Abstract: The replaceable grip for mobility devices includes a cylindrical handle portion which includes an opening for installing the grip over the frame of the mobility device. The grip further includes a mechanical means such as mating holes and protuberances or mating teeth which removably fasten the handle to the mobility device such that the grip is prevented from slipping. The grip provides a replaceable, sanitary, stable grasping point for the user of the mobility device.
REPLACEABLE GRIP HANDLE

CROSS REFERENCE TO RELATED APPLICATIONS

[01] The present application claims priority from U.S. Provisional Application Ser. No. 60/569,468, filed May 7, 2005.

BACKGROUND OF THE INVENTION

1. Field of the Invention

[02] The invention relates to grip handles and more particularly to an easily replaced grip handle for mobility, support and seating devices.

2. Description of Related Art

[03] Many types of mobility, support and seating devices include grip handles. For example, walkers, crutches and canes employ grip handles. In previous devices, the grip handle is fixedly attached to the device and can not be removed by the consumer if damaged or soiled or for any other purpose. Instead, the device must be returned to the manufacturer if the grip handle needs to be replaced. Furthermore, if the walker is used by different people, sanitary issues arise. For example, if such devices are provided on a rental basis for temporary use, it is costly and time consuming to replace the grip handles for subsequent users.

[04] Previously known grip apparatuses are for sanitary purposes and cover handles used by many individuals. The grips are disposable or reusable and provide protection against germs or other unsanitary conditions left by prior users. For example, U.S. Patent No.
6,817,066 discloses a reusable cover for grocery cart handles. While such a device provides a sanitary grasp for a grocery cart handle, it does not provide a stable, non-slip gripping surface as such stability is not contemplated in such a use. Numerous other such covers are shown in U.S. Patent No. 6,065,764, U.S. Patent No. 5,429,377, U.S. Patent No. 5,215,319 and many others. None of these devices provides a stable, non-slip grip handle.

[05] Thus, it is desired to make available a grip handle which can be replaced easily when worn or when needed for sanitary reasons. Further, it is desired to make available a grip handle which can be replaced by the consumer. Finally, it is desired to make available a grip handle which attaches in a non-slip connection.

[06] An object of the present invention is to provide a grip handle which can be replaced easily when worn or when needed for sanitary reasons.

[07] An object of the present invention is to provide a grip handle which can be replaced by the consumer.

[08] An object of the present invention is to provide a grip handle which attaches in a non-slip connection.

[09] Finally, it is an object of the present invention to accomplish the foregoing objectives in a simple and cost effective manner.
SUMMARY OF THE INVENTION

[10] The present invention addresses these needs by providing a replaceable hand grip for a framed device or for use on a handle which includes a grip apparatus which can substantially surround a portion of the framed device or handle and which includes a mechanical means for removably attaching the grip apparatus to the framed device or handle such that the grip apparatus remains in a desired stable, non-slip orientation. The grip apparatus is preferably made from plastic, a rigid foam, spring steel or a molded composite. The grip apparatus is generally cylindrical and includes a lengthwise opening to allow placement of the grip apparatus around the framed device or handle. In one embodiment, the framed device or handle includes one or more holes formed in the framed device or handle and one or more protuberances formed on the internal surface of the grip apparatus extending inwardly from the inner surface of the grip apparatus. In this embodiment, the protuberance extends into the hole as the grip apparatus is installed on the framed device or handle in order to provide a releasable but slip free connection between the grip and the framed device or handle. For added stability, more than one protuberance and hole are used in a linear orientation or in a non-linear orientation. In the preferred embodiment, the framed device includes an additional hole directly opposite each of the first holes. The protuberance, which is preferably hollow in this embodiment, extends into the first hole, passes through the framed device or handle and exits through the second hole. A fastener, such as a screw, snap-in pin or pop rivet, can be used to removably secure the protuberance in the installed configuration. Alternatively, the protuberance may extend into the first hole and the fastener can extend into the second hole such that they connect within the framed device or handle. In alternate embodiments, the framed device or handle includes protuberances which mate with
holes in the grip apparatus or the external surface of the framed device or handle and the internal surface of the grip apparatus are formed with mating geometric surfaces, such as mating teeth, to provide a slip-free, removable connection between the grip and the framed device or handle. Finally, if desired, for comfort and/or to provide additional grip strength, the outer surface of the grip may be coated with a deformable material.

BRIEF DESCRIPTION OF THE DRAWINGS

[11] A more complete description of the subject matter of the present invention and the advantages thereof, can be achieved by the reference to the following detailed description by which reference is made to the accompanying drawings in which:

[12] Figure 1 is a perspective view of a walker showing a prior art grip handle and a grip handle according to the present invention;

[13] Figure 2 is an enlarged view of the grip handle according to the present invention;

[14] Figure 3 is a bottom perspective view of the preferred embodiment of the present invention;

[15] Figure 4 is a top perspective view of the preferred embodiment of the present invention;

[16] Figure 5 is an end view of the grip handle;
[17] Figures 6a and 6b are side views of the preferred embodiment of the present invention showing 2 alternate embodiments of the ends of the grip handle;

[18] Figure 7 is a top view of the grip handle;

[19] Figure 8 is a view of the preferred embodiment of the present invention from below as seen in use;

[20] Figure 9 is a view of the alternate embodiment of the present invention from below;

[21] Figure 10 is a view of a walker with the alternate embodiment of the present invention removed;

[22] Figure 11 is a view of the inner surface of the alternate embodiment of the present invention and the hand bar of a walker;

[23] Figure 12 is a view of the inner surface of the alternate embodiment of the present invention;

[24] Figures 13a and 13b are end views of alternate embodiments of the present invention;

[25] Figure 14 is a side view of the alternate embodiment of the present invention showing 2 alternate embodiments of the ends;
[26] Figure 15 is a top view of the alternate embodiment of the present invention;

[27] Figure 16 is a view of an alternate embodiment of the inner surface of the grip handle;

[28] Figure 17 is a view of an alternate embodiment of the hand bar of the walker;

[29] Figure 18 is an end view of an alternate embodiment of the inner surface of the grip handle; and

[30] Figure 19 is an end view of an alternate embodiment of the hand bar of the walker.

Element list:

[31] 20 prior art grip handle
[32] 22 grip handle
[33] 24 walker
[34] 26 hole
[35] 28 protuberance
[36] 29 fastener
[37] 30 end of grip
[38] 32 alternate embodiment of end of grip
[39] 34 teeth
DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[40] The following detailed description is of the best presently contemplated modes of carrying out the invention. This description is not to be taken in a limiting sense, but is made merely for the purpose of illustrating general principles of embodiments of the invention. While the invention has been described as being for a walker, use with any mobility, support or seating device which includes a grip handle is contemplated.

[41] As shown in the drawings, the present invention can be used on walkers. It can also be used on canes; crutches; wheel chairs; bed, bath, support and shower rails; foot stools; grab bars; commode, bath and shower chairs; as well as other devices employing a hand grip.

[42] Figure 1 shows an example of a commonly used grip handle 20. This handle 20 is not removable by the consumer. Instead, the walker must be returned to the manufacturer if the handle needs to be replaced. Furthermore, if the walker is used by different people, sanitary issues arise. Thus, it is desired to make available a grip handle which can be replaced easily when worn or when needed for sanitary reasons. Further, it is desired to make available a grip handle which can be replaced by the consumer. Finally, it is desired to make available a grip handle which attaches in a non-slip connection.

[43] Figure 1 also shows one embodiment of the present invention in the form of a replaceable grip handle 22. A walker 24 is commonly made from cylindrical metal tubing which is bent and welded, screwed or riveted into the desired frame which normally includes vertical legs, horizontal hand grip portions and other structural components. The present
invention can be used with devices made from metal tubing as shown, as well as with devices made from other materials such as wood, plastic or a composite. The present invention is functional with any material from which walkers and other mobility devices can be manufactured. Figure 2 shows another view of the present invention installed on a walker 24.

[44] The grip handle 22 shown in the drawings is formed from a semi-rigid plastic. The grip handle can also be formed from a rigid foam, spring steel or a molded composite. The material must be fairly durable to withstand regular use and must have a memory characteristic which allows the grip handle 22 to be deformed for installation yet return to a configuration which is snug about the walker 24. If desired, the grip handle 22 can be coated with a deformable material for added comfort. The handle 22 is generally cylindrical in shape to fit around the cylindrical tubing commonly used for constructing mobility devices. If needed, the grip handle 22 can be formed in other shapes. The grip handle 22 can have either curved ends 30 or straight ends 32 as shown particularly in Figures 6a, 6b, 14 and 15.

[45] Figures 3 - 8 show the preferred embodiment of the present invention. In this embodiment, opposing holes 26 are formed on either side of the frame of the walker 24. As shown in Figures 3 and 5, on the inner surface of the grip handle 22, a protuberance 28 is formed which mates with the opposing holes 26 on the walker 24. The grip handle is prevented from moving about the frame of the walker 24 by having the protuberance 28 extend into the first hole 26, passing through the frame of the walker 24 and then exiting through the second hole 26 (see Figure 8). This embodiment provides additional stability for the grip handle 22. The protuberance 28 may be formed from the same material as the grip
handle 22, as shown. Alternatively, the protuberance 28 may be metal, molded to a plastic, or other material, grip. If desired, the protuberance 28 can be hollow to allow for a fastener 29 to connect to the protuberance 28 through the opposing hole. The fastener 29 can be a screw, plastic snap-in pin, pop rivet or other such device. If desired, instead of extending through the second hole 26, the protuberance 28 can extend into the first hole 26 and the fastener 29 can enter the second hole to connect to the protuberance 28 within the frame of the walker 24.

[46] Figures 9 - 13 show an alternate embodiment of the invention in which one or more holes are formed in the frame of the walker 24. In this embodiment, the protuberance 28 extends into each hole 26 but does not exit the frame of the walker 24. Figure 9 shows this embodiment which does not include holes opposite from the entrance holes 26. As described previously, each protuberance 28 formed on the inner surface of the grip handle 22 mates with a hole 26 on the walker 24. The protuberances 28 may be formed from the same material as the grip handle 22, as shown. Alternatively, the protuberances 28 may be metal, molded to a plastic, or other material, grip. By using more than one hole 26 and protuberance 28, additional stability is provided. Furthermore, the protuberances 28 need not be located along the center of the grip handle 22 as shown in Figure 13a. The protuberances 28 can be located on the sides of the grip handle 22 as shown in Figure 13b. Furthermore, the protuberances 28 and holes 26 need not be in a straight line or directly opposite each other.

[47] In a further alternate embodiment as shown in Figs 16 and 17, the walker 24 may be formed with a plurality of protuberances 28 extending therefrom. One or more holes 26 are
formed in the inner surface of the grip handle 22 to mate with the protuberances 28 on the walker 24.

[48] While the preferred embodiment of the present invention shows one specific geometric design for mating the grip handle 22 to a mobility device, other designs are considered within the scope of this invention. The design must prevent the grip handle 22 from slipping around the structure of the mobility device. One alternative is shown in Figs. 18 and 19. In this design, teeth 34 are formed along the length of the inner surface of the grip handle 22. Additional teeth 34 are formed on the outer surface of the mobility device 24 which mate with the teeth 34 on the grip handle.

[49] Many improvements, modifications, and additions will be apparent to the skilled artisan without departing from the spirit and scope of the present invention as described herein and defined in the following claims.
What is claimed is:

1. A replaceable hand grip for a framed device, comprising:
   a grip apparatus which is capable of substantially surrounding a portion of the framed device;
   a mechanical means for removably attaching the grip apparatus to the framed device such that the grip apparatus remains in a desired stable, non-slip orientation.

2. The grip as set forth in claim 1 wherein the grip apparatus is made from a material selected from the group consisting of plastic, a rigid foam, spring steel and a molded composite.

3. The grip as set forth in claim 1 wherein the grip apparatus is generally cylindrical and includes a lengthwise opening to allow placement of the grip apparatus around the framed device.

4. The grip as set forth in claim 1 wherein the mechanical means for removably attaching the grip apparatus to the framed device further comprises:
   the framed device including at least one hole; and
   the grip apparatus having at least one protuberance extending from the inner surface of the grip apparatus which mates with the at least one hole in the framed device.

5. The grip as set forth in claim 4 wherein the framed device further comprises a second hole opposite each at least one hole and each at least one protuberance is of sufficient length to extend through each at least one hole and the second hole opposing each at least one hole.

6. The grip as set forth in claim 5 wherein the protuberance is hollow.

7. The grip as set forth in claim 6 further comprising a fastener which connects to the hollow portion of the protuberance which extends from the second hole.
8. The grip as set forth in claim 7 wherein the fastener is selected from the group consisting of a screw, a snap-in pin and a pop rivet.

9. The grip as set forth in claim 1 wherein the mechanical means for removably attaching the grip apparatus to the framed device further comprises:
   the grip apparatus including at least one hole; and
   the framed device having at least one protuberance extending from its outer surface wherein the protuberance mates with the at least one hole in the grip apparatus.

10. The grip as set forth in claim 9 wherein the mechanical means for removably attaching the grip apparatus to the framed device further comprises:
    a plurality of teeth extending from the outer surface of the framed device; and
    a plurality of teeth extending from the inner surface of the grip apparatus wherein the teeth are design to mate with the teeth extending from the outer surface of the framed device such that the grip apparatus is prevented from moving around the framed device.

11. The grip as set forth in claim 1 wherein the outer surface is coated with a deformable material.

12. A replaceable hand grip for a device which includes a handle, comprising:
   a grip apparatus which is capable of substantially surrounding a portion of the handle;
   a mechanical means for removably attaching the grip apparatus to the handle such that the grip apparatus remains in a desired stable, non-slip orientation.
13. The grip as set forth in claim 12 wherein the grip apparatus is made from a material selected from the group consisting of plastic, a rigid foam, spring steel and a molded composite.

14. The grip as set forth in claim 13 wherein the grip apparatus is generally cylindrical and includes a lengthwise opening to allow placement of the grip apparatus around the handle.

15. The grip as set forth in claim 13 wherein the mechanical means for removably attaching the grip apparatus to the handle further comprises:
   the handle including at least one hole; and
   the grip apparatus having at least one protuberance extending from the inner surface of the grip apparatus which mates with the at least one hole in the hole.

16. The grip as set forth in claim 15 wherein the handle further comprises a second hole opposite each at least one hole and each at least one protuberance is of sufficient length to extend through each at least one hole and the second hole opposing each at least one hole.

17. The grip as set forth in claim 16 wherein the protuberance is hollow.

18. The grip as set forth in claim 17 further comprising a fastener which connects to the hollow portion of the protuberance which extends from the second hole.
19. The grip as set forth in claim 18 wherein the fastener is selected from the group consisting of a screw, a snap-in pin and a pop rivet.

20. The grip as set forth in claim 12 wherein the mechanical means for removably attaching the grip apparatus to the handle further comprises:
   the grip apparatus including at least one hole; and
   the handle having at least one protuberance extending from its outer surface wherein the protuberance mates with the at least one hole in the grip apparatus.

21. The grip as set forth in claim 20 wherein the mechanical means for removably attaching the grip apparatus to the handle further comprises:
   a plurality of teeth extending from the outer surface of the handle; and
   a plurality of teeth extending from the inner surface of the grip apparatus wherein the teeth are design to mate with the teeth extending from the outer surface of the handle such that the grip apparatus is prevented from moving around the handle.

22. The grip as set forth in claim 12 wherein the outer surface is coated with a deformable material.
FIG. 6a

FIG. 6b

FIG. 7

SUBSTITUTE SHEET (RULE 26)
FIG. 9

FIG. 10
FIG. 16

FIG. 17

FIG. 18  FIG. 19

SUBSTITUTE SHEET (RULE 26)
INTERNATIONAL SEARCH REPORT

International application No
PCT/US05/36413

A CLASSIFICATION OF SUBJECT MATTER
IPC(8) - E05B 1/00 (2006.01)
USPC - 16/110 1

According to International Patent Classification (IPC) or to both national classification and IPC

B FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) - E05B 1/00, B25G 1/10, A47J 45/00, B32B 7/12, B66C 1/42, E21B 31/00, 19/06 (2006.01)
USPC - 161/13 1, 421, 430, 426/349, 354, 294/57, 8625, 864, 86 31, 96

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
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