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J. KILBORN

3,606,231

ANCHOR SUPPORT

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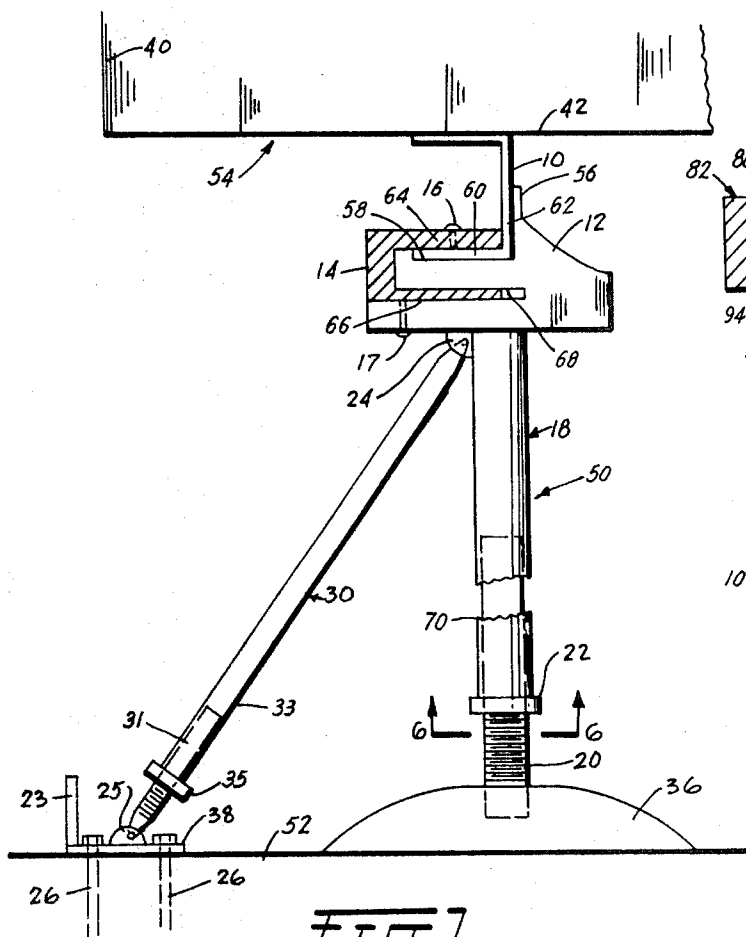


FIG. 1.

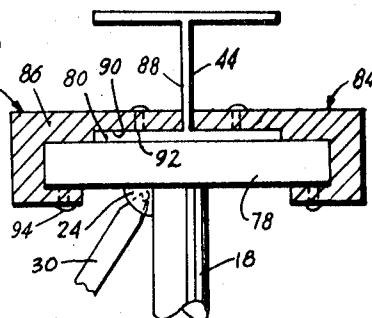


FIG. 2.

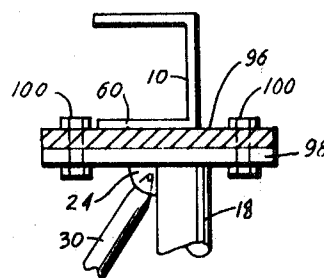


FIG. 3.

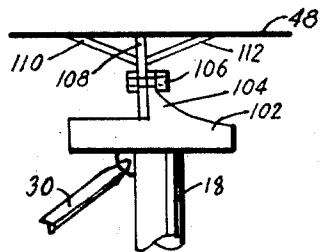


FIG. 4.

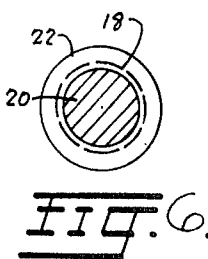


FIG. 5.

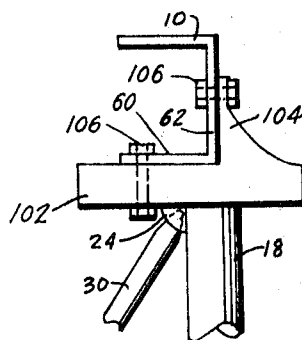


FIG. 6.

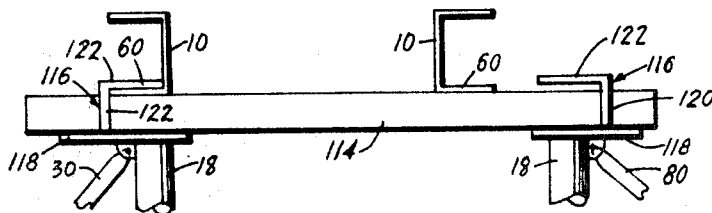


FIG. 7.

INVENTOR.
JOHN KILBORN

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3,606,231

ANCHOR SUPPORT

John Kilborn, 4222 Brott Road,
Goodells, Mich. 48027

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1 Claim

ABSTRACT OF THE DISCLOSURE

A combined support and guy stabilizer for trailers and the like which provides enhanced stability and security in high winds or other disturbances.

SUMMARY OF THE INVENTION

My invention is directed toward a combination support and guy stabilizer for any structure, but of particular value for mobile homes or trailers. I call it any anchor-support.

It will provide a firm, adjustable support column, with an attached guy rod, which is also adjustable. I have provided an adjustable clamp for the top of the anchor-support which will firmly attach it to the trailer frame. The top of the anchor-support may also be bolted to the frame, or to a plate which has been welded to the frame.

One end of the guy rod is fastened to the top of the anchor-support and the other end to a ground plate, which is either bolted to a concrete slab, or anchored by long stakes into the ground. While I have designed a rod or tube as the guy rod, a similar result may be obtained by the use of chain or cable with suitable adjustment such as a turnbuckle, although in this situation, the vertical stability is somewhat reduced. The guy rod may be attached to the anchor column and ground plate by hinge, hook, or any type of clamp or fastener which will allow flexibility.

A vertical plate at the outer edge of the ground plate on the guy rod serves as an anchor for a skirt which will enclose the space between the trailer bed and the ground.

Both anchor support column and guy rod are adjusted in length by a threaded core and a threaded collar.

Another variation of this idea which should be noted would be the placement of a transverse beam, e.g., an I beam under the frame. A clamp at the top of the anchor-support would slide along the beam to engage the channel frame, or may be bolted to the frame.

My invention will provide much more stability and security for mobile homes or trailers in high winds or other disturbances than prior art devices.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a front view of my invention in use;

FIG. 2 is a detail view of an outside clamp that can adapt to either an I or channel frame;

FIGS. 3 and 4 are detail views showing slight modifications of the structure of FIG. 1;

FIG. 5 is a detail view illustrating bolting of the support to a straight frame;

FIG. 6 is a cross section taken along line 6—6 in FIG. 1; and

FIG. 7 is a view of an I beam placed across a trailer under the frame with sliding clasps to engage the frame.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

As can be seen from FIGS. 1–7, a vertical support column adjustable in length extends upward from a foot plate on the ground to a top clamp which engages the channel frame of a trailer or an I beam underneath the

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frame, various geometries being used for this purposes as shown in each of FIGS. 1–5.

A guy rod is pivotally or hingedly secured at the top clamp at one end and extends inclinedly downwards to make pivotal or hinged connection at its other end to a ground plate spaced from the foot plate. With these two plates firmly secured in position, the desired support and stabilizing actions are obtained.

Referring more specifically to the structure illustrated in FIGS. 1 and 6, the anchor support 50 comprises an upstanding support column 18 which extends between the ground support 52, illustratively a concrete slab, and a channel beam 10 forming a portion of the channel frame structure provided on the underside 42 of a trailer 54. The frame channels are provided adjacent to the upstanding side wall 40 of the trailer.

The support column 18 is secured, at its lower end, to an upwardly dished foot plate 36. The column 18 carries, at its upper end, and anchor support element 12 for engagement with the channel 10. The support 12 is a block-like member having on the upper portion thereof an upstanding wall 56 and a horizontal recess 58 which together define an L-shaped recess for reception of the lower leg 60 and a portion of the web 62 of the trailer frame channel 10. This results in firm engagement with the channel. A clamping element 14 is provided for securing the anchor support element to the channel 10. The clamping element 14 is a U-shaped member having horizontally extending legs 64, 66. A slot 68 is provided in the support 12 for reception of the leg 66, with the leg 64 being received on the top side of the channel leg 60. Set screws 16, 17 are provided to lock the clamp in place. This structure prevents disengagement of the anchor support 12 from the frame channel 10.

The support column 18 is axially adjustable. The column 18 comprises a hollow cylindrical portion 70 which telescopically receives an externally threaded core member 20. An internally threaded collar 22 is provided. The cylindrical portion 70 may be raised or lowered by threading of the collar 22 upwardly or downwardly.

An axially adjustable guy rod 30 extends from a point adjacent the upper end of the support column 18 angularly outwardly and downwardly into connection with a ground plate 38 secured to the ground support 52. The upper and lower ends of the guy rod 30 are pivotally connected to brackets 24, 25.

The guy rod 30 is also axially adjustable and is constructed in a manner similar to the support column 18. The guy rod 30 comprises an elongated tubular member 33 which telescopically receives, at the lower end thereof, a threaded core 31. An internally threaded collar 35 is provided for adjusting the length of guy rod 30.

The ground plate 38 is fixedly secured to the concrete slab 52 by means of a plurality of bolts 26. An upstanding plate 23 is provided on the outer edge of the plate 28 and may serve as a support for skirting provided between the ground level and the lower edge of the trailer.

FIG. 2 illustrates a modified version of an anchor support element which is adapted for connection to either a channel frame section or an I-beam frame section 44. A flat plate 78 is provided on the upper end of support column 18. The lower wall 80 of the I-beam 44 abuts against the upper surface of the plate 78. A pair of clamp elements 82, 84 secure the assembly in place. Each clamp element has a J-shaped configuration with an elongated upper leg 86 which is received over the plate 78 and I-beam wall 80 on one side of the I-beam web 88. A notch 90 is provided in the underside of the forward portion of leg 86 to receive the I-beam wall 80. Set screws 92, 94 secure the assembly together.

FIG. 3 illustrates another embodiment of the anchor support structure for securing the upper end of the sup-

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port column 18 to the channel frame member 10. In this embodiment, a plate 96 is secured to the lower leg 60 of the channel member 10 as by welding. A matching plate 98 is provided on the upper end of support column 18. The structure is secured together by means of a plurality of bolts 100.

FIG. 4 illustrates a further embodiment of anchor support means for securing the support column 18 to the frame channel 10. As there shown, a plate 102 is secured to the upper end of the support column 18. An upstanding wall 104 is provided on the upper surface of the plate 102. The wall 104 and adjacent surface of the plate 102 define an L-shaped recess for reception of the leg 60 and a portion of the member 62 of the frame channel 10. The assembly is secured together by means of bolts 106.

The anchoring structure of FIG. 4 may also be used, as illustrated in FIG. 5, with a trailer 48 having a frame comprising a substantially flat vertically oriented frame element 108 supported by means of angular members 110, 112. In this case, the lower edge of the frame member 108 is nested in the corner defined by the juncture of the wall 104 and the plate 102. Bolts 106 which pass through the wall 104 and frame member 108 secure the assembly together.

FIG. 7 illustrates a technique for utilizing the anchor support structure in which the frame channel members on opposite sides of the trailer are structurally interconnected by means of an I-beam 114. As will be noted, the I-beam 114 extends beneath the frame channel members 10. The lower leg 60 of the channel members rests on the upper surface of the I-beam. The support columns 18 are provided with a plate 118 on the upper ends thereof which are positioned on the lower surface of the I-beam 114. An L-shaped clamp 116 is provided on the upper surface of each plate 118. Each of the clamps 116 has upstanding wall portions 120 which extend around the sides of the beam 114. A horizontally extending plate 122 is provided on the upper end of the wall portions 120. The plates 122 are spaced from the upper surface of I-beam 114 a distance to permit sliding thereof over the legs 60 of the frame channels 10. In FIG. 7, the left hand clamp has been moved into place while the right hand clamp is in a position to be moved into engagement with the adjacent frame channel 10. Movement is accomplished by manual shifting of the support column structure leftwardly as viewed in FIG. 7.

Having thus described this invention what is asserted as new is:

1. Anchor apparatus for supporting trailers, mobile homes and like structures above a ground support surface, said structures having a body with the frame on the underside thereof, said frame including a frame portion having a downwardly extending wall portion including a horizontally extending leg on the lower edge thereof,

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said anchor apparatus comprising an axially adjustable vertical support column for extending between the ground support surface and said downwardly extending wall portion, said support column comprising a hollow cylindrical portion including an internally threaded collar at the bottom thereof and an externally threaded core member threadedly engageable with said collar and adapted to be telescopically received by said cylindrical portion, clamp means on the upper end of the support column for clamping engagement with the downwardly extending wall portion comprising a block-like member including a horizontally extending wall having a horizontally extending slot therein and a vertically extending wall defining an L-shaped recess adapted to receive said downwardly extending wall portion therein with said horizontally extending leg being in abutment with said horizontal wall, a separable clamp element having a U-shaped cross section, said separable clamp element being received on the horizontal wall of the clamp means with one leg extending into said slot and the other leg extending over the horizontal leg of the frame, threaded fastening means for securement of the separable clamp in place, said fastening means comprising threaded opening means adapted to receive threaded members and extending through the top leg of the U-shaped clamp element and through the bottom of the horizontally extending wall of the block-like member to the horizontally extending slot therein, and threaded members received in said opening means in abutment with the undersurface of the lower leg of the U-shaped clamp within the horizontally extending slot and with the top surface of the horizontally extending leg on the lower edge of the frame portion within the L-shaped recess, an axially adjustable guy member pivotally attached at one end to the upper end of the support column, a ground support member securable to the ground support surface at a point spaced away from the support column towards the outer portion of said supported structure, said guy member being pivotally secured at the other end thereof to said ground support member whereby the guy member will extend at an angle downwardly and outwardly with respect to the support column.

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WILLIAM H. SCHULTZ, Primary Examiner

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