United States Patent

Schneider

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[54] **FOLDABLE INVALID WALKER CONVERTIBLE FROM FIXED TO SWINGABLE WALKER**

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[52] **U.S. Cl.** .....**272/70.3**, 135/45 A

[51] **Int. Cl.** **A61h 3/00**

[58] **Field of Search** .....272/70.3, 70.4; 297/5, 6; 135/45 A

[56] **References Cited**

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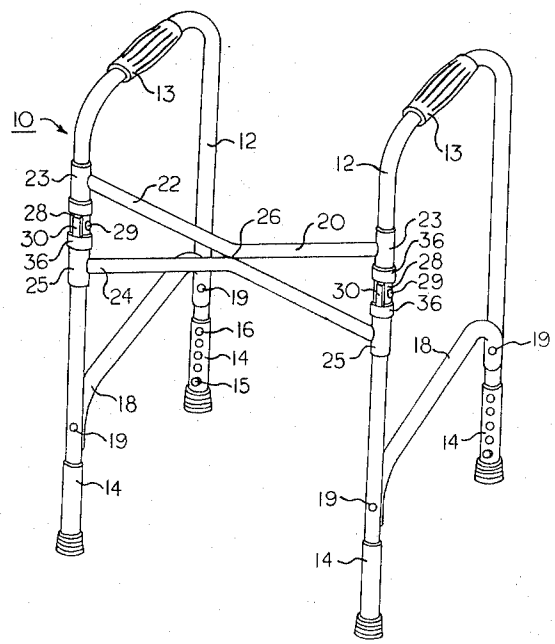
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[57] **ABSTRACT**

A foldable invalid walker is provided with a pair of locking keys each of which is mounted within a leg of the walker for movement into either a narrow slot for use of the walker as a fixed walker, or into a wide slot for use of the walker as a swingable striding walker. When the keys are positioned in their respective narrow slots, the associated legs are held against relative movement with respect to the rest of the walker. When the keys are positioned in their respective wide slots, the associated legs are pivotally mounted to the rest of the walker, thus converting the walker to a swingable walker. The walker can further be folded for storage.

10 Claims, 6 Drawing Figures



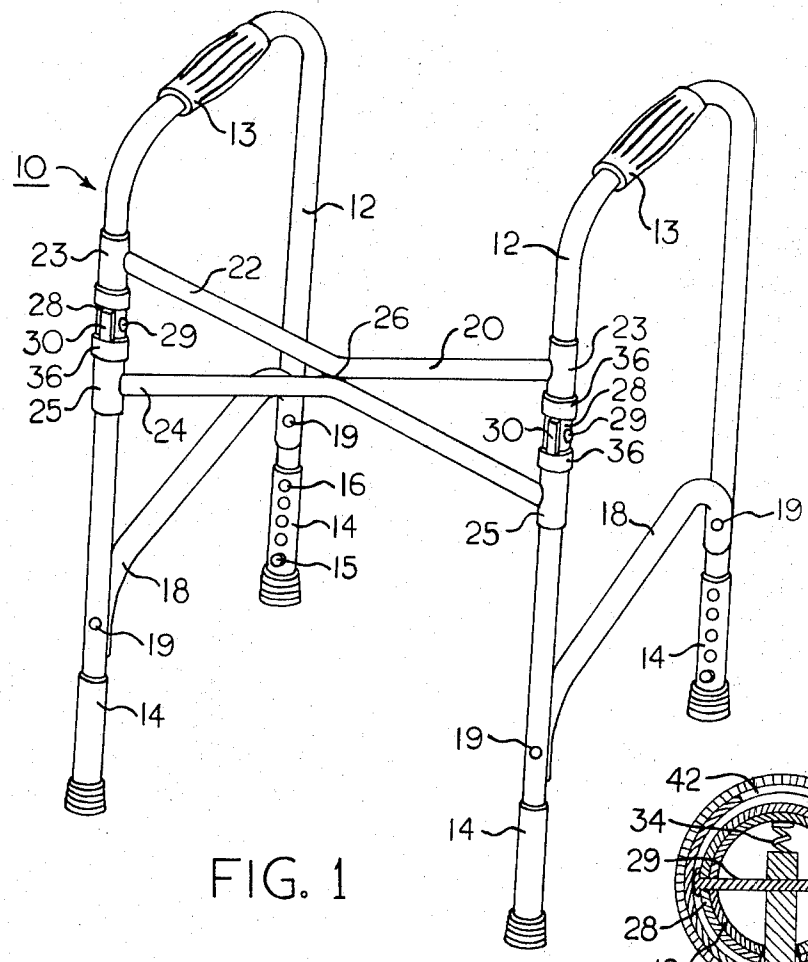


FIG. 1

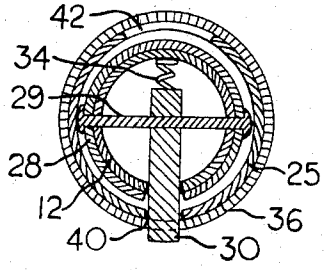


FIG. 5

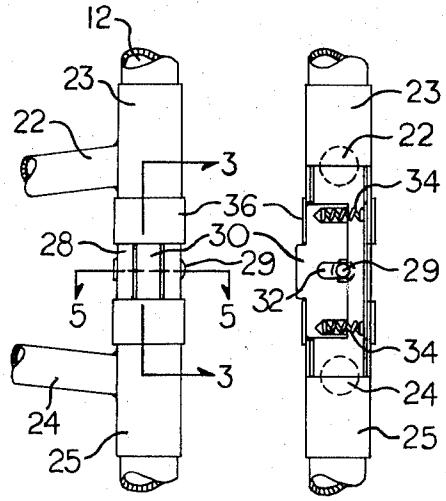


FIG. 2

FIG. 3

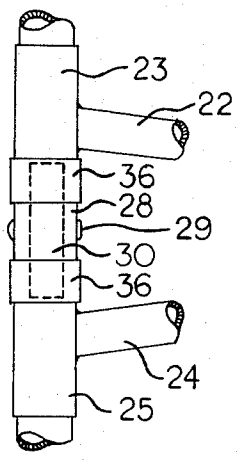


FIG. 4

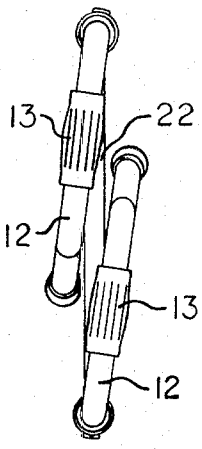


FIG. 6

FOLDABLE INVALID WALKER CONVERTIBLE FROM FIXED TO SWINGABLE WALKER

BACKGROUND OF THE INVENTION

This invention relates to a foldable invalid walker, and more particularly to a foldable invalid walker that is selectively operable as a fixed walker or as a swingable walker.

Foldable invalid walkers are now well established in the hospital supply art; although the folding means of prior art walkers are generally more complex than desirable. Most prior art foldable walkers are of the fixed type, wherein the spaced legs and the cross braces are fixed in relation to one another during use of the walker; although the prior art means for locking the members to assure the fixed relationship generally provide less than the desired degree of stability. Swingable walkers permit the spaced legs to be alternately advanced as the patient seeks to regain his normal walking motion; although prior art swingable walkers generally employ massive braces to limit the advancement of the leg members.

It is an object of this invention to provide a foldable invalid walker that is selectively usable as both a fixed walker and as a swingable walker. Another object is the provision of a walker having unitary simple means for folding the walker and for converting the walker to either fixed or swingable use. A further object is the provision of unitary means for alternately establishing stability for a fixed walker and for establishing limits for a swingable walker and for establishing compactness for a folding walker.

SUMMARY OF THE INVENTION

In accordance with this invention a foldable invalid walker capable of use as both a fixed and swingable walker is provided by unitary locking means having an unlocked position for folding the walker, a locked position for stabilizing the walker as a fixed walker, and another locked position for limiting the movement of the legs of the walker as a swingable walker.

In general, the walker of this invention employs a spring urged key mounted within a leg of the walker for movement into either a narrow slot for use as a fixed walker, or into a wide slot for use as a swingable walker. Whenever the key is not within either the narrow slot or the wide slot, the legs of the walker can be folded against the cross-brace for compact storage.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of the walker of this invention;

FIG. 2 is a fragmentary view of one of the legs of the walker of FIG. 1;

FIG. 3 is a fragmentary view partially in section along the line 3—3 of FIG. 2;

FIG. 4 is a fragmentary view of the structure of FIG. 2 in another locked position;

FIG. 5 is a fragmentary cross section in expanded form taken along the line 5—5 of FIG. 2; and

FIG. 6 is a top view of the walker of FIG. 1 in folded position.

DESCRIPTION OF THE INVENTION

The drawing shows the walker **10** of this invention having a pair of substantially U-shaped leg members **12** joined by cross-brace **20**.

Each of the legs **12** has adjustable feet **14** at both of its ends. A spring urged button **15** secured near the bottom of each leg **12** is selectively engaged in one of spaced holes **16** in foot **14** according to the height of the user of the walker **10** of this invention. Each of feet **14** has a conventional non-slip cap, preferably of rubber or other material acceptable to the hospital supply art, covering the ends of feet **14**.

Legs **12** are preferably of one inch anodized aluminum tubing to provide strength at low weight. The legs **12** are substantially U-shaped, and are slightly more spaced at the feet **14** than at the bight portion at hand grips **13**. The grips **13** are slotted or knurled in conventional manner to prevent the user from losing his gripping position while shifting his weight during use of the walker. The grips **13** are secured by rubber cement or the like at the generally flat portion of the bight or bottom of the U.

The U-shape of legs **12** is maintained by stretchers **18** which are secured to legs **12** about three-quarters of the distance from grips **13** to feet **14**. Stretchers or braces **18** are also preferably of anodized aluminum tubing which is flattened at its ends and half rounded to snugly engage legs **12** and impart rigidity thereto. The stretchers **18** are secured to legs **12** by steel rivets **19** or other known securing means.

Cross-brace **20** as shown is made up of two broad V-shaped members **22** and **24** joined at their mid-point **26**. Members **22** and **24** are preferably of chrome plated steel tubes for strength. The use of steel also facilitates making connections thereto, such as the joint **26**, by welding. The inverted V-shape of member **24** provides cross-brace **20** with a design that is convenient for use over a standard height toilet.

The ends of brace members **22** and **24** are joined to tubular bearing sleeves **23** and **25**, respectively. Again, the use of steel permits welding the members to the sleeves; however, other known metal working joints may be used with other metals if desired. Cross-brace **20** is positioned on legs **12** by sliding the brace onto the legs before adding feet **14** and spreader **18**. Cross-brace **20** is fixed in position on legs **12** by split sleeves **28** which are pinned to legs **12** by through rivets **29** which are substantially parallel to joint **26** of members **22** and **24**.

Legs **12** are each provided with longitudinal openings or slots, as best shown in FIGS. **3** and **5** to accommodate locking key **30** substantially normal to rivet **29**. Key **30** is provided with a notch **32** which fits around rivet **29** to fix key **30** against vertical movement within leg **12**. Springs **34** urge key **30** outwardly of the slot in leg **12** through the split in split sleeve **28** and into either narrow slot **40** or wide slot **42** in both of bearing sleeves **23** and **25** into a stop provided by collars **36** which are fixedly joined to bearing sleeves **23** and **25**. Collars **36** serve to restrain key **30** from loss through expulsion from leg **12** by the action of springs **34** as shown in FIG. **3**. Key **30** is made of any rigid material that permits easy machining such as plastic or metal.

As shown in FIGS. **3** and **5**, slot **40** is of approximately the width of key **30** to provide a snug fit

therebetween, so that engagement of key **30** in slot **40** locks leg **12** against rotation, and thereby provides the fixed walker position of the walker **10** of this invention. Slot **42** is substantially wider than key **30** so as to permit limited arcurate rotation of leg **12** within the limits set by slot **42**, and thereby provides the swingable walker position of walker **10**.

The extension of key **30** beyond collar **36** serves as a push button to disengage key **30** from either of the slots **40** and **42** in sleeves **23** and **25**. With key **30** disengaged from slots **40** and **42** the legs **12** may be folded against cross-brace **20**, which is the folded position of walker **10**. As shown in FIG. **6**, folding one leg **12** on one side of cross-brace **20** and the other leg **12** on the other side of cross-brace **20** provides compact storage of the walker of this invention. The constant pressure maintained on key **30** by springs **34** causes key **30** to snap into either slot **40** or slot **42** when the legs **12** are unfolded from the storage position.

Slots **40** in bearing sleeves **23** and **25** should be of approximately the same width as key **30** so as to afford rigidity to walker **10** when legs 12 are in the fixed walker position. However, slots **42** in bearing sleeves **23** and **25** may be of any desired width depending on the stride action that is to be afforded the user. It is important that overstriding by the user be restrained by limiting slots **42** to about one-third of the circumference of sleeves **23** and **25**.

This description has disclosed the preferred arrangement of the key **30** in a leg and the slots **40** and **42** in the bearing sleeves **23** and **25** of cross-brace **20**. However, it should be understood that other arrangements of the key and slot elements may be employed to attain several of the advantages of this invention. For example, the key may be mounted on the cross-brace and urged into slots in the legs for usage where the rigidity and stability of the preferred embodiment is not demanded.

What is claimed is:

1. A foldable invalid walker usable as fixed walker and as a swingable walker, said walker comprising a pair of substantially U-shaped leg members, a cross-brace joining said leg members, at least one locking means having key and slot elements, one of said elements on at least one of said leg members and the other of said elements on said cross-brace, said slot elements including a narrow slot to snugly engage said key to lock said cross-brace and the associated leg member against relative movement to provide a fixed walker and a wide slot to provide for relative pivotal movement between said cross-brace and the associated leg member to permit limited movement of said key to provide a swingable walker.

2. The walker of claim **1** wherein said cross-brace includes at least one bearing sleeve at each end, and said leg members are rotatably mounted in said bearing sleeves.

3. The walker of claim **2** wherein one of said keys is mounted in each of said pair of leg members, and each of said bearing sleeves contains said narrow slot and said wide slot.

4. The walker of claim **3** wherein each of said keys is mounted within an opening in said leg and selectively urged into engagement with one of said slots in said bearing sleeves.

5. The walker of claim **4** wherein each of said keys is restrained from loss by a collar on said bearing sleeves.

6. The walker of claim **5** wherein each of said keys includes a push button extending beyond said bearing sleeves for selectively disengaging said keys from said slots.

7. The walker of claim **6** wherein each of said wide slots is so dimensioned as to limit the rotation of said legs to provide a stride limiting swingable walker.

8. The walker of claim **7** wherein said cross-brace includes a pair of V-shaped members joined at their midpoints, said V-shaped members being terminated at both ends by one of said bearing sleeves.

9. The walker of claim **8** wherein said cross-brace is retained on said leg members by a split sleeve fixed thereto and positioned between said bearing sleeves.

10. The walker of claim **9** wherein said push button of said key extends through the split in said split sleeve.

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