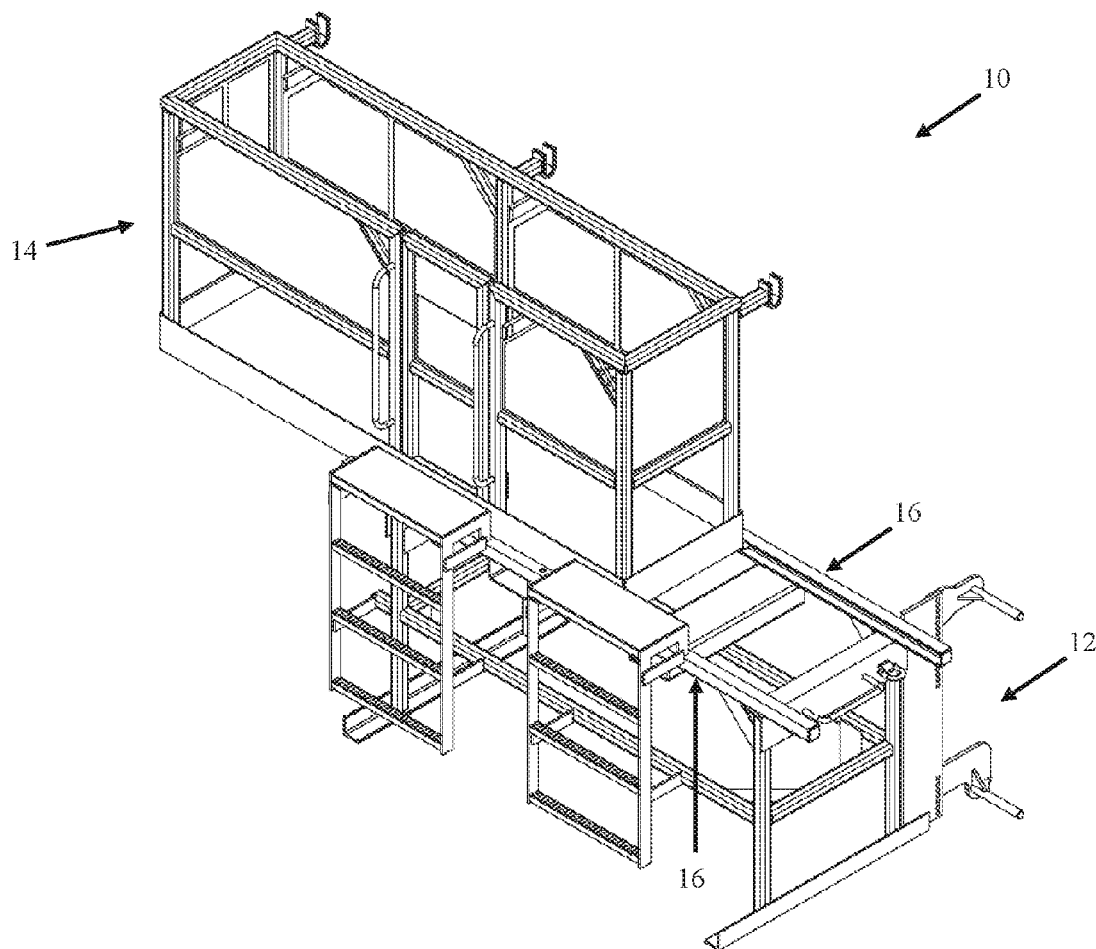




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Walker, II et al.(10) **Pub. No.: US 2019/0161980 A1**(43) **Pub. Date: May 30, 2019**(54) **ELEVATED WORK PLATFORM VEHICLE
ATTACHMENT****Publication Classification**(71) Applicant: **Virginia Department of
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(52) **U.S. Cl.**
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(2013.01); *E04G 5/141* (2013.01)(72) Inventors: **Lindsay E. Walker, II**, Staunton, VA
(US); **Chad A. Baker**, Chester, VA
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Fredericksburg, VA (US)(21) Appl. No.: **15/799,522**(22) Filed: **Oct. 31, 2017****Related U.S. Application Data**(60) Provisional application No. 62/415,547, filed on Nov.
1, 2016.(57) **ABSTRACT**

An elevated work platform vehicle attachment is disclosed that includes a base assembly having primary and secondary connection members to detachably connect to a motor vehicle when a worker requires an elevated work platform. The attachment further includes a working platform operatively connected to the base assembly by a roller assembly that allows for rectilinear movement of the working platform relative to the base assembly. When the working platform is in an extended position, the base assembly provides cantilever support thereto and the roller assembly includes a locking mechanism to prevent movement of the working platform, both of which allow a worker to be safely positioned on the extended working platform.



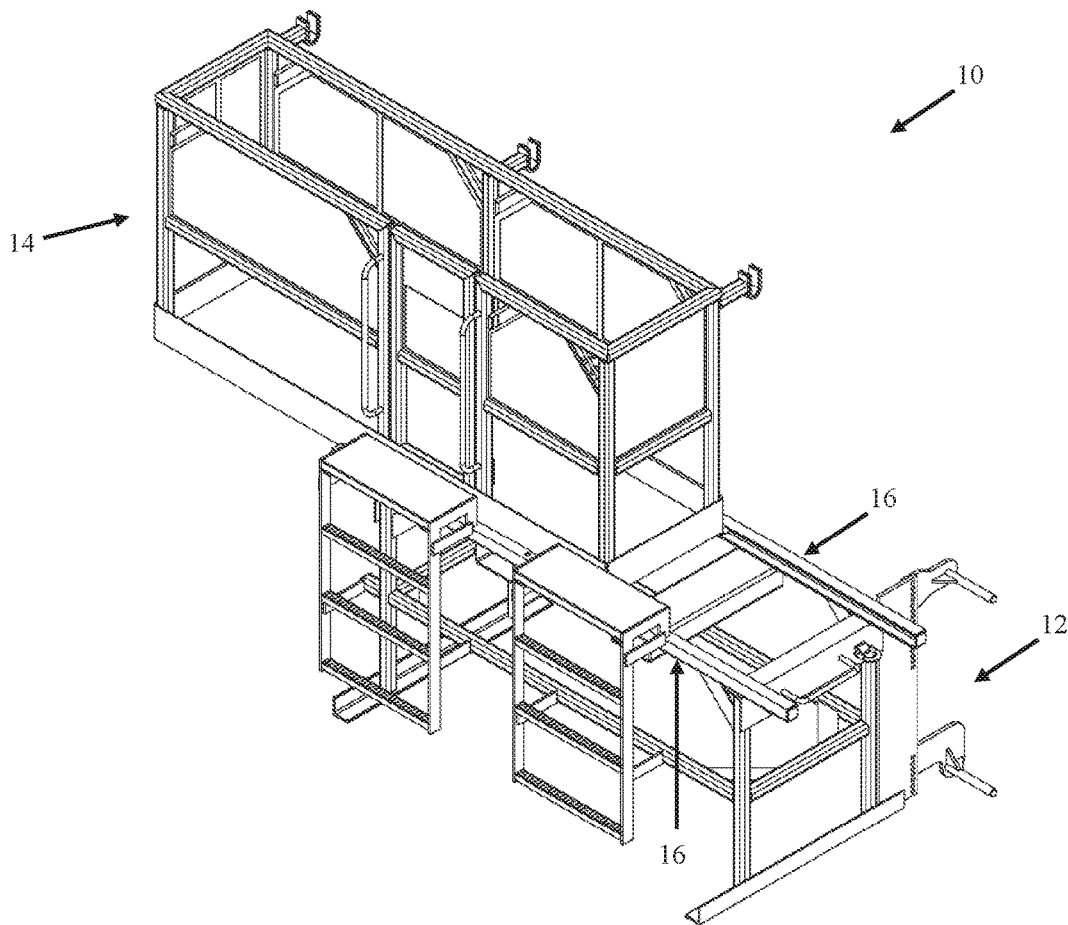


Figure 1

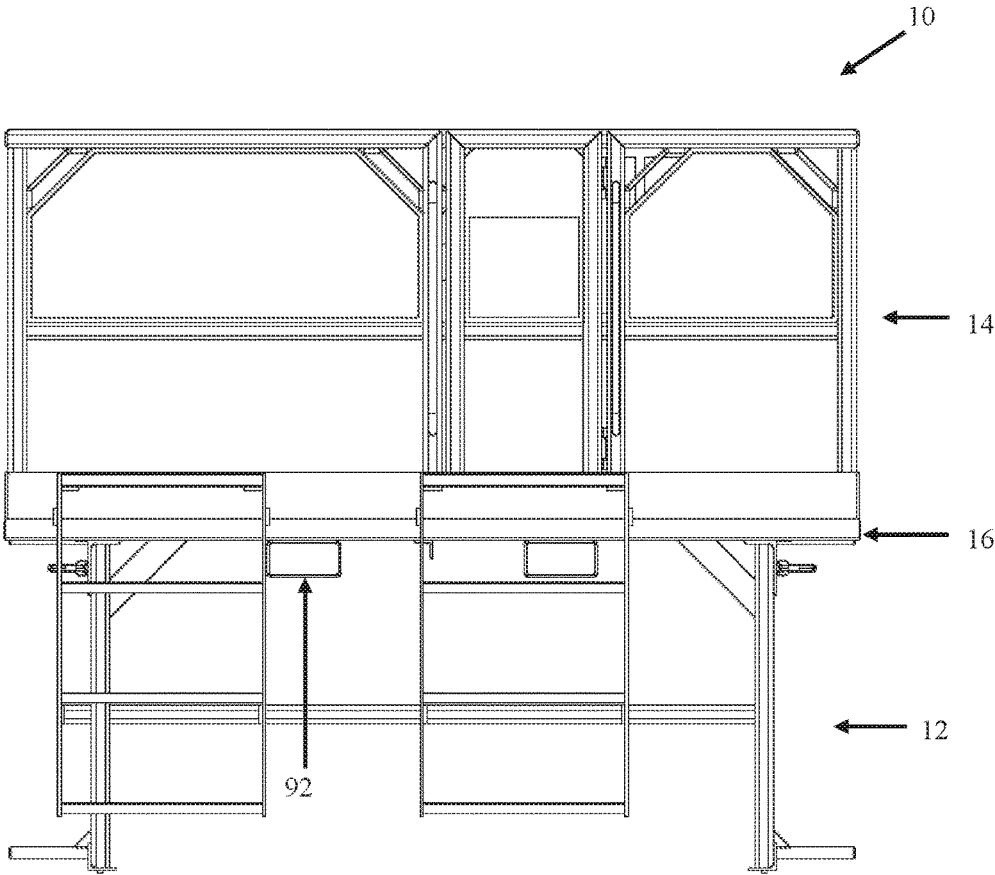


Figure 2a

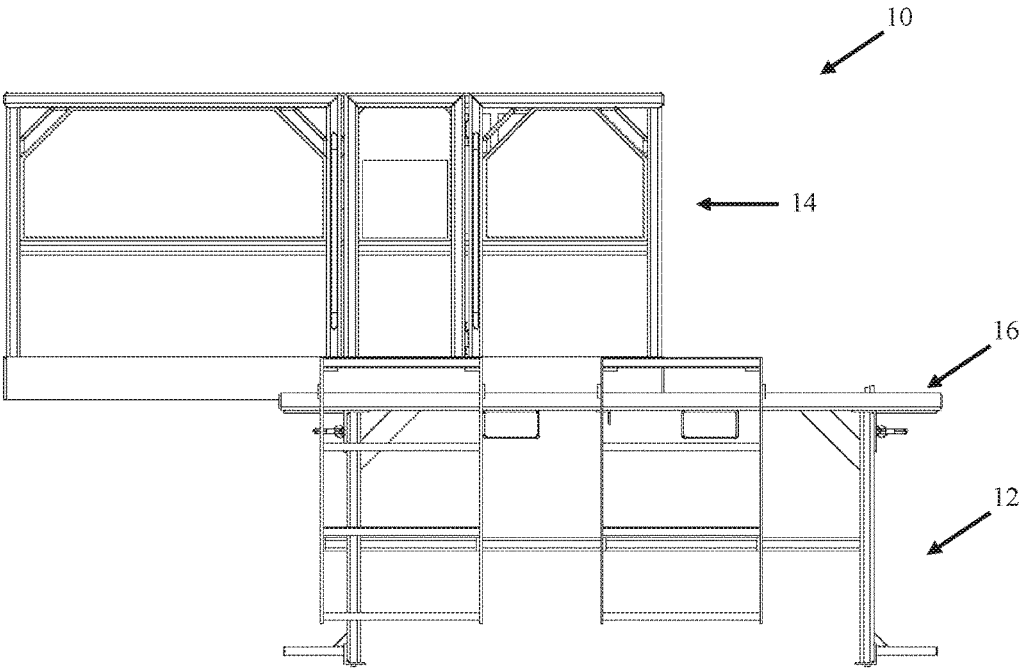


Figure 2b

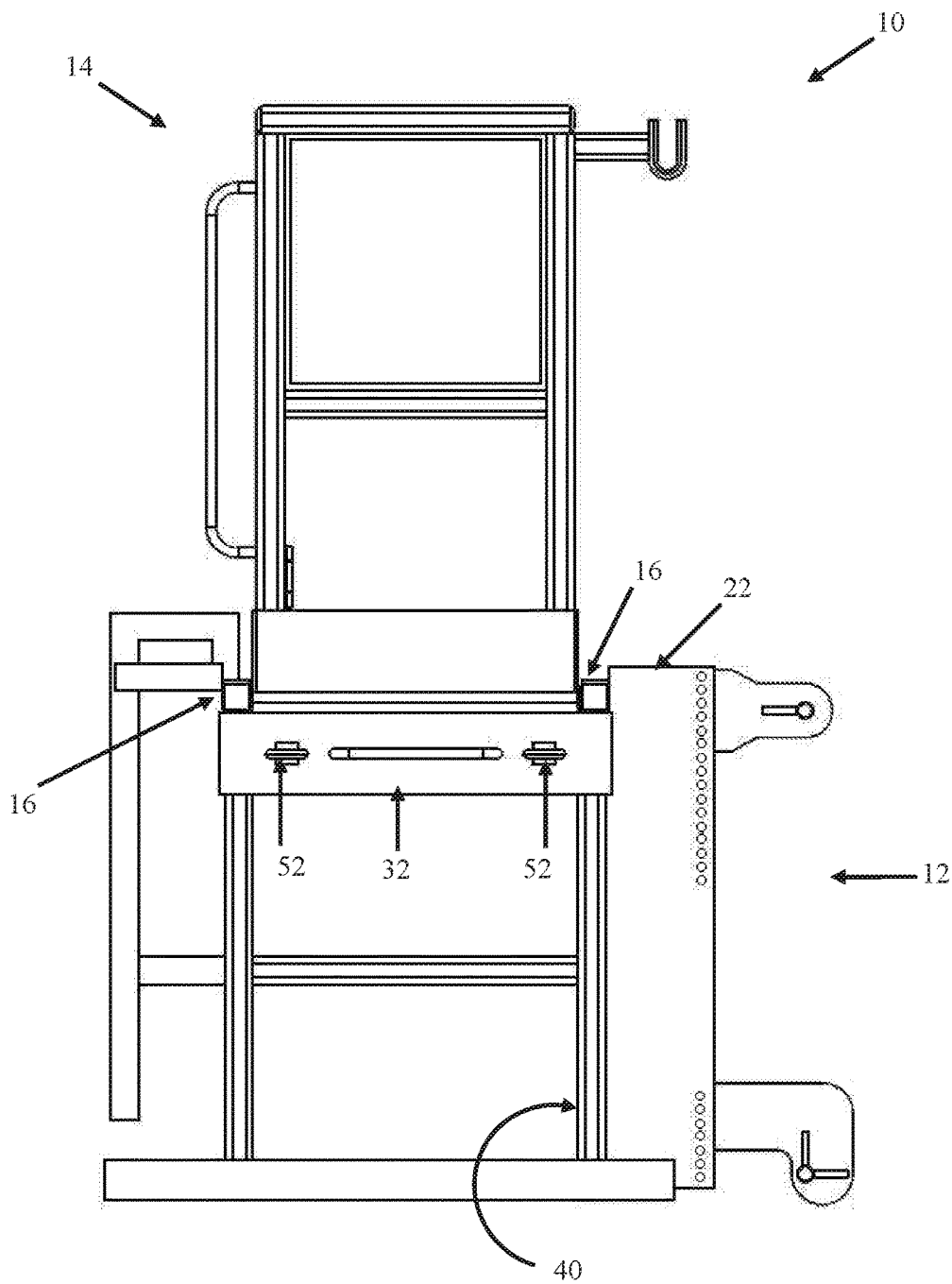


Figure 3

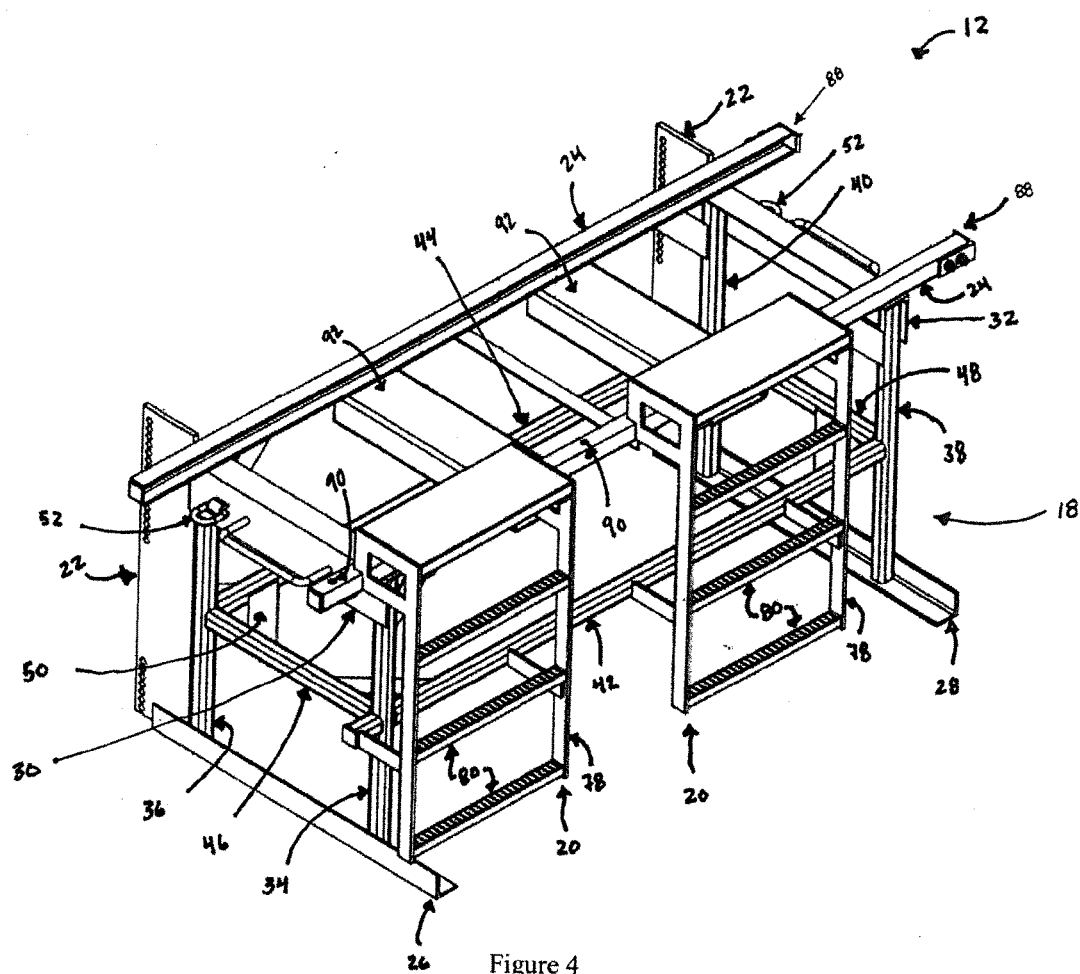


Figure 4

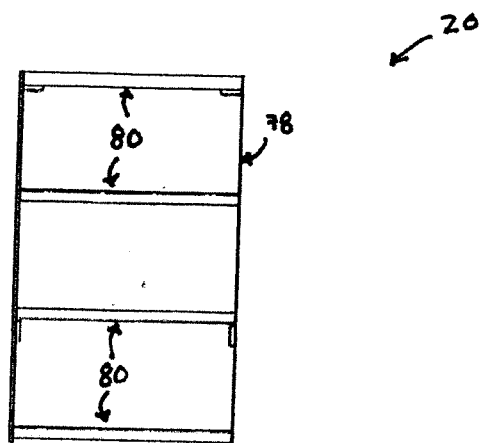


Figure 5a

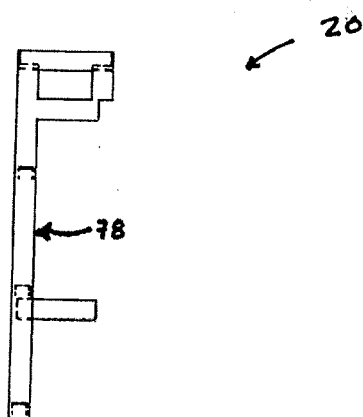


Figure 5b

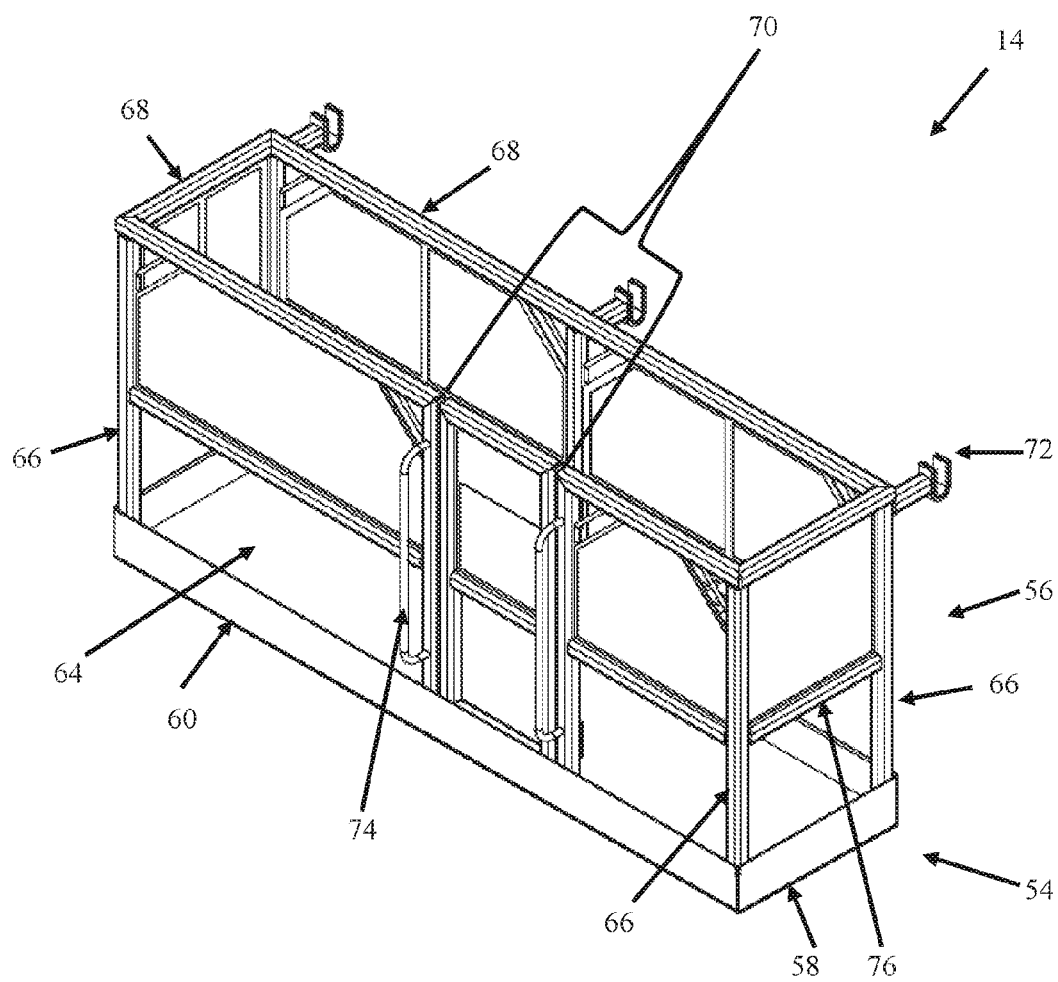


Figure 6

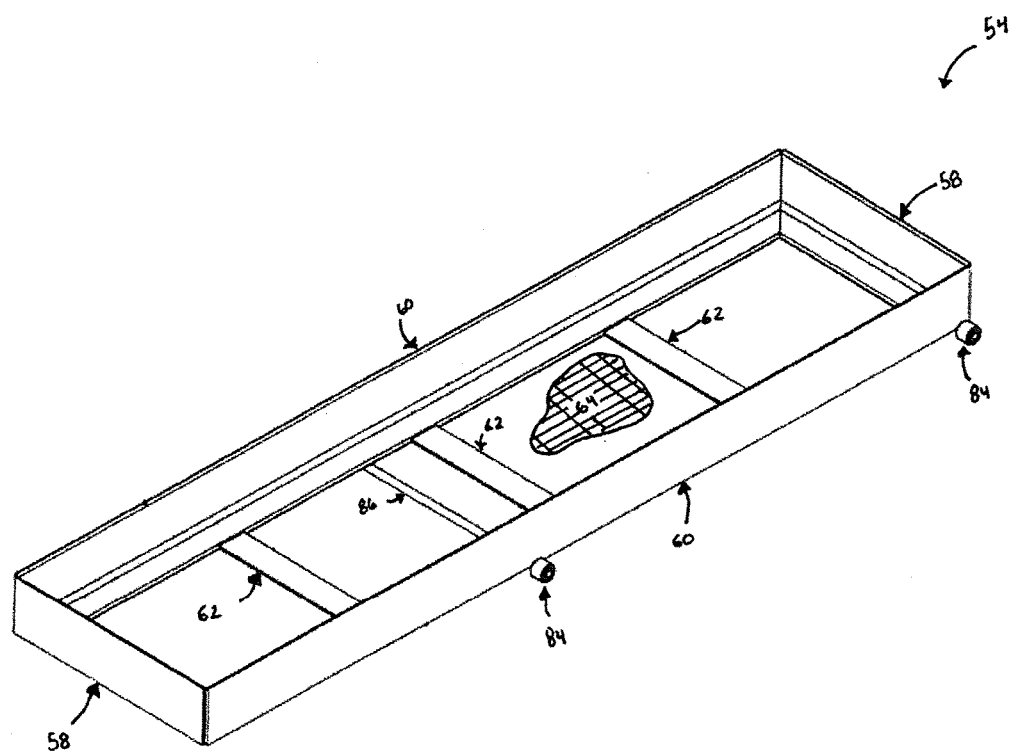


Figure 7

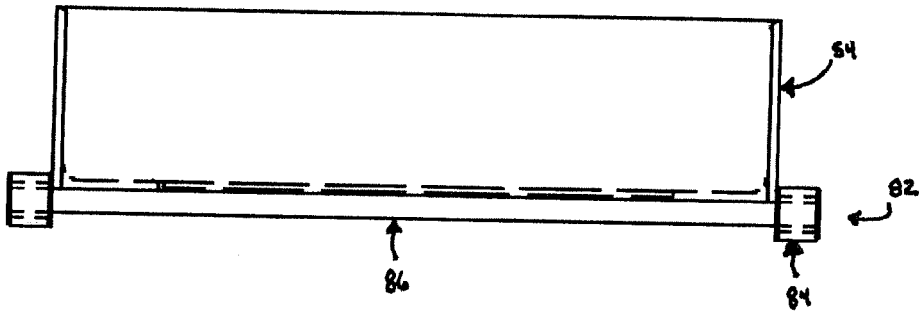


Figure 8

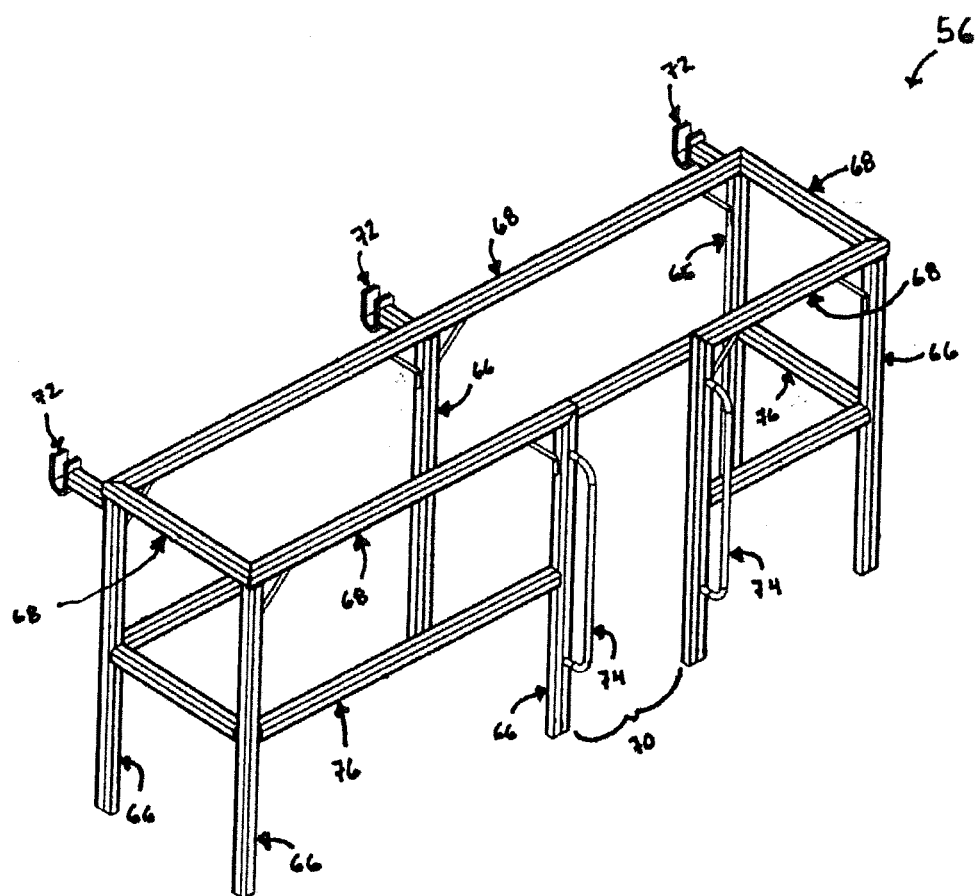


Figure 9

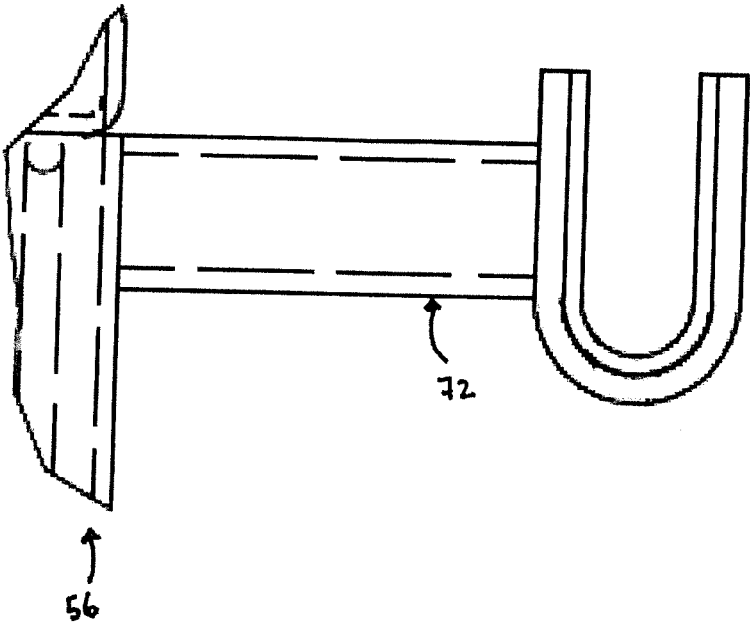


Figure 10

ELEVATED WORK PLATFORM VEHICLE ATTACHMENT

FIELD

[0001] The present non-provisional patent application relates generally to vehicular attachments, and more particularly, to devices and systems for assisting operators in trimming trees, vegetation, and other flora adjacent to roadways.

BACKGROUND

[0002] Federal, state, and local government agencies are generally responsible for the construction, maintenance, and operation of roadways within their jurisdiction. One component of roadway maintenance involves pruning and trimming trees, shrubbery, and other flora that grow along roads, streets, and highways and create an unacceptable risk or safety hazard to the motoring public (e.g., those blocking sight distance). Currently, maintenance workers depend on specialized aerial devices (e.g., bucket trucks or vehicles with dedicated scaffolding units) to gain access to roadside trees that are otherwise inaccessible due to their height and distance from the roadway. The availability and cost of purchasing or renting specialized aerial devices is a significant disadvantage for federal, state, and local government agencies with large roadway maintenance operations. A need therefore exists for a low-cost elevated work platform vehicle attachment (i.e., easily connected to, and disconnected from, a vehicle) for roadway maintenance, particularly pruning and trimming roadside trees, shrubbery, and other flora.

SUMMARY

[0003] An elevated work platform vehicle attachment is disclosed that includes a base assembly that may be removably attached to a motor vehicle when a worker requires an elevated work platform. The attachment further includes a working platform operatively connected to the base assembly by a roller assembly that allows for rectilinear movement of the working platform relative to the base assembly. When the working platform is in an extended position, the base assembly provides cantilever support thereto and the roller assembly includes a locking mechanism to prevent movement of the working platform, both of which allow a worker to be safely positioned on the extended working platform.

[0004] Other aspects of the disclosed elevated work platform vehicle attachment will become apparent from the following description of a presently preferred exemplary embodiment, and the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] Some embodiments of the present invention are illustrated as an example and are not limited by the figures of the accompanying drawings, in which like references may indicate similar elements and in which:

[0006] FIG. 1 is a perspective view of one aspect of the disclosed elevated work platform vehicle attachment, which includes a base assembly and working platform that are operatively connected by a C-shaped roller assembly;

[0007] FIG. 2a is a front elevational view of one embodiment of the elevated work platform vehicle attachment of FIG. 1;

[0008] FIG. 2b is a front elevational view of the elevated work platform vehicle attachment of FIG. 1 showing the working platform thereof extended from one side of the base assembly;

[0009] FIG. 3 is a side elevational view of one aspect of the disclosed elevated work platform vehicle attachment illustrated in FIG. 1;

[0010] FIG. 4 is a perspective view of one embodiment of the base assembly of the elevated work platform vehicle attachment of FIG. 1;

[0011] FIG. 5a is a front elevational view of one embodiment of the ladder of the base assembly of FIG. 4;

[0012] FIG. 5b is a side elevational view of one embodiment of the ladder of the base assembly of FIG. 4;

[0013] FIG. 6 is a perspective view of one embodiment of the working platform of the elevated work platform vehicle attachment of FIG. 1;

[0014] FIG. 7 is a perspective view of one embodiment of the working platform base of the working platform of FIG. 6;

[0015] FIG. 8 is a side elevation view of one embodiment of the working platform base of the working platform of FIG. 6;

[0016] FIG. 9 is a perspective view of one embodiment of the railing assembly of the working platform of FIG. 6;

[0017] FIG. 10 is a side elevational view of one embodiment of the tool rests of the railing assembly of FIG. 9.

DETAILED DESCRIPTION

[0018] Referring now to the embodiment shown in FIGS. 1-3, an elevated work platform vehicle attachment, generally designated 10, is shown that includes a base assembly 12 and a working platform 14 operatively connected by a C-shaped roller assembly 16. As will be described in greater detail below, elevated work platform vehicle attachment 10 may be detachably connected to a motor vehicle (e.g., the bed of a standard single-axle dump truck). C-shaped roller assembly 16 provides for rectilinear movement of working platform 14 relative to base assembly 12. Specifically, C-shaped roller assembly 16 allows working platform 14 to be in a nested positioned, superjacent to base assembly 12, as shown in FIGS. 2a and 3, and further allows working platform 14 to move laterally relative to the base assembly 12 into an extended position, as shown in FIG. 2b. It is understood that base assembly 12 provides cantilever support to working platform 14.

[0019] Now referring to FIG. 4, base assembly 12 of elevated work platform vehicle attachment 10 may include rectangular cuboid framework 18, ladders 20, primary connection members 22, and C-shaped roller tracks 24. Rectangular cuboid framework 18 may include spaced-apart support angles 26, 28, and opposing spaced-apart top angles 30, 32, a first pair of vertical posts 34, 36 extending upward from, and generally perpendicular to, support angle 26 and extending downward from, and generally perpendicular to, top angle 30, and a second pair of vertical posts 38, 40 extending upward from, and generally perpendicular to, support angle 28 and extending downward from, and generally perpendicular to, top angle 32.

[0020] Again referring to FIG. 4, a first pair of parallel struts 42, 44 may extend between, and generally perpendicular to, vertical posts 34, 38 and vertical posts 36, 40 and a second pair of parallel struts 46, 48 may extend between, and generally perpendicular to, vertical posts 34, 36 and

vertical posts **38**, **40**. Support brackets **50** may extend between the first pair of parallel struts **42**, **44** and the second pair of parallel struts **46**, **48**.

[0021] Referring to FIGS. **1, 4**, **5a**, and **5b**, ladders **20** of base assembly **12** allow workers to enter and exit the working platform **14** through an access point **70**. Ladders **20** may be permanently attached to parallel strut **42** and C-shaped roller track **24**, and comprised of vertical ladder supports **78** and transverse ladder steps **80**. In one embodiment, ladders **20** may be positioned such that one ladder aligns with the access point **70** when the working platform **14** is in a nested position, and the other ladder aligns with the access point **70** when the working platform **14** is in an extended position.

[0022] Now referring to FIG. **4**, C-shaped roller tracks **24** of base assembly **12** may be attached to top angles **30**, **32** and configured so that the C-shaped roller tracks **24** can engage a plurality of rolling mechanisms **82** of the working platform **14**. C-shaped roller tracks **24** may include an end cap **88** that prevents disengagement of the C-shaped roller track **24** and the rolling mechanisms **82**. C-shaped roller tracks may also include a locking mechanism **90** that prevents movement of the working platform **14** from the extended position once the locking mechanism **90** has been engaged.

[0023] Now referring to FIGS. **2a** and **4**, lift brackets **92** may be immovably fixed subjacent to, and generally perpendicular to, the C-shaped roller tracks **24**. Lift brackets **92** may be utilized when loading or unloading the elevated work platform vehicle attachment **10**.

[0024] Now referring to FIGS. **3** and **4**, primary connection members **22** may extend outward from, and generally parallel to, vertical posts **36**, **40**. Further, secondary connection members **52** may be attached to top angles **30**, **32**. In this embodiment, primary connection members **22** and secondary connection members **52** may be used to removably attach the elevated work platform vehicle attachment **10** to a motor vehicle (e.g., inside the bed of a standard single-axle dump truck) to assist maintenance workers when pruning and trimming roadside vegetation.

[0025] Now referring to FIGS. **6-9**, working platform **14** of elevated work platform vehicle attachment **10** may include a working platform base **54** and a railing assembly **56**. As best seen in FIG. **7**, working platform base **54** may include opposing pairs of spaced-apart perimeter frame members **58**, **60** joined to one another to form a rectangular area. Cross support frame members **62** may extend between, and generally perpendicular to, lateral perimeter frame members **60** so as to support a working platform deck **64**.

[0026] Referring to FIGS. **6** and **9**, working platform **14** may include railing assembly **56** to prevent a worker from falling off thereof. Railing assembly **56** may be permanently attached to working platform base **54** and may be comprised of vertical rail posts **66**, horizontal top rails **68**, an access point **70**, tool rests **72**, and handles **74**.

[0027] As seen in FIG. **6**, vertical rail posts **66** extend upward from, and generally perpendicular to, working platform base **54** and attach to horizontal top rails **68**. Vertical rail posts **66** and horizontal top rails **68** are positioned so as to form a boundary extending upward from the working platform base **54**. Horizontal struts **76** may extend between, and generally perpendicular to, adjacent vertical rail posts **66**.

[0028] Referring to FIG. **9**, railing assembly **56** may include an access point **70** so that a worker may position themselves on the working platform **14**. In one embodiment, access point **70** may be a door, as seen in FIG. **6**, hingedly connected to the railing assembly **56**. In another embodiment, the door may be connected using spring-loaded hinges to provide additional safety for the worker positioned on the working platform **14**.

[0029] Referring to FIGS. **9** and **10**, tool rests **72** extend laterally from the railing assembly **56** of the working platform **14**. In one embodiment, tool rests **72** may be positioned to receive and hold a tool (e.g., a pole saw) when not in use by the worker positioned on the working platform **14**. Further, handles **74** may be attached to the vertical rail posts **66** of the railing assembly **56**, which may be used by the worker when accessing or departing the working platform **14**.

[0030] Referring to FIGS. **1**, **2a**, and **3**, C-shaped roller assembly **16** of elevated work platform vehicle attachment **10** may include a C-shaped roller track **24** (as seen in FIG. **4**) and a plurality of rolling mechanisms **82** (as best seen in FIG. **8**), each of which may be comprised of rollers **84** connected by a roller axle **86**. As previously discussed, C-shaped roller track **24** may be permanently attached to top angles **30**, **32** (as shown in FIG. **4**), and rolling mechanisms **82** may be permanently attached to working platform base **54** (as shown in FIGS. **7** and **8**).

[0031] As best seen in FIG. **3**, C-shaped roller track **24** and rolling mechanisms **82** may be configured so that C-shaped roller track **24** can engage said rolling mechanisms **82**. An end cap **88** prevents rolling mechanisms **82** from disengaging C-shaped roller track **24**. Once engaged, C-shaped roller track **24** and rolling mechanisms **84** allow for rectilinear movement of working platform **14** between a nested position (FIG. **2a**) and an extended position (FIG. **2b**).

What is claimed is:

1. An aerial work platform attachment comprising:
 - a base assembly; and
 - a working platform comprising:
 - a working platform base; and
 - a railing assembly which bounds the perimeter of the working platform;
 wherein the base assembly is designed to be detachably connected to a vehicle; and
 wherein the working platform is operatively connected to the base assembly for rectilinear movement between a first position where the working platform is in a nested position, superjacent to the base assembly and a second position where the working platform is extended from the base assembly; and
 wherein the base assembly provides cantilever support for the working platform when in the second position.
2. The aerial work platform attachment of claim 1, wherein the working platform is operatively connected to the base assembly by a C-shaped roller assembly.
3. The aerial work platform attachment of claim 2, wherein the C-shaped roller assembly contains a pair of end caps and a pair of locking mechanisms for preventing disconnection of the working platform and the base assembly.
4. The aerial work platform attachment of claim 3, wherein the base assembly includes a pair of primary

connection members and a pair of secondary connection members for detachably connecting the base assembly to the vehicle.

5. The aerial work platform attachment of claim 4, wherein the railing assembly includes an access point and at least a pair of tool rests.

6. The aerial work platform attachment of claim 5, wherein the access point is a door hingedly connected to the railing assembly.

7. The aerial work platform attachment of claim 5, wherein the base assembly includes a pair of ladders.

8. The aerial work platform attachment of claim 7, wherein the base assembly includes a first ladder that aligns with the access point when the working platform is in the first position and a second ladder that aligns with the access point when the working platform is in the second position.

9. The aerial work platform attachment of claim 8, wherein the working platform further comprises a pair of handles.

10. The aerial work platform attachment of claim 9, wherein the base assembly includes a pair of lift brackets for loading or unloading the aerial work platform attachment onto a vehicle.

* * * * *