally mounted to one of the frame parts so as to be rotatable between a substantially horizontal position of use and an upright storing position, and if desired the chair seat or a pivotally mounted frame part supporting the seat may be shaped so as to form part of the releasable locking means.

The chair frame may, for example, comprise a pair of mutually spaced forelegs each carrying a caster wheel at its lower end and a pair of mutually spaced hind legs each having wheel mounting means positioned at different levels above the ground or floor surface. These wheel mounting means positioned at different levels may then be used for mounting different wheels, such as wheels of different diameter, and in plan view the wheel mounting means positioned at different levels are preferably also positioned so as to be differently spaced from the hand grips of the chair. Such different spacing may, for example, be obtained when the lower end portion of each hind leg extends obliquely backwards. The wheel mounting means may, for example, comprise transverse bores or openings in the hind legs for receiving a bolt, spindle or journal for the wheels.

When the chair is used for transporting a sitting handicapped person the feet of that person should preferably not unintentionally come into contact with the ground or floor surface during transportation. Therefore, the chair preferably comprises a foot rest which may be movable between an advanced position of use and a retracted position.

When the chair is used as a leaning or supporting device it is useful that a handicapped person who has been pushing the device and has been gripping the hand grips is able to take a rest and lean against or sit on the device in a standing position. Thus, the chair may further comprise a chair member mounted so as to be movable between a first position in which it may serve as a chair back for a person sitting on the chair seat, and a second position in which a person standing at the hand grips may sit on the chair member or lean against it. Thus, the chair back may serve a dual function.

In its unstressed condition the chair seat may define a substantially plane upper surface and may then serve as a tray on which a handicapped person using the chair as a leaning or supporting device may place various objects or items.

Furthermore, the chair according to the invention may comprise an upwardly open receptacle, container or back positioned immediately below the pivotally mounted chair seat which may function as a lid covering the open end of the receptacle or container. The receptacle or container may serve as a storing container in which a person using the chair may carry personal items. In order to allow access to the receptacle or container when a person is sitting on the chair seat, the receptacle or container may be mounted so as to be transversely displaceable in relation to the chair seat to a position in which a person sitting on the chair seat may have access to the inner space of the receptacle or container.

The invention will now be further described with reference to the drawings, wherein

Fig. 1 is a perspective view of an embodiment of the chair according to the invention,

Fig. 2 is a side view of the chair shown in Fig. 1,

Fig. 3 is a side view of the chair shown in Figs. 1 and 2 in a collapsed position,

Figs. 4-7 illustrate four various purposes of use of

the chair according to the invention.

Fig. 8 is a side view illustrating a second embodiment of the chair according to the invention,

Fig. 9 is a side view of the chair shown in Fig. 8 where the releasably mounted rear wheels have been replaced by large diameter rear wheels,

Fig. 10 diagrammatically illustrates a third embodiment of the chair according to the invention,

Figs. 11 and 12 are side views illustrating a fourth embodiment of the chair according to the invention,

Figs. 13 and 14 illustrate a fifths embodiment of the chair according to the invention,

Fig. 15 and 16 illustrate a sixths embodiment of the chair according to the invention,

Figs. 17 and 18 illustrate a sevenths embodiment of the chair according to the invention,

Figs. 19 and 20 illustrate an eights embodiment of the chair according to the invention, and

Figs. 21 and 22 illustrate a ninths embodiment of the chair according to the invention.

The chair shown in Figs. 1-3 comprises a chair frame 10 which may be made from metal tubes, a chair seat 11 and a chair back 12 mounted on the frame 10. The frame 10 comprises a front frame part 13 forming a pair of front legs 14 and a rear frame part 15 forming a pair of rear legs 16. A pair of rear wheels or rear rollers 17 are rotatably mounted at the lower ends of the rear legs 16, and a pair of caster wheels 18 are mounted at the lower ends of the front legs 14. A pair of rearwardly directed hand grips 19 positioned behind the chair seat 11 are formed at the upper ends of the rear frame part 15. Braking devices (not shown) for selectively braking the rear wheels 17 may be selectively operated by means of brake actuating members 20 which are positioned immediately below the hand grips 19 and which are connected to the braking devices via cables 21.

The frame parts 13 and 15 are interconnected by link members 22 so that the frame parts 13 and 15 may be moved between a collapsed position shown in Fig. 3 and a position of use shown in Figs. 1 and 2. In the position of use the front legs 14 and the rear legs 16 are spaced apart and may be locked in this position by a link member. The chair seat 11 may be pivotally mounted to the rear frame part 15 at its rear edge so that the seat may be tilted between a substantially vertical position and a substantially horizontal position of use, and the link members may also comprise a frame part for supporting the chair seat 11 in its substantially horizontal position of use.

An upwardly open container or basket 23 which may, for example, be made from wire, is mounted under the chair seat 11, vide Figs. 2 and 3, so that the chair seat 11 may form a lid closing the upper open end of the container or basket 23. The container or basket 23 may be mounted so that it may be displaced transversely in relation to the seat 11 whereby a person sitting on the chair seat 11 may gain access to the inner space of the basket or container.

Fig. 4 illustrates how the chair shown in Figs. 1-3 may be used as a supporting or leaning device (a so-called rollator) by a handicapped person who needs a walking aid. The person then grips around the hand grips 19 and pushes the chair in front of him. When necessary, the user may operate the brakes by means of the brake actuating members 20.

When the user needs a rest he may operate the braking devices so as to make the chair stationary and may then lean against the back side of the chair as illustrated in Fig. 5. The chair bag 12 may be mounted pivotally about a horizontal axis so that the chair back may be moved between a substantially vertical position as shown in Fig. 1 and a substantially horizontal or an inclined position. As shown in Fig. 5 the user of the chair may then lean against and partly sit on the substantially horizontal or inclined chair back 12 so as to get a small rest in an upright, almost standing position.

As illustrated in Fig. 6 the chair may also be used for transporting a handicapped person sitting on the chair seat 11 and leaning against the substantially vertical chair back 12. An assisting person may then grip the hand grips 19 and push the chair. The chair shown in Figs. 1-3 is preferably provided with a foot rest 24 (shown only in Fig. 6) for supporting the feet of the sitting person so that the feet do not come into contact with the floor or ground surface during transportation.

Finally, as illustrated in Fig. 7 the chair may also be used as a chair for a person sitting at a table or at a similar working place. In that case the braking devices should be operated so that the chair does not move.

Figs. 8 and 9 illustrate an embodiment similar to that shown in Figs. 1-3, and similar parts are provided with the same reference numerals. In the embodiment shown in Figs. 8 and 9 the rearwardly inclining rear legs 16 are provided with three different wheel mounting bores or openings 25, 26 and 27 positioned in different levels and in different transverse positions in relation to the hand grips 19. The small diameter rear wheels 17 may then be replaced by large diameter rear wheels 28 which may be gripped and moved by a user sitting in the chair. Thereby the chair may be converted into a wheel chair which is also suited for outdoor use.

A person gripping the hand grips 19 and pushing the chair forwards usually applies a downwardly and forwardly directed force F to each of the hand grips 19. When the small diameter rear wheels 17 are mounted on the chair such force intersects the floor or ground surface between the contact points 29 and 30 between the floor or ground surface and the front and rear wheels 18 and 17, respectively. However, when the large diameter rear wheels 28 are mounted the downwardly directed forces F may intersect the ground surface adjacent to the contact point 31 between the rear wheels and the ground surface. This means that a person gripping the hand grips 19 and pushing the wheel chair may rather easily tilt the chair about and axis

defined by the contact points 31 whereby the front wheels 18 may be lifted for passing small elevations in the ground surface, such as kerbs, doorsteps and other hindrances.

Fig. 10 diagrammatically illustrates an embodiment of the chair according to the invention in which the center of each of the rear wheels 17 may be moved between alternative positions along a track 32 which may extend in a substantially direction or may form a small acute angle with the horizontal direction as indicated. The rear wheels 17 may then be releasably locked in two alternative positions, namely a rearward position shown in solid lines in which the chair may be used as a supporting device to be pushed by the handicapped person, and a forward position shown in broken lines. In the latter position the handicapped person may be seated in the chair and be transported by an assisting person.

In the embodiment shown in Figs. 11 and 12 each of the rear wheels 17 are mounted at a free end of a supporting arm 33, which may be rotated between a forwardly directed position (shown in solid lines in Figs. 11 and 12) and a rearwardly directed position (shown in broken lines in Figs. 11 and 12) about a pivot 34. In its alternative positions the supporting arm 33 is engaging with a tilting limiting bracket 35 forming part of the chair frame 10. The supporting arm 33 is biassed towards its alternative positions by means of a spring 36. As shown in Fig. 12 the bracket 35 restricts backwards tilting of the chair about the axis of the rear wheels 17 when the rear wheels are in their forward position shown in Fig. 12.

In the embodiment shown in Figs. 13 and 14 the front frame part 13 and the rear frame part 15 are mounted so as to be mutually pivotable about a pivot 37. Furthermore, a pin or cam follower 38 formed on each of the rear legs 16 is cooperating with a corresponding slot or track 39. The pins 38 may be releasably locked in alternative positions in which they are engaging with the opposite ends of the slots 39 whereby the chair may be converted from the position shown in Fig. 13 in which it is adapted to be pushed by the handicapped person, into the position shown in Fig. 14, in which the handicapped person may sit in the chair and be pushed by an assisting person.

Figs. 15 and 16 show an embodiment in which the chair back 12 may be swung from a position shown in Fig. 15 in which it is in abutting engagement with the seat 11, into a position of use shown in Fig. 16. Furthermore, each rear leg 16 comprises telescopically moveable parts which may be mutually locked in predetermined positions so that the height of the mounting bore 25 for receiving the shaft or pivot of the corresponding rear wheel 17 may be adapted to the diameter of the rear wheel chosen.

The embodiment shown in Figs. 17 and 18 corresponds to the embodiment shown in Figs. 15 and 16. However, in Figs. 17 and 18 the chair seat 11 and the chair back 12 are formed as an integral unit which is tiltably mounted on the chair frame 10 about a pivot axis 40. Thus, when the chair is used for transporting a handicapped person in a sitting position, the seat and back is tilted to the position shown in Fig. 17. However, when the chair is to be pushed by the handicapped person the seat and back may be tilted to the position shown in Fig. 18.

In the embodiment shown in Figs. 19 and 20 the front frame part 13 and the rear frame part 15 may perform a mutually pivotal movement about the pivot 37. In order to allow such pivotal movement the front frame part 13 comprises telescopically inter-engaging parts,and the rear frame part 15 is connected to the interconnecting link members 22 via pin and slot connections 41. Thus, in Fig. 19 the chair is adapted to be pushed by and to support a standing or walking handicapped person. In this position the telescopic parts of the front frame part 13 are pushed together and the pins of the connections 41 are in their upper end positions within the corresponding slots. In Fig. 20, however, the front frame part 13 is in its extended position and the pins of the pin and slot connections 41 are in their lower position. In this condition the chair is adapted to support a sitting handicapped person and to be pushed by an assisting person.

In the embodiment shown in Figs. 21 and 22 the hand grips 19 are telescopically received in upper end portions of the rear frame part 15 so that the hand grips may be releasably locked to the rear frame part 15 in a forwardly directed position as shown in Fig. 21 or in a rearwardly directed position as shown in Fig. 22. The chair seat 11 and the chair back 12 may be divided into three pivotally interconnected parts so that these parts may be arranged in a sandwiched position shown in Fig. 21 or in a position of use shown in Fig. 22. When the chair is in the condition shown in Fig. 21 it may be used for supporting a standing or walking handicapped person who may stand between the horizontally spaced rear legs 16. When the user needs a rest he or she may partially sit on the sandwiched seat. In the condition shown in Fig. 22 the chair is adapted to transport a sitting handicapped person, and the chair is then pushed by an assistant person gripping the rear wardly directed hand grips 19.

It should be understood that the features of the various embodiments shown and described could be combined in numerals other ways than shown and described above, and such combinations should be interpreted as being within the scope of the present invention when falling within the scope of the following claims.

Claims

1. A chair for handicapped or elderly persons walking with difficulty, said chair comprising a chair frame, a chair seat mounted on the chair frame, front and rear wheels mounted on the chair frame for sup-

porting the chair on a ground or floor surface, the contact points between the wheels and the floor surface defining the vertices of a polygon, and hand grips formed on the chair frame and behind the seat to be gripped by a person pushing the chair, **characterized** in that at least one of the rear wheels and/or the hand grips of the chair may be releasably mounted in such first and second alternative positions on the chair frame that the vertical projection of the hand grips intersects the ground or floor surface inside said polygon in said first position of said at least one rear wheel and/or the hand grips, while the vertical projection of the hand grips intersects the ground or floor surface closer to and closely adjacent to a side of the polygon extending between the contact points of the rear wheels, or outside said polygon in said second position.

2. A chair according to claim 1, wherein the wheels comprise first and second sets of releasable rear wheels to be mounted in said first and second positions, respectively, the diameter of the rear wheel or wheels in the second set exceeding that of the first set.

3. A chair according to claim 2, wherein the position of the center of the releasable rear wheel or wheels is adjustable in relation to the seat.

4. A chair according to claim 3, wherein each releasable rear wheel is mounted on a frame part which is telescopically moveable in relation to a main frame part.

5. A chair according to any of the claims 1-4, wherein at least one of the rear wheels of the chair is mounted on a frame part moveable in relation to a main frame part so as to position said at least one rear wheel in said first and second alternative positions.

6. A chair according to claim 5, wherein the moveable frame part is swingably mounted in relation to the main frame part.

7. A chair according to any of the claims 1-5, wherein the center of said at least one rear wheel is displaceable along a track or path between said first and second alternative positions.

8. A chair according to any of the claims 2-7, wherein the rear wheels additionally comprise a third set of at least one releasable rear wheel to be mounted in a third position.

9. A chair according to any of the claims 2-8, wherein the diameter of the rear wheels in the second or in the third set is such that a person sitting on the chair seat may grip and drive such wheels forward when they are mounted on the chair frame in said second or third position.

10. A chair according to any of the claims 1-9, further comprising a braking device for braking at least one of the wheels of the chair, and brake actuating means positioned at or adjacent to the hand grips for selectively operating the braking device.

11. A chair according to any of the claims 1-10, wherein the hand grips are mounted on the chair frame movably between said first and second alternative positions.

12. A chair according to claim 11, wherein the hand grips are mounted rotatably about upright or substantially vertical axes between said first and second alternative positions.

13. A chair according to any of the claims 1-12, **characterized** in a braking device for braking at least one of the chair wheels and brake actuating means positioned at or adjacent to the hand grips for selectively operating the braking device, which may be maintained in and released from its actuated position.

14. A chair according to any of the claims 1-13, wherein the chair frame comprises pivotally interconnected frame parts which may be moved between a position of use and a collapsed storing position, releasable locking means being provided for locking the frame parts mutually in their position of use.

15. A chair according to claim 14, wherein the seat is pivotally mounted to one of the frame parts so as to be rotatable between a substantially horizontal position of use and an upright storing position.

16. A chair according to claim 15, wherein the locking means for locking the frame parts in their position of use comprise the pivotally mounted seat or a pivotally mounted supporting member therefor.

17. A chair according to any of the claims 1-16, wherein the chair frame comprises a pair of mutually spaced forelegs each carrying a wheel at its lower end and a pair of mutually spaced hind legs each having rear wheel mounting means positioned at different levels above the ground or floor surface.

18. A chair according to claim 17, wherein the lower end portion of each hind leg extends obliquely backwards.

19. A chair according to any of the claims 1-18, further comprising a foot rest for a person sitting on the

chair seat.

20. A chair according to any of the claims 1-19, further comprising a chair member mounted so as to be movable between a first position in which it may serve as a chair back for a person sitting on the chair seat, and a second position in which a person standing at the hand grips may sit on the chair member or lean thereagainst.

21. A chair according to any of the claims 1-20, wherein the chair seat defines in its unstressed condition a substantially plane upper surface.

22. A chair according to any of the claims 1-21, further comprising an upwardly open receptacle, container or bag positioned immediately below the pivotally mounted chair seat which may function as a lid covering the open end of the receptacle or container.

23. A chair according to claim 22, wherein the receptacle or container is mounted so as to be transversely displaceable in relation to the chair seat to a position in which a person sitting on the chair seat may have access to the inner space of the receptacle or container.

Patentansprüche

1. Stuhl für Behinderte oder ältere Personen, die Schwierigkeiten beim Gehen haben, mit einem Stuhlrahmen, einem am Stuhlrahmen befestigten Stuhlsitz, Vorder- und Hinterrädern, die an dem Stuhlrahmen zum Abstützen des Stuhls an einer Boden- oder Fußbodenfläche befestigt sind, wobei die Berührungspunkte zwischen den Rädern und der Bodenfläche die Scheitelpunkte eines Polygons definieren und mit an dem Stuhlrahmen hinter dem Sitz vorgesehenen Handgriffen, die von einer den Stuhl schiebenden Person gegriffen werden können, dadurch gekennzeichnet, daß wenigstens eines der Hinterräder und/oder einer der Handgriffe des Stuhls an dem Stuhlrahmen in einer ersten und einer zweiten alternativen Position derart lösbar befestigt werden kann, daß die vertikale Projektion der Handgriffe die Boden- oder Fußbodenfläche innerhalb des Polygons in der ersten Position des wenigstens einen Hinterrads und/oder Handgriffs schneidet, während die vertikale Projektion der Handgriffe in der zweiten Position die Boden- oder Fußbodenfläche näher an und dicht in der Nähe an einer Seite des sich zwischen den Berührungspunkten der Hinterräder erstreckenden Polygons oder außerhalb des Polygons schneidet.

2. Stuhl nach Anspruch 1, wobei die Räder jeweils einen ersten und zweiten Satz von lösbaren Hinterrädern aufweisen, die in der ersten und zweiten Position befestigt werden können, wobei der Durchmesser des Hinterrades oder der Räder des zweiten Satzes größer ist als der des ersten Satzes.

3. Stuhl nach Anspruch 2, wobei die Position der Achse des lösbaren Hinterrades oder der Räder in bezug auf den Sitz einstellbar ist.

4. Stuhl nach Anspruch 3, wobei jedes lösbare Hinterrad an einem Rahmenteil befestigt ist, das teleskopisch in bezug auf ein Hauptrahmenteil bewegbar ist.

5. Stuhl nach einem der Ansprüche 1-4, wobei wenigstens eines der Hinterräder des Stuhls an einem Rahmenteil befestigt ist, das in bezug auf ein Hauptrahmenteil derart bewegbar ist, daß das wenigstens eine Hinterrad in die erste und zweite alternative Position bringbar ist.

6. Stuhl nach Anspruch 5, wobei das bewegbare Rahmenteil in bezug auf das Hauptrahmenteil schwenkbar befestigt ist.

7. Stuhl nach einem der Ansprüche 1-5, wobei die Achse des wenigstens einen Hinterrades entlang einer Bahn oder eines Pfades zwischen der ersten und zweiten alternativen Position verschiebbar ist.

8. Stuhl nach einem der Ansprüche 2-7, wobei die Hinterräder zusätzlich einen dritten Satz von wenigstens einem lösbaren Hinterrad aufweisen, das in einer dritten Position befestigt werden kann.

9. Stuhl nach einem der Ansprüche 2-8, wobei die Hinterräder in dem zweiten oder in dem dritten Satz einen Durchmesser haben, daß eine auf dem Stuhlsitz sitzende Person die Räder greifen und diese vorwärtsbewegen kann, wenn diese an dem Stuhlrahmen in der zweiten oder dritten Position befestigt sind.

10. Stuhl nach einem der Ansprüche 1-9, ferner aufweisend eine Bremseinrichtung zum Bremsen wenigstens eines der Räder des Stuhls und Bremsbetätigungsmittel, die an oder in der Nähe der Handgriffe zur wahlweisen Betätigung der Bremseinrichtung angeordnet sind.

11. Stuhl nach einem der Ansprüche 1-10, wobei die Handgriffe an dem Stuhlrahmen zwischen der ersten und zweiten alternativen Position bewegbar angeordnet sind.

12. Stuhl nach Anspruch 11, wobei die Handgriffe um nach oben gerichtete oder im wesentlichen vertikale Achsen zwischen der ersten und zweiten alternativen Position drehbar befestigt sind.

13. Stuhl nach einem der Ansprüche 1-12, gekennzeichnet durch eine Bremseinrichtung zum Bremsen wenigstens eines der Stuhlräder und Bremsbetätigungsmitteln, die an oder in der Nähe der Handgriffe zur wahlweisen Betätigung der Bremseinrichtung angeordnet sind, die in der betätigten Position gehalten und freigegeben werden kann.

14. Stuhl nach einem der Ansprüche 1-13, wobei der Stuhlrahmen drehbar miteinander verbundene Rahmenteile aufweist, die zwischen einer Gebrauchsposition und einer zusammengelegten Lagerposition bewegt werden können, wobei lösbare Arretiermittel zum Arretieren der Rahmenteile untereinander in ihrer Gebrauchsposition vorgesehen sind.

15. Stuhl nach Anspruch 14, wobei der Sitz an einem der Rahmenteile derart drehbar befestigt ist, daß dieser zwischen einer im wesentlichen horizontalen Gebrauchsposition und einer nach oben gerichteten Lagerposition drehbar ist.

16. Stuhl nach Anspruch 15, wobei die Arretiermittel zum Arretieren der Rahmenteile in ihrer Gebrauchsposition den drehbar befestigten Sitz oder ein drehbar befestigtes Teil zur Befestigung desselben aufweist.

17. Stuhl nach einem der Ansprüche 1-16, wobei der Stuhlrahmen ein Paar von versetzt zueinander angeordneten Vorderbeinen aufweist, an deren unteren Enden jeweils ein Rad befestigt ist, und ein Paar von versetzt zueinander angeordneten Hinterbeinen aufweist, die jeweils Hinterradbefestigungsmittel haben, die in unterschiedlicher Höhe über der Boden- oder Fußbodenfläche angeordnet sind.

18. Stuhl nach Anspruch 17, wobei der untere Endbereich jedes Hinterbeins sich schräg nach hinten erstreckt.

19. Stuhl nach einem der Ansprüche 1-18, ferner aufweisend eine Fußstütze für eine auf dem Stuhlsitz sitzende Person.

20. Stuhl nach einem der Ansprüche 1-19, ferner aufweisend ein Stuhlteil, das zwischen einer ersten Position, in welcher es als Stuhllehne für eine auf dem Stuhl sitzende Person dienen kann und einer zweiten Position bewegbar ist, in der eine an den Handgriffen stehende Person auf dem Stuhlteil sitzen oder sich dagegen anlehnen kann.

21. Stuhl nach einem der Ansprüche 1-20, wobei der Stuhlsitz in seinem unbeanspruchten Zustand eine im wesentlichen ebene Oberfläche definiert.

22. Stuhl nach einem der Ansprüche 1-21, ferner aufweisend einen nach oben geöffneten Behälter, Container oder Tasche, der unmittelbar unterhalb des drehbar befestigten Stuhlsitzes angeordnet ist, der als Deckel zum Abdecken des offenen Endes des Behälters oder Containers dient.

23. Stuhl nach Anspruch 22, wobei der Behälter oder Container derart befestigt ist, daß er quer zu dem Stuhlsitz in eine Position verschiebbar ist, in welcher eine auf dem Stuhlsitz sitzende Person zu dem Innenraum des Behälters oder Containers Zugang hat.

Revendications

1. Fauteuil pour personnes handicapées ou âgées marchant avec difficulté, ledit fauteuil comprenant un châssis de fauteuil, un siège de fauteuil monté sur le châssis du fauteuil, des roues avant et arrière montées sur le châssis du fauteuil pour supporter le fauteuil sur une surface du sol ou de plancher, les points de contact entre les roues et la surface du sol définissant les sommets d'un polygone, et des poignées formées sur le châssis du fauteuil et derrière le siège, destinées à être empoignées par une personne poussant le fauteuil, ***caractérisé en ce qu'***au moins une des roues arrière et/ou les poignées du fauteuil peuvent être montées de manière libérable sur le châssis du fauteuil dans des première et seconde positions alternatives telles que la projection verticale des poignées intersecte la surface du sol ou du plancher à l'intérieur dudit polygone dans ladite première position desdites au moins une roue arrière et/ou poignées, alors que la projection verticale des poignées intersecte la surface du sol ou du plancher plus près, et de manière étroitement adjacente, d'un côté du polygone s'étendant entre les points de contact des roues arrière, ou à l'extérieur dudit polygone, dans la dite seconde position.

2. Fauteuil selon la Revendication 1, dans lequel les roues comprennent des premier et second jeux de roues arrière libérables à monter respectivement dans lesdites première et seconde positions, le diamètre de la roue arrière ou des roues dans le second jeu étant supérieur à celui du premier jeu.

3. Fauteuil selon la Revendication 2, dans lequel la position du centre de la roue ou des roues arrière libérable(s) est réglable par rapport au siège.

4. Fauteuil selon la Revendication 3, dans lequel chaque roue arrière libérable est montée sur une partie du châssis qui est mobile télescopiquement par rapport à une partie principale du châssis.

5. Fauteuil selon l'une quelconque des Revendications 1 à 4, dans lequel au moins une des roues arrière du fauteuil est montée sur une partie du châssis mobile par rapport à une partie principale du châssis de manière à positionner ladite au moins une roue arrière dans lesdites première et seconde positions alternatives.

6. Fauteuil selon la Revendication 5, dans lequel la partie mobile du châssis est montée pivotante par rapport à la partie principale du châssis.

7. Fauteuil selon l'une quelconque des Revendications 1 à 5, dans lequel le centre de ladite au moins une roue arrière est déplaçable sur une trajectoire ou un trajet entre lesdites première et seconde positions alternatives.

8. Fauteuil selon l'une quelconque des Revendications 2 à 7, dans lequel les roues arrière comprennent additionnellement un troisième jeu d'au moins une roue arrière libérable à monter dans une troisième position.

9. Fauteuil selon l'une quelconque des Revendications 2 à 8, dans lequel le diamètre des roues arrière dans le second ou dans le troisième jeu est tel qu'une personne assise sur le siège du fauteuil peut agripper et entraîner ces roues vers l'avant lorsqu'elles sont montées sur le châssis du fauteuil dans ladite seconde ou troisième position.

10. Fauteuil selon l'une quelconque des Revendications 1 à 9, comprenant de plus un dispositif de freinage pour freiner au moins une des roues du fauteuil, et des moyens d' actionnement du frein positionnés sur, ou adjacents aux poignées afin d' actionner sélectivement le dispositif de freinage.

11. Fauteuil selon l'une quelconque des Revendications 1 à 10, dans lequel les poignées sont montées sur le châssis du fauteuil de manière mobile entre lesdites première et seconde positions alternatives.

12. Fauteuil selon la Revendication 11, dans lequel les poignées sont montées de manière rotative autour d'axes verticaux ou sensiblement verticaux entre lesdites première et seconde positions alternatives.

13. Fauteuil selon l'une quelconque des Revendications 1 à 12, ***caractérisé par*** un dispositif de freinage pour freiner au moins une des roues du fauteuil et des moyens d' actionnement du frein positionnés sur, ou adjacents aux poignées afin d' actionner sélectivement le dispositif de freinage qui peut être maintenu dans sa position actionnée et libéré de celle-ci.

14. Fauteuil selon l'une quelconque des Revendications 1 à 13, dans lequel le châssis du fauteuil comprend des parties de châssis reliées entre elles de manière pivotante et qui peuvent être déplacées entre une position d'utilisation et une position repliée de stockage, des moyens de verrouillage libérables étant prévus pour verrouiller mutuellement les parties du châssis dans leur position d'utilisation.

15. Fauteuil selon la Revendication 14, dans lequel le siège est monté pivotant sur une des parties du châssis de manière à pouvoir pivoter entre une position d'utilisation substantiellement horizontale et une position verticale de stockage.

16. Fauteuil selon la Revendication 15, dans lequel les moyens de verrouillage pour verrouiller les parties du châssis dans leur position d'utilisation comprennent le siège monté pivotant ou un élément de support monté pivotant dans ce but.

17. Fauteuil selon l'une quelconque des Revendications 1 à 16, dans lequel le châssis du fauteuil comprend une paire de jambes avant mutuellement espaceés portant chacune une roue sur son extrémité inférieure et une paire de jambes arrière mutuellement espacées munie chacune de moyens de montage des roues arrière positionnés à différents niveaux au-dessus de la surface du sol ou du plancher.

18. Fauteuil selon la Revendication 17, dans lequel la portion de l'extrémité inférieure de chaque jambe arrière s'étend obliquement vers l'arrière.

19. Fauteuil selon l'une quelconque des Revendications 1 à 18, comprenant additionnellement un repose-pied pour une personne assise sur le siège du fauteuil.

20. Fauteuil selon l'une quelconque des Revendications 1 à 19, comprenant additionnellement un élément de fauteuil monté pour être mobile entre une première position dans laquelle il peut servir de dossier pour une personne assise sur le siège, et une seconde position dans laquelle une personne se tenant debout côté poignées peut s'asseoir sur l'élément de fauteuil ou s'appuyer contre lui.

21. Fauteuil selon l'une quelconque des Revendications 1 à 20, dans lequel le siège du fauteuil définit dans sa position non chargée une surface supérieure substantiellement plane.

22. Fauteuil selon l'une quelconque des Revendications 1 à 21, comprenant additionnellement un récipient, bac ou sac ouvert vers le haut positionné

immédiatement au-dessous du siège de fauteuil monté pivotant, lequel peut fonctionner comme un couvercle recouvrant l'extrémité ouverte du récipient ou bac.

23. Fauteuil selon la Revendication 22, dans lequel le récipient ou bac est monté de façon à être déplaçable transversalement par rapport au siège du fauteuil jusqu'à une position dans laquelle une personne assise sur le siège du fauteuil peut avoir accès à l'espace intérieur du récipient ou du bac.

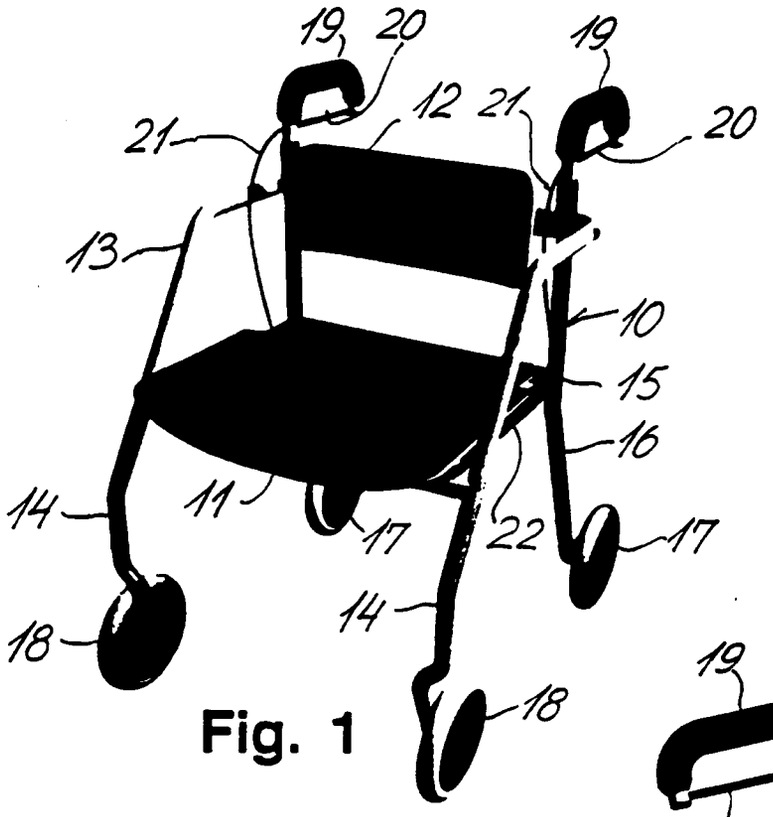


Fig. 1

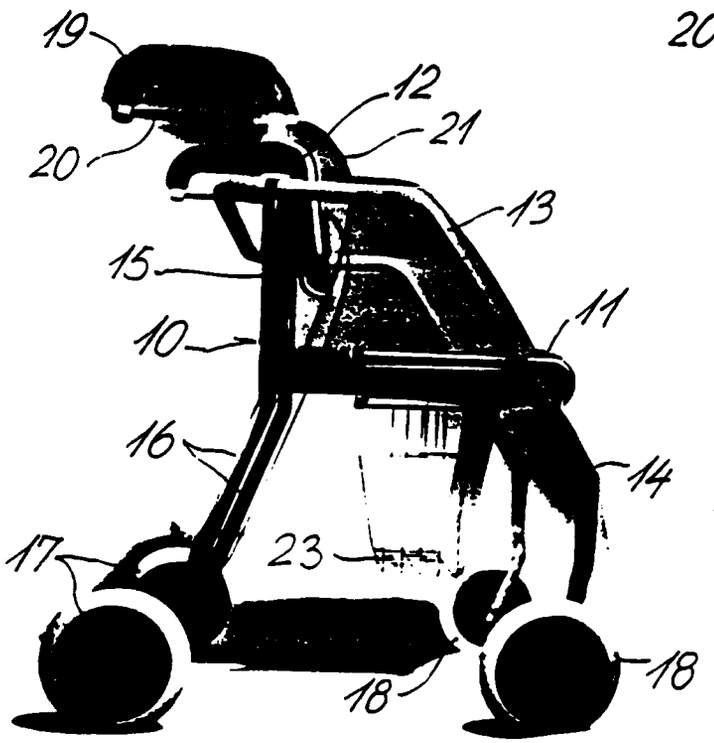


Fig. 2

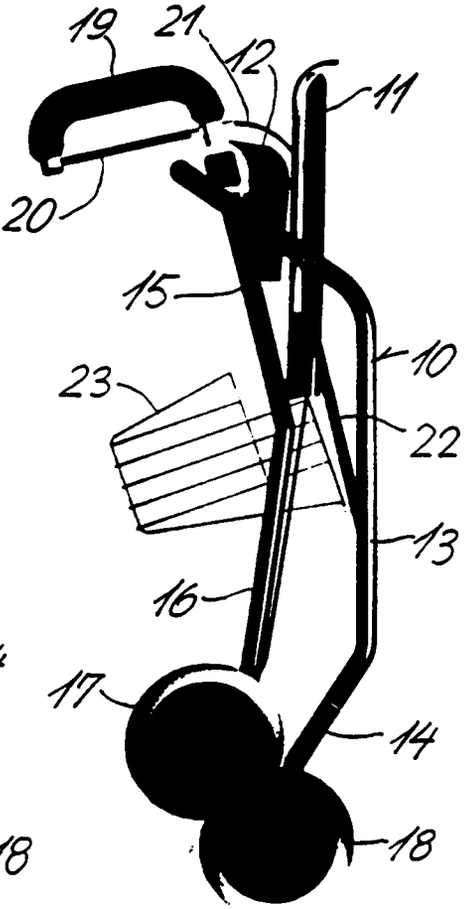


Fig. 3

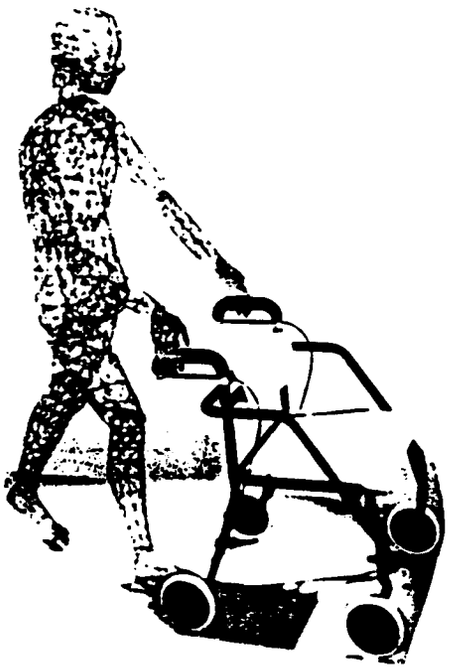


Fig. 4



Fig. 5

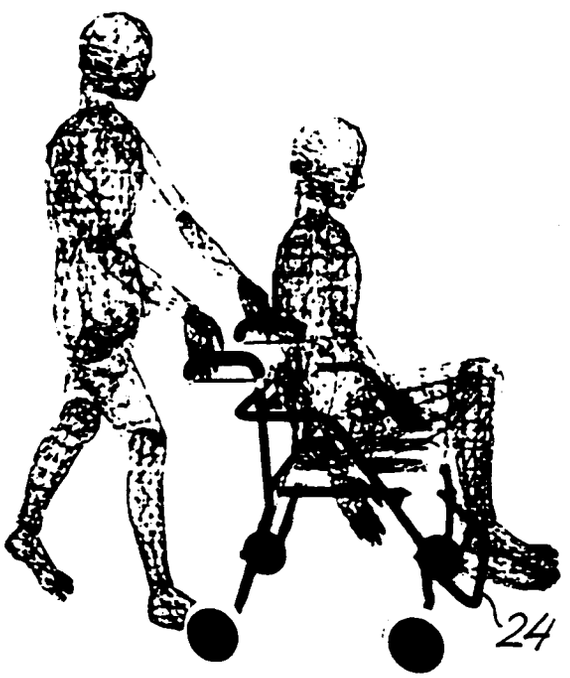


Fig. 6



Fig. 7

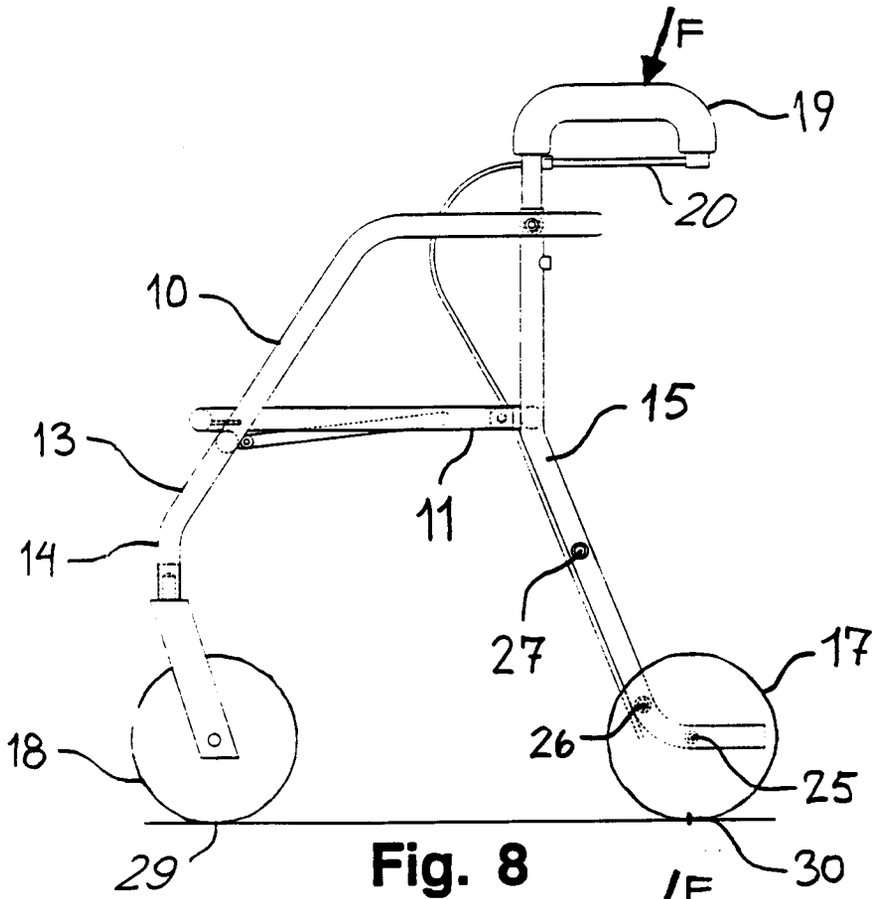

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Fig. 8

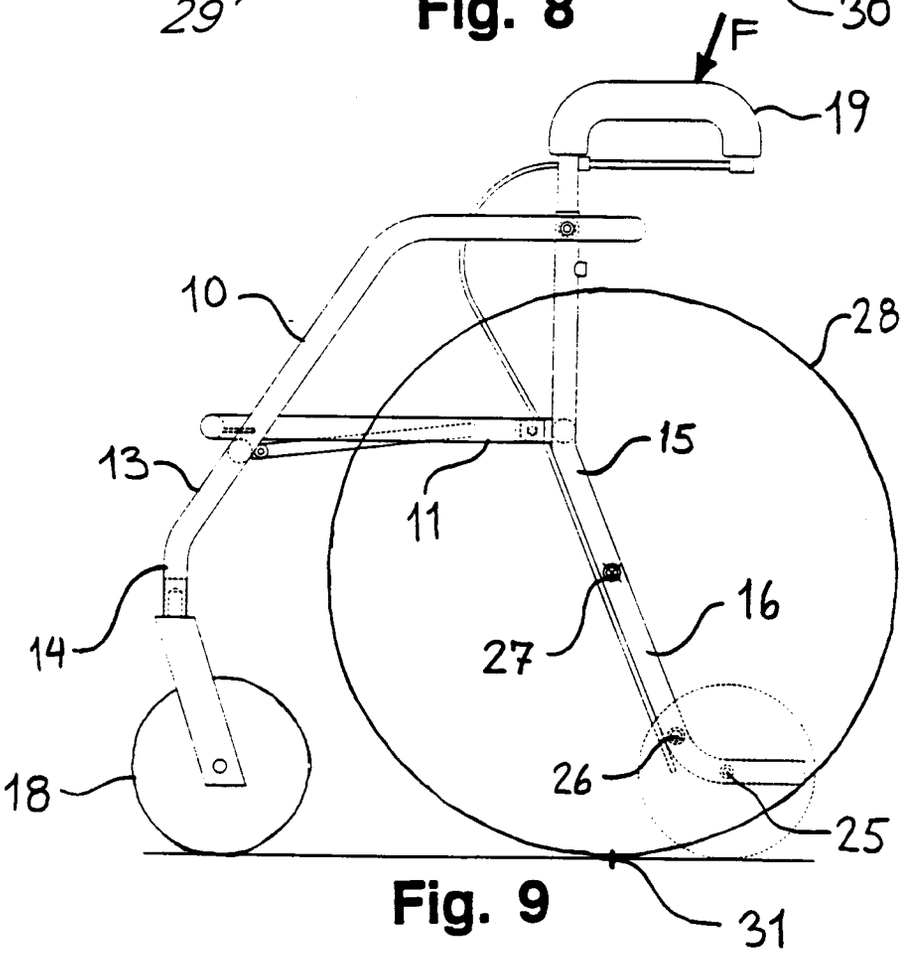

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Fig. 9

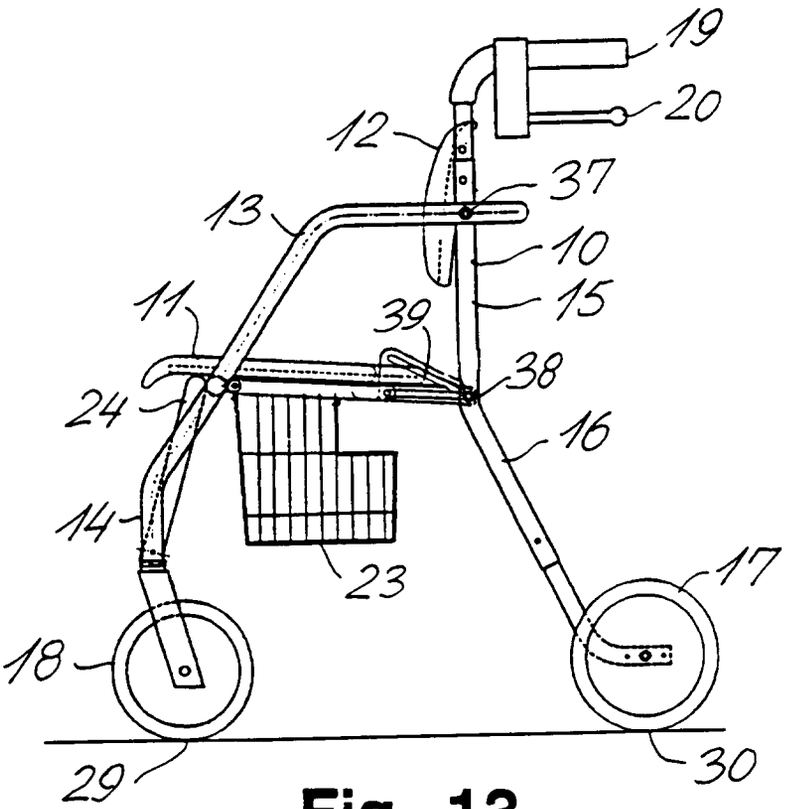

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Fig. 13

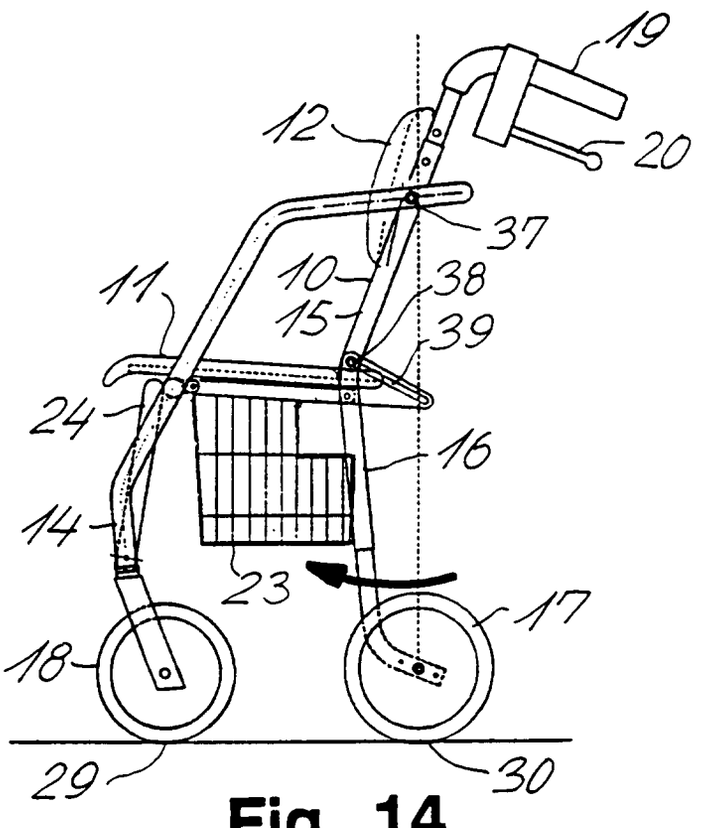

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Fig. 14

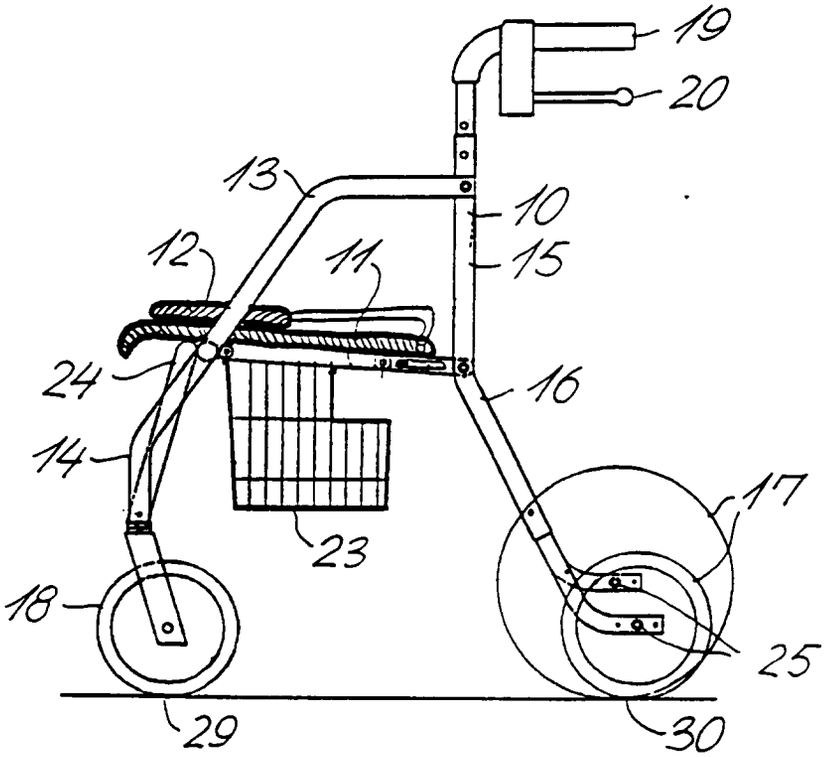

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Fig. 15

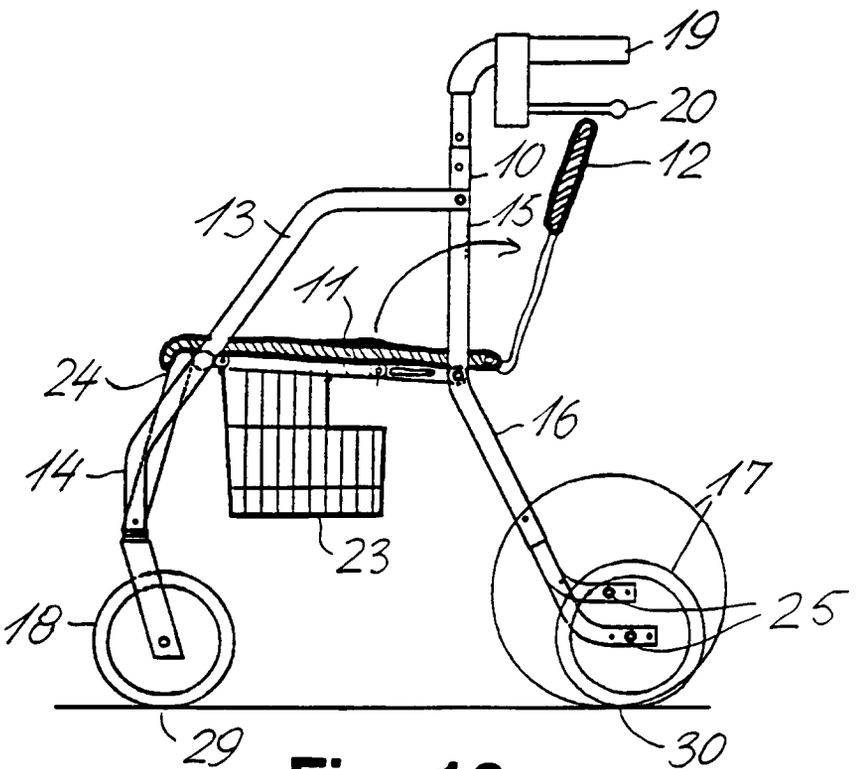

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Fig. 16

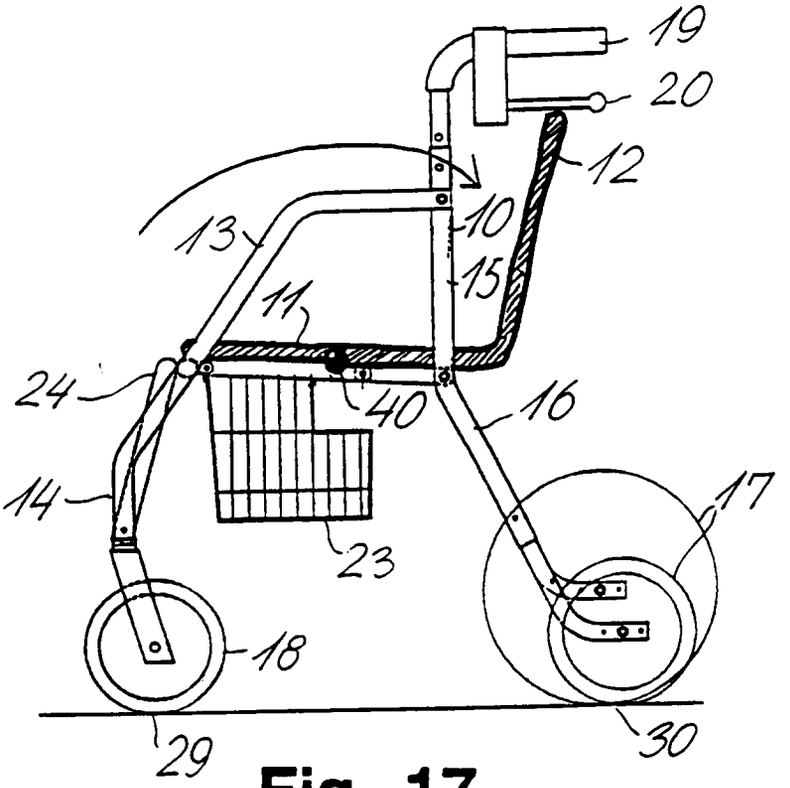

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Fig. 17

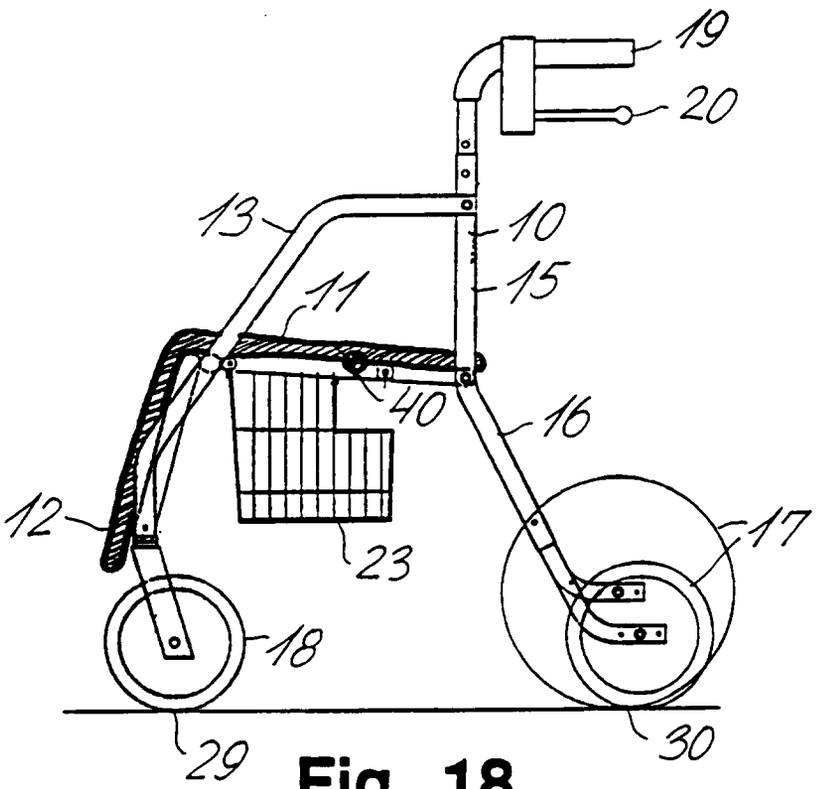

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Fig. 18

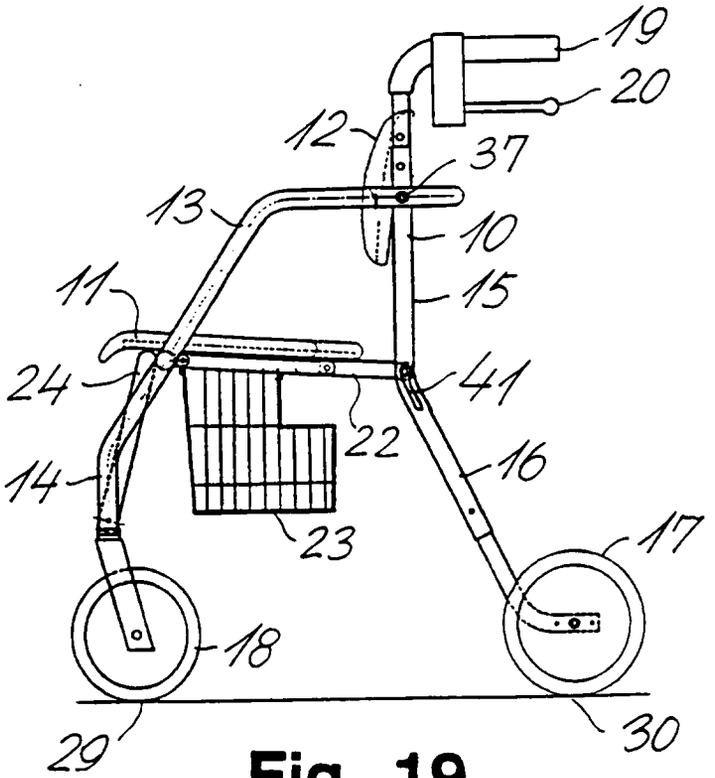

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Fig. 19

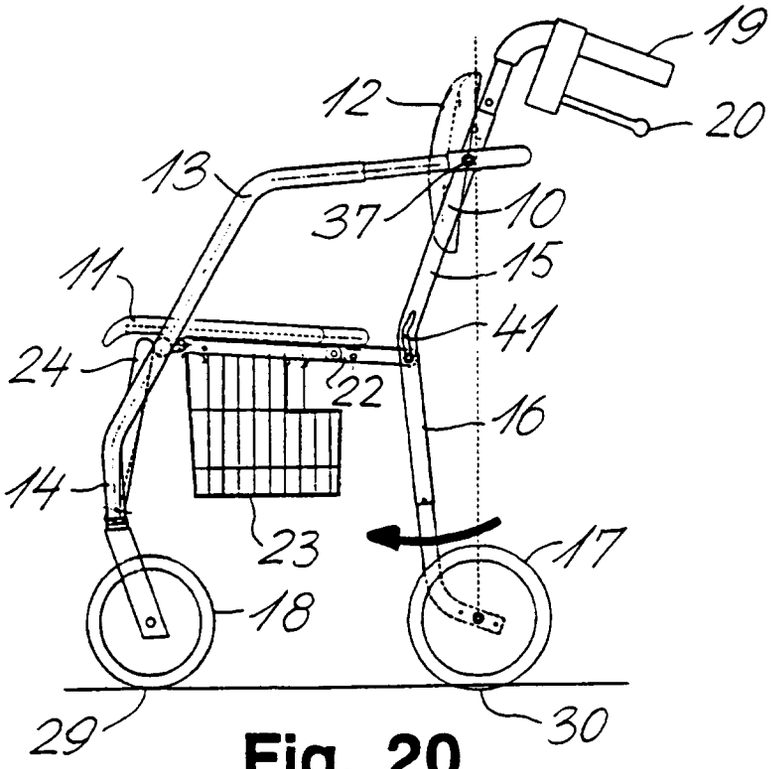

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Fig. 20

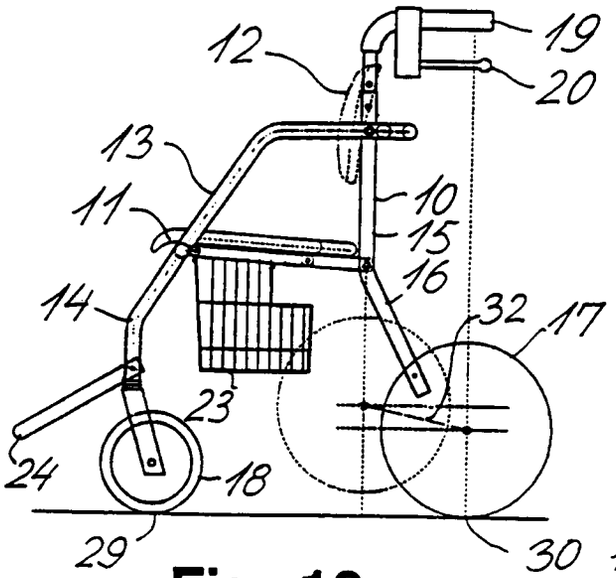


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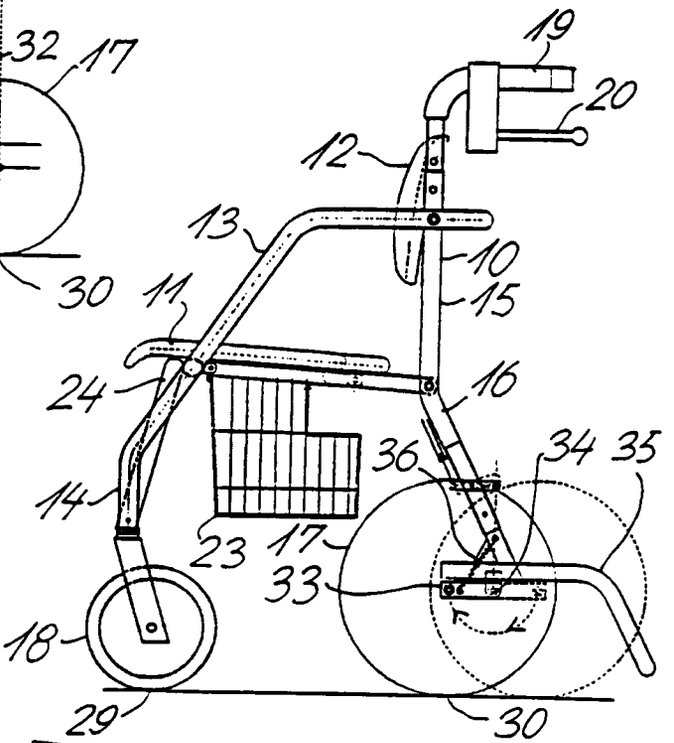


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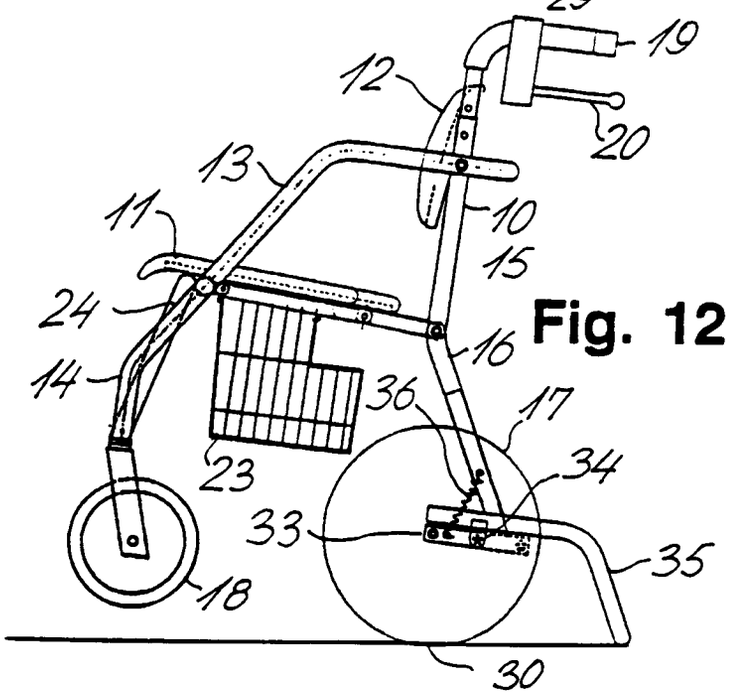


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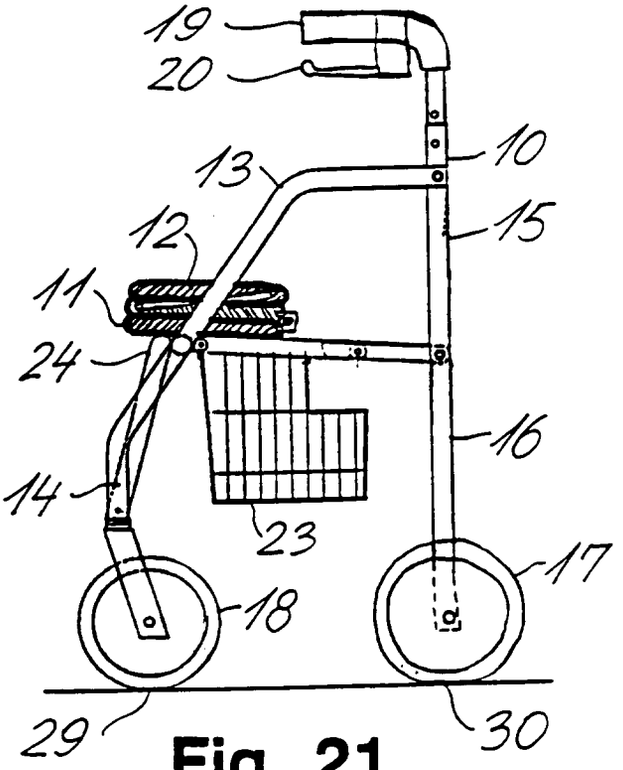

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Fig. 21

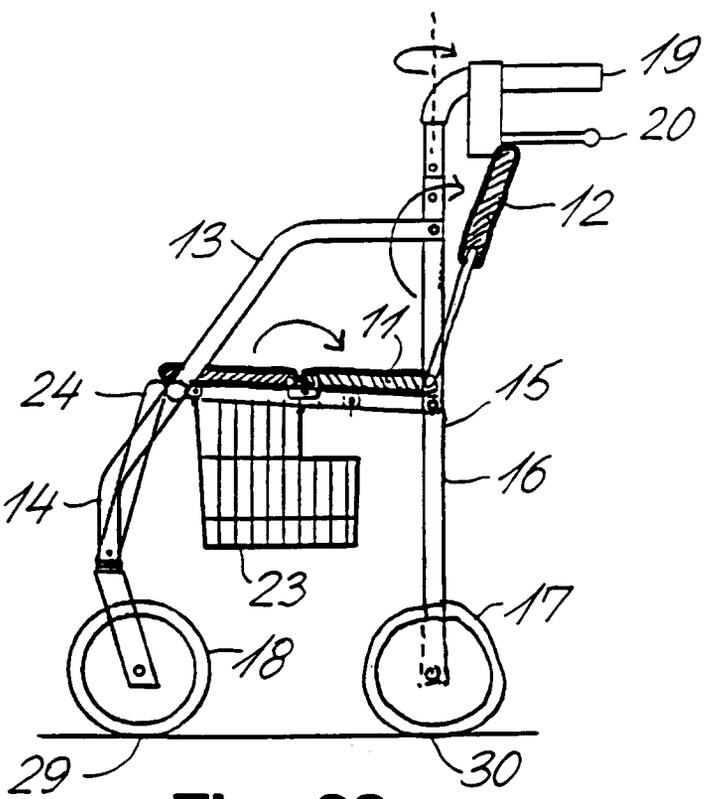

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Fig. 22