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Goldberg et al.

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(54) **WALKING CANE**

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A45B 9/02 (2006.01)

(52) **U.S. Cl.** **135/76**; 135/72

(58) **Field of Classification Search** ..... 135/65, 135/72, 76; 16/421, 430, 436, 440, 444, 16/426, DIG. 12, DIG. 19, DIG. 24, 431; 294/57

See application file for complete search history.

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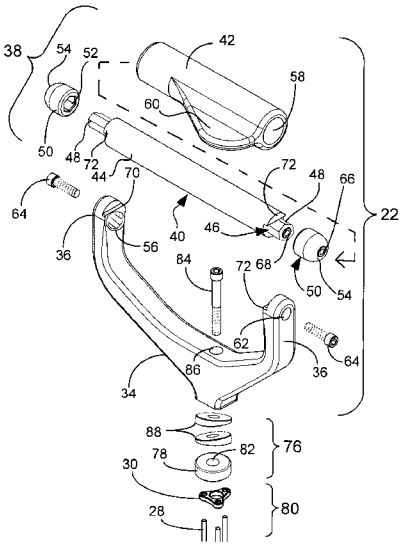
(57) **ABSTRACT**

The present invention includes a walking cane having a handle assembly, a support assembly and foot member. The handle assembly includes first and second generally upright rigid posts. A shaft adaptable for grasping by a user's hand connects to each end of the posts. Pliable mounts dispose between the terminal ends of the shaft and each post. The mounts, biased against the shaft, permit omni-directional movement of the shaft relative to each post. The support assembly connects to the handle assembly and includes three parallel elongated rods spaced apart from one another in a triangular formation. The handle assembly can be adjusted relative to the support assembly by means of two cooperating shims. The foot member connects to the support assembly and contacts the ground. The cane provides a light-weight shaft and a shock absorbing handle assembly to assist in relieving hand, wrist and arm strains.

15 Claims, 6 Drawing Sheets



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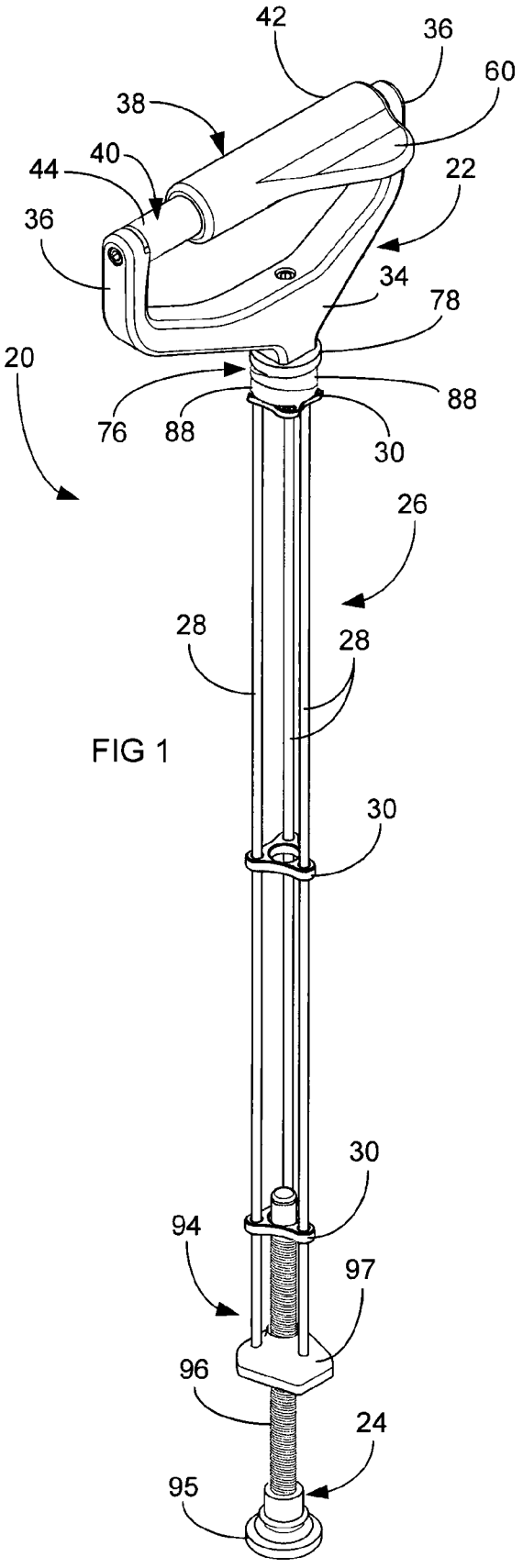
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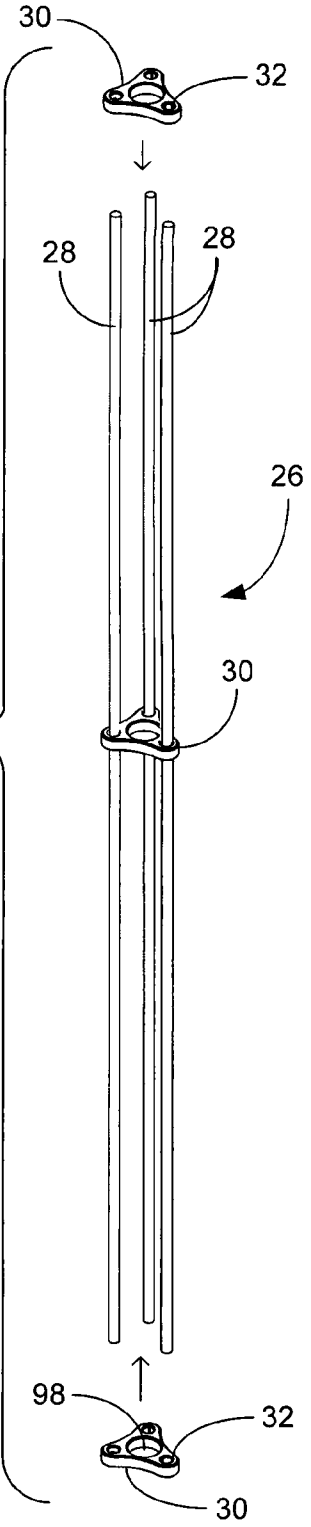
FIG 1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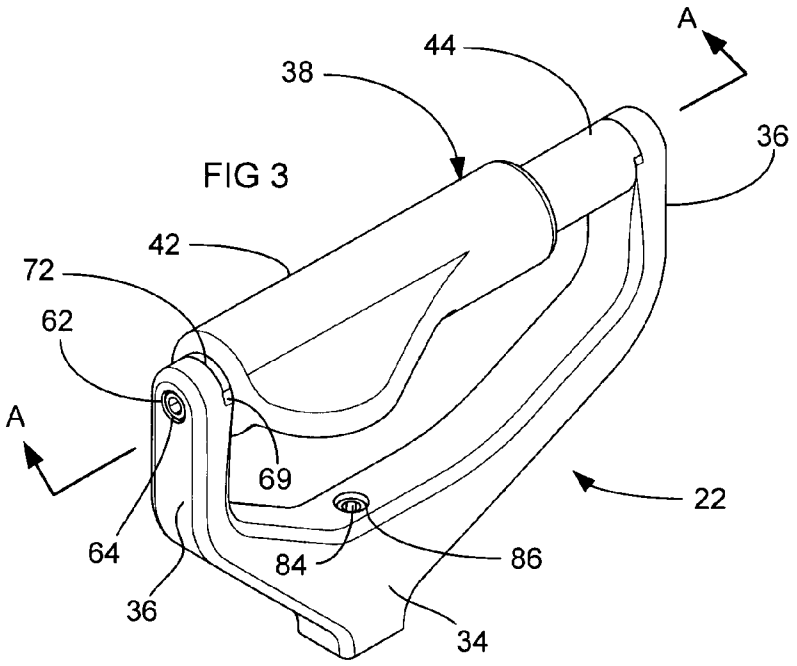
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FIG 3

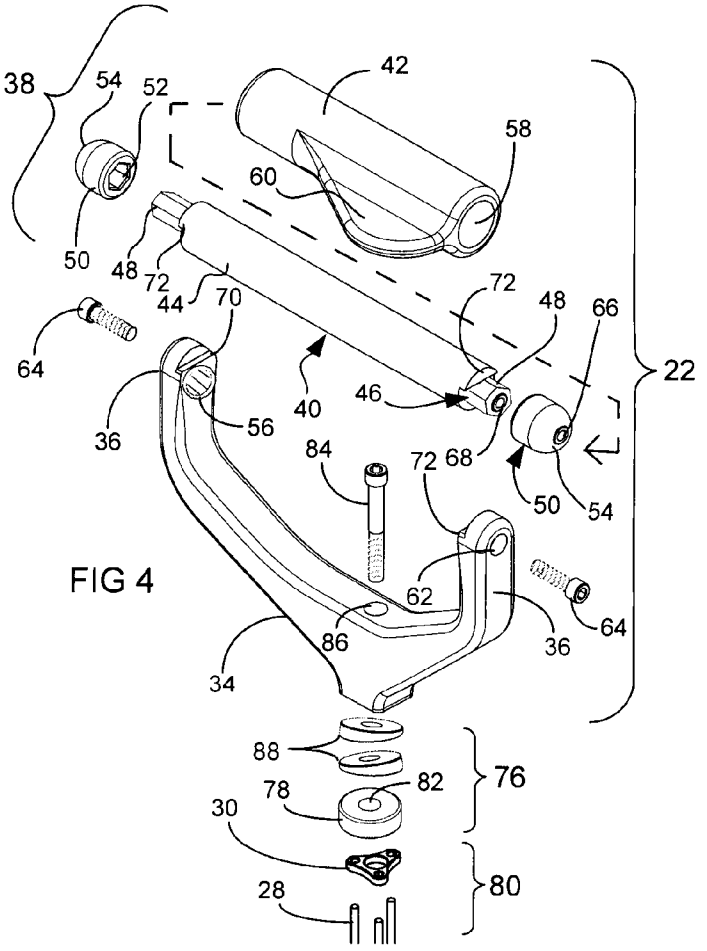
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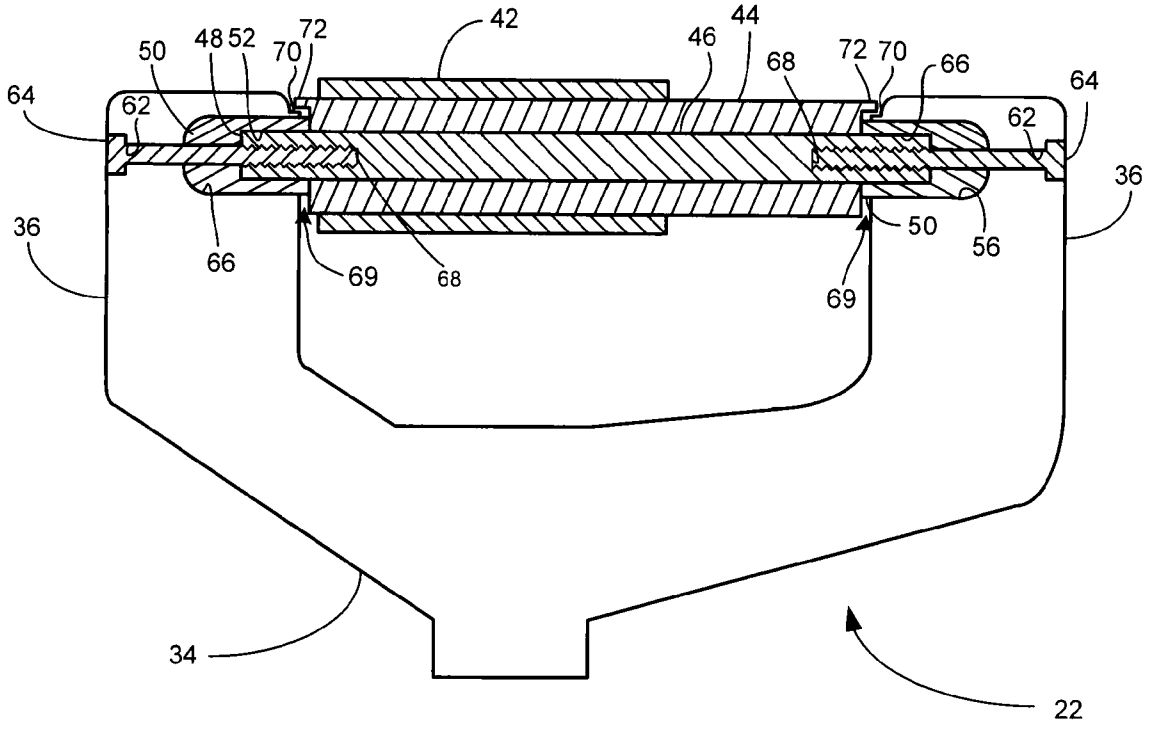
FIG 4

FIG 5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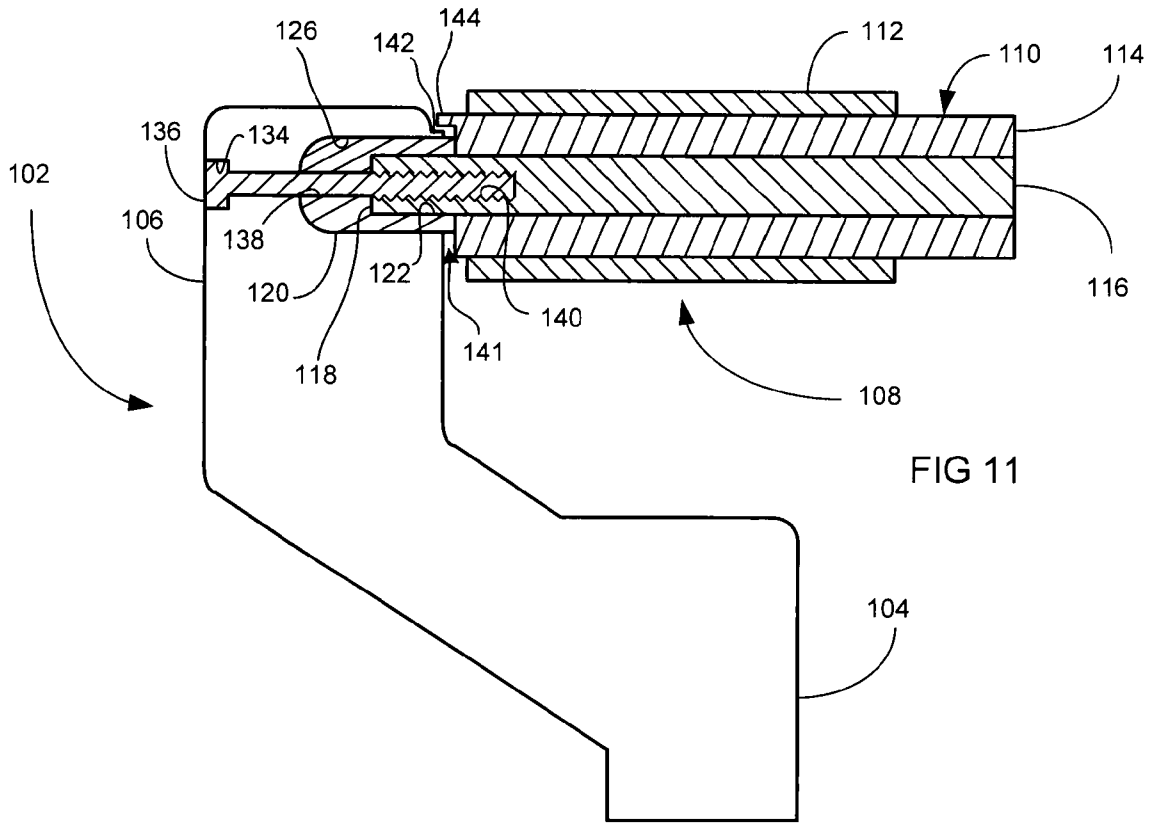
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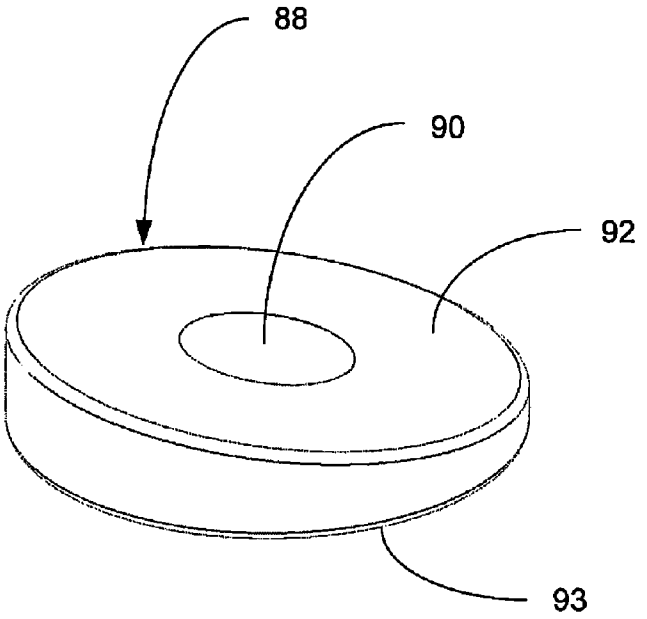
FIG 11

FIG 6



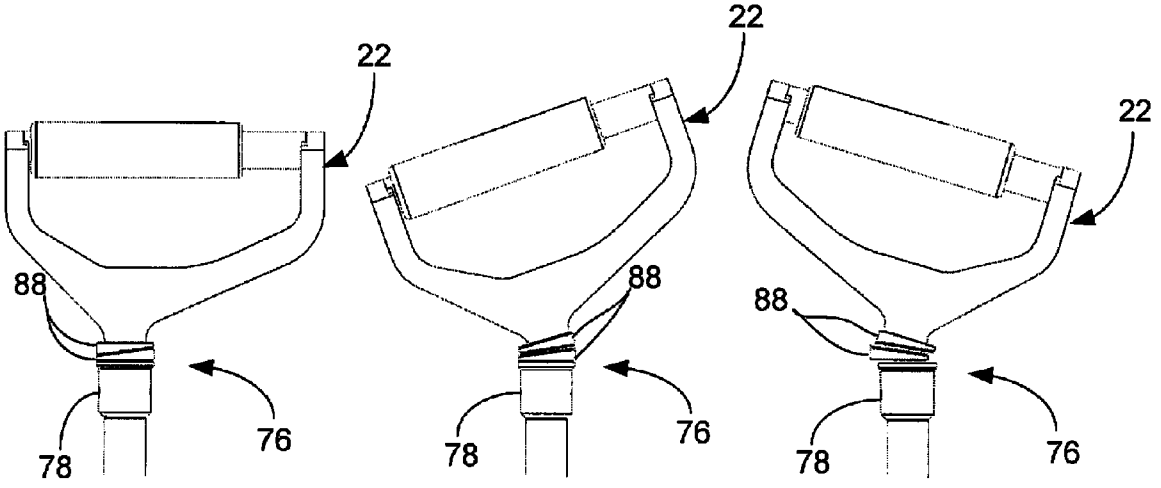


FIG 7a FIG 7b FIG 7c

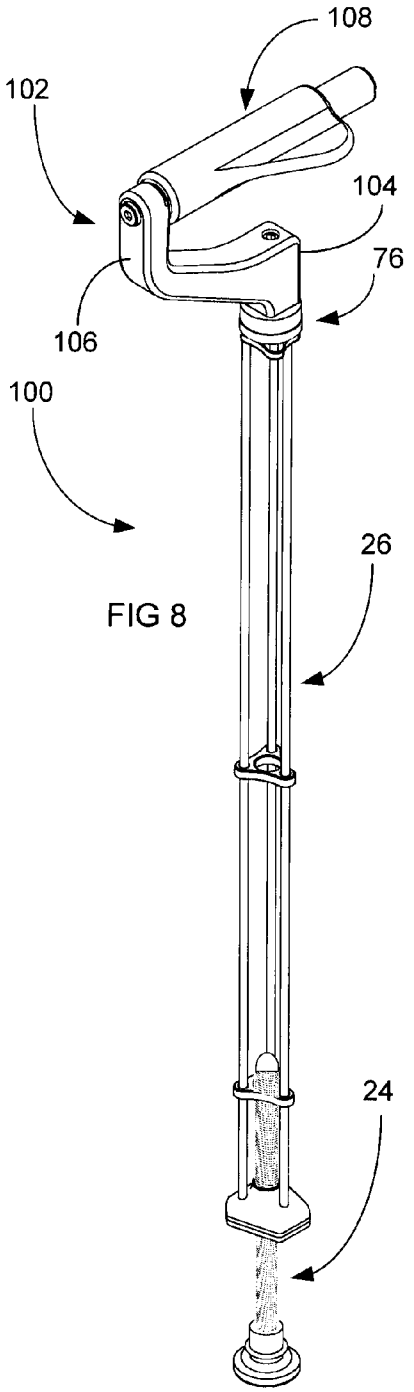


FIG 8

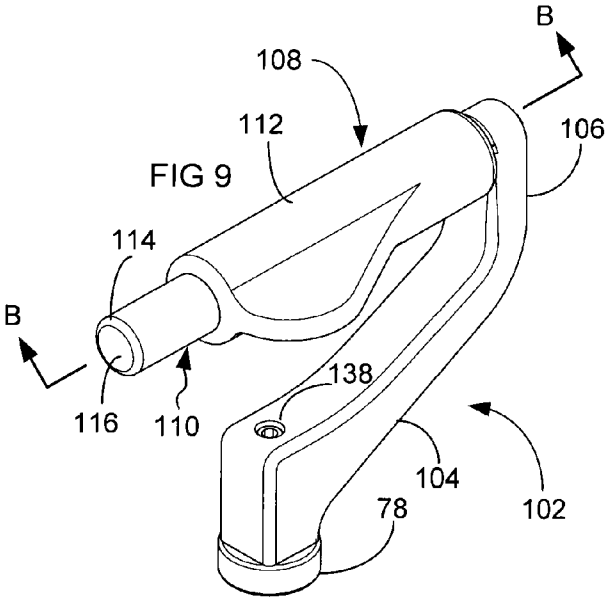


FIG 9

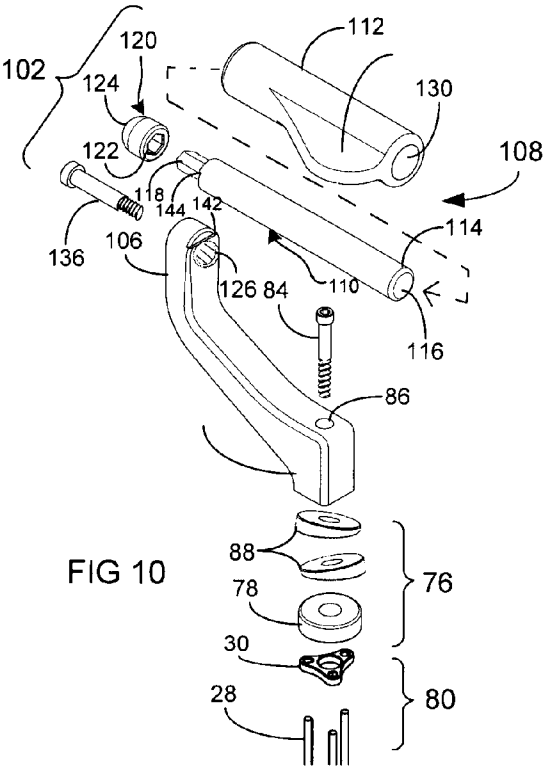


FIG 10

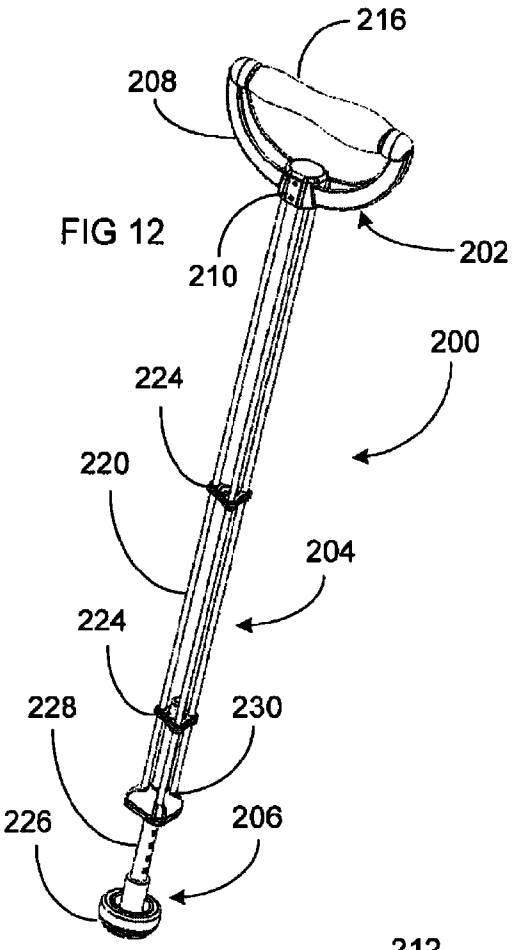


FIG 12

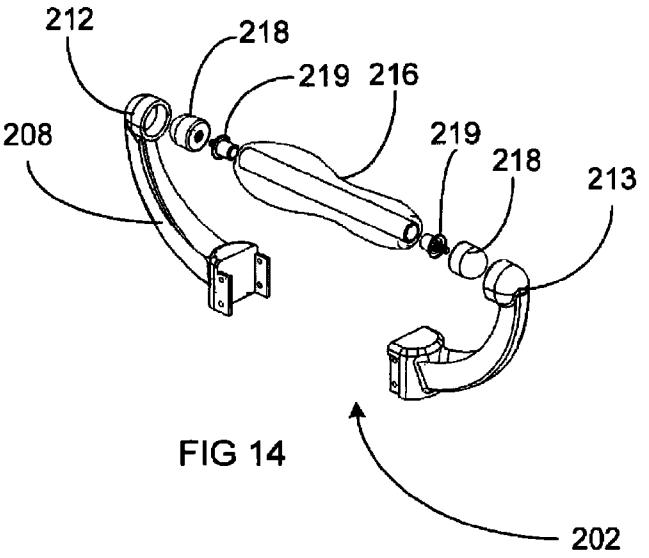


FIG 14

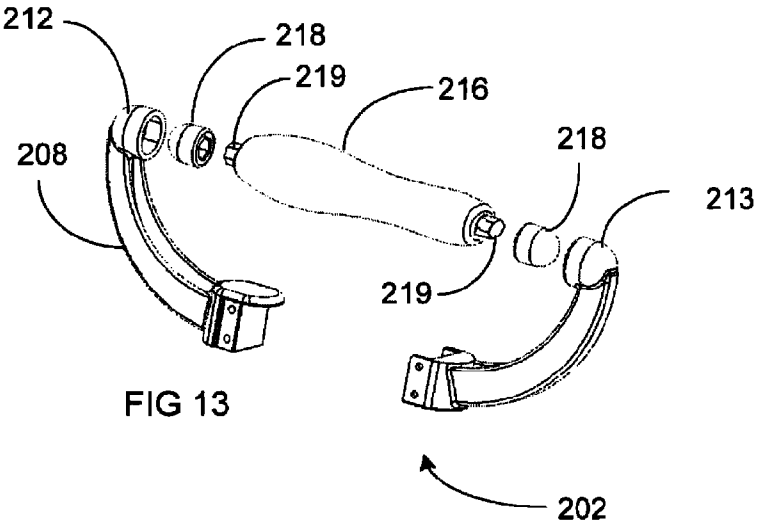


FIG 13

WALKING CANE

CROSS-REFERENCE TO RELATED APPLICATION(S)

This application claims the benefit of U.S. Provisional Patent Application No. 61/246,776 entitled WALKING CANE, filed on 29 Sep. 2009, which is hereby incorporated herein by reference.

BACKGROUND OF INVENTION

The present invention is generally directed at ambulatory devices. More particularly, the present invention is directed at a walking aid having improved ergonomics, strategic shock absorption properties, and a lightweight multi-structural shaft.

Walking is an important function in everyday life, even over short distances. Without the aid of ambulatory devices, many individuals have a difficult, if not an impossible, time of moving one's self even within the confines of their own home. As of 2008, an estimated 12 million people in the United States reported at least some mobility difficulty. Many of these individuals include senior citizens, whose population is ever drastically increasing as "baby boomers" begin to enter their later stages of life.

There exist in the prior art numerous examples of ambulatory devices such as walking canes, walking sticks, crutches and the like which aid in providing stability to persons requiring assistance when walking or standing. Generally, though, conventional walking canes contain a fixed design which imposes excessive stress on the user's hands, wrists and triceps, resulting in associated shoulder and back strain caused by gait compensation. Conventional cane shafts also have the deleterious effect of providing stiff repetitive shock to hands and arms as weight is applied to the cane, resulting in painful fatigue through frequent use. Such strains may be exacerbated by the repetitive motion necessary to walk even short distances, as well as the associated impact stresses transmitted through the cane and to the user when engaging the tip with the ground.

There presently exists a need in providing a durable walking cane to overcome the aforementioned obstacles. Such a walking aid would diminish excessive stress applied to the hands and wrists during its use, thereby decreasing gait compensation to reduce the occurrence of shoulder and back strain. An object of the present invention would therefore include providing a light-weight cane having an improved shaft and handle construction to achieve the aforementioned goals.

BRIEF SUMMARY OF INVENTION

The present invention overcomes the deficiencies of the prior art in several of its embodiments. It is therefore an object of the present invention to provide a walking cane or crutch including a non-stationary, shock absorbing handle assembly to assist in relieving hand, wrist and arm strains. In one embodiment, the handle assembly comprises a closed configuration having opposing first and second upright posts. The posts carry a grip biased by first and second pliable mounts held in place under tension by a fastening mechanism. The mounts act as shock absorbers and permit the grip to have limited omni-directional movement relative to each post.

In another embodiment, the handle assembly comprises an open configuration having a generally upright post, a grip connectable substantially orthogonal to the post, and a pliable mount engageable with the post and the grip. A fastening mechanism secures the grip and the mount to the post, thereby biasing mount against the grip. The mount acts as a shock absorber and permits the grip to have limited omni-directional movement relative to the post.

In another embodiment, a pliable mount is positioned between the handle assembly and a vertical support. The mount acts as shock absorbers and permits the handle assembly to have limited omni-directional movement relative to the vertical support.

It is also an object of the present invention to provide a walking cane having a tilting handle assembly so that the handle assembly can be adjusted to produce ergonomically optimized loading positions for the hand and wrist, even on an individualized need. In one embodiment, the handle assembly is selectively positionable relative to a vertical support by providing first and second shims cooperably engaged with on another. The shims are preferably positioned between the handle assembly and the vertical support. The orientation of the handle assembly relative to the vertical support can be modified by selectively positioning either shim relative to the other.

Another object of the present invention is to provide an extremely lightweight vertical support, durable enough to withstand the force of a person resting, leaning or using the cane as a means of support. In one embodiment, the vertical support includes three parallel elongated rods spaced apart from one another in a triangular position. Triangular brackets attach to the rods to prevent flexation thereof when a load is applied to the walking device.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is perspective view of a first embodiment of a walking cane of the present invention.

FIG. **2** is a perspective view of a vertical support for use in the walking cane of the present invention.

FIG. **3** is a perspective view of a handle assembly in accordance with the first embodiment of the present invention.

FIG. **4** is an exploded view of the handle assembly in accordance with the first embodiment of the present invention.

FIG. **5** is a cross-sectional view of the handle assembly in accordance with the first embodiment of the present invention as taken along lines A-A in FIG. **3**.

FIG. **6** is a perspective view of a shim as used in accordance with a neck assembly of the present invention.

FIGS. **7***a*, **7***b* and **7***c* illustrate selected orientations of the handle assembly in accordance with the present invention.

FIG. **8** is a perspective view of a second embodiment of the walking cane of the present invention.

FIG. **9** is a perspective view of a handle assembly in accordance with the second embodiment of the present invention.

FIG. **10** is an exploded view of the handle assembly in accordance with the second embodiment of the present invention.

FIG. **11** is a cross-sectional view of the handle assembly in accordance with the second embodiment of the present invention as taken along lines B-B in FIG. **9**.

FIG. **12** is a perspective view of an alternative embodiment of the walking cane in accordance with the present invention.

FIG. **13** is an exploded view of a handle assembly in accordance with the alternative embodiment of the present invention.

FIG. **14** is an exploded view of and alternative handle assembly in accordance with the alternative embodiment of the present invention.

DETAILED DESCRIPTION

A first embodiment of a walking cane according to the present invention is generally indicated at **20** in FIG. **1**. While the present description uses the term cane throughout, it should be noted that that term is meant to include a multiplicity of walking aids or ambulatory devices, including crutches and walkers. The walking cane **20** generally includes a handle assembly **22** and a ground engaging assembly **24**, each connected to a vertical support assembly **26**. As illustrated in FIG. **2**, the vertical support assembly **26** includes three elongated rods **28** spaced-apart in a preferably triangular fashion. Each rod **28** is preferably constructed from a light-weight, high tensile strength material, for example carbon fiber composite. However, similar suitable materials for the construction of the rods **28** are well within the scope of the present invention, including aluminum, magnesium, titanium, advanced high-strength steels, fiber-reinforced composites, and metal matrix composites. It has been discovered that by replacing the single shaft support of the prior art with three spaced-apart rods **28** placed in triangular formation, ease of maneuverability is greatly improved and the overall weight of the cane **20** is reduced while maintaining, if not improving, the overall structural integrity of the cane **20**. It should be noted, though, that it is well within the scope of the present invention to include additional rods **28** in other formations, including a square formation, pentagonal, hexagonal, heptagonal, octagonal formations as well. It is also within the scope of the present invention to provide hollow tubes instead of solid rods. The rods **28** are held in fixed relation to one another by a series of stabilizing brackets **30**. Each bracket **30** includes a generally triangular configuration having an aperture **32** positioned at each vertex. These apertures **32** are sized for receiving each rod **28** so that the brackets **30** may be permitted to be positionable along the length of support assembly **26** during the construction thereof, but at the same time providing a snug fit such that the bracket **30** can be retained at any selected position. After proper positioning, each bracket **30** can be adhered into place, for example with the application of an adhesive. As illustrated in FIG. **2**, three brackets **30** are utilized to retain the rods **28** in fixed relation to one another. It should be noted, though, that it is well within the scope of the present invention to provide additional brackets **30**, and also that as few as a single bracket **30** may be provided. Each bracket **30** is preferably of unitary construction, molded from suitable plastic, metal, or composite material, such as carbon fiber or Delrin® as made commercially available by E.I. Du Pont de Nemours and Company of Wilmington, Del., as is known in the art.

As illustrated in FIGS. **3** and **4**, the handle assembly **22** includes a base **34** having opposing substantially upright posts **36** for supporting a grip assembly **38**. By substantially upright it is meant that the posts **36** extend generally perpendicularly upward from the lengthwise plane of the base **34**, but may deviate therefrom up to 90 degrees in either direction and still be within the scope of the present invention. The base **34** and posts **36** are preferably of unitary construction, but it is well within the scope of the present invention to attach the posts **36** to the base **34** as separate pieces. It is also within the scope of the present invention to provide the base **34** and posts **36** in two separate halves which are joined together at a center portion of the base **34**. The base **34** and posts **36** are preferably molded from plastic or other suitable composite material which provides for lightweight and durable support, such as Delrin® as made commercially available by E.I. Du Pont de Nemours and Company of Wilmington, Del. Again, the use of any lightweight, high-strength material is well within the scope of the present invention, including aluminum, magnesium, titanium, advanced high-strength steels, fiber-reinforced composites, and metal matrix composites.

The grip assembly **38** includes a cross member **40** adapted to contain a grip **42**. The cross member **40**, which is generally cylindrical in shape, preferably includes a layer of composite plastic **44** molded over an inner metallic shaft **46**. Terminal ends **48** of the shaft **46** extend beyond the molded layer **44** for supporting pliable mounts or dampeners **50**. The mounts **50** are configured to receive the respective terminal end **48** within a recessed cavity **52**. Each recessed cavity **52** may include a corresponding shape, in this example hexagonal, to receive the respective terminal end **48** in a specific orientation. It should be noted, though, that alternate shapes of each terminal end **48**, and of the corresponding cavity **52** of the mount **50**, are within the scope of the present invention and include, but are not limited to, circular, oval, square, pentagonal, heptagonal and octagonal configurations. An opposing frusto-conical or semi-spherical portion **54** of each mount **50** seats within a corresponding cavity **56** contained within each upright post **36**, which facilitates in securing the grip assembly **38** to the base **34**.

The grip **42**, preferably constructed from a pliant material such as silicone, includes an inner core **58** disposable over the molded layer **44** for attachment to the cross member **40**. The grip **42** may optionally contain a layer of memory foam (not shown) to enhance the comfort thereof when grasped by a user. The grip **42** also contains a webbing support **60** partially extending from an outer surface. To increase comfort, the webbing support **60** is designed to accept a portion of a user's palm, thumb, and the heel and webbing of the hand, to provide greater load-bearing surface area to reduce pressure applied to the user's hand. The webbing support **60** may be configured for a left-handed user, as illustrated in FIG. **3**, or a right-handed user, as illustrated in FIG. **4**. The webbing support can also be selectively positioned for use with both left-handed and right-handed users.

To secure the grip assembly **38** to the base **34**, each post **36** contains an aperture **62** for receiving a male threaded fastener **64** therethrough. Each mount **50** contains a corresponding aperture **66** for receiving the fastener **64**, and each terminal end **48** of the cross member **40** contains a female threaded internal bore **68**. Upon disposing the fastener **64** through the respective post **36** and mount **50**, the fastener **64** threadably engages with the corresponding terminal end **48** of the shaft **46**. Upon further tightening the fastener **64**, each mount **50** seating within the respective post cavity **56** compresses under tension, frictionally engaging the grip assembly **38** to the posts **36** while at the same time allowing limited omni-directional movement of the grip assembly **38** relative to the base **34** and posts **36**. By omni-directional it is meant that the grip assembly **38** is permitted limited movement within six degrees of freedom, including heaving, swaying, surging, pitching, yawning and rolling.

As illustrated in FIG. **5**, to permit the omni-directional movement of the grip assembly **38**, the length of the cross member **40** is slightly less than the distance between the posts **36** while under tension, providing a gap **69** between the cross member **40** and the inner surface of each post **36**. Also, to prevent excess torsional movement of the grip assembly **38** when excessive torsional force is applied to the webbing support **60**, each post **36** may contain an optional ledge **70** positioned on an inner surface thereof which engages a cor-

responding outcropping **72** contained on the cross member **40**. The pliant mounts **50** allow the grip assembly **38** a limited range of movement relative to the base **34**, including translational movement in a three-dimensional plane, as well pivotal pitch, roll and yaw movement. The mounts **50** further act as shock reducers, absorbing both impact stresses transmitted through the cane **20** from contact with the ground, as well as movement applied to the handle assembly **22** by the user.

Connecting the handle assembly **22** to the support assembly **26** is accomplished by means of a neck assembly **76**. The neck assembly **76** includes a circular mounting cap **78** which is positionable over and attached to the upper portion **80** of the support assembly **26**, wherein a top bracket **30** and the rods **28** preferably seat therein and are adhered to the cap **78**. Alternatively, the cap **78** can be configured to have separate apertures (not shown) for receiving the upper terminal end of each rod **28** which are journaled therein. The mounting cap **78** contains a centrally located female threaded aperture **82** for receiving a male threaded fastener **84**. The fastener **84** is disposable through an aperture **86** located in the central portion of the base **34** to threadably engage the cap **78**, thereby securing the handle assembly **22** to the support assembly **26**. The cap **78** may be constructed of a pliant material which further acts as a shock absorber, reducing or eliminating impact stresses transmitted through the tip assembly **24** and support assembly **26** to the handle assembly **22** from contact with the ground.

The neck assembly **76** may further include mateable shims **88** which allow for the selectively angled positioning of the handle assembly **22** relative to the support assembly **26**. As illustrated in FIG. **6**, an exemplary shim **88** contains a central bore **90** for disposing the fastener **84** therethrough. Each shim **88** also contains a first angled surface **92** on one side, and a level surface **93** on the opposing side. The shims **88** are engaged with one another, preferably such that the angled surfaces **92** contact each other. As illustrated in FIGS. **7***a*, **7***b* and **7***c*, the shims **88** can be rotated relative to one another such that the pitch and roll of the handle assembly **22** relative to the support assembly **26** can be selectively positioned. Such adjustment may be especially desirable if the user has some malady which makes it difficult in grasping a cane in a conventional fashion. As illustrated in FIG. **7***a*, the shims **88** are adjusted so that the grip assembly **38** is a substantially parallel with the ground when the cane **20** is in an upright position. As illustrated in FIG. **7***b*, the top shim **88** has been positioned to adjust the pitch and roll of the handle assembly **22** relative to the support assembly **26**. As illustrated in FIG. **7***c*, both shims **88** have been positioned to adjust the pitch and roll of the handle assembly **22** relative to the support assembly **26**.

Referring back to FIG. **1**, a bottom portion **94** of the support assembly **26** connects to the ground engaging assembly **24**. The ground engaging assembly **24** generally includes a foot pad **95** connected to a threaded rod **96**. The rod **96** disposes within a housing **97** attached to the support assembly **26** and containing a threaded burr (not shown). By rotating the threaded rod **96**, the overall length of the cane **20** be adjusted. The bracket **30** includes a central aperture **98** so that the threaded rod **96** can be disposed therethrough. This allows the bracket **30** to be positioned to stabilize the lower portion **94** of the support assembly **26** without interfering with the ground engaging assembly **24**. Those skilled in the art should recognize that other known ground engaging assemblies can be employed with the present invention, including fixed length assemblies, locking assemblies and the like.

In initially setting up the walking cane **20** for a specific user, the user can customize the cane **20** by adjusting its height (if the ability to do so is available), as well as adjust the pitch and yaw of the handle assembly **22** by loosening the fastener **84** and selectively positioning the shims **88**. Upon attaining the desired position of the handle assembly **22**, the fastener **84** is tightened to lock the handle assembly **22** in place. Selective rotational positioning of the handle assembly **22** can also be accomplished in this manner if a directional foot is used.

Referring now to FIGS. **8**, **9** and **10**, a second embodiment of a walking cane of the present invention is indicated at **100**. The second embodiment **100** contains all the features of the first embodiment **20**, with the exception that a handle assembly **102** now employs an open design. As such, like references in the description of the second embodiment correspond with similar parts of the first embodiment. As illustrated in FIGS. **9**, **10** and **11**, the handle assembly **102** includes a base **104** having a substantially upright post **106** for supporting a grip assembly **108**. By substantially upright it is meant that the post **106** extends generally perpendicularly upward from the lengthwise plane of the base **104**, but may deviate therefrom up to 90 degrees in either direction and still be within the scope of the present invention. The base **104** and post **106** are preferably of unitary construction, but it is well within the scope of the present invention to attach the post **106** to the base **104** as separate pieces. The base **104** and post **106** are preferably molded from plastic or other suitable composite material which provides for lightweight and durable support, such as Delrin® as made commercially available by E.I. Du Pont de Nemours and Company of Wilmington, Del. Again, the use of any lightweight, high-strength material is well within the scope of the present invention, including aluminum, magnesium, titanium, advanced high-strength steels, fiber-reinforced composites, and metal matrix composites.

The grip assembly **108** includes a cantilevered member **110** adapted to contain a grip **112**. The cantilevered member **110**, which is generally cylindrical in shape, preferably includes a layer of composite plastic **114** molded over an inner metallic shaft **116**. A proximal end **118** of the shaft **116** extends beyond the molded layer **114** for supporting a pliable mount or dampener **120**. The mount **120** is configured to receive the proximal end **118** within a recessed cavity **122**. The recessed cavity **122** may include a corresponding shape, in this example hexagonal, to receive the proximal end **118** in a specific orientation. It should be noted, though, that alternate shapes of the proximal end **118**, and of the corresponding cavity **122**, are within the scope of the present invention and include, but are not limited to, circular, oval, square, pentagonal, heptagonal and octagonal configurations. An opposing frusto-conical or semi-spherical portion **124** of the mount **120** seats within a cavity **126** contained within the upright post **106**, which facilitates in securing the grip assembly **108** to the base **104**.

The grip **112**, preferably constructed from a pliant material such as silicone, includes an inner core **130** disposable over the molded layer **114** for attachment to the cantilevered member **110**. The grip **112** may also contain a layer of memory foam (note shown) to enhance the comfort thereof when grasped by a user. The grip **112** also contains a webbing support **132** partially extending from an outer surface. To increase comfort, the webbing support **132** is designed to accept a portion of a user's palm and thumb, and the webbing of the hand therebetween, to provide greater load-bearing surface area to reduce pressure applied to the user's hand. The webbing support **132** may be configured for a left-handed user, as illustrated in FIGS. **8** and **10**, or a right-handed user,

as illustrated in FIG. **9**. The webbing support **132** can also be selectively positioned for use with both left-handed and right-handed users.

To secure the grip assembly **108** to the base **104**, the post **106** contains an aperture **134** for receiving a male threaded fastener **136** therethrough. The mount **120** also contains a corresponding aperture **138** for receiving the fastener **136**, and the proximal end **118** contains a female threaded internal bore **140**. Upon disposing the fastener **136** through the post **106** and mount **120**, the fastener **136** threadably engages with the proximal end **118** of the shaft **116**. Upon further tightening the fastener **136**, the mount **120** seats within the post cavity **126** and compresses under tension, frictionally engaging the grip assembly **108** to the post **106**, while at the same time allowing limited omni-directional movement of the grip assembly **108**. By omni-directional it is meant that the grip assembly is permitted limited move within six degrees of freedom, including heaving, swaying, surging, pitching, yawning and rolling.

To permit the omni-directional movement of the grip assembly **108**, a small gap **141** exists between the cantilevered member **110** and the inner surface of post **106**, as best illustrated in FIG. **11**. To prevent excess torsional movement of the grip assembly **108** when excessive torsional force is applied to the webbing support **132**, the post **106** may contain an optional ledge **142** positioned on an inner surface thereof to receive a corresponding outcropping **144** contained on the cantilevered member **110**. The pliant mount **120** allows the grip assembly **108** a limited range of pitch, yaw and roll movement relative to the base. The mount **120** further acts as a shock reducer, absorbing both impact stresses transmitted through the cane from contact with the ground, as well as movement applied to the handle assembly **102** by the user.

Similar to the first embodiment **20**, the handle assembly **102** connects to the support assembly **26** by means of the neck assembly **76**. The handle assembly **102** is therefore positionable relative to the support assembly **26** through use of the shims **88** in the same manner as previously described. However, and as illustrated in FIG. **9**, the neck assembly may only consist of the cap member **78**.

Turning now to FIG. **12**, an alternative embodiment of the walking cane of the present invention is generally depicted at **200**. The walking cane **200** includes a handle portion **202** connected to a multi-member shaft portion **204** to which is attached a tip portion **206**. The handle portion **202** includes a parabolic saddle-shaped member **208** connected to the shaft portion **204** by a connecting assembly **210**. The design of the handle is such that the user's force from when walking is always directed in the most efficient way toward the central support of the shaft. No matter which angle the user uses to orient the cane to the ground while walking, the symmetrical fork-shaped handle directs the physical "load" to the shaft. This eliminates the need for the "offset" angle commonly used in conventional canes to solve this problem. Referring to FIGS. **13** and **14**, each end **212**, **213** of the saddle member **208** is designed to receive respective terminal ends **214** of a handle **216**. Each terminal end **214** of the handle **216** includes a compressible member **218** which seats within the respective end **212**, **213** to secure the handle **216** to the saddle member **208**. Each compressible member **218** is designed to be slightly positionable relative to the saddle-shaped member **208** in order to permit the handle **216** to adjust its position when a user grips the handle **216** and positions the cane **200** to support the user's weight thereon. As such, regardless the orientation of the cane **200** relative to the ground, the positionability of the handle **216** enables greater relaxation and relief of stress upon the user' hand, wrist, arm and elbow. This unique anti-shock system utilizes a cylinder or sphere made of compressible foam or silicone materials. A horizontal dowel-type rod **219** structure inside the grip extends beyond the grip into the center of these shock absorbers. Because the dowel from the grip is now surrounded by shock absorbing materials at each end, the shock absorption is omni-directional in that shock protection is afforded no matter which angle the user orients the cane to the ground. Further, the compressibility of each member **218** also absorbs shock forces transferred through the cane **200** during the repetitive engagement and disengagement of the tip portion **206** with the ground while the user is walking with the cane **200**.

Moreover, the handle **216** is ergonomically designed to provide an optimized gripping surface to further reduce stresses on the hand, wrist, arm and shoulder to relieve pain and fatigue. In so doing, the ergonomic handle **216** moves the primary point of stress and force from the weak, bony parts of the hand and wrist to the strong, "meaty" parts. The ergonomic handle **216** enables the hand, wrist and arm to be oriented in such a way as to provide maximum strength and minimal strains to the forearm, elbow, back and shoulder. The shape of the handle **216** provides surer, more comfortable gripping area for the thumb and forefinger, and also moves the main stress point away from the bony part of the hand to the meatier palm and heel areas.

The shaft portion **204** includes a plurality of elongated members **220**. Each elongated member **220** may consist of a hollow tube, for example a ¼ inch tube, or a solid rod, for example a ⅛ inch rod. The construction of either the tube or the rod preferably includes a light-weight material exhibiting a high tensile strength. Such suitable materials include, but are not limited to, carbon graphite and aluminum. Preferably three rods **220** are implemented and spaced apart at each terminal end thereof, and at an approximate midsection by a spacer **224**. It should be noted, though, that a different number of elongated members **220**, or a differing positioning thereof, is well within the scope of the present invention. By providing a plurality of lightweight elongated members **220** exhibiting high tensile strength, the overall weight of the cane **200** is drastically reduced without decreasing, and in some cases increasing, the strength of the cane **200**.

Positioned at the terminal end of the shaft portion **204** is the tip portion **206**. The tip portion **206** includes a member **226** engageable with the ground connected to a rod or tube **228** slidably disposable between the elongated members **220**. A flip-lock **230** secures the tip portion **206** relative to the shaft **204** when the tip **226** is at a desired position. The tip portion **206** is thereby positionable to extend or decrease the overall length of the cane **200** to fit the needs of the respective user.

Although the present invention has been described with reference to preferred embodiments, workers skilled in the art will recognize that changes may be made in form and detail without departing from the spirit and scope of the invention.

The invention claimed is:

1. A handle assembly for use with a walking aid comprising:

a generally upright first post;

a first recessed cavity contained on an inner face of the post;

a grip connectable substantially orthogonal to the post, the grip configured for grasping by a user's hand;

a pliable mount engageable with the post and a proximal end of the grip; and

a fastening mechanism to secure the grip and the mount to the post, the fastening mechanism biasing the mount against the grip, wherein at least a portion of the mount seats within the first cavity when the mount and grip are secured to the post, wherein the portion of the pliant

mount seating within the first recessed cavity includes an outer semi-spherical configuration, wherein the grip is permitted omni-directional movement relative to the post to increase comfort when the user grips the handle to use the walking aid.

2. The device of claim **1** wherein the fastening mechanism comprises a threaded fastener to secure the grip to the post, the post and the mount each including surfaces defining an aperture therethrough, the grip including a threaded bore for receiving a terminal end of the fastener, the terminal end of the fastener disposable through the aperture of the post and the aperture of the mount to threadably engage the bore of the grip, whereupon the grip is biased against the mount.

3. The device of claim **1** further comprising:

a second generally upright rigid post positioned in cooperable relation to the first post, terminal ends of the grip connected to each post; and

a second pliable mount disposed between the grip and the second post, wherein the second mount biases against the grip while permitting omni-directional movement of the grip relative to the posts to reduce impact stress and increase user comfort when the user grasps the handle assembly in using the apparatus.

4. The device of claim **1** wherein the grip contains an outcropping extending towards the post and the post contains a corresponding ledge for receiving the outcropping, wherein the amount of omni-directional movement of the grip is limited by the outcropping engaging the ledge.

5. The device of claim **1** and further comprising a second recessed cavity contained within pliant mount for receiving a terminal end of the grip.

6. The device of claim **5** wherein the second recessed cavity includes a flat inner surface extending perpendicular to the inner face of the post, and wherein the terminal end of the grip includes a corresponding outer flat surface, whereupon the second recessed cavity of the pliant mount receiving the terminal end of the grip, the outer flat surface engages the inner flat surface, wherein rotational movement of the grip relative to the post is prevented.

7. A handle assembly for use with a walking aid comprising:

a first generally upright rigid post;

a shaft having a proximal end connected to the first post, the shaft adaptable for grasping by a user's hand;

a first pliable mount disposed between the proximal end of the shaft and the first post, the first mount engaged with the first post and the shaft; and

a first recessed cavity contained on an inner face of the first post, wherein the first end of the mount includes a semi-spherical configuration, wherein a first end of the mount at least partially disposes within the cavity when engaged with the first post and the shaft, wherein the first mount permits omni-directional movement of the shaft relative to the first post to increase comfort when the user grips the handle to use the walking aid.

8. The handle assembly of claim **7** and further comprising a threaded fastener to secure the shaft and mount to the post, the post and the mount each including surfaces defining an aperture therethrough, the shaft including a threaded bore for receiving a terminal end of the fastener, the terminal end of the fastener disposable through the aperture of the post and the aperture of the mount to threadably engage the bore of the shaft, whereupon the shaft is urged against the mount.

9. The handle assembly of claim **7** and further comprising:

a second generally upright post positioned in cooperable relation to the first post, a distal end of the shaft connected to the second post; and

a second pliable mount disposed between the distal end of the shaft and the second post, the second mount engaged with the second post and the terminal end of the shaft, wherein the second mount permits omni-directional movement of the distal end of the shaft relative to the second post to assist in relieving hand, wrist and arm strains and reduce impact stress when the user grasps the handle assembly in using the walking aid.

10. The handle assembly of claim **9** and further comprising:

a first threaded fastener to secure the proximal end of the shaft and the first mount to the first post, the first post and the first mount each including surfaces defining an aperture therethrough, the proximal end of the shaft including a threaded bore for receiving a terminal end of the first fastener, the terminal end of the first fastener disposable through the aperture of the first post and the aperture of the first mount to threadably engage the bore of the proximal end of the shaft; and

a second threaded fastener to secure the distal end of the shaft and the second mount to the second post, the second post and the second mount each including surfaces defining an aperture therethrough, the distal end of the shaft including a threaded bore for receiving a terminal end of the second fastener, the terminal end of the second fastener disposable through the aperture of the second post and the aperture of the second mount to threadably engage the bore of the distal end of the shaft.

11. The device of claim **7** and further comprising a second recessed cavity contained within a second end of the pliant mount, the second recessed cavity for receiving the proximal end of the shaft.

12. The device of claim **11** wherein the second recessed cavity includes a flat inner surface extending perpendicular to the inner face of the upright post, and wherein the proximal end of the shaft includes a corresponding outer flat surface, whereupon the second recessed cavity receiving the proximal end of the shaft the outer flat surface of the shaft engages the inner flat surface of the second recessed cavity, wherein rotational movement of the shaft relative to the upright post is prevented.

13. A handle assembly for use with a walking aid comprising:

a generally upright first post containing a first recessed cavity on an inner face;

a second generally upright rigid post positioned in cooperable relation to the first post, the second post containing a second recessed cavity

a cross member extending substantially orthogonal between the first and second posts, the cross member configured for grasping by a user's hand;

a first shock absorber having a first end at least partially disposed within the first recessed cavity and a second end at least partially disposed over a proximal end of the cross member;

a second shock absorber having a first end at least partially disposed within the second recessed cavity and a second end at least partially disposed over an opposing distal end of the cross member; and

a fastening mechanism to secure the proximal end of the cross member to the first post and the distal end of the cross member to the second post, wherein the first end of the first and second shock absorbers include a semi-spherical configuration, whereupon securing the cross member to the first and second posts the first shock absorber becomes biased against the proximal end of the cross member and the first post and the second shock

absorber becomes biased against the distal end of the cross member and the second post, whereupon the cross member is permitted omni-directional movement relative to the post to increase comfort when the user grips the handle when using the walking aid for walking.

14. The device of claim **13** and further comprising a second recessed cavity contained within the shock absorber for receiving the proximal end of the cross member.

15. The device of claim **14** wherein the second recessed cavity of the shock absorber includes a flat inner surface extending perpendicular to the inner face of the upright post, wherein the proximal end of the cross member includes a corresponding outer flat surface, whereupon the second recessed cavity of the shock absorber receiving the proximal end of the cross member, the outer flat surface of the cross member engages the inner flat surface of the second recessed cavity, wherein rotational movement of the cross member relative to the upright post is limited.

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