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(71) Applicant and
(72) Inventor: **MCGOVERN, Eddie, J.** [US/US]; 35509 N. 31st Drive, Phoenix, AZ 85086-2111 (US).

(74) Agent: **VOLK, Michael, D., Jr.**; Stoneman Volk Patent Group, 3770 N. 7th., Suite 100, Phoenix, AZ 85014-5022 (US).

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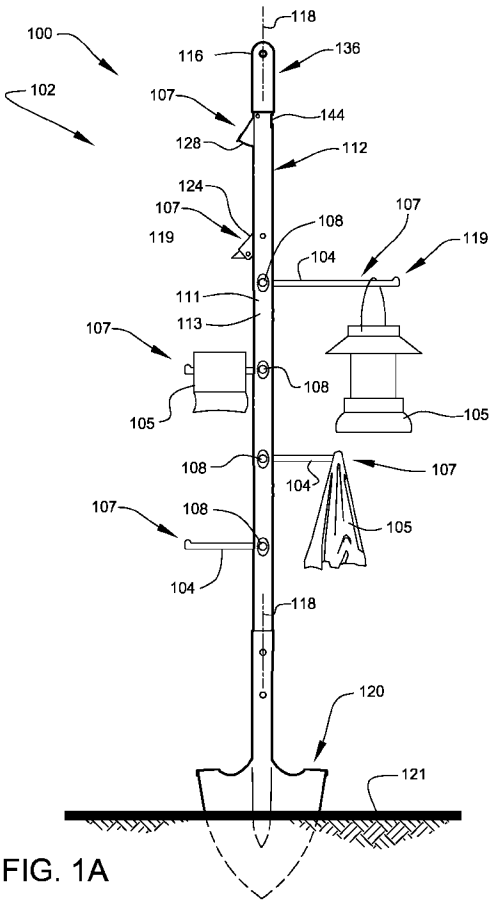

FIG. 1A

(57) Abstract: A system addressing the problem of storing and supporting outdoor items used while camping without transporting any additional equipment. The system provides a plurality of camp tools that are integral to a shovel, so as to provide the intended function without interfering with the normal usage of the shovel.

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ENHANCED SHOVEL SYSTEMS

BACKGROUND

This invention relates to providing a system for improved storage and support of outdoor items used while camping. More particularly this invention relates to providing a system for improved storage and support of outdoor items used while camping, which preferably incorporates a shovel as the primary means of enclosure and support.

Individuals camping in the wilderness often utilize items that, by their nature or function, necessitate support or storage above the ground, such as, for example, lanterns, toilet paper, garbage bags, water jugs, etc. Typically, the person hangs such camping items on a tree, or some form of stand, so that the object is elevated by an amount above the ground for the object's intended use. This is not always possible when no tree or support is available for such a purpose. Often, the transport and erecting of such a temporary support may be inconvenient, representing an additional piece of equipment to be hauled to the campsite. In addition, many persons carry a shovel while camping for a multitude of purposes, including trenching around a tent, digging a latrine, moving rock from under a tent location, trenching for a fire, putting out a fire, etc. It would be of great benefit to campers to provide an enhanced shovel system that provides both support and digging functionality within a single tool.

OBJECTS AND FEATURES OF THE INVENTION

A primary object and feature of the present invention is to provide a system overcoming the problem of storing and supporting outdoor items used while camping without transporting any additional equipment.

It is a further object and feature of the present invention to provide such a system that is integral to a shovel, so as to provide the intended function without interfering with the normal usage of the shovel.

A further primary object and feature of the present invention is to provide such a system that is efficient, inexpensive, and handy. Other objects and features of this invention will become apparent with reference to the following descriptions.

SUMMARY OF THE INVENTION

In accordance with a preferred embodiment hereof, this invention provides a system related to assisting at least one user during outdoor camping activities, such system comprising: at least one soil-shoveling tool structured and arranged to assist the at least one user to perform at least one shoveling activity; at least one handle-bar structured and arranged to assist the at least one user in manipulating such at least one soil-shoveling tool; and at least one non-shovel tool structured and arranged to provide at least one tool not related to such at least one shoveling activity; wherein such at least one shovel tool is supported by such at least one handle-bar; wherein such

at least one non-shovel tool is supported by such at least one handle-bar; wherein such at least one handle-bar comprises at least one internal compartment structured and arranged to internally compartmentalize such at least one non-shovel tool therewithin; and wherein, when internally compartmentalized within such at least one handle-bar, such at least one non-shovel tool does not interfere with hand-manipulation of such at least one handle-bar.

Moreover, it provides such a system wherein: such at least one non-shovel tool comprises at least one support arm structured and arranged to support at least one camping item from such at least one handle-bar; such at least one support arm comprises at least one deployed position extending generally outwardly of such at least one handle-bar, and at least one stowed position located substantially within such at least one internal compartment of such at least one handle-bar. Additionally, it provides such a system wherein: such at least one support arm comprises at least one support-arm pivot structured and arranged to pivotally couple such at least one support arm with such at least one handle-bar; and such at least one support-arm pivot assists pivotal movement of such at least one support arm between such at least one deployed position and such at least one stowed position.

Also, it provides such a system wherein such at least one support arm comprises: at least one first positional maintainer structured and arranged to positionally maintain such at least

one support arm in such at least one stowed position; at least one second positional maintainer structured and arranged to positionally maintain such at least one support arm in such at least one deployed position; and at least one deployment assister structured and arranged to assist an initial deployment of such at least one support arm from such at least one stowed position; wherein operational enablement and disablement of such at least one positional maintainer is user controllable. In addition, it provides such a system wherein such at least one deployment assister comprises at least one spring member. And, it provides such a system wherein: such at least one handle-bar comprises at least one first longitudinal axis extending substantially along its length; such at least one support arm comprises an elongated member having at least one second longitudinal axis extending along its length; and when in such at least one deployed position, such at least one second positional maintainer maintains such at least one first longitudinal axis in a generally perpendicular relationship relative to such at least one second longitudinal axis.

Also, it provides such a system wherein such at least one handle-bar comprises: at least one first handle portion structured and arranged to assist the at least one user in manipulating such at least one soil-shoveling tool; at least one second handle portion structured and arranged to supportively engage such at least one shovel tool; and at least one pivot joint structured and arranged to pivotally couple such at least

one first handle portion and such at least one second handle portion; wherein an unfolded length of such at least one handle-bar is reduced by pivoting such at least one first handle to at least one folded position adjacent such at least one second handle portion. Moreover, it provides such a system wherein: such at least one pivot joint comprises at least one positional lock structured and arranged to positionally lock such at least one first handle portion and such at least one second handle portion in at least one substantially coaxial configuration; and such at least one positional lock is engagable and disengagable by the at least one user. Further, it provides such a system wherein such at least one soil-shoveling tool comprises: at least one shovel blade structured and arranged to assist manipulation of the soil; wherein such at least one shovel blade comprises at least one first end and at least one second end; wherein such at least one first end comprises at least one soil-penetrating shape structured and arranged to assist penetration of the soil; wherein such at least one second end comprises at least one handle-receiving socket structured and arranged to receive such at least one handle-bar.

Even further, it provides such a system wherein such at least one non-shovel tool comprises at least one storage container comprising at least one interior portion structured and arranged to contain storable camping items. Moreover, it provides such a system wherein such at least one storage container comprises: at least one deployed position extending

generally outwardly of such at least one handle-bar, and at least one stowed position located substantially within such at least one internal compartment of such at least one handle-bar; wherein, when in such at least one deployed position, such at least one storage container comprises at least one storage opening structured and arranged to provide access to such at least one interior portion; and wherein, when in such at least one stowed position, such at least one interior portion is substantially enclosed within such at least one handle-bar. Additionally, it provides such a system wherein: such at least one storage container comprises at least one storage-container pivot structured and arranged to pivotally couple such at least one storage container with such at least one handle-bar; and such at least one storage-container pivot assists pivotal movement of such at least one storage container between such at least one deployed position and such at least one stowed position. Also, it provides such a system wherein such at least one storage container comprises at least one moisture-restrictive seal structured and arranged to limit the introduction of moisture to within such at least one interior portion.

In addition, it provides such a system wherein such at least one non-shovel tool comprises: at least one cutting blade structured and arranged to assist the at least one user to perform cutting actions; wherein such at least one cutting blade is locatable within such at least one handle-bar. And, it

provides such a system wherein such at least one cutting blade comprises: at least one deployed position extending generally outwardly of such at least one handle-bar, and at least one stowed position located substantially within such at least one internal compartment of such at least one handle-bar. Further, it provides such a system wherein: such at least one cutting blade comprises at least one cutting-blade pivot structured and arranged to pivotally couple such at least one cutting blade with such at least one handle-bar; and such at least one cutting-blade pivot assists pivotal movement of such at least one cutting blade between such at least one deployed position and such at least one stowed position.

Even further, it provides such a system wherein such at least one non-shovel tool comprises at least one bottle opener structured and arranged to assist the user in removing bottle caps from beverage bottles. Furthermore, it provides such a system wherein: such at least one non-shovel tool comprises at least four support arms each one structured and arranged to support at least one camping item from such at least one handle-bar; wherein at least one of such at least four support arms comprises a length of about thirteen inches; and wherein at least one of such at least four support arms comprises a length of about seven inches.

Even further, it provides such a system wherein: such at least one soil-shoveling tool comprises at least one shovel blade structured and arranged to assist manipulation of the

soil, wherein such at least one shovel blade comprises at least one first end and at least one second end, wherein such at least one first end comprises at least one soil-penetrating shape structured and arranged to assist penetration of the soil, and wherein such at least one second end comprises at least one handle-receiving socket structured and arranged to receive such at least one handle-bar; such at least one non-shovel tool comprises at least one storage container comprising at least one interior portion structured and arranged to contain storable camping items, at least one cutting blade structured and arranged to assist the at least one user to perform cutting actions, and at least one bottle opener structured and arranged to assist the user in removing bottle caps from beverage bottles.

In accordance with another preferred embodiment hereof, this invention provides a method of developing at least one multi-functional shovel to assist at least one user during outdoor camping activities, such method comprising the steps of: providing at least one shovel handle structured and arranged to assist the at least one user in manipulating at least one shovel blade during at least one shoveling activity; providing at least one camp tool, not related to such at least one shoveling activity, usable by the at least one user during such outdoor camping activities; and incorporating such at least one camp tool within such at least one shovel handle so that such at least one camp tool is permanently mounted to such at least one

shovel handle; wherein such at least one shovel handle comprises at least one internal compartment structured and arranged to internally compartmentalize such at least one camp tool when not in use; and wherein, when internally compartmentalized within such at least one shovel handle, such at least one camp tool does not interfere with hand-manipulation of such at least one shovel handle. Even further, it provides such a method further comprising the steps of: providing at least one shovel blade structured and arranged to assist the at least one user to perform such at least one shoveling activity; and mounting such at least one shovel blade to such at least one shovel handle.

In accordance with another preferred embodiment hereof, this invention provides a system related to assisting at least one user during outdoor camping activities comprising: shovel tool means for assisting the at least one user to accomplish at least one shoveling activity; handle-bar means for assisting the at least one user manipulate such shovel tool means during the; and non-shovel tool means for providing at least one tool not relating to such at least one shoveling activity; wherein such shovel tool means is supported by such handle-bar means; wherein such non-shovel tool means is supported by such handle-bar means; wherein such handle-bar means comprises compartment means for substantially fully compartmentalizing such non-shovel tool means therewithin. In addition, it provides each and every novel feature, element, combination, step and/or method disclosed or suggested by this patent application.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1A shows a front elevation view, illustrating an enhanced shovel, comprising a preferred arrangement of camping tools deployed from a handle portion, according to a preferred embodiment of the present invention.

FIG. 1B shows a front elevation view, illustrating the enhanced shovel with the camping tools fully stowed within the handle portion, according to a preferred embodiment of FIG. 1.

FIG. 2 shows a perspective view, illustrating the enhanced shovel, according to the preferred embodiment of FIG. 1A.

FIG. 3 shows an enlarged cutaway view, illustrating preferred internal arrangements of the enhanced shovel, according to the preferred embodiment of FIG. 1A.

FIG. 4 shows another enlarged cutaway view, illustrating additional preferred internal arrangements of the enhanced shovel, according to the preferred embodiment of FIG. 1A.

FIG. 5 shows a schematic diagram generally illustrating a method of developing at least one multi-functional shovel to assist at least one user during outdoor camping activities, according to a preferred method of the present invention.

FIG. 6 shows a front elevation view, illustrating an alternate enhanced shovel, comprising a pivot joint, according to another preferred embodiment of the present invention.

FIG. 7 shows a perspective view of the alternate enhanced shovel of FIG. 6 in a folded configuration.

FIG. 8 shows a side view of the pivot joint in a partially folded configuration.

FIG. 9 shows a side view illustrating the manipulation of a threaded locking collar preferably used to fix the pivot joint in an unfolded position.

FIG. 10 shows a side view illustrating the pivot joint fixed in the unfolded position.

FIG. 11 shows an exploded view illustrating the preferred components of the pivot joint.

DETAILED DESCRIPTION OF THE BEST MODES AND PREFERRED EMBODIMENTS OF THE INVENTION

FIG. 1A shows a front elevation view, illustrating enhanced shovel **102** comprising a preferred arrangement of camp tools **107** deployed from handle portion **112**, according to a preferred embodiment of the present invention. FIG. 1B shows a front elevation view, illustrating enhanced shovel **102** with camping tools **107** fully stowed within handle portion **112**, according to a preferred embodiment of FIG. 1A. FIG. 2 shows a perspective view, illustrating enhanced shovel **102**, according to the preferred embodiment of FIG. 1A.

Preferred embodiments of enhanced shovel system **100**, preferably including enhanced shovel **102**, are designed to be brought along by a user, while camping, to assist in the performance of digging and or shoveling activities. In addition, preferred embodiments of enhanced shovel system **100** provide a means for convenient storage and support of camping

equipment **105**, as shown. Such camping equipment **105** preferably comprises common camping items (e.g., lanterns, bathroom tissue, towels) used during outdoor camping activities, especially items that customarily require suspension from an elevated support during their use, as shown. Thus, enhanced shovel **102** provides both support and digging functions within a single hand-operated tool. Preferably, enhanced shovel **102** comprises an assembly of two principle components, preferably comprising handle portion **112** and shovel-blade portion **120**, as shown.

Shovel-blade portion **120** is preferably arranged in such manner as to permit its use in the manipulation of soil (e.g. soiled penetration, soil lifting, etc.). Shovel-blade portion **120** preferably comprises a substantially solid plate **117** having a lower and an upper end respectively identified herein as first end **122** and second end **123**, as shown. Preferably, first end **122** comprises at least one soil-penetrating shape, most preferably a V-shaped point, as shown. This preferred shape assists in the penetration of shovel-blade portion **120** into soil **110**, as shown in FIG. 1A and FIG. 1B. Preferably, second end **123** comprises handle-receiving socket **126** structured and arranged to receive an end of handle portion **112**, as shown. Preferably, plate **117** and handle-receiving socket **126** are formed from a single material, most preferably, a single piece of sheet metal. Preferably, the sheet metal of plate **117** is formed into a slightly concaved shape, as shown, to stiffen the plate and assists in retaining soil during lifting. This type of

construction is often referred to in the art as an "open-back" shovel blade. Alternately preferably, shovel-blade portion **120** is constructed from a rigid molded plastic, or the like.

Preferably, handle portion **112** is tightly fitted to handle-receiving socket **126** and is preferably retained therein by means of an appropriate mechanical fastener **114** (e.g., a preferred rivet, a preferred bolt, or a preferred screw). Upon reading the teachings of this specification, those of ordinary skill in the art will now understand that, under appropriate circumstances, considering such issues as intended use, etc., other shovel-tool arrangements, such as integrally forming a shovel blade with a handle, utilizing a square-point shovel blade, providing perforations within the blade plate to assist sifting of material, omitting the shovel blade in favor of a spike (to develop a multifunctional walking stick), allowing for interchangeable blades, etc., may suffice.

Together, handle portion **112** (at least embodying herein at least one handle-bar structured and arranged to assist the at least one user in manipulating such at least one soil-shoveling tool) and shovel-blade portion **120** (at least embodying herein at least one soil-shoveling tool) enables the above-described "shovel" functionality wherein a user may use enhanced shovel **102** to perform at least one shoveling activity.

Preferably, as best illustrated in FIG. 1A, handle portion **112** is designed to contain at least one, preferably a plurality of deployable camp tools **107**, as shown. Preferably, each camp

tool **107** is useful in assisting a user to perform an outdoor camping activity. It is noted that such camp tools **107** are, by preference, not directly related to shoveling activities (wherein such camp tools at least embody herein non-shovel tools). Preferred camp tools **107** at least comprise one or more retractable support arms **104**, as shown. A preferred combination of camp tools **107** comprises one or more retractable support arms **104** in combination with retractable knife **124**, storage container **128**, and bottle opener **144**, as shown.

Preferably, handle portion **112** comprises an elongated cylindrical bar comprising outer wall **111** having, along the majority of its length, an outer graspable surface **113**, as shown. Preferably, outer graspable surface **113** comprises a substantially uniform outer diameter **D** of between about 1-1/2 inches and about 2 inches, as shown. Preferably, outer wall **111** is positioned substantially symmetrically about first longitudinal axis **118**, which preferably extends substantially along the length of the handle, as shown. Upon reading the teachings of this specification, those of ordinary skill in the art will now understand that, under appropriate circumstances, considering such issues as ease of use, etc., other handle arrangements, such as curved handle shapes, handles having offset portions, folding handles, etc., may suffice.

Preferably, handle portion **112** comprises one or more internal compartments **125** structured and arranged to internally compartmentalize camp tools **107**, as will be discussed with

respect to FIG. 4 and FIG. 5. Preferably, each of the deployable camp tools **107** comprises internally stowed position **129** substantially within internal compartment **125** of handle portion **112**. When in such a stowed position, camp tools **107** are maintained at a position essentially equal to or below the level of outer graspable surface **113** so as to not interfere with hand-manipulation of handle portion **112** by the user, as best illustrated in FIG. 1B.

Preferably, the upper distal end **136** of handle portion **112** preferably comprises handle-gripping portion **116**, as shown. Handle-gripping portion **116** preferably comprises an elastomeric material that assists in user-manipulation of enhanced shovel **102** (e.g., prevents slipping in the hands of a user, protects the user from unwanted vibration, etc.).

A preferred embodiment of handle portion **112** preferably comprises at least one retractable support arm **104**, more preferably, four retractable support arms **104**, as shown. Preferably, each retractable support arm **104** is designed to assist in the support of camping equipment **105** from handle portion **112** at a level preferably above ground surface **121**, as shown (at least embodying herein wherein such at least one non-shovel tool comprises at least one support arm structured and arranged to support at least one camping item from such at least one handle-bar). Preferably, each retractable support arm **104** comprises a deployed position **119** that extends generally outwardly of handle portion **112** (as best illustrated in FIG 1A)

and the previously noted stowed position **129** that locates retractable support arm **104** substantially within its respective internal compartment **125** of handle portion **112**.

FIG. 3 shows an enlarged cutaway view, illustrating preferred internal arrangements of enhanced shovel **102**, according to the preferred embodiment of FIG. 1A. Preferably, each retractable support arm **104** is pivotally coupled to handle portion **112** by support-arm pivot **130**, as shown. Preferably, support-arm pivot **130** assists pivotal movement of retractable support arm **104** between deployed position **119** and stowed position **129**, as suggested by the dashed-line depiction of the illustration.

Preferably, each retractable support arm **104** comprises a generally elongated member having a second longitudinal axis **131** extending substantially along its length, as shown. Preferably, each retractable support arm **104** passes in and out of a respective internal compartment **125** through opening **132** in outer wall **111**, as shown. The lower terminating edge **133** of opening **132** is preferably positioned to form a stop adapted to maintain retractable support arm **104** in a preferred deployed orientation relative to handle portion **112**. More specifically, the lower terminating edge **133** of opening **132** preferably functions as a positional maintainer (at least embodying herein at least one second positional maintainer) to maintain second longitudinal axis **131** of retractable support arms **104** in a generally perpendicular relationship relative to first longitudinal axis

118 of handle portion **112**, as shown. Upon reading the teachings of this specification, those of ordinary skill in the art will now understand that, under appropriate circumstances, considering such issues as intended use, cost, etc., other position-maintaining arrangements, such as supportive ratcheting holders, supportive cords, fixing pins, etc., may suffice.

Preferably, retractable support arm **104** is maintained in stowed position **129** by a user-releasable lock assembly **134** (at least embodying herein at least one first positional maintainer). Preferably, user-releasable lock assembly **134** comprises a releasable locking mechanism, such as a locking ratchet mechanism, or the like. Preferably, user-releasable lock assembly **134** is operated by depressing push button **108** located at a user-accessible position on handle portion **112**, as shown. In addition, retractable support arm **104** comprises at least one deployment assister, most preferably spring member **135**, as shown. Spring member **135** preferably assists the initial deployment of retractable support arm **104** from stowed position **129** by "spring" action. Preferably, spring member **135** is compressed as retractable support arm **104** is swung upwardly into a respective internal compartment **125**. On release of user-releasable lock assembly **134**, spring member **135** preferably "ejects" retractable support arm **104** from internal compartment **125** as the compressive energy stored by spring member **135** is released. Spring member **135** preferably comprises a small "S"-shaped segment of spring steel mechanically fastened to the

internal surface of outer wall **111** (within internal compartment **125**), as shown.

It is preferred that at least one retractable support arm **104** be substantially longer in relation to the other retractable support arms **104**, as shown. This preference increases the functionality of enhanced shovel **102** by accommodating the support of a wider range of camping equipment **105** than would be possible using arms of shorter length. Preferably, at least one of the four retractable support arms **104** comprises a projecting length of about thirteen inches with the remaining retractable support arm **104** comprising projecting lengths of about seven inches, as best shown in FIG. 1A.

Handle portion **112** preferably supports and allows for the use and storage of retractable knife **124**, as shown. Retractable knife **124** (at least embodying herein at least one cutting blade structured and arranged to assist the at least one user to perform cutting actions) is preferably stored within an internal compartment of handle portion **112** and can be rotationally extended outward to allow for use as a cutting tool. Preferably, retractable knife **124** can be used to cut items frequently used while camping (e.g., rope, twine, lanyard, etc.).

Preferably, retractable knife **124** comprises a deployed position **119** that extends generally outwardly of handle portion **112** (as best illustrated in FIG 1A) and a stowed position **129** that locates retractable knife **124** substantially within its

respective internal compartment **125** of handle portion **112**. The preferred arrangements of retractable knife **124** within handle portion **112** preferably follow the above-described preferred structures and arrangements of retractable support arms **104**. Thus, retractable knife **124** preferably comprises component arrangements analogous to support-arm pivot **130**, user-releasable lock assembly **134**, and spring member **135** of retractable support arm **104**.

FIG. 4 shows another enlarged cutaway view, illustrating additional preferred internal features and arrangements of enhanced shovel **102**, according to the preferred embodiment of FIG. 1A. Preferably, enhanced shovel **102** further comprises at least one deployable storage container **128**, as shown. Preferably, storage container **128** comprises at least one interior portion **136** preferably adapted to contain small storable camping items **137**, as shown. Storage container **128** is preferably designed to deploy by pivoting outwardly from compartment **125** of handle portion **112**.

As with prior camp tools **107**, storage container **128** preferably comprises a deployed position **119** and a stowed position **129**, as shown. Storage container **128** preferably comprises a box-like structure preferably formed by front wall **138**, rear wall **140**, upper wall **141**, an actuate bottom wall **142**, and opening **139**, as shown. Preferably, opening **139** provides access to interior portion **136** when storage container **128** is in deployed position **119**, as shown. When in stowed position **129**,

storage container **128** is substantially enclosed within internal compartment **125**, thus preferably preventing small storable camping items **137** from passing out of interior portion **136**. Preferably, storage container **128** is pivotally coupled to handle portion **112** by storage-container pivot **144**, as shown. Preferably, storage-container pivot **144** assists pivotal movement of storage container **128** between stowed position **129** and deployed position **119**, as illustrated by the dashed-line depiction. Preferably, storage container **128** comprises at least one moisture-resisting seal **145** designed to limit the introduction of moisture into interior portion **136**.

Enhanced shovel **102** preferably comprises bottle opener **147**, as shown. Bottle opener **147** is preferably generated by forming a transverse slot opening **150** within outer wall **111**, as shown. Preferably, transverse slot opening **150** is formed approximately perpendicular to first longitudinal axis **118** and is designed to engage bottle cap **151**, as shown. Preferably, the lower edge of transverse slot opening **150** comprises a projecting blade-like engager **152** adapted to engage the peripheral flange of bottle cap **151**, as shown. Preferably, the upper edge of transverse slot opening **150** comprises fulcrum surface **153** adapted to engage the top of bottle cap **151**, as shown. Preferably, bottle cap **151** is removed by rotation of bottle **152** while bottle cap **151** is engaged on arcuately-shaped engager **152** and fulcrum surface **153**.

FIG. 5 shows a schematic diagram generally illustrating a preferred method **160** used to develop at least one multi-

functional shovel to assist at least one user during outdoor camping activities, according to a preferred method of enhanced shovel system **100**. Method **160** is preferably embodied within a series of preferred steps described below.

Initially, at least one shovel handle, generally matching the structures and arrangements of handle portion **112**, is provided as indicated in preferred step **162**. Next, as indicated in preferred step **164**, one or more camp tools are selected for incorporation into handle portion **112**. Next, the selected camp tools are incorporated within the shovel handle so that the camp tools are permanently mounted to the handle as indicated in preferred step **166**. It is again noted that the selected tools are integrated within the handle so as to maintain the user's ability to grip and manipulate handle portion **112** in a customary manner. Next, as indicated in preferred step **168**, at least one shovel blade, generally matching the structures and arrangements of shovel-blade portion **120**, is provided. Finally, the above-noted shovel blade is mounted to the shovel handle, as indicated in preferred step **170**.

FIG. 6 shows a front elevation view, illustrating alternate enhanced shovel **180**, comprising pivot joint **182**, according to another preferred embodiment of the present invention. FIG. 7 shows a perspective view of alternate enhanced shovel **180** of FIG. 6 in a folded configuration. Alternate enhanced shovel **180** preferably comprises a folding embodiment of enhanced shovel system **100**. In this preferred embodiment of the present

invention, handle portion **184** of alternate enhanced shovel **180** is preferably divided into two independent segments joined by pivot joint **182**, as shown.

Handle portion **184** preferably comprises upper handle portion **186** and lower handle portion **188**, as shown. Lower handle portion **188** is preferably coupled with shovel-blade portion **120**, as shown(at least embodying herein at least one second handle portion structured and arranged to supportively engage such at least one shovel tool). Both upper handle portion **186** (at least embodying herein at least one first handle portion structured and arranged to assist the at least one user in manipulating such at least one soil-shoveling tool) and lower handle portion **188** are preferably configured to contain deployable camping equipment **105** in a manner substantially similar to the preferred arrangements of handle portion **112**.

Pivot joint **182** preferably enables pivotal rotation of upper handle portion **186** and lower handle portion **188** between the extended position of FIG. 6, and the folded position of FIG. 7. When configured to the folded position of FIG. 7, upper handle portion **186** and lower handle portion **188** are folded together in a substantially parallel relationship to reduce the overall length of handle portion **184** to facilitate storage of alternate enhanced shovel **180** (at least embodying herein wherein an unfolded length of such at least one handle-bar is reduced by pivoting such at least one first handle to at least one folded position adjacent such at least one second handle portion).

FIG. 8 through FIG. 10 illustrate a preferred manipulation of pivot joint **182** to fix pivot joint **182** in an unfolded position. FIG. 8 shows a side view of pivot joint **182** in a partially folded configuration. FIG. 9 shows a side view illustrating the manipulation of threaded locking collar **190** preferably used to secure pivot joint **182** in the unfolded position. FIG. 10 shows a side view illustrating pivot joint fixed in the unfolded position with upper handle portion **186** and lower handle portion **188** secured in a coaxial configuration. FIG. 11 shows an exploded view illustrating the preferred components of pivot joint **182**.

Pivot joint **182** preferably comprises a set of inter-engaging parts identified herein as upper pivot member **192**, lower pivot member **194**, coupler pin **196**, and threaded locking collar **190**, as shown. Upper pivot member **192** is firmly joined with upper handle portion **186** and lower pivot member **194** is firmly joined with lower handle portion **188**, as shown. Pivot joint **182** preferably comprises at least one cylindrical upper knuckle **200** integrally formed with upper pivot member **192**, and at least one, preferably two, cylindrical lower knuckles **202** integrally formed with lower pivot member **194**, as shown. Preferably, upper knuckle **200** is interdigitally positioned between the two lower knuckles **202**, and the retaining coupler pin **196** is pressed through the internal apertures of the lower knuckles **202** and upper knuckle **200**, thereby pivotally joining the two pivot members, as shown. It will be understood by those

skilled in the art, based on the teachings of this disclosure that under appropriate circumstances, considering such issues as cost and intended use, other hinge structures, such as, pivot joints formed separately from the upper and lower pivot members, double jointed connections, etc., may suffice.

Lower pivot member **194** preferably comprises an upwardly projecting bar **206** structured and arranged to engage a complementary receiving slot **208** formed within upper pivot member **192.** Thus, projecting bar **206** is preferably structured and arranged to reside within receiving slot **208** when pivot joint 182 is placed in the unfolded position of FIG. 6.

Upper pivot member **192** further comprises a substantially cylindrical body having an outer surface supporting a set of integrally formed helical threads **210**, as shown. Threaded locking collar **190** preferably comprises a hollow cylindrical member fitted with inner helical-threading **211** adapted to threadably engage helical threads **210.** Manual rotation of threaded locking collar **190** results in the up-and-down translation of threaded locking collar **190** over upper pivot member **192.** Both projecting bar **206** and receiving slot **208** are preferably sized and arranged so as to not impede the translational movement of threaded locking collar **190** over upper pivot member **192.**

In preferred use, pivot joint **182** is locked in the unfolded position by a clockwise rotation of threaded locking collar 190 down upper pivot member **192**, as diagrammatically illustrated in

FIG. 9. This action places threaded locking collar **190** in a lowered position blocking the pivoting movement of projecting bar **206** out of receiving slot **208**. This preferably prevents relative rotation of upper pivot member **192** and lower pivot member **194** about pivot axis **216** of coupler pin **196**. Thus, threaded locking collar **190** comprises at least one positional lock structured and arranged to positionally lock such at least one first handle portion and such at least one second handle portion in at least one substantially coaxial configuration, as shown. Release of pivot joint **182** is preferably achieved by rotating threaded locking collar **190**, in a counterclockwise direction, to a position above both projecting bar **206** and receiving slot **208**. In this configuration, pivot joint **182** is again free to hinge about pivot axis **216**. Such positional locking arrangement is preferably engagable and disengagable by the user.

Pivot joint **182** is preferably constructed from a substantially rigid and durable material, preferably cast metal, most preferably cast aluminum selected for favorable weight, durability, and economy. All handle portions are preferably constructed from substantially rigid and durable materials, preferably extruded aluminum. Upon reading this specification, those with ordinary skill in the art will now appreciate that, under appropriate circumstances, considering such issues as cost, user preference, etc., other material arrangements such

as, for example, the use of rigid plastics, composite materials including fiberglass-reinforced resins, etc., may suffice.

Although applicant has described applicant's preferred embodiments of this invention, it will be understood that the broadest scope of this invention includes modifications such as diverse shapes, sizes, and materials. Such scope is limited only by the below claims as read in connection with the above specification. Further, many other advantages of applicant's invention will be apparent to those skilled in the art from the above descriptions and the below claims.

What is claimed is:

1) A system related to assisting at least one user during outdoor camping activities, said system comprising:

a) at least one soil-shoveling tool structured and arranged to assist the at least one user to perform at least one shoveling activity;

b) at least one handle-bar structured and arranged to assist the at least one user in manipulating said at least one soil-shoveling tool; and

c) at least one non-shovel tool structured and arranged to provide at least one tool not related to such at least one shoveling activity;

d) wherein said at least one shovel tool is supported by said at least one handle-bar;

e) wherein said at least one non-shovel tool is supported by said at least one handle-bar;

f) wherein said at least one handle-bar comprises at least one internal compartment structured and arranged to internally compartmentalize said at least one non-shovel tool therewithin; and

g) wherein, when internally compartmentalized within said at least one handle-bar, said at least one non-shovel tool does not interfere with hand-manipulation of said at least one handle-bar.

2) The system according to Claim 1 wherein said at least one handle-bar comprises:

a) at least one first handle portion structured and arranged to assist the at least one user in manipulating said at least one soil-shoveling tool;

b) at least one second handle portion structured and arranged to supportively engage said at least one shovel tool; and

c) at least one pivot joint structured and arranged to pivotally couple said at least one first handle portion and said at least one second handle portion;

d) wherein an unfolded length of said at least one handle-bar is reduced by pivoting said at least one first handle to at least one folded position adjacent said at least one second handle portion.

3) The system according to Claim 2 wherein:

a) said at least one pivot joint comprises at least one positional lock structured and arranged to positionally lock said at least one first handle portion and said at least one second handle portion in at least one substantially coaxial configuration; and

b) said at least one positional lock is engagable and disengagable by the at least one user.

4) The system according to Claim 1 wherein:

a) said at least one non-shovel tool comprises at least one support arm structured and arranged to support at least one camping item from said at least one handle-bar;

b) said at least one support arm comprises

i) at least one deployed position extending generally outwardly of said at least one handle-bar, and

ii) at least one stowed position located substantially within said at least one internal compartment of said at least one handle-bar.

5) The system according to Claim 4 wherein:

a) said at least one support arm comprises at least one support-arm pivot structured and arranged to pivotally couple said at least one support arm with said at least one handle-bar; and

b) said at least one support-arm pivot assists pivotal movement of said at least one support arm between such at least one deployed position and such at least one stowed position.

6) The system according to Claim 5 wherein said at least one support arm comprises:

a) at least one first positional maintainer structured and arranged to positionally maintain said at least one support arm in such at least one stowed position;

b) at least one second positional maintainer structured and arranged to positionally maintain said at least one support arm in such at least one deployed position; and

c) at least one deployment assister structured and arranged to assist an initial deployment of said at least one support arm from such at least one stowed position;

d) wherein operational enablement and disablement of said at least one first positional maintainer is user controllable.

7) The system according to Claim 6 wherein said at least one deployment assister comprises at least one spring member.

8) The system according to Claim 7 wherein:

a) said at least one handle-bar comprises at least one first longitudinal axis extending substantially along its length;

b) said at least one support arm comprises an elongated member having at least one second longitudinal axis extending along its length; and

c) when in such at least one deployed position, said at least one second positional maintainer maintains said at least one first longitudinal axis in a generally perpendicular relationship relative to said at least one second longitudinal axis.

9) The system according to Claim 1 wherein said at least one soil-shoveling tool comprises:

a) at least one shovel blade structured and arranged to assist manipulation of the soil;

b) wherein said at least one shovel blade comprises at least one first end and at least one second end;

c) wherein said at least one first end comprises at least one soil-penetrating shape structured and arranged to assist penetration of the soil;

d) wherein said at least one second end comprises at least one handle-receiving socket structured and arranged to receive said at least one handle-bar.

10) The system according to Claim 1 wherein said at least one non-shovel tool comprises at least one storage container comprising at least one interior portion structured and arranged to contain storable camping items.

11) The system according to Claim 10 wherein said at least one storage container comprises:

a) at least one deployed position extending generally outwardly of said at least one handle-bar, and

b) at least one stowed position located substantially within said at least one internal compartment of said at least one handle-bar;

c) wherein, when in said at least one deployed position, said at least one storage container comprises at least one storage opening structured and arranged to provide access to said at least one interior portion; and

d) wherein, when in said at least one stowed position, said at least one interior portion is substantially enclosed within said at least one handle-bar.

12) The system according to Claim 11 wherein:

a) said at least one storage container comprises at least one storage-container pivot structured and arranged to pivotally couple said at least one storage container with said at least one handle-bar; and

b) said at least one storage-container pivot assists pivotal movement of said at least one storage container between such at least one deployed position and such at least one stowed position.

13) The system according to Claim 12 wherein said at least one storage container comprises at least one moisture-restrictive seal structured and arranged to limit the introduction of moisture to within said at least one interior portion.

14) The system according to Claim 1 wherein said at least one non-shovel tool comprises:

a) at least one cutting blade structured and arranged to assist the at least one user to perform cutting actions;

b) wherein said at least one cutting blade is locatable within said at least one handle-bar.

15) The system according to Claim 14 wherein said at least one cutting blade comprises:

a) at least one deployed position extending generally outwardly of said at least one handle-bar, and

b) at least one stowed position located substantially within said at least one internal compartment of said at least one handle-bar.

16) The system according to Claim 15 wherein:

a) said at least one cutting blade comprises at least one cutting-blade pivot structured and arranged to pivotally couple said at least one cutting blade with said at least one handle-bar; and

b) said at least one cutting-blade pivot assists pivotal movement of said at least one cutting blade between such at least one deployed position and such at least one stowed position.

17) The system according to Claim 1 wherein said at least one non-shovel tool comprises at least one bottle opener structured and arranged to assist the user in removing bottle caps from beverage bottles.

18) The system according to Claim 8 wherein:

a) said at least one non-shovel tool comprises at least four support arms each one structured and arranged to support at least one camping item from said at least one handle-bar;

b) wherein at least one of said at least four support arms comprises a length of about thirteen inches; and

c) wherein at least one of said at least four support arms comprises a length of about seven inches.

19) The system according to Claim 8 wherein:

a) said at least one soil-shoveling tool comprises

i) at least one shovel blade structured and arranged to assist manipulation of the soil,

ii) wherein said at least one shovel blade comprises at least one first end and at least one second end,

iii) wherein said at least one first end comprises at least one soil-penetrating shape structured and arranged to assist penetration of the soil, and

iv) wherein said at least one second end comprises at least one handle-receiving socket structured and arranged to receive said at least one handle-bar;

b) said at least one non-shovel tool comprises

i) at least one storage container comprising at least one interior portion structured and arranged to contain storable camping items,

ii) at least one cutting blade structured and arranged to assist the at least one user to perform cutting actions, and

iii) at least one bottle opener structured and arranged to assist the user in removing bottle caps from beverage bottles.

20) A method of developing at least one multi-functional shovel to assist at least one user during outdoor camping activities, said method comprising the steps of:

a) providing at least one shovel handle structured and arranged to assist the at least one user in manipulating at least one shovel blade during at least one shoveling activity;

b) providing at least one camp tool, not related to such at least one shoveling activity, usable by the at least one user during such outdoor camping activities; and

c) incorporating such at least one camp tool within such at least one shovel handle so that such at least one camp tool is permanently mounted to such at least one shovel handle;

d) wherein such at least one shovel handle comprises at least one internal compartment structured and arranged to internally compartmentalize such at least one camp tool when not in use; and

e) wherein, when internally compartmentalized within such at least one shovel handle, such at least one camp tool does not interfere with hand-manipulation of such at least one shovel handle.

21) The method according to Claim 20 further comprising the steps of:

a) providing at least one shovel blade structured and arranged to assist the at least one user to perform such at least one shoveling activity; and

b) mounting such at least one shovel blade to such at least one shovel handle.

22) A system related to assisting at least one user during outdoor camping activities comprising:

a) shovel tool means for assisting the at least one user to accomplish at least one shoveling activity;

b) handle-bar means for assisting the at least one user manipulate said shovel tool means during the; and

c) non-shovel tool means for providing at least one tool not relating to such at least one shoveling activity;

d) wherein said shovel tool means is supported by said handle-bar means;

e) wherein said non-shovel tool means is supported by said handle-bar means;

f) wherein said handle-bar means comprises compartment means for substantially fully compartmentalizing said non-shovel tool means therewithin.

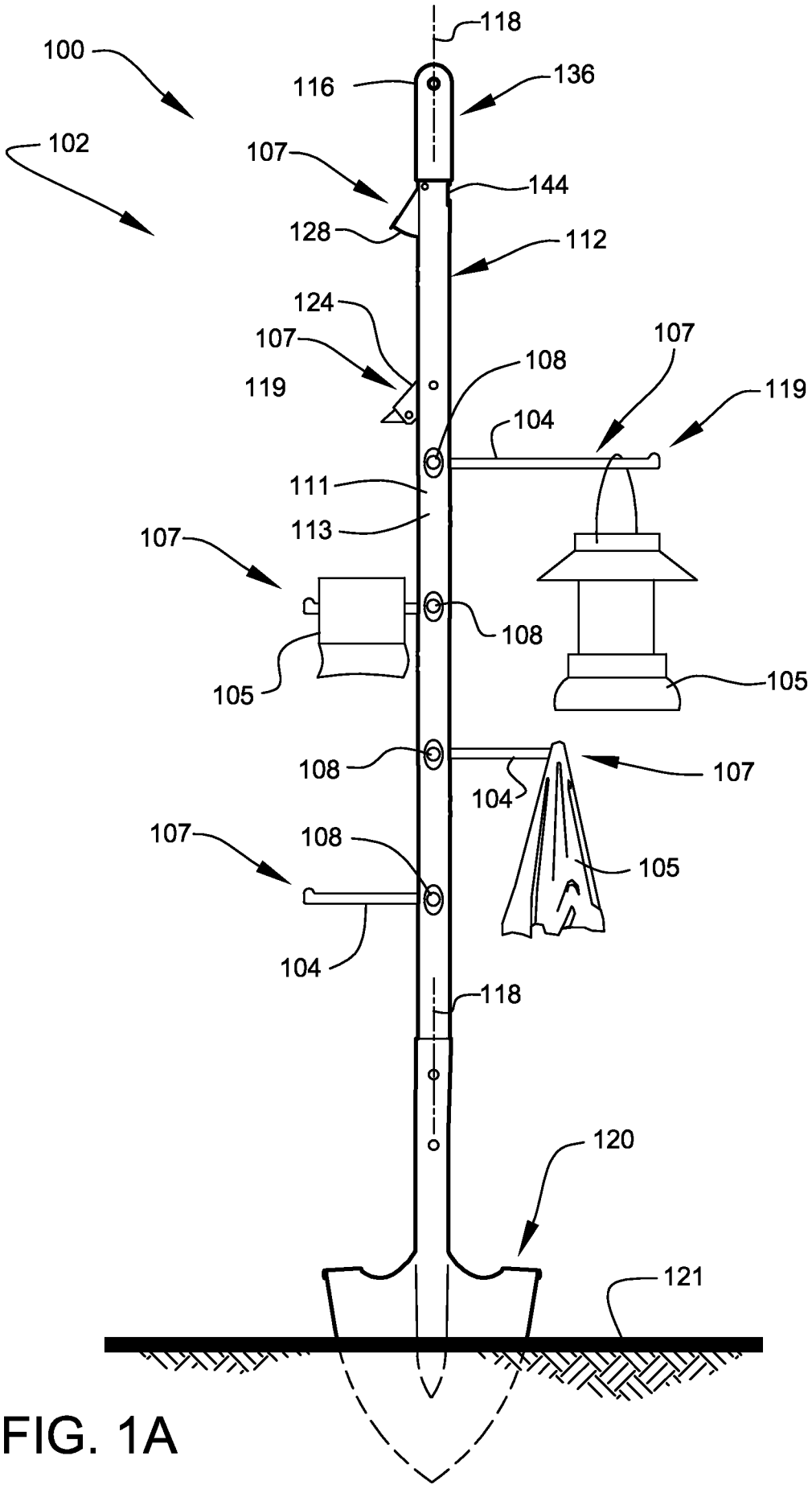
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FIG. 1A

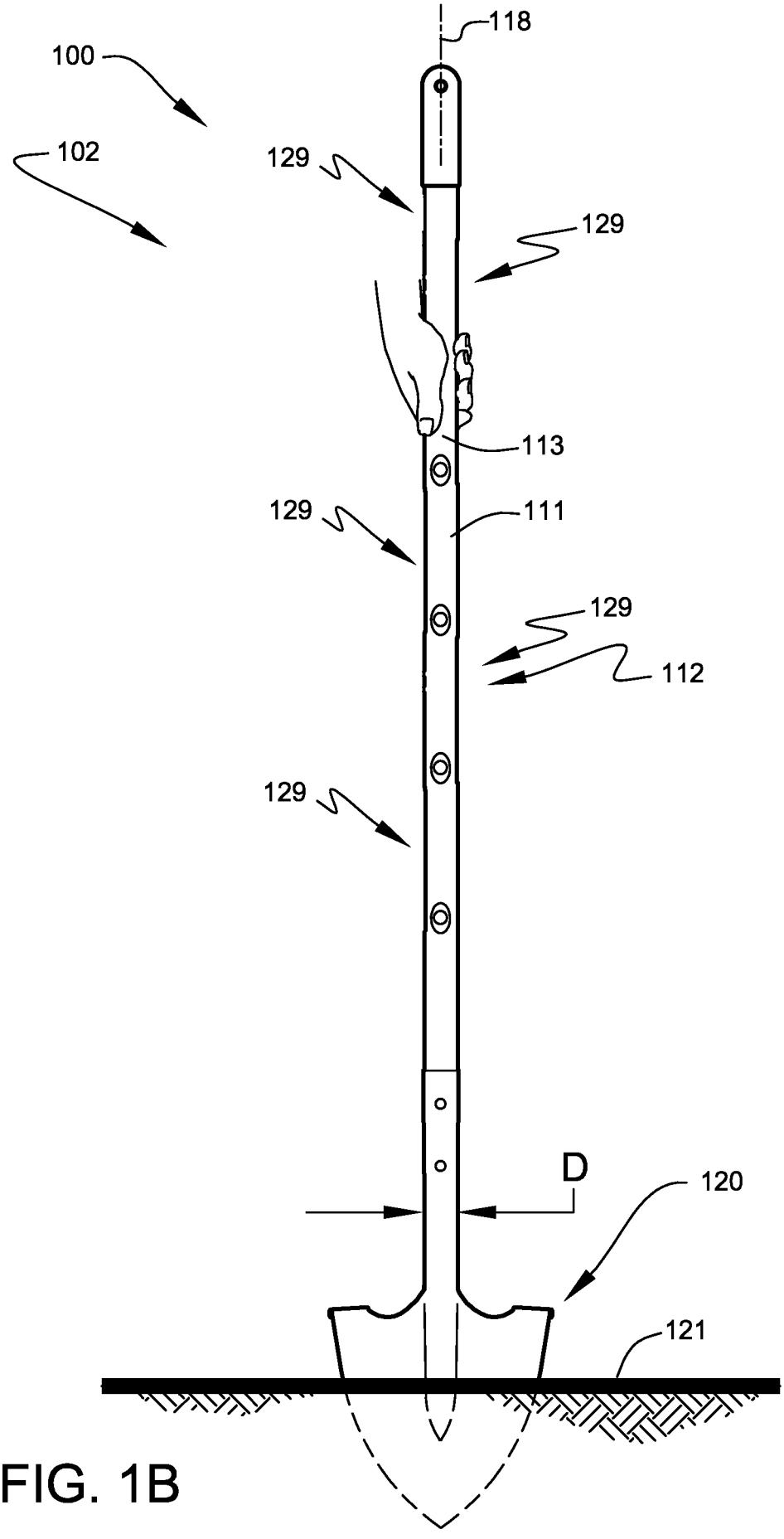

FIG. 1B

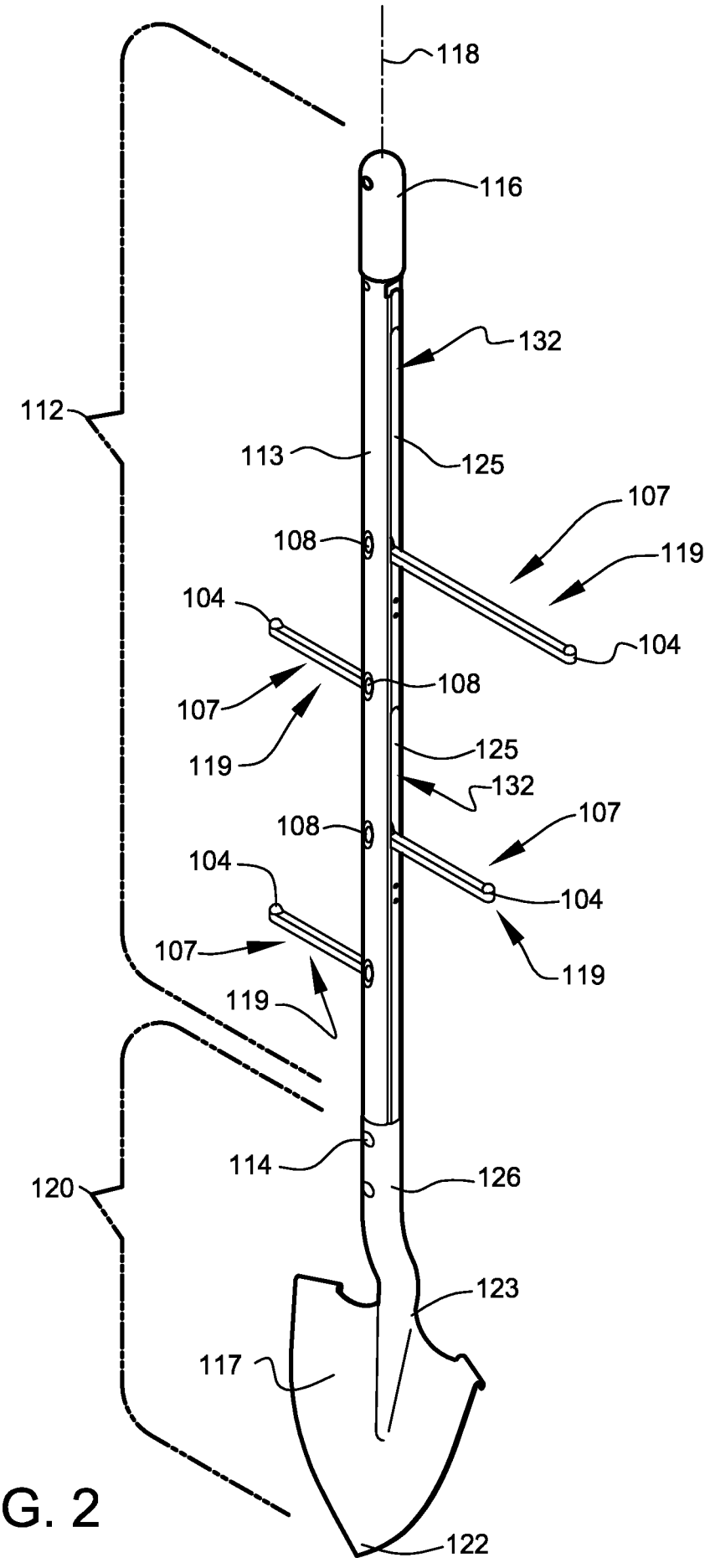
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FIG. 2

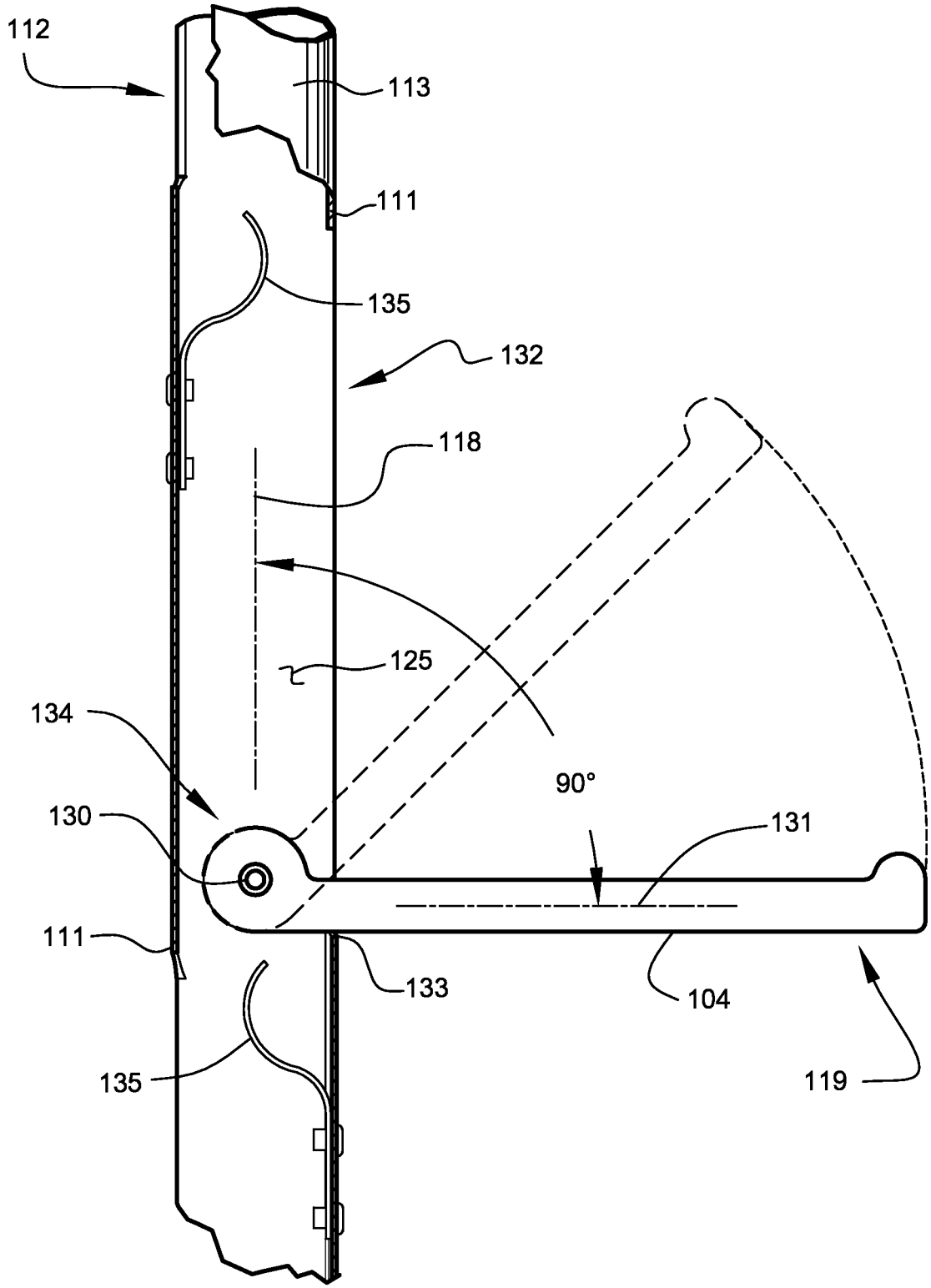

FIG. 3

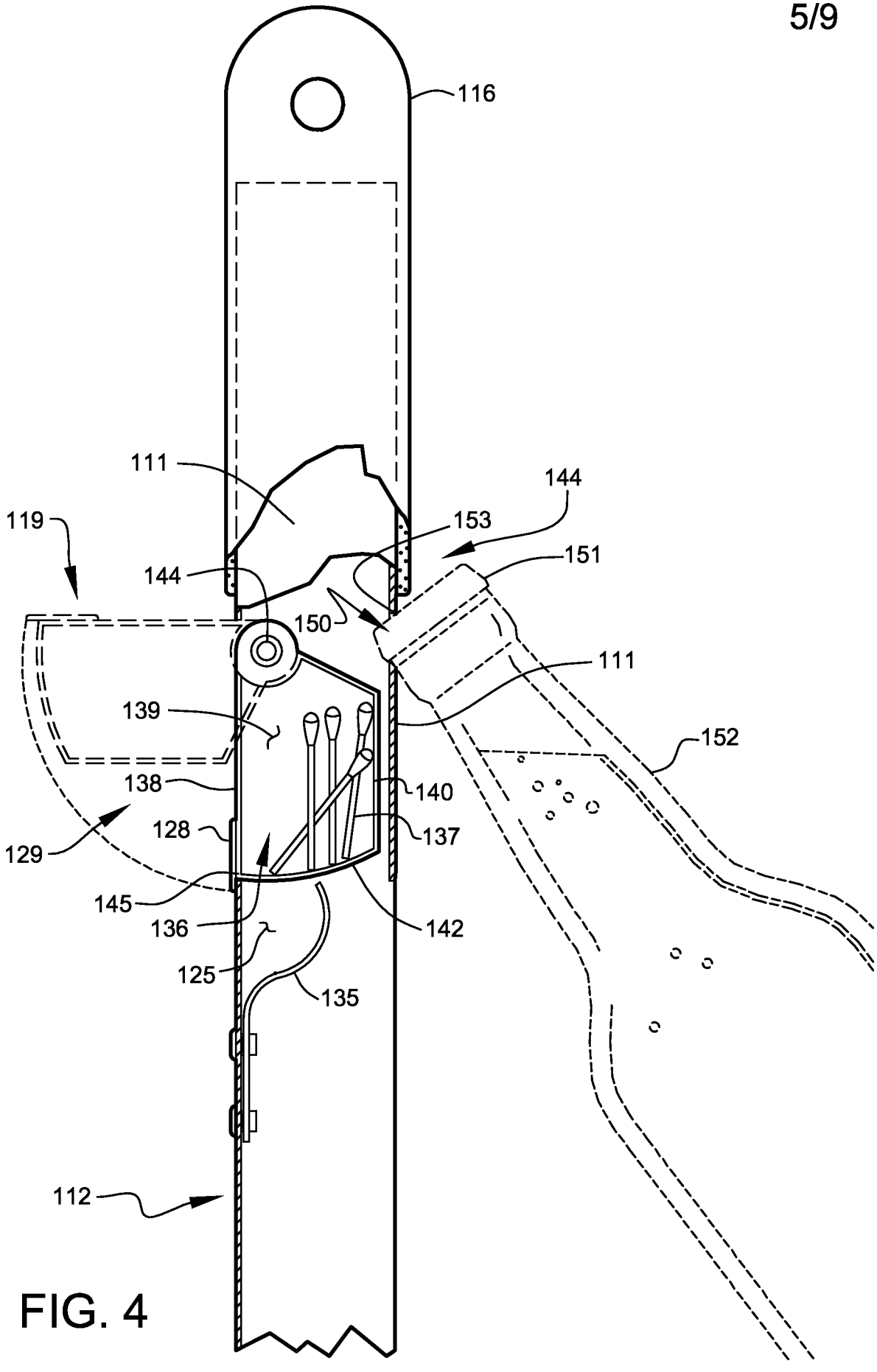
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FIG. 4

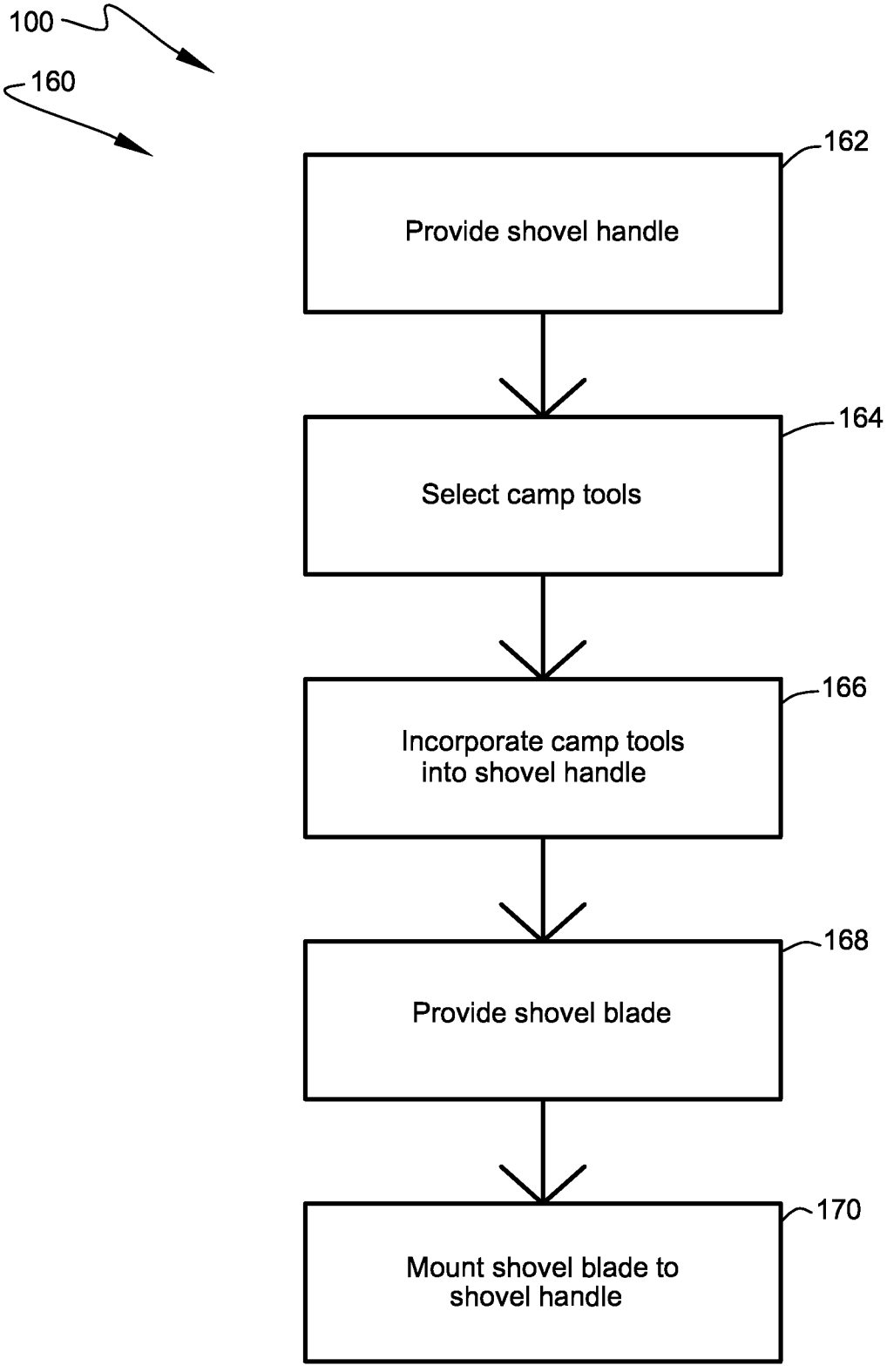

100
160
162
Provide shovel handle
164
Select camp tools
166
Incorporate camp tools into shovel handle
168
Provide shovel blade
170
Mount shovel blade to shovel handle

FIG. 5

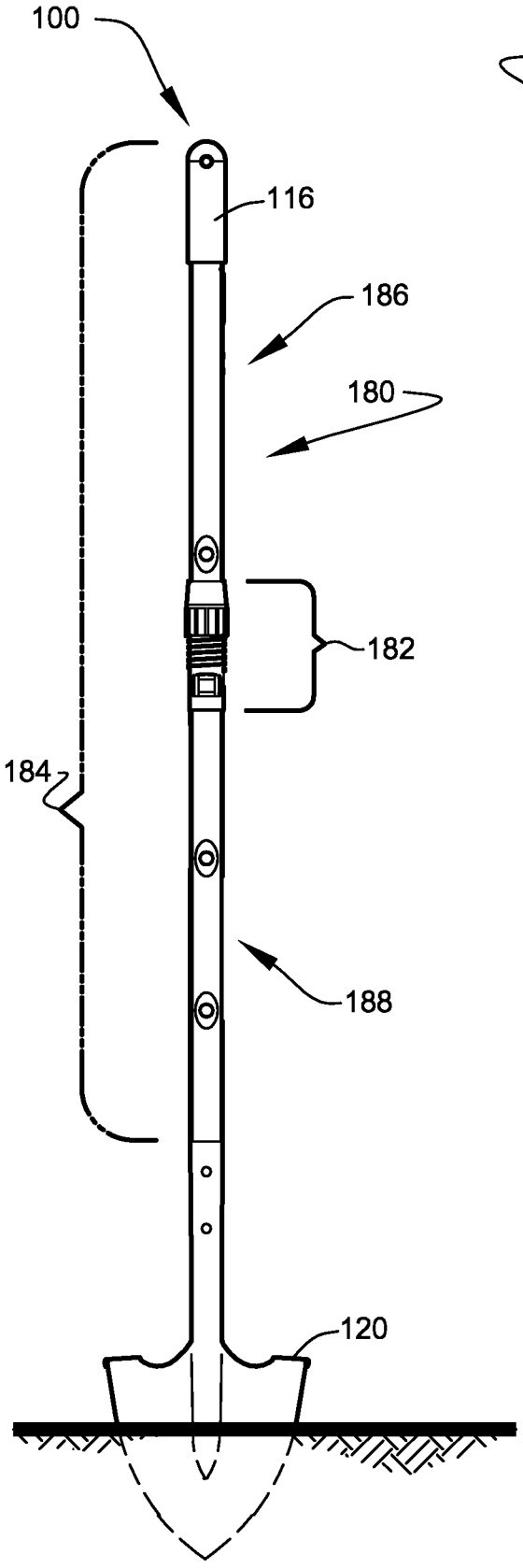
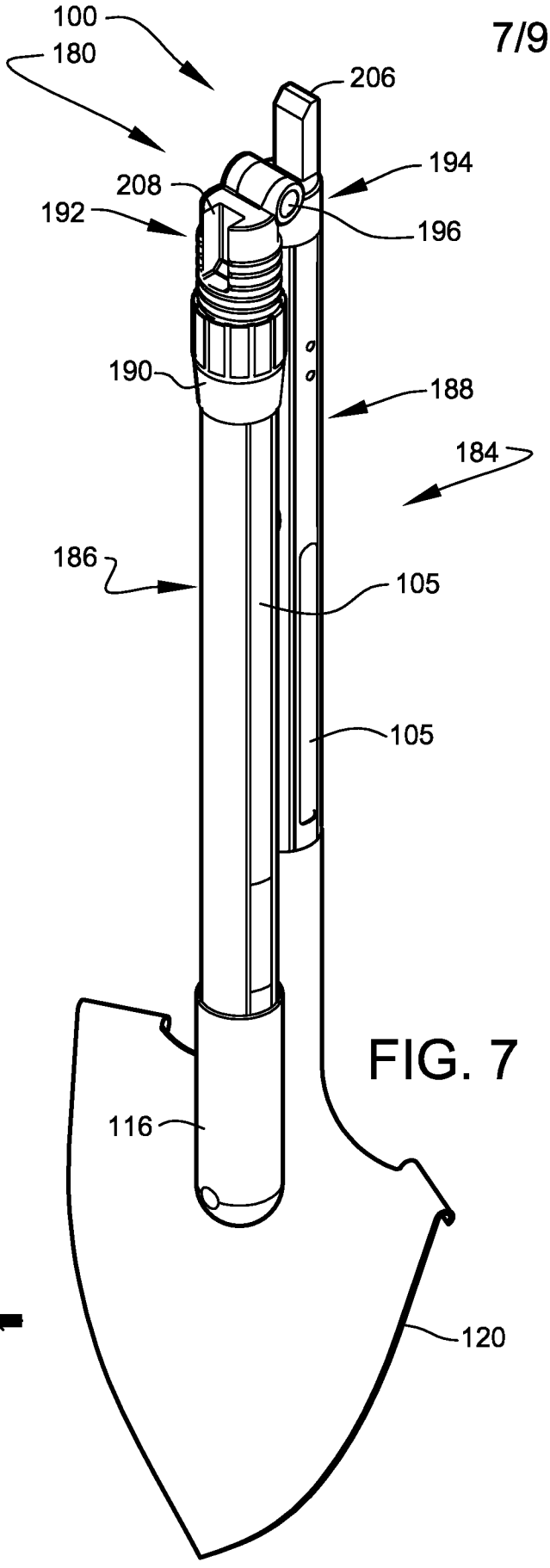

100
116
186
180
182
184
188
120

FIG. 6


100
180
206
194
208
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186
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116
120

FIG. 7

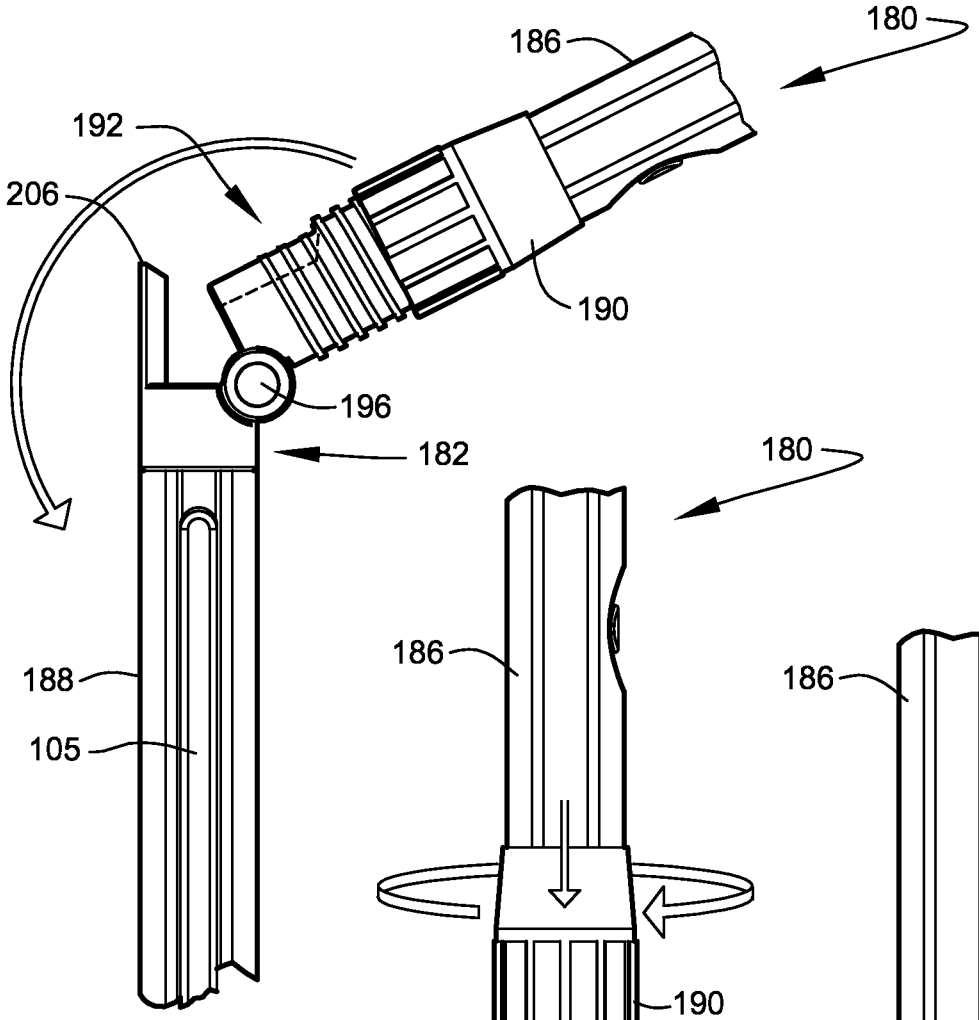

FIG. 8

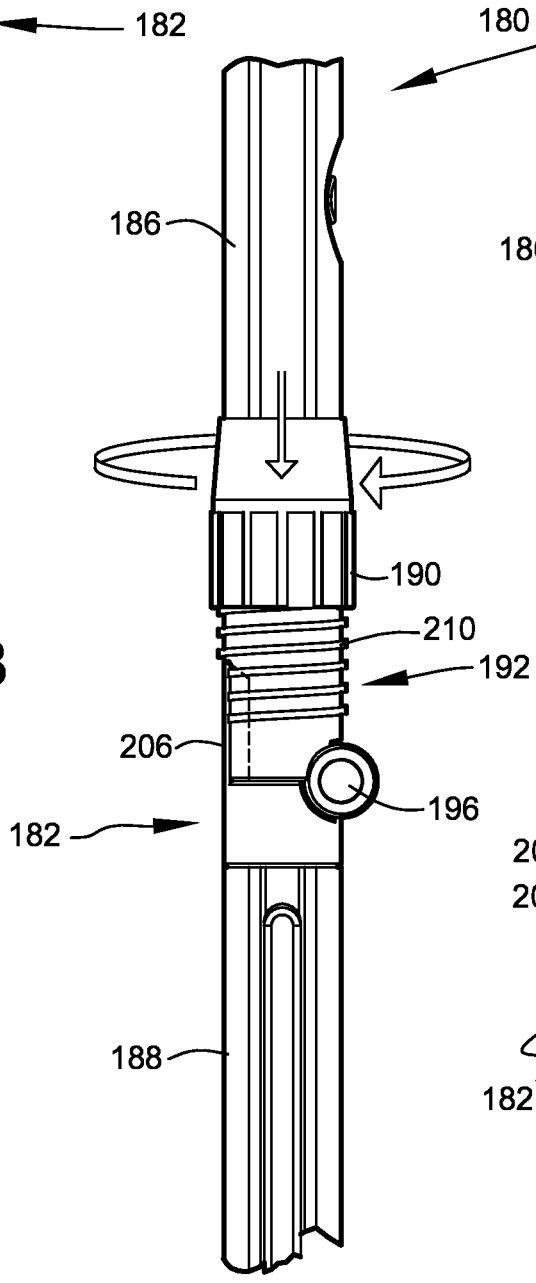

FIG. 9

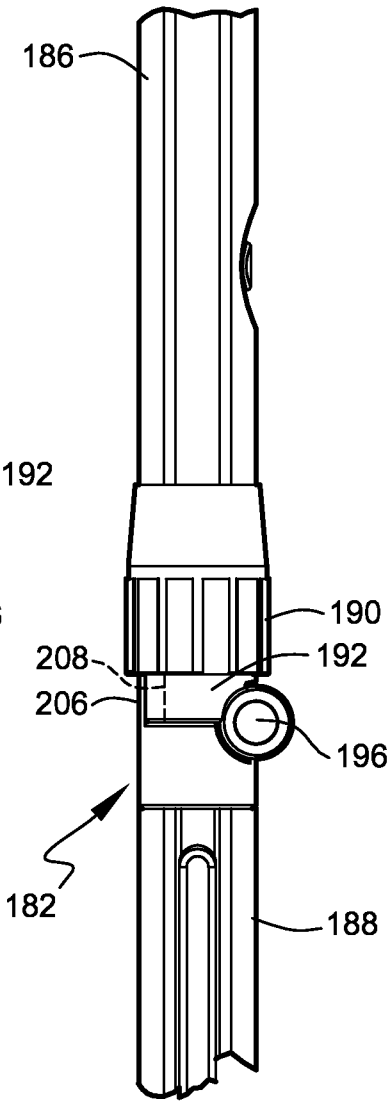

FIG. 10

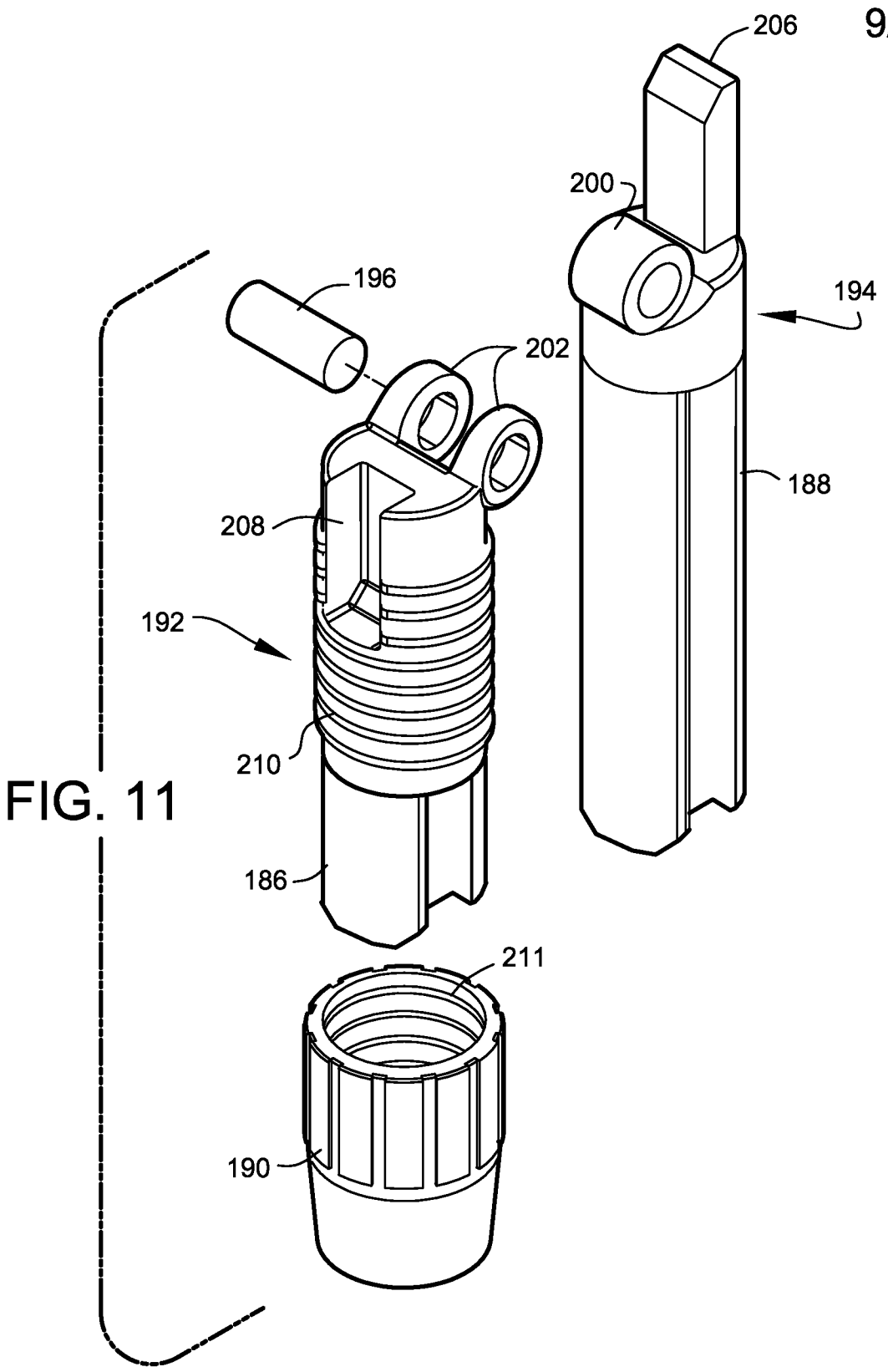

FIG. 11