US 20040211094A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2004/0211094 A1**

Seavey (43) **Pub. Date: Oct. 28, 2004**

(54) **MOUNTING DEVICE**

(76) Inventor: **Stephen W. Seavey**, N. Conway, NH (US)

Correspondence Address:
BOURQUE & ASSOCIATES, P.A.
835 HANOVER STREET
SUITE 303
MANCHESTER, NH 03104 (US)

(21) Appl. No.: **10/425,047**

(22) Filed: **Apr. 28, 2003**

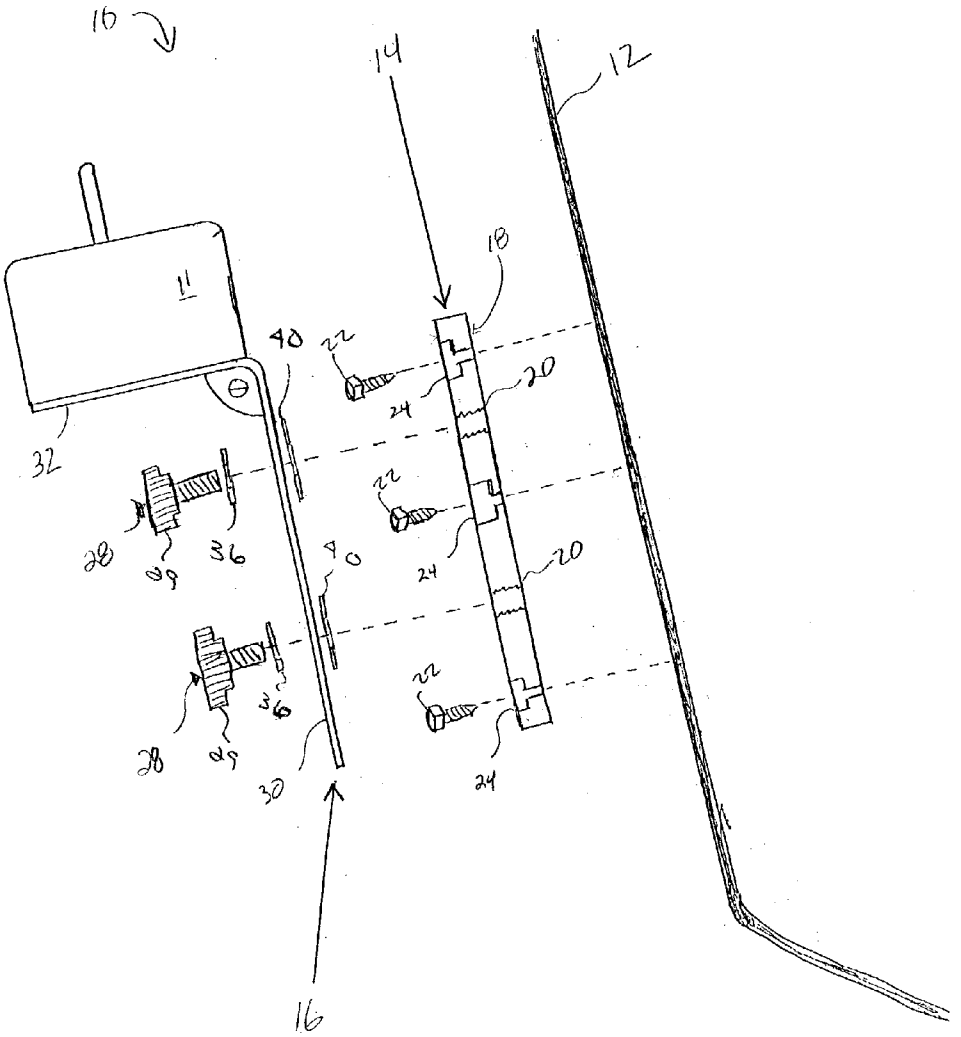
Publication Classification

(51) **Int. Cl.**[7] **E01H 5/04**

(52) **U.S. Cl.** **37/234**

(57) **ABSTRACT**

A mounting device for mounting a snowplow controller or the like to the inside of a vehicle cab includes a sub-plate and an angle bracket. The sub-plate is adapted to be secured to the dash. The angle bracket includes a mounting plate releaseably secured to the sub-plate and a support plate, adapted to hold the controller, disposed at an angle relative to the mounting plate. In the preferred embodiment, the angle bracket is secured to the sub-plate with fasteners disposed through one or more slots in the mounting plate. Alternatively, the angle bracket is secured to the sub-plate using a layer of hooks and loops. The support plate is preferably substantially horizontal, but may also include a hinge such that the angle of the support plate may be adjusted.



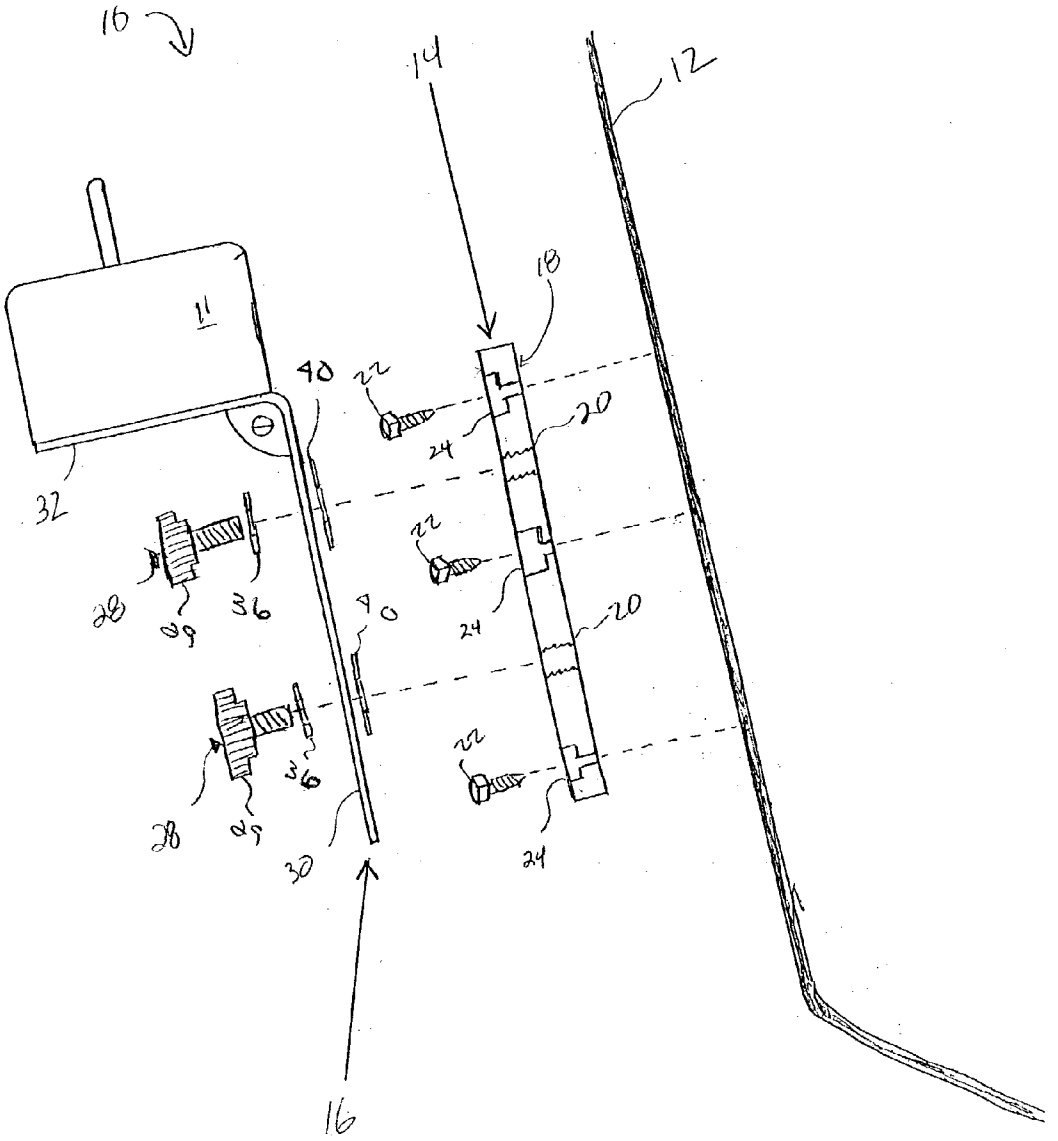


FIG 1

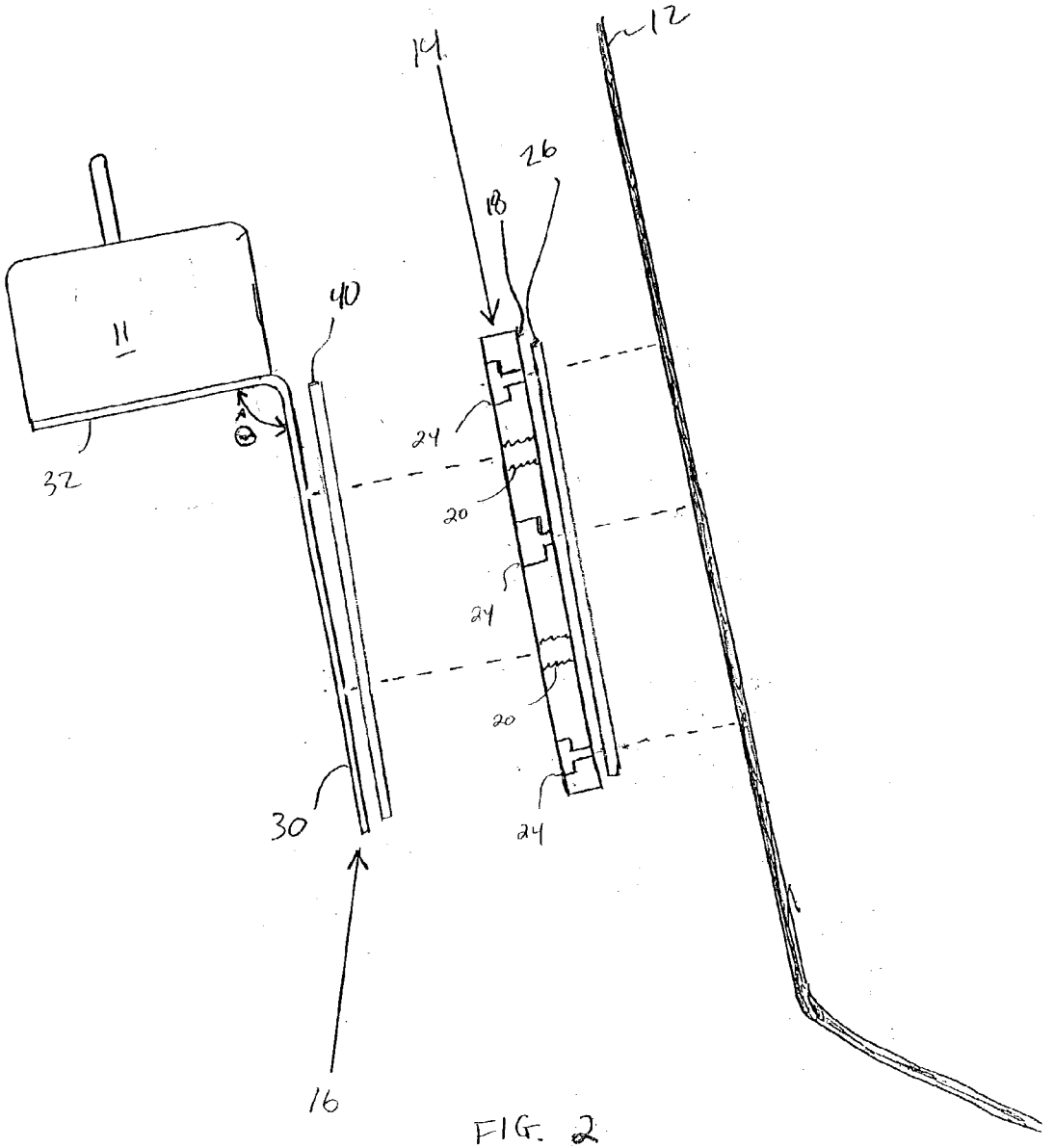


FIG. 2

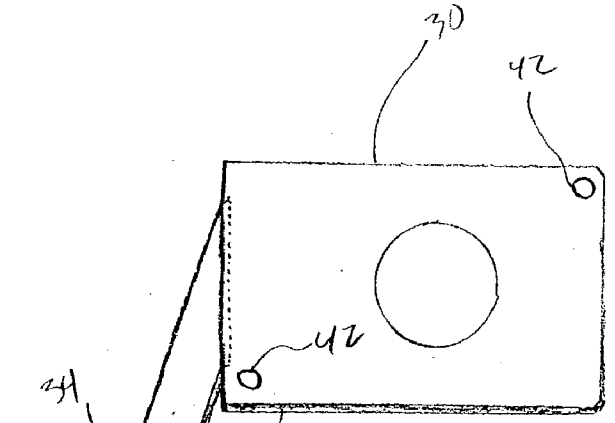


FIG. 3

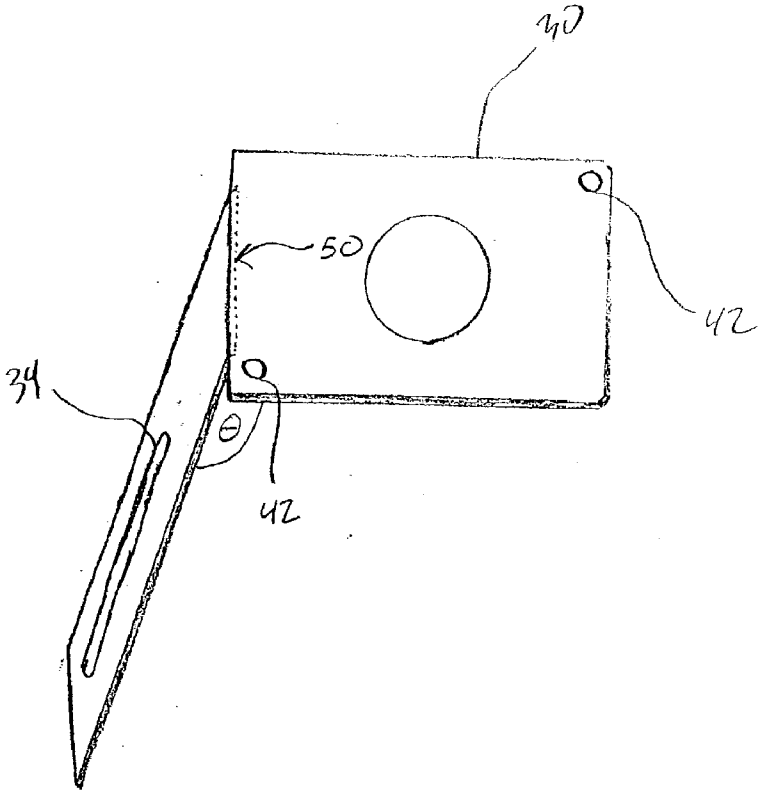


FIG. 4

MOUNTING DEVICE

FIELD OF THE INVENTION

[0001] The present invention relates to snow plows and controls therefore and more particularly, to a mounting device for releasably mounting a snowplow controller within a cab of a vehicle.

BACKGROUND OF THE INVENTION

[0002] Vehicles such as pickup trucks and the like can be equipped with snowplow systems which permits the vehicle to clear snow from streets, driveways, parking lots and other surfaces. Normally, the height and angle of the blade can be varied to control the "float" of the blade and its angle relative to the direction of movement of the vehicle. Hydraulic cylinders usually raise and lower the blade and adjust its angle. The cylinders are, in turn, controlled by electric switches that are located within the cab of the vehicle, usually in the form of a "joy stick", or a touch pad so that the driver can make the blade adjustments from his or her seat within the cab.

[0003] The joy stick is typically mounted on the dashboard of the vehicle where access to it can be somewhat difficult if installed at the wrong height. In order to vary the blade height or angle, it is necessary for the driver of the vehicle to reach forward and operate the appropriate dash mounted switch. Because multiple users often operate the same vehicle at different times, the exact placement of the joy stick or switches is often in the incorrect position for many of the operators. The need for the driver to reach in order to activate the snowplow switches is thus a considerable inconvenience that can result in the blade not always being adjusted to the most desirable height and angle. Moreover, when reaching for the switch, the driver often must take his eyes off the road, thus increasing the likelihood of an accident.

[0004] Another problem with the present mounting systems is that the snowplow joy stick/switches or other controllers are permanently mounted to the dashboard. As discussed above, these switches are often in an inconvenient position and often interfere with the operator entering and exiting the cab of the vehicle. Moreover, the switches often have cables connecting the switch to the plow system. These switches and cables create an unsightly clutter within the cab of the vehicle.

[0005] Accordingly, what is needed is a mounting system that allows the user to adjust the height and position of the plow control joy stick/switches within the cab. The mounting system should be able to be easily adjusted without the need for tools. The system should also allow the user to quickly and easily remove the snowplow switch from the cab of the vehicle, thus reducing the clutter and danger within the cab of the vehicle during periods when the snowplow is not being used.

SUMMARY OF THE INVENTION

[0006] The present invention features a mounting device for mounting a controller to a support surface. The mounting device includes a sub-plate adapted to be secured to the support surface and an angle bracket. The angle bracket includes a mounting plate adapted to be releaseably secured to the sub-plate and a support plate, for supporting the controller, and coupled to the mounting plate at an angle. The sub-plate may be secured to the support surface with fasteners disposed through a plurality of apertures within the sub-plate or with an adhesive layer disposed between the sub-plate and the support surface. Alternatively, the sub-plate may be secured to the support surface with a hook and loop fastener disposed between the sub-plate and the support surface.

[0007] The mounting device may further include at least one fastener disposed through at least one aperture in the mounting plate. The fastener threadably engages at least one threaded aperture disposed on a front surface of the sub-plate. In the exemplary embodiment, the aperture in the mounting plate is a slot wherein the position of the angle bracket may be adjusted relative to the sub-plate.

[0008] The support plate is preferably disposed approximately horizontal or at a 90 degree angle relative to the mounting plate. Optionally, the support plate may include a hinge such that the angle between the support plate and the mounting plate may be adjusted.

DESCRIPTION OF THE DRAWINGS

[0009] These and other features and advantages of the present invention will be better understood by reading the following detailed description, taken together with the drawings wherein:

[0010] **FIG. 1** is a perspective view of one embodiment according to the present invention;

[0011] **FIG. 2** is a perspective view of one embodiment of the mounting device according to the present invention;

[0012] **FIG. 3** is a perspective view of one embodiment of the angle bracket according to the present invention; and

[0013] **FIG. 4** is a perspective view of yet another embodiment of the angle bracket according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0014] The present invention includes a mounting device **10**, **FIG. 1**, for releasably securing a controller or switch **11** to a mounting surface (for example a dashboard of a vehicle cab) **12** and includes a sub-plate **14** and an angle bracket **16**. The sub-plate **14** is secured to the dash **12** by any means known to those skilled in the art.

[0015] For example, the sub-plate **14** may be secured to the dash **12** using a plurality of screws **22** inserted through apertures **24** within the sub-plate **14**. The screws **22** are preferably counter-sunk into the sub-plate **14**. Alternatively, the mounting plate **14**, **FIG. 2**, may be secured to the dash **12** using an adhesive or fastener layer **26** disposed between a back surface **18** of the sub-plate **14** and the dash **12**. The adhesive layer **26** may include any type of adhesive known to those skilled in the art as well as a hook and loop fastener system wherein one piece is applied to back surface **18** and the other to dash **12**. The sub-plate **14** also preferably includes a plurality of threaded apertures **20** adapted to receive fasteners **28** as will be discussed in greater detail below.

[0016] The angle bracket **16** preferably includes a mounting plate **30** and a support plate **32** disposed at an angle θ

with respect to each other. The mounting plate **30** is releasably secured to the sub-plate **14** by any means known to those skilled in the art. In the exemplary embodiment, the mounting plate **30** is secured to the sub-plate **14** using a plurality (preferably two) of fasteners **28** (such as bolts) having a knurled grip **29** and which are disposed through one or more slots **34**, **FIGS. 3-4**, which engage with threaded apertures **20**, **FIG. 1**.

[**0017**] The position of the angle bracket **16** (and ultimately the controller **11** which is not part of the invention) may be adjusted vertically by sliding the angle bracket **16** within the slots **34** about the bolts **28**. In the preferred embodiment, the mounting device **10** includes washers **36** and retaining clips **38** respectively disposed on both sides of the mounting plate **30** through which fasteners **28** are disposed.

[**0018**] Alternatively, angle bracket **16** may be releasably secured to the sub-plate **14** using an adhesive layer or a fastener comprising a hook and loop fastener layer **40** disposed between the mounting plate **30** and the sub-plate **14**. According to this embodiment, the user may adjust the position of the angle bracket **16** (and ultimately the controller **11**) by repositioning the angle bracket **16** relative to the sub-plate **14**.

[**0019**] Support plate **32** is disposed at an angle θ relative to the mounting plate **30** such that the support plate **30** is preferably disposed substantially horizontally. In the preferred embodiment, the angle θ is approximately 90°, however, the exact angle will depend on the angle of the mounting surface **12**. The support plate **30** may also include an adjustable hinge **50** which allows the angle θ to be adjusted about 180°.

[**0020**] Controller **11** is secured to support plate **32** by any means known to those skilled in the art. In the preferred embodiment, the controller **11** is secured to the support plate **32** using a plurality of fasteners (not shown), such as screws or bolts, disposed through apertures **42** within the support plate **32**. Alternatively, the controller **11** may be secured to the support plate **32** using adhesive or a hooks and loops layer.

[**0021**] Accordingly, the present invention provides a unique mounting device for a controller, such as a snow plow controller, that can be easily adjusted in height and removed when not in use.

[**0022**] Modifications and substitutions by one of ordinary skill in the art are considered to be within the scope of the present invention which is not to be limited except by the claims which follow.

What is claimed is:

1. A mounting device for mounting a controller to a support surface, said mounting device comprising:

a sub-plate adapted to be secured to said support surface;

a mounting plate adapted to be releaseably secured to said sub-plate; and

a support plate, coupled to said mounting plate at an angle, for supporting said controller.

2. The mounting device as claimed in claim 1 wherein said sub-plate further includes a plurality of apertures adapted to receive a plurality of sub-plate fasteners to secure said sub-plate to said support surface.

3. The mounting device as claimed in claim 1 wherein said sub-plate further includes an adhesive layer disposed between said sub-plate and said support surface, to secure said sub-plate to said support surface.

4. The mounting device as claimed in claim 1 wherein said sub-plate further includes a hook and loop fastener disposed between said sub-plate and said support surface, for securing said sub-plate to said support surface.

5. The mounting device as claimed in claim 1 wherein said mounting device further includes at least one fastener disposed through at least one aperture in said mounting plate which threadably engages at least one threaded aperture disposed on at least a front surface of said sub-plate.

6. The mounting device as claimed in claim 5 wherein said aperture in said mounting plate is a slot, wherein the position of said mounting plate and said support plate may be adjusted relative to said sub-plate.

7. The mounting device as claimed in claim 6 wherein said mounting device includes a first and a second fastener disposed through a first and a second slot region in said mounting plate which engages a first and a second threaded aperture in said sub-plate.

8. The mounting device as claimed in claim 1 wherein said support plate further includes a hinge such that said angle between said support plate and said mounting plate may be adjusted.

9. The mounting device as claimed in claim 1 wherein said support plate is disposed at approximately a 90 degree angle relative to said mounting plate.

10. The mounting device as claimed in claim 1 wherein said support plate is disposed substantially parallel to said horizon.

11. A mounting device for mounting a controller to a support surface, said mounting device comprising:

a sub-plate adapted to be secured to said support surface;

at least one fastener; and

an angle bracket including:

a mounting plate releaseably secured to said sub-plate with said fastener; and

a support plate disposed at an angle to said mounting plate, said support plate adapted to support said controller.

12. The mounting device as claimed in claim 11 wherein said sub-plate further includes a plurality of apertures adapted to receive a plurality of fasteners to secure said sub-plate to said support surface.

13. The mounting device as claimed in claim 11 wherein said mounting device further includes an adhesive layer disposed between said sub-plate and said support surface to secure said sub-plate to said support surface.

14. The mounting device as claimed in claim 11 wherein said mounting device further includes a hook and loop fastener disposed between said sub-plate and said support surface to secure said sub-plate to said support surface.

15. The mounting device as claimed in claim 11 wherein said mounting device further includes two fasteners disposed through at least two apertures in said mounting plate which threadably engage two apertures disposed on a front surface of said sub-plate.

16. The mounting device as claimed in claim 15 wherein said apertures in said mounting plate is are slots, wherein the position of said angle bracket may be adjusted relative to said sub-plate.

17. The mounting device as claimed in claim 16 wherein said mounting device further includes washers disposed about said two fasteners between said mounting plate and said sub-plate.

18. The mounting device as claimed in claim 11 wherein said support plate further includes a hinge such that said angle between said support plate and said mounting plate may be adjusted.

19. The mounting device as claimed in claim 11 wherein said support plate is disposed at approximately a 90 degree angle relative to said mounting plate.

20. The mounting device as claimed in claim 1 wherein said support plate is disposed substantially parallel to said horizon.

21. A mounting device for mounting a controller to a support surface, said mounting device comprising:

a sub-plate adapted to be secured to said support surface, said sub-plate including a plurality of apertures adapted to receive a plurality of sub-plate fasteners, for securing said sub-plate to said support surface;

plurality of mounting plate fasteners; and

an angle bracket including:

a mounting plate releaseably secured to said sub-plate with said plurality of mounting plate fasteners, each said plurality of mounting plate fasteners disposed through a corresponding aperture slot in said mounting plate and which threadably engage a threaded aperture disposed on at least a front surface of said sub-plate; and

a support plate, disposed at an angle to said mounting plate, said support plate adapted to support said controller.

* * * * *