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(54) **CAMPER STABILIZER SYSTEM**

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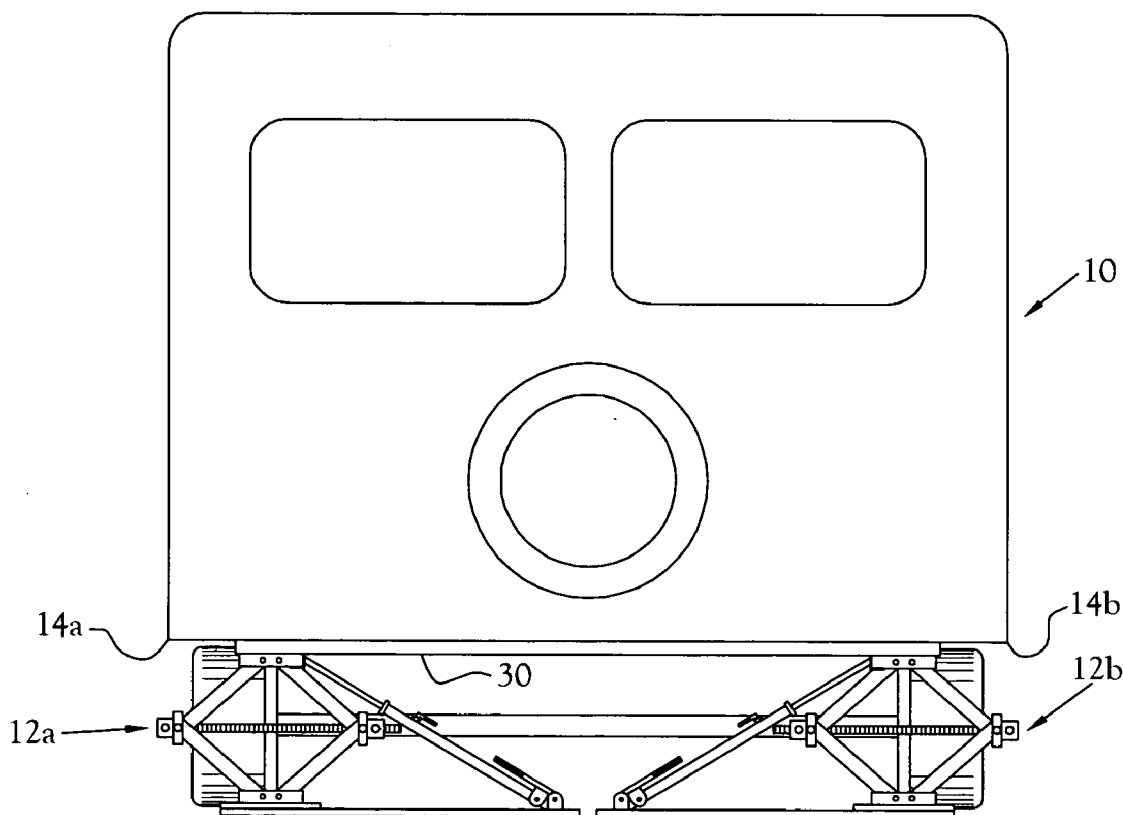
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(57) **ABSTRACT**

An apparatus for stabilizing a camper comprises an elongated base plate having a first end portion and an opposing second end portion and a top surface. An extendible jack extends upwardly from the top surface of the base plate. An elongated brace is engaged with the second end portion of the base plate and comprises a first brace section telescopically engaged with a second brace section. A releasable locking mechanism secures the first brace section relative to the second brace section to define a rigid triangular stabilizer for the camper.



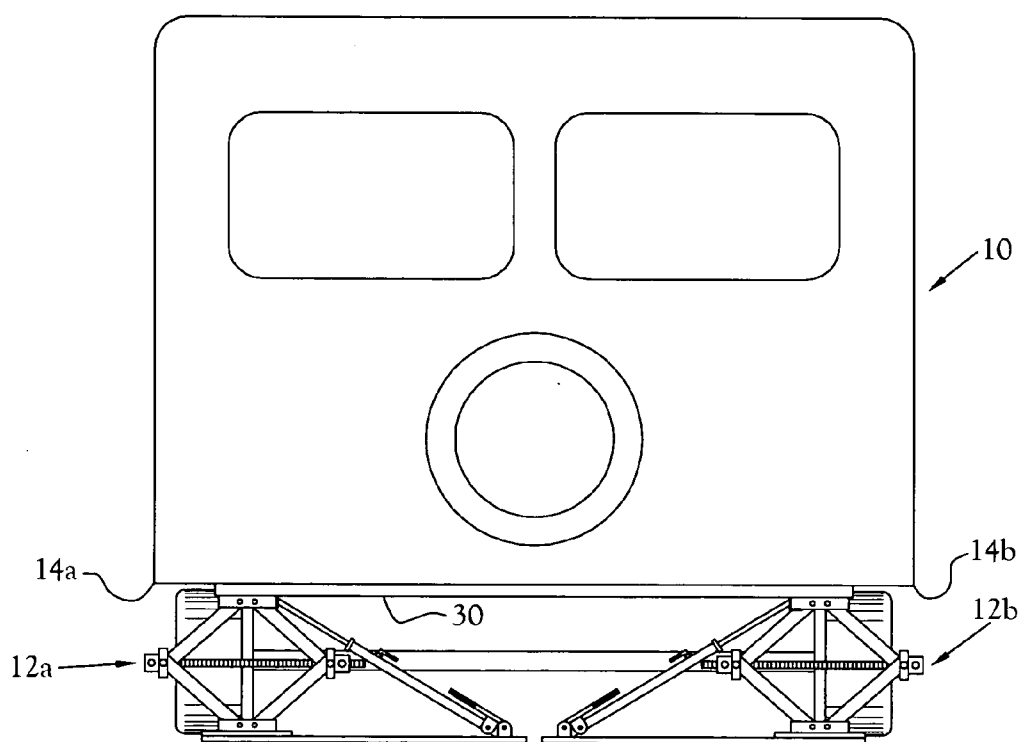


Fig. 1

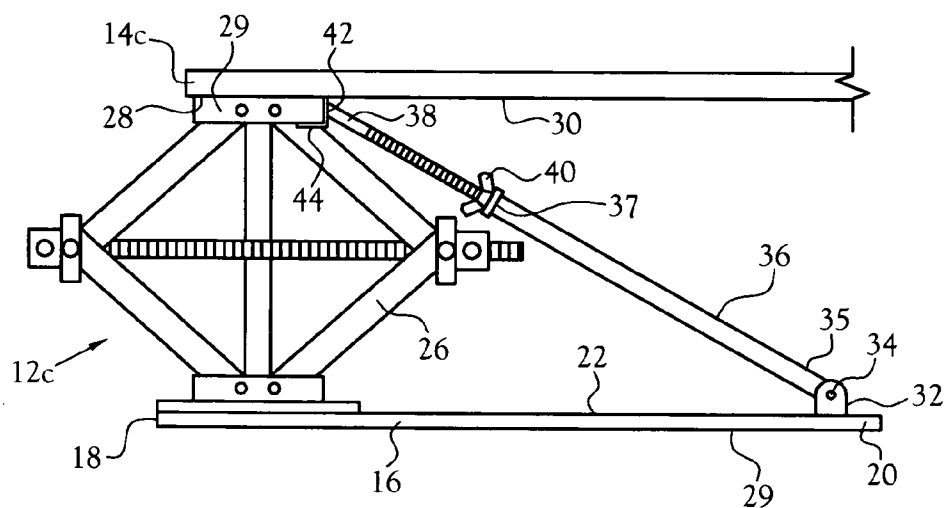


Fig.2

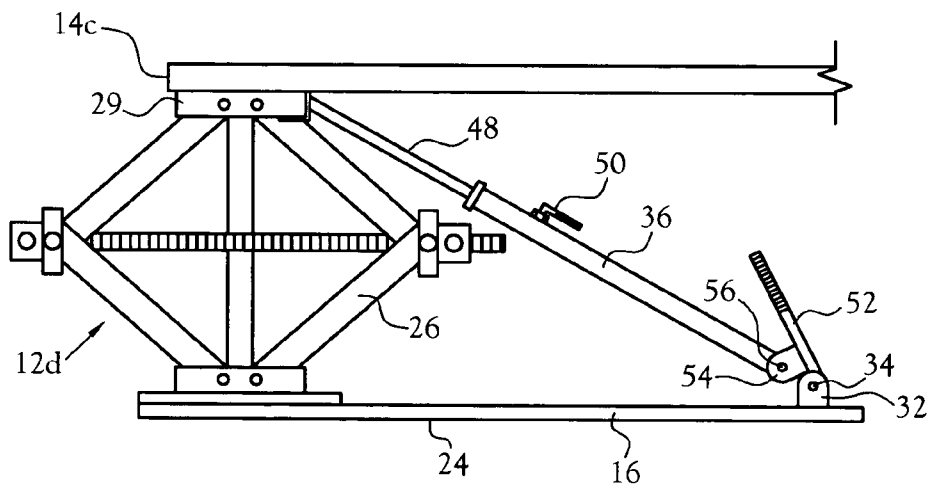


Fig.3

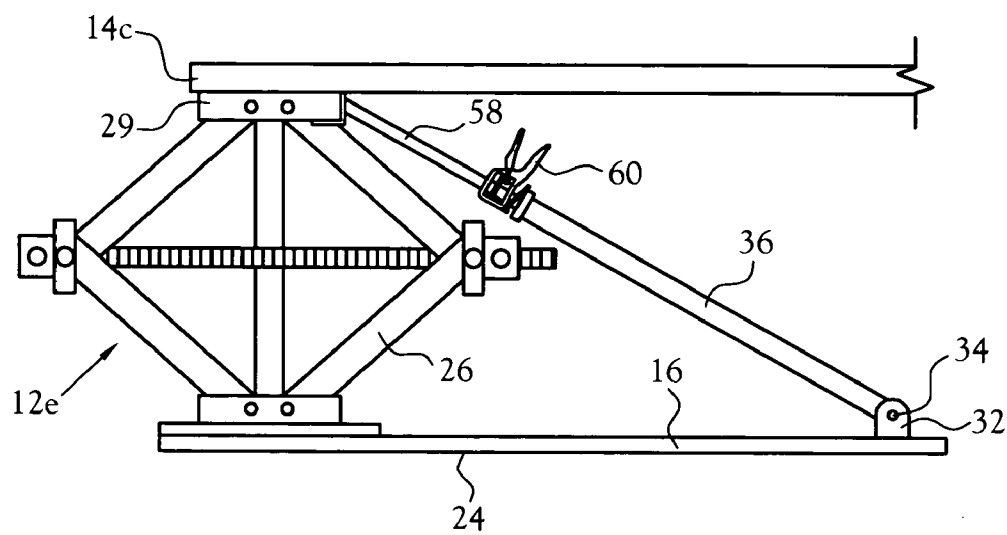


Fig.4

CAMPER STABILIZER SYSTEM**CROSS-REFERENCE TO RELATED APPLICATIONS**

[0001] Not Applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not Applicable

BACKGROUND OF THE INVENTION

[0003] 1. Field of Invention

[0004] This invention pertains to stabilizers for campers, 5th wheels and trailers.

[0005] More particularly, this invention pertains to removable stabilizers adapted for leveling and stabilizing campers and trailers.

[0006] 2. Description of the Related Art

[0007] Recreational vehicles, campers and trailers (hereinafter referred to generally as "campers") generally include suspension systems for traveling in order to absorb bumps and rough terrain. However, when a camper is parked and users are entering, leaving or moving around within the camper, it is generally desirable to secure the camper in a fixed position, so that it will not rock on its suspension system. Accordingly, various support systems have been developed for campers to secure them in fixed positions.

[0008] In addition, campers are often parked in locations which do not provide a horizontal surface. Accordingly, it is generally desirable to provide an extendible support which levels the floor of the camper in a horizontal orientation.

[0009] One prior system is disclosed in U.S. Pat. No. 6,331,016, issued to Wallace et al. on Dec. 18, 2001. The system disclosed in this patent includes two scissor jacks which are mounted on the rear corners of a trailer. Each of the scissor jacks is independently lowered to the ground and extended to level the rear corners of the trailer. A pair of cross-braces connects the top of each scissor jack to the bottom of the other scissor jack to prevent swaying. However, the interconnection of the cross-braces requires that the scissor jacks be allowed to move laterally relative to one another. This lateral movement is difficult when the bottoms of the jacks have engaged the ground, but not yet leveled the trailer. Moreover, because the system is permanently installed on the trailer, it is prone to collect grime and dirt in its operating mechanism and also subject to damage on the road.

[0010] It is generally desirable to provide a support system which can be stored in a safe and clean environment, out of the elements. It is also desirable to provide a support system which is quickly and easily installed and similarly uninstalled.

BRIEF SUMMARY OF THE INVENTION

[0011] According to one embodiment of the present invention, a support system for a camper includes at least one and preferably two independent stabilizers. Each stabilizer includes an elongated base plate, an extendible jack mounted upon the base plate, and a brace pivotally attached to the base plate at a location spaced apart from the jack. The brace includes an extension which telescopes to extend into engagement with the bottom of the camper. A releasable lock restrains the extension in an engaged position with the

camper, whereby the jack, base plate and brace provide a rigid triangular support for the camper.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0012] The above-mentioned features of the invention will become more clearly understood from the following detailed description of the invention read together with the drawings in which:

[0013] FIG. 1 is an elevation view of a stabilizer system in accordance with the present invention secured to a camper.

[0014] FIG. 2 is an elevation view of a stabilizer system in accordance with the present invention.

[0015] FIG. 3 is an alternate embodiment of a stabilizer system in accordance with the present invention.

[0016] FIG. 4 is another embodiment of a stabilizer system in accordance with the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0017] Referring to the drawings, in which like numbers represent like parts of the apparatus a system for stabilizing a camper 10 is disclosed. In most cases, a stabilizing system in accordance with the present invention will include at least two stabilizers 12a and 12b located adjacent to the rear corners 14a and 14b of the camper 10. Because the stabilizers 12a and 12b are substantially identical, as shown in FIG. 1, one stabilizer will be described in detail. One skilled in the art will recognize that the description of second stabilizer would be substantially identical.

[0018] Referring to FIG. 2, a stabilizer 12c includes a substantially rigid elongated base plate 16, having a first end portion 18, an opposed end portion 20, a top surface 22 and a bottom surface 24. In the depicted embodiment, the base plate 16 is about 34 inches long, about 6 inches wide and about 1/8 inch thick and comprises steel. However the exact sizes and material are not critical to the invention.

[0019] A jack 26 is secured to the top surface 22 of the base plate 16 adjacent to the first end portion 18 of the base plate 16. In the depicted embodiment, the jack 26 is a scissor jack, but any jack having sufficient strength to lift a camper is suitable. The jack 26 includes top block 29 having an upper surface 28 adapted to engage a bottom surface 30 of the camper 10.

[0020] A clevis 32 is secured to the top surface 22 of the base plate 16 adjacent to the end portion 20. A pin 34 extends through the clevis 32 to pivotally secure a lower end 35 of a first elongated brace section 36 to the clevis 32. The first brace portion 36 is tubular, having a lower end 35 and an upper end 37. A second elongated brace section 38, having an interior end (not shown) is slidably telescoped within the upper end 37 of the first brace section 36. The second brace section 38 is threaded and carries a wing nut 40 adapted to rotatably traverse the second brace section 38. The upper end 42 of the second brace section includes an L-shaped engager 44 adapted to wrap around a portion of the top block 29.

[0021] In operation, the stabilizer 12c, which has been stored in a clean, protected environment, is placed below a lower corner 14c of a camper 10, with the bottom surface resting in the ground. The jack 26 is located below the lower corner 14c and the base plate 16 extends toward the opposing rear corner of the camper 10, generally parallel to the

rear surface of the camper 10. Similarly, a second stabilizer is installed under the opposing rear corner of the camper 10. The jacks 26 are extended upwardly until they engage the bottom surface 30 of the camper 10. The two jacks 26 are used to level the camper 10. Thereafter, the second brace section 38 of each stabilizer 12c is extended until the engagers 44 contact the blocks 29 of the jacks 26. The wing nuts 40 are then threadably rotated into engagement with the upper ends 37 of the first brace sections 36 to lock the first brace sections 36 relative to the second brace sections 38. Removal of the stabilizers 12c is accomplished by a reversal of the steps outlined above for installation. As desired, the jacks 26 may be extended to relieve pressure on the wing nuts 40.

[0022] Referring to FIG. 3, there is depicted an alternative embodiment of a stabilizer 12d. The second brace section 48 is telescopically received in the first brace section 48, but it is not threaded and there is no wing nut 40. Instead, an L-shaped bolt 50 is threadably mounted through the wall of the first brace section 36 so that rotation of the bolt 50 brings the bolt 50 in and out of locking engagement with the second brace section 48.

[0023] The lower end 35 of the first brace section 36 is connected to the clevis 32 through a cam handle 52. The cam handle 52 is pivotally mounted upon the pin 34 and a secondary clevis 54 is pivotally mounted upon the lower end 35 of the first brace section 36 by a pin 56.

[0024] In operation, the stabilizer 12d, which has been stored in a clean, protected environment, is placed below a lower corner 14c of a camper 10, with the bottom surface 24 resting in the ground. The jack 26 is located below the lower corner 14c and the base plate 16 extends toward the opposing rear corner of the camper 10, generally parallel to the rear surface of the camper 10. Similarly, a second stabilizer is installed under the opposing rear corner of the camper 10. The jacks 26 are extended upwardly until they engage the bottom surface 30 of the camper 10. The two jacks 26 are used to level the camper 10. Thereafter, the second brace section 38 of each stabilizer 12c is extended until the engagers 44 contact the blocks 29 of the jacks 26. The bolts 50 are then threadably rotated into engagement with the second brace sections 48 within the first brace sections 36 to lock the first brace sections 36 relative to the second brace sections 48. Then the cam handle is rotated lock the engager against the block 29. Removal of the stabilizers 12d is accomplished by a reversal of the steps outlined above for installation.

[0025] Referring to FIG. 4, there is depicted another alternative embodiment of a stabilizer 12e. The second brace section 58 is telescopically received in the first brace section 36, but it is not threaded and there is no wing nut 44. Instead, a squeeze clamp 60 is adjustably mounted upon the second brace section 58 so that adjustment of the clamp 60 along the second brace section 58 brings the clamp in and out of locking engagement with the first brace section 36.

[0026] In operation, the stabilizer 12e, which has been stored in a clean, protected environment, is placed below a lower corner 14c of a camper 10, with the bottom surface 24 resting in the ground. The jack 26 is located below the lower corner 14c and the base plate 16 extends toward the opposing rear corner of the camper 10, generally parallel to the rear surface of the camper 10. Similarly, a second stabilizer is installed under the opposing rear corner of the camper 10. The jacks 26 are extended upwardly until they engage the

bottom surface 30 of the camper 10. The two jacks 26 are used to level the camper 10. Thereafter, the second brace section 58 of each stabilizer 12e is extended until the engagers 44 contact the blocks 29 of the jacks 26. The squeeze clamps 60 are then adjusted downwardly along the second brace sections 58 into engagement with the upper ends 37 of the first brace sections 36 to lock the first brace sections 36 relative to the second brace sections 58. Removal of the stabilizers 12e is accomplished by a reversal of the steps outlined above for installation. As desired, the jacks 26 may be extended to relieve pressure on the clamps 60.

[0027] In the foregoing description, the jack 26, have been described as secured to the base plate 16. It will be recognized by those skilled in the art that the jack 26 may be secured to the bottom surface of the camper 10 by the block 29, for example. In this case, the jack 26 will be extended downwardly to engage the base plate 16.

[0028] Those skilled in the art will recognize that various arrangements of the telescoping relationship of the first and second brace sections may be used without departing from the spirit and scope of the present invention. Similarly, other locking mechanisms may be used for locking the first and second brace sections, whereby the jack 26, the base plate and the first and second brace sections cooperatively define a rigid triangular stabilizing system.

[0029] From the foregoing description, it will be recognized by those skilled in the art that an improved camper stabilizing system has been provided.

[0030] While the present invention has been illustrated by description of several embodiments and while the illustrative embodiments have been described in considerable detail, it is not the intention of the applicant to restrict or in any way limit the scope of the appended claims to such detail. Additional advantages and modifications will readily appear to those skilled in the art. The invention in its broader aspects is therefore not limited to the specific details, representative apparatus and methods, and illustrative examples shown and described. Accordingly, departures may be made from such details without departing from the spirit or scope of applicant's general inventive concept.

What is claimed is:

1. An apparatus for stabilizing a camper, said apparatus comprising:
 - an elongated base plate having a first end portion and an opposing second end portion and a top surface,
 - an extendible jack extending upwardly from said top surface of said base plate,
 - an elongated brace engaged with said second end portion of said base plate and comprising a first brace section telescopically engaged with a second brace section,
 - and a releasable locking mechanism for securing said first brace section relative to said second brace section to define a rigid triangular stabilizer for said camper.
2. The apparatus of claim 1 wherein said first brace section is pivotally mounted upon said second end portion of said base plate.
3. The apparatus of claim 1 wherein said first brace section is pivotally mounted upon a cam handle and said cam handle is pivotally mounted upon said second end portion of said base plate.
4. The apparatus of claim 1 wherein said second brace section includes an engager for wrapping around a portion of said jack.

5. The apparatus of claim 1 wherein said locking mechanism comprises a wing nut threadably mounted upon said second brace section.

6. The apparatus of claim 1 wherein said locking mechanism comprises a bolt threadably mounted through said first brace section for engagement with said second brace section.

7. The apparatus of claim 6 wherein said first brace section is pivotably mounted upon a cam handle and said

cam handle is pivotally mounted upon said second end portion of said base plate.

8. The apparatus of claim 1 wherein said locking mechanism comprises a squeeze clamp adjustably mounted upon said second brace section for engagement with said first brace section.

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