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Fair(10) **Pub. No.: US 2006/0081280 A1**(43) **Pub. Date: Apr. 20, 2006**(54) **CRUTCH HANDLE EXTENSION**

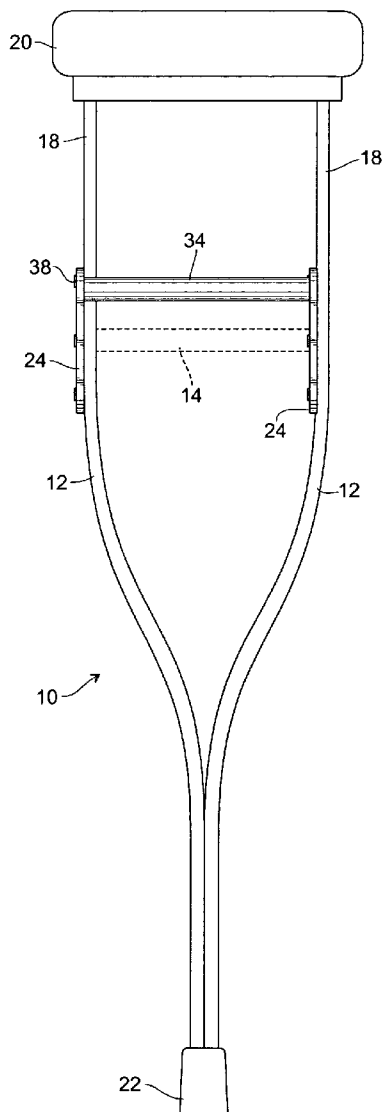
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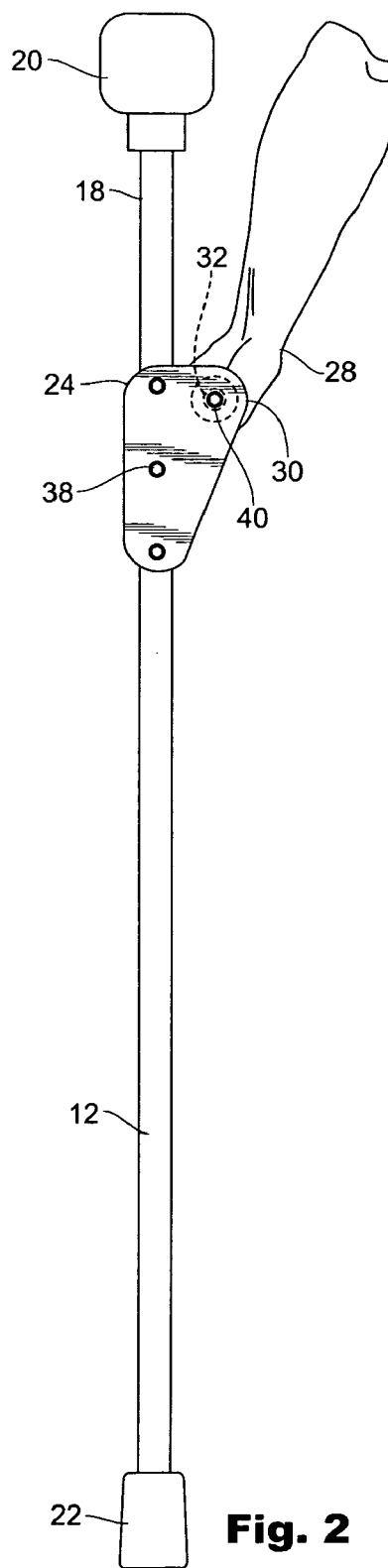
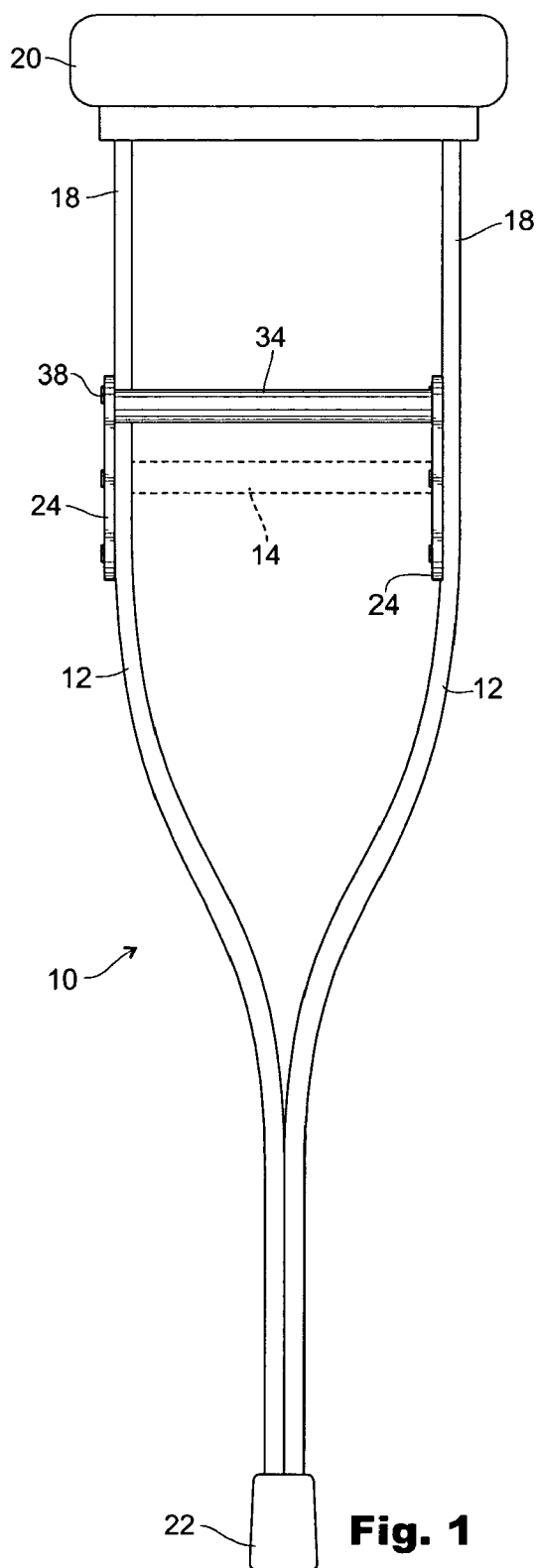
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For use with a crutch having two spaced-apart side members or crutch arms interconnected by a crutch handle that is gripped by the individual, a triangular-shaped extender plate supplants the crutch handle and is mounted to the crutch arm and projects away from crutch arm and the individual's body. A horizontally disposed extender plate handle is secured to the extender plate so that when the individual grips the extender plate handle the individual's wrist is spaced from the crutch arm thereby eliminating the rubbing of the individual's wrist against the crutch arm. Each crutch can have one or two extender plates attached thereto, and if two extender plates are used with each crutch, one extender plate would be secured to each crutch arm of the left arm crutch and each crutch arm of the right arm crutch as desired by the individual.





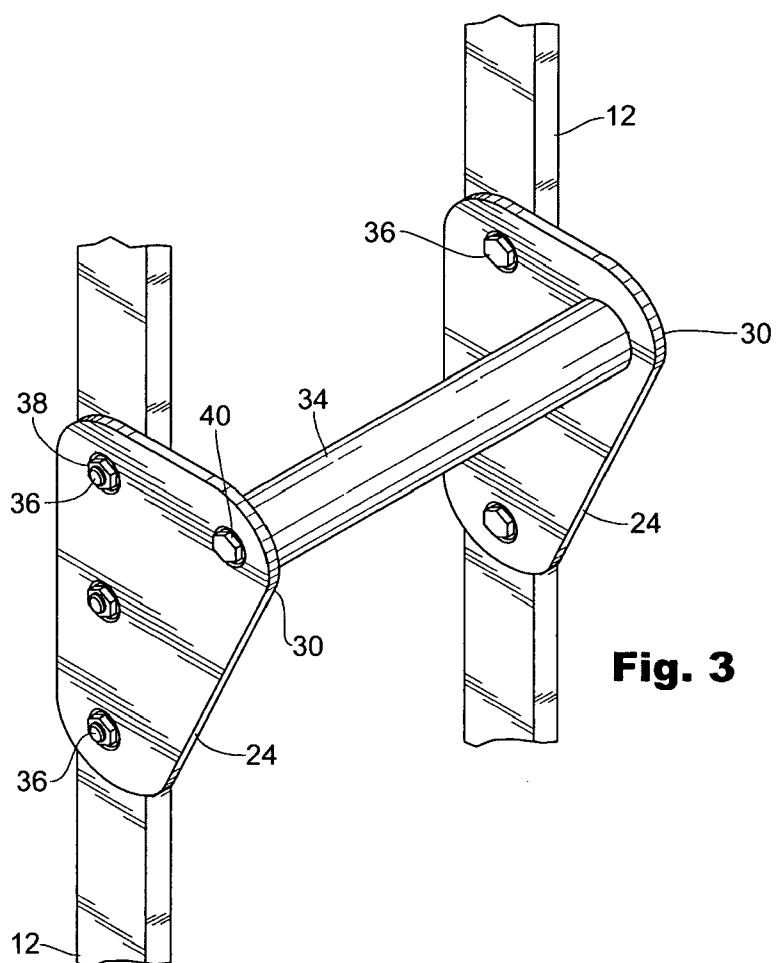


Fig. 3

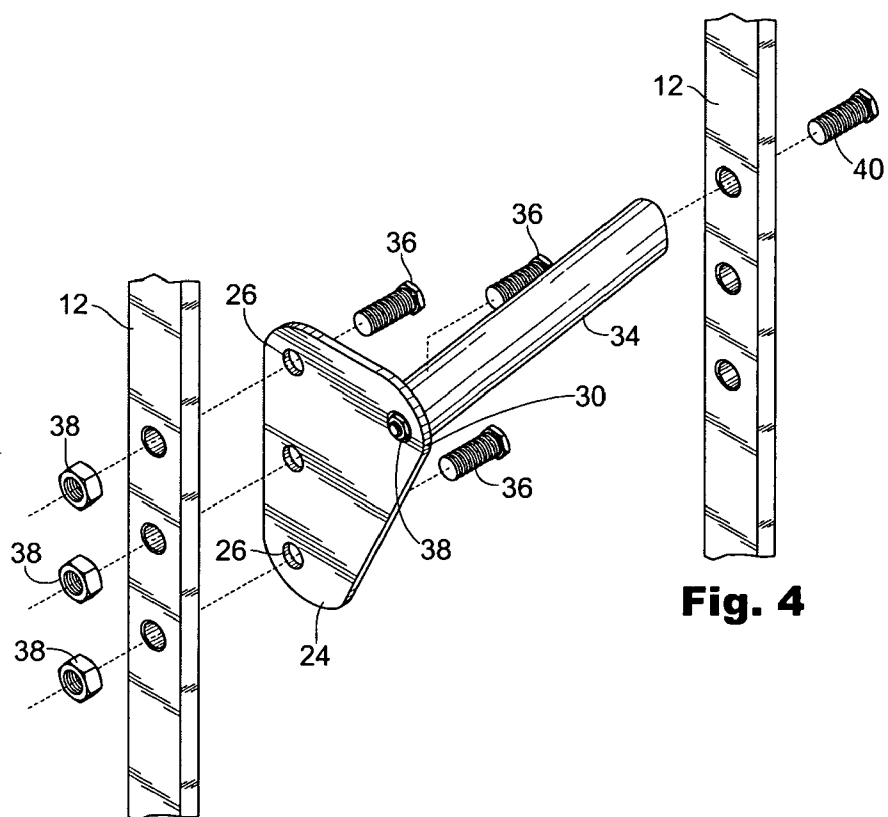


Fig. 4

CRUTCH HANDLE EXTENSION

FIELD OF THE INVENTION

[0001] The present invention relates to walking aids and assist devices such as crutches, and more particularly pertains to auxiliary attachments for crutches that make them easier and more comfortable in use.

BACKGROUND OF THE INVENTION

[0002] For individuals with lower limb injuries and afflictions such as broken leg bones, leg-muscle strains or sprains, knee injuries, broken foot bones, etc., there contains to be need for support and walking crutches that assist in the recovery from the injury. Modern crutch designs have emphasized such considerations and factors as improved balance, stability and weight bearing capabilities. In addition, crutch designs have been broadened to include dual-use or multi-use functions whereby the crutch can be broken down, disassembled or reassembled to for other uses—often uses unrelated to ambulatory assistance for the individual. However crutch designs still include the standard features of two spaced-apart, generally tubular, support member or crutch arms interconnected by a padded tubular handle, and a single tubular member depending from the crutch arms and having a rubber tipped end for contacting the ground. The upper ends of the tubular members are also interconnected by a padded underarm crosspiece or crossbar. Because of the emphasis on comfort in use and convenience in storage and transportation, the prior art discloses a variety of crutch designs some of which include auxiliary attachments in order to enhance the convenience, comfort and broaden the use of the standard crutch.

[0003] For example, the Ferry patent (U.S. Pat. No. 3,710, 807) discloses a crutch having a lower telescoping tubular member that provides continuous columnar support throughout the longitudinal extension of the shaft arm of the crutch.

[0004] The Lee patent (U.S. Pat. No. 4,386,466) discloses a crutch gauge measuring device that includes a slidably adjustable extension leg disposed between and attached to the side members of a crutch and is capable of extending beyond the side members for being properly positioned and then locked in place.

[0005] The DiVito patent (U.S. Pat. No. 4,838,291) discloses an auxiliary crutch wherein a u-shaped frame member is slidably and telescopically attached to the spaced support arms of a crutch and the bottom of the u-shaped frame member is radially shaped to assist in ambulation.

[0006] The Liu patent (U.S. Pat. No. 5,482,071) discloses a combination crutch that includes a knife integrally attached to the crutch handle and shovel attachable to the lower end of the crutch by a coupling mechanism.

[0007] The Richter patent (U.S. Pat. No. 5,871,025) discloses a walking stick that includes retaining structure in the handle for holding an item such as a watch or compass, and the handle having a surface structure that massages the user's hands when gripping the handle and using the walking stick.

[0008] The Geary patent (U.S. Pat. No. 6,085,766) discloses a convertible crutch system that includes a crutch

shaft comprised of three tubular members telescopically arranged and a laterally extending crutch handle.

[0009] Nonetheless, despite the ingenuity of the above devices, there remains a need for an attachment for a crutch handle that provides a more comfortable and natural gripping position for the wrist and eliminates any rubbing of the wrist against the arms of the crutch.

SUMMARY OF THE INVENTION

[0010] The present invention comprehends a crutch handle extension for positioning and moving the wrist of the individual away from the crutch arms so that the rubbing on the wrists by the crutch arms is eliminated. The crutch handle extension includes at least one pair of extender plates one of which is securable to a crutch arm of each crutch after the removal of the crutch handle. The extender plates are triangular-shaped and manufactured of either wood or aluminum and include through holes that can be aligned with the pre-drilled holes formed on each crutch arm for securing the extender plate to that crutch arm. A portion of the extender plate extends past the vertical plane defined by the spaced-apart crutch arms, and away from the individual, and an extender handle is horizontally mounted to this portion of the extender plate so that when the individual grips the extender handle his or her wrist is spaced outwardly and away from the crutch arms thereby eliminating the rubbing of the wrist on the crutch arms. One or two extender plates can be used with each crutch as desired by the individual.

[0011] It is an objective of the present invention to provide a crutch handle extension that projects the wrists away from the crutch arms thereby preventing the rubbing and chafing of the wrists against the crutch arms.

[0012] It is another objective of the present invention to provide a crutch handle extension that projects the wrists away from the crutch arms for minimizing wrist and arm soreness by providing a more natural gripping point for the hands.

[0013] It is yet another objective of the present invention to provide a crutch handle extension that is easy to install on the crutch arms with a minimum of tools and expertise.

[0014] It is still yet another objective of the present invention to provide a crutch handle extension that is lightweight and portable and can be installed as desired by the individual using the crutch.

[0015] Still another objective of the present invention is to provide a crutch handle extension having reversible elements so that the elements can be secured to either the left or the right crutch with no diminution in use or functioning thereof.

[0016] These and other objects, features and advantages will become apparent to one skilled in the art upon a perusal of the following detailed description when read in conjunction with the accompanying drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] **FIG. 1** is a side elevational view of the crutch handle extension secured the crutch arms of the right arm crutch;

[0018] **FIG. 2** is rear elevational view of the crutch handle extension illustrating the securement of one extender plate to the rear crutch arm of the crutch used for the right arm;

[0019] **FIG. 3** is a perspective view of the crutch handle extension illustrating the securement of the crutch handle extension to the crutch arms of the right arm crutch; and

[0020] **FIG. 4** is a perspective view of the crutch handle extension illustrating the use of only one extender plate for the right crutch arm.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0021] Illustrated in **FIGS. 1-4** is an auxiliary attachment for crutches that allows the crutches to be used comfortably by the individual recuperating from a leg injury. A representative crutch 10, as shown in **FIGS. 1-4**, includes a pair of elongated crutch arms 12 that are spaced from each other and interconnected by a cylindrical crutch handle 14. Each crutch arm 12 has a series of spaced-apart pre-drilled holes 16 that provides adjustability for the crutch handle 14 to accommodate individuals of different heights. Extending across the upper ends 18 of the crutch arms 12 is a padded underarm support member 20 while the lowermost ends of the crutch arms 12 come together and are enclosed by a rubber cup 22 for providing cushioning when the crutches 10 are used.

[0022] As shown in **FIGS. 1-4**, the crutch handle extension includes at least one extender plate 24 that is removably securable to the crutch arms 12 using the pre-drilled holes 16 that are used to mount the crutch handle 14—and after the crutch handle 14 has been removed from the crutch arm 12. The crutch handle extension has a flexibility of use for the individual in that one extender plate 24 can be attached to one crutch arm 12, or a pair of extender plates 24 can be attached to the crutch arms 12 of one crutch 10 with one extender plate 24 attached to each crutch arm 12 for that crutch 10; or for maximum employment of the invention, one pair of extender plates 24 can be attached to the arms 12 of what would be denoted as the left crutch and one pair of extender plates 24 can be attached to the arms of what would be denoted as the right crutch. The extender plates 24 are reversible and interchangeable so that they can be used on the arms 12 of both the left crutch and the arms 12 of the right crutch.

[0023] The extender plate 24 can be manufactured from wood or aluminum, and Baltic birch is a preferable wood product. The extender plate 24 is triangular-shaped and in one configuration is $\frac{3}{8}$ of inch thick, 1 and $\frac{7}{8}$ inch wide at its bottom, 2 and $\frac{3}{8}$ inch wide at its top and 4 and $\frac{5}{8}$ inch high. The extender plate 24 includes three vertically aligned and spaced-apart plate apertures 26 for alignment with the pre-drilled holes 16 on the crutch arm 12 so that the extender plate 24 can be attached to the crutch arm 12. As shown in **FIGS. 1 and 3**, when two extender plates 24 are used, one extender plate 24 is secured to the inside of one crutch arm 12 and one extender plate 24 is secured to the outside of the other crutch arm 12 of that crutch 10. As shown in **FIG. 2**, the extender plate 24 extends past or beyond a vertical plane defined by the crutch 10 being disposed in the upright disposition for use by the individual. Thus, the individual's wrist 28 is positioned or spaced past the crutch arms 12 so that the individual's wrist 28 doesn't rub and chafe against the crutch arms 12. More specifically, the extender plate 24 includes a lobe portion 30 that extends past the vertical plane of the crutch arms 12 when the extender plate 24 is attached

to the crutch arm 12. The lobe portion 30 includes an aperture 32 that aligns with the aperture 32 on the lobe portion 30 of the other extender plate 24 so that an extender plate handle 34 can be interconnected to both extender plates 24 as shown in **FIGS. 1 and 3**. The extender plate handle 34 is gripped by the individual, as shown in **FIG. 2**, and replaces the original crutch handle 14 that is removed prior to installation of the extender plate 24.

[0024] There are a number of different ways to install one, two or four extender plates 24 on a single crutch arm 12 of one crutch 10, on both crutch arms 12 of one crutch 10, or on both crutch arms 12 of both crutches 10 when the individual desires to obtain the maximum benefit of the crutch handle extension. What follows is one representative method of installation.

[0025] With reference to **FIGS. 1-4**, for using one extender plate 24 on the crutch arm 12 of each crutch 10, the first step is to remove the original crutch handle 14. Using fasteners 36, such as the stainless steel slotted round head bolts, attach one extender plate 24 to the inside the back crutch arm 12 of each crutch 10 so that one extender plate 24 is projecting out to the left (for what would be the left crutch), and the other extender plate 24 is projecting out to the right (for what would be the right crutch). The fasteners 36 are inserted through the pre-drilled holes 16 on each crutch arm 12 and the apertures 26, and then lock nuts 38 would be tightened onto the fasteners 36 to secure each extender plate 24 to each crutch arm 12. The fasteners 36 would go on the inside of the crutch arm 12 and the lock nuts 38 would be tightened down from the outside of the crutch arm 12. The extender handle 34 is then attached to the lobe portion 30 of the extender plate 24 using the aperture 32 at the lobe portion 30. Furthermore, the extender plate 24 should be mounted on the backside of the crutch arm 12 with the lobe portion 30 pointing away from the individual.

[0026] When using two extender plates 24 for each crutch 10, as shown in **FIGS. 1 and 3**, the first step is to remove the originally mounted crutch handle 14. Next, one extender plate 24 is secured to the inside of one crutch arm 12 and one extender plate 24 is secured to the outside of the other crutch arm 12 of that crutch 10. The plate apertures 26 are aligned with the pre-drilled holes 16 and each extender plate 24 for that crutch 10 is then secured using the fasteners 36 and lock nuts 38. Again, the fasteners 36 would mount from the inside of each crutch arm 12 and the lock nuts 38 would be tightened thereon from the outside of the crutch arm 12. The final step would be to slide each extender handle 34 between each pair of extender plates 24 (now mounted on what would be the left arm crutch and the right arm crutch), and secure the handles 34 to the respective extender plates 24 by using the apertures 32 at the lobe portions 30 for inserting fasteners 40, such as round head bolts, therethrough and into each handle 34.

[0027] It will be understood that numerous modifications, alterations, and variations can be made in the details of the invention as herein described and illustrated without, however, departing from the spirit and scope of the appended claims.

I claim:

1. A crutch handle extension for attachment to at least one of the two crutch arms of the crutch that are interconnected by a crutch handle, comprising:

an extender plate for removable securement to one crutch arm after the crutch handle has been removed;

the extender plate securable to one crutch arm by using the pre-drilled holes of that crutch arm;

the extender plate having a lobe portion that extends past the vertical plane of the crutch arms defined when the crutch arms of the crutch are disposed upright and gripped by the individual; and

an extender handle secured to the lobe portion of the extender plate and horizontally disposed thereon so that the wrist of the individual is spaced from the crutch arm when the individual grips the extender handle.

2. The crutch handle extension of claim 1 wherein the extender plate is composed of wood.

3. The crutch handle extension of claim 2 wherein the extender plate is composed of aluminum.

4. The crutch handle extension of claim 3 wherein the extender plate is triangular-shaped.

5. For use with a crutch having a pair of spaced-apart crutch arms interconnected by a crutch handle, a crutch handle extension, comprising:

a pair of extender plates with each extender plate removably attachable to each respective crutch arm using the pre-drilled holes of the crutch arms so that the extender plates are level with each other;

each extender plate having a lobe portion and the lobe portions extending past the vertical plane defined by crutch arms when the crutch arms are gripped by the individual and the crutch is disposed in the upright ambulatory assistance position; and

an extender handle extending between and secured to each lobe portion so that the extender handle is spaced from the crutch arms and as a result the individual's wrist does not rub against the crutch arms when the individual grips the extender handle.

6. The crutch handle extension of claim 5 wherein the extender plates are composed of wood.

7. The crutch handle extension of claim 6 wherein the extender plates are composed of aluminum.

8. The crutch handle extension of claim 7 wherein the extender plates are triangular-shaped.

9. For use with a left arm crutch and a right arm crutch with each crutch having a pair of crutch arms spaced from each other and interconnected by a crutch handle, a crutch handle extension, comprising:

two pairs of extender plates with one pair of extender plates securable to the crutch arms of the left arm crutch and one pair of extender plates securable to the crutch arms of the right arm crutch;

each extender plate having a lobe portion that extends beyond the vertical plane of the crutch arms when both the left arm crutch and the right arm crutch are gripped by the individual and disposed upright for ambulatory assistance; and

a pair of extender handles with one extender handle extending between and attached to the extender plates on the left crutch arm and one extender handle extending between and attached to the extender plates on the right crutch arm so that the wrists of the individual do not rub against the crutch arms when the individual grips the extender handles for using the crutches.

10. The crutch handle extension of claim 9 wherein the extender plates are composed of wood.

11. The crutch handle extension of claim 10 wherein the extender plates are composed of aluminum.

12. The crutch handle extension of claim 11 wherein the extender plates are triangular-shaped.

13. The crutch handle extension of claim 12 wherein the extender plates are reversible on the left arm crutch and the right arm crutch.

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