

Jan. 21, 1969

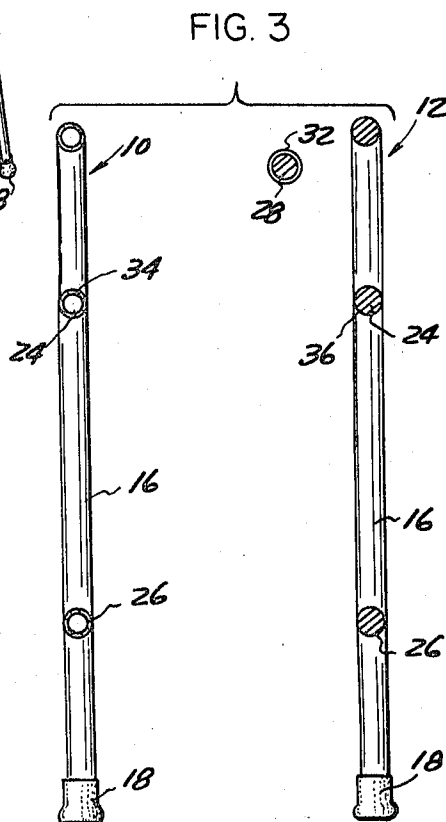
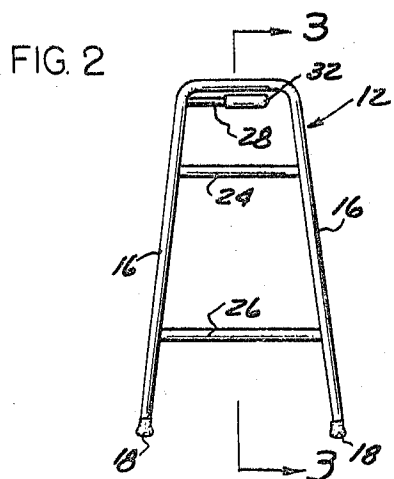
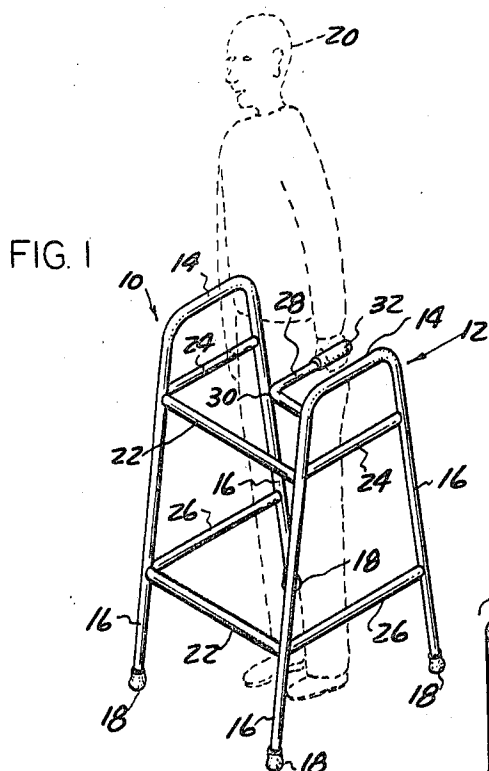
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3,422,830

WALKING DEVICE

Filed July 25, 1966

Sheet 1 of 2



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Sheet 2 of 2

FIG. 4

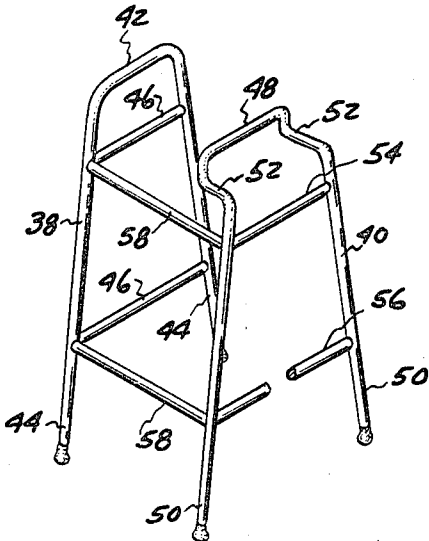
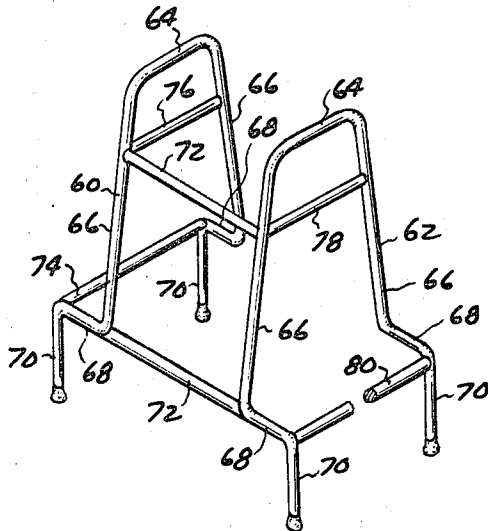


FIG. 5



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1

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WALKING DEVICE

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3 Claims

ABSTRACT OF THE DISCLOSURE

A self-supporting walking device having a hand grip mounted at the center of the balance of the device so that a user, having the use of only one hand, can alternately apply his weight on the hand grip to advance his body toward the hand grip and then lift the device by the hand grip to advance it in the direction of his travel.

This invention relates to walking devices and more specifically to a self-supporting walking device having a center of balance coincident with a single hand gripping section.

There are many walking devices in the prior art for providing ambulatory assistance to crippled persons. Generally the walking devices take the form of a self-supporting framework having a plurality of ground supported sections and which assist the user to ambulate by first lifting the walker and then advancing it forward. However, walkers of this general type require that the user grasp opposite sides of the walker with each hand. Thus walkers of this type are useful to a user having both of his hands enjoying their natural capability, but they are useless to a user disabled along a lateral side of his body, such as a person afflicted with hemiplegia. A person having a disability of this character with only the use of one hand, upon grasping one of the hand gripping sections of the conventional walking devices, is unable to manipulate the device because of the torque set up by the unbalanced sections of the frame.

It is the broad purpose of the present invention to provide a walking device which may be manipulated by grasping and lifting a single hand hold section associated with the walking device. This broad purpose is achieved by providing a frame having a center of balance substantially coincident with the single hand hold section. The preferred embodiment of the present invention, which will be subsequently described in detail, takes the form of a pair of spaced apart framing sections having a generally U-shaped configuration including a bight section and downwardly directed leg sections, each of which terminates in a ground supported end section. The U-shaped frame sections are joined along a common side preferably by a plurality of horizontal connecting sections to provide a self supporting frame work.

The side opposite the connecting sections provides an opening permitting access between the frame sections. A hand hold section is fixed to the upper portion of one of the frame sections and between the two frame sections. Each of the frame sections is constructed so that their combined weight establishes a center of balance which is substantially coincident with the hand hold section. In a preferred embodiment, this balanced construction is achieved by forming the frame section associated with the hand hold section of a bar stock, and the opposite frame section of a tubular stock.

2

It is therefore an object of the present invention to provide a self supporting walking device which may be manipulated by an effort applied upon a single hand hold section by providing a walking device of this character comprising a self-supporting frame and a hand hold section fixed to the frame and coincident with the other of balance of the frame.

It is another object of the present invention to provide a walking device of the type characterized by a balanced self supporting frame which is lifted from a first position and then advanced to a second position and wherein the lifting effort is applied to a single hand hold section by providing a self-supporting frame including a pair of spaced apart frame sections, joined along a common side to provide a self-supporting framework and open along another side to permit access to the frame sections, a hand gripping section fixed to one of the frame sections and between the frame sections and wherein one of the frame sections has a weight sufficiently in excess of the weight of the other frame section so that the two frame sections combine to establish a center of balance substantially corresponding with the hand hold section.

Still other objects and advantages will be apparent to those skilled in the art to which the invention pertains upon reference to the following detailed description and the accompanying drawings wherein like reference characters refer to like parts throughout the several views and in which

FIG. 1 is a perspective view of a walking device illustrating a preferred embodiment of the present invention;

FIG. 2 is an elevational side view of the preferred walking device;

FIG. 3 is a sectional view taken along line 3—3 of FIG. 2;

FIG. 4 illustrates an alternative form of the present invention wherein the hand gripping section forms an integral extension of one of the frame sections; and

FIG. 5 illustrates still another embodiment of the invention.

Now referring to the drawings, FIG. 1 illustrates a preferred walking device which includes a first frame section and a second frame section generally indicated at 10 and 12 respectively. The frame sections 10 and 12 preferably have a similar configuration, each of which includes an elongated member formed into a generally U-shaped cross section including a bight section 14 and downwardly depending leg elements 16. The lower ends of each leg element 16 carries a ground-engaging leg tip 18.

The bight sections 14 preferably are formed at a common height generally corresponding to the hip height of a user indicated in phantom at 20.

The first frame section 10 is spaced from the second frame section 12 and joined thereto along their common side by a pair of elongated horizontal connecting members 22. The connecting members 22 have a length sufficient to provide a space between the first frame section 10 and the second frame section 12 sufficient to accommodate the user 20. The opposite common side of the first and second frame sections 10 and 12 is open to permit access for the user 20 between the frame sections.

The frame section 10 is reinforced by an elongated upper horizontal brace member 24 and a lower horizontal brace member 26 which connect its legs 16.

The frame section 12 is reinforced by an upper brace member 25 and a lower brace member 27 which connect its legs.

An elongated hand hold section 28 preferably has one end fixed to the second frame section 12 adjacent the bight 14 and extends normally thereto toward the opposite frame section and then is sharply bent as at 30 to extend toward the frame opening and generally parallel to the plane formed by the frame section 12. Preferably a plastic hand grip 32 is provided for the free end of the hand hold section 28. The hand hold section 28 is spaced from the bight 14 of the section frame 12 a distance sufficient for the user 20 to impose a gripping effort thereon.

The second frame section 12 has a weight sufficiently in excess of the weight of the first frame section 10 so that the center of balance of the preferred walking device is established coincident with the hand hold section 28. This balanced construction is achieved as is illustrated in FIG. 3, by forming the first frame section 10 of a tubular material as at 34 and forming the second frame section 12 of bar stock or nontubular material as at 36. It is to be understood of course that this balanced construction may be achieved by constructing the first frame section 10 of a light weight material such as aluminum and the second frame section 12 of a material having a greater unit weight such as steel, the only limitations being that the framework provide adequate support for the weight of the user 20. It would be obvious to provide the first frame section 10 and the second frame section 12 with a similar configuration and achieve a balanced structure by adding an additional weighting member (not shown) to the second frame section 12 in order that the combined weight of the elements of the walking device provides a zero net torque about the hand hold section 28. It is to be understood of course that the hand hold section 28 is fixed to the frame section associated with the good side of the user 20 and that the walking device is balanced accordingly.

In operation, the user 20 grips the hand hold section 28 with his good hand, lifts the walking device while advancing it from a first position to a second position. Then by shifting his weight from his leg to the walking device the user advances his body in the direction defined by the movement of the walking device.

The legs tips 18 are adapted to accommodate either a smooth or an irregular ground surface. If the surface is regular and smooth, the leg tips have a stainless steel construction permitting the user to glide the walking device over the ground surface. If the ground surface is irregular, the leg tips 18 are preferably formed of a skid proof rubber composition.

FIG. 4 shows an alternative form of walking device illustrating the invention and includes a pair of spaced apart substantially U-shaped frame sections 38 and 40. The frame section 38 includes a bight section 42 and downwardly directed legs 44. The legs 44 are joined by braces 46.

The opposite frame section 40 includes a bight section 48 joined to a pair of downwardly directed leg sections 50 by short inwardly directed shoulder sections 52. The shoulder section 52 support the bight section 48 in a direction toward the frame section 42 as illustrated.

Brace members 54 and 56 join the leg sections 50. Preferably the lower brace 56 is formed of a bar stock having a different unit weight which will be subsequently described.

The frame sections 38 and 40 are spaced apart and interconnected along a common side by brace members 58. Brace members 58 have a length sufficient to permit access between the frame sections through the opening defined in the side opposite the brace members.

It is to be understood that the user will normally grasp the bight section 48 with his good hand to advance the walking device. The weight of the brace 56 is sufficient that when combined with the distance the legs 50 carrying

the brace 56 are offset from the bight 48, a torque is established about the bight 48 sufficient to counter-balance the resisting moments of the other frame section when the walking device is suspended off the ground.

FIG. 5 shows a further embodiment of the present invention comprising a pair of similarly shaped frame sections 60 and 62. Each of the frame sections 60 and 62 have a generally U-shaped configuration including a bight section 64 and downwardly directed leg sections or legs 66. Each of the leg sections 66 terminates at short laterally outwardly extending shoulder sections 68. Each shoulder section 68 is supported by a short ground-supported end section 70.

Frame sections 60 and 62 are spaced apart and interconnected along a common side by braces 72. Braces 72 have a length sufficient to define a space between the frame sections sufficient to accommodate a user.

The legs 66 of frame section 60 are preferably interconnected by tubular brace elements 74 and 76. The legs 66 of frame section 62 are preferably joined by a tubular brace element 78 and the shoulders 68 are joined by a brace 80. The brace 80 is preferably formed of a bar stock having a unit weight stock having a unit weight sufficient such that the weight of the brace 80 when combined with the distance the brace is offset from the bight 64 of the frame section 62 establishes a torque sufficient to counterbalance the weight of the frame section 60 about the bight 64 of frame section 62.

Thus in the embodiment of the invention illustrated in FIG. 5, the user grips the bight 64 of frame section 62 and lifts the walking device to advance it to a new position. The balanced construction ensures that the suspended frame sections maintain identical relative positions with respect to the ground.

It is to be understood that although I have described several embodiments of this present invention, that various changes and modifications could be made therein without departing from the spirit of the invention or the scope of the appended claims.

Having described my invention, I claim:

1. A walking device for providing walking support for a user having the use of only one hand; comprising:

(a) a frame formed of first and second generally U-shaped frame sections, each having a bight connecting a pair of downwardly directed legs, the bight of the first frame section being bent with respect to its legs to form a hand-grip, brace means rigidly connecting the first and second frame sections together to form a self-supporting structure with the hand grip extending from the first frame section toward the second frame section, and means balancing said frame about said hand grip, and so that the user can rest his weight on the hand grip to advance his body relative to the frame; and then raise the frame by a lifting effort applied solely at the hand grip with the frame maintaining a substantially constant orientation with respect to the user as it is raised.

2. A walking device useful in providing walking support for a user having a disability on one lateral side of his body, comprising:

(a) a first frame section having a U-shaped configuration including a bight section joining downwardly legs;

(b) a second frame section having a U-shaped configuration including a bight section joining downwardly directed legs, said second frame section having a weight different from the weight of said first frame section;

(c) brace means joining a leg of said first frame section to a leg of said second frame section so that the frame sections are spaced to form a self-supporting structure with the unjoined legs of said frame sections providing an opening between the frame sections for the user;

5

- (d) a hand-hold section; and
- (e) structure connecting said hand-hold section to the bight of one of said frame sections so that said hand-hold section is at the center of balance of the two frame sections.

3. The invention as defined in claim 2 wherein said hand-hold section includes an elongated section extending normally from said first frame section and a handle section directed towards said opening and in spaced, parallel relationship to said first frame section.

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