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(54) **IMPLEMENT ATTACHING APPARATUS**

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See application file for complete search history.

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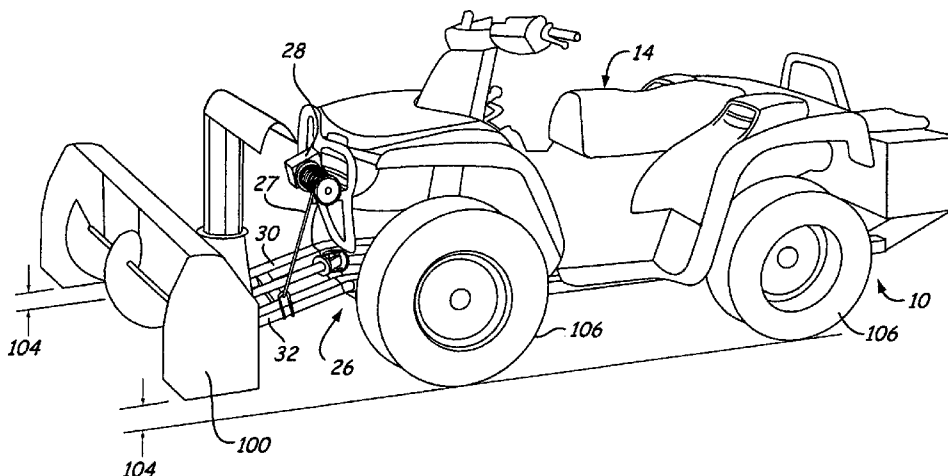
Primary Examiner—Thomas A Beach

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(57) **ABSTRACT**

An apparatus for connecting a mechanized implement to an all-terrain vehicle having an undercarriage with a front axle and a rear axle includes a unitary frame having a base connected to the unitary frame and a swingable portion. The mechanized implement includes an auxiliary power source separate from the power means of the all-terrain vehicle. The unitary frame includes a first portion and a second portion, the first portion connectable to the undercarriage proximate the front axle and the second portion connectable to the undercarriage proximate the rear axle. The base supports the auxiliary power source and is positioned proximate the second portion of the frame. The swingable portion includes a first end pivotally attached to the frame and a second end mateable with the mechanized implement. The swingable portion is positionable to position the connected mechanized implement between a working position and a non-working position, wherein only the ATV engages the ground when the mechanized implement is positioned towards the non-working position.

20 Claims, 6 Drawing Sheets



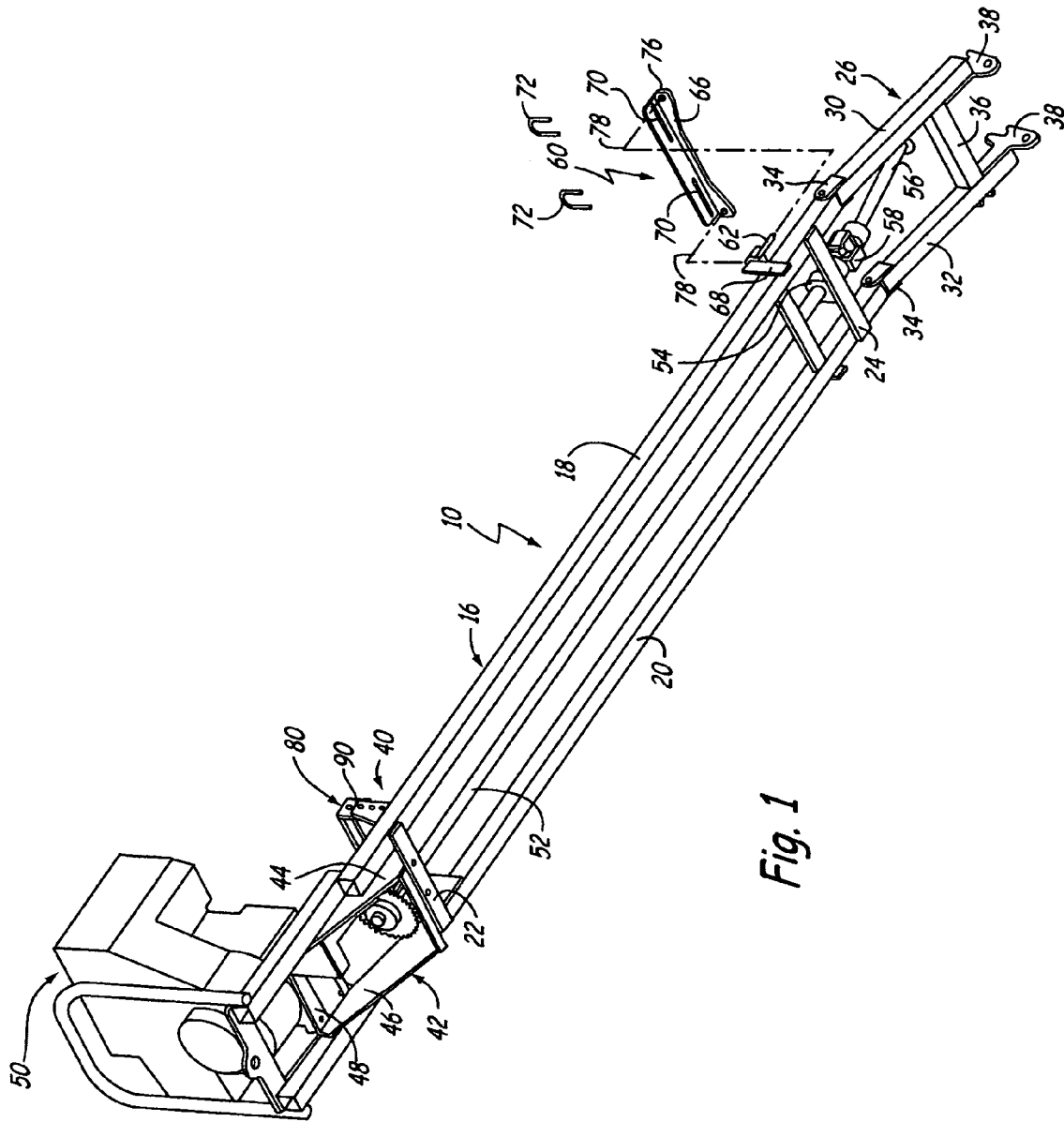


Fig. 1

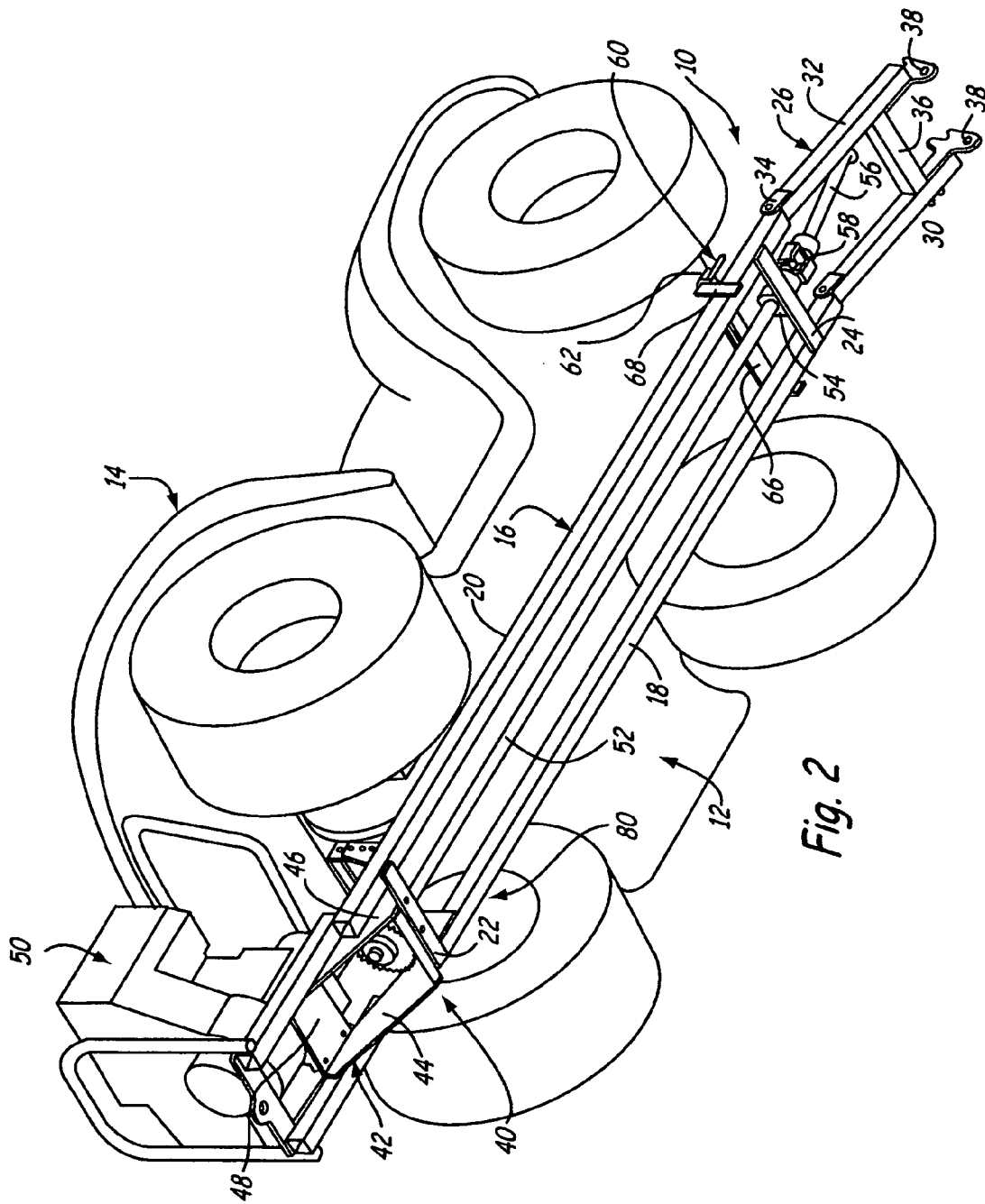


Fig. 2

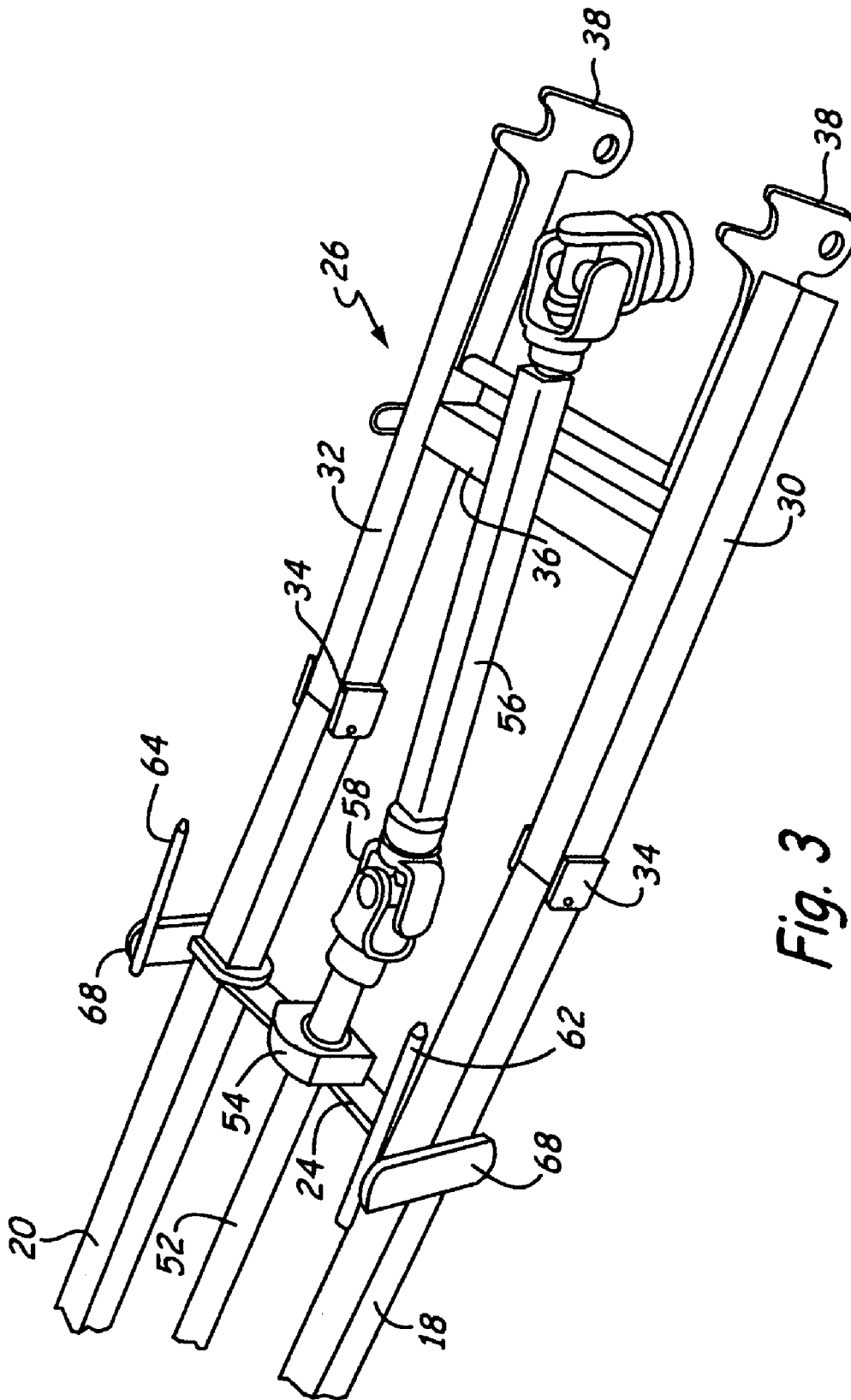


Fig. 3

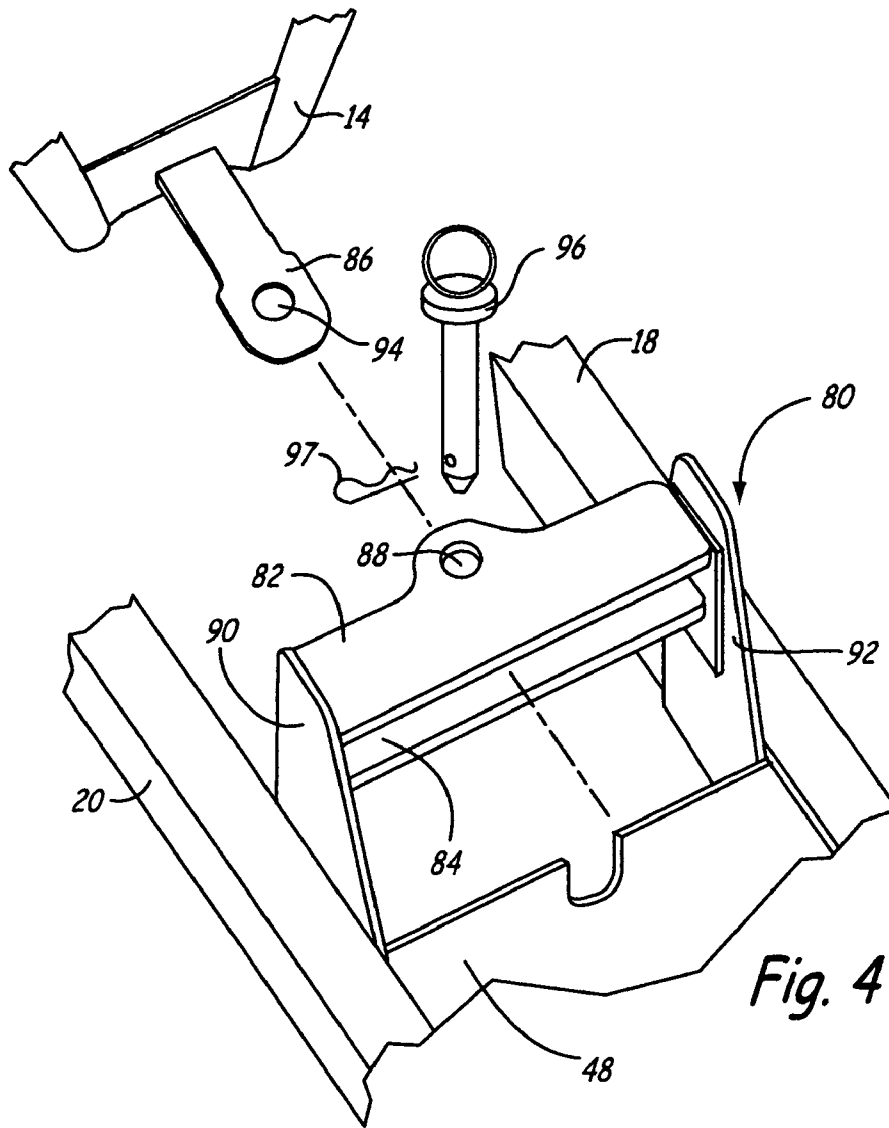


Fig. 4

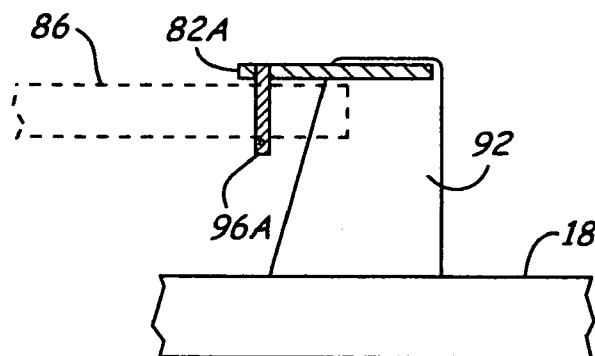


Fig. 4A

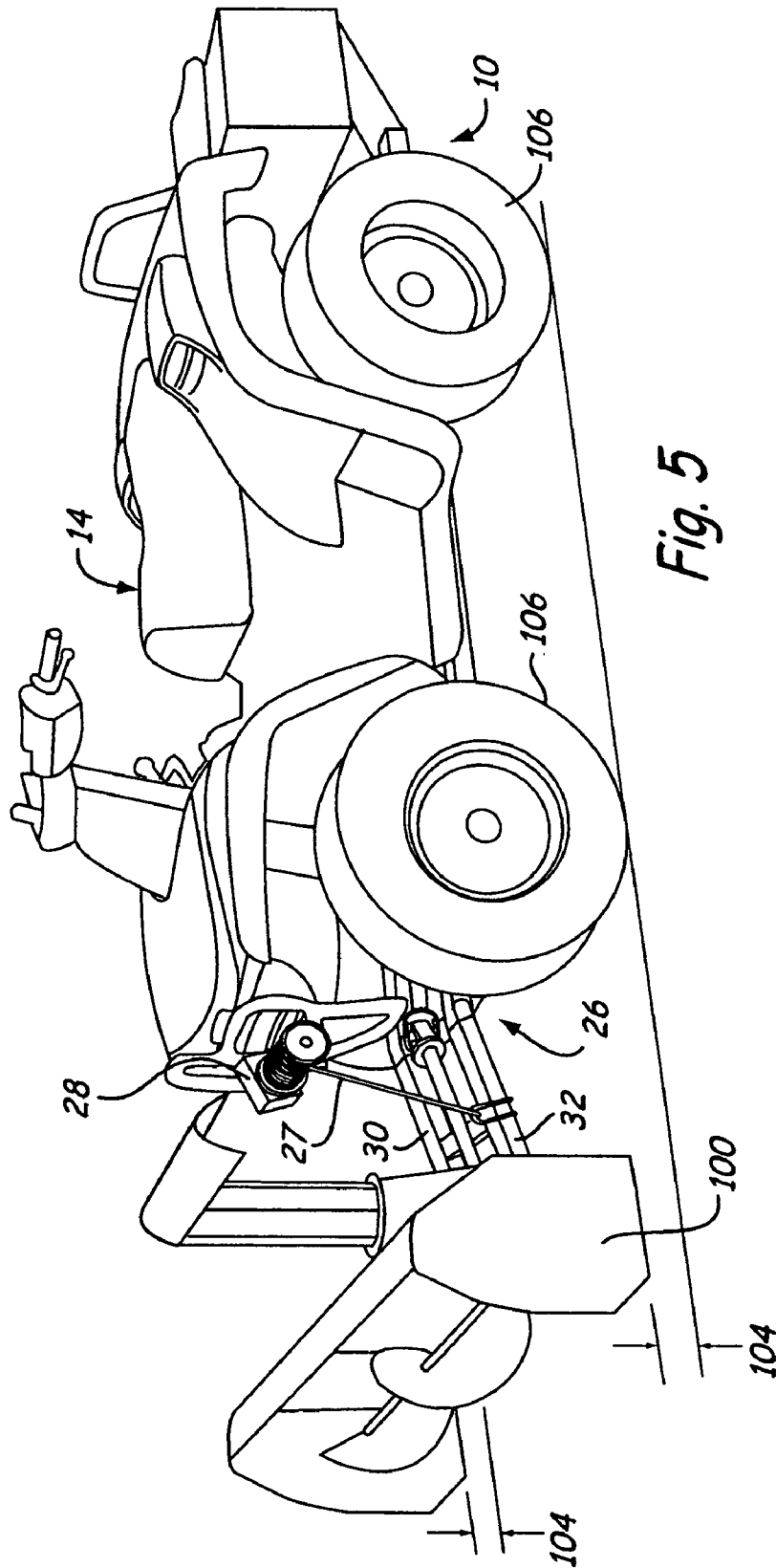


Fig. 5

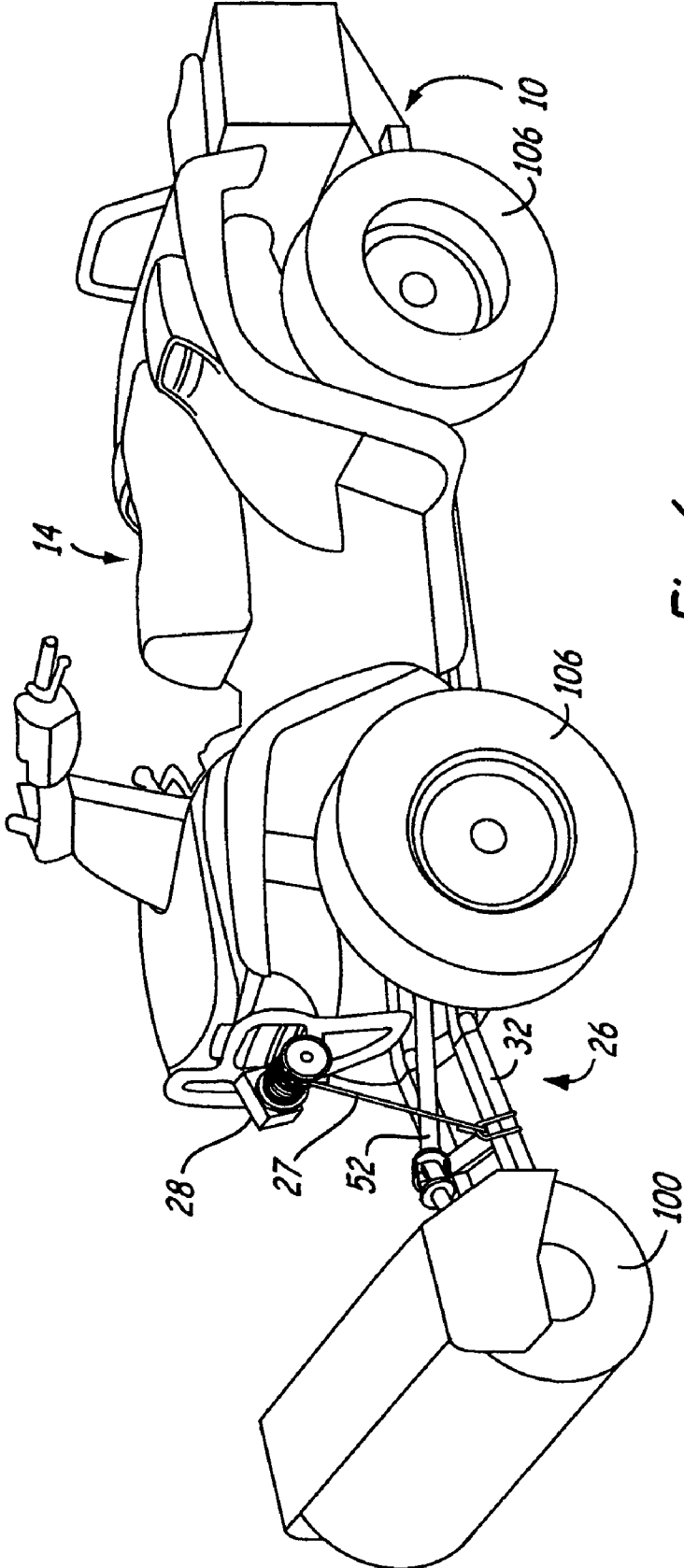


Fig. 6

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IMPLEMENT ATTACHING APPARATUSCROSS-REFERENCE TO RELATED
APPLICATION(S)

None.

BACKGROUND OF INVENTION

The present invention generally relates to all-terrain vehicles. In particular, the present invention relates to an apparatus for attaching mechanized implements to an all-terrain vehicle.

An all-terrain vehicle (hereinafter "ATV") is a motorized vehicle that typically allows travel over varying types of terrain. ATVs are well known in the art and have been in existence for well over thirty years. While originally invented as work vehicles, over the past three decades ATVs have taken on a role primarily as recreational vehicles. However, as the prior-art demonstrates, interest in ATVs as work vehicles has always existed and has been waxing over the last decade, especially in the field of attaching implements to the ATV for doing yard-work or other non-industrial tasks. Examples of implements that have been employed utilizing the work capabilities of an ATV include herbicide/fungicide applicators, snow or push blades, lawn mowers, mechanized brooms, snow removal devices and the like. As such, there exists in the prior art many examples that demonstrate how to attach an implement to an ATV. Such examples include devices that allow the implement to be attached to either the front or rear end of the ATV. Of the examples listed, mechanized implements have been taking on a greater role as they allow the ATV to be utilized as a work vehicle as well as a recreational vehicle, thereby broadening the appeal of an ATV to a greater market.

Mechanized implements, however, generally need a power source other than the ATV engine in order to ideally operate. Most ATVs are not equipped with power take-off devices to operate mechanized implements, nor would it be feasible in most cases to do so. Revving the ATV engine at a high speed, which is generally required in order to provide sufficient power to the mechanized implement, does not allow for adequate control of the ATV as their transmissions are not geared for that type of work. Alternatively, the engine may not have the desired output power to drive both the ATV and the mechanized implement. Therefore, auxiliary power sources are desirable to run certain mechanized implement attachments.

Because of the additional moving parts, and the need for an auxiliary power source, mechanized implements tend to be more massive than non-mechanized implements. As such, the attachments of the prior art typically provide a ground engaging means, other than the ATV, to help support the mechanized implement. For example, U.S. Pat. Nos. 5,381,647 and 6,178,668 disclose front-attachable implements that connect to the ATV, but also include ground-engaging wheels, other than the ATV wheels, to help support for example, a mowing implement or a snow removal implement. These wheels are continuously engaged with the ground as long as the implement is attached to the ATV. This type of attachment is disadvantageous in that it hinders both the control of the ATV and does not allow for adequate mobility of the ATV during speeds in excess of normal operating conditions while using the attached implement. The control of the ATV is hindered by the additional ground-engaging wheels which impede the maneuverability of the ATV; the more massive the mechanized implement,

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the lesser maneuverability of the ATV. Alternatively, and again taking U.S. Pat. Nos. 5,381,647 and 6,178,668 as examples, transportation from one job site to another is greatly hindered by the ground-engaging wheels of the attachment which are generally designed for one type of terrain and not for transportation on gravel roads, highways or other uneven terrain, thereby defeating the purpose of having an all-terrain vehicle.

Also, most applications for use with an ATV having an attached implement involve residential applications, including regular yard-work, removing snow from driveways, and the like that can be typically done by a single person. And given the dual nature of ATVs in that they are used as both recreational vehicles and work vehicles, it is desirable to be able to transfer between each application with relative ease. Attachments of prior art generally require fastening to the ATV in such a manner that is both time consuming and difficult for a single person to accomplish, especially considering that many do not allow the ATV to function as a recreational vehicle when an attachment is connected thereto.

BRIEF SUMMARY OF INVENTION

The present invention includes an implement attaching apparatus for connecting a mechanized implement and an auxiliary power source to an ATV. The implement attaching apparatus includes a rigid frame longitudinally disposable along an underside of the ATV proximate the undercarriage. The frame attaches at a forward position and a rearward position. The forward position includes pin members attached to the frame which are disposable within apertures of a bracket connected to the undercarriage proximate a front axle of the ATV. The pins allow for slidable forward and rearward movement of the frame while connected to the forward position. After attaching the frame at the forward position, the frame is secured to the ATV by connection at the rear position. Attachment at the rear position includes a device cooperably mateable with a hitch attached to the ATV. Upon attaching the frame to the ATV at the rear position, the frame is secured and slidable rearward or forward movement is not permitted.

The implement attaching apparatus further includes a swingable portion attached to the frame for mateable connection to the mechanized implement. An auxiliary power source mounted on the rear portion of the frame operatively connects to the mechanized implement by way of an output shaft and secondary shaft. The mechanized implement is positionable between a lowered working position and a raised non-working or transport position. When in the raised non-working or transport position, neither the mechanized implement nor the implement attaching apparatus engages the ground.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an implement attaching apparatus of the present invention.

FIG. 2 is a perspective view of the implement attaching apparatus of the present invention connected to an undercarriage of an ATV.

FIG. 3 is a perspective view of a forward portion of the implement attaching apparatus of the present invention.

FIG. 4 is a perspective view of a connecting device of the implement attaching apparatus of the present invention.

FIG. 4A is a side view of an alternative embodiment of a connecting device of the implement attaching apparatus of the present invention.

FIG. 5 is a perspective view of a snow removal implement connected to an ATV by the implement attaching apparatus of the present invention.

FIG. 6 is a perspective view of a mechanized broom implement connected to an ATV by the implement attaching apparatus of the present invention.

DETAILED DESCRIPTION

The implement attaching apparatus 10 of the present invention is generally indicated at 10 in FIG. 1. The implement attaching apparatus 10 connects to an undercarriage 12 of an ATV 14, as illustrated in FIG. 2. The implement attaching apparatus 10 includes a rigid frame 16 having a first longitudinal member 18 and a second longitudinal member 20, each member 18 and 20 spaced-apart a fixed distance by attached first and second cross members, 22 and 24 respectively. Each longitudinal member, 18 and 20, is preferably of tubular construction, having a square cross-section. However, other types of members are well within the scope of the present invention, including but not limited to, circular tubular members, non-tubular members, channel members, "L"-shaped or angle members, flat members and the like.

Pivotaly attached to a first end of the frame 16 is a swingable portion 26 for connecting an implement 100 to the frame 16. The swingable portion 26 is pivotal in relation to the frame 16 to allow raising and lowering of the attached implement. As illustrated in FIGS. 5 and 6, the raising and lowering of the swingable portion 26 is accomplished by means of a winch 28 connected to the ATV 14 and swingable portion 26 by cable 27. It should be noted, however, that other mechanical means for raising and lowering the swingable portion 26 are also within the scope of the present invention, including but not limited to levers, cranks, actuators and hydraulic cylinders. The pivotability of the swingable portion 26 further allows selective positioning to attach or detach the implement.

Referring now to FIG. 3, the swingable portion 26 includes first and second arms, 30 and 32 respectively, spaced apart approximately the width of the frame 16. Each arm 30 and 32 includes a terminally placed clevis 34 attached to a proximal end which allows pivotal attachment to the respective longitudinal member, 18 and 20. In a preferred embodiment of the present invention, a connecting cross member 36 attaches to each arm 30 and 32 to provide rigidity to the swingable portion 26. In an alternative embodiment of the present invention, each arm 30 and 32 is allowed to pivot independent of one another, allowing the attached implement 100 to float over uneven terrain. A cable attached to each arm 30 and 32 is in turn connected to the winch 28 to raise and/or lower the swingable portion.

To connect the implement 100 to the swingable portion 26, a quick-attach device 38 disposes between terminal ends of each arm 30 and 32 proximate the cross member 36. Alternatively, the quick attach device 38 is attached on an outside surface of each arm 30 and 32. Such quick attach devices are well known in the art and typically include a notched area and aperture for engaging cooperable members attached to the implement. The quick attach device 38 may be approximately "U"-shaped and disposable between each arm 30 and 32 and engaged to the connecting cross-member 36 for added support. It should be noted, however, that other types of quick attach devices are well within the scope of the present invention, including any device that allows for cooperable mateability to attach an implement to the swingable portion 26 in such a manner.

As illustrated in FIGS. 1 and 2, a second rear end 40 of the frame 16 includes a motor mount 42 attached thereto. The motor mount 42 includes a first strut member 44 attached to and extending away from the first longitudinal member 18. A second strut member 46 attaches to and extends away from the second longitudinal member 20. Preferably, the strut members 44 and 46 are fixedly attached to the frame 16. However, it is well within the scope of the present invention to attach the strut members 44 and 46 by removable fastening means, thereby allowing the entire motor mount to be removed from the frame 16. A support plate 48 disposes between each strut member 44 and 46, thereby forming a base to support an auxiliary power source 50. The auxiliary power source is preferably an internal-combustion engine operatively connected to an output shaft 52. The output shaft 52 connects to the auxiliary power source 50 at a proximal end and disposes between the first and second longitudinal members, 18 and 20 respectively, of the frame 16. The output shaft 52 is held in place by housed bearings 54 connected to the cross members of the frame 16. Preferably, a distal end of the output shaft 52 connects to a second shaft 56 by way of a universal joint 58, as illustrated in FIG. 3. The second shaft 56 is mateable with a mechanized implement 100, thereby operatively engaging the auxiliary power source 50 with the mechanized implement 100.

To connect the frame 16 to the ATV 14, two connecting devices are supplied. A first forward connecting device 60 is positioned proximate the first end of the frame 16 and includes first and second pin members, 62 and 64 respectively, attached to the frame 16 along with a bracket member 66 securable to the undercarriage 12 of the ATV 14 for receiving the pin members 62 and 64. The first pin member 62 connects to the first longitudinal member 18, while the second pin member 64 connects to the second longitudinal member 20. Each pin member 62 and 64 extends substantially parallel towards the first end of the frame 16 while being connected at a proximal end to the respective longitudinal member, 18 and 20, by means of a spacing plate 68. By substantially parallel it is meant that the length of each pin 62 and 64 is spaced apart an equal distance from the respective longitudinal members, 18 and 20, however variation within this distance may fluctuate such that each pin member 62 and 64 is positioned at a slight angle with respect to each longitudinal member, 18 and 20. The bracket member 66 connects to the undercarriage 12 of the ATV 14 preferably proximate the front axle of the ATV 14. The bracket 66 is preferably "L"-shaped, having apertures 70 which receive fasteners 72 for attachment to the undercarriage 12 of the ATV 14. The apertures 70 may be circular or elongated. The fasteners 72 are preferably "U"-shaped bolts that can either be positioned about existing members in the undercarriage of the ATV 14. Alternatively, the fasteners 72 can include bolts disposable within apertures drilled into the undercarriage 12. Each fastener 72 disposes within the respective aperture 70, securing the bracket 66 to the undercarriage 12 of the ATV 14 by way of cooperating burrs 74. The apertures 70 allow the bracket member 66 to be selectively positioned transversely relative to the ATV 14, thereby allowing the first end of the frame 16 to be positioned relative to the undercarriage 12 of the ATV 14. The bracket member 66 further includes downwardly extending members 76, each containing a receiving aperture 78 for receiving the respective pin member 62 and 64. Each receiving aperture 78 may be circular or elongated.

Attached to the second rear end of the frame 16 is a second rear connecting device 80, as illustrated in FIG. 4.

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The rear connecting device **80** includes upper and lower spaced-apart plates, **82** and **84** respectively, for receiving a hitch member **86**, as illustrated in FIG. 4. Each plate **82** and **84** includes an aperture **88** and is attached at terminal ends to first and second side members, **90** and **92** respectively. Each respective side member **90** and **92** is attached to the respective first and second longitudinal members, **18** and **20** respectively, of the frame **16**. The first and second side members **90** and **92** may be permanently attached, or attached by removable fastening means. The hitch member **86** also includes an aperture **94** alignable with the apertures **88** of the upper and lower plates, **82** and **84** respectively, for receiving a fastening means **96** therethrough to secure the rear connecting device **80** to the hitch **86** of the ATV **14**. The fastening means **96** may include a pin secured by a cotter pin **97**. It should be noted, however, that other fastening means **96** are well within the scope of the present invention, including a threaded bolt and cooperable burr.

To mount the implement attaching apparatus **10** to the ATV **14**, the bracket **66** of the forward connecting device **60** is installed by being attached to the undercarriage **12** of the ATV **14** proximate the front axle. The implement attaching apparatus **10** is positioned on the ground beneath the ATV **14** such that the first connecting device **60** is proximate the front axle of the ATV **14**, and the second connecting device **80** is proximate the hitch **86** of the ATV **14**. An operator then positions the frame **16** such that the pins **62** and **64** of the forward connecting device **60** are aligned with the respective apertures **78** of the bracket **66**. Upon alignment, the frame **16** is positioned such that each pin **62** and **64** inserts within and slidably engages the respective aperture, whereupon the forward portion of the frame **16** is slidably connected to the ATV **14** by the first connecting device **60**. When slidably connected to the ATV **14**, the frame **16** is allowed both slight forward and rearward movement, which enables the operator to attach the rear portion of the frame **16** to the hitch **86** of the ATV **14** with relative ease. This is accomplished by the operator positioning the second end of the frame **16** such that the hitch member **86** attached to the ATV **14** is disposed between the upper and lower plates, **82** and **84** respectively, of the rear connecting device **80**. The operator then aligns the respective apertures **88** of the upper and lower plate **82** and **84** with the hitch aperture **94** and inserts the fastening means **96** therethrough to secure the rear portion of the frame **16** to the ATV **14**. As stated, the pins **62** and **64** of the first connecting device **60**, when slidably seated within the respective aperture **78** of the bracket **66**, allow for slidable movement of the frame **16** such that a single operator can connect and disconnect the implement attaching apparatus **10** to the ATV **14** in a quick and efficient manner. To disconnect the implement attaching apparatus **10**, the fastening means **96** is removed from the rear connecting device **80** and hitch **86**, thereby allowing the operator to position the frame **16** to disengage the rear connecting device **80** from the hitch **86**. The operator then positions the frame **16** to disengage the pins **62** and **64** from the respective aperture **78**, thereby disconnecting the implement attaching apparatus **10** from the ATV **14**.

FIG. 4A illustrates an alternative embodiment of the second connecting device **80A**. The alternative rear connecting device **80A** includes a plate **82A** for engaging the hitch member **86**. The plate **82A** connects to the frame **16** in the same manner as the first embodiment illustrated in FIG. 4, of which only side plate **92** and first longitudinal member **18** is illustrated in FIG. 4A. A pin member **96A** attaches to the plate **82A** and extends downward. Preferably, the pin member **96A** is permanently attached, either by way of a

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weld or similar attaching means. However, it is well within the scope of the present invention to provide for the pin member **96A** to be removable from plate **82A**. To secure the rear portion of the frame **16** to the hitch **86** utilizing rear connecting device **80A**, the rear portion of the frame is simply positioned to dispose pin member **96A** within the aperture **44** of the hitch **86**. Upon doing so, the plate **82A** of the rear connecting device **80A** engages and rests up the hitch member **86**. The weight of the frame **16**, in addition to the weight of the auxiliary power source **50** prevents the rear connecting device **80A** from disengaging from the hitch **86**. However, a cotter pin (not shown) can also be secured to the pin member **96A** to prevent disengagement as well.

Upon attaching the apparatus **10** to the ATV **14**, the implement can be connected to the swingable portion **26** as previously described herein by means of the quick attachment **38**, and operatively connecting the auxiliary power source **50** to the mechanized implement **100** by attaching the second shaft **56**. Preferably, the implement **100** is a mechanized implement which is connected to and powered by the auxiliary power source **56**. Such mechanized implements **100** include, but are not limited to, a snow removal implement as illustrated in FIG. 5 a rotary broom implement as illustrated in FIG. 6 and a lawn mowing implement and tilling implements. Alternatively, non-mechanized implements are also within the scope of the present invention, including push blades and the like.

As previously mentioned, the swingable portion **26** of the implement attaching apparatus **10** allows the attached implement **100** to be raised or lowered relative to the ground. This allows the implement **100** to be positioned between a lowered working position and a raised transport position, as illustrated by differential arrows **104** in FIG. 6. When in the lowered working position, the attached implement **100** either engages the ground or is allowed to float over the ground when performing a specific operation, such as removing snow when a snow removing implement is attached or cutting grass when a mowing implement is attached. When the attached implement **100** is not in use, or it is desirable to drive the ATV **14** or transport the attached implement **100** to another work site, the implement **100** is raised by the attached winch **28** and brought to the raised transport position, as indicated by differential arrows **104**. While in the raised transport position **104**, neither the implement attaching apparatus **10** nor the attached implement **100** engage the ground, as only the tires **106** of ATV **14** engage the ground. This allows the ATV **14** to be driven in a regular manner and transport the attached implement without being impeded.

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

The invention claimed is:

1. An apparatus for connecting to an all-terrain vehicle (ATV) a mechanized implement operatively connected to an auxiliary power source, the ATV having an undercarriage with a front axle and a rear axle, the apparatus comprising:
 - a rigid frame having a first portion and a second portion, each portion connectable to the undercarriage;
 - a base for supporting the auxiliary power source connected to the second portion of the frame;
 - a swingable portion having a first end pivotally attached to the first portion of the frame and a second end mateable with the mechanized implement to connect the mechanized implement to the ATV, the swingable

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portion positionable to position the connected mechanized implement between a working position and a non-working position, wherein only the ATV engages the ground when the mechanized implement is positioned towards the non-working position;

a pin member spaced-apart from and connected to the frame, the pin member extending substantially parallel to the frame towards the swingable portion; and

a bracket attachable to the undercarriage portion of the ATV, the bracket including a surface defining an aperture for receiving the pin member, whereupon disposing the pin member within the aperture, the first portion of the frame connects to the undercarriage portion.

2. The apparatus of claim 1 wherein the bracket attaches to a forward portion of undercarriage proximate a front axle of the ATV.

3. The apparatus of claim 1 wherein the first portion connects to the undercarriage proximate the front axle and the second portion connects to the undercarriage proximate the rear axle.

4. The apparatus of claim 1 and further comprising a positioning mechanism attachable to the swingable portion for positioning the connected mechanized implement between a working position and a non-working position.

5. The apparatus of claim 4 wherein the positioning mechanism includes a winch assembly attached to the ATV and the swingable portion.

6. An apparatus for connecting a mechanized implement to an all-terrain vehicle (ATV), the ATV having an undercarriage, a front axle, a rear axle and a rear hitch extending in a generally rearward direction, the apparatus comprising:

a rigid frame assembly longitudinally positionable proximate the undercarriage of the ATV, the frame assembly having a first end extending past the front axle and a second end extending past the rear axle;

a pin member spaced apart a selected distance from and connected to the frame assembly;

a bracket attachable to the undercarriage proximate the front axle of the ATV having a surface defining an aperture for receiving the pin member;

a rear connecting assembly attached proximate the second end of the frame assembly for connecting the frame assembly to the rear hitch of the ATV; and

a swingable assembly for positioning the implement, the swingable assembly pivotally attached to the first end of the frame assembly and connectable to the implement; and

a base for supporting an auxiliary power source operably connected to the mechanized implement, the base connected to the frame assembly proximate the second end.

7. The apparatus of claim 6 wherein the mechanized implement is operably connected to the auxiliary power source by an articulated shaft.

8. The apparatus of claim 6 wherein the mechanized implement is positionable between a working position and a non-working position, wherein positioning the mechanized implement towards the non-working position, only the ATV engages the ground.

9. The apparatus of claim 6 and further comprising a mechanism attachable to the ATV and the swingable portion to lower and raise the swingable portion, thereby positioning the implement between a respective working and non-working position.

10. An apparatus for connecting to an all-terrain vehicle (ATV) a mechanized implement operatively connected to

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an auxiliary power source, the ATV having an undercarriage, a front axle, a rear axle and a rear hitch, the apparatus comprising:

a frame assembly including first and second spaced-apart rigid members, the frame assembly longitudinally positionable proximate the undercarriage of the ATV, the frame assembly having a forward portion extending past the front axle and a rear portion extending past the rear axle;

a first pin member spaced apart a selected distance from and connected to the first rigid member of the frame assembly;

a second pin member spaced apart a selected distance from and connected to the second rigid member of the frame assembly;

a bracket attachable to the undercarriage proximate the front axle of the ATV, the bracket including a first surface defining a first aperture for receiving the first pin member and a second surface defining a second aperture for receiving the second pin member;

a base connected to the rear portion of the frame assembly for supporting the auxiliary power source;

a rear connecting assembly connected to the rear portion of the frame assembly for connecting the frame assembly to the rear hitch of the ATV; and

a swingable portion having a first end pivotally attached to the forward portion of the frame assembly and a second end mateable with the mechanized implement to connect the mechanized implement to the ATV, the mechanized implement positionable between a working position and a non-working position, wherein only the ATV engages the ground when the mechanized implement is positioned towards the non-working position.

11. The apparatus of claim 10 wherein the rear connecting assembly comprises:

an upper plate connected to the rear portion of the frame assembly; and

a lower plate connected to the rear portion of the frame assembly, the lower plate spaced apart from the upper plate, wherein the rear hitch of the ATV is disposable between the upper and lower plates.

12. The apparatus of claim 11 wherein each plate includes a surface defining an aperture for receiving a pin there-through to secure the frame assembly to the rear hitch, each aperture positioned to cooperably align with each other.

13. The apparatus of claim 10 wherein the bracket further includes a surface defining a slotted aperture to selectively position the bracket relative the undercarriage of the ATV.

14. The apparatus of claim 10 wherein the ATV includes a hitch member connected to the undercarriage portion proximate the rear axle, the hitch member including an aperture, the apparatus further comprising:

a plate connected to the second portion of the frame; and

a securing member connected to and extending away from the plate, the securing member disposable within the aperture of the hitch member, whereupon disposing the securing member within the aperture of the hitch member the plate engages and is supported by the hitch member, thereby securing the second portion of the frame to the ATV.

15. The apparatus of claim 10 and further comprising a mechanism attachable to the ATV and the swingable portion to position the mechanized implement between the working and non-working position.

16. An apparatus for connecting to an all-terrain vehicle (ATV) a mechanized implement operatively connected to an

auxiliary power source, the ATV having an undercarriage with a front axle, a rear axle and a hitch member connected to the undercarriage proximate the rear axle, the hitch member containing an aperture, the apparatus comprising:

- a rigid frame having a first portion and a second portion, each portion connectable to the undercarriage;
- a base for supporting the auxiliary power source connected to the second portion of the frame;
- a swingable portion having a first end pivotally attached to the first portion of the frame and a second end mateable with the mechanized implement to connect the mechanized implement to the ATV, the swingable portion positionable to position the connected mechanized implement between a working position and a non-working position, wherein only the ATV engages the ground when the mechanized implement is positioned towards the non-working position; and
- first and second spaced-apart plates for receiving the hitch member therebetween, the first and second spaced-apart plates connected to the second portion of the frame, each plate including a surface defining a respective plate aperture, each plate aperture positioned to cooperably align with the other, whereupon disposing the hitch member between the first and second plates, the hitch aperture is cooperably alignable with the plate apertures to receive a fastener to secure the second frame portion to the rearward undercarriage portion.

17. An apparatus for connecting to an all-terrain vehicle (ATV) a mechanized implement operatively connected to an auxiliary power source, the ATV having an undercarriage with a front axle, a rear axle and a hitch member connected to the undercarriage proximate the rear axle, the hitch member including an aperture, the apparatus comprising:

- a rigid frame having a first portion and a second portion, each portion connectable to the undercarriage;
- a base for supporting the auxiliary power source connected to the second portion of the frame;
- a swingable portion having a first end pivotally attached to the first portion of the frame and a second end mateable with the mechanized implement to connect the mechanized implement to the ATV, the swingable portion positionable to position the connected mechanized implement between a working position and a non-working position, wherein only the ATV engages the ground when the mechanized implement is positioned towards the non-working position;
- a plate connected to the second portion of the frame; and
- a securing member connected to and extending away from the plate, the securing member disposable within the aperture of the hitch member, whereupon disposing the securing member within the aperture of the hitch member the plate engages and is supported by the hitch member, thereby securing the second portion of the frame to the ATV.

18. An apparatus for connecting an implement to an all-terrain vehicle (ATV), the ATV having an undercarriage, a front axle, a rear axle and a rear hitch, the apparatus comprising:

- a rigid frame assembly longitudinally positionable proximate the undercarriage of the ATV, the frame assembly having a first end extending past the front axle and a second end extending past the rear axle;
- pin members spaced apart a selected distance from and connected to the frame assembly;
- a bracket attachable to the undercarriage proximate the front axle of the ATV having plurality of surfaces defining apertures for receiving the pin members;

a rear connecting assembly attached proximate the second end of the frame assembly for connecting the frame assembly to the rear hitch of the ATV; and

- a swingable assembly for positioning the implement, the swingable assembly pivotally attached to the first end of the frame assembly and connectable to the implement.

19. An apparatus for connecting an implement to an all-terrain vehicle (ATV), the ATV having an undercarriage, a front axle, a rear axle and a rear hitch having an aperture, the apparatus comprising:

- a rigid frame assembly longitudinally positionable proximate the undercarriage of the ATV, the frame assembly having a first end extending past the front axle and a second end extending past the rear axle;

a pin member spaced apart a selected distance from and connected to the frame assembly;

- a bracket attachable to the undercarriage proximate the front axle of the ATV having a surface defining an aperture for receiving the pin member;

a rear connecting assembly attached proximate the second end of the frame assembly for connecting the frame assembly to the rear hitch of the ATV, the rear connecting assembly comprising:

- an upper plate connected to the frame assembly and including a surface defining an aperture; and

a lower plate spaced apart from the upper plate, the lower plate connected to the frame assembly and including a surface defining an aperture cooperably aligned with aperture of the upper plate, whereupon disposing the rear hitch of the ATV between the upper and lower plates, the aperture of the hitch cooperates with the aperture of the upper plate and the lower plate to receive a fastener therethrough and secure the second portion of the frame to the ATV; and

- a swingable assembly for positioning the implement, the swingable assembly pivotally attached to the first end of the frame assembly and connectable to the implement.

20. An apparatus for connecting an implement to an all-terrain vehicle (ATV), the ATV having an undercarriage, a front axle, a rear axle and a rear hitch member connected to the undercarriage proximate the rear axle, the rear hitch member having an aperture, the apparatus comprising:

- a rigid frame assembly longitudinally positionable proximate the undercarriage of the ATV, the frame assembly having a first end extending past the front axle and a second end extending past the rear axle;

a pin member spaced apart a selected distance from and connected to the frame assembly;

- a bracket attachable to the undercarriage proximate the front axle of the ATV having a surface defining an aperture for receiving the pin member;

a rear connecting assembly attached proximate the second end of the frame assembly for connecting the frame assembly to the rear hitch of the ATV; and

- a swingable assembly for positioning the implement, the swingable assembly pivotally attached to the first end of the frame assembly and connectable to the implement;

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a plate connected to the second portion of the frame; and a securing member connected to and extending away from the plate, the securing member disposable within the aperture of the hitch member, whereupon disposing the securing member within the aperture of the hitch mem-

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ber the plate engages and is supported by the hitch member, thereby securing the second portion of the frame to the ATV.

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