AERIAL-LIFT-PLATFORM ACCESSORY

Inventor: Michael E. Keshock, Fairhope, AL (US)

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ABSTRACT

An aerial-lift-platform accessory (10) comprising a container (30) for holding items, a hanger (40) for hanging the container (30) on an upper safety rail (25), and a brace (50). The brace (50) is convertible between a bracing condition whereat its arm (51) braces the container (30) against a lower safety rail (26) and a carrying condition whereat its arm (51) is stowed close to the contour of the container (30).
AERIAL-LIFT-PLATFORM ACCESSORY
RELATED APPLICATION


BACKGROUND

[0002] An aerial lift platform generally comprises a deck, an elevator for raising the deck to significant heights, and a safety railing surrounding the deck. The safety railing typically comprises vertical posts arranged around the deck’s border and horizontal bars extending across the vertical posts. The vertical posts and the horizontal bars together guard workers, tools, building supplies, and other items from falling from the deck.

SUMMARY

[0003] An accessory for an aerial lift platform is provided that is compatible with standard platform constructions. The aerial-lift-platform accessory allows tools, building supplies, and/or other items to be easily, neatly, and safely conveyed to an elevated work level.

DRAWINGS

[0004] FIG. 1 shows an accessory being used on an aerial lift platform.
[0005] FIGS. 2-3 shows the aerial-lift-platform accessory and adjacent sections of the horizontal bars of the safety railing.
[0006] FIGS. 4-8 show various views and/or embodiments of the aerial-lift-platform accessory.
[0007] FIGS. 9-11 show possible ways of converting a brace of the aerial-lift-platform between a bracing condition and a carrying condition.
[0008] FIG. 12 shows another type of accessory being used on an aerial lift platform.
[0009] FIG. 13 shows the aerial-lift-platform accessory of FIG. 12 and adjacent sections of the upper horizontal bar of the safety railing.
[0010] FIGS. 14-17 show the aerial-lift-platform accessory of FIG. 12 and parts thereof.

DESCRIPTION

[0011] Referring now to the drawings, and initially to FIG. 1, an accessory 10 is shown in use on an aerial lift platform 20. The aerial lift platform 20 generally comprises a deck 21, an elevator 22 for moving the deck 21 to significant heights, and a safety railing 23 surrounding the deck 23. The safety railing 23 can be constructed to resist a 300-pound outward force when it is leashed or otherwise pushed against.

[0012] The safety railing 23 can comprises a plurality of vertical posts 24 and horizontal bars 25-26. The vertical posts 24 are securely affixed to the deck 21 and arranged around its margin of the deck 21 about thirty to fifty inches apart. They typically extend upward from the deck 21 to a tallness of about forty-five inches above the deck 21. The horizontal bars 26 extend across an intermediate perimeter of the vertical posts 24, and they are usually situated at a height of about ten to thirty inches above the deck 21. The upper bar 26 and the lower bar 25 are separated from each by a vertical distance of about twelve to thirty-five inches.

[0014] Turning now to FIGS. 2 and 3, the aerial-lift-platform accessory 10 is shown hung on a top horizontal bar 25 of the safety railing 23. The accessory 10 comprises a container 30 for holding items such as tools, a hanger 40 for hanging the container 30 on the upper railing bar 25, and brace 50 for bracing against the lower railing bar 26.

[0015] The brace 50 prevents the container 30 from tilting forward and its contents spilling out when it is hung on the top horizontal bar 25. The brace 50 includes an arm 51 which is selectively movable between a bracing position and a carrying position. In the bracing position shown in FIG. 2, the arm 51 extends downward to below the lower bar 26 of the safety railing 23. Thus, there is a distance b between the arm’s bottom end to the lower bar 26. This distance b is preferably at least 3 inches, at least 5 inches and/or at least 10 inches.

[0016] Referring now to FIGS. 4-7, the container 30 can comprise a front wall 31, a rear wall 32, a bottom wall 33, and side walls 34. These walls 31-34 of the container 30 define a storage space 35 within the container 30. In the illustrated storage accessory 10, the top side of the container 30 is left open so as to allow easy access to the items stored in the space 35. However, a removable lid or other cover can be provided for the container 30. Additionally or alternatively, a permanent top wall can be provided with access to the storage space being obtained in another manner (e.g., side doors and/or drawers).

[0017] The illustrated hanger 40 comprises rectangular panels 41-43 forming an inverted U-shape channel 45 for the lower railing bar 26. The panel 41 is secured to the rear wall 32 of the container 30, the panel 42 extends outwardly from the top edge of the panel 41, and the panel 43 extends downwardly from the distal edge of the panel 42. In FIG. 5 (and also FIG. 3), the hanger 40 and/or the panels 41-43 are centrally located on, and do not extend entirely across the rear wall 32 of the container 30. As shown in FIG. 8, the hanger 40 can instead extend entirely thereacross. In either or any event, any hanger 40 which forms an appropriate railing-bar channel 45, or other means of secure connection to the bar 26, can be employed.

[0018] As was indicated above, the brace 50 comprises an arm 51 which is selectively movable between a bracing position and a carrying position. This arm movement between the bracing-carrying positions can be accomplished in any suitable manner. For example, as shown in FIGS. 9-11, this movement can be accomplished by the arm 51 having a pivotal attachment 52 (FIG. 9), the arm 51 having telescoping pieces 51a-51c (FIG. 10), or by both a pivotal attachment 52 and telescoping pieces 51a-51c (FIG. 11).

[0019] Preferably, the arm 51 is fixed to the container 30 in the bracing position, fixed to the container 30 in the carrying position, and remains fixed to the container 30 as it is moved therewith. And when the arm 51 is in the carrying position, it is preferably positioned above the bottom wall 33 of the container 30 and does not extend laterally beyond the side walls 34 of the container 30. That being said, a removable brace 50 and/or arm 51, and/or one that projects outside the container contour in the carrying position, is possible contemplated.
The container 30 can further comprise a handle 60, a tray 70, a drawer 80, and/or an apron 90. The handle 60 is located relative to the container 30 for convenient lifting as it is being carried to and from work sites. The tray 70 can be inserted into the container storage space 35 and accessible through its open top. The drawer 80 can be withdrawn from a pocket formed in the front wall 31 (or any other part) of the container 30. The apron 90 can be optionally fastened to the container 30 for the storage of additional items.

Referring now to FIGS. 12-17, another aerial-lift-platform accessory 110 is shown. In FIG. 12, two accessories 110 are being used in tandem on an aerial lift platform 20 to convey building supplies (e.g., lumber and/or piping) alongside the deck 21. Depending upon the load to be lifted and/or the platform size, only one accessory 110 or more than two accessories 100 can be employed.

The aerial-lift-platform accessory 110 comprises a pole 130, a hanger 140 for hanging the pole 130 on the upper horizontal bar 25, an upper bracket 150 for cradling building supplies, and a lower cradle 160 for cradling building supplies. The accessory 110 need not include both the upper bracket 150 and lower bracket 160 as only one may suffice in some circumstances. Alternatively, additional brackets (e.g., similar to bracket 150) could be provided along the pole length.

The pole 130 includes a vertical strut 131 and a horizontal foot 132 extending perpendicularly outward from a bottom end thereof. The hanger 140 and the upper bracket 150 are connected to the vertical strut 131, and the lower bracket 160 is connected to the horizontal foot 132. In the illustrated embodiment, the pole 130 is formed from square metal rod.

The hanger 140 includes a clamp 141 having rectangular panels 142-144 forming a channel 145 for the upper raling bar 25. The first panel 142 and the second panel 143 can be vertically oriented and situated on opposite sides (i.e., inner and outer relative to the deck 21) of the bar 25. The third panel 144 can extend horizontally therebetween. The clamp 141 (e.g., the panels 142 and 143) can include openings 146 for receipt of locking members.

The hanger 140 also includes a sleeve 147 with a conduit 148 for receipt of the pole 130, and more particularly a top region of its strut 131. If the pole 130 is made from square metal rod, as illustrated, the sleeve 147 and the conduit 148 can have a similar geometry. Openings 149 for positioning pins (not shown) can be provided in the sleeve 147 to adjust the vertical reach of the post 130. The sleeve 147 is fixed to the outer vertical panel 143 of the clamp 141.

The upper bracket 150 is connected to an intermediate region of the pole strut 131. The bracket 150 can comprise legs 151-153 forming a cradle 154 for building supplies. In the illustrated embodiment, the first leg 151 is vertically oriented and connected to the pole 130, the second leg 152 extends horizontally outward from a bottom end of the first leg 151, and the third leg 153 extends vertically upward from distal end of the second leg 152. If the pole 130 and/or its vertical strut 131 are made of square bar, as illustrated, the bracket 150, the legs 151-153, or just the leg 151 can be square-tube (e.g., similar to the sleeve 147).

The bracket 150 can be vertically adjustable relative to the pole 130 to accommodate a range of short-to-tall cargo. Specifically, for example, the bracket 150, and particularly its leg 151, can be slidable relative to pole strut 131. The bracket 150 can be provided with position-pin openings 159 which align with similar openings 139 in the post 130 to lock the bracket in the desired vertical position.

The lower bracket 160 is connected to the foot 132 of the pole 130. The bracket 160 has legs 162-163 forming, with the bottom region of the pole strut 131, a cradle 164. The first leg 162 can be horizontally oriented and connected to the pole foot 132 and the second leg 163 can extend upward from the distal end of the first leg 162. Again, if the pole 130 and/or the foot 132 are made from square bar, the bracket 160 and/or its legs 162-163 (or just leg 162) can be made of tubular-bar-receiving material.

The lower bracket 160 can be horizontally adjustable relative to the pole 130 to accommodate thin-to-wide cargo. To this end, the bracket 160 and particularly the bracket panel 162 can be slidable relative to the foot 132. Position-pin openings 169 in the first bracket leg 162 (which coordinate with similar openings in the pole 130) can be used to lock the bracket 160 in the desired horizontal position.

One may now appreciate that the accessory 10/110 is compatible with standard aerial lift platforms and it allows tools, work supplies, and/or other items to be easily, neatly, and safely conveyed to an elevated work level. While the accessory 10, the aerial lift platform 20, and/or the accessory 110 have been shown and described with respect to a certain embodiment or embodiments, other equivalent alterations and modifications will occur to others skilled in the art upon the reading and understanding of this disclosure.

1. An aerial-lift-platform accessory for use on an aerial lift platform having a deck, an elevator for moving the deck to significant heights, and a safety railing surrounding the deck; said accessory comprising:
   a container for holding items;
   a hanger for hanging the container on a horizontal bar of the safety railing; and
   a brace for bracing the container against a lower horizontal bracing portion of the aerial lift platform; wherein the brace includes an arm selectively movable from a bracing position wherein it extends downward from the container to a level below the lower horizontal bracing portion and a carrying position wherein it resides close the contour of the container.

2. An aerial-lift-platform accessory as set forth in claim 1, wherein the horizontal bar is an upper horizontal bar and wherein the lower horizontal bracing portion is a lower horizontal bar of the safety railing.

3. An aerial-lift-platform accessory as set forth in claim 2, wherein the hanger forms a channel for the horizontal bar.

4. An aerial-lift-platform accessory as set forth in claim 3, wherein the hanger comprises panels forming the channel; and wherein a first panel is secured to a rear wall of the container, a second panel extends outwardly from the top edge of the first panel, and a third panel extends downwardly from the distal edge of the second panel.

5. An aerial-lift-platform accessory as set forth in claim 1, wherein the brace comprises a pivotal attachment attaching the arm to the container and wherein the arm moves between the bracing position and the carrying position by pivotal movement.
6. An aerial-lift-platform accessory as set forth in claim 1, wherein the arm comprises telescoping pieces and wherein the arm moves between the bracing position and the carrying position by telescopic movement between the pieces.

7. An aerial-lift-platform accessory as set forth in claim 1, wherein the arm remains fixed to the container as it is moved between the bracing position and the carrying position.

8. An aerial-lift-platform accessory as set forth in claim 1, wherein the arm when in the carrying position, is positioned above a bottom wall of the container and does not extend beyond side walls of the container.

9. An aerial lift platform with the accessory set forth in claim 1 hung on a horizontal bar of a safety railing, wherein the post is in its bracing position and braces the container against a lower bracing portion, wherein the safety railing is constructed to resist a 300-pound outward force when it is leaned or otherwise pushed against.

10. An aerial-lift-platform accessory for use on an aerial lift platform having a deck, an elevator for moving the deck to significant heights, and a safety railing surrounding the deck; said accessory comprising:
   a pole;
   a hanger for hanging the pole from a horizontal rail of the safety railing; and
   a bracket, connected to the pole for cradling building supplies;
   wherein the bracket either vertically adjustable to accommodate short-to-tall cargo or horizontally adjustable to accommodate thin-to-wide cargo.

11. An aerial-lift-platform accessory as set forth in claim 10, wherein the pole comprises a vertical strut and a horizontal foot; and wherein the pole is adjustable relative to the hanger.

12. An aerial-lift platform accessory as set forth in claim 11, wherein the hanger includes a clamp comprising panels forming a channel for the railing bar; wherein first and second panels are vertically oriented and situated on opposite sides of the horizontal bar and wherein a third panel extends horizontally therebetween.

13. An aerial-lift-platform accessory as set forth in claim 12, wherein the hanger comprises a sleeve with a conduit for receipt of the pole and wherein the sleeve is connected to a panel of the clamp.

14. An aerial-lift-platform accessory as set forth in claim 10, wherein the bracket comprises legs forming a cradle for building supplies, wherein a first leg is vertically oriented and connected to the pole, wherein a second leg extends horizontally outward from a bottom end of the first leg, and wherein the third leg extends vertically upward from distal end of the second leg.

15. An aerial-lift-platform accessory as set forth in claim 10, wherein the bracket is vertically adjustable relative to the pole.

16. An aerial-lift-platform accessory as set forth in claim 10, wherein the bracket is connected to a foot of the pole.

17. An aerial-lift-platform accessory as set forth in claim 10, wherein the bracket has legs forming, with a bottom region of the pole, a cradle; wherein a first leg is horizontally oriented and connected to the pole and wherein a second leg extends upward from the distal end of the first leg.

18. An aerial-lift-platform accessory as set forth in claim 10, wherein the bracket is horizontally adjustable so as to accommodate thin-to-wide cargo.

19. An aerial-lift-platform accessory as set forth in claim 10, comprising two brackets connected to the pole for cradling building supplies, wherein one of the brackets is vertically adjustable to accommodate short-to-tall cargo and/or wherein one of the brackets is horizontally adjustable to accommodate thin-to-wide cargo.

20. An aerial lift platform with the accessory set forth in claim 10 hung on a horizontal bar of its safety railing, wherein the safety railing is constructed to resist a 300-pound outward force when it is leaned or otherwise pushed against.

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