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(54) **WALKING FRAME**

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Description

[0001] This invention relates to a walking frame, especially for disabled persons.

[0002] A walking frame according to the preamble of claim 1 is known from EP-A-0 009 260.

[0003] According to the invention, there is provided a walking frame as defined in claim 1, comprising side frame parts bridged by at least one crosspiece, front and rear wheels, a rear seat, and braking means for preventing the frame from running rearwardly when a user grips the frame to assist movement from a seated position to a standing position, the rear seat being swingable to the side to allow wheelchair access into the frame from the rear.

[0004] The braking means act on the front wheels and the rear wheels.

[0005] A front wheel braking means acts on at least one front wheel. The frame has two front wheels, and this braking means comprises means for preventing rotation of at least one of the front wheels at least in the sense corresponding to rearward movement of the frame. Such means are a lever controlled brake for at least one front wheel, the lever being releasable after the user has stood up to enable forward movement of the frame.

[0006] Rear wheel braking means, additional to the front wheel braking means, are provided for preventing running of the frame when the user is seated. Such braking means acts on at least one rear wheel. The braking means are a spring loaded pressure brake linked to the seat.

This braking means is such that it is not released until the user has substantially completely lifted his or her body from the seat.

[0007] The wheels are preferably in the form of castors, preferably fixed front castors and swivelling rear castors.

[0008] The seat is swingable upwardly and over or laterally swingable, about a generally vertical axis, in order to provide rear access into the frame as aforesaid.

[0009] The seat may be adjustable in height, for example by means of a parallel linkage, a screwthreaded pillar or a gas strut.

[0010] The side parts of the frame preferably include supports for serving as forearm rests. At the front of the forearm supports hand grips may be provided to assist the user in lifting himself or herself into a standing position. Alternatively or additionally, a grab rail in the form of a front crosspiece at the top of the side parts of the frame may be provided for this purpose. The forearm rests and the grab rail or hand grips may also be adjustable in height, for example by means of one or more sliding or telescopic connections with the frame, and a locking device or clamp.

[0011] Means are provided for attachment of a carrier basket at the front. A permanent shopping basket may be incorporated at the front, for example to adapt the

frame into a shopping trolley for use by disabled persons at supermarkets and stores.

[0012] The frame, especially when not intended for use as a shopping trolley, may be arranged to be foldable, for example with a scissors action, or may be arranged to be collapsible side part to side part, to facilitate transport and storage, in which case the seat and/or basket may be detachably mounted to the frame.

[0013] The walking frame is further described with reference to the accompanying drawings, in which:-

Figure 1 shows a preferred embodiment of the walking frame in perspective view;

Figures 2 and 3 show alternative embodiments, also in perspective view;

Figures 4a and 4b illustrate the rear wheel braking means; and

Figure 5 illustrates the front wheel braking means.

[0014] Referring to Figure 1, the illustrated walking frame for disabled persons comprises two side frame parts 10, 12 linked by crosspieces 14, 16 at the front. At the rear the frame is bridged by a seat 18. When the seat 18 is folded up out of the way on a side hinge 18A, the back of the frame is open to enable a wheel-chair to be pushed forwardly into the frame. When the seat is folded down, it locks into position further to rigidify the frame.

[0015] The seat 18 is adjustable in height by means of a parallel linkage 19 and an associated release bar 19A.

[0016] The frame has front and rear castor-type wheels 20, 22. The front castors 20 are fixed against swivelling, but the rear castors 22 can swivel to enable steering of the frame around bends and corners. Braking means for the front and rear wheels are later described with reference to Figures 4 and 5.

[0017] The foldable seat 18 is actually mounted at the rear of an inclined subframe 24 carrying a front cross-bar which constitutes a grab rail 26 enabling the user more readily to move between sitting and standing positions. The grab rail 26 constitutes part of a telescopically extendable U-shaped section 28 of the subframe 24, which enables the grab rail to be adjusted in an inclined plane for reach relative to the seat 18. The section 28 fixes in position by means of releasable clamps 30, and also carries arm rests 32.

[0018] Foam rubber padding 34 covers the grab rail 26 and the rear part of the subframe 24 forward of the seat 18.

[0019] The upper crosspiece 14 of the main frame detachably carries a canvas basket 36.

[0020] A rear wheel braking means is illustrated in the simplified drawing of the walking frame shown in Figure 4a. The lower rear end of the main frame carries, on

both side parts 10, 12, a tubular part 38 housing a brake push rod 40 carrying a brake pad 42 for the swivelling rear wheel 22. The rod 40 is urged upwardly by a spring 44 (see Figure 4b). A brake adjusting screw 46 acting as a stop is provided at the top of the tubular part 38.

[0021] When a downward thrust is applied to the rear end of the main frame, as by the user sitting down on the seat 18, the brake push rod 40 is pressed down against the action of the spring 44 so that the brake pad 42 bears hard against the wheel 22. The spring 44 is selected and the adjusting screw 46 set so that the automatic brake is not released until the user has substantially completely lifted his or her body from the seat, i.e. the user is substantially fully standing with hands gripping the grab rail. Moreover, the walking frame should, in proper use thereof, still not be free to move due to the braking means employed at the front wheels, as shown in Figure 5.

[0022] The braking means at the front wheels 20 comprises a brake lever 48 acting through a sub-assembly 50 on brake push rods 52 having brake pads 54 acting on the front wheels 20. A brake adjuster in the form of a nut and spring 56 is incorporated.

[0023] When the user is seated, he or she uses the lever 48 to lock the front brakes on, and only releases the lever after standing up and being ready to walk forward.

[0024] An alternative embodiment of walking frame is shown in Figure 2, wherein the same reference numerals as in Figure 1 are employed for similar parts. In this embodiment, the side frame parts 10A, 12A are differently shaped, and interconnect at the rear by a releasable, hinged crosspiece 16 which carries the seat 18 on a gas strut 62 enabling height adjustment via a strut operating lever 64. The crosspiece 60 and with it the seat 18 are swung sideways out of the way to enable a wheel chair to be entered into the walking frame from the rear. A seat frame release lever is referenced 66.

[0025] This embodiment also differs from that of Figure 1 in that the grab rail frame 68 including arm rests 68A is adjustable for height and reach on a parallel linkage 70 lockable by a friction clamp 72. The grab rail and arm rests are covered with foam rubber padding.

[0026] Wire basket 36A optionally replaces the canvas basket of the embodiment of Figure 1.

[0027] A braking system similar to that hitherto described with reference to Figures 4 and 5 is preferably employed.

[0028] Figure 3 shows another possible embodiment of the walking frame in which the seat 18A, adjustable in height on a coarse screw thread 74, is carried by a rear-end subframe 76 which is hinged to swing sideways to allow rear access to the frame. A release lever for the subframe 70 is referenced 78.

[0029] The side frame parts 10B, 12B of the walking frame are again differently shaped, and arm rest supports 80, including arm rests 80A, are telescopically mounted for height and reach at the top of front columns

82 of the side frame parts 10B, 12B. The grab rail of preceding embodiments is replaced by hand grabs 80B on the supports 80. The supports 80 are lockable in a chosen position of adjustment by cam action clamps 84.

[0030] A rigid bin 36B of plastics material optionally replaces the canvas basket of the embodiment of Figure 1.

[0031] Again, a similar braking system to that described with reference to Figures 4 and 5 is preferably employed.

[0032] Various features taken from the individual embodiments of Figures 1 to 3 may be utilised in still further embodiments of the walking frame.

[0033] Additional features which may optionally be incorporated are:-

1) the ability to fold up the base of the seat against the seat back rest, for example to provide more front-to-back space for the user when walking;

2) the ability to completely detach the grab rail support (or arm rest/hand grab supports) and the seat, coupled with the provision of hinged crosspieces for the side parts of the frame, enabling the frame to be collapsed side part to side part, thereby to facilitate transport and storage of the frame when not in use;

3) the provision of a fifth wheel at the centre of the front of the frame; and

4) the provision of a counterweight at the back of the frame, more especially to prevent the frame from tipping forwardly if the user, when standing, leans on the grab rail or hand grabs.

Claims

1. A walking frame comprising side frame parts bridged (10, 12) by at least one crosspiece (14, 16), front and rear wheels (20, 22), a rear seat (18), and braking means for preventing the frame from running rearwardly when a user grips the frame to assist movement from a seated position to a standing position, wherein the rear seat (18) is swingable to the side to allow access into the frame from the rear, **characterised by** the provision of braking means acting on both the front wheels (20) and the rear wheels (22), the front wheel braking means comprising a lever controlled brake (48, 50, 52, 54) for preventing rotation of at least one of the front wheels at least in the sense corresponding to rearward movement of the frame, and the rear wheel braking means acting on at least one rear wheel and comprising a spring loaded pressure brake (38, 40, 42, 44) linked to the seat (18) to prevent running of the frame when the user is seated, and further **characterised by** a carrier means (36, 36A, 36B) mount-

ed on the front.

2. A walking frame according to claim 1, wherein the pressure brake is not released until the user has completely lifted his or her body from the seat. 5
3. A walking frame according to claim 1 or claim 2, wherein the wheels comprise fixed front castors (20) and swivelling rear castors (22). 10
4. A walking frame according to any of claims 1 to 3, wherein the seat is adjustable in height without affecting operability of the rear wheel braking means. 15
5. A walking frame according to any of claims 1 to 4, wherein the side parts of the frame include supports for serving as forearm rests (68A, 80A). 20
6. A walking frame according to claim 5, having either hand grips (80B) at the front of the forearm supports or a grab rail (26) in the form of a front crosspiece at the top of the side parts of the frame to assist the user in lifting himself or herself into a standing position from which the front wheel braking means is operable. 25
7. A walking frame according to either of claims 5 or 6, wherein the forearm rests and/or the grab rail are adjustable in height, the adjustment means comprising one or more sliding or telescopic connections with the frame, and a locking device or clamp (84). 30
8. A walking frame as claimed in any of claims 1 to 7 wherein the carrier means comprises a basket (36A) or bin (36B). 35

Patentansprüche

1. Rahmenförmige Gehhilfe mit durch mindestens ein Querstück (14, 16) überbrückten seitlichen Rahmenteil (10,12), mit Vorder- und Hinterrädern (20,22), und mit Bremsmitteln zum Verhindern eines nach hinten Rollens der Gehhilfe bei Ergreifen der Gehhilfe durch einen Benutzer zum Unterstützen einer Bewegung aus einer Sitzstellung in den Stand, wobei der rückwärtige Sitz (18) zum Ermöglichen eines Zugangs zur Gehhilfe von hinten zur Seite verschwenkbar ist, **gekennzeichnet durch** die Ausbildung von sowohl auf die Vorderräder (20) wie auch auf die Hinterräder (22) einwirkenden Bremsmitteln, wobei die Vorderradbremsmittel eine hebelgesteuerte Bremse (48, 50, 52, 54) zum Verhindern einer Drehung von mindestens einem der Vorderräder mindestens in der einer Rückwärtsbewegung der Gehhilfe entsprechenden Richtung aufweisen, und die Hinterradbremsmittel minde-

stens auf ein Hinterrad einwirken und eine mit dem Sitz (18) verbundene federbelastete Bremse (38,40,42,44) aufweisen zum Verhindern eines Rollens der Gehhilfe bei Sitzen des Benutzers und weiter **gekennzeichnet durch** an der Vorderseite befestigte Tragmittel (36, 36A, 36B).

2. Gehhilfe nach Anspruch 1, wobei die Druckbremse nicht gelöst wird bis der Benutzer oder die Benutzerin seinen oder ihren Körper vollständig aus dem Sitz erhoben hat.
3. Gehhilfe nach Anspruch 1 oder Anspruch 2, **dadurch gekennzeichnet, daß** die Räder feststehende vordere Laufrollen (20) und schwenkbare hintere Laufrollen (22) aufweisen.
4. Gehhilfe nach irgendeinem der Ansprüche 1 bis 3, wobei der Sitz ohne Beeinflussung der Betriebsfähigkeit der Hinterradbremsmittel in der Höhe verstellbar ist.
5. Gehhilfe nach irgendeinem der Ansprüche 1 bis 4, wobei die Seitenteile des Rahmens Stützen zum Ausbilden von Vorderarmauflagen (68A, 80A) aufweisen.
6. Gehhilfe nach Anspruch 5 mit entweder Handgriffen (80B) am vorderen Ende der Vorderarmauflagen oder einer Greifstange (26) in der Form eines vordern Querstückes am oberen Ende der Seitenteile der Gehhilfe zum Unterstützen des Benutzers bei seinem oder ihrem Erheben in eine Standstellung, von der aus das Vorderradbremsmittel betätigbar ist.
7. Gehhilfe nach irgendeinem der Ansprüche 5 oder 6, wobei die Vorderarmauflagen und/oder die Greifstange in der Höhe verstellbar sind und das Verstellmittel eine oder mehrere Gleit- oder Teleskopverbindungen mit der Gehhilfe und eine Klemmvorrichtung oder eine Klemme (84) aufweist.
8. Eine Gehhilfe wie in irgendeinem der Ansprüche 1 bis 7 beansprucht, wobei das Tragmittel einen Korb (36) oder Behälter (36B) aufweist.

Revendications

1. Déambulateur comprenant des parties latérales (10, 12) pontées par au moins une traverse (14, 16), des roues avant et arrière (20, 22), un siège arrière (18) et des moyens de freinage pour empêcher le déambulateur de rouler vers l'arrière lorsqu'un utilisateur saisit le déambulateur pour faciliter le mouvement entre une position assise et une position debout, dans lequel le siège arrière (18) peut pivoter

- vers le côté pour permettre l'accès dans le déambulateur par l'arrière, **caractérisé par** la mise en oeuvre des moyens de freinage agissant, à la fois, sur les roues avant (20) et les roues arrière (22), les moyens de freinage des roues avant comprenant un frein (48, 50, 52, 54) commandé par un levier pour empêcher la rotation d'au moins une des roues avant au moins dans le sens correspondant au mouvement arrière du déambulateur, et les moyens de freinage des roues arrière agissant sur au moins une roue arrière et comprenant un frein à pression (38, 40, 42, 44) sollicité par un ressort, associé au siège (18) pour empêcher le roulement du déambulateur lorsque l'utilisateur est assis, et **caractérisé par** ailleurs par un moyen de transport (36, 36A, 36B) monté à l'avant. 5
2. Déambulateur selon la revendication 1, dans lequel le frein à pression n'est pas libéré tant que l'utilisateur n'a pas complètement soulevé son corps du siège. 10 20
3. Déambulateur selon la revendication 1 ou 2, dans lequel les roues comprennent des roulettes avant fixes (20) et des roulettes arrière pivotantes (22). 25
4. Déambulateur selon l'une quelconque des revendications 1 à 3, dans lequel le siège est ajustable en hauteur sans affecter la capacité de fonctionnement des moyens de freinage des roues arrière. 30
5. Déambulateur selon l'une quelconque des revendications 1 à 4, dans lequel les parties latérales du déambulateur comprennent des supports pour servir comme repose-bras (68A, 80A) pour les avant-bras. 35
6. Déambulateur selon la revendication 5, ayant des prises (80B) pour les mains à l'avant des supports d'avant-bras ou une main courante (26) sous la forme d'une traverse avant au sommet des parties latérales du déambulateur pour aider l'utilisateur à se soulever pour adopter une position debout où les moyens de freinage des roues avant peuvent être commandés. 40 45
7. Déambulateur selon l'une quelconque des revendications 5 ou 6, dans lequel les repose-bras des avant-bras et/ou la main courante sont ajustables en hauteur, les moyens d'ajustement comprenant une ou plusieurs connexions de coulissement ou télescopiques avec le déambulateur, et un dispositif de blocage ou collier de serrage (84). 50
8. Déambulateur selon l'une quelconque des revendications 1 à 7, dans lequel le moyen de transport comprend un panier (36A) ou un coffre (36B). 55

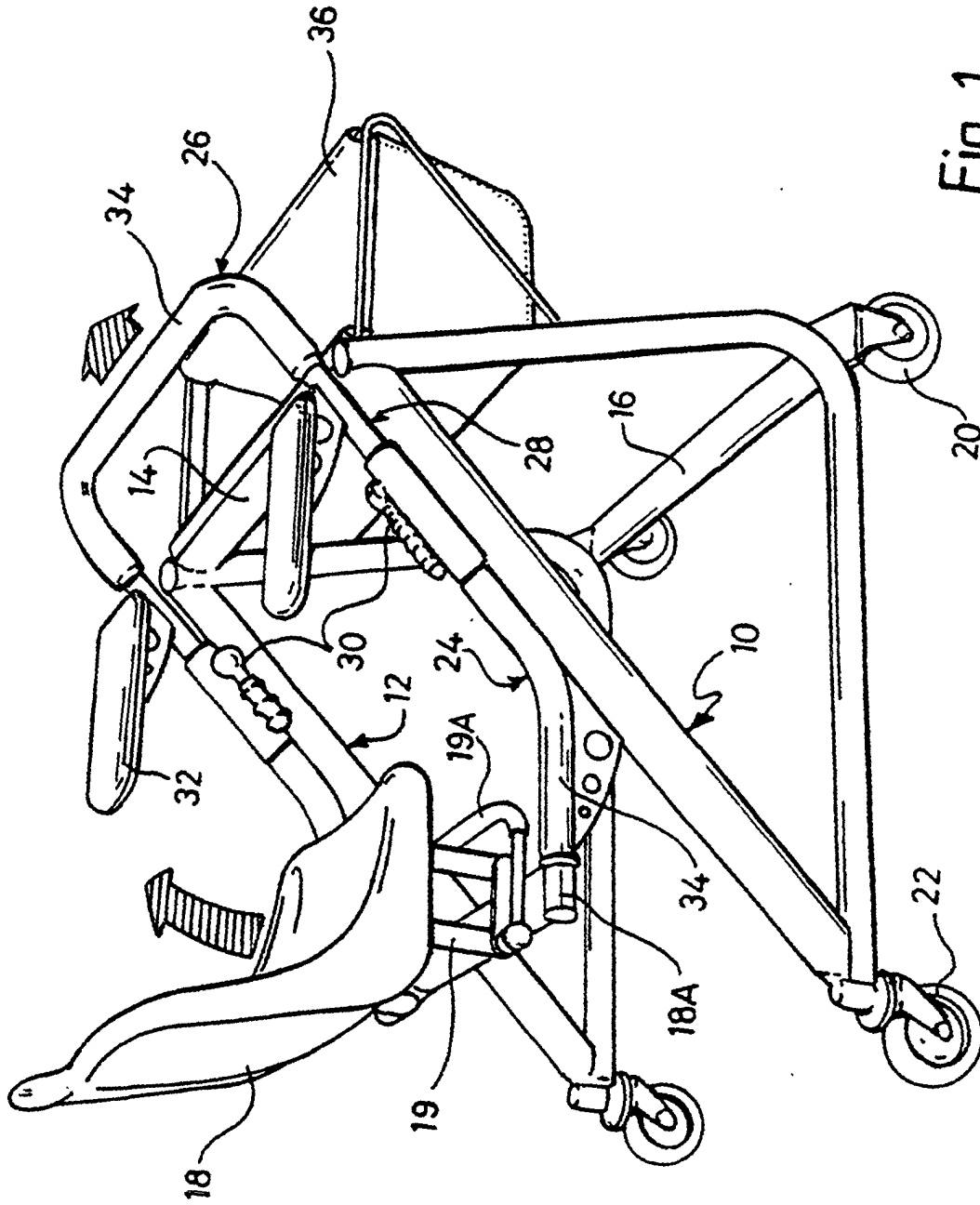


Fig. 1

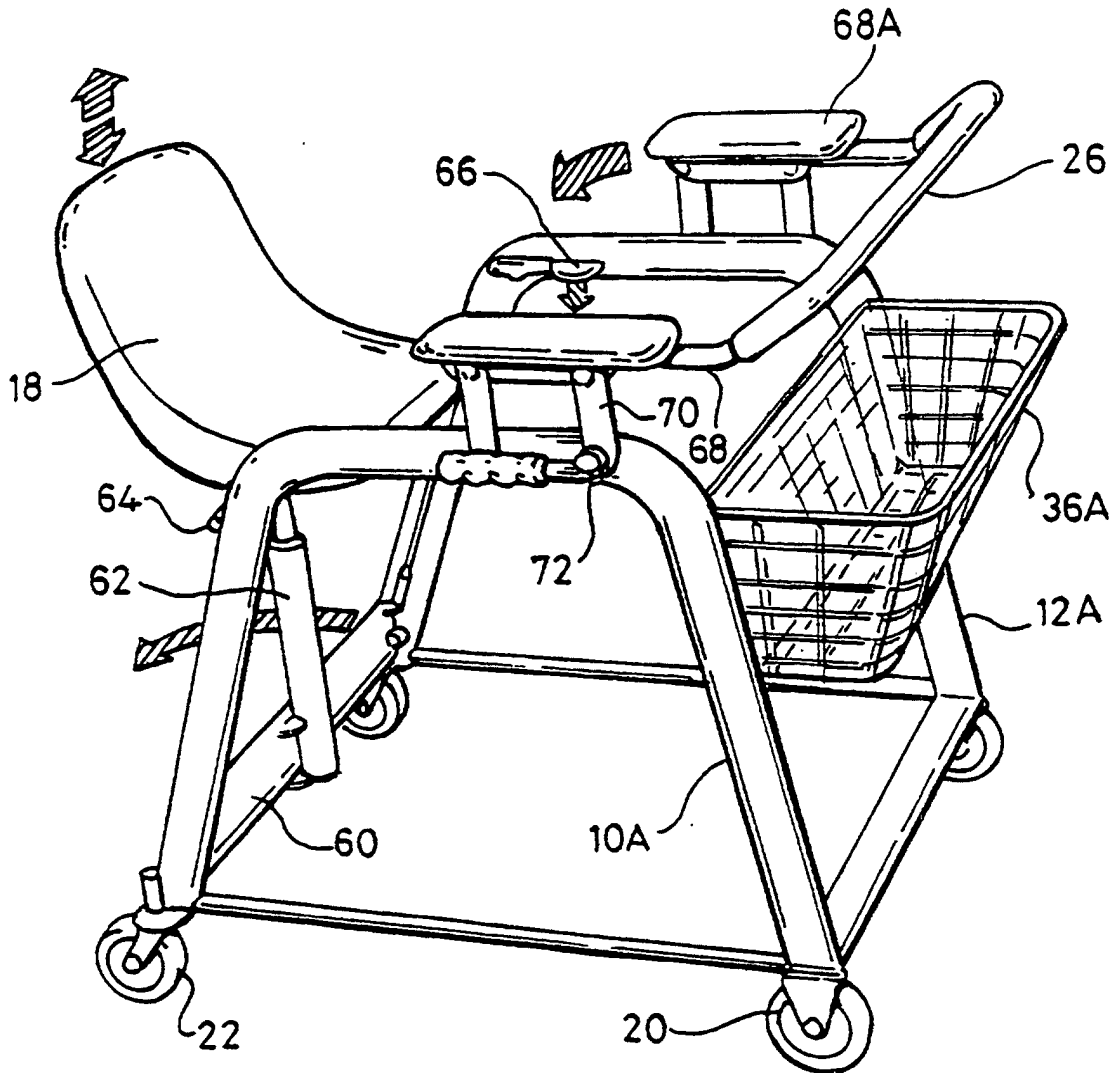


Fig. 2

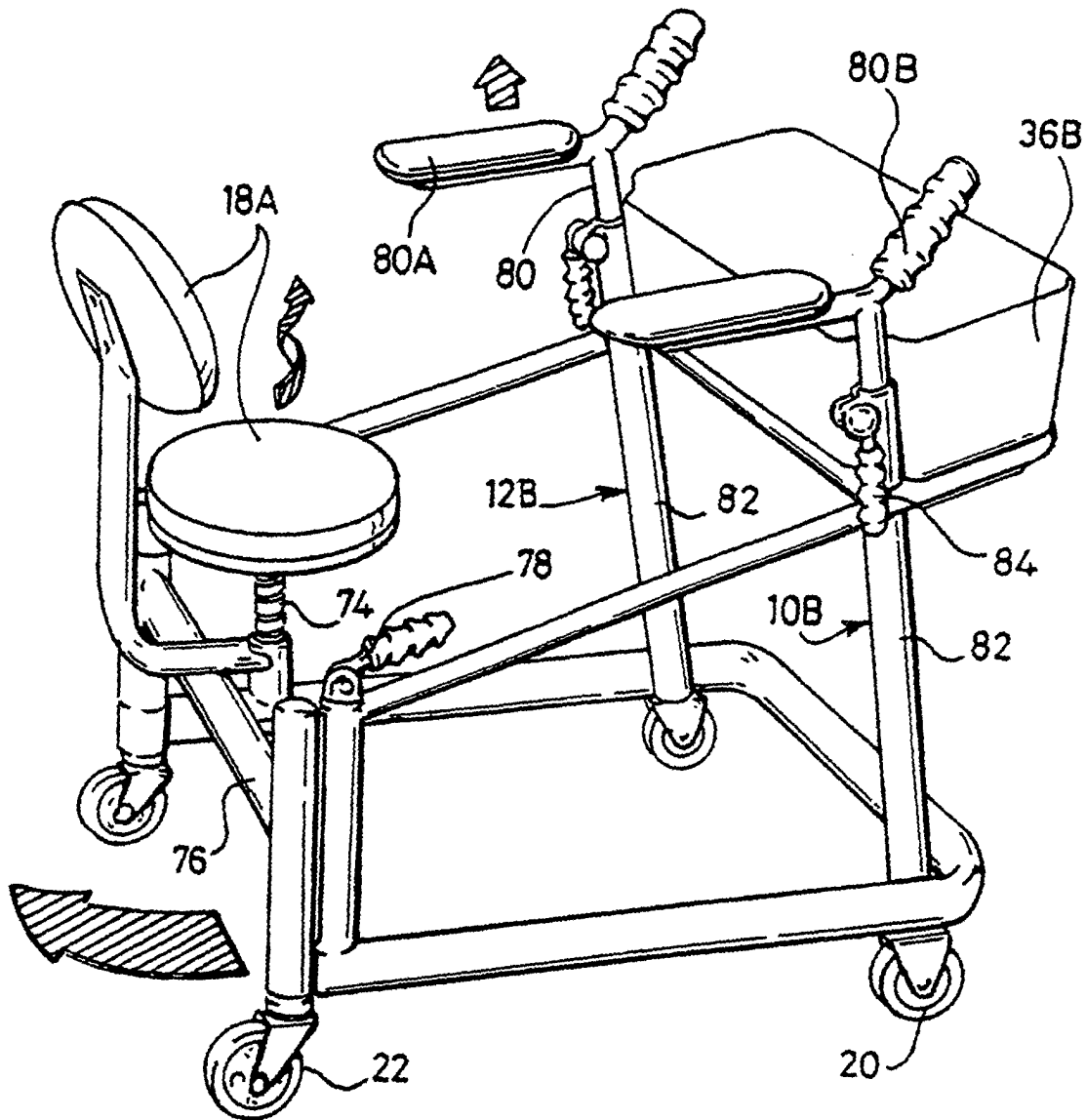
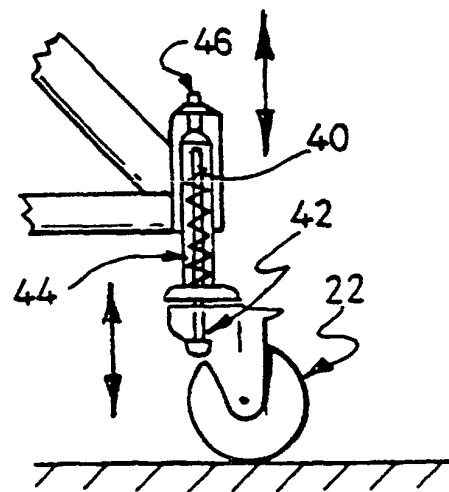
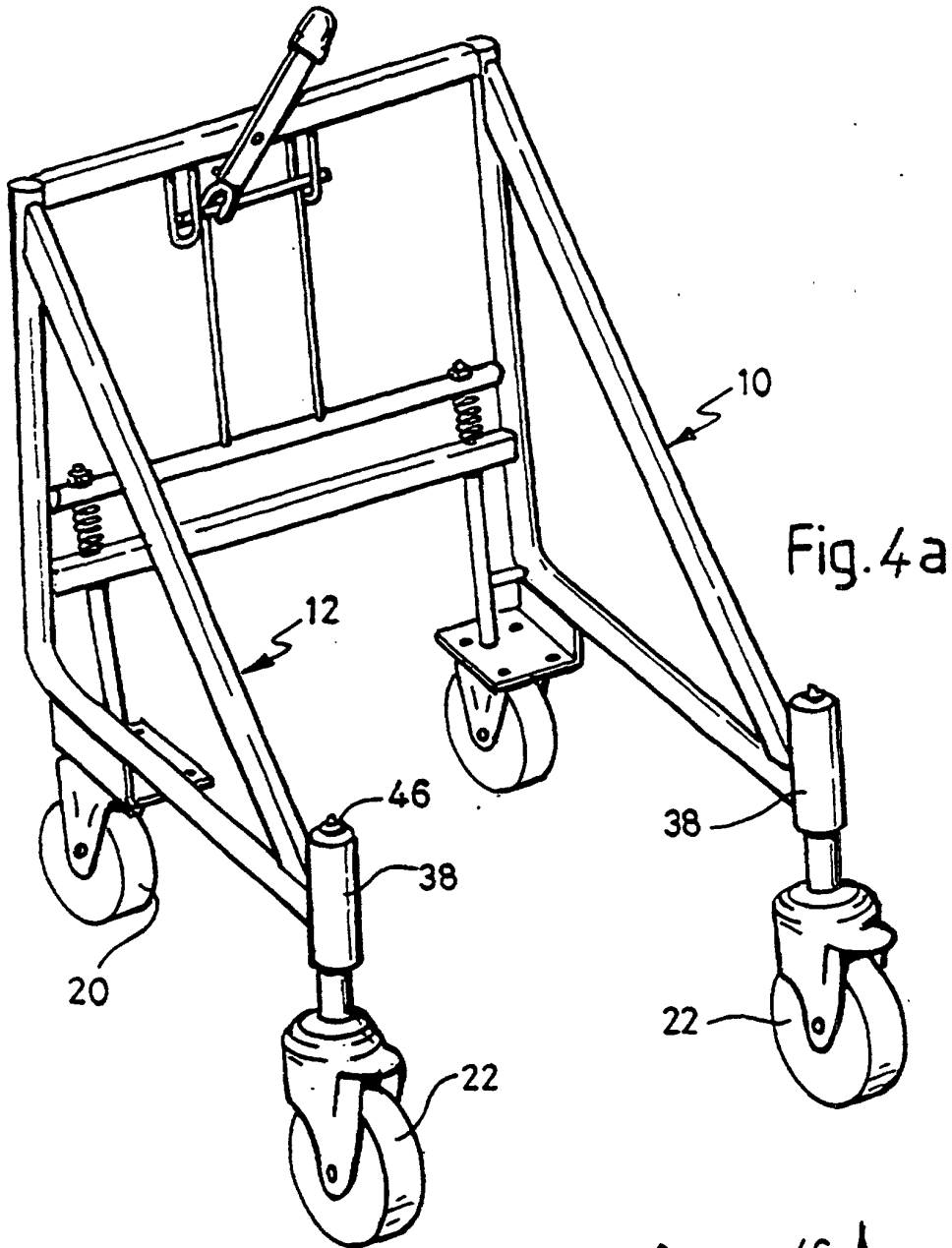


Fig. 3



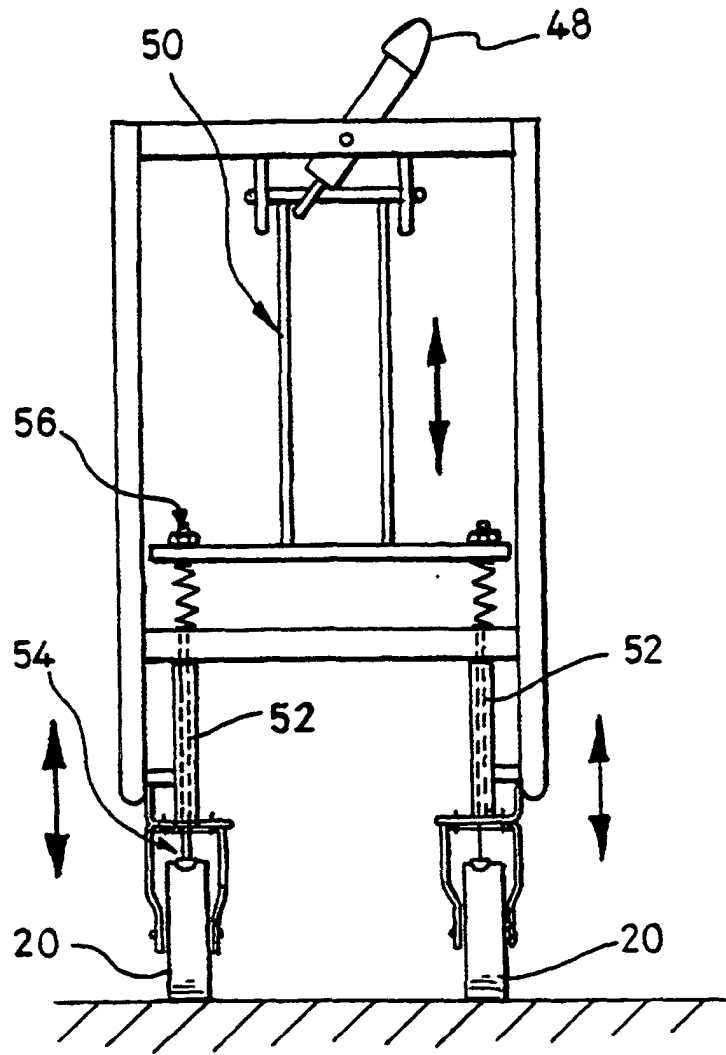


Fig. 5