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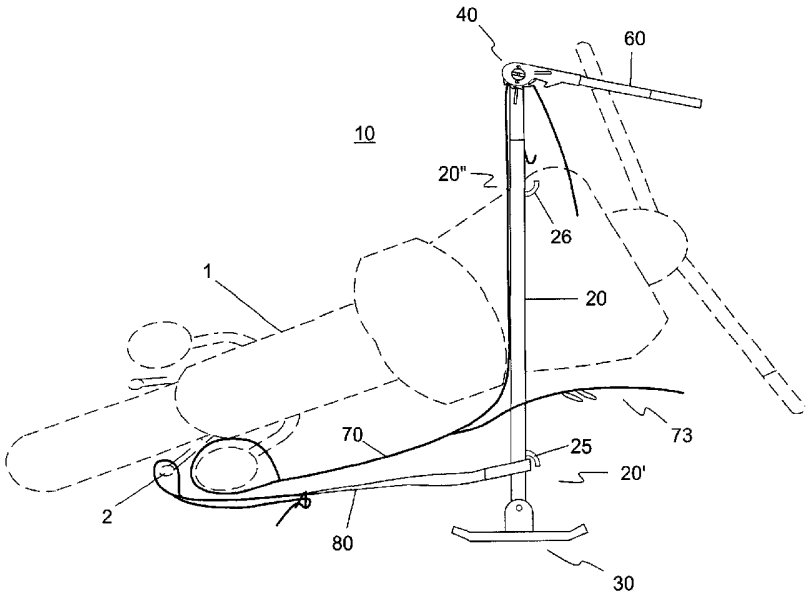
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(54) Title: MOTOCYCLE LIFT BAR AND METHOD



(57) Abstract: A two-wheeled vehicle uprighting device having a support bar with a stabilizing base on one end and a ratcheting mechanism on another end, a cable sling adapted for attachment to a lower portion of the two-wheeled vehicle, and a flexible lifting member with a first end adapted for attachment to the cable sling and a second end for engaging relationship about a spindle of said ratchet mechanism.

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MOTORCYCLE LIFT BAR AND METHOD

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to the field of motorcycles. More particularly, the present invention relates to lifting a motorcycle that has fallen on its side to an upright position.

2. Description of the Prior Art

Motorcycles and other two-wheeled motorized vehicles are used extensively for both recreational and transportation purposes. They may peripherally have a sidecar for transporting goods or one or two additional persons, and perhaps a trailer for transporting goods, but typically, motorcycles seat one or two persons astride.

A motorcycle is designed to remain upright at all times. A rider maintains the upright position by stabilizing the motorcycle with his or her legs and feet when the motorcycle is stopped in traffic, such as at a red light or a stop sign. In motion, the motorcycle is balanced in the upright position by the distribution of the rider's weight combined with the momentum of the motorcycle. When the motorcycle is not in use, it is kept upright using one of several kickstand apparatuses that are available commercially.

A motorcycle can weigh several hundred pounds. Generally, operator-drivers of motorcycles who lack the physical strength to erect a motorcycle lying on its side, or fearful of injury to themselves, choose not to erect a motorcycle

lying on its side. They must wait for help from passers-by or obtain assistance, if possible, from a commercial road service.

In an attempt to circumvent this problem, the prior art has proposed several devices. For example, U.S. Patent No. 5,984,337 (1999, Dubin) discloses a motorcycle erector device that erects a motorcycle lying on its side. The motorcycle erector device comprises a retaining link with a deformable coating, a self-contained power source of high-pressure, non-inflammable gas stored in a tank with a manually operated tank valve, a pressure reducing gas-metering nipple assembly installed in the tank valve, a flexible tubing gas-transfer assembly with quick-disconnect fitting, and an erecting spheroid assembly. The erecting spheroid assembly comprises a flexible spheroid enclosure, a retention point woven fabric loop, an access and service opening with closure means and an opening for the installation of a gas feed threaded fitting, a gas feed threaded fitting with seals, washers and an assembly nut.

One of the parts used in this invention, the compressed gas tank, may represent a danger to persons and property. If the pressure reducing gas-metering nipple assembly is knocked loose or off the compressed gas tank, either in an accident or due to faulty assembly, high-pressure gas will be allowed to escape quickly from the compressed gas tank. This could have the effect of turning the compressed gas tank into a projectile, which could injure or even kill persons within range or severely damage property within range.

German Patent Abstract DE3514704 (1985, Eberhard) discloses a device with an electric motor drive for raising a motorcycle. The motorcycle has a pivotable support, which can be pivoted about an axis. Essentially, the device

consists in that the point of contact with the floor of the free end of the support together with the floor contact points of the wheels of the motorcycle forms a triangle. The formed triangle is such that the center of gravity of the motorcycle lies above the formed triangle while the motorcycle is being raised and when it is standing. The support is actuated by an electric motor by way of a speed-reducing gear mechanism.

This device must be affixed to the frame of the motorcycle in order to operate. It also uses an electric motor drive for raising the motorcycle. If the motorcycle battery does not have sufficient charge to power the electric motor or if the electric motor is damaged in the fall of the motorcycle, the device is inoperable and, thus, the motorcycle cannot be righted using the device. Further, the additional weight added to the frame in front of the motor may impact the performance of the motorcycle when the motorcycle is being ridden.

U.S. Patent No. 4,377,295 (1983, Lemman) discloses a device which is designed to upright a motorized two-wheeled vehicle, which is lying on the ground, no matter which side it is lying on. The device is attached to the motorized two-wheeled vehicle where the fixably mounted device contains two removable retainer pins and two hinges, a pair of side portions each selectively hingeably connected to the fixably mounted device, and an expansible center portion containing a piston and cylinder which is connected by a hose to a means for pressurizing the cylinder space above the piston. The means for pressuring the cylinder space are either hydraulic or compressed gas. In another embodiment, the expansible center portion of the apparatus is replaced by a screw mechanism, each end of which is hingeably connected to the side portions

of the apparatus.

A disadvantage of the Lemman device is that it must be affixed to a motorcycle. Also, the device must use an extrinsic part or mechanism to provide the required force for actually raising the motorcycle. The disclosed mechanisms are a hydraulic system and a gas-pressured system. If the mechanism in use is hydraulic, the system will require regular maintenance and the operator must be assured that the system contains sufficient hydraulic fluid at all times. If the mechanism in use is pressurized gas, the device will require a source for the compressed gas, which must be additionally carried on the motorcycle at all times. The dangers inherent in carrying compressed gas have been discussed above.

U.S. Patent No. 5,358,265 (1994, Yaple) discloses an automatically actuated motorcycle lift stand. The stand comprises upper and lower stand units on each side of the motorcycle. This configuration enables independent raising of the motorcycle when resting on either side, as well as providing a normal parking function. Yaple also discloses a linear actuator comprising a plurality of concentric telescoping members driven by a small DC motor.

This device must be affixed to the frame of the motorcycle in order to operate. This can impact on motorcycle performance. Also, this device requires an actuating power source in order to operate. If the power source is not functioning when the motorcycle is overturned, the operator will be unable to right the motorcycle.

U.S. Patent No. 4,494,764 (1985, Kelley) discloses a lift stand and method of using which lifts the rear wheel of a motorcycle off the ground. U.S. Patent No.

6,341,763 B1 (2002, Lefebvre) discloses a lever-action vehicle lift for raising a motorcycle or other two-wheeled motorized vehicle from the ground surface. Both of these devices are used to raise upright motorcycles off the ground; they are not used or useable to right overturned motorcycles.

Therefore, what is needed is a simple, portable device for raising a fallen motorcycle. What is also needed is a device for raising a fallen motorcycle that can be easily carried on any motorcycle and which does not interfere with the performance of the motorcycle. What is further needed is a device for raising a fallen motorcycle that requires no motorized parts or any hydraulic or compressed gas system for operation.

SUMMARY OF THE INVENTION

If the motorcycle should fall from its upright position, either while in motion or while standing still, the operator must raise the motorcycle back up to its upright position before the motorcycle can be used again. A fully equipped touring motorcycle can weigh approximately 800 to 1000 pounds. This is far too much weight for the average motorcycle rider to lift unassisted. It is possible for more than one person to lift the motorcycle, but this puts the operator of the fallen motorcycle in a position of having to wait for a "good Samaritan" to stop and help lift the motorcycle.

It is an object of the present invention is to provide a simple mechanism and method to raise a fallen motorcycle back to the upright position. It is another object of the present invention to provide a device for raising a fallen motorcycle that is portable and that can be easily carried on any motorcycle. It is a further

object of the present invention to provide a device for raising a fallen motorcycle that requires no motorized parts or any hydraulic or compressed gas system for operation.

The present invention achieves these and other objectives by providing an uprighting device having an elongated support body, a stabilizing base plate at one end of the support body, a ratchet mechanism at the other end of the support body, a handle attached to the ratchet mechanism for operating the ratchet mechanism, and a flexible lifting member for attaching to a fallen motorcycle on one end and for operably connecting to the ratchet mechanism on the other end. Optionally, the stabilizing base plate may be pivotably mounted to the support body.

The elongated support body is preferably tubular and may comprise one or more sections. In one embodiment, the support body is configured into three sections, a top, a middle and a bottom section. The three sections linearly connect in series to each other by way of any mechanism known by those skilled in the art. These three sections are preferably slidingly interconnected. The top and bottom sections may each have a hook-type structure on their outside surfaces for use with the optional intermediate and lower/spreader support members described below. The stabilizing base plate connects to the bottom section of the support body and abuts the ground and provides stability to the support body during the lifting operation. Optionally, the stabilizing base plate may be pivotably attached to the support body and may have a nonslip coating or material adhered to the bottom surface. The top section has a ratchet

mechanism fixedly attached to an end opposite the end that removably connects to the middle section.

The flexible lifting member operably connects on one end to the frame or exhaust pipe of the fallen motorcycle and engages with the ratchet mechanism between the top of the support bar and the handle. Optionally, a slip-preventing support or lower/spreader support member may be used as a spreader support, which connects between the bottom portion of the support body and the frame or exhaust pipe of the fallen motorcycle. The slip-preventing support aids in preventing any inadvertent slippage of the stabilizing base plate during the uprighting/lifting operation. The slip-preventing support may be a strap, a cord, a cable, a bar with hook-type connections at each end or any other structure that prevents the motorcycle from slipping away from the bottom of the support bar, or vice-versa, creating an unsafe situation. The lower hook-type structure on the bottom section of the support body or bar helps retain the spreader support at a position along the bottom section of the support body.

The ratchet mechanism is preferably and typical of those used with and known in the industry as ratcheting straps. The ratchet mechanism typically has an arm mounted to a spindle. The spindle has a pair of sprockets, each of which is mounted at a respective end of the spindle. A spring-loaded catch is attached to the arm and is biasedly engaged with the sprockets. Also included is a lever which is rotatably mounted to the spindle and which supports a spring-loaded pawl that is biasedly engaged with the sprockets.

In the present invention, unlike the ratcheting straps in the industry, the lever is connected to a handle and the arm is connected to the top end of the

elongated support body. The flexible lifting member has a first end connected to the motorcycle frame or exhaust system and a second free end is connected to and carried about the spindle.

The present invention may optionally include one or more of an extended catch release for the spring-loaded catch spaced along the elongated support body, an extended lever release for releasing the spring-loaded pawl and an intermediate support strap. The extended catch release may be a rigid J-shaped rod or bar that is connected on one end to the spring-loaded catch and has the other end (the J-shaped end) spaced from the catch and along the support body for easy release of the catch by the user. Where tubing is used for the support body, it is convenient and preferable to have the main body of the release inside the support body and allow the J-shaped end to protrude through a small, elongated opening in the sidewall of the support body to the outside for easy access to operate the catch release. It is noted that the release is not limited to being a rigid J-shaped rod or bar. Other materials such as rope, wire, wire rope, and the like may be used along with pull loops or release handles and still accomplish the releasing action in order to release the spring-loaded catch.

The lever release may also be made of the same materials as that described for the catch release. The lever release is connected on one end to the spring-loaded pawl and has the other end spaced from the pawl and along the handle for easy release of the pawl by the user. It is noted that neither the catch release nor the lever release is required because the design of the ratchet mechanism is such that it provides access, although not as convenient and easy to use, to each of the catch and pawl mechanisms.

The optional intermediate support member may be an integral part of the flexible lifting member or it may be a separate flexible member. The purpose of the intermediate support member is to support a partially uprighted two-wheeled vehicle in the event that the spindle, which carries the flexible lifting member, becomes full. If it is an integral part of the flexible lifting member, it is typically connected to the flexible lifting member at a point along the flexible lifting member closer to the frame/exhaust pipe end than the end passing through the ratchet mechanism. The intermediate support member has one loose end for looping around the support body of the lifting device and a clasp end that receives the loose end and holds the support member. The clasp end may incorporate any type of belt fastening arrangement known in the art for holding the loose end. It is understood that the ratchet mechanism may be made of sufficient size so that the spindle is capable of holding all of the flexible lifting member, eliminating the need for an intermediate support member.

If the intermediate support member is separate from the flexible lifting member, it typically has a loose end and a clasp end. The intermediate support member is looped around the frame or the exhaust pipe of the two-wheeled vehicle proximate to the point of connection of the flexible lifting member, looped around the support body up near the top end, and typically above the upper hook-type structure of the top section of the support body, and then connected to itself at the clasp end. Regardless of the type of intermediate support member, its function is to support the partially uprighted vehicle while the ratchet mechanism is released allowing the user to empty the full spindle (if applicable) and to pull the loose end and excess length of the flexible lifting member through the ratchet

mechanism for subsequent ratcheting of the flexible lifting member around the spindle at a new beginning point along the flexible lifting member body.

In embodiments where the flexible lifting member is a strap made of material capable of melting when in contact with a hot exhaust pipe, a cable sling is preferably used to attach to the lower section of the two-wheeled vehicle, eliminating the need to allow the vehicle's exhaust to cool to prevent melting of the strap material. The cable sling is preferably an elongated piece of wire rope having a Flemish eye at each end and having sufficient length so that, when attached to the vehicle, the Flemish eye loops are positioned away from the hot surfaces of the vehicle. The Flemish eye ends of the cable sling attach to the frame end of the flexible lifting member at a location away from the hot exhaust. The lower support member or spreader support member may also attach to the ends of the cable sling instead of attaching separately to a lower section of the two-wheeled vehicle.

To use the vehicle uprighting device, attach the frame end of the flexible lifting member to the lower frame adjacent the transmission. Place the support bar in a substantially vertical position against the seat about two inches from the rear of the fuel tank with the bar's stabilizing base on the ground. Insert the loose end of the flexible lifting member through the ratchet mechanism so that as much slack of the lifting member is pulled through before ratcheting of the lifting member about the spindle begins. Work the ratchet mechanism to take up enough of the strap so that the tension on the strap maintains the support bar in a vertical position. Place a cushioning material between the seat and the support

bar to protect the seat. The cushioning material may be a jacket or the duffel used for storing the present invention or a piece of foam.

Where a slip-preventing support or spreader support is used, attach one end of the spreader support to the lower frame or exhaust pipe. Attach the other end to the lower section of the support bar below the hook-type structure (if so equipped) on the bottom section of the support body leaving a little slack in the spreader support. Grasp the handle of the erecting device and operate the ratchet mechanism to tighten the flexible lifting member, which begins lifting the two-wheeled vehicle. Once the vehicle is raised enough to its upright position, move to the other side of the vehicle and stand on the foot peg or running board and physically right the vehicle to its full upright position.

On motorcycles with no motor guards or crash bars, the spindle of readily available ratchet mechanisms may not have enough capacity to ratchet the motorcycle to its upright position in one stage. Two stages may be required. In this case, an intermediate support member is required. The procedure is the same as previously described except that once the motorcycle is up about halfway, the intermediate support member, if integral with the flexible lifting member, is looped around the upper portion of the support bar above the upper hook-type structure, fastened to its own fastening mechanism and tightened. The ratchet mechanism is then manipulated to allow a controlled release of the flexible lifting member so that the intermediate support member takes up the full weight of the motorcycle and holds the motorcycle to allow the user to adjust the flexible lifting member about the spindle.

The ratchet manipulation is typically accomplished by pushing the handle to its lowest position to release the pawl under the spindle. While holding the pawl in its released position, the handle is pivoted to controllably release the flexible lifting member, lowering the motorcycle onto the intermediate support member. Once the motorcycle is supported completely by the intermediate support member, the flexible lifting member wrapped about the spindle is pulled from the spindle. The pawl is let go and the pawl is allowed to re-engage with the sprockets. The excess lifting member is then pulled through the ratchet mechanism until the excess is pulled through leaving only a small amount of slack between the spindle and the motorcycle. The flexible lifting member is then engaged about the spindle until taut. Once taut, the ratchet mechanism is operated as before and the flexible lifting member is allowed to be taken up around the spindle once again. Continue the motorcycle lifting process until the motorcycle is in position to allow uprighting the motorcycle by moving to the opposite side and performing the tasks as explained previously.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a side view of one embodiment of the present invention showing the erecting device attached to a motorcycle and ready for operation.

FIGURE 2 is a side view of some of the components of the present invention showing a support bar and handle.

FIGURE 3 is a front view of a portion of the ratchet mechanism of the present invention showing the extended catch release.

FIGURE 4 is a perspective view of some of the components of the present invention showing a lifting strap and a slip-preventing or spreader strap.

FIGURE 5 is an enlarged partial view of another embodiment of intermediate support strap of the present invention showing the hook-type ends of the support strap and an attachment point along the lifting strap.

FIGURE 6 is a side view of a kit of the present invention showing a component holding pouch or duffel.

FIGURE 7 is side view of another embodiment of the present invention showing the vehicle uprighting device using a cable sling attached to a motorcycle and ready for operation.

FIGURE 8 is a plan view of the cable sling of the embodiment in Fig. 7.

FIGURE 9 is a side view of another embodiment of the present invention showing the vehicle uprighting device using wire rope or cable as the flexible lifting member.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The preferred embodiment(s) of the present invention is illustrated in Figs. 1-9. Turning now to Figure 1, there is illustrated a vehicle uprighting device **10** having a support body **20**, a stabilizing base **30** connected to the bottom of support body **20**, a ratchet mechanism **40** connected to the top of support body **20**, a handle **60** connected to ratchet mechanism **40**, a flexible lifting member **70** for attaching on one end to a motorcycle **1** and to be taken up by ratchet mechanism **40** at a predetermined location along its length, and a spreader support member **80** attached to a motorcycle **1**. Spreader support member **80** is secured on one end to the lower frame **2** of motorcycle **1** adjacent the transmission (not shown) of motorcycle **1** and engaged with a lower portion **20'** of support body **20**. In the embodiment, flexible lifting member **70** and spreader support member **80** are straps.

In one embodiment of the present invention, support body **20** of uprighting device **10** comprises three sections, a top section **20a**, a middle section **20b**, and a bottom section **20c** as illustrated in Figure 2. Sections **20a**, **20b** and **20c** are connected in series as indicated by arrows **21**. Sections **20b**, **20c** each have a protrusion **22** of reduced diameter on one end for insertion into corresponding recesses **23** of adjacent sections as indicated by arrows **21**. Preferably, sections **20a**, **20b** and **20c** are in slidable engagement with an adjacent section. Protrusions **22** may be integrally formed with sections **20b**, **20c** or may be separate inserts for joining the sections together. If separate inserts are used, the inserts may be affixed to one end of the appropriate sections. Affixing the inserts will reduce the number of parts and the likelihood of loosing one of the inserts. It

is noted that any known structure for joining adjacent sections of tubing or rods in series may be used, for example, a spring-biased button engageable with a receiving hole, threads, collars, twist and lock mechanisms, and the like.

Stabilizing base **30** is preferably pivotally connected to bottom section **20c** by a pivot pin (not shown) inserted through the aligned holes of base hole **32** in base tab **31** and bottom section hole **24** of bottom section **20c**. Base surface **33** may optionally have a non-slip coating or layer.

Support body **20** may optionally include a lower hook **25** on bottom section **20c** and an upper hook **26** on top section **20a**. Hooks **25**, **26** function to prevent possible slippage of the straps preferably used in the present invention, which are described later. Ratchet mechanism **40** may also be in slidable engagement with top section **20a**, but is preferably affixed to top section **20a** for better strength and reliability when using the present invention. Handle **60** may be either fixedly or removably attached to ratchet mechanism **40**.

Ratchet mechanism **40** is typical of those used with and known in the industry as ratcheting straps. Ratchet mechanism **40** typically has an arm **41** mounted to a spindle **42**. Spindle **42** has a pair of sprockets **43** (only one shown), each of which is mounted at a respective end of spindle **42**. A spring-loaded catch **44** is attached to arm **41** and is biasedly engaged with the sprockets **43**. Also included is a lever **45** which is rotatably mounted to spindle **42** and which supports a spring-loaded pawl **46** that is biasedly engaged with the sprockets **43**. To facilitate release of either catch **44** or pawl **46**, an extended release **50** may optionally be included. As shown, handle **60** is in the full, open position where the catch **44** and the pawl **46** are disengaged with the sprockets **43**.

Turning now to Fig. 3, extended release **50** may be a rigid J-shaped rod **51** having an elongated release section or bar **52** with a ratchet connecting end **53** and a J-shaped handle end **54**. Ratchet connecting end **53** is connected to the spring-loaded catch **44**. J-shaped handle end **54** is spaced from catch **44** along the support body **20** for easy release of catch **44** by the user. Where tubing is used for support body **20**, it is convenient to have a substantial portion of extended release **50** inside support body **20** with J-shaped handle end **54** protruding through a small, elongated opening **27** in the sidewall of the support body **20** to the outside for easy access to operate extended release **50**. It is noted that the release is not limited to being a rigid J-shaped rod or bar. Other materials such as rope, wire, wire rope, and the like may be used along with loops or release handles such that the releasing action may still be accomplished in order to facilitate release of spring-loaded catch **44**. Other structural designs may be used and are a contemplated to be covered by the scope of the present invention. An extended release **50** may also optionally be incorporated into handle **60** to facilitate release of pawl **46** on lever **45**, as shown in Fig. 2.

Referring to Fig. 4, the preferred embodiment of flexible lifting member **70** is shown. Flexible lifting member **70** comprises a vehicle loop end **71**, a spindle portion **72**, and an attached intermediate support member **73**. Intermediate support member **73** includes a support body portion **74** and a clasp end **75**. Clasp end **75** further includes a pair of O-shaped or D-shaped rings **76** for receiving support body portion **74** in a holding engagement configuration, as is known in the art. Vehicle loop end **71** is preferably a closed loop for pulling

flexible lifting member **70** therethrough forming a secure, closed-loop attachment about the frame or exhaust system of motorcycle **1**.

Optional spreader support member **80** includes a frame loop end **81**, which is preferably a closed-loop end, for pulling spreader support member **80** therethrough forming a secure closed-loop attachment, a vehicle holding portion **82** and a spreader clasp end **83**. Spreader clasp end **83** further includes a pair of O-shaped or D-shaped rings **84** for receiving vehicle holding portion **82** in holding engagement, as is known in the art. Optional spreader support member **80** may also be a chain or rope structure with hook-type ends or an adjustable rod with hook-type ends for attaching to the motorcycle and the support bar, respectively.

It is noted that the optional intermediate support member **73** may be a separate component, similar in structure to spreader support member **80**. It should also be understood that the use of a closed-loop end is not limiting and that an open loop portion with a clasp mechanism spaced from the end for receiving the open portion of the strap is also within the scope of the present invention.

In another embodiment, an intermediate support component **170** may be a strap or cord or chain or rod with hook-type ends **172** where one hook-type end is adapted for attaching to an attachment point **174** along lifting strap **70** and the other hook-type end is adapted for attaching to the upper portion of support bar **20**, as illustrated in Fig. 5.

The present invention may also be provided as a self-contained kit **100** as shown in Fig. 6. Kit **100** includes at least the minimal components of vehicle uprighting device **10**, which are the support body **20**, the ratchet mechanism **40**,

the handle **60** and the lifting strap **70**. Kit **100** may also include a spreader strap **80**, an intermediate support strap **90** as a separate strap or as an integral part of lifting strap **70**, instructions **105** for assembling and using vehicle uprighting device **10**, and a duffel **110** for storing the components of kit **100**. The straps of kit **100** may be color coded to simplify the assembly and use instructions. The instructions **105** may be imprinted on a separate sheet or imprinted on the wall of duffel **110** or otherwise secured to duffel **110** to prevent inadvertent loss of the instructions. In the preferred embodiment, a cable sling **190** is also included within kit **100** for use with hot engines.

Turning now to Figure 7, there is shown the preferred embodiment of the present invention. In addition to the previously listed components of erecting device **10**, there is included a cable sling **190**. Cable sling **190** is typically a wire rope sling having looped ends **192**. Looped ends **192** are preferably ends having loops known in the art as Flemish eye splices. Typically in the Flemish eye mechanical splice, the end of the wire rope is separated into two parts, 3 adjacent strands and 3 adjacent strands. The two parts are then re-laid back in opposite directions to form an eye and the ends are secured to the core with a pressed metal sleeve.

As shown in Fig. 7, cable sling **190** is looped around the lower frame of motorcycle **1** and the looped ends **192** are connected to flexible lifting member **70**. A dowel may be used as a "hooking" device around which cable sling **190** is looped. If a dowel is used, the dowel is placed in a position on the opposite side of motorcycle **1** such that the ratcheting of flexible lifting member **70** will pull cable sling **190** forcing the dowel against motorcycle **1** instead of attaching cable sling

190 around the frame. Optional spreader support member **80** and optional intermediate support member **73** (if not an integral part of flexible member **70**) may also be connected to looped ends **192**. Cable sling **190**, which is made of wire rope, may be used against a hot exhaust of motorcycle **1** without melting. Thus, cable sling **190** allows a user to erect a recently used and fallen motorcycle where the exhaust has not yet cooled to ambient temperature.

Turning now to Figure 8, there is shown an enlarged view of cable sling **190**. As described previously, cable sling **190** preferably has Flemish eye loops **192** at each end that are secured to the core **194** by a pressed metal sleeve **196**. Flemish eye loops are preferred because these types of eye loops maintain a centered pull on the wire rope and a strength very near the rated weight capacity of the wire rope from which it is made.

Figure 9 illustrates yet another embodiment of the present invention. In this embodiment of erecting device **10**, flexible lifting member **270** is a wire rope having a hook end **272** and a spreader support member sleeve **274**. Hook end **272** is sized to hooking around the lower frame of motorcycle **1**. Spreader support member sleeve **274** in configured for removable attachment of spreader support member **80** to flexible lifting member **270**. Flexible lifting member **270** is wound up by ratchet mechanism **40**. Flexible lifting member **270** may also include another sleeve, intermediate support sleeve **274'** spaced from spreader support member sleeve **274** for attaching intermediate support member **278**.

To use the preferred embodiment of erecting device **10**, a user attaches cable sling **190** to the lower frame **2** adjacent the transmission of motorcycle **1**. Vehicle loop end **71** of flexible lifting member **70** is attached to the looped ends

192 of cable sling **190**. Support bar **20** is placed in a substantially vertical position against the seat of motorcycle **1** about two inches from the rear of the fuel tank with the stabilizing base **30** on the ground. Loose end, i.e. spindle end **72**, of flexible lifting member **70** is inserted through ratchet mechanism **40** so that the lifting member **70** can be drawn about spindle **42**. Ratchet mechanism **40** is operated in a levered action to take up enough of flexible lifting member **70** so that the tension on flexible lifting member **70** maintains support bar **20** in a relatively vertical position. It is advisable to place a cushioning material between the seat and support bar **70** to protect the seat as the motorcycle **1** is raised and the seat approaches and potentially contacts ratchet mechanism **40**. The cushioning material may be a jacket or the duffel **110** used for storing the present invention or a sheet of foam padding, etc.

Where a slip-preventing support such as spreader support member **80** is used, frame loop end **81** of spreader support member **80** is attached to the lower frame or exhaust pipe of motorcycle **1** or preferably to looped ends **192** of cable sling **190** when the motorcycle engine is still hot. Vehicle holding portion **82** is looped around the lower section of the support bar **20** below the hook-type structure **25** (if so equipped) located on the bottom section **20c** of support body **20** and secured to spreader clasp end **83**, leaving a little slack in the spreader support member **80**. Handle **60** is then grasped and ratchet mechanism **40** operated to tighten flexible lifting member **70**, which begins lifting motorcycle **1**. Once motorcycle **1** is raised enough to its upright position, the user may move to the other side of motorcycle **1** and stand on a foot peg or running board and physically right motorcycle **1** to its full upright position.

On motorcycles with no motor guards or crash bars, spindle **42** may not have enough capacity to ratchet motorcycle **1** to its upright position in one stage. Two stages may be required. In this case, an intermediate support member is required. The procedure is the same as previously described except that once motorcycle **1** is up about halfway, intermediate support member **73**, if integral with flexible lifting member **70**, is looped around the upper portion of support bar **20** above upper hook-type structure **26**, threaded through rings **76** of clasp end **75** in holding engagement configuration and tightened. Ratchet mechanism **40** is then manipulated to allow a controlled release of flexible lifting member **70** so that intermediate support member **73** holds and supports motorcycle **1**.

The ratchet manipulation is typically accomplished by pushing handle **60** to its lowest position, i.e. closest to support bar **20**, for releasing catch **44** from sprockets **43**. While holding catch **44** in its released position, handle **60** is pivoted away from support bar **20** to controllably release flexible lifting member **70**. Catch **44** is then allowed to engage sprockets **43**. Once engaged, pawl **46** of lever **45** is released from sprockets **43** allowing handle **60** to be repositioned adjacent support bar **20** where pawl **46** is then re-engaged with sprockets **43** for controllable release of flexible lifting member **70**. This disengaging and re-engaging of catch **44** and pawl **46** in alternating fashion is continued until motorcycle **1** is lowered onto intermediate support member **73**.

Once motorcycle **1** is supported completely by intermediate support member **73**, handle **60** is moved to its spindle release position by holding pawl **46** to disengage pawl **46** from sprockets **43**. Once handle **60** is raised to its full, open, spindle release position, pawl **46** is released to engage within a handle

holding notch in the periphery of arm **41**. Coincident with raising handle **60** to its full open position, the periphery of lever **45** that encircles spindle **42** at its ends engages and moves catch **44** to its release position, allowing spindle **42** to freely rotate. Flexible lifting member **70**, which is wrapped about spindle **42**, is pulled from spindle **42** until free.

The excess lifting member **70** is then pulled through ratchet mechanism **40** until substantially all of the excess of lifting member **70** is passed through ratchet mechanism **40**. Pawl **46** is then pulled to disengage with the handle holding notch in order to release handle **60** from its full open position. Handle **60** is rotated toward support bar **20** and pawl **46** is allowed to re-engage with the sprockets **43**. Flexible lifting member **70** is then wrapped about spindle **43** and ratchet mechanism **40** operated until lifting member **70** between spindle **43** and motorcycle **1** becomes taut. Once taut, ratchet mechanism **40** is then operated in the normal fashion and flexible lifting member **70** is allowed to be taken up around spindle **43** once again to continue the lifting process. The lifting process is continued until motorcycle **1** is in position to allow uprighting of motorcycle **1** by moving to the opposite side and performing the tasks as explained above.

Although the preferred embodiments of the present invention have been described herein, the above description is merely illustrative. Further modification of the invention herein disclosed will occur to those skilled in the respective arts and all such modifications are deemed to be within the scope of the invention as defined by the appended claims.

What is claimed is:

1. A two-wheeled vehicle uprighting device comprising:

a support bar having a first bar end and a second bar end;

a stabilizing base at said second bar end;

a ratchet mechanism having an arm and a lever, said arm attached to said first bar end;

a handle attached to said lever; and

a flexible lifting member having a first lifting end configured for attachment to a lower portion of a two-wheeled vehicle and a second lifting end for engaging relationship about a spindle of said ratchet mechanism.

2. The device of Claim 1 wherein said flexible lifting member further comprising a cable sling having a first cable end for attachment to said lower portion of said two-wheeled vehicle and a second cable end adapted for attachment to said first lifting end of said flexible lifting member.

3. The device of Claim 1 wherein said support bar further comprises a top section, a middle section and a bottom section wherein said top section incorporates said first bar end and said bottom section incorporates said second bar end.

4. The device of Claim 1 wherein said support bar includes an upper hook-type structure positioned on an upper portion of said support bar.

5. The device of Claim 1 wherein said support bar includes a lower hook-type structure positioned on a lower portion of said support bar.

6. The device of Claim 1 further comprising a spreader support member having a cable sling-vehicle attachment end and a lower support bar attachment end.

7. The device of Claim 1 further comprising an intermediate support member having a cable sling-vehicle attachment end and an upper support bar attachment end.

8. The device of Claim 1 further comprising an intermediate support member having a first end adapted for connecting to an attaching point along the length of said flexible lifting member and attaching a second end of said intermediate support member to an upper portion of said support bar.

9. The device of Claim 1 wherein said flexible lifting member further includes an intermediate support member portion having a support bar end and a clasp end for receiving said support bar end in a fastening relationship.

10. The device of Claim 1 wherein said ratchet mechanism includes an extended release.

11. A vehicle erecting kit comprising:

a support bar having a stabilizing base on one end and a ratchet mechanism on an opposite end;

a cable sling;

a flexible lifting member having a cable sling-vehicle attachment end and a strap body wherein said strap body is adapted for engaging about a spindle of said ratchet mechanism; and

instructions for assembling said support bar, said cable sling and said flexible lifting member and for using said erecting kit.

12. The kit of Claim 11 further comprising a container to hold said support bar, said flexible lifting member, said cable sling, and said instructions.

13. The kit of Claim 12 wherein said container is a duffel.

14. The kit of Claim 11 further comprising a spreader support member having a cable slip-vehicle attachment end and a support member portion adapted to be connected to a lower portion of said support bar spaced from said stabilizing base.

15. The kit of Claim 11 further comprising an intermediate support member having a cable slip-vehicle attachment end and a support member portion adapted to be connected about an upper portion of said support bar spaced from said ratchet mechanism.

16. The kit of Claim 11 further comprising an intermediate support member having a first end adapted for connecting to an attaching point along the length of said flexible lifting member and a second end adapted for attaching to an upper portion of said support bar.

17. The kit of Claim 11 wherein said flexible lifting member further includes an intermediate support member fixedly attached along a portion of said flexible lifting member, said intermediate support member having a support bar portion and a clasp end for receiving said support bar portion in a fastening relationship.

18. The kit of Claim 11 wherein said support bar further includes two or more sectional lengths adapted for removable serial connection.

19. The kit of Claim 11 wherein said support bar further includes an upper hook-type structure positioned on an upper portion of said support bar.

20. The kit of Claim 11 wherein said support bar further includes a lower hook-type structure positioned on a lower portion of said support bar.

21. The kit of Claim 11 wherein said ratchet mechanism further includes a handle.

22. The kit of Claim 11 wherein said ratchet mechanism further includes an extended release.

23. A method of erecting a motorcycle lying on a side, said method comprising:

attaching one end of a lifting strap to a lower portion of said motorcycle;

vertically positioning a support bar having a ratchet mechanism for receiving said lifting strap adjacent a seat of said motorcycle;

threading a second end of said lifting strap through said ratchet mechanism; and

operating said ratchet mechanism to take up said lifting strap about a spindle of said ratchet mechanism.

24. The method of Claim 23 further comprising attaching one end of a spreader support to said lower portion of said motorcycle and a second end of said spreader support about a lower portion of said support bar.

25. The method of Claim 23 further comprising:

attaching a first end of an intermediate support strap to said lower portion of said motorcycle and attaching a second end of said intermediate support strap to an upper portion of said support bar when said motorcycle is partially raised;

lowering said motorcycle to a position where said motorcycle is supported by said intermediate support strap;

releasing said second end of said lifting strap from said ratchet mechanism;

re-threading said second end of said lifting strap through said ratchet mechanism; and

operating said ratchet mechanism to continue raising said motorcycle to a position sufficient to allow one to stabilize said motorcycle in an upright position.

26. The method of Claim 25 wherein said attaching step further includes attaching said intermediate support strap about an upper hook-type structure on said upper portion of said support bar.

27. The method of Claim 23 further comprising:

attaching an intermediate support strap that is integral with said lifting strap to an upper portion of said support bar when said motorcycle is partially raised;

lowering said motorcycle to a position where said motorcycle is supported by said intermediate support strap;

releasing said second end of said lifting strap from said ratchet mechanism;

re-threading said second end of said lifting strap through said ratchet mechanism; and

operating said ratchet mechanism to continue raising said motorcycle to a position sufficient to allow one to stabilize said motorcycle in an upright position.

28. The method of Claim 27 wherein said attaching step further includes attaching said intermediate support strap about an upper hook-type structure on said upper portion of said support bar.

29. The method of Claim 23 further comprising:

attaching a first end of an intermediate support component to an attaching point along the length of said lifting strap and attaching a second end of said intermediate support component to an upper portion of said support bar when said motorcycle is partially raised;

lowering said motorcycle to a position where said motorcycle is supported by said intermediate support strap;

releasing said second end of said lifting strap from said ratchet mechanism;

re-threading said second end of said lifting strap through said ratchet mechanism; and

operating said ratchet mechanism to continue raising said motorcycle to a position sufficient to allow one to stabilize said motorcycle in an upright position.

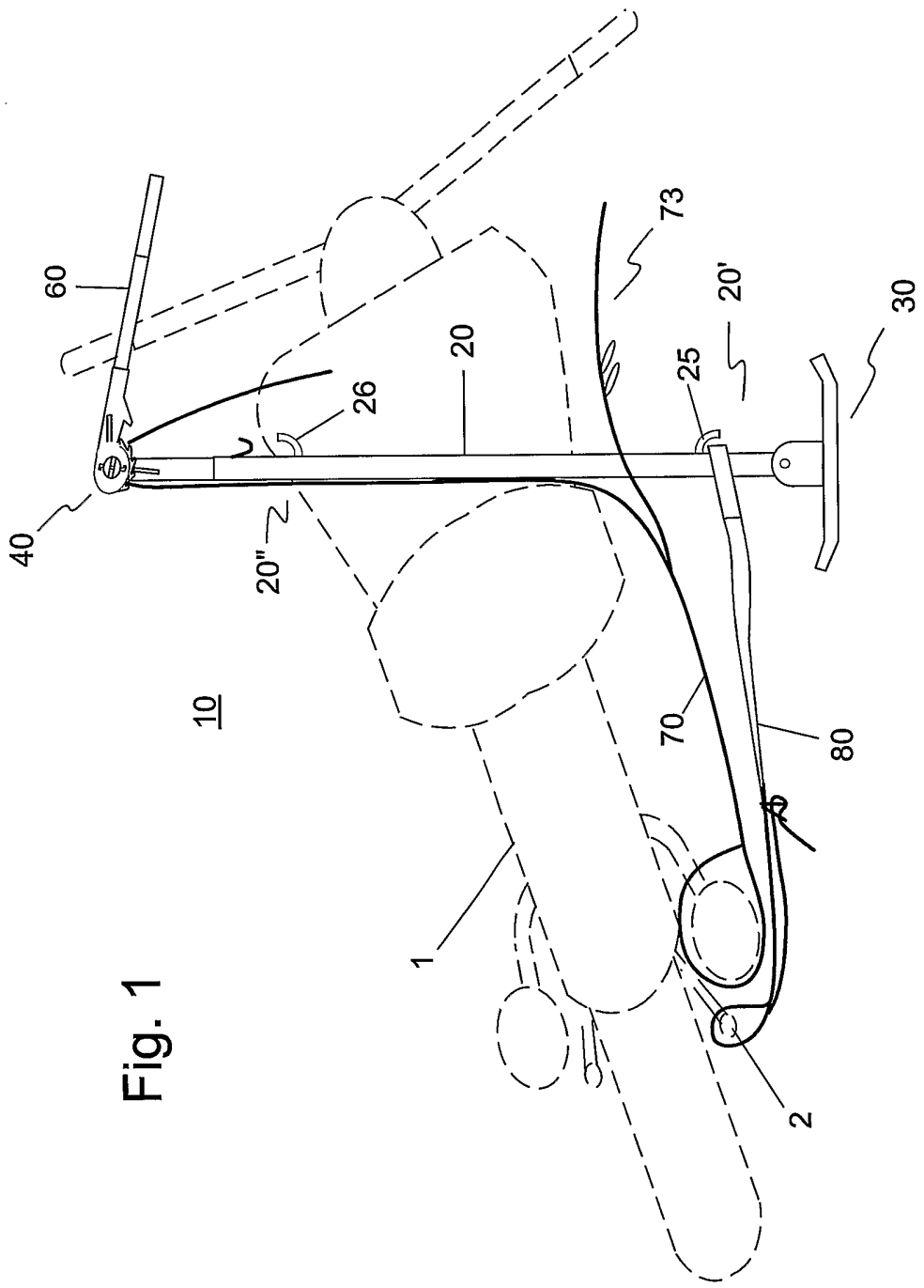
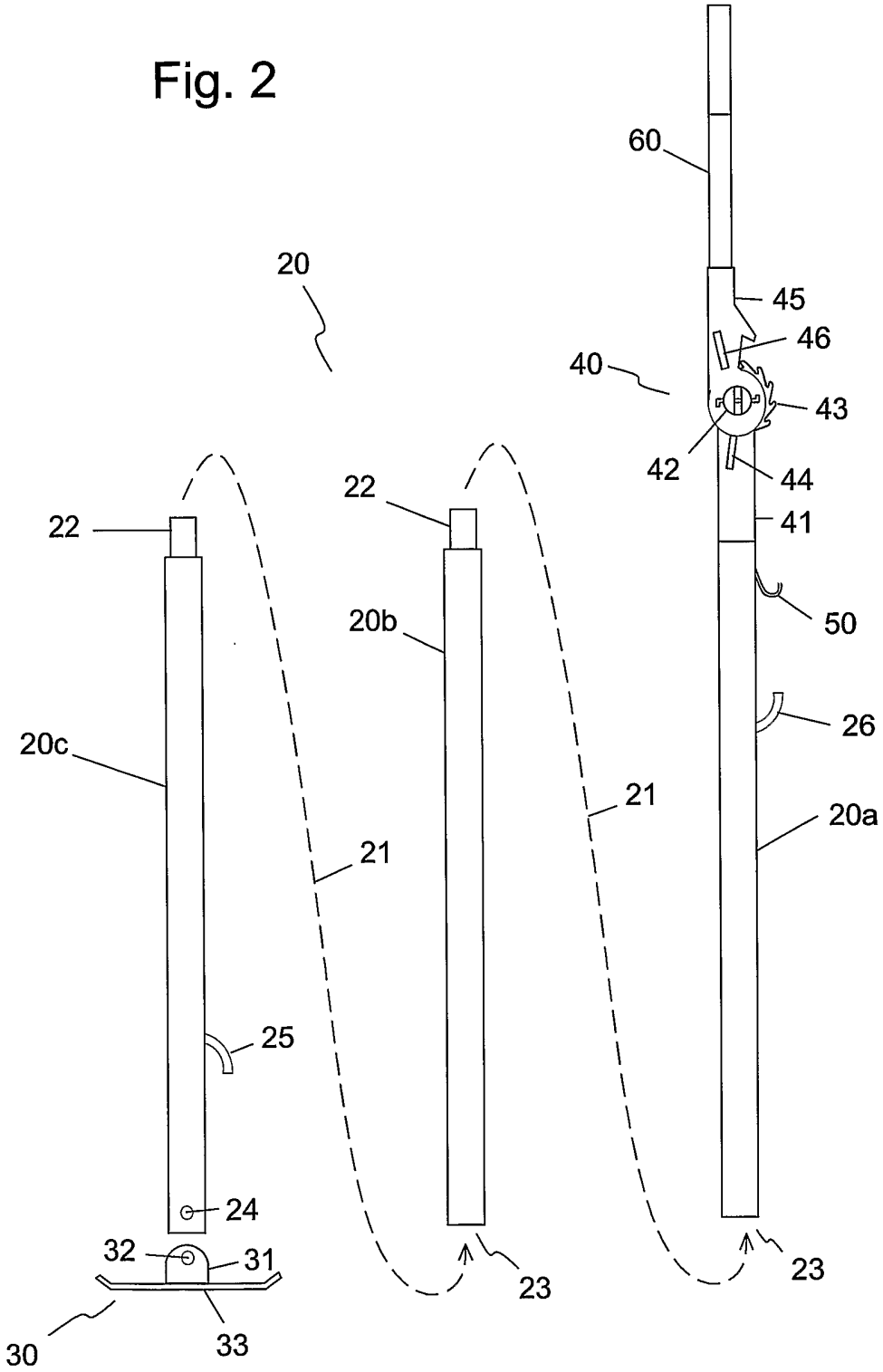


Fig. 1

Fig. 2


60
20
45
46
40
43
42
44
41
22
22
20b
50
20c
26
21
21
20a
25
24
32
31
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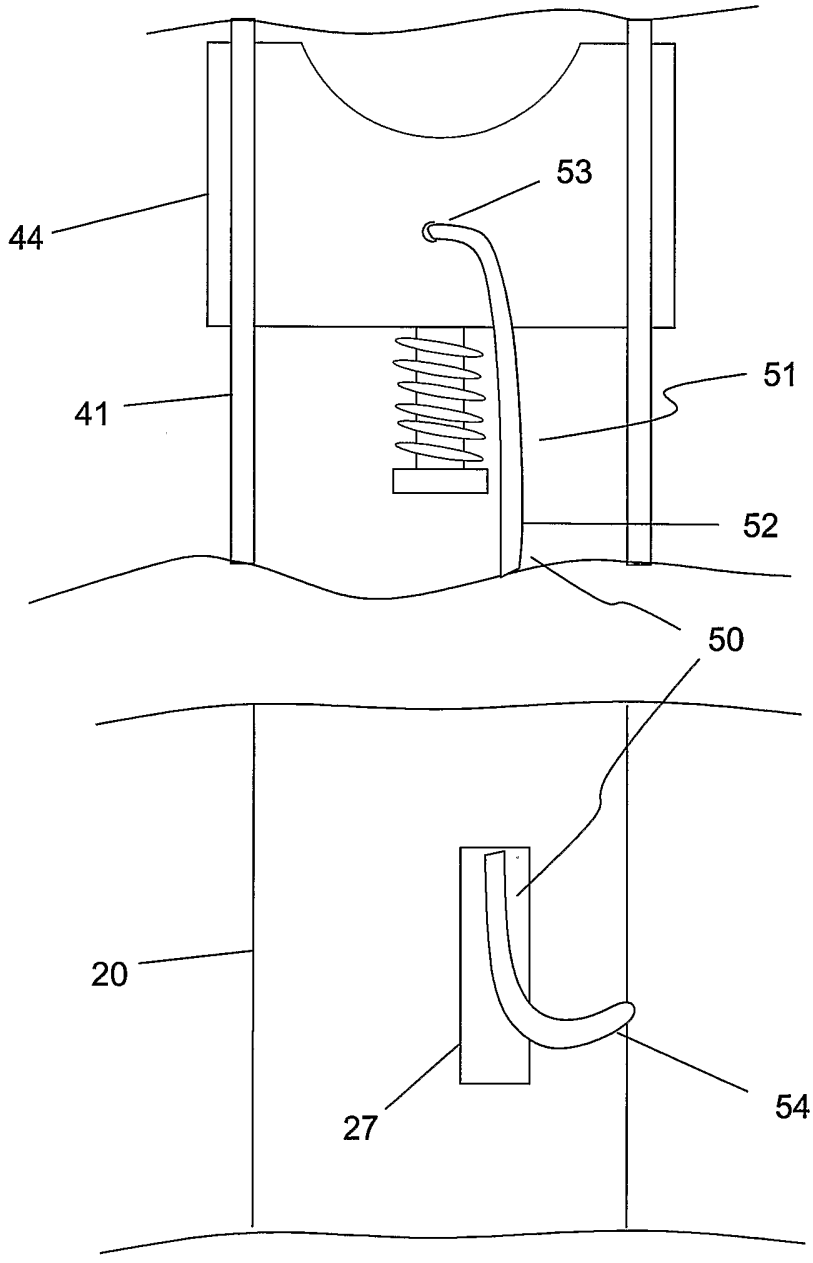
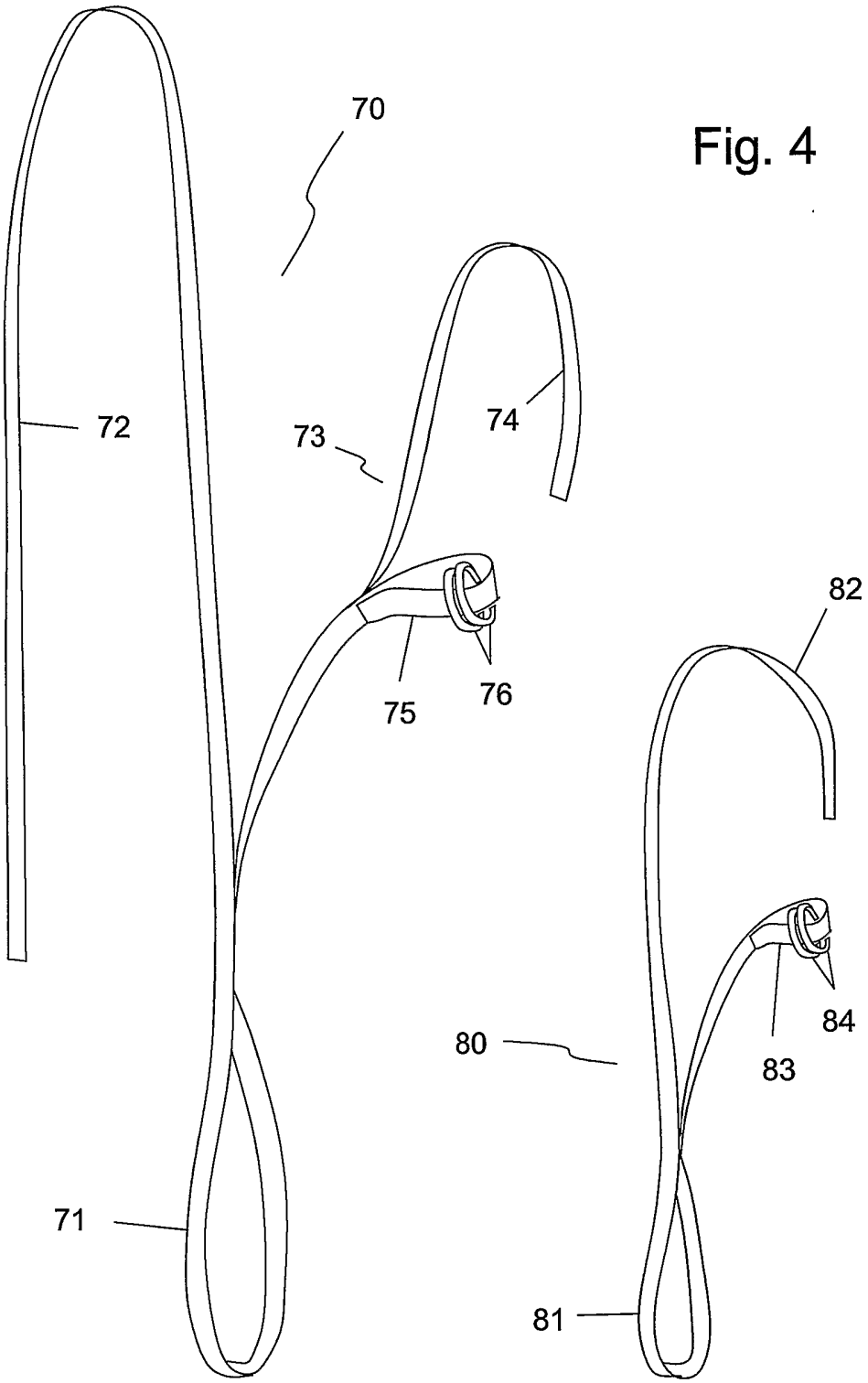


Fig. 3

Fig. 4



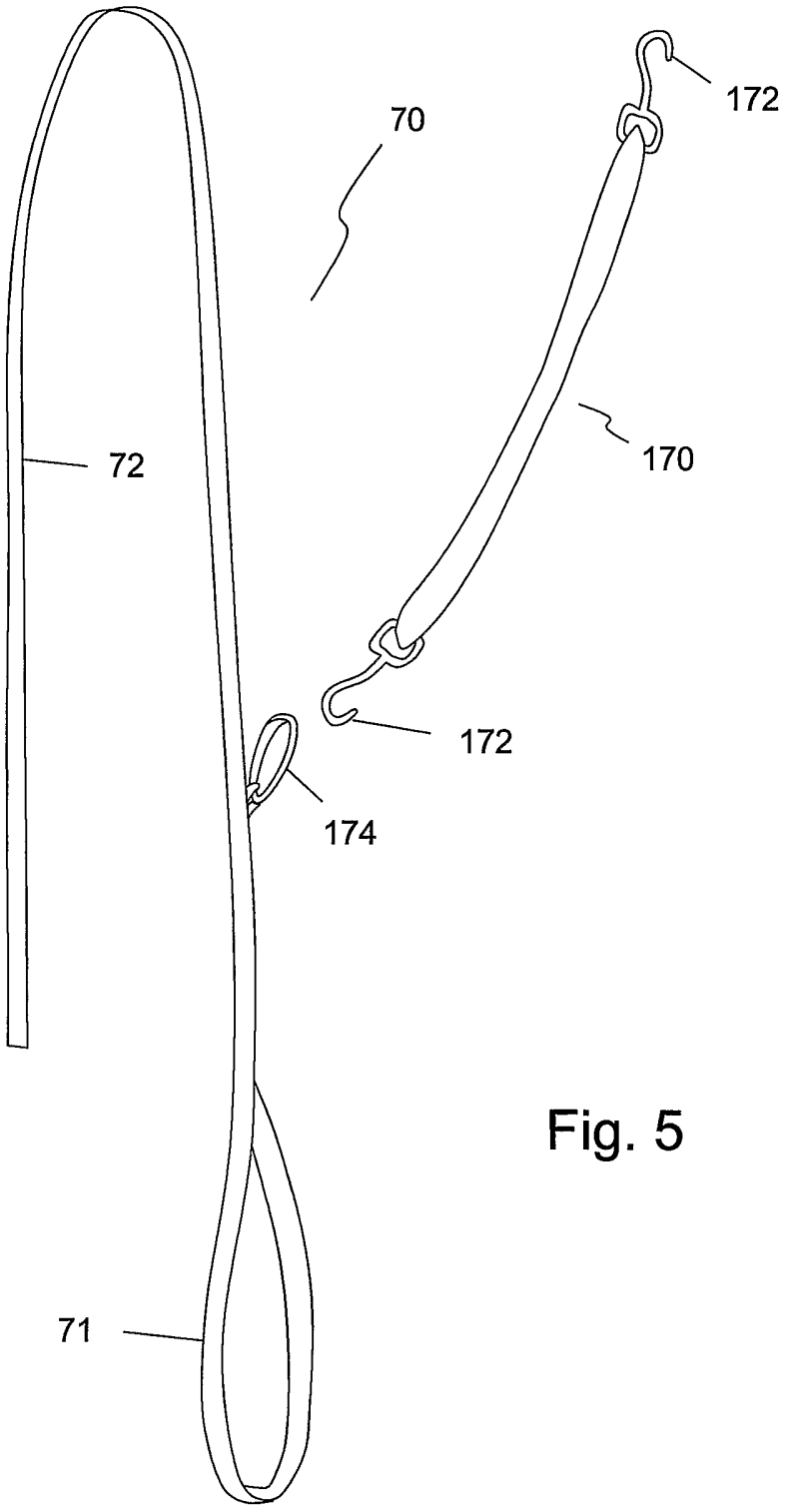


Fig. 5

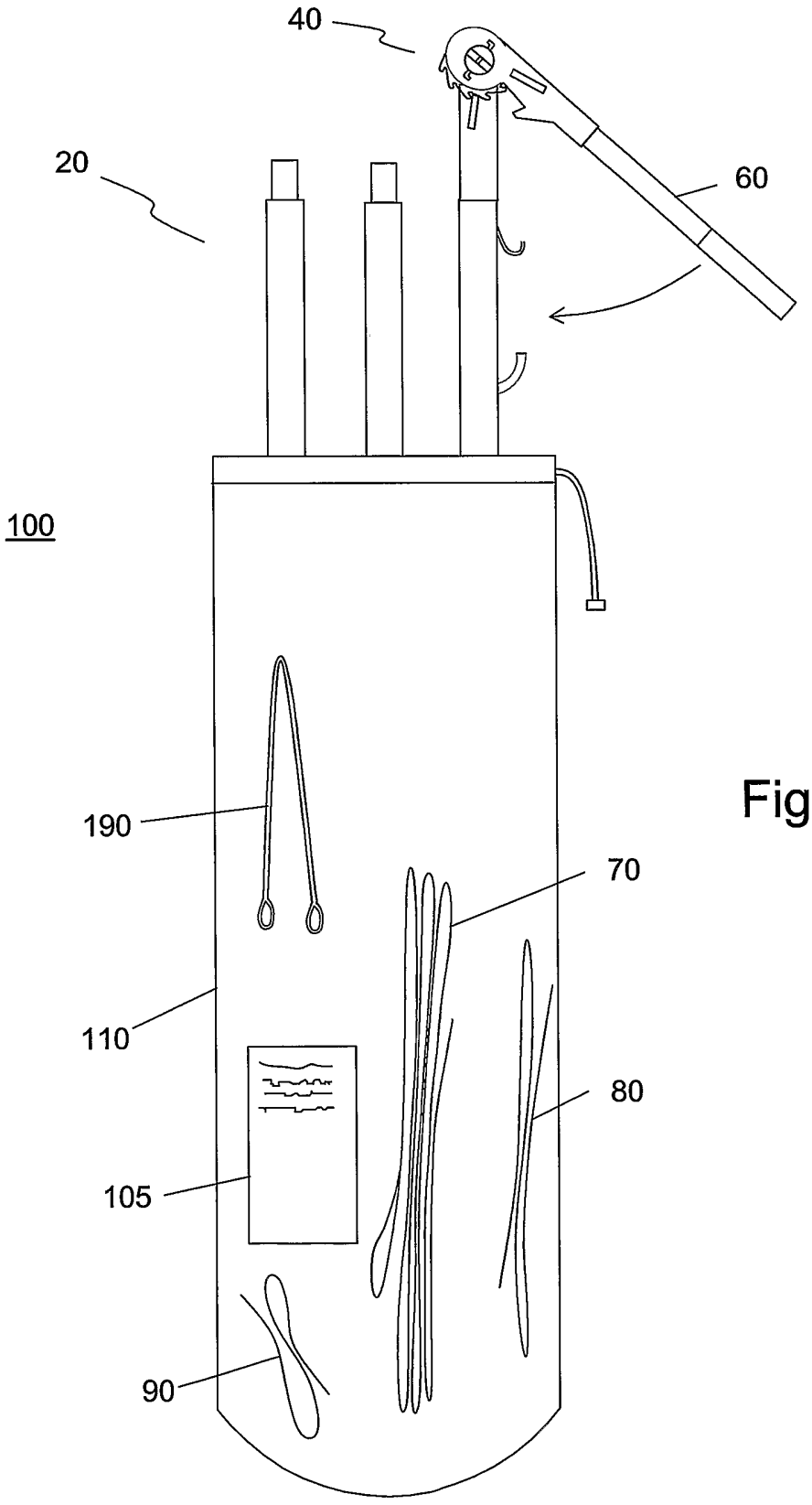


Fig. 6

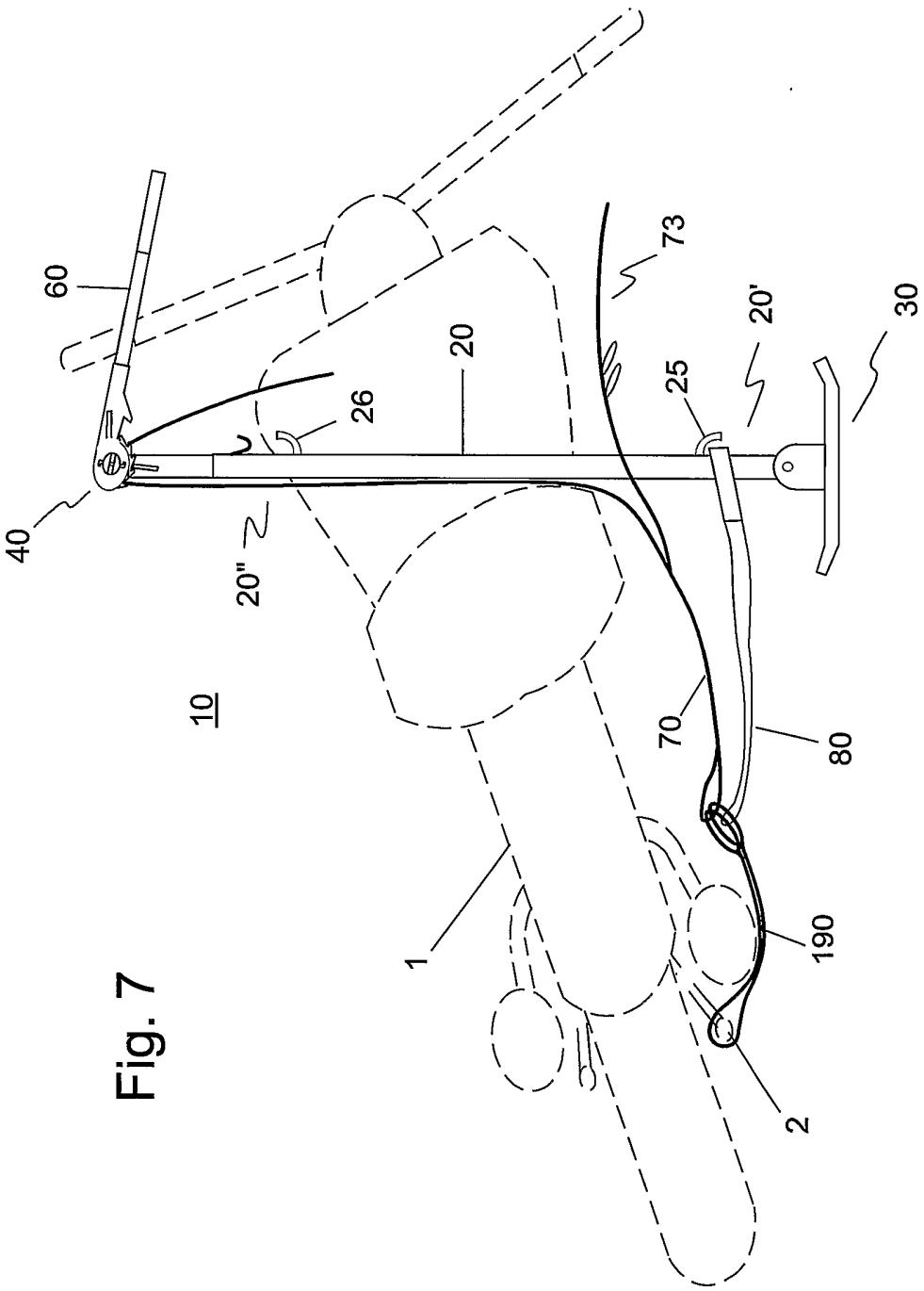


Fig. 7

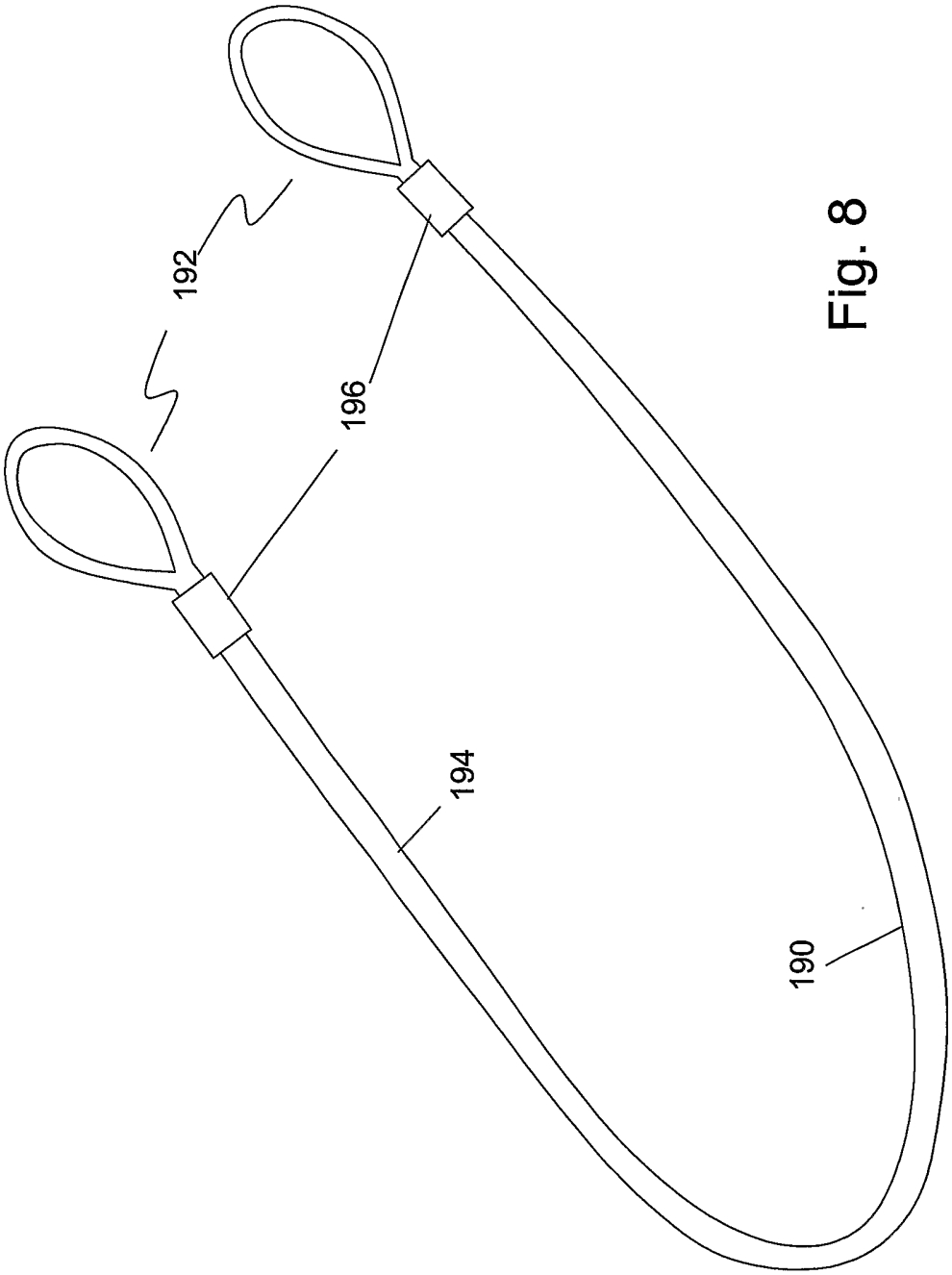


Fig. 8

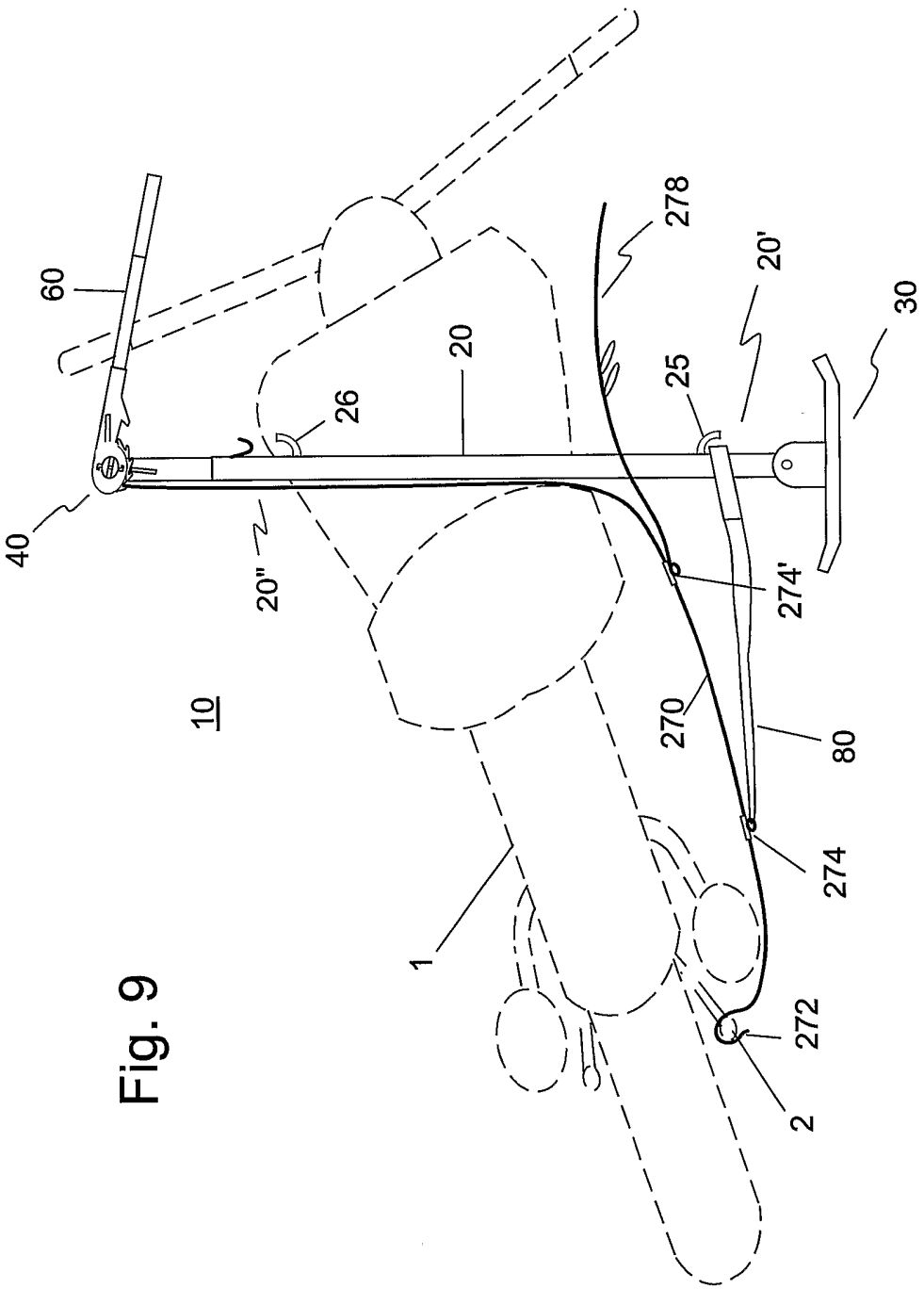


Fig. 9