US 20050191142A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2005/0191142 A1**

Rozell (43) **Pub. Date: Sep. 1, 2005**

(54) **PORTABLE ACCESSORY MOUNTING SYSTEM FOR A VEHICLE**

(76) Inventor: **John Steven Rozell**, Pineland, FL (US)

Correspondence Address:
John Steven Rozell
P.O. Box 2303
Pineland, FL 33945 (US)

(21) Appl. No.: **11/067,994**

(22) Filed: **Feb. 28, 2005**

Related U.S. Application Data

(60) Provisional application No. 60/548,819, filed on Mar. 1, 2004.

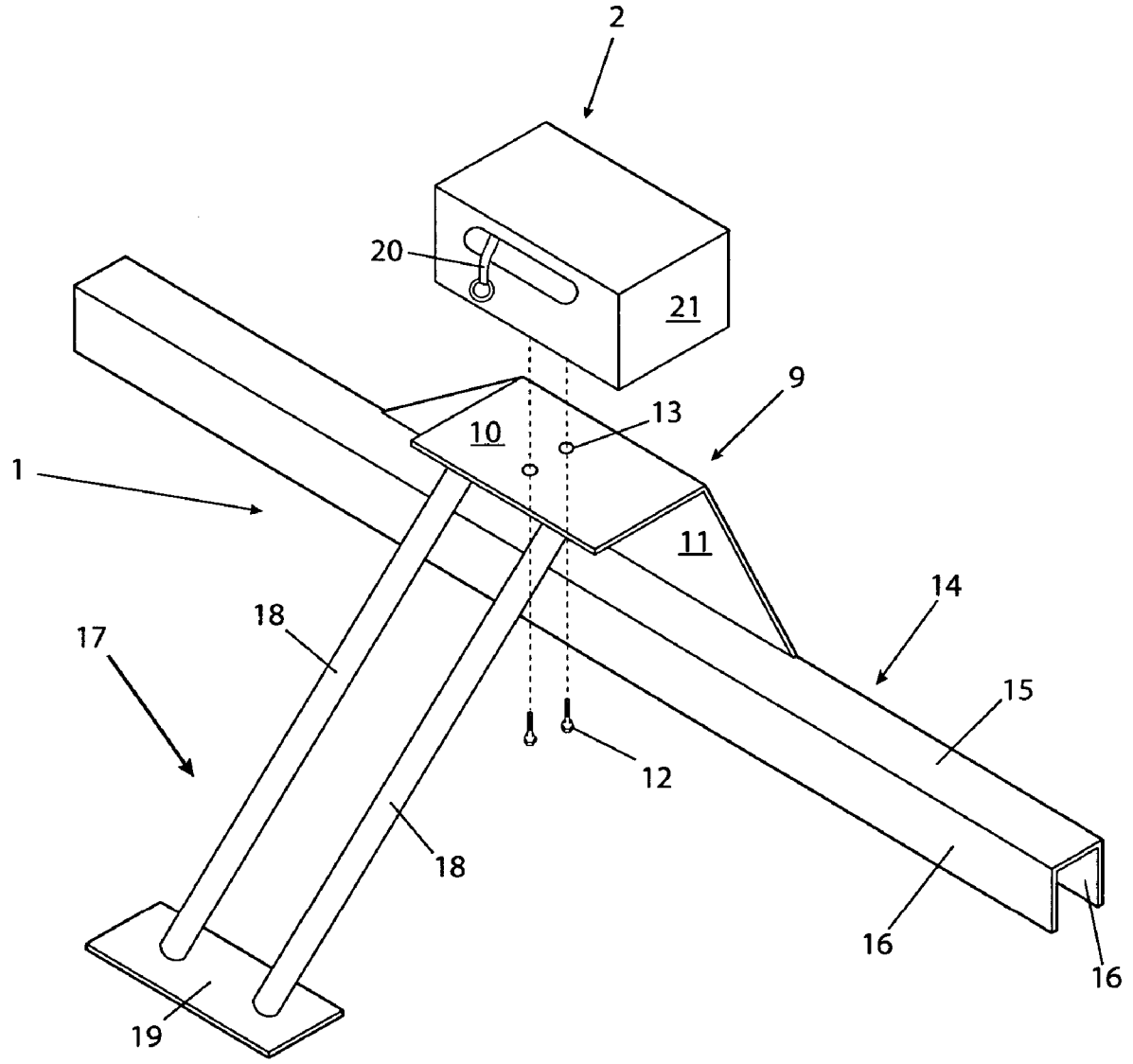
Publication Classification

(51) **Int. Cl.**[7] **B61D 3/16**

(52) **U.S. Cl.** **410/2**

(57) **ABSTRACT**

A portable accessory mounting system for use with a cargo bed that includes a front wall and a floor is provided. The portable accessory mounting system includes a base capable of coupling with an accessory and configured to mount the front wall with no modifications to the cargo bed. A support leg system couples with the base to provide increased resistance of the base against thrust that is rotational about an axis parallel with the floor and parallel with the front wall, and against thrust that is toward the floor. The portable accessory mounting system may be dismounted from the front wall using thrust that is away from the floor.



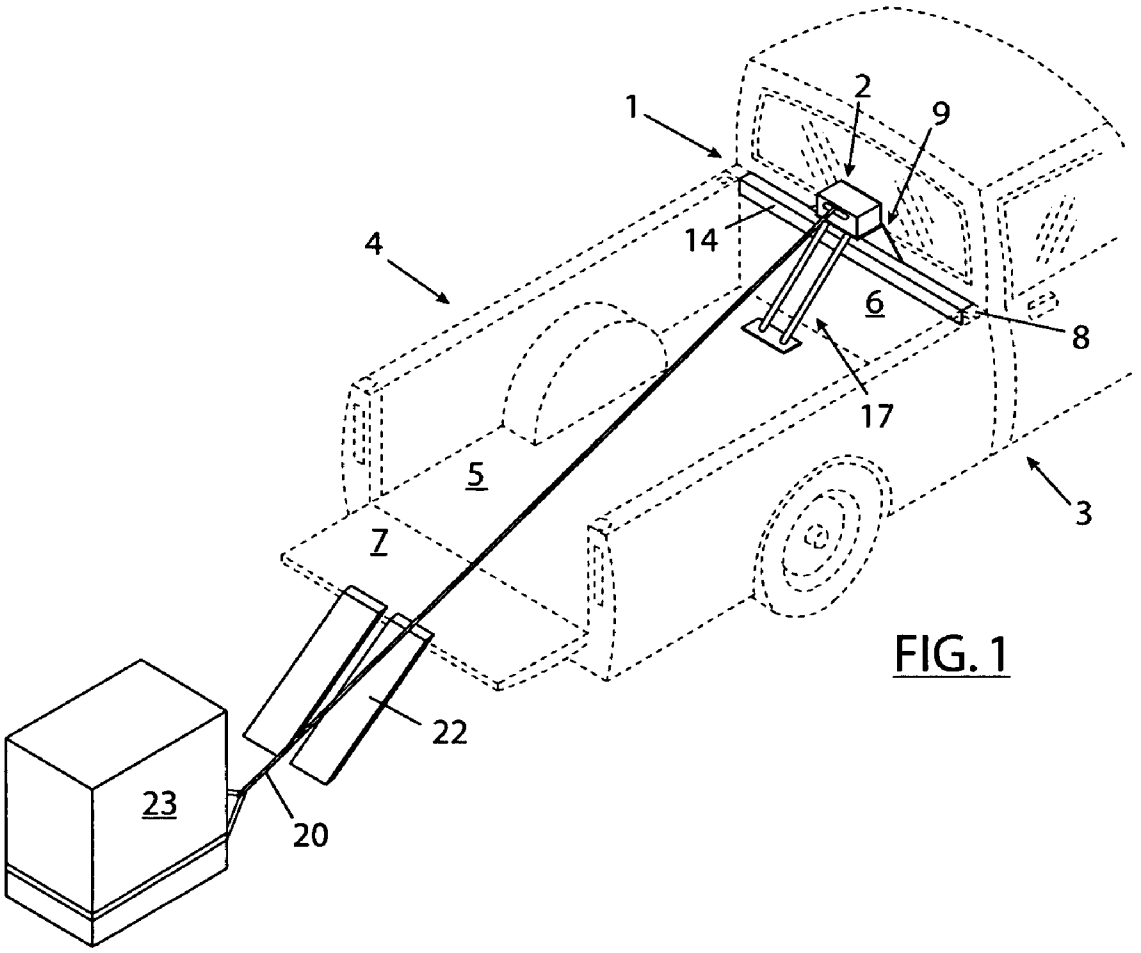


FIG. 1

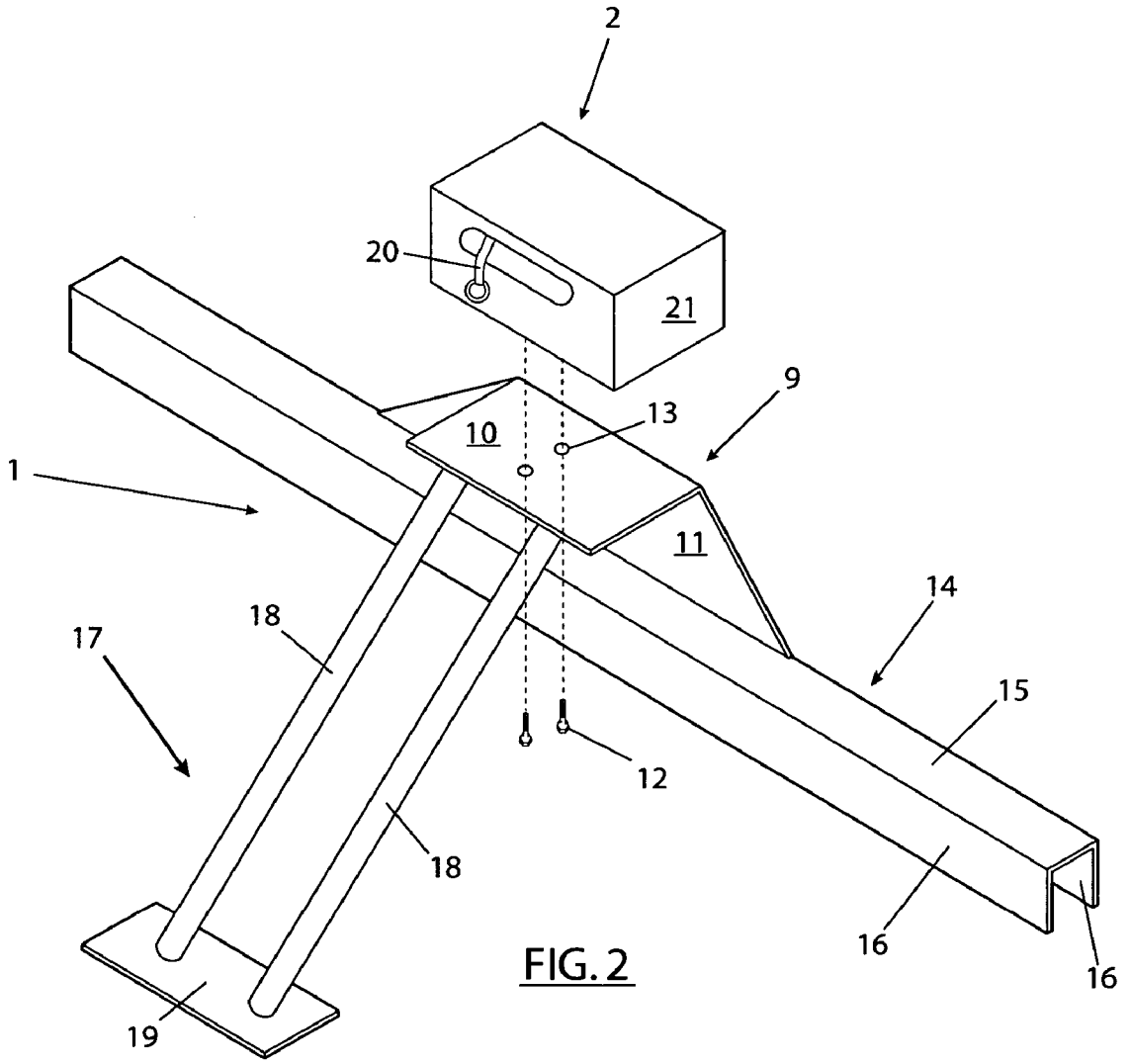


FIG. 2

PORTABLE ACCESSORY MOUNTING SYSTEM FOR A VEHICLE

[0001] The instant application claims priority of Provisional Utility Patent Application No. 60/548,819 by John Steven Rozell filed on Mar. 1, 2004.

BACKGROUND OF THE INVENTION

[0002] Vehicles with a cargo bed (such as flatbed trucks or pickup trucks) are often used for hauling objects that are too heavy for the operator to load without assistance. Many systems for mounting a winch in cargo beds of various sizes have been developed to provide the operator with a means for loading objects without assistance. Unfortunately, most of the winch mounting systems require the owner to make modifications to the vehicle, such as drilling holes in the vehicle body. These modifications mar the appearance of the vehicle, make it more susceptible to rust and corrosion, and potentially lessen the vehicle's resale value. Additionally, these systems often incorporate boom assemblies or mounting hardware that encumber some portion of the cargo bed. In these systems it is either difficult or impossible to completely remove the winch and mounting apparatus and regain full use of the unencumbered cargo bed when the winch is not in use.

SUMMARY OF THE INVENTION

[0003] According to one aspect of one or more embodiments of the present invention, the present invention relates to a portable accessory mounting system for use with a cargo bed comprising a front wall and a floor, said portable accessory mounting system comprising a base, capable of coupling with an accessory and configured to mount said front wall with no modifications to said cargo bed, such that when said base is mounted on said front wall said base is resistive against thrust that is in a horizontal direction that is parallel to said floor and perpendicular to said front wall, against thrust that is rotational about an axis perpendicular with said floor and parallel to said front wall, against thrust that is rotational about an axis parallel with said floor and parallel with said front wall, and against thrust that is toward said floor, and such that said base may be dismounted from said front wall using thrust that is away from said floor; and a support leg system coupled with said base, such that when said base is mounted on said front wall said support leg system provides increased resistance of said base against thrust that is rotational about an axis parallel with said floor and parallel with said front wall and against thrust that is toward said floor, and such that said may be dismounted from said front wall using thrust that is away from said floor.

[0004] According to one aspect of one or more embodiments of the present invention, the present invention relates to a portable accessory mounting system for use with a cargo bed comprising a front wall and a floor, said portable accessory mounting system comprising a base, capable of coupling with an accessory and configured to mount said front wall with no modifications to said cargo bed, said base comprises a three-sided U-shaped channel, such that when said base is mounted on said front wall said base is resistive against thrust that is in a horizontal direction that is parallel to said floor and perpendicular to said front wall, against thrust that is rotational about an axis perpendicular with said floor and parallel to said front wall, against thrust that is rotational about an axis parallel with said floor and parallel with said front wall and against thrust that is toward said floor, and such that said base may be dismounted from said front wall using thrust that is away from said floor; a support leg system coupled with said base, such that when said base is mounted on said front wall said support leg system extends away from said front wall to contact said floor, such that said support leg system comprises a support leg body and a support leg pad, such that said support leg pad rests on said floor when said base is mounted with said front wall to provide increased resistance of said base against thrust that is rotational about an axis parallel with said floor and parallel with said front wall and against thrust that is toward said floor, and such that said support leg system does not prevent said base from being dismounted from said front wall using thrust that is away from said floor; and an attachment platform, such that said attachment platform comprises a mounting plate and a raising plate, such that said raising plate is arranged between said base and said mounting plate, said mounting plate capable of coupling with said accessory, and said mounting plate is arranged to support said accessory above said base opposite said floor.

[0005] According to one aspect of one or more embodiments of the present invention, the present invention relates to a portable accessory mounting system for use with a cargo bed comprising a front wall and a floor, said portable accessory mounting system comprising a means for supporting an accessory wherein said means for supporting said accessory rests on said front wall of said cargo bed such that said means for supporting said accessory is resistive against thrust that is in a horizontal direction that is parallel to said floor and perpendicular to said front wall, against thrust that is rotational about an axis perpendicular with said floor and parallel to said front wall, against thrust that is rotational about an axis parallel with said floor and parallel with said front wall and against thrust that is toward said floor, and such that said means for supporting an accessory may be dismounted from said front wall using thrust that is away from said floor; and a means for coupling with said accessory and capable of positioning said accessory above said front wall opposite said floor when said means for supporting said accessory is engaged with said cargo bed.

[0006] Other aspects and advantages of the invention will be apparent from the following description and the appended claims.

DESCRIPTION OF THE DRAWINGS

[0007] The invention will be more readily understood upon review of the following drawings.

[0008] **FIG. 1** is an environmental, perspective view of an embodiment of the invention mounted in a vehicle bed.

[0009] **FIG. 2** is a detail, perspective view of a winch mounting system according to the present invention.

DESCRIPTION OF A PREFERRED EMBODIMENT

[0010] By way of illustration and not limitation, **FIGS. 1 and 2** are presented to show a preferred embodiment of the invention. Referring to the drawings in detail, a portable accessory mounting system **1** is shown operating with a standard bed **4** of a vehicle **3**, including floor **5**, front wall **6**, and gate **7**. Front wall **6** includes top side **8** which extends parallel with floor **5**.

[0011] Several models of winch **2** are commercially available. Winch **2** includes winch housing **21** and cable **20** that are accessible to the user. Winch **2** also typically includes an electric motor and a cable spool, which may or may not be contained within winch housing **21**. The housing of many commercially available winches includes a pair of holes on the bottom that accept bolts for mounting the winch to a stable platform. Any commercially available winch of suitable size and capacity could be adapted to operate with the system of the present invention. While the preferred embodiment of the present invention is used to engage a winch in a vehicle cargo bed, one of ordinary skill in the art having benefit of this disclosure understands that portable accessory mounting system **1** has many other uses. These uses include mounting other accessory devices for use in the cargo bed, and as a stable point for attaching tie-downs to secure loaded objects in position.

[0012] The present invention includes base **14**, comprised in the preferred embodiment of top rail **15** and side rails **16** that form a U-shaped channel. When the portable accessory mounting system **1** is engaged with bed **4**, top rail **15** of base **14** rests on top side **8** of front wall **6**, and side rails **16** of base **14** fit on either side of front wall **6**. Base **14** is constructed so that there is little room for movement between side rails **16** and front wall **6**. It is preferred that base **14** be constructed to have a length that will allow it to be used in both full-size and compact pick-up trucks. It is also preferred that the cargo bed be equipped with a plastic bedliner that covers the top side of the front wall to protect the cargo bed from damage when the portable mounting system is engaged. One of ordinary skill in the art understands that an alternate embodiment would have base **14** equipped with a plastic liner on the inside of the U-shaped channel to minimize damage to cargo beds without a bedliner.

[0013] In the preferred embodiment, base **14** mounts with winch **2** by means of attachment platform **9**. Attachment platform **9** includes mounting plate **10** and raising plate **11**. Raising plate **11** attaches to base **14**, serving to secure attachment platform **9** above base **14**. Raising plate **11** extends perpendicular to floor **5** and parallel to front wall **6** between base **14** and mounting plate **10**, positioning mounting plate **10** above front wall **6** and parallel with floor **5** when portable accessory mounting system **1** is engaged with bed **4**. Mounting plate **10** mounts with winch housing **21** with bolts **12** passing through mounting holes **13**.

[0014] Portable accessory mounting system **1** also includes support leg system **17**, comprised of support leg pad **19** and a plurality of support leg bodies **18**. Support leg bodies **18** are preferably hollow and shaped to have a circular cross-section. Support leg pad **19** is flat, having an area greater than the cross-sectional area of support leg bodies **18**. One end of support leg bodies **18** attaches to the bottom of mounting plate **10** so that support leg bodies **18** extend toward floor **5** at an angle away from front wall **6**. Support leg pad **19** is attached to the other end of support leg bodies **18** at an angle that makes support leg pad **19** parallel to floor **5**. The length of support leg bodies **18** is such that support leg pad **19** rests on floor **5** when portable accessory mounting system **1** is engaged with bed **4**. In the preferred embodiment, support leg bodies **18** are spaced so that the front fender of most standard motorcycles will fit between support leg bodies **18**. In an alternate embodiment, support leg system **17** could have one support leg pad **19** for each support leg body **18** and these pads would not be connected. One of ordinary skill in the art understands that an alternate embodiment would have support leg pad **19** equipped with a plastic liner to minimize damage to cargo beds without a bedliner.

[0015] In practice, portable accessory mounting system **1** is lowered into bed **4** so that base **14** comes to rest on top side **8** of front wall **6**. During normal use of an accessory such as winch **2**, the accessory will often be subject to either direct or rotational forces. These forces will produce thrust on the accessory as well as on portable accessory mounting system **1** in a variety of directions. Portable accessory mounting system **1** is held in stationary position in bed **4** against thrust that is in a horizontal direction that is parallel to floor **5** and perpendicular to front wall **6**, against thrust that is rotational about an axis perpendicular with floor **5** and parallel to front wall **6**, against thrust that is rotational about an axis parallel with floor **5** and parallel with front wall **6**, and against thrust that is toward floor **5** by the interaction between base **14** and front wall **6** and the interaction between support leg system **17** and floor **5**. Portable accessory mounting system **1** does not hold a stationary position in bed **4** against thrust away from floor **5**, allowing portable accessory mounting system **1** to be easily raised vertically and separated from bed **4**. Support leg pad **19** of the support leg system **17** serve to distribute force over a large enough area of floor **5** to prevent damage under normal working conditions.

[0016] With portable accessory mounting system **1** engaged with bed **4**, winch **2** is activated to play out cable **20**. If desired, a pair of ramps **22** may be engaged with gate **7** to aid the loading of cargo **23**, as shown in **FIG. 1**. Cable **20** is connected to cargo **23** in any suitable manner and winch **2** is activated to pull cargo **23** into bed **4**.

[0017] When not in use, portable accessory mounting system **1** may be removed from bed **4** and stored in a suitable location. The portable accessory mounting system **1** requires no adjustments and may be easily moved between vehicles with bed **4** of various size. Also, while cargo **23** shown is boxed, the system may be used to load many varied items, including motorcycles, all-terrain vehicles and yard maintenance equipment.

[0018] It is preferred that the components of the portable accessory mounting system be made out of steel, though any material capable of withstanding the stresses exerted on the system could be used. The components of the system may be attached in the configuration described using any method suitable for the material in use. With steel components, it is preferred that the components be welded together. When using any type of metal in the construction, it is preferred that the system be given a powder coating to reduce scratching of the vehicle paint.

[0019] Advantages of the present invention may include one or more of the following. The present invention relates to a portable accessory mounting system designed for use in cargo beds of various sizes. This portable accessory mounting system works in cargo beds without side walls, requires no modification to the vehicle, is easily removable, and can be moved quickly between cargo beds of varying sizes with no adjustment. When used to engage a winch with the cargo bed, the portable accessory mounting system has multiple uses, such as pulling heavy objects into the cargo bed and securing loaded cargo in place.

[0020] While a preferred embodiment the portable accessory mounting system has been described for illustrative purposes, it is understood that variations may be made without departing from the spirit or scope of the following claims.

What is claimed is:

1. A portable accessory mounting system for use with a cargo bed comprising a front wall and a floor, said portable accessory mounting system comprising:

a base, capable of coupling with an accessory and configured to mount said front wall with no modifications to said cargo bed, such that when said base is mounted on said front wall said base is resistive against thrust that is in a horizontal direction that is parallel to said floor and perpendicular to said front wall, against thrust that is rotational about an axis perpendicular with said floor and parallel to said front wall, against thrust that is rotational about an axis parallel with said floor and parallel with said front wall, and against thrust that is toward said floor, and such that said base may be dismounted from said front wall using thrust that is away from said floor; and

a support leg system coupled with said base, such that when said base is mounted on said front wall said support leg system provides increased resistance of said base against thrust that is rotational about an axis parallel with said floor and parallel with said front wall and against thrust that is toward said floor, and such that said may be dismounted from said front wall using thrust that is away from said floor.

2. The support leg system of claim 1, such that when said base is mounted with said front wall, said support leg system extends away from said front wall to contact said floor.

3. The portable accessory mounting system of claim 2, said support leg system further comprises a protective lining acting to reduce damaging contact between said cargo bed and said support leg system when said base is mounted with said front wall.

4. The portable accessory mounting system of claim 2, such that said support leg system comprises a support leg body and a support leg pad, such that said support leg pad rests on said floor when said base is mounted on said front wall and such that said support leg pad distributes force toward said cargo bed over a larger area than the cross-sectional area of said support leg body.

5. The portable accessory mounting system of claim 4, such that said support leg system comprises a plurality of support leg bodies.

6. The portable accessory mounting system of claim 5, such that said support leg system comprises a plurality of support leg pads, one pad for each of said support leg bodies.

7. The portable accessory mounting system of claim 1, further comprising an attachment platform, such that said attachment platform comprises a mounting plate capable of coupling with said accessory.

8. The portable accessory mounting system of claim 7, such that said mounting plate is arranged to support said accessory above said base opposite said floor.

9. The portable accessory mounting system of claim 8, said attachment platform further comprising a raising plate arranged between said base and said mounting plate.

10. The portable accessory mounting system of claim 9, such that said raising plate is oriented perpendicular to said floor and parallel to said front wall when said base is mounted on said front wall.

11. The portable accessory mounting system of claim 7, said mounting plate comprises a plurality of mounting holes for providing a means to couple said accessory to said mounting plate.

12. The portable accessory mounting system of claim 1, said base comprises a three-sided U-shaped channel.

13. The portable accessory mounting system of claim 12, said base further comprises a protective lining acting to reduce damaging contact between said cargo bed and said base when said base is mounted with said front wall.

14. The portable accessory mounting system of claim 1, said base comprises a plurality of mounting holes for providing a means to couple said accessory to said base.

15. A portable accessory mounting system for use with a cargo bed comprising a front wall and a floor, said portable accessory mounting system comprising:

a base, capable of coupling with an accessory and configured to mount said front wall with no modifications to said cargo bed, said base comprises a three-sided U-shaped channel, such that when said base is mounted on said front wall said base is resistive against thrust that is in a horizontal direction that is parallel to said floor and perpendicular to said front wall, against thrust that is rotational about an axis perpendicular with said floor and parallel to said front wall, against thrust that is rotational about an axis parallel with said floor and parallel with said front wall and against thrust that is toward said floor, and such that said base may be dismounted from said front wall using thrust that is away from said floor;

a support leg system coupled with said base, such that when said base is mounted on said front wall said support leg system extends away from said front wall to contact said floor, such that said support leg system comprises a support leg body and a support leg pad, such that said support leg pad rests on said floor when said base is mounted with said front wall to provide increased resistance of said base against thrust that is rotational about an axis parallel with said floor and parallel with said front wall and against thrust that is toward said floor, and such that said support leg system does not prevent said base from being dismounted from said front wall using thrust that is away from said floor; and

an attachment platform, such that said attachment platform comprises a mounting plate and a raising plate, such that said raising plate is arranged between said base and said mounting plate, said mounting plate capable of coupling with said accessory, and said mounting plate is arranged to support said accessory above said base opposite said floor.

16. A portable accessory mounting system for use with a cargo bed comprising a front wall and a floor, said portable accessory mounting system comprising:

a means for supporting an accessory wherein said means for supporting said accessory rests on said front wall of

said cargo bed such that said means for supporting said accessory is resistive against thrust that is in a horizontal direction that is parallel to said floor and perpendicular to said front wall, against thrust that is rotational about an axis perpendicular with said floor and parallel to said front wall, against thrust that is rotational about an axis parallel with said floor and parallel with said front wall and against thrust that is toward said floor, and such that said means for supporting an accessory may be dismounted from said front wall using thrust that is away from said floor; and

a means for coupling with said accessory and capable of positioning said accessory above said front wall opposite said floor when said means for supporting said accessory is engaged with said cargo bed.

* * * * *