A VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present application claims priority to and the benefit of U.S. Provisional Patent Application No. 62/770,022, filed on November 20, 2018, the content of which is incorporated herein by reference in its entirety.

BACKGROUND

1. Field

[0002] Aspects and features of embodiments of the present invention relate to a vehicle-mounted elevated access system.

2. Description of Related Art

[0003] In the course of, for example, tactical (police, SWAT, or military), firefighting, and rescue operations, groups of people may need to rapidly enter and/or exit elevated points of interest, including buildings, structures, environmental features, or mobile targets (e.g., commercial aircraft parked on tarmac). To easily and quickly reach these elevated points of interest, external structures, such as external staircases, may be used. Further, in some instances, it may be desired that a continuous route of access and/or egress between the ground and the elevated point of interest be maintained such that rapid movements of personnel between elevations may be achieved at any time throughout the operation.

[0004] Conventional elevated access systems exist which may be mounted or dismounted from various suitable vehicles in order that the vehicle may be used in a variety of functions (e.g., so that the vehicle's utility is not limited). When mounted to a suitable vehicle, such systems generally include a base structure connected to the vehicle at a plurality of points and an access structure including a ramp or stairway,

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which can be inclined with respect to the base structure, providing personnel access between ground level and points some height above the ground.

[0005] However, these conventional elevated access systems suffer drawbacks including:

- a reduction in horizontal overhang of the access structure;
- substantial cantilevered sections of the access structure that are subject to increased bending forces and deflections (e.g., movement under load) as compared to non-cantilevered structures; and
- inherent instability and failure modes such as buckling.

[0006] The above information disclosed in this Background section is only for enhancement of understanding of the background, and therefore, it may contain information that does not constitute prior art.

SUMMARY

[0007] Embodiments of the present invention provide an elevated access system including:

- a movable hinge between an access structure and a base structure, which improves horizontal reach;
- self-deploying and self-stowing handrails/guardrails along the access structure and end platform;
- a self-deploying and self-stowing end platform; and
- access structure actuation components that are substantially loaded in tension and that are attached further along the access structure, thereby reducing cantilevered lengths of the access structure.

[0008] Aspects of embodiments of the present disclosure are directed toward a vehicle-mounted elevated access system.

[0009] According to some example embodiments of the present disclosure, a vehicle-mounted access system including: a fixed base structure including a plurality of track channels; a plurality of movable hinge carriages respectively on and configured to move along the plurality of track channels; an inclinable access structure having a proximal end and a distal end, the proximal end of the inclinable access structure being pivotably connected to the plurality of movable hinge carriages; a lifting mast having a proximal end and a distal end, the distal end of the lifting mast being connected to the distal end of the inclinable access structure by forward tension elements and being connected to the fixed base structure by rear tension elements, the proximal end of the lifting mast being pivotably connected to the fixed base structure; and an actuator connected between the movable hinge carriages and the fixed base structure, the actuator being configured to move the movable hinge carriages to raise the distal end of the inclinable access structure via the forward tension elements, the lifting mast, and the rear tension elements.

[0010] According to some example embodiments, the vehicle-mounted access system further includes an inclinable access handrail positioned along to and pivotably attached to the inclinable access structure.

[0011] According to some example embodiments, the inclinable access handrail is configured to extend into a deployed position by a plurality of linkages.

[0012] According to some example embodiments, the vehicle-mounted access system further including a multi-position end breaching platform that is pivotably connected to the distal end of the inclinable access structure.

[0013] According to some example embodiments, the vehicle-mounted access, further including a platform handrail positioned along and pivotably attached to the multi-position end breaching platform.

[0014] According to some example embodiments, the platform handrail is configured to extend into a deployed position by an action of a multilink kinematic mechanism.

[0015] According to some example embodiments, the vehicle-mounted access system further including a plurality of secondary actuators connected between the distal end of the inclinable access structure and the multi-position end breaching platform.

[0016] According to some example embodiments, the secondary actuators are configured to extend to pivot the multi-position end breaching platform relative to the inclined access structure and to transition a surface of the multi-position end breaching platform into a series of stairs.

[0017] According to some example embodiments, the inclinable access structure further includes a ramp.

[0018] According to some example embodiments, the inclinable access structure further includes a plurality of stairs.

[0019] According to some example embodiments, the plurality of stairs are configured to remain passively parallel to the ground.

[0020] According to some example embodiment, the vehicle-mounted access system further including a controller configured to control movement of the actuator.

[0021] According to some example embodiments, the controller is operated by a touchscreen user interface including: a manual mode; a preset mode; a video streaming mode; and an aircraft mode.

[0022] According to some example embodiments, the preset mode is configured to allow a selection of pre-programmed heights of the distal end of the inclinable access structure.

[0023] According to some example embodiments, in the aircraft mode, the touchscreen user interface displays an aircraft, wherein, in the aircraft mode, the controller is configured to allow for a selection of a pre-programmed height of the distal end of the inclinable access structure by selecting a window on the displayed aircraft.

[0024] According to some example embodiments, the actuator is configured to pull the movable hinge carriages toward the actuator to raise the distal end of the inclinable access structure.

[0025] According to some example embodiments, a method for deploying the vehicle-mounted access system by using a touchscreen user interface, the method including: displaying, by the touchscreen user interface, an image of an aircraft; transmitting, by the touchscreen user interface, a preprogrammed height selected by a user by selecting a window on the image of the aircraft to a controller of the vehicle-mounted access system; and raising, by the controller, a distal end of an inclinable access structure connected to the vehicle-mounted access system to the preprogrammed height.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] FIG. 1 is a perspective view of a vehicle-mounted elevated access system according to an embodiment of the present invention;

[0027] FIG. 2 shows an enlarged portion A of FIG. 1;

[0028] FIG. 3 is a perspective view of an end platform shown in FIG. 1 in a deployed configuration;

[0029] FIGS. 4-8 show steps of deploying the vehicle-mounted elevated access system from a stowed configuration according to an embodiment of the present invention;

[0030] FIG. 9 shows a graphical user interface (GUI) for controlling the vehicle-mounted elevated access system in a manual mode according to an embodiment of the present invention; and

[0031] FIG. 10 shows the GUI shown in FIG. 9 in an aircraft mode according to an embodiment of the present invention.

DETAILED DESCRIPTION

[0032] The exemplary embodiments of the present invention disclosed herein are directed to a vehicle-mounted platform including one or more inclinable access structures connected to a base structure at movable hinge points, which allows the entire access structure to advance toward an above-ground target prior to and/or during elevation/inclination. In some embodiments, the actuation devices, structures, and mechanisms of the access structure are substantially loaded in tension, and the handrails/guardrails and end platform(s) may be deployed automatically and without manual effort.

[0033] Referring to FIGS. 1-3, a vehicle-mounted elevated access system 100 according to an embodiment of the present invention includes an inclinable access structure 110 connected to (e.g., positioned upon) a fixed base structure (e.g., a fixed base) 105. In some embodiments, a plurality of inclinable access structures 110 may be included in the vehicle-mounted elevated access system 100. In such embodiments, the inclinable access structures 110 may be arranged adjacent to each other or in front/behind each other. The fixed base structure 105 may be mounted to a suitable host vehicle 101 so the vehicle-mounted elevated access system 100 is mobile. In such an embodiment, the fixed base structure 105 has a front end 203 that is positioned near the front of the host vehicle 101 and a rear end 204 opposite to the front end 203 and positioned near the rear of the host vehicle 101.

[0034] The inclinable access structure 110 has a proximal end 201 that is partially connected (e.g., movably and/or pivotably connected to, not rigidly connected) to the fixed base structure 105 and a distal end 202 opposite to the proximal end 201. In a deployed configuration, the distal end 202 is positioned further away from the fixed base structure 105 than is the proximal end 201.

[0035] In various embodiments, the inclinable access structure 110 may include one or more ramps and/or one or more stairways. In the illustrated embodiment, the inclinable access structure 110 includes a stairway including a plurality of steps 113. The steps 113 may be configured to remain passively parallel to the ground (e.g., may remain parallel to the ground due to gravity) during all angles of operation of the inclinable access structure 110 (e.g., during inclination and declination of the inclinable access structure 110).

[0036] Hereinafter, the lifting mechanism for the inclinable access structure 110 will be described in more detail. A plurality of lifting masts 120 (e.g., one lifting mast 120 on each side of the inclinable access structure 110, or one lifting mast 120 on each side of each of the inclinable access structures 110) are pivotably connected to the fixed base structure 105 at a proximal end of the lifting masts 120. A distal end of each of the lifting masts 120 is connected to (e.g., pivotably connected to) forward tension element(s) 111 and rear tension element(s) 112. The forward tension elements 111 are respectively connected to (e.g., extend between) the distal end of the lifting masts 120 and the distal end 202 of the inclinable access structure 110, and the rear tension elements 112 are respectively connected to (e.g., extend between) the distal end of the lifting masts 120 and the fixed base structure 105.

[0037] The forward and rear tension elements 111/112 may be rods, or plates, such as metal or composite rods or plates, or they may be cables or ropes, such as metal cable or synthetic fiber rope or cable. In other embodiments, the forward and rear

tension elements 111/112 may be cables or ropes, such as metal cables or synthetic fiber ropes or cables. In some embodiments, the forward tension elements 111 may each be a single, continuous element between the lifting mast 120 and the distal end 202 of the inclinable access structure 110, and the rear tension elements 112 may each include a plurality of elements pivotably connected to each other. Referring to, for example, FIG. 4, by adding a pivotable joint (e.g., a pivotable connection) in the rear tension element 112, the rear tension element 112 may be more compactly folded in a retracted/declined position.

[0038] In addition, the fixed base structure 105 includes a plurality of track channels 107 (e.g., one track channel 107 on each side of the inclinable access structure 110). The track channels 107 are oriented from the front end 203 to the rear end 204 of the fixed base structure 105 (e.g., an axis of each of the track channel 107 extends in a direction from the front end 203 toward the rear end 204 of the fixed base structure 105).

[0039] One or more movable hinge points (e.g., moveable hinge carriages) 108 may be arranged on each track channel 107. The movable hinge points 108 may include a plurality of bearings (e.g., wheels or sliding/bearing surfaces and plates) such that they may move longitudinally along the respective track channel 107.

[0040] The inclinable access structure 110 may be pivotably attached to the movable hinge points 108, which are arranged on the track channels 107. For example, a proximal end 201 of the inclinable access structure 110 may be connected to one movable hinge point 108.

[0041] Actuators 140 may be connected between the movable hinge points 108 and the front end 203 of the fixed base structure 105. In various embodiments, the actuators 140 may be hydraulic cylinders (e.g., double-acting hydraulic cylinders), and in such an embodiment, the barrel is connected to the front end 203 of the fixed base structure 105

and the piston rod is connected to the movable hinge points 108, but the present invention is not limited thereto. In other embodiments, the actuators 140 may be screw-type actuators, such as ACME or ball screw actuators, or a belt drive, rack and pinion, gear and track, or a set of winches, but the present invention is not limited thereto. The actuators 140 may be configured to translate (e.g., move or pull) the movable hinge points 108 along the track channels 107 toward the front end 203 of the fixed base structure 105, thereby moving the proximal end 201 of the inclinable access structure 110. As the proximal end 201 of the inclinable access structure 110 moves toward the front end 203 of the fixed base structure 105, the distal end 202 of the inclinable access structure 110 is elevated (e.g., pivoted upwardly) about the lifting masts 120 due to the fixed lengths of the front and rear tension elements 111/112. For example, because the front and rear tension elements 111/112 do not extend (e.g., stretch), as the proximal end 201 of the inclinable access structure 110 moves forward due to the movement of the movable hinge points 108, the distal end 202 of the inclinable access structure 110 is pulled upwardly (e.g., is inclined) due to the restrictive force applied by the front and rear tension elements 111/112. Put another way, because the length of the front and rear tension elements 111/112 cannot extend beyond a maximum length, as the proximal end 201 of the inclinable access structure 110 moves toward the front end 203 of the fixed base structure 105, the distal end 202 of the inclinable access structure 110 moves upwardly (e.g., inclines). Reversing the actuators 140 translates (e.g., moves or pushes) the movable hinge points 108 rearward (e.g., toward a rear of the vehicle 101), thereby declining the inclinable access structure 110 and stowing the inclinable access structure 110.

[0042] In some embodiments, the fixed base structure 105 includes a deck section 106 that is positioned near the rear end 204 thereof and at (or adjacent to) the proximal end 201 of the inclinable access structure 110. The deck section 106 may have a

substantially flat surface parallel to and facing away from the ground (e.g., facing upward). The surface of the deck section 106 is suitable for standing and walking, and may have a similar surface structure as that of the inclinable access structure 110 or may have a different surface structure than that of the inclinable access structure 110. For example, because the deck section 106 does not incline (e.g., remains flat), the deck section 106 may have a continuous, flat surface, optionally with ribs or grooves formed therein for additional traction, as opposed to stairs as in the inclinable access structure 110.

[0043] In addition, the elevated access system 100 includes a multi-position end breaching platform 125. The multi-position end breaching platform 125 may be pivotably connected to the distal end 202 of the inclinable access structure 110. The multi-position end breaching platform 125 has a surface 126 that, in a deployed configuration, faces away from and is parallel to the ground (e.g., is substantially flat). In the retracted position, the multi-position end breaching platform 125 lies on the inclinable access structure 110 to provide compact overall dimensions. The surface 126 is suitable for standing and walking and may have a similar surface structure as that of the inclinable access structure 110 or a different surface structure as that of the inclinable access structure 110. For example, when the inclinable access structure 110 is stairs, the surface 126 may also be stairs. But in another embodiment, when the inclinable access structure 110 is stairs, the surface 126 may be a flat (with or without ribs or grooves for traction) surface. Further, the deck section 106, the inclinable access structure 110, and the multi-position end breaching platform 125 provide a substantially continuous path (e.g., movement path) for one or more people and/or machines (e.g., drones, robots, etc.) to access an elevated location by walking or running from the deck section 106, up the inclinable access structure 110, onto the multi-position end breaching platform 125, and then into the elevated position. In various embodiments, the multi-position end

breaching platform 125 may be configured to remain passively parallel to the ground during operation of the vehicle-mounted elevated access system 100. For example, the surface 126 may remain parallel to the ground regardless of the inclination angle of the inclinable access structure 110 to which it is connected.

[0044] The multi-position end breaching platform 125 may also be controlled to be inclined at an angle corresponding to the inclination angle of the inclinable access structure 110 to allow access to even higher points of interest. For example, in some embodiments, the multi-position end breaching platform 125 may be configured to be raised by actuators (e.g., secondary actuators) 301. In some embodiments, the actuators 301 may be electric actuators, but the present invention is not limited thereto. The actuators 301 are connected between the distal end 202 of the inclinable access structure 110 and the multi-position end breaching platform 125 (e.g., a proximal end of the multi-position end breaching platform 125 adjacent to the distal end 202 of the inclinable access structure 110). The actuators 301 can push the multi-position end breaching platform 125 upwardly to match (or substantially match) the angle of the inclinable access structure 110.

[0045] The elevated access system 100 may include handrails 130 mounted to the inclinable access structure 110 and handrails 131 mounted to the multi-position end breaching platform 125. The handrails 130 may be positioned along and pivotably mounted to the inclinable access structure 110, and the handrails 131 may be positioned along and pivotably mounted to the multi-position end breaching platform 125. In some embodiments, handrails 130 and handrails 131 may be configured to operate independently from each other. The handrails 130/131 may operate by gravity. For example, as the inclinable access structure 110 is deployed, the handrails 130/131 may fall backwards, thereby extending the handrails 130/131. In some embodiments, the handrails 130/131 may be pivotably mounted to the inclinable access structure 110

and the multi-position end breaching platform 125, respectively, and may have stops such that, when the pivot to the extended position is due to gravity, the stop pivoting at a desired angle due to the stops. In the illustrated embodiment, the handrails 131 and 130 may be connected to the inclinable access structure 110 via a deployment linkage 115 such that the motion of the inclinable access structure 110 passively (e.g. without additional actuation) deploys and stows the handrails 131 and 130 while rigidly maintaining their position (e.g., their stowed or deployed position).

[0046] In various embodiments, a control system (e.g., a controller) 135 may be housed in or on the vehicle and/or within the fixed base structure 105. The control system 135 is configured to control the operation of the vehicle-mounted elevated access system 100. For example, the control system 135 may control the movement of the actuators 140 and the movement of the actuators 301 to determine the configuration and overall height of the inclinable access structure 110.

[0047] A method of deploying (e.g., extending, raising, or inclining) an embodiment of the vehicle-mounted elevated access system 100 will be described in more detail hereinafter with reference to FIGS. 4-8.

[0048] Referring to FIG. 4, which shows the vehicle-mounted elevated access system 100 in the stowed (or retracted) configuration, the inclinable access structure 110 is positioned flat against the fixed base structure 105, and the multi-position end breaching platform 125 is folded against (e.g., is folded against a top surface of) the inclinable access structure 110. In this configuration, the handrails 130 and 131 are in a stowed configuration in which they are positioned flat against the fixed base structure 105, and the lifting masts 120 are in a stowed configuration in which they are pivoted downwardly near the fixed base structure 105.

[0049] Referring to FIG. 5, in the deployed flat configuration, the inclinable access structure 110 remains flat against the fixed base structure 105, but the lifting masts 120

are shifted into their deployed position due to retraction (e.g., partial retraction) of the actuators 140, which pulls the tension elements 111 forward, which cause the movable hinge points 108 to move along the track channels 107, which causes the lifting masts 120 to move into a deployed configuration (or position). Additionally, as the movable hinge points 108 translate the inclinable access structure 110 forward, the multi-position end breaching platform 125 is shifted into its flat deployed position by way of forces applied through the deployment mechanism 302, and reacted by the fixed base structure 105, and host vehicle 101. The forward tension elements 111 and the rear tension elements 112 pivot relative to the fixed base structure 105 during the movement of the actuators 140 but do not bend or fold. In various embodiments, the lifting masts 120, the handrails 131, and the multi-position end breaching platform 125 may be deployed concurrently (or substantially simultaneously).

[0050] In the deployed flat configuration, the tops of the lifting masts 120 are raised above the fixed base structure 105. The inclinable access structure 110 is connected to the lifting masts 120 by the forward tension elements 111, and the lifting masts 120 are connected to the fixed base structure 105 by way of rear tension elements 112 and the pivotable connection 104. In the deployed flat configuration, the multi-position end breaching platform 125 is oriented in a flat, deployed position in which the multi-position end breaching platform 125 is folded out so that the surface 126 thereof faces upwardly and is parallel to the inclinable access structure 110. In various embodiments, the multi-position end breaching platform 125 may be configured to remain passively parallel to the ground in the flat deployed position. In this configuration, the handrails 131 of the multi-position end breaching platform 125 may be deployed automatically (e.g., may be deployed passively, without additional actuation) via a rigid linkage 303 (e.g., may be a multilink kinematic mechanism) while the handrails 130 of the inclinable access structure 110 remain flat against the fixed base structure 105.

[0051] The elevated access system 100 shifts from the deployed flat configuration shown in FIG. 5 to the deployed low angle configuration shown in FIG. 6 by further movement of the actuators 140. In the deployed low angle configuration shown in FIG. 6, the distal end 202 of the inclinable access structure 110 is raised to a height above the fixed base structure 105. As described above, because the steps 113 of the inclinable access structure 110 are configured to remain passively parallel to the ground, they remain parallel to the ground in this configuration without external input. Similarly, the multi-position end breaching platform 125 is pivotably connected to the distal end 202 of the inclinable access structure 110 such that it remains passively parallel to the ground without external input. In various embodiments, the multi-position end breaching platform 125 may be configured to remain passively parallel to the ground during operation of the vehicle-mounted elevated access system 100. When the inclinable access structure 110 is moved to an angle above parallel, such as the low angle deployed configuration shown in FIG. 6, the handrails 130 may be extended (or deployed) via the motion of the deployment linkages 115 connected to the inclinable access structure 110 and to the proximal ends of the handrail uprights 116. Such linkages may be disconnected to allow handrails 130 to lay flat on the inclinable access structure 110 when desired. In the low angle deployed configuration, both the handrails 130 and 131 may be in the extended (or deployed) configuration (or position).

[0052] The elevated access system 100 shifts from the deployed low angle configuration shown in FIG. 6 to the deployed high angle configuration as shown in FIG. 7 by further movement of the actuators 140. Referring to FIG. 7, in the deployed high angle configuration, the distal end 202 of the inclinable access structure 110 is raised to a height greater than that reached in the deployed low angle configuration shown in FIG. 6. As in the other configurations, the steps 113 of the inclinable access structure 110 and the surface 126 of the multi-position end breaching platform 125 remain passively

parallel to the ground. The handrails 130 remain substantially parallel to the inclinable access structure 110, and the handrails 131 remain substantially parallel to the multi-position end breaching platform 125.

[0053] The elevated access system 100 shifts from the deployed high angle configuration shown in FIG. 7 to the deployed high angle configuration with the multi-position end breaching platform 125 deployed in a stairway configuration as shown in FIG. 8 by extension (e.g., further extension) of the actuators 301. Referring to FIG. 8, when the multi-position end breaching platform 125 is in the stairway configuration, the tread surface 126 of the multi-position end breaching platform 125 separates and rotates into a series of stairs which align as an extension of the inclinable access structure 110 and is not parallel to the ground as in the above-described configurations. The multi-position end breaching platform 125 is deployed into the stairway configuration by movement (e.g., extension) of the actuators 301.

[0054] Although the multi-position end breaching platform 125 is only shown as entering the stairway configuration when the inclinable access structure 110 is in its highest configuration, that is, the high angle configuration, the multi-position end breaching platform 125 may enter the stairway configuration regardless of the position (or configuration) of the inclinable access structure 110 as long as it is in at least the deployed flat configuration shown in FIG. 5 (e.g., as long as the multi-position end breaching platform 125 is folded out from the inclinable access structure 110).

[0055] Further, although the inclinable access structure 110 is shown as being deployed into certain configurations, the inclinable access structure 110 can be deployed to any height between the deployed flat configuration shown in FIG. 5 to the deployed high angle configuration shown in FIG. 8. Put another way, the inclination angle of the inclinable access structure 110 is not limited to the distinct angles shown in FIGS. 5-8 but may be raised to any desired height (e.g., to any desired angle) between

the deployed flat configuration shown in FIG. 5 and the deployed high angle configuration shown in FIG. 8. Nor are the angles of the inclinable access structure 110 and the multi-position end breaching platform 125 shown in FIG. 8 intended to be limiting of the possible range of motion of these components.

[0056] In some embodiments, a user may be able to control the inclinable access structure 110 and/or the multi-position end breaching platform 125 to reach a desired height by using a controller. For example, a user may input or select a desired height for vehicle-mounted access system 100 (e.g., the distal end of the multi-position end breaching platform 125), and the vehicle-mounted elevated access system 100 may deploy itself to the desired height. For example, the controller 135 may have a look-up table of values comparing movement of the actuators 140 to the overall height of the elevated access system 100. And, in some embodiments, the controller 135 may store heights of various entry points, etc., such as the height of a particular aircraft door above the ground. In such an embodiment, a user may select which door of an aircraft the elevated access system 100 is desired to reach, and by using the software look-up table and stored information relating to the height of the selected aircraft door, the elevated access system 100 may deploy the inclinable access structure 110 and the multi-position end breaching platform 125 to substantially the correct height to reach the selected aircraft door.

[0057] FIG. 9 illustrates a graphical user interface 900 for communicating with the controller according to an embodiment of the present invention.

[0058] Referring to FIG. 9, the graphical user interface 900 communicates with the controller on the vehicle-mounted elevated access system 100 to control the operation of the system. The graphical user interface 900 may operate on a suitable device using touchscreen input methods, such as mobile devices including mobile phones, tablets, etc. The graphical user interface 900 is compatible with multiple touch enabled

operating systems including, but not limited to: macOS, iOS, Android, Windows. The graphical user interface 900 may communicate with the controller of the vehicle-mounted elevated access system 100 via a cellular connection, a WiFi connection by using in-vehicle WiFi hotspot (e.g., a local-area WiFi network), or Bluetooth. Over the Air (OTA) updates are available for software running on device that have an internet connection. The graphical user interface 900 may incorporate programmed logic with feedback from sensors and switches to prevent mechanical interference between mechanisms, such that, for example the multi-position end breaching platform 125 does not extend unless the inclinable access structure 110 is raised to or above 1 degree). In some embodiments, the touchscreen controls are useable by operators in touch-enabled gloves.

[0059] In various embodiments, graphical user interface 900 can operate in different control modes, including, but not limited to, manual control mode, preset mode, aircraft mode, and video streaming mode. The manual control mode can be selected by pressing the MODE MANUAL button 901. When in manual control mode, individual touch sensitive actuation buttons 902, when held down, control the extension and retraction of various mechanisms and actuators. In some embodiments, the graphical user interface 900 may include an ARM button. In such an embodiment, to move the inclinable access structure 110 and/or the multi-position end breaching platform 125, the user may be to hold down the ARM button along with any actuation button 902 to execute the selected actuation command to prevent or reduce the occurrence of accidental control inputs. The manual control mode also displays a 3D responsive image 903 of the vehicle-mounted elevated access system 100 that highlights the subsystem (or component) being actuated. A stair info box 904 displays real time angle and height of the inclinable access structure 110 and the multi-position end breaching platform 125 by using on board sensors. A large ALL STOP button 905 can be pushed

to immediately cut power to all systems, which will arrest the motion of the system and maintain its position for safety.

[0060] The preset mode can be selected by pressing the MODE PRESETS button 906. When in preset mode, the graphical user interface 900 displays a scrollable list of preset system heights from 3 meters (m) to 9 m in 0.25 m increments. The preset system heights correspond to the height of the overall distal end. While holding down the ARM button (when present), a user presses and release one of the preset height buttons, at which time the graphical user interface 900 will display a "deploying to preset" message and will begin to drive system to the preset height. If at any time, the user releases the ARM button during deployment to the preset height, the control logic will automatically halt all system motion. Once the desired height has been reached, as determined by on-board sensors, the controller will automatically halt all motion and maintain the position (or configuration) of the vehicle-mounted elevated access system 100. Any configuration (e.g., height) can be stored (e.g., permanently stored) in the controller for quick recall by pressing a SAVE CONFIGURATION button. The stored configuration may then be named by a user, such as "West Wing – 2nd Store Balcony".

[0061] The video streaming mode can be selected by pressing the VIEW VIDEO STREAM button. When the VIEW VIDEO STREAM button is selected, the device wirelessly streams live high definition (HD) video from Ethernet cameras mounted to the vehicle-mounted elevated access system. During video streaming, a return arrow in corner of the screen allows user to return to the most recent control screen.

[0062] FIG. 10 illustrates another screen of the graphical user interface (UI) 900 in an aircraft mode according to an embodiment of the present invention.

[0063] When in the aircraft mode, the graphical user interface 900 displays a drop down "Aircraft Selection Menu." The "Aircraft Selection Menu" provides a user with a list of commercial aircraft to choose from, such as the Airbus A380, the Boeing 777, the

Boeing 747, etc. Upon selection of an aircraft, a side view of that aircraft (with identification label) is displayed on the screen with each fuselage door represented as an easily visible button. While holding down the ARM button (when present), a user presses and releases one of the fuselage door buttons, at which time the UI displays a "Deploying to Preset" message and begins to drive the vehicle-mounted elevated access system 100 into a configuration corresponding to the selected door preset. Fuselage door configuration settings may be pre-calibrated to aircraft manufacturer specifications. If at any time, the user releases the ARM button during deployment to preset, the control logic will automatically halt all system motion. Once a preset configuration has been reached, the corresponding fuselage door remains highlighted until a different configuration is selected. The user can select a desired height for the distal end of the inclinable access structure 110 and/or the multi-position end breaching platform 125 by selecting a window on the side view of the displayed aircraft. The height of the window corresponds to the height of the inclinable access structure 110 and/or the multi-position end breaching platform 125.

[0064] It will be understood that when an element or layer is referred to as being "on," "connected to," or "coupled to" another element or layer, it may be directly on, connected, or coupled to the other element or layer or one or more intervening elements or layers may also be present. When an element or layer is referred to as being "directly on," "directly connected to," or "directly coupled to" another element or layer, there are no intervening elements or layers present. For example, when a first element is described as being "coupled" or "connected" to a second element, the first element may be directly coupled or connected to the second element or the first element may be indirectly coupled or connected to the second element via one or more intervening elements.

[0065] The same reference numerals designate the same elements. As used herein, the term “and/or” includes any and all combinations of one or more of the associated listed items. Further, the use of “may” when describing embodiments of the present invention relates to “one or more embodiments of the present invention.” Expressions, such as “at least one of,” when preceding a list of elements, modify the entire list of elements and do not modify the individual elements of the list. Also, the term “exemplary” is intended to refer to an example or illustration. As used herein, the terms “use,” “using,” and “used” may be considered synonymous with the terms “utilize,” “utilizing,” and “utilized,” respectively. As used herein, the terms "substantially," "about," and similar terms are used as terms of approximation and not as terms of degree, and are intended to account for the inherent variations in measured or calculated values that would be recognized by those of ordinary skill in the art.

[0066] It will be understood that, although the terms first, second, third, etc. may be used herein to describe various elements, components, regions, layers, and/or sections, these elements, components, regions, layers, and/or sections should not be limited by these terms. These terms are used to distinguish one element, component, region, layer, or section from another element, component, region, layer, or section. Thus, a first element, component, region, layer, or section discussed below could be termed a second element, component, region, layer, or section without departing from the teachings of example embodiments. In the figures, dimensions of the various elements, layers, etc. may be exaggerated for clarity of illustration.

[0067] Spatially relative terms, such as “beneath,” “below,” “lower,” “above,” “upper,” and the like, may be used herein for ease of description to describe one element or feature’s relationship to another element(s) or feature(s) as illustrated in the figures. It will be understood that the spatially relative terms are intended to encompass different orientations of the device in use or operation in addition to the orientation depicted in the

figures. For example, if the device in the figures is turned over, elements described as "below" or "beneath" other elements or features would then be oriented "above" or "over" the other elements or features. Thus, the term "below" may encompass both an orientation of above and below. The device may be otherwise oriented (rotated 90 degrees or at other orientations), and the spatially relative descriptors used herein should be interpreted accordingly.

[0068] The terminology used herein is for the purpose of describing particular example embodiments of the present invention and is not intended to be limiting of the described example embodiments of the present invention. As used herein, the singular forms "a" and "an" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "includes," "including," "comprises," and/or "comprising," when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

[0069] Also, any numerical range disclosed and/or recited herein is intended to include all sub-ranges of the same numerical precision subsumed within the recited range. For example, a range of "1.0 to 10.0" is intended to include all subranges between (and including) the recited minimum value of 1.0 and the recited maximum value of 10.0, that is, having a minimum value equal to or greater than 1.0 and a maximum value equal to or less than 10.0, such as, for example, 2.4 to 7.6. Any maximum numerical limitation recited herein is intended to include all lower numerical limitations subsumed therein, and any minimum numerical limitation recited in this specification is intended to include all higher numerical limitations subsumed therein. Accordingly, Applicant reserves the right to amend this specification, including the claims, to expressly recite any sub-range subsumed within the ranges expressly recited

herein. All such ranges are intended to be inherently described in this specification such that amending to expressly recite any such sub-ranges would comply with the requirements of 35 U.S.C. § 112(a) and 35 U.S.C. § 132(a).

[0070] Although example embodiments of the vehicle-mounted elevated access system have been described and illustrated herein, many modifications and variations within those embodiments will be apparent to those skilled in the art. Accordingly, it is to be understood that the vehicle-mounted elevated access system according to the present invention may be embodied in forms other than as described herein without departing from the spirit and scope of the present invention. The present invention is defined by the following claims and equivalents thereof.

WHAT IS CLAIMED IS:

1. A vehicle-mounted access system comprising:

a fixed base structure comprising a plurality of track channels;

a plurality of movable hinge carriages respectively on and configured to move along the plurality of track channels;

an inclinable access structure having a proximal end and a distal end, the proximal end of the inclinable access structure being pivotably connected to the plurality of movable hinge carriages;

a lifting mast having a proximal end and a distal end, the distal end of the lifting mast being connected to the distal end of the inclinable access structure by forward tension elements and being connected to the fixed base structure by rear tension elements, the proximal end of the lifting mast being pivotably connected to the fixed base structure; and

an actuator connected between the movable hinge carriages and the fixed base structure, the actuator being configured to move the movable hinge carriages to raise the distal end of the inclinable access structure via the forward tension elements, the lifting mast, and the rear tension elements.

2. The vehicle-mounted access system of claim 1, further comprising an inclinable access handrail positioned along to and pivotably attached to the inclinable access structure.

3. The vehicle-mounted access system of claim 2, wherein the inclinable access handrail is configured to extend into a deployed position by a plurality of linkages.

4. The vehicle-mounted access system of claim 1, further comprising a multi-position end breaching platform that is pivotably connected to the distal end of the inclinable access structure.

5. The vehicle-mounted access system of claim 4, further comprising a platform handrail positioned along and pivotably attached to the multi-position end breaching platform.

6. The vehicle-mounted access system of claim 5, wherein the platform handrail is configured to extend into a deployed position by an action of a multilink kinematic mechanism.

7. The vehicle-mounted access system of claim 4, further comprising a plurality of secondary actuators connected between the distal end of the inclinable access structure and the multi-position end breaching platform.

8. The vehicle-mounted access system of claim 7, wherein the secondary actuators are configured to extend to pivot the multi-position end breaching platform relative to the inclined access structure and to transition a surface of the multi-position end breaching platform into a series of stairs.

9. The vehicle-mounted access system of claim 1, wherein the inclinable access structure further comprises a ramp.

10. The vehicle-mounted access system of claim 1, wherein the inclinable access structure further comprises a plurality of stairs.

11. The vehicle-mounted access system of claim 10, wherein the plurality of stairs are configured to remain passively parallel to the ground.

12. The vehicle-mounted access system of claim 1, further comprising a controller configured to control movement of the actuator.

13. The vehicle-mounted access system of claim 12, wherein the controller is operated by a touchscreen user interface comprising:

a manual mode;

a preset mode;

a video streaming mode; and

an aircraft mode.

14. The vehicle-mounted access system of claim 13, wherein the preset mode is configured to allow a selection of pre-programmed heights of the distal end of the inclinable access structure.

15. The vehicle-mounted access system of claim 13, wherein, in the aircraft mode, the touchscreen user interface displays an aircraft,

wherein, in the aircraft mode, the controller is configured to allow for a selection of a pre-programmed height of the distal end of the inclinable access structure by selecting a window on the displayed aircraft.

16. The vehicle-mounted access system of claim 1, wherein the actuator is configured to pull the movable hinge carriages toward the actuator to raise the distal end of the inclinable access structure.

17. A method for deploying the vehicle-mounted access system according to claim 1 by using a touchscreen user interface, the method comprising:

displaying, by the touchscreen user interface, an image of an aircraft;

transmitting, by the touchscreen user interface, a preprogrammed height selected by a user by selecting a window on the image of the aircraft to a controller of the vehicle-mounted access system; and

raising, by the controller, a distal end of an inclinable access structure connected to the vehicle-mounted access system to the preprogrammed height.

ABSTRACT

A vehicle-mounted access system includes a fixed base structure including a plurality of track channels; a plurality of movable hinge carriages configured to move along the plurality of track channels; an inclinable access structure pivotably connected to the movable hinge points and connected to lifting masts by forward tension elements, lifting masts connected to the fixed base structure by rear tension elements and pivotably connected to the fixed base structure; an actuator connected between the movable hinge carriages and the fixed base structure, the actuator configured to move the movable hinge carriages to raise the distal end of the inclinable access structure via the forward tension elements, the lifting mast, and the rear tension elements.

Mission Ex. 1002-0027

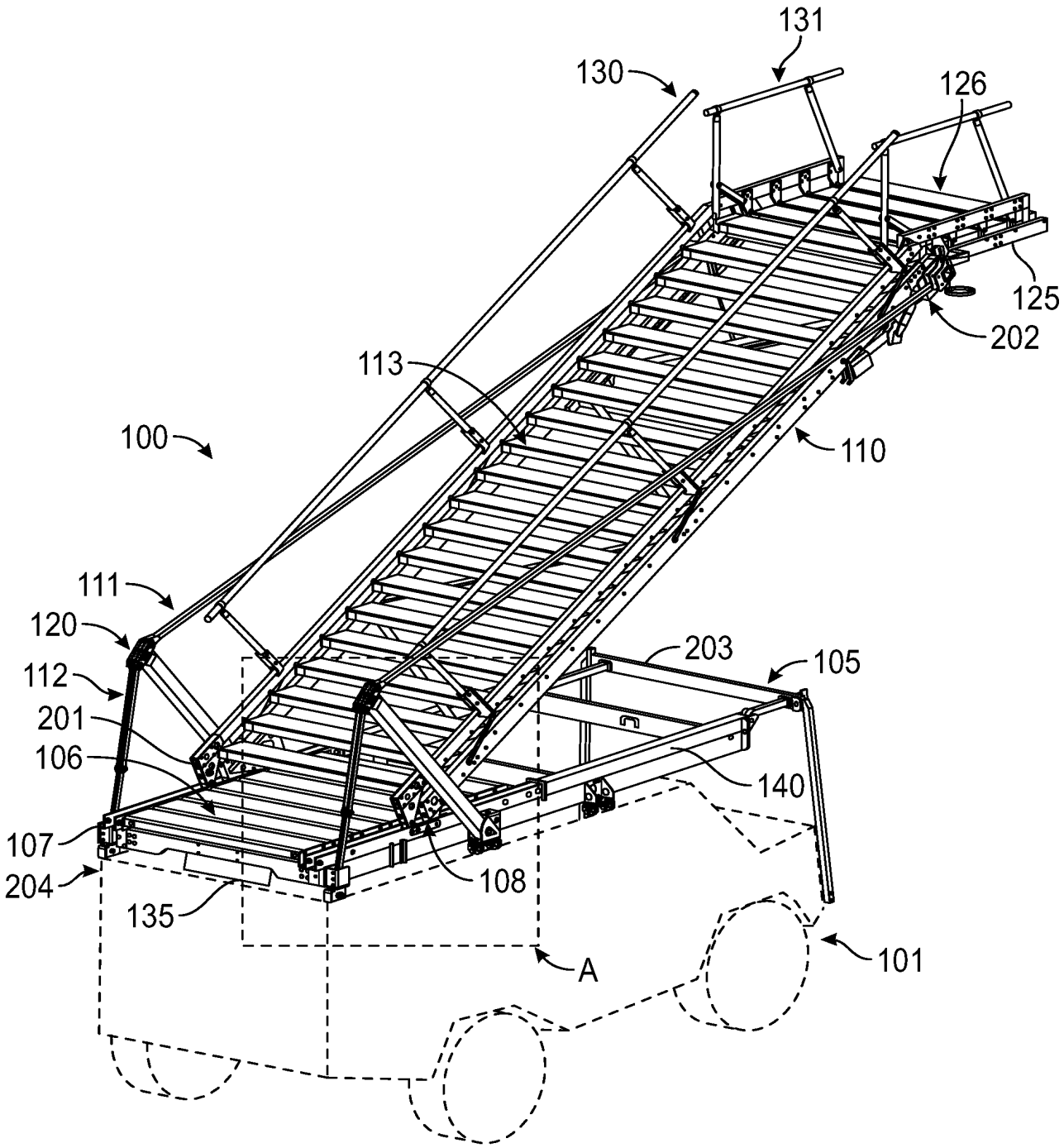

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FIG. 1

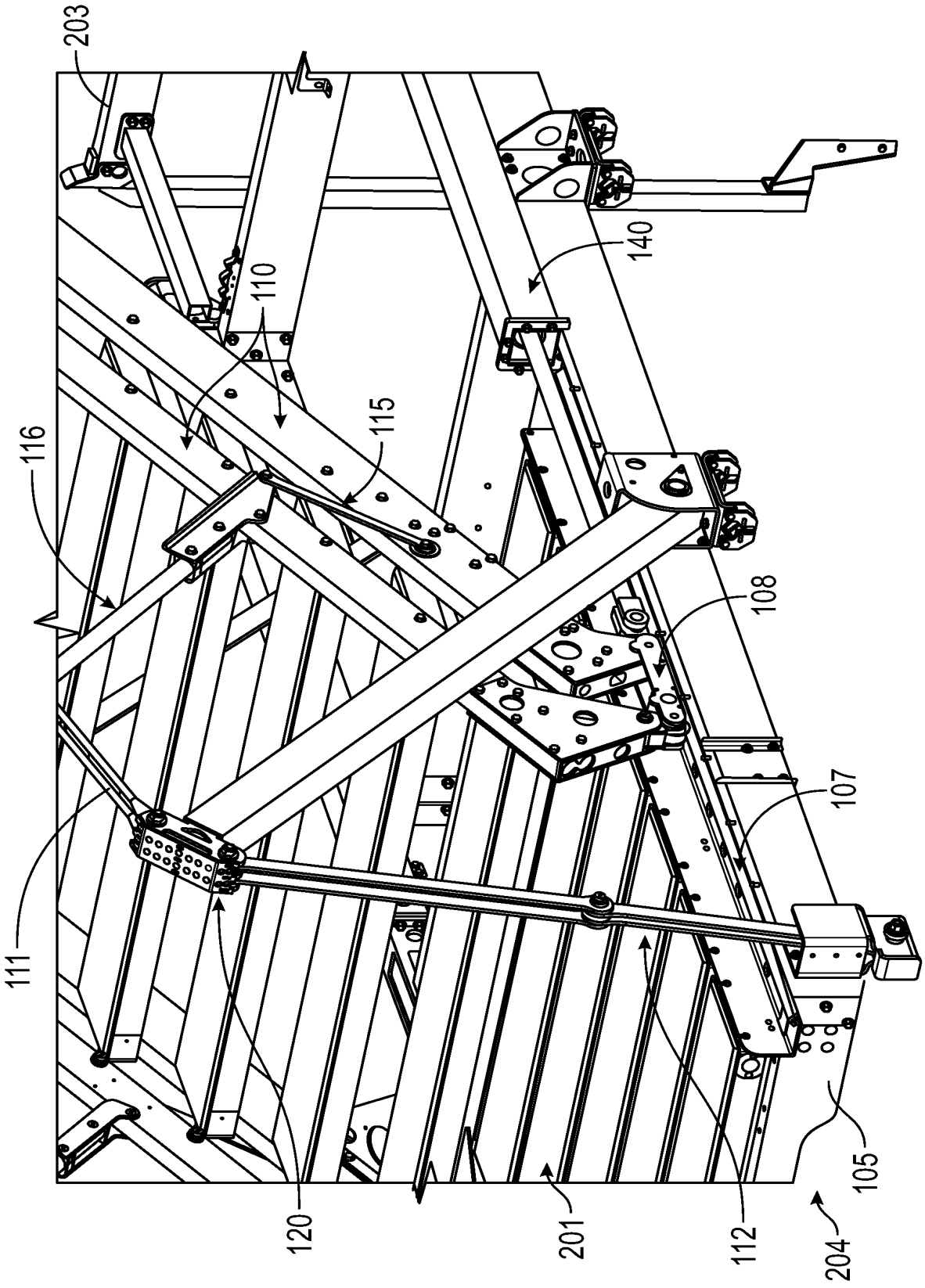


FIG. 2

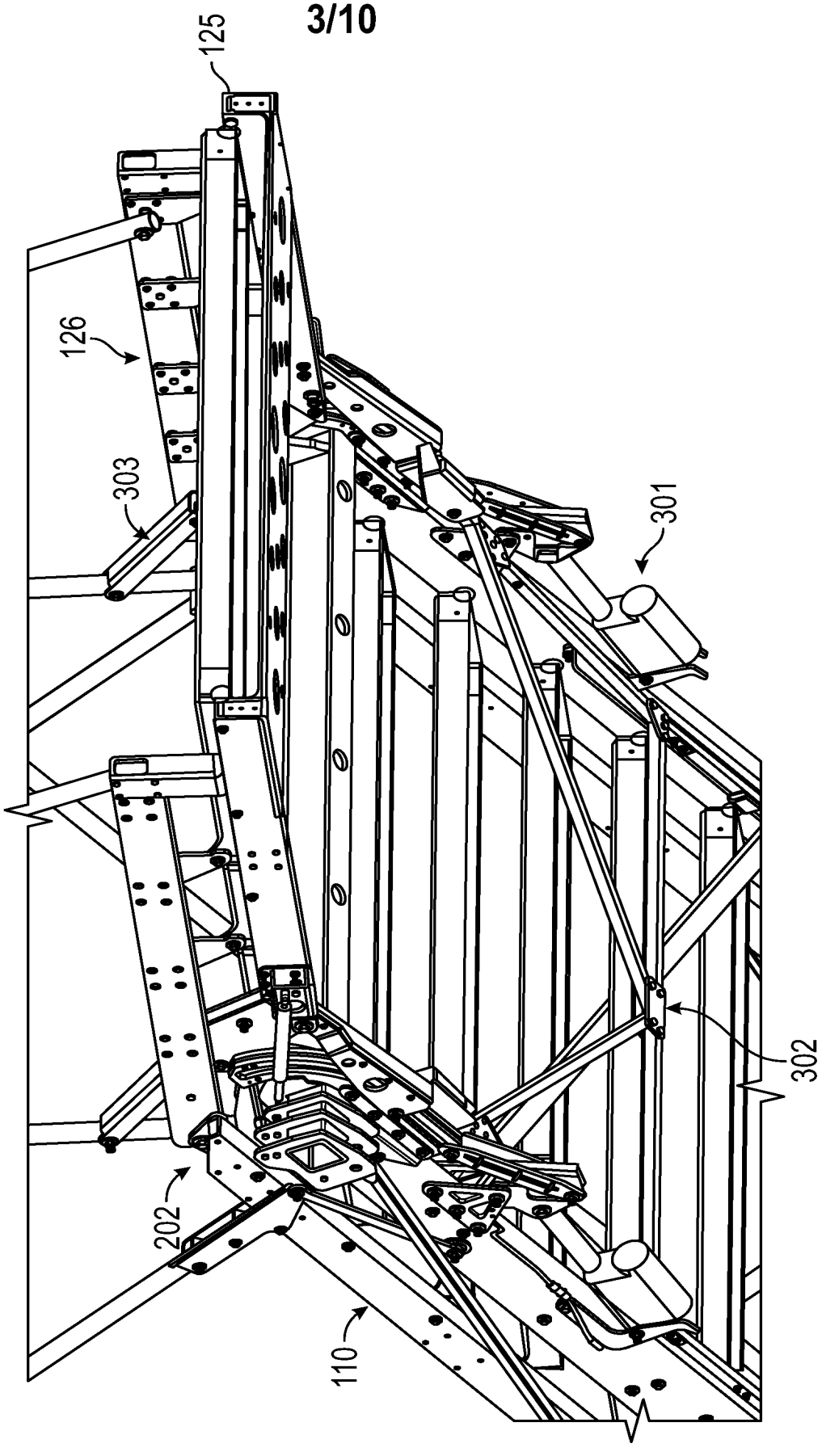


FIG. 3

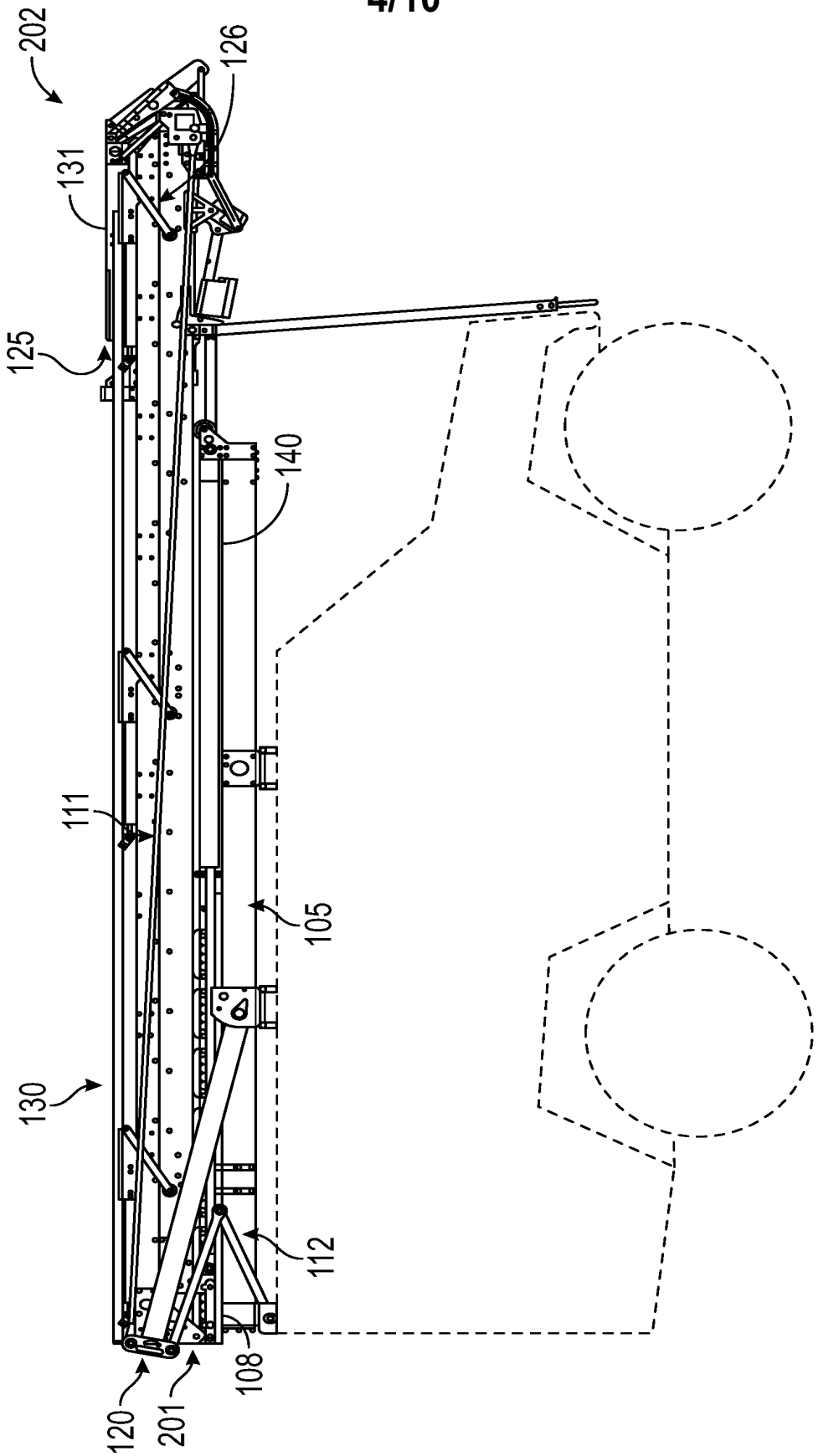


FIG. 4

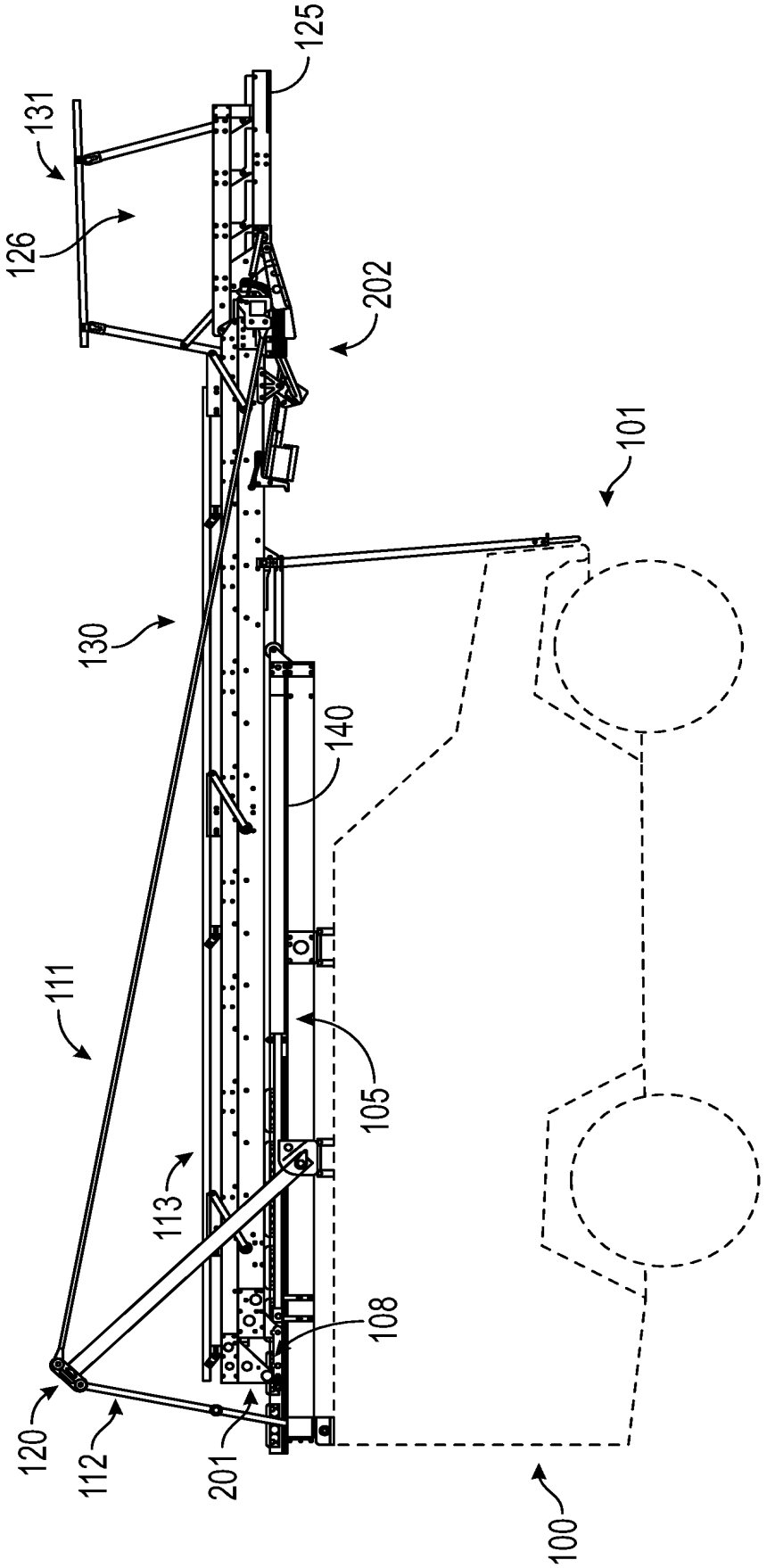


FIG. 5

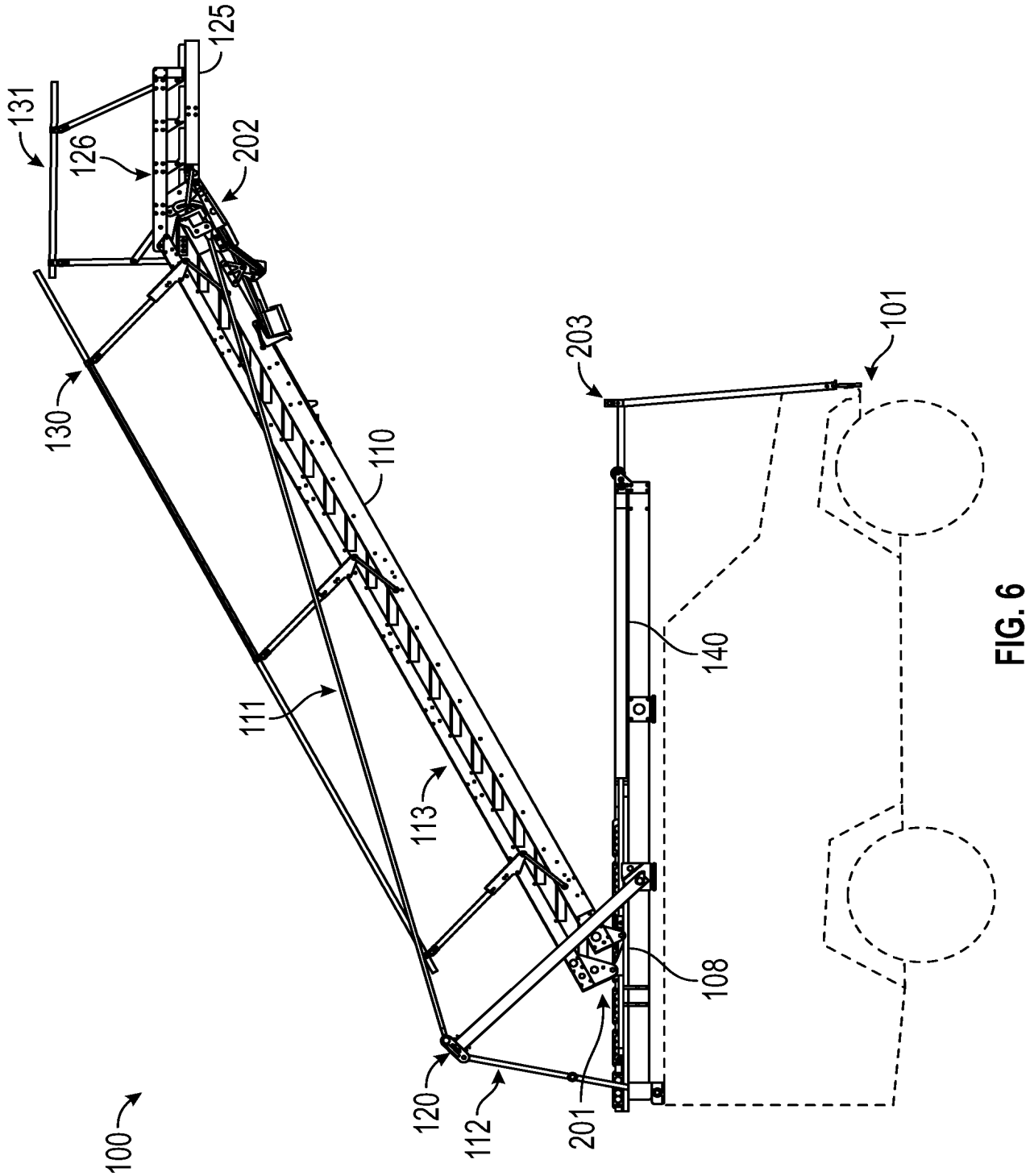


FIG. 6

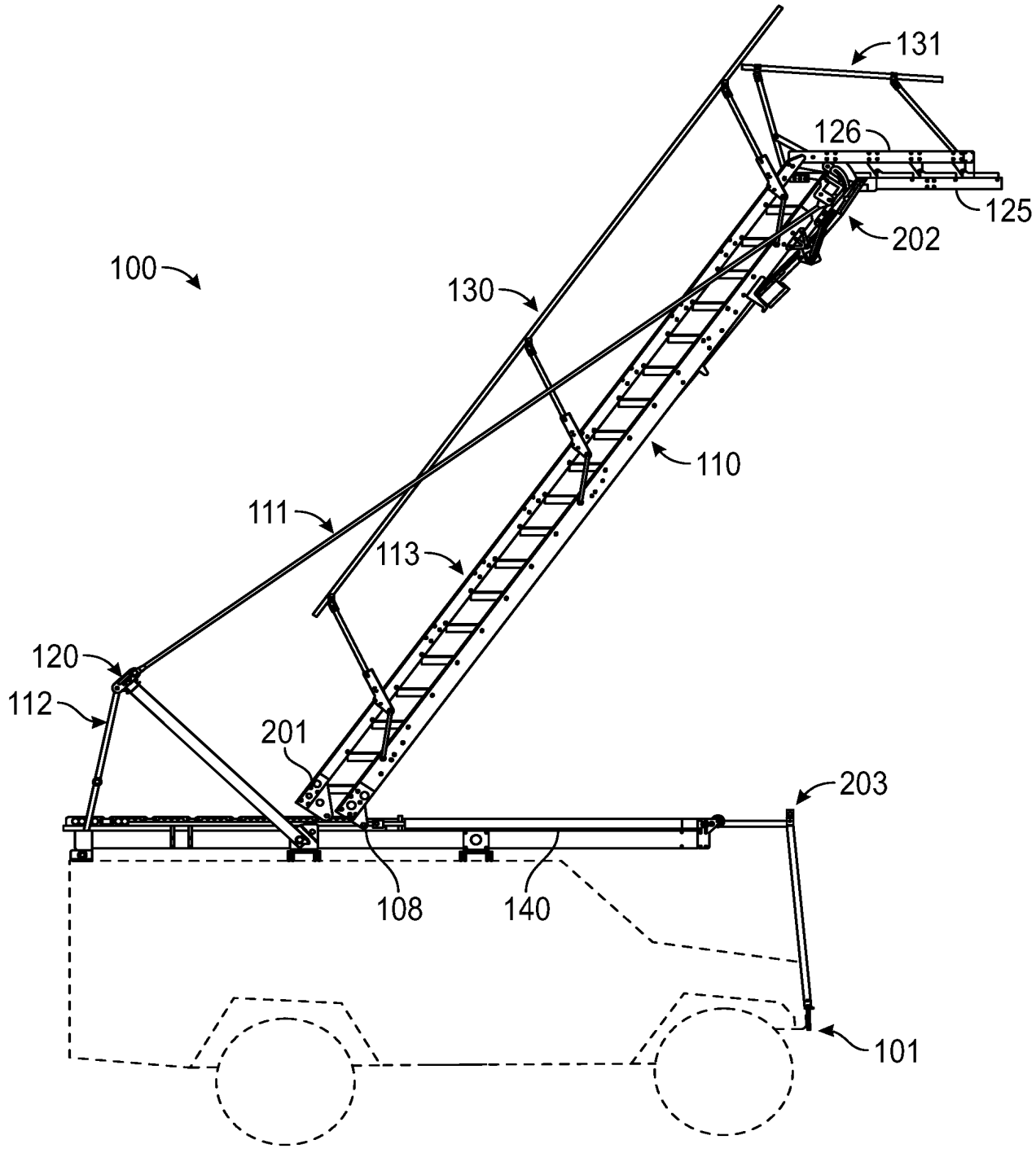


FIG. 7

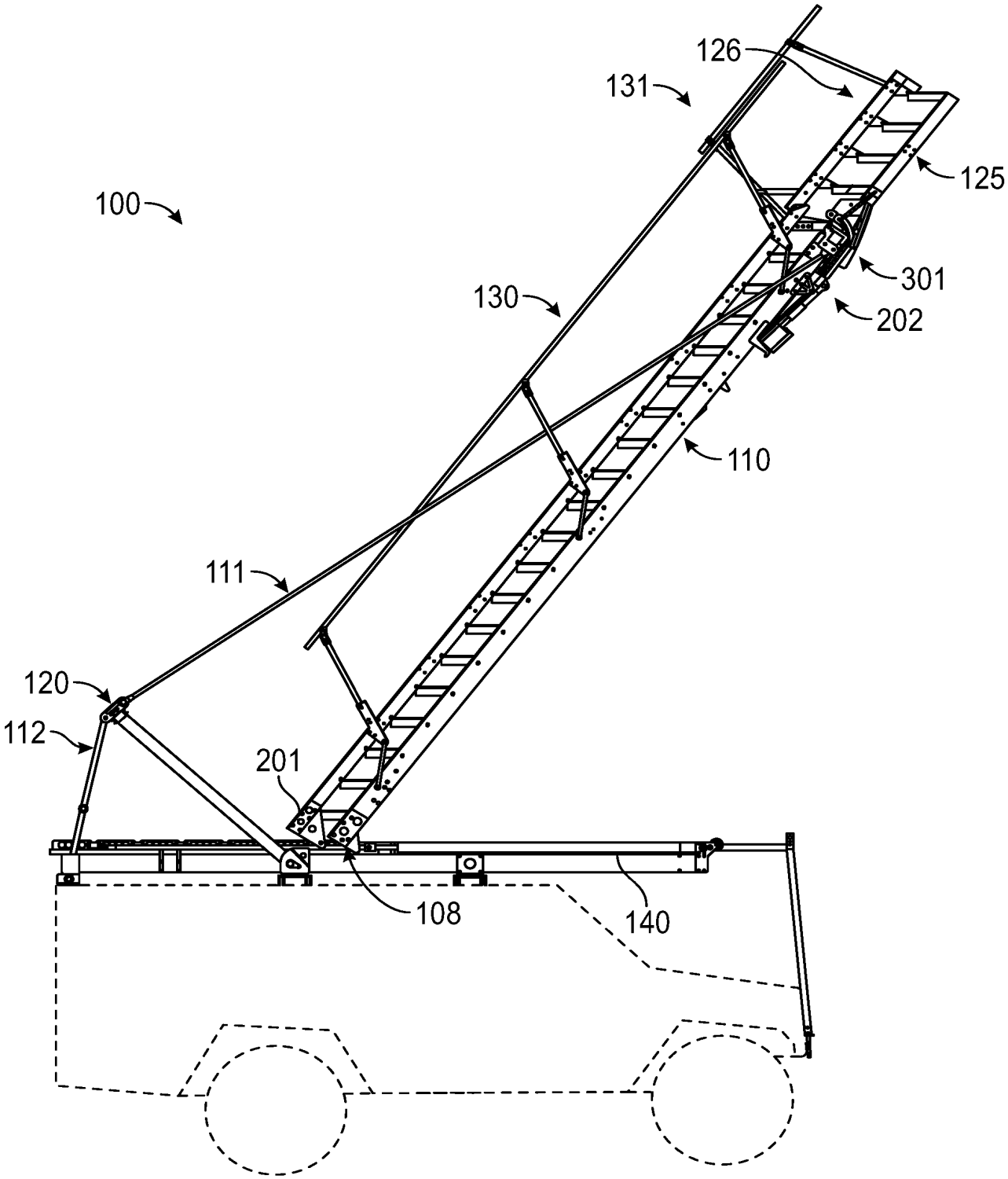


FIG. 8

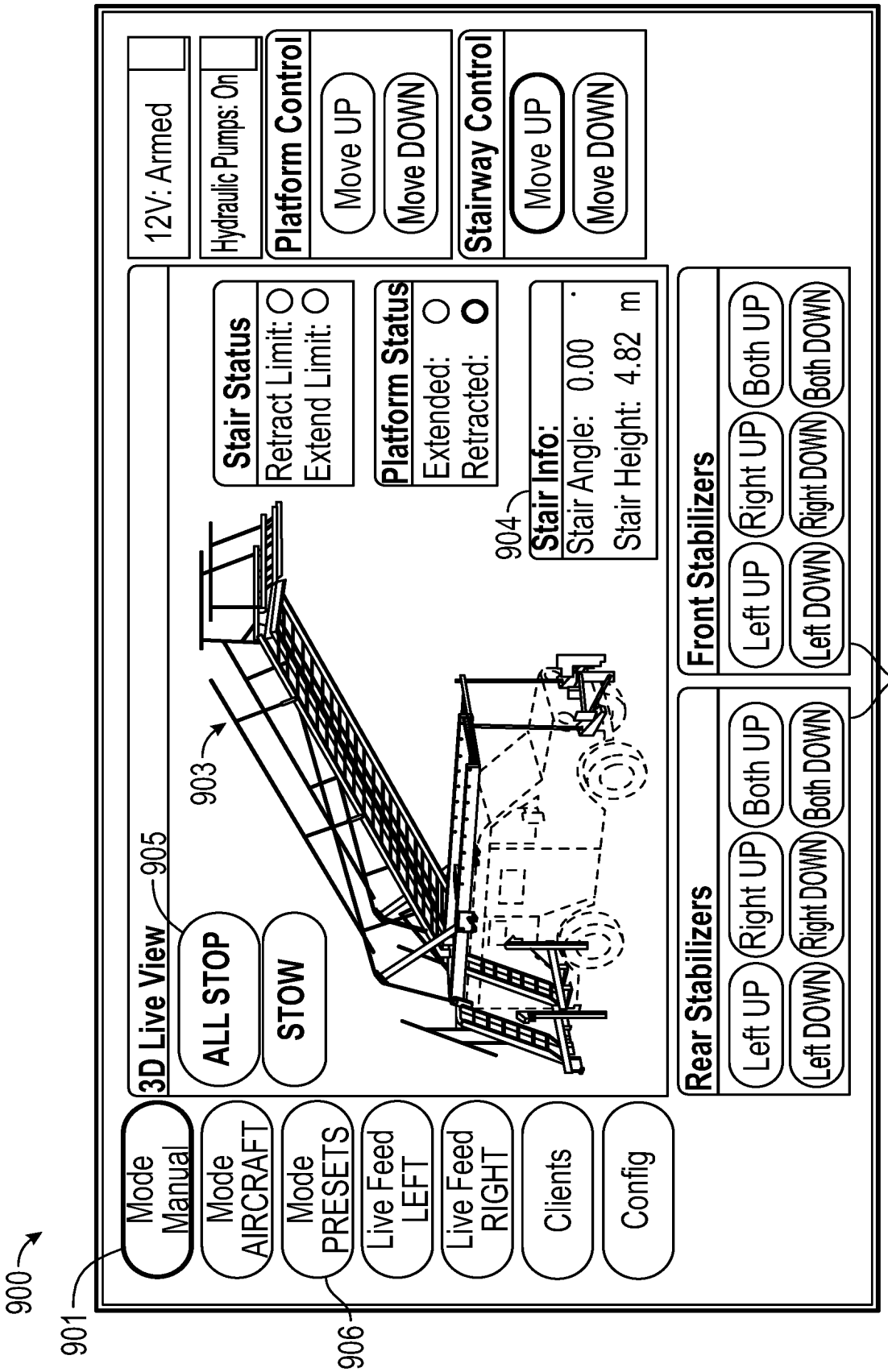

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901
906
Mode Manual
Mode AIRCRAFT
Mode PRESETS
Live Feed LEFT
Live Feed RIGHT
Clients
Config
3D Live View
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ALL STOP
STOW
903
904
Stair Status
Retract Limit:
Extend Limit:
Platform Status
Extended:
Retracted:
Stair Info:
Stair Angle: 0.00
Stair Height: 4.82 m
12V: Armed
Hydraulic Pumps: On
Platform Control
Move UP
Move DOWN
Stairway Control
Move UP
Move DOWN
Rear Stabilizers
Left UP
Right UP
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Left DOWN
Right DOWN
Both DOWN
Front Stabilizers
Left UP
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Both UP
Left DOWN
Right DOWN
Both DOWN
902

FIG. 9

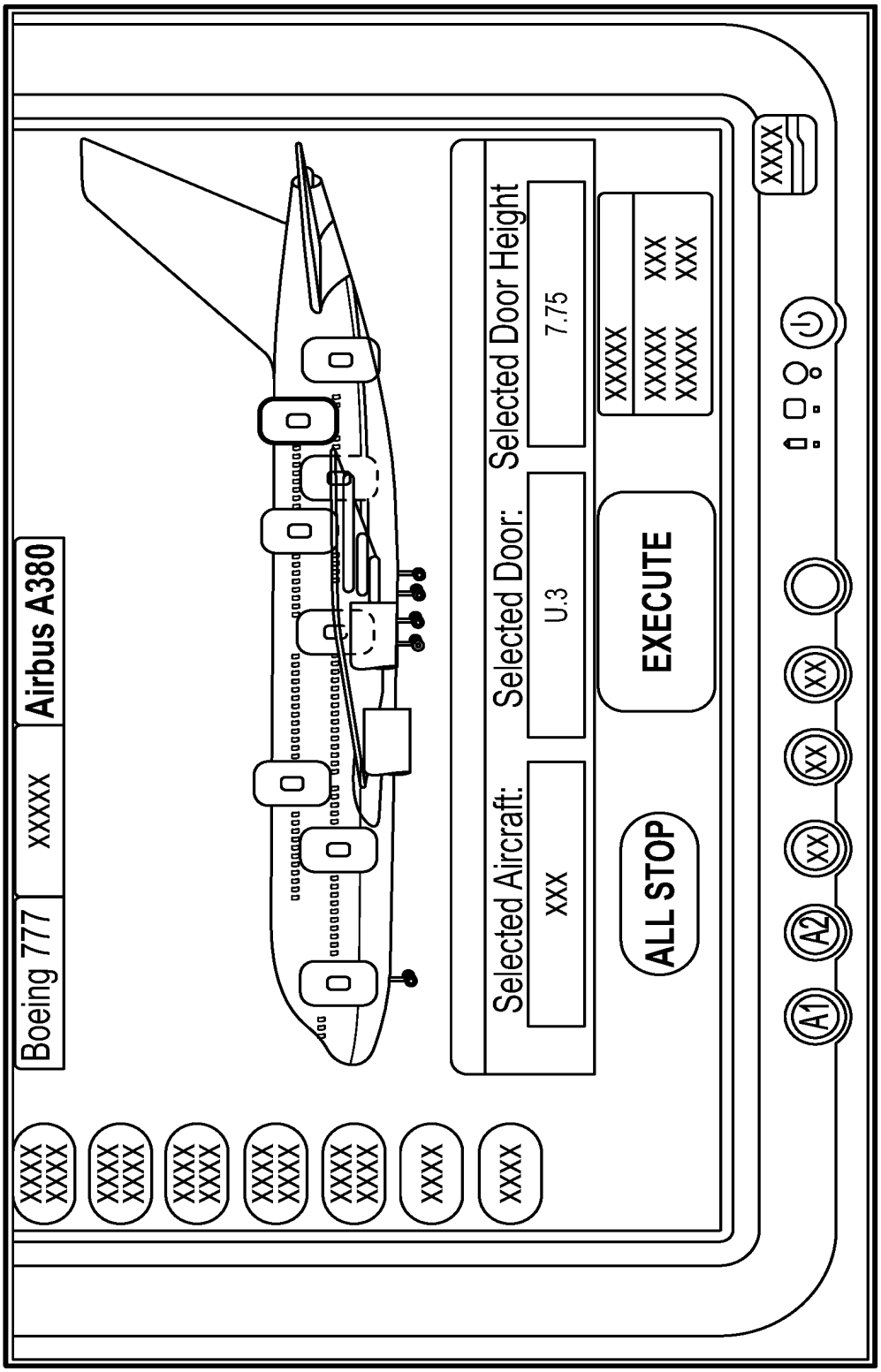

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Selected Aircraft:
XXX
Selected Door:
U.3
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7.75
ALL STOP
EXECUTE
XXXXX
XXXXX XXX
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A1
A2
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FIG. 10

AIA-SEPARATE

INVENTOR'S DECLARATION FOR PATENT APPLICATION PATENT

Title of Invention: A VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

Docket No.: 180720

As the below named inventor, I hereby declare that:

This declaration is directed to the attached application unless the following is checked:

_____ United States Application or PCT International Application Number _____ filed on _____.

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the above-identified application.

I have reviewed and understand the contents of the above-identified application, including the claims.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. § 1001 by fine or imprisonment of not more than five (5) years, or both.

Joshua Clemente
Legal Name of Inventor

11/19/19
Date

Signature

I09751925.1

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

I hereby certify that this correspondence is being EFS-Web transmitted to the United States Patent and Trademark Office on November 19, 2019 at or before 11:59 p.m. Pacific Time under the Rules of 37 CFR § 1.8.

/Sheila R. Harter/
Sheila R. Harter

Appl No.	:	TBD Confirmation No. TBD
Inventor	:	Joshua Clemente
Filed	:	Herewith
Title	:	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM (As Amended)
TC/A.U.	:	TBD
Examiner	:	TBD
Docket No.	:	180720
Customer No.	:	23363

PRELIMINARY AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Post Office Box 29001
Glendale, CA 91209-9001
November 19, 2019

Commissioner:

Prior to examination, please amend the above-identified application as follows:

Amendments to the Specification begin on page 2 of this paper.

Remarks/Arguments begin on page 3 of this paper.

Mission Ex. 1002-0039

Amendments to the Specification:

Please amend the title of the invention as set forth below:

[[A]] VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

Mission Ex. 1002-0040

REMARKS/ARGUMENTS

Prior to examination, Applicant respectfully requests entry to the amended title of the invention as set forth herein. No new matter has been introduced.

If there are any additional fees associated with the filing of this Preliminary Amendment, please charge the prescribed fee(s) to Deposit Account No. 03-1728.

Respectfully submitted,
LEWIS ROCA ROTHGERBER CHRISTIE LLP

By /Daniel Salgado/
Daniel A. Salgado
Reg. No. 76,283
626/795-9900

DAS/srh
SRH 109778654.1-*-11/19/2019 1:59 PM

Mission Ex. 1002-0041

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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/Sheila R. Harter/
Sheila R. Harter

Inventor : Joshua Clemente
Application No. : To Be Determined
Filed : November 19, 2019
Title : VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

Grp./Div. : To Be Determined
Examiner : To Be Determined

Docket No. : 180720

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS IN ACCORDANCE WITH 37 CFR 1.5

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Post Office Box 29001
Glendale, CA 91209-9001
November 19, 2019

Commissioner:

Attached herewith is a General Power of Attorney for the above-identified patent application.

Respectfully submitted,

LEWIS ROCA ROTHGERBER CHRISTIE LLP

By /Daniel Salgado/
Daniel A. Salgado
Reg. No. 76,283
626/795-9900

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SRH 109778585.1-*-11/19/2019 1:58 PM

FEE TRANSMITTAL
UTILITY PATENT APPLICATION

DATE: November 19, 2019

Docket No. : 180720 Duplicate __
Inventor(s) : Joshua Clemente
Title : VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

FEE CALCULATION

CLAIMS AS FILED						
	Number Filed	Number Extra	Large Entity Rate	Small Entity Rate	Micro Entity Rate	Fee
Total Claims	17 – 20	= 0	$100.00	$50.00	0 x $25.00	$0.00
Independent Claims	1 – 3	= 0	$460.00	$230.00	0 x $115.00	$0.00
Multiple-Dependent Claims Fee			$820.00	$410.00	$205.00	$0.00

BASIC FILING, SEARCH, AND EXAMINATION FEES				
	Large Entity Rate	Small Entity Rate	Micro Entity Rate	Fee
Basic Filing Fee	$300.00	$75.00	$75.00	$75.00
Search Fee	$660.00	$330.00	$165.00	$165.00
Examination Fee	$760.00	$380.00	$190.00	$190.00

APPLICATION SIZE FEE							
EFS Paper Size Equivalent	Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof (round up to whole number)	Large Entity Rate	Small Entity Rate	Micro Entity Rate	Fee
37 *.75	= 28 – 100	= 0/50	= 0	$400.00	$200.00	0 x $100.00	$0.00

OTHER				
	Large Entity Rate	Small Entity Rate	Micro Entity Rate	Fee
Late Submission of Oath/Declaration Fee	$160.00	$80.00	$40.00	$0.00
Non-Electronic Filing Fee	$400.00	$200.00	$200.00	$0.00
			TOTAL AMOUNT OF FEES	$430.00
List Independent Claims: 1				

METHOD OF PAYMENT

__X__ Submitted herewith is the fee of $430.00.

__X__ The Commissioner is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required during the **entire pendency** of the application to Deposit Account No. 03-1728. Please show our docket number with any charge or credit to our Deposit Account.

Respectfully submitted,

LEWIS ROCA ROTHGERBER CHRISTIE LLP

By /Daniel Salgado/
Daniel A. Salgado
Reg. No. 76,283
626/795-9900

DAS/srh

UTILITY PATENT APPLICATION TRANSMITTAL
(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.: 180720

5. _____ **Nucleotide and/or Amino Acid Sequence Submission** *(if applicable, all necessary)*
   _____ Computer Readable Copy
   _____ Paper Copy (identical to computer copy)
   _____ Statement verifying identity of above copies

6. **APPLICANT(S) STATUS UNDER 37 CFR § 1.27 or 1.29**
   _____ Applicant(s) and any others associated with it/them under § 1.27(a) are a SMALL ENTITY
   __X__ Applicant(s) and any others associated with it/them under § 1.29(a) are a MICRO ENTITY
   __X__ Certification of Micro Entity Status (Gross Income Basis)

7. **ALSO ENCLOSED ARE**
   _____ Request and Certificate under 35 U.S.C. §122(b)(2)(B)(i) **(Request for Non-Publication)**
   __X__ Preliminary Amendment
   _____ Includes "Cross-Reference to Related Applications"
   _____ A Petition for Extension of Time for the parent application and the required fee are being filed concurrently herewith.
   _____ This application is owned by _____ pursuant to an Assignment recorded at Reel _____, Frame _____
   _____ Information Disclosure Statement (IDS)
   _____ Copies of IDS Citations
   _____ Certified copy of Priority Document(s) (*paper filing only, if foreign priority is claimed)*
   _____ English Translation Document *(if applicable)*
   _____ Return Receipt Postcard (MPEP 503) (should be specifically itemized).
   __X__ Other: Micro-Entity Statement

8. **DIRECT ALL CORRESPONDENCE TO: CUSTOMER NUMBER 23363**

Respectfully submitted,

LEWIS ROCA ROTHGERBER CHRISTIE LLP

By /Daniel Salgado/
Daniel A. Salgado
Reg. No. 76,283
626/795-9900

LEWIS ROCA ROTHGERBER CHRISTIE LLP, ***P.O. BOX 29001, GLENDALE, CA 91209-9001***

Mission Ex. 1002-0044

UTILITY PATENT APPLICATION TRANSMITTAL
(Only for new nonprovisional applications under 37 CFR 1.53(b))

I hereby certify that this correspondence is being EFS-Web transmitted to the United States Patent and Trademark Office on November 19, 2019 at or before 11:59 p.m. Eastern Standard Time under the Rules of 37 CFR § 1.10.

/Sheila R. Harter/
Sheila R. Harter

Docket No. : 180720
Inventor(s) : Joshua Clemente
Title : VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

ADDRESS TO: Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

November 19, 2019

1. __X__ **FEE TRANSMITTAL FORM**

2. **IF A CONTINUING APPLICATION**
_____ This application is a _____ of patent application No. _____.

Prior application information: Examiner _____; Group Art Unit: _____.

__X__ This application claims the benefit of Provisional Application No. 62/770,022 pursuant to 35 U.S.C. §119(e) and 37 CFR §1.78(a)(4).

3. **APPLICATION COMPRISED OF**

Specification
__27__ Specification, claims and Abstract (total pages)

Drawings
__10__ Sheets of formal drawing(s) (FIGS. 1 to 10)

Inventor's Declaration(s)
__X__ Executed Declaration (new or copy from a prior application (37 CFR 1.63(d)) (for continuation and divisional)
_____ Executed Declaration/Assignment (new or copy from a prior application (37 CFR 1.63(d)) (for continuation and divisional)

Power of Attorney by Applicant(s)
__X__ Executed (new or copy from a prior application (37 CFR 1.63(d)) (for continuation and divisional) with transmittal

Application Data Sheet
__X__ Newly executed ADS
_____ Unexecuted ADS

4. _____ **Microfiche Computer Program** *(Appendix)*

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

	Claims		23	26	
	Specification		1	22	
Warnings:					
Information:					
5	Drawings-only black and white line drawings	180720LabeledDwgSet.PDF	548924 3742e8dbc47fd479a76f9023b6acde8063aee47b	no	10
Warnings:					
Information:					
6	Oath or Declaration filed	180720InventorDec.pdf	34342 4a39aabddbeef07ad7b8fdf9f21733375733 9935	no	1
Warnings:					
Information:					
7	Certification of Micro Entity (Gross Income Basis)	180720MicroStatement.pdf	110487 301ce6544f87d4035ffb59df48d76c659e6d3f4d	no	2
Warnings:					
Information:					
8	Power of Attorney	180720POA.pdf	30270 dee39babbf93aa6ad1481e37c6191a3b7b5390f6	no	1
Warnings:					
Information:					
9	Application Data Sheet	180270ADS.pdf	2872765 d7f2dba6f21aeda690149da7e87d68fda70424e2	no	8
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
10	Fee Worksheet (SB06)	fee-info.pdf	35136 147a48f3b5fb8d3a3aca445526216bd6762beb08	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	4285856		

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	180720UtilityTransmittal.pdf	187831 ccecbdebf905884dc87a21413994f0df49951e67	no	3
Warnings:					
Information:					
2	Miscellaneous Incoming Letter	180720POATransmittal.pdf	128423 d953ff864eb73150962842941b51fbe0f761f306	no	1
Warnings:					
Information:					
3		180720PreAmend.pdf	137672 61274edc81fbb5bde612cddc6a7229adb08632d6	yes	3

Multipart Description/PDF files in .zip description

Document Description	Start	End
Applicant Arguments/Remarks Made in an Amendment	3	3
Specification	2	2
Preliminary Amendment	1	1

Warnings:					
Information:					
4		180720Specification.pdf	200006 d40179431b24b10fc37fe8dc6ec9164222937b13	yes	27

Multipart Description/PDF files in .zip description

Document Description	Start	End
Abstract	27	27

Electronic Acknowledgement Receipt

EFS ID:	37798922
Application Number:	16688884
International Application Number:	
Confirmation Number:	6650
Title of Invention:	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM
First Named Inventor/Applicant Name:	Joshua Clemente
Customer Number:	23363
Filer:	Daniel A. Salgado/Sheila Harter
Filer Authorized By:	Daniel A. Salgado
Attorney Docket Number:	180720 (306317-00001)
Receipt Date:	19-NOV-2019
Filing Date:	
Time Stamp:	18:50:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$430
RAM confirmation Number	E2019AII51000167
Deposit Account	031728
Authorized User	Sheila Harter

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.21 (Miscellaneous fees and charges)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**430**

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM
First Named Inventor/Applicant Name:	Joshua Clemente
Filer:	Daniel A. Salgado/Sheila Harter
Attorney Docket Number:	180720 (306317-00001)

Filed as Micro Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
BASIC FILING FEE-UTILITY	3011	1	75	75
UTILITY SEARCH FEE	3111	1	165	165
UTILITY EXAMINATION FEE	3311	1	190	190
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1 The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3 A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent CooperationTreaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Mission Ex. 1002-0052

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	180720 (306317-00001)
	Application Number	
Title of Invention	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Joshua		Clemente	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Philadelphia	State/Province	PA	Country of Residence	US

Mailing Address of Inventor:

Address 1	2111 Ellsworth Street		
Address 2			
City	Philadelphia	State/Province	PA
Postal Code	19146	Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	23363		
Email Address	pto@lrrc.com	Add Email	Remove Email

Application Information:

Title of the Invention	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM		
Attorney Docket Number	180720 (306317-00001)	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	10	Suggested Figure for Publication (if any)	

Mission Ex. 1002-0053

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	180720 (306317-00001)
	Application Number	
Title of Invention	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	23363		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Claims benefit of provisional	62/770022	2018-11-20

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

Mission Ex. 1002-0054

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	180720 (306317-00001)
	Application Number	
Title of Invention	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Mission Ex. 1002-0055

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	180720 (306317-00001)
	Application Number	
Title of Invention	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

◯ Assignee ◯ Legal Representative under 35 U.S.C. 117 ◯ Joint Inventor

◯ Person to whom the inventor is obligated to assign. ◯ Person who shows sufficient proprietary interest

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Applicant:

Address 1			
Address 2			
City		**State/Province**	
Country		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button.

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Mission Ex. 1002-0056

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	180720 (306317-00001)
	Application Number	
Title of Invention	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM	

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Mission Ex. 1002-0057

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	180720 (306317-00001)
	Application Number	
Title of Invention	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Daniel Salgado/			Date (YYYY-MM-DD)	2019-11-19
First Name	Daniel	Last Name	Salgado	Registration Number	76283

Additional Signature may be generated within this form by selecting the Add button.

Mission Ex. 1002-0058

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	180720 (306317-00001)
	Application Number	
Title of Invention	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Mission Ex. 1002-0059

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor	:	Joshua Clemente	Confirmation No. TBD
Application No.	:	TBD	
Filed	:	Herewith	
Title	:	A VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM	
Grp./Div.	:	TBD	
Examiner	:	TBD	
Docket No.	:	180720	

POWER OF ATTORNEY

Commissioner for Patents
P.O.Box 1450
Alexandria, VA 22313-1450

Commissioner:

The undersigned inventor(s) for the above-identified application hereby appoint(s) the practitioners associated with the

CUSTOMER NUMBER 23363

of the firm LEWIS ROCA ROTHGERBER CHRISTIE LLP, telephone 626/795-9900, as attorneys or agents to transact all business in the United States Patent and Trademark Office for the matter identified above, for which (I am/we are) the applicant(s) as inventor(s)

Please direct all correspondence to **CUSTOMER NUMBER 23363**. Direct all telephone calls to Daniel A. Salgado at 626/795-9900, **LEWIS ROCA ROTHGERBER CHRISTIE LLP, P.O. Box 29001, Glendale, California 91209-9001**.

Date 11/19/19 By _____
Joshua Clemente

109751913.1

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Doc Code: MES.GIB
Document Description: Certification of Micro Entity Status (Gross Income Basis)

PTO/SB/15A (07-14)

CERTIFICATION OF MICRO ENTITY STATUS
(GROSS INCOME BASIS)

Application Number or Control Number (if applicable):	Patent Number (if applicable):
First Named Inventor: Joshua Clemente	Title of Invention: A VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

The applicant hereby certifies the following—

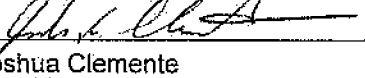
(1) **SMALL ENTITY REQUIREMENT** – The applicant qualifies as a small entity as defined in 37 CFR 1.27.

(2) **APPLICATION FILING LIMIT** – Neither the applicant nor the inventor nor a joint inventor has been named as the inventor or a joint inventor on more than four previously filed U.S. patent applications, excluding provisional applications and international applications under the Patent Cooperation Treaty (PCT) for which the basic national fee under 37 CFR 1.492(a) was not paid, and also excluding patent applications for which the applicant has assigned all ownership rights, or is obligated to assign all ownership rights, as a result of the applicant's previous employment.

(3) **GROSS INCOME LIMIT ON APPLICANTS AND INVENTORS** – Neither the applicant nor the inventor nor a joint inventor, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986 (26 U.S.C. 61(a)), exceeding the "Maximum Qualifying Gross Income" reported on the USPTO Web site at http://www.uspto.gov/patents/law/micro_entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.

(4) **GROSS INCOME LIMIT ON PARTIES WITH AN "OWNERSHIP INTEREST"** – Neither the applicant nor the inventor nor a joint inventor has assigned, granted, or conveyed, nor is under an obligation by contract or law to assign, grant, or convey, a license or other ownership interest in the application concerned to an entity that, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986, exceeding the "Maximum Qualifying Gross Income" reported on the USPTO Web site at http://www.uspto.gov/patents/law/micro_entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.

SIGNATURE by an authorized party set forth in 37 CFR 1.33(b)

Signature					
Name	Joshua Clemente				
Date	11/19/19	Telephone	540-429-1631	Registration No.	

☐ There is more than one inventor and I am one of the inventors who are jointly identified as the applicant. The required additional certification form(s) signed by the other joint inventor(s) are included with this form.

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

Mission Ex. 1002-0063

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/688,884**

Projected Publication Date: 05/21/2020

Non-Publication Request: No

Early Publication Request: No
**** MICRO ENTITY ****
Title

VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

Preliminary Class

297

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

Mission Ex. 1002-0064

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
16/688,884	11/19/2019	3636	430	180720 (306317-00001)	17	1

CONFIRMATION NO. 6650

FILING RECEIPT

23363
Lewis Roca Rothgerber Christie LLP
PO BOX 29001
Glendale, CA 91209-9001

OC000000113138102

Date Mailed: 12/10/2019

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Joshua Clemente, Philadelphia, PA;

Applicant(s)

Joshua Clemente, Philadelphia, PA;

Power of Attorney: The patent practitioners associated with Customer Number 23363

Domestic Priority data as claimed by applicant

This appln claims benefit of 62/770,022 11/20/2018

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 12/05/2019

Mission Ex. 1002-0065

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/688,884

APPLICATION AS FILED - PART I

	(Column 1)	(Column 2)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE($)	FEE($)		RATE($)	FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	75
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	165
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	190
TOTAL CLAIMS (37 CFR 1.16(i))	17 minus 20 =	*			OR	x 25 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*				x 115 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	430

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)					
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

I hereby certify that this correspondence is being EFS-Web transmitted to the United States Patent and Trademark Office on May 19, 2020 at or before 11:59 p.m. Pacific Time under the Rules of 37 CFR § 1.8.

/Sheila R. Harter/
Sheila R. Harter

Inventor(s)	: Joshua Clemente	Confirmation No. 6650
Application No.	: 16/688,884	
Filed	: November 19, 2019	
Title	: VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM	
Grp./Div.	: 3634	
Examiner	: TBD	
Docket No.	: 180720	

INFORMATION DISCLOSURE STATEMENT
37 CFR § 1.97(b)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Post Office Box 29001
Glendale, CA 91209-9001
May 19, 2020

Commissioner:

In compliance with the duty of disclosure under 37 CFR §§ 1.56, 1.97 and 1.98, and in accordance with the provisions in the Manual of Patent Examining Procedure §§ 609 and 707.05(b), enclosed is an information disclosure statement listing the references that are known to applicant. A copy of the foreign reference is enclosed. This filing is timely because it is made during one of the periods described in 37 CFR § 1.97(b).

It is respectfully requested that the listed references be considered in the examination of this application and identified on the list of references cited on the patent issuing for this application. Applicant also requests that an initialed copy of the information disclosure statement be entered in the application file and returned to applicant with the next communication from the Office in accordance with MPEP § 609.

The Commissioner is hereby authorized to charge any fees which may be required by this paper to Deposit Account No. 03-1728. Please show our docket number with any Deposit Account transaction.

Respectfully submitted,

LEWIS ROCA ROTHGERBER CHRISTIE LLP

By */Kyle W. Kellar/*
Kyle W. Kellar
Reg. No. 71,165
626/795-9900

KWK/srh
Enclosures: IDS/Foreign Ref

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	180720SB08.pdf	95737 59d6eec8ee6608dfd695c49ce9b3d786554688db	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Foreign Reference	WO2001097919.pdf	4911152 1f4b0fa0ee2734753f383c9d9a1010c82483af0b	no	36
Warnings:					
Information:					
			Total Files Size (in bytes):	5130984	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt

EFS ID:	39486067
Application Number:	16688884
International Application Number:	
Confirmation Number:	6650
Title of Invention:	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM
First Named Inventor/Applicant Name:	Joshua Clemente
Customer Number:	23363
Filer:	Kyle W. Kellar/Sheila Harter
Filer Authorized By:	Kyle W. Kellar
Attorney Docket Number:	180720 (306317-00001)
Receipt Date:	19-MAY-2020
Filing Date:	19-NOV-2019
Time Stamp:	18:47:17
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	180720IDSTransmittal.pdf	124095 ec621e1825977dfd8cf2cd3fcbc29c6760f79caa	no	2

Warnings:

INTERNATIONAL SEARCH REPORT

Information on patent family members

Internal Application No
PCT/US 00/22113

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 9416065 U	01-02-1996	NONE	
US 3850283 A	26-11-1974	NONE	
FR 2325782 A	22-04-1977	NONE	
US 4919234 A	24-04-1990	NONE	
US 4060148 A	29-11-1977	NONE	

Mission Ex. 1002-0071

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 00/22113

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 060 148 A (SIDNEY JAMES T) 29 November 1977 (1977-11-29) figure 1	1-20

Mission Ex. 1002-0072

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 00/22113

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A62C27/00 E06C5/06 B64F1/315 B60P3/00 E04G1/22
B66F11/04 A62B1/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A62C E06C B64F B60P E04G B66F A62B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 94 16 065 U (FLUGHAFEN MUENCHEN GMBH) 1 February 1996 (1996-02-01) page 1, line 5 - line 17; figure 1 ---	1-20
X	US 3 850 283 A (NORDSTROM A) 26 November 1974 (1974-11-26) figures 1,14,15 ---	1-5,9, 10,14-20
A	FR 2 325 782 A (PASQUIER YVES) 22 April 1977 (1977-04-22) figures 1,3 ---	1-20
A	US 4 919 234 A (PEARSON DECEASED THEODORE S ET AL) 24 April 1990 (1990-04-24) figures 1,2,10 ---	1-20

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
20 February 2001	21 05. 2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Joosting, T

Form PCT/ISA/210 (second sheet) (July 1992)

FIG. 1

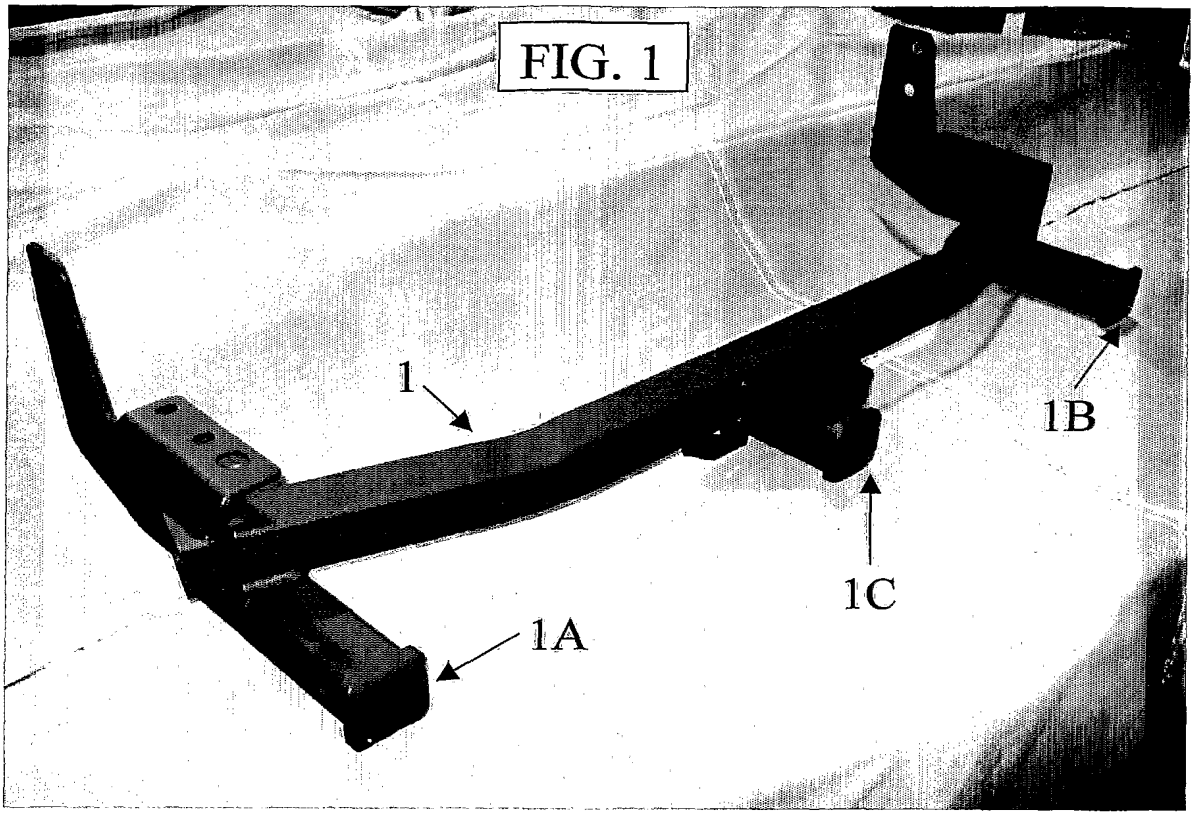
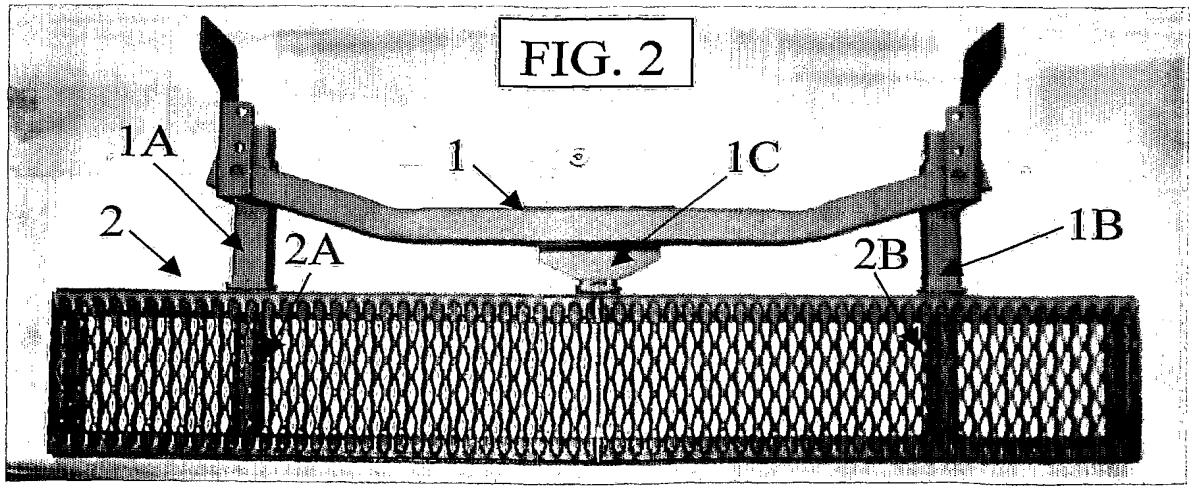
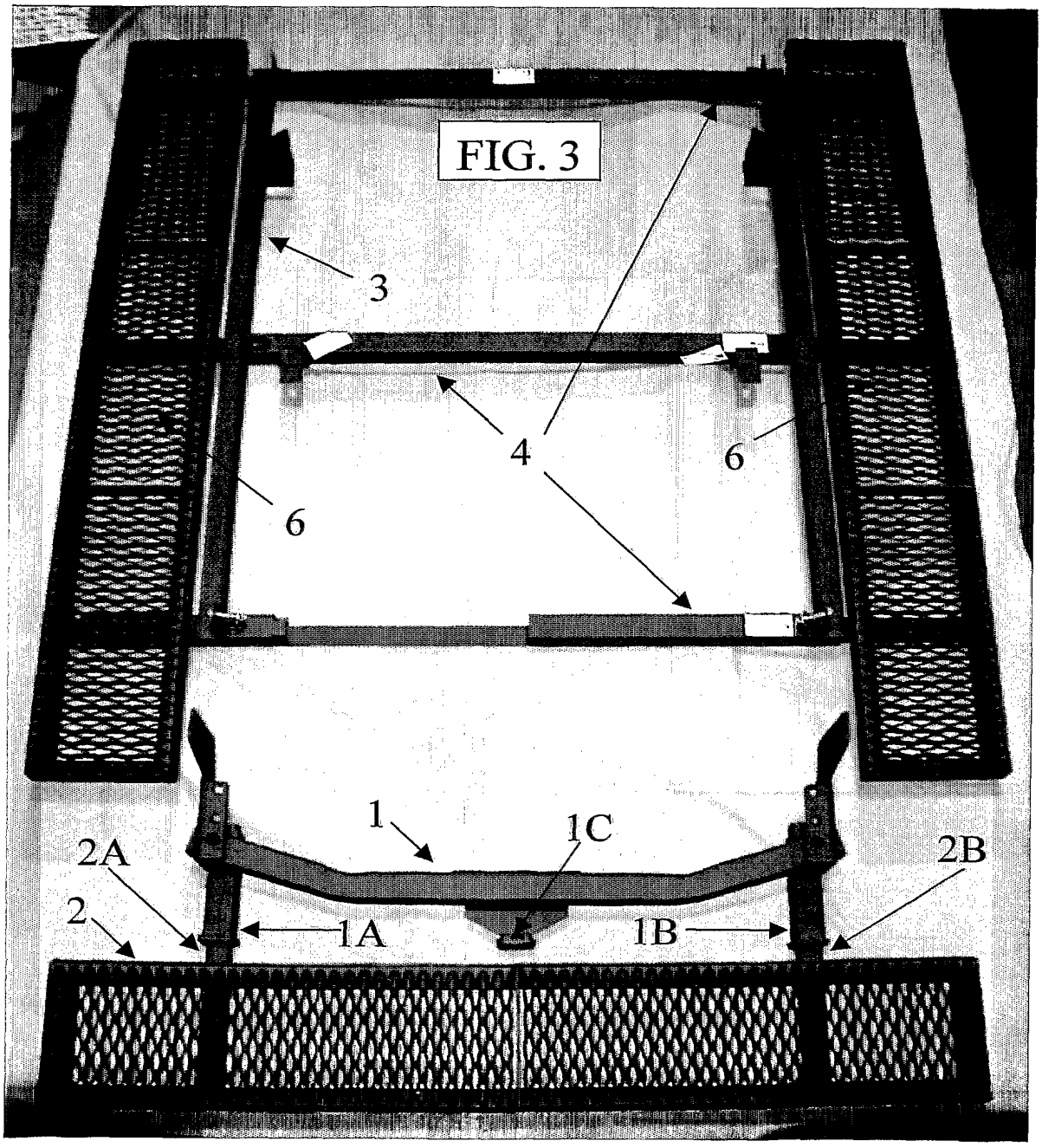


FIG. 2




FIG. 3
3
4
6
6
1
1C
2A
2B
2
1A
1B

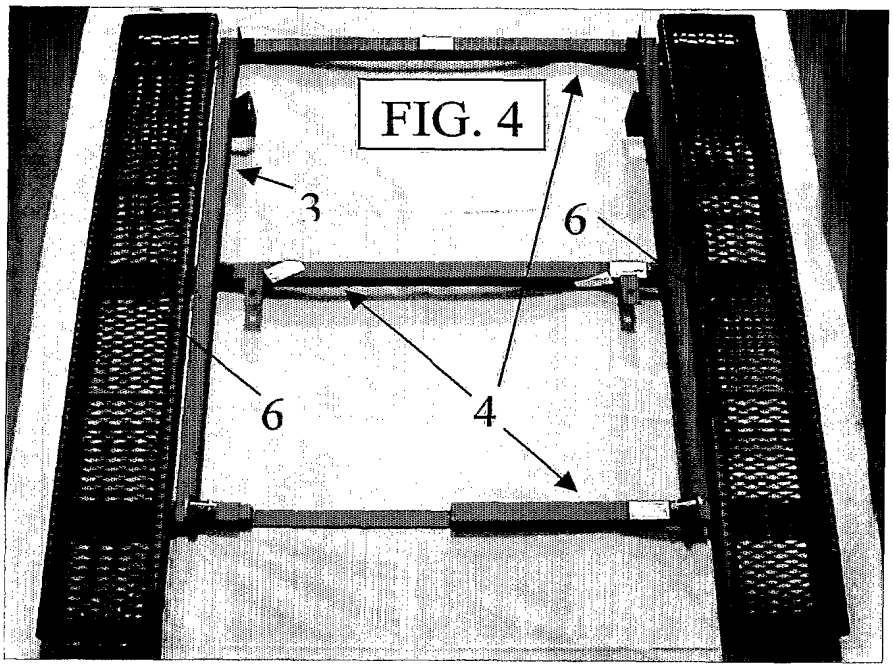


FIG. 4

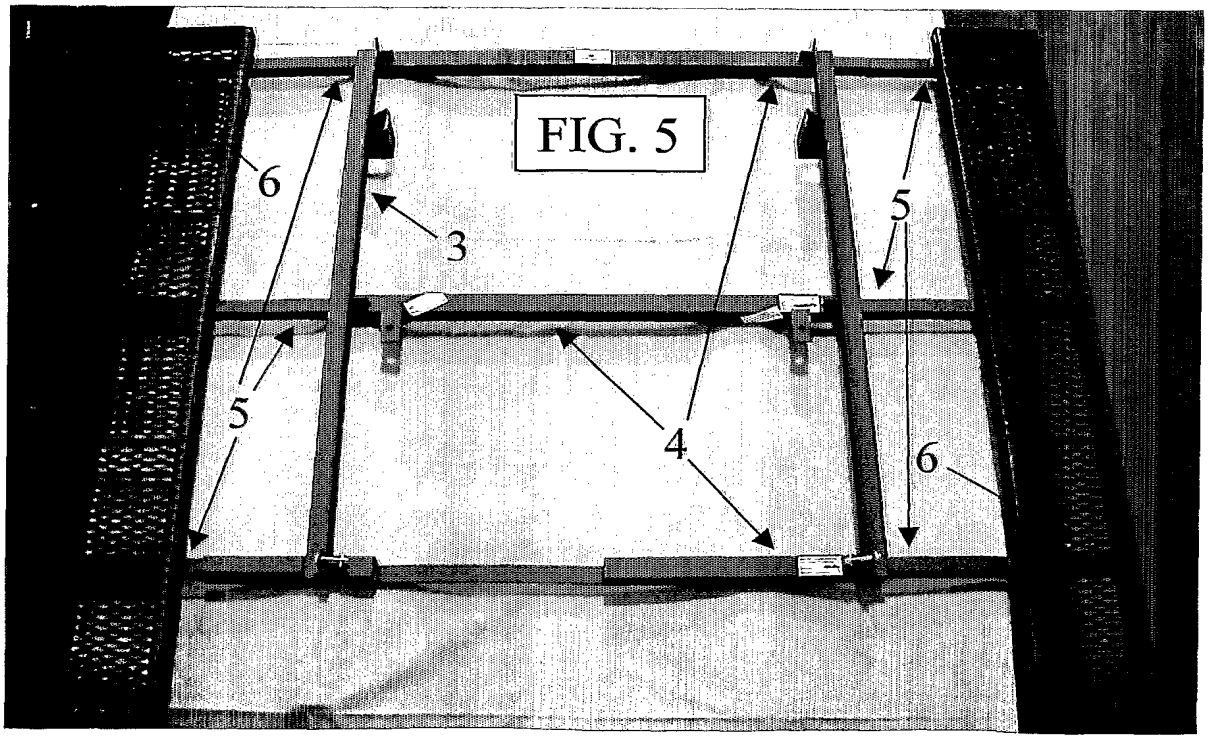


FIG. 5



FIG. 6

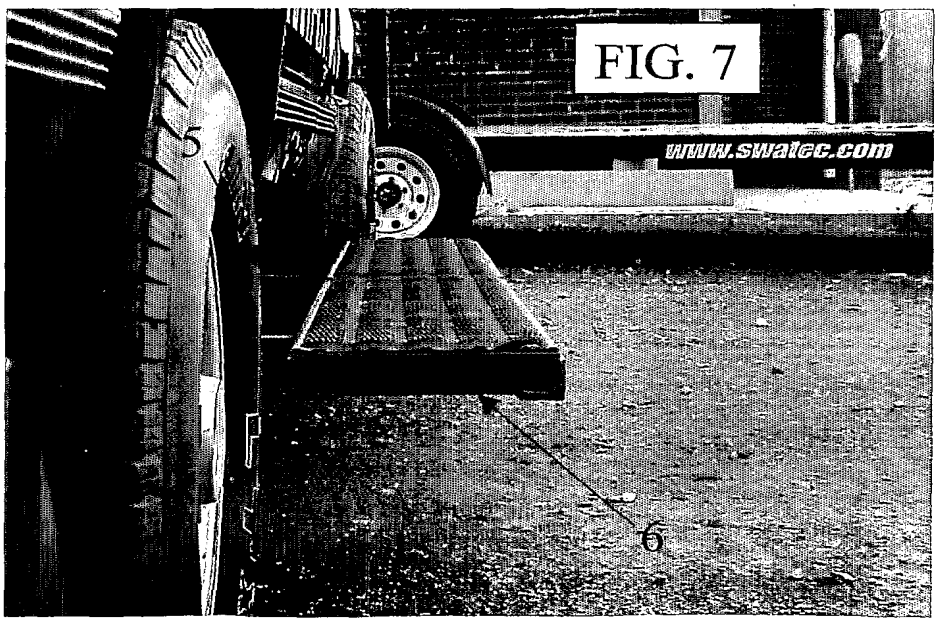


FIG. 7

FIG. 8

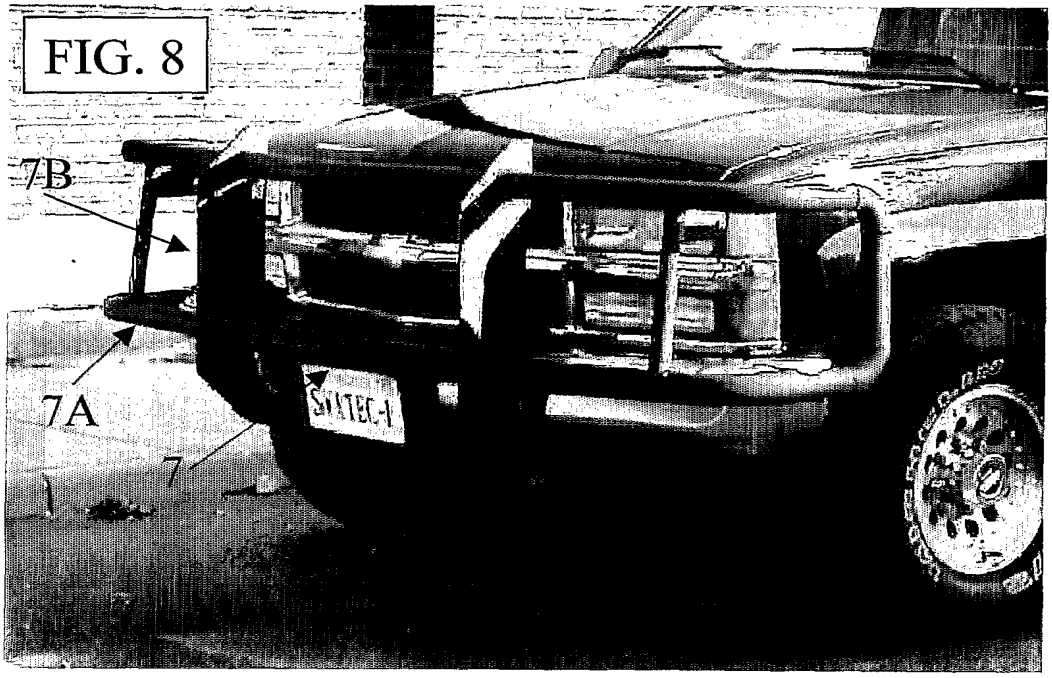


FIG. 9

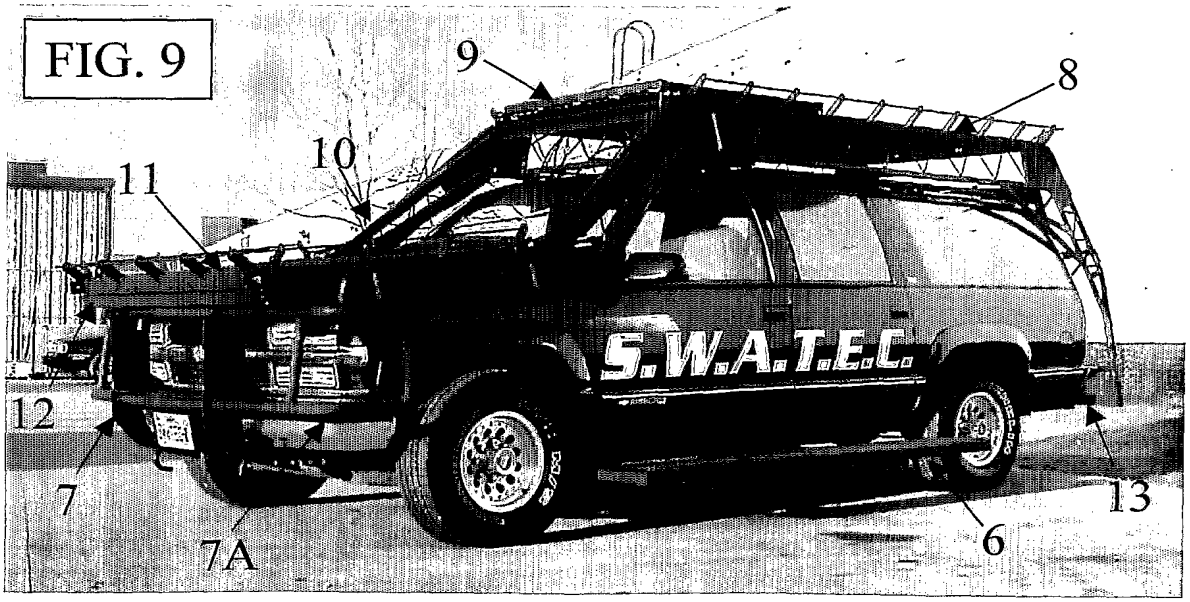


FIG. 10

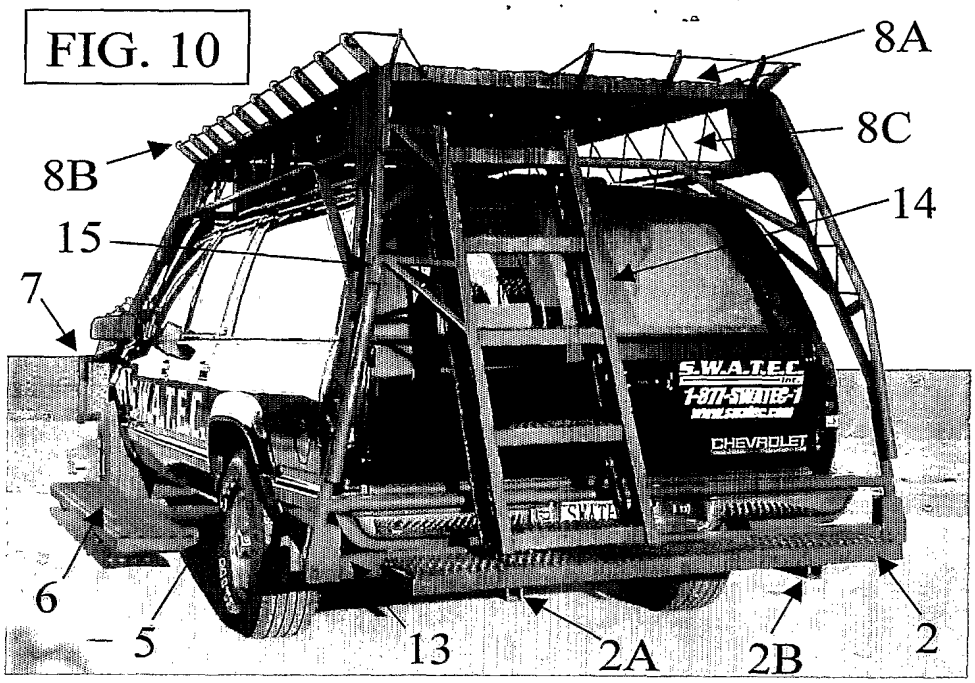

8A
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S.W.A.T.E.C.
1-877-SWATEC-1
CHEVROLET

FIG. 11

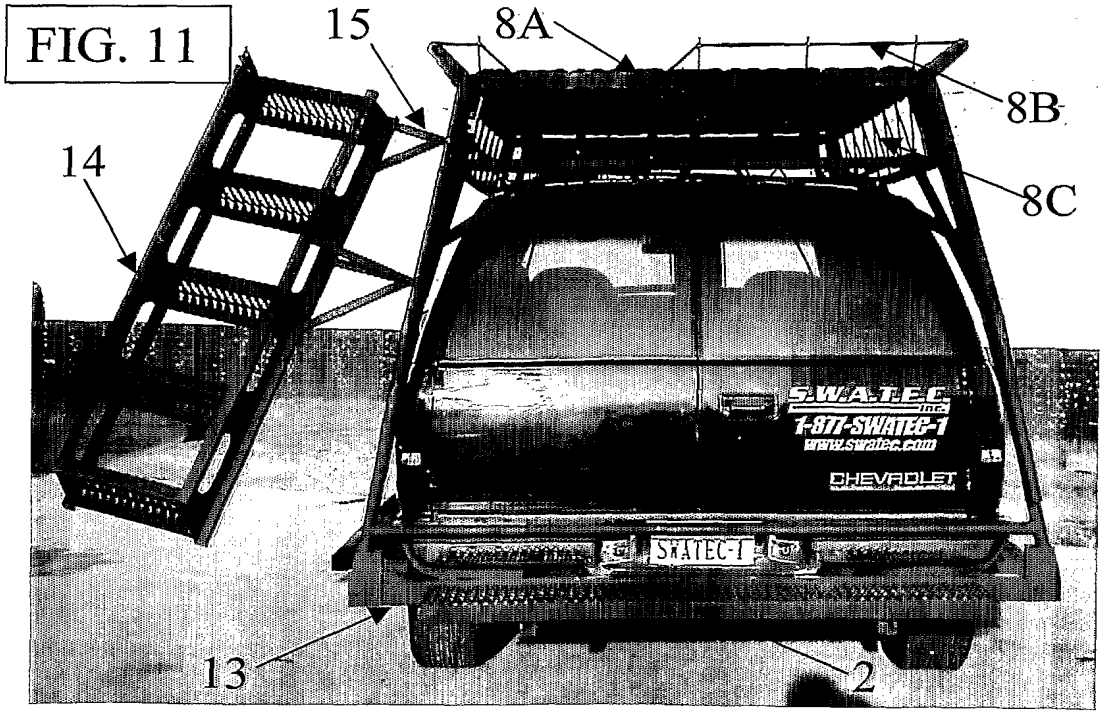

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www.swatec.com
CHEVROLET
SWATEC-1

FIG. 12

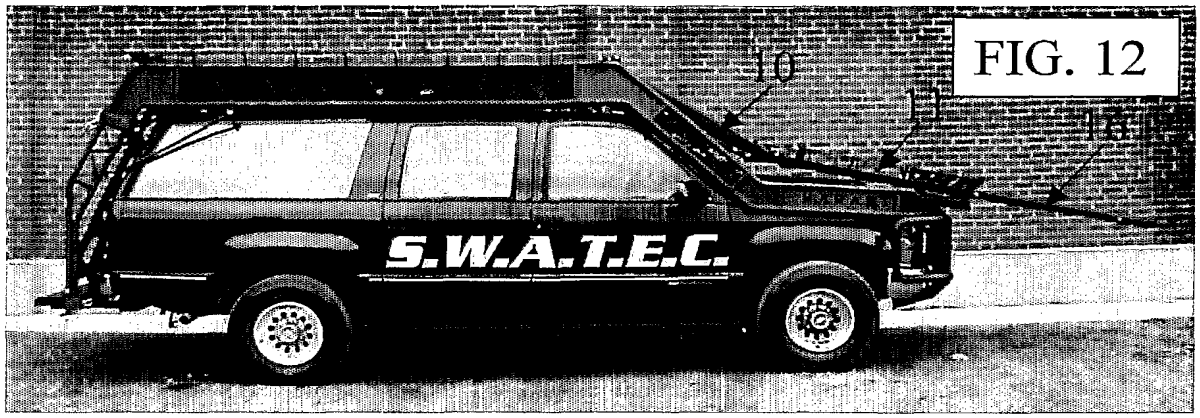


FIG. 13

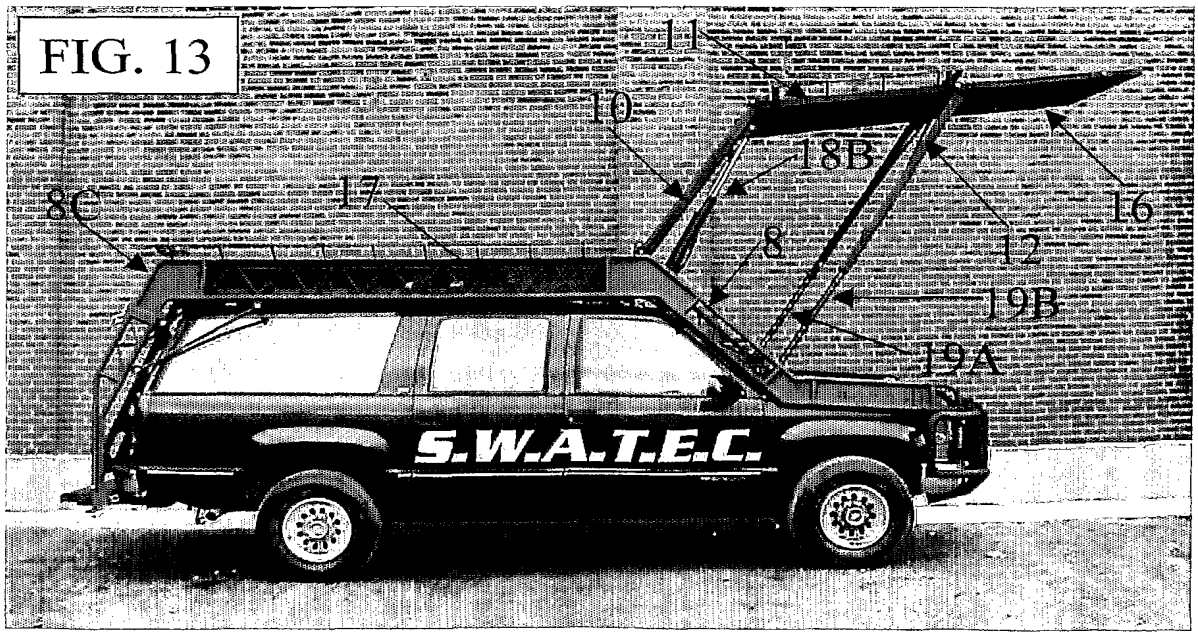


FIG. 14

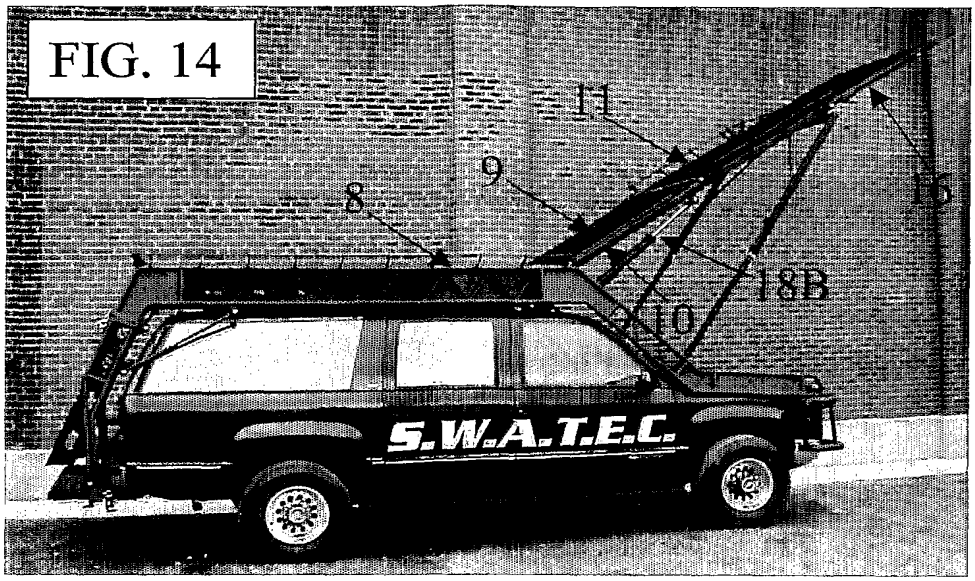


FIG. 15

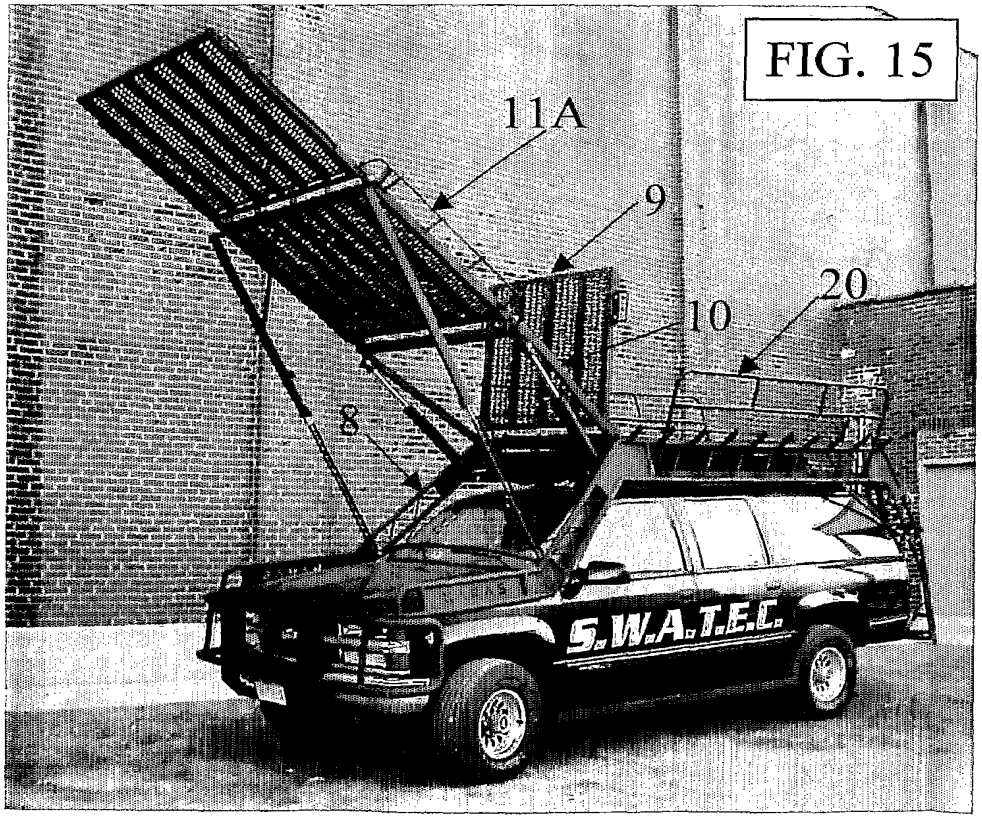


FIG. 16

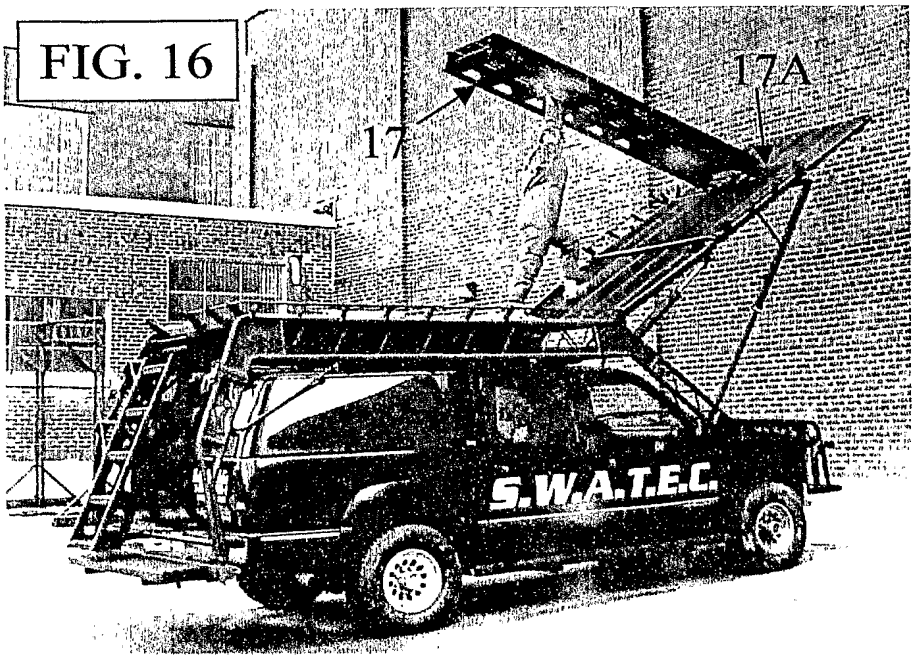


FIG. 17



FIG. 18

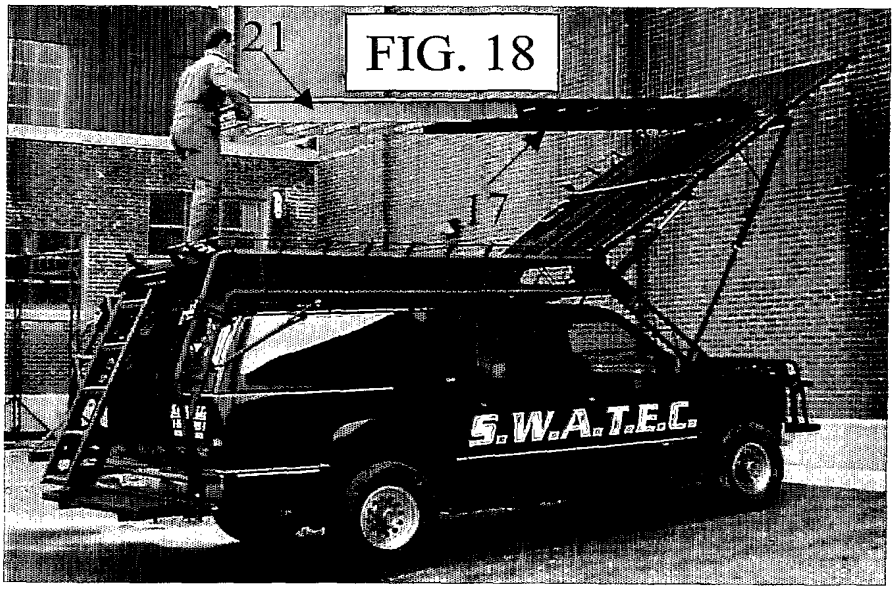


FIG. 19



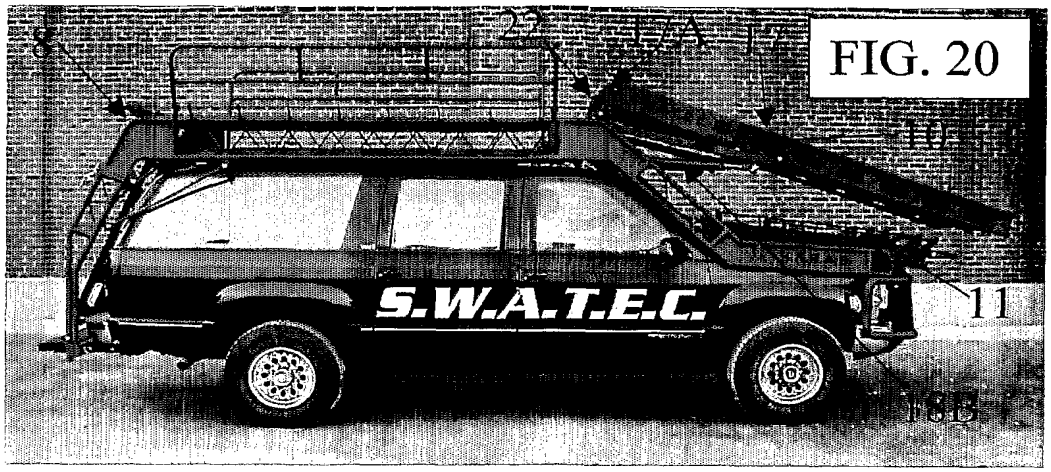


FIG. 20

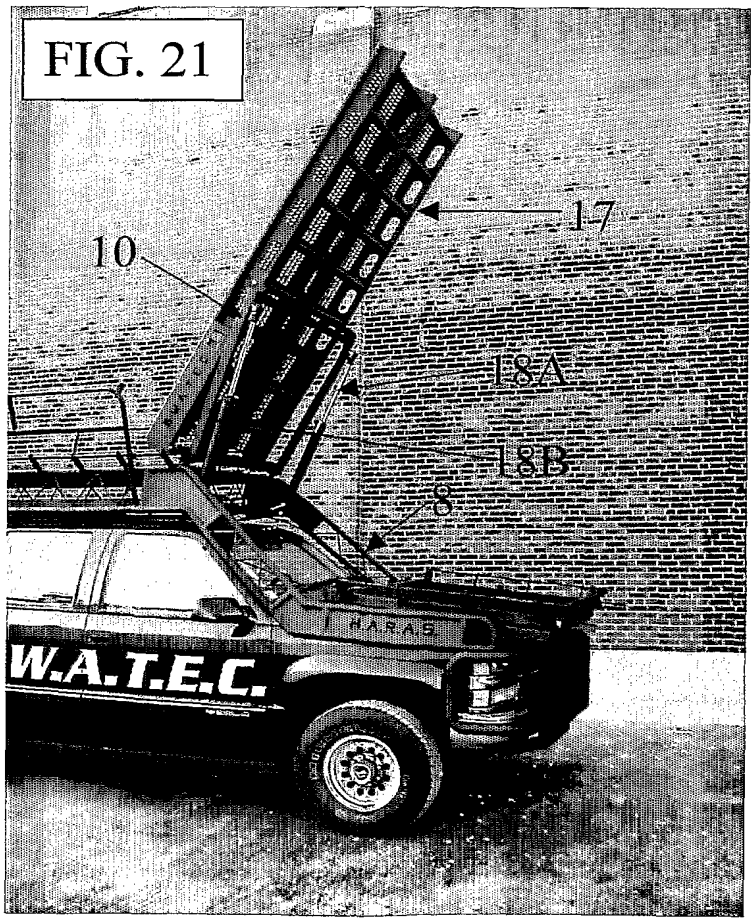


FIG. 21

FIG. 22



FIG. 23



FIG. 24

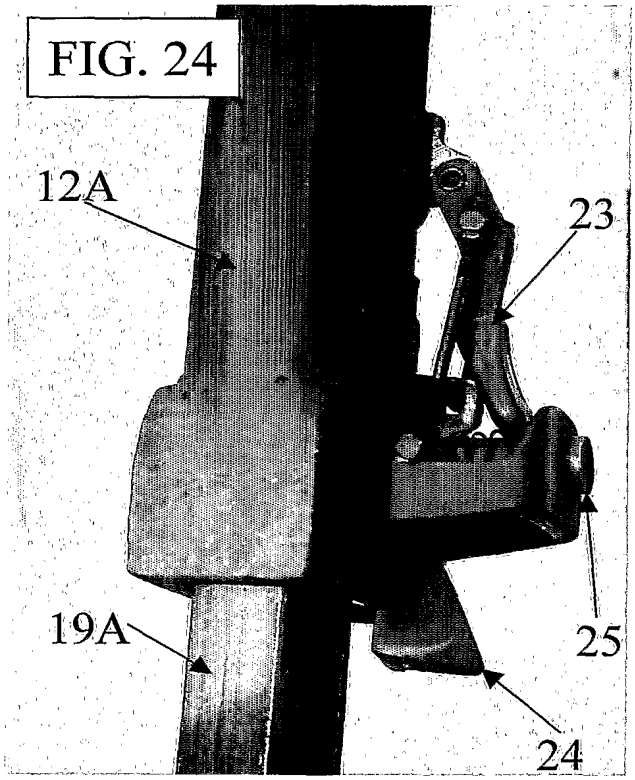
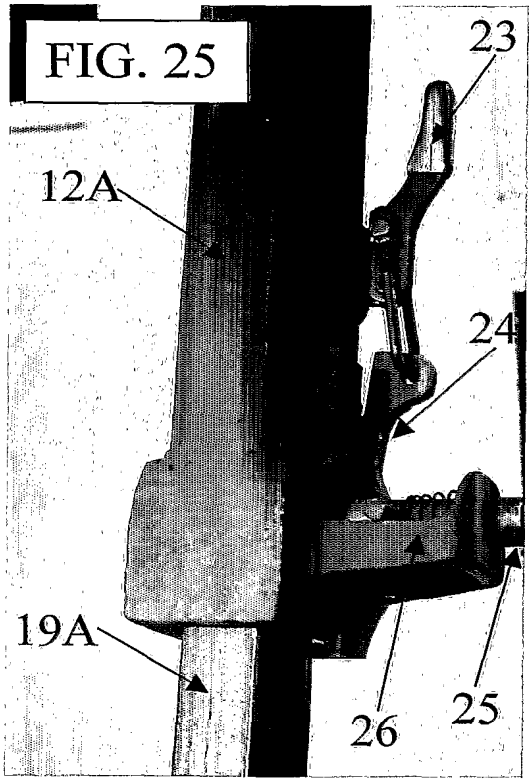


FIG. 25



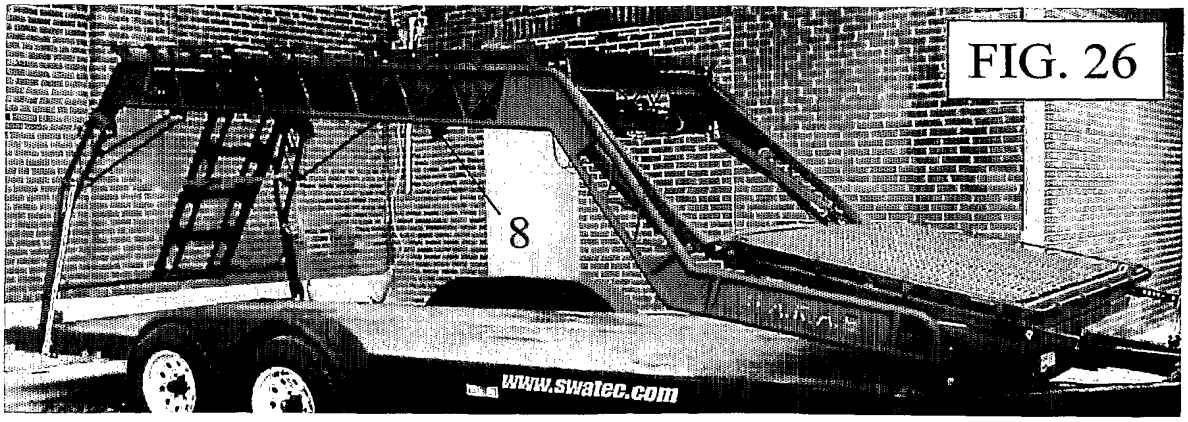


FIG. 26

FIG. 27

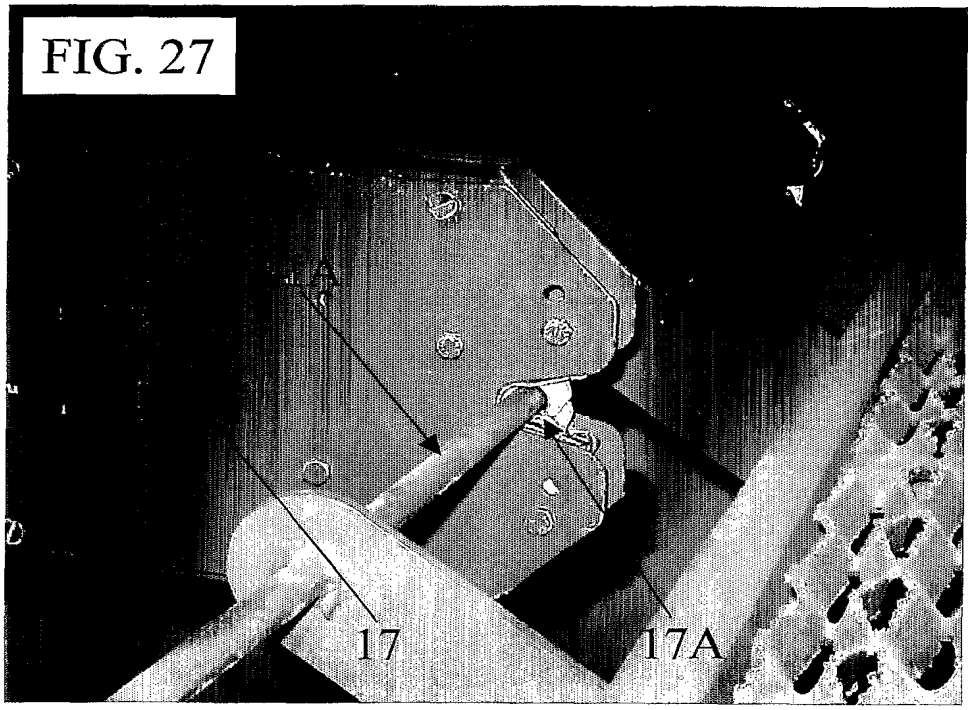
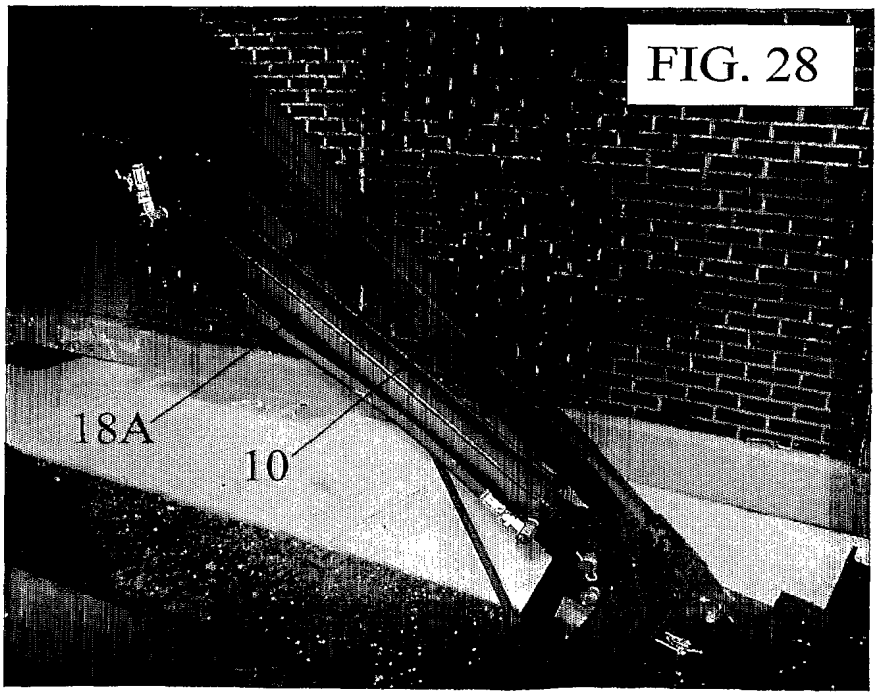


FIG. 28



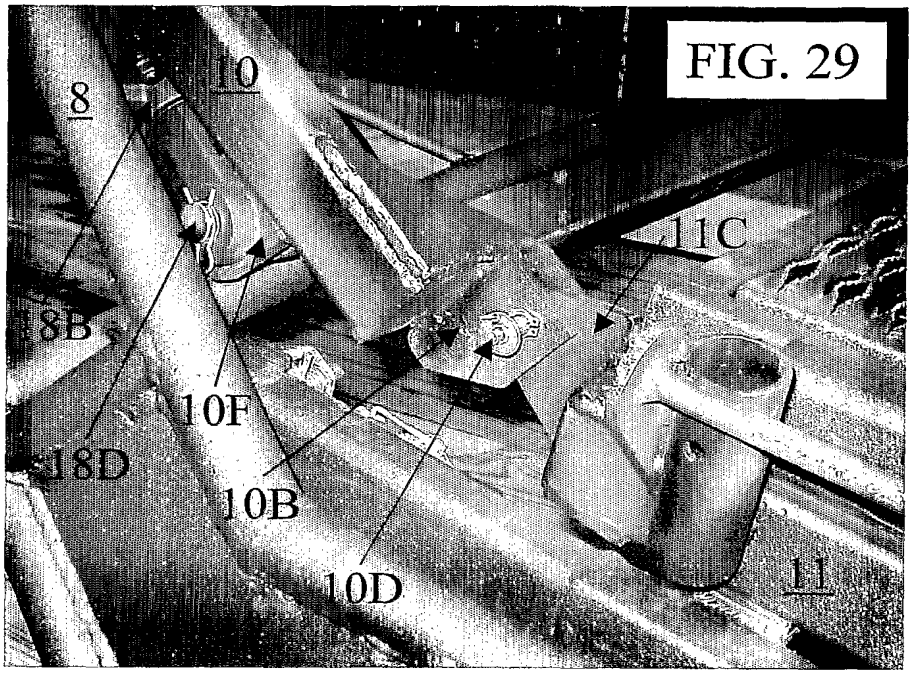


FIG. 29

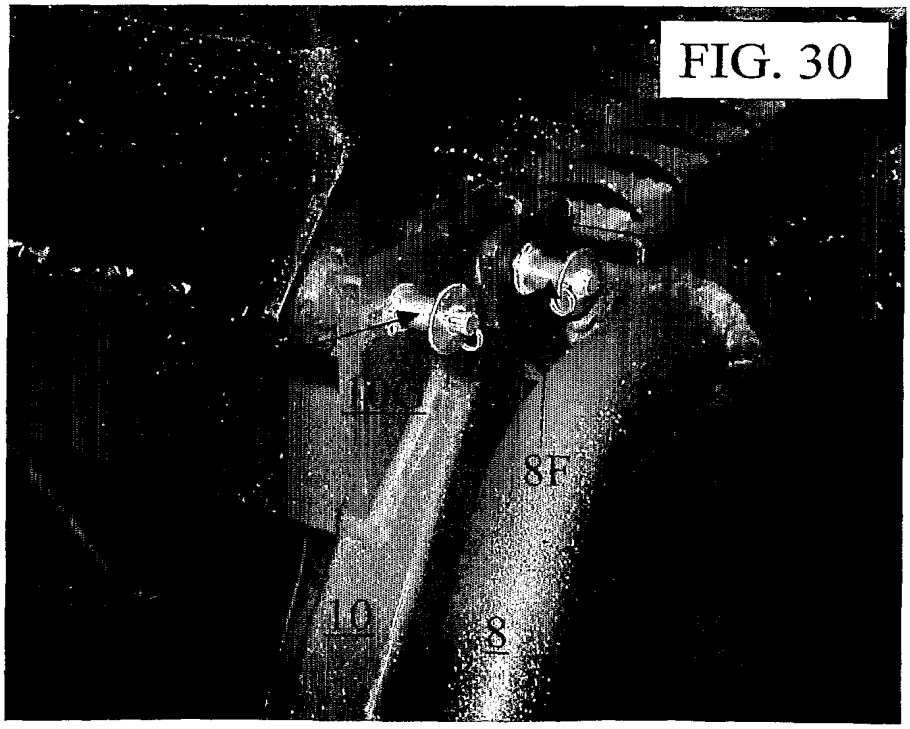


FIG. 30

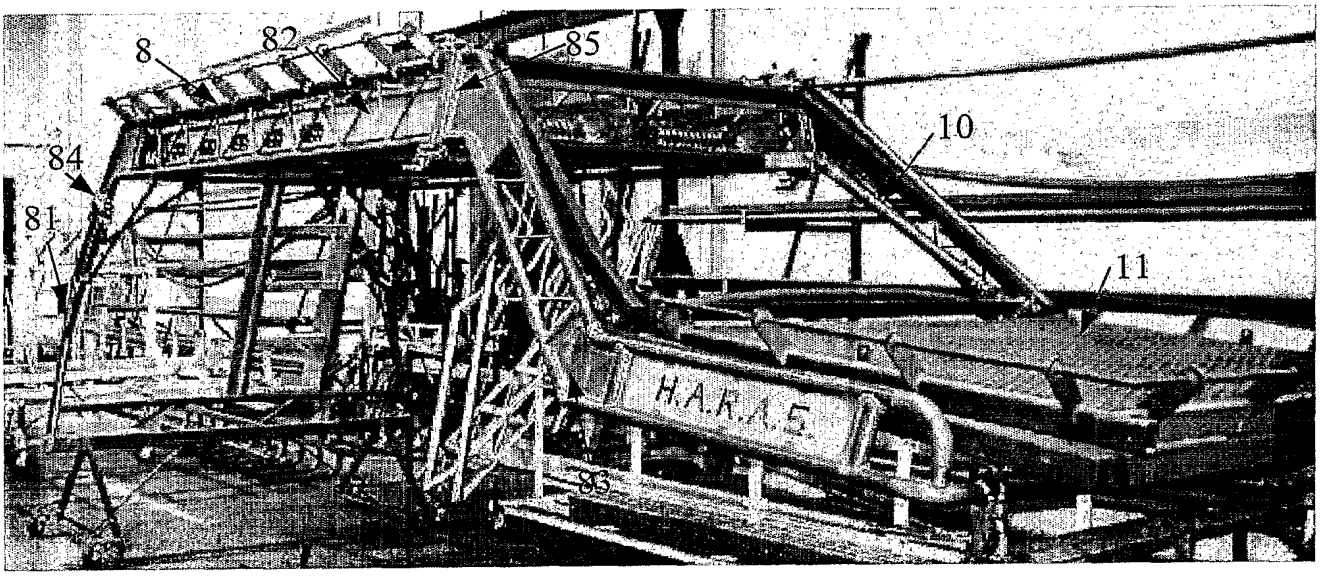


FIG. 31

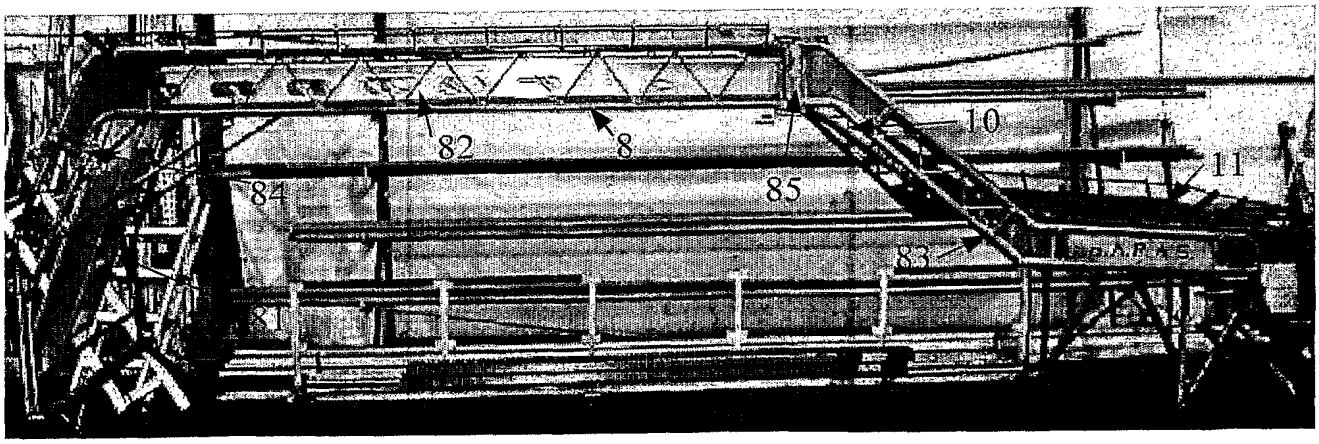


FIG. 32

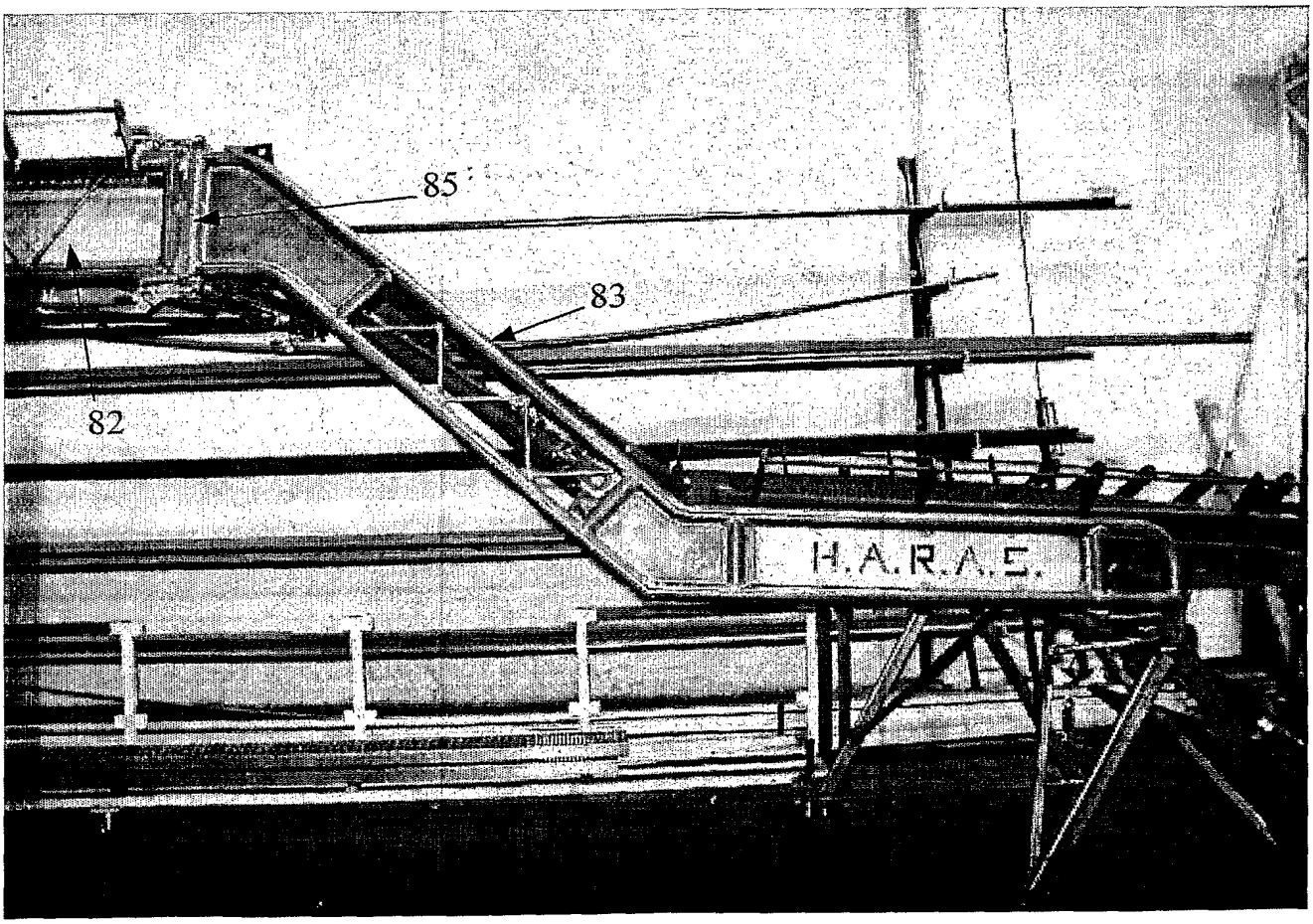


FIG. 33

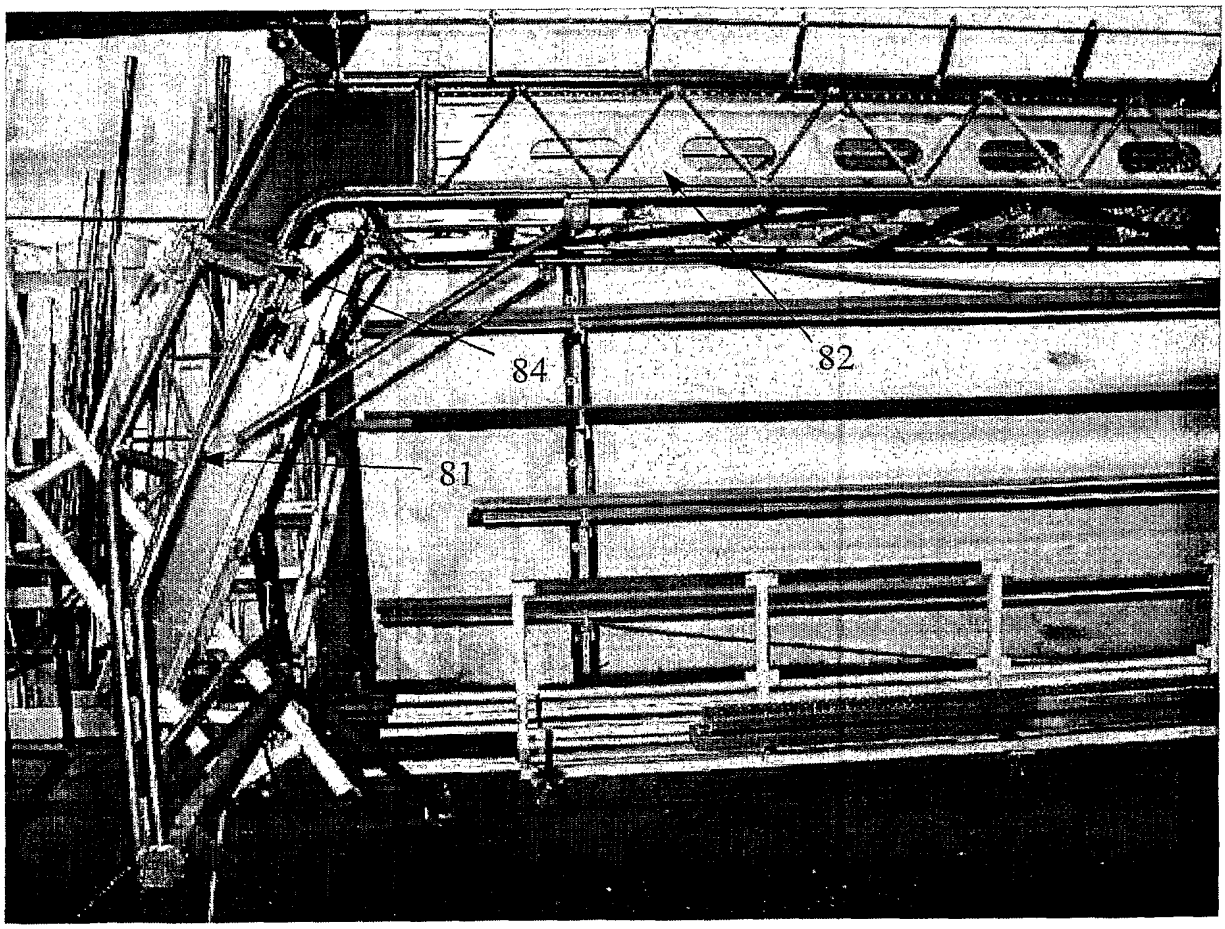


FIG. 34

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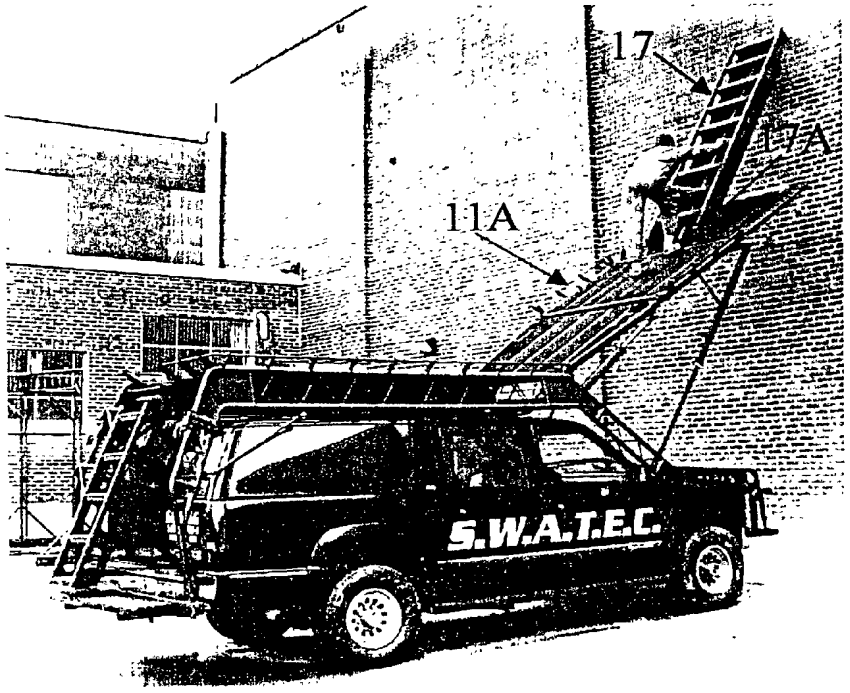
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(54) Title: HEIGHT ADJUSTABLE RESCUE ASSAULT SYSTEM WITH SECTIONAL COMPONENTS



(57) Abstract: This invention is an improvement over prior scaffolding and ladder systems. Accordingly, a main object of the invention is the provision of improved conveyance of personnel to a given location and a precisely positioned elevation relative to a structure, aircraft or edifice, with rapidity, facility, and safety. In addition, the invention affords a reliable, stable platform for use at thedesired elevation, and facilitates safe and rapid egress from that location under ordinary and exigent circumstances. Unlike a ladder, the Height Adjustable Rescue Assault System, or HARAS, provides a stable platform regardless of the nature of the terrain upon which it is deployed, since it is attached to, and has as its'base, an inherently stable vehicle. Although similar in working surface area to a scaffold, the HARAS is much more mobile than a conventional scaffold, in that it can be driven to, set up at, and utilized at a variety of locations in a matter of seconds. The invention's removable/retractable side running boards and removable rear platform, with horizontal surface of high traction aluminum weep decking enables personnel to ride in an elevated position alongside the system during operation. Sectional construction adds to the systems' portability and flexibility.

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TITLE: Height Adjustable Rescue Assault System with Sectional Components

FIELD OF THE INVENTION

The present invention is drawn to a height adjustable platform for mounting on vehicles. More particularly, it is drawn to a sectional, vehicle-mounted platform system with a height adjustable ramp adapted to be useful for rescue and assault applications.

BACKGROUND INFORMATION

There are myriad fields of endeavor requiring personnel to access elevated areas located at distances inaccessible from ground level. As the elevation and the complexity of the task to be completed increases, the need for safety and stability at those heights increases proportionately. Many of the fields of endeavor identified below are intrinsically dangerous, while others become so due to the nature of the technology available to negotiate vertical distances to perform requisite tasks.

Following are some of the numerous fields of endeavor which require personnel to operate or negotiate at various elevations:

- Law enforcement officers and tactical team members in the execution of warrant service and hostage rescue,
- Military operations in urban terrain, including many of the same types operations performed by law enforcement as identified above
- Fire and emergency medical rescue,
- Contractors and construction workers in remodeling and new construction work, i.e., framing, roofing, or siding work,
- Maintenance workers such as building or sign upkeep,
- Highway overpass and bridge inspection and maintenance personnel,
- Aircraft and other conveyance servicing and maintenance personnel,

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- Television, motion picture, video, and still photography personnel requiring an elevated vantage point to record an event, and
- Electrical and power company, cable company, and telephone company linemen and installers.

The above fields of endeavor require personnel to at least temporarily perform certain functions while at elevations well above ground level. Prior art affords these personnel access to ladders, scaffolds, or specialty vehicles (i.e., bucket trucks, cherry pickers, or aircraft servicing vehicles) in order to traverse vertical distances, and or conduct varying tasks while there. While each of these means of ascent are quite sufficient in and of themselves, often times they are inadequate in specific circumstances for any number of reasons.

A ladder is often used in many of the fields of endeavor listed above, however, it presents a very unstable and dangerous means of negotiating a task at varying elevations. If the terrain it is situated on is uneven or sloping, the ladder, although firmly resting on the ground, can succumb to the forces of gravity and topple over. Even if properly deployed, a ladder can easily become unstable and cause its' operator(s) to fall unless it is secured in some fashion to create a stable base.

As an example, a team of law enforcement officers attempting to execute a warrant (i.e., the Bureau of Alcohol Tobacco and Firearms (BATF) raid on the Branch Davidian Compound in Waco, Texas) may need to deploy several operators to the second or third story of a building quickly and safely. In the Waco raid several men carried ladders to the edifice and ascended the ladders to the sloping roof over the first floor. Once on the roof, several of the operators were shot or shot at from occupants within the building, causing the operators to attempt to exit the roof Unfortunately, due to the inherently unstable nature of the ladder, the operators ladders were incapable of conveying the operators back to the ground, causing some of the ladders and their occupants to topple to the ground, stranding other operators on the roof with no means of egress. Existing prior art does not offer many other options in a circumstance such as this, in that a scaffold could not have

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been deployed in such a circumstance, and prior to this application, no specialty vehicle would have been suited to fill this need.

In addition, another inherent flaw of a ladder, as relates to many of the endeavors above, most especially military and law enforcement applications, is the ability to convey only one individual at a time to the required elevation. This runs in stark contrast to the military and law enforcement mission requiring the simultaneous deployment of as many individuals as is possible in as short a time period as is feasible, preferably never allowing an individual to be alone for even a short period of time.

BRIEF SUMMARY OF THE INVENTION

A main object of the invention is the provision of improved conveyance of personnel to a given location and a precisely positioned elevation relative to a structure, aircraft or edifice, with rapidity, facility, and safety.

It is therefore an object of the invention to provide vehicles with a reliable, stable platform for use by personnel at a desired elevation.

It is a further object of the invention to facilitate safe and rapid egress from a vehicle-mounted, adjustable height platform under ordinary and exigent circumstances.

It is another object of the invention to provide a vehicle-mounted, adjustable height platform that is sectional for improved handling and flexibility.

It is another object of the invention to provide a vehicle-mounted, adjustable height platform that can be quickly attached and detached from the vehicle without tools.

It is yet another object of the invention to provide said vehicle-mounted, adjustable height platform in a configuration useful for rescue and assault purposes.

Other objects of the invention will appear from the following detailed description which, in connection with the accompanying photographs, discloses one embodiment of the invention for purposes of illustration only and not for definition of the scope of the invention.

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BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side angled view of the Triple Hitch Receiver (THP) used with the present invention.

FIG. 2 is an overhead view of the THP and Removable Rear Platform of the present invention.

FIG. 3 is a top view of the configuration of the running boards and rear platform as they would be placed on a vehicle.

FIG. 4 is a top view of the running boards retracted into their frame.

FIG. 5 is a top view of the running boards extended from their frame.

FIG. 6 is a longitudinal view of the running boards retracted under the vehicle.

FIG. 7 is a longitudinal view of the running boards fully extended from under the vehicle.

FIG. 8 is an oblique view of the Pit-Boss Grill Guard Xoskeleton Support on the vehicle. **FIG. 9** is a side view of the HARAS deployed on a typical SUV type vehicle.

FIG. 10 is a left rear view of the HARAS deployed on a typical SUV type vehicle.

FIG. 11 is a straight on rear view of the HARAS deployed on a typical SUV type vehicle.

FIG. 12 is a right side view of the HARAS with front extension platform attached and lowered.

FIG. 13 is a right side view of the HARAS with front extension platform attached and raised.

FIG. 14 is a right side view of the HARAS with front extension platform and in full ramp position.

FIG. 15 is a front left side view of the HARAS with front extension platform and in full ramp position and windshield ramp raised.

FIG. 16 is a right side rear view of the HARAS and a version of its stair/rampway.

FIG. 17 is a right side rear view of the HARAS and the attachment of its

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stair/rampway.

FIG. 18 is a right rear side view of the HARAS with the stair extension being mounted.

FIG. 19 is a right rear side view of the HARAS with the stair extension fully raised.

FIG. 20 is a right side view of the HARAS with the stair/rampway attached to the windshield frame.

FIG. 21 is a right front side view of the HARAS with stair/rampway attached and fully raised.

FIG. 22 is a right rear side view of the HARAS with stair/rampway and fully raised ramp side up.

FIG. 23 is a right rear side view of the HARAS with stair/rampway and fully raised stair side up.

FIG. 24 is a view of the telescoping leg connection.

FIG. 25 is a view of the telescoping leg connection.

FIG. 26 is a view of the entire Xoskeleton removed from vehicle.

FIG. 27 is a close up view of stair/rampway attachment.

FIG. 28 is a close up view of the vertically mounted hydraulic cylinder.

FIG. 29 is a close up of the windshield frame and hood platform connecting hinge.

FIG. 30 is a close up of the windshield ramp/frame connection to the Xoskeleton.

FIG. 31 is a quarter-view of a three-piece, sectional Xoskeleton.

FIG. 32 is a side-view of a three-piece, sectional Xoskeleton.

FIG. 33 is a side-view of a front section of a three-piece, sectional Xoskeleton.

FIG. 34 is a side-view of a rear section of a three-piece, sectional Xoskeleton.

DETAILED DESCRIPTION OF THE INVENTION

The present **H**eight **A**djustable **R**escue **A**ssault **S**ystem invention or HARAS, will enable a group of as many as twelve or more individuals to be transported rapidly and

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safely to elevations one to three stories above the ground. It is a height adjustable system that can be mounted on a variety of vehicles at considerably lower expense than the purchase of a dedicated specialty lift vehicle.

The HARAS system is sectional, with the major elements including a central upper portion and front and rear support portions that can be disassembled from each other for shipping, handling and storage. This sectional aspect also allows the system to be adapted to various vehicles by changing one or more of the sections. For example, a system designed for a Chevrolet Suburban can be adapted for use with a similar, but shorter-length, Chevrolet K-Blazer by providing a shorter central portion.

The entire HARAS system, less mounting hardware and front push bars and grill guard, can easily be removed from the vehicle in a matter of minutes without the use of tools, and can be reinstalled just as easily, utilizing quick release clamps and locking safety pins. The system can be adapted and configured for installation on a number of differing vehicles, and consists of extendable and retractable side running boards, a rear platform and rear door ladder, a one-piece exterior frame called an Xoskeleton that supports a roof platform (size dependent upon vehicle type, for a standard Chevrolet Suburban it is approximately 5' wide by 11' long, and 7' x 10' for HUMMVEE), a windshield ramp (size dependent upon vehicle type, for a Chevrolet Suburban it is approximately 4' wide by 4' long, 7' x 7' for a HUMMVEE), a hood platform (size dependent upon vehicle type, for a Chevrolet Suburban approximately 6' wide by 4' long, for a HUMMVEE 7' x 4'), and a variety of fixed length ramp/stairways (these can be of any length up to 16' long and up to 7' wide depending upon the desired application) with adjustable depth stair treads from 4.75" to 11.75" deep.

All horizontal surfaces on the HARAS are extremely high traction aluminum weep decking. The windshield ramp and hood platform are raised by hydraulic cylinders to elevations from 4' to approximately 18' above the ground depending on the system configuration. With windshield ramp and hood platform elevated, individuals can easily access a second story of a structure or aircraft, and due to the approximately 6' width of the

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hood platform, as many as three individuals can deploy side by side at the required elevation. In addition, the ramp/stairways can be securely fixed on its' pivoting base to a perimeter rail around the hood and roof platforms, providing safe stable access to elevations of 20' to 25' above the ground. The extendable/retractable running boards can be configured for hydraulic or manual operation. The running boards and rear platform mount to brackets on the vehicle frame and can be easily installed or removed by one person without the use of tools.

Unlike a ladder, the HARAS provides a stable platform regardless of the nature of the terrain upon which it is deployed, since it is attached to, and has as its' base, an inherently stable vehicle. Although similar in working surface area to a scaffold, the HARAS is much more mobile than a conventional scaffold, in that it can be driven to, set up at, and utilized at a variety of locations in a matter of seconds. In law enforcement and military applications, as identified above in the Waco raid, the HARAS would be utilized to rapidly transport operators on the roof platform to the eave of the building, where they could speedily ascend the windshield ramp and hood platform onto the building's roof. As happened in the Waco raid, exigent circumstances often arise where the immediate evacuation of operators is of primary concern. In such a circumstance, the operators could quickly return to the HARAS' ramps or platforms, where they could safely remain during a speedy withdrawal.

The removable/retractable running boards and removable rear platform provide a secure and stable platform for personnel to ride on each side and the rear of the vehicle. This feature of the invention is of particular value to law enforcement and military operators who would utilize the system in a high-risk arrest or assault operation. By placing the operators on the exterior and at street level they are able to quickly deploy to ground level entries or withdraw without giving up their ability to employ personal weapons during ingress or egress from the site. Likewise cameramen can utilize them to operate their cameras while moving relative to an object, workers can utilize them to carry out maintenance/construction at a height lesser than accessed by the roof or hood platform, and

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a wide variety of unnamed uses is possible.

In construction or maintenance applications, the HARAS, which can be installed on an SUV, pickup truck, van, box truck, or similar vehicle, can be driven to the desired location where it could be raised to the required elevation enabling workers to stand on a stable, high traction surface while performing myriad functions (i.e., installing siding or trim on a building, repairing signs, or performing maintenance on a building or aircraft). A highway bridge or overpass inspection or maintenance function could be performed much more simply from the HARAS, than from virtually any other vehicle or structure.

FIG. 1 is a side angled view of the Triple Hitch Receiver (THP) **1** showing its three distinct hitch receivers in the same plane, one in the center and one at each end, directly under the supports which mount to the vehicle frame. **FIG. 2** is an overhead view of the THP **1** into which the Removable Rear Platform (RRP) **2** is mounted.

FIG. 3 is a top view of the configuration of the running boards and rear platform as they would be placed on a vehicle. THP **1**, with RRP **2**, mounted in it, Running Board Frame (RBF) **3**, Running Board Frame Support Receivers (RBFSR) **4** which can number as many as two or three, Running Board Frame Support Arms (RBFSA) **5**, which can number two or three depending upon vehicle used, and the two removable/retractable Running Boards (RB) **6**.

FIG. 4 is a top view of the running boards RB **6**, retracted into their receivers RBFSR **4**, mounted onto the frame RBF **3**.

FIG. 5 is a top view of the running boards RB **6**, fully extended from their receivers RBFSR **4**, mounted onto the frame RBF **3**.

FIG. 6 is a longitudinal view of the running boards, RB **6**, retracted under the vehicle.

FIG. 7 is a longitudinal view of the running boards RB **6**, fully extended from under the vehicle, and the Frame Support Arms **5**.

FIG. 8 is an oblique view of the Pit - Boss Grill Guard Xoskeleton Support (Pit - Boss) **7**, mounted onto the front of the vehicle, heavy duty tubular steel brush bars **7A**, and

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ramming/push bar plates **7B** are secured to the vehicle with three hardened 5/8" diameter frame mounting bolts on each side of the frame at the vehicle bumper.

FIG. 9 depicts the HARAS deployed on a typical SUV type vehicle, showing the Pit-Boss Grill Guard **7**, heavy duty tubular steel brush bars **7A**, the Xoskeleton **8**, the hood platform **11**, the hood platform leg assembly **12**, the Windshield Frame **10**, the Windshield Ramp (WR) **9** in its stowed travel position on top of the roof platform **8A**, during ordinary operation of the vehicle without utility of the HARAS system.

FIG. 10 depicts a left rear view of the HARAS deployed on a typical SUV type vehicle, showing the Xoskeleton **8** back mounting on the removable rear platform **2**, and resting on the integrated Xoskeleton Support Crossbar (XSC) **13**. Also depicted is the integrated roof platform **8A**, perimeter and stair/rampway mounting rail **8B**, stair/rampway storage well **8C**, rear platform support arms left **2A**, and right **2B**, removable retractable running board 6, extended by the running board support arms **5**, a rear view of the heavy duty tubular steel brush bars **7A**, the rear stairway ladder **14**, which is comprised of solid aluminum "C" channel stringer with lightening holes, and seven inch deep high traction aluminum weep deck tread and is secured to the Xoskeleton by the hinged rear stairway support bracket **15**, which permits the stairway to swung away in order to open the rear cargo doors of the vehicle.

FIG. 11 is a straight on rear view of the HARAS depicting the rear stairway ladder **14**, swung open on the hinged rear stairway support bracket **15**, the integrated roof platform **8A**, perimeter and stair/rampway mounting rail **8B**, stair/rampway storage well **8C**, the integrated Xoskeleton Support Crossbar (XSC) **13**, and the removable rear platform **2**.

FIG. 12 depicts a right side view of the HARAS with windshield frame **10**, hood platform **11**, and mounted extension platform **16**.

FIG. 13 depicts stair/rampway (depicted here in 10' configuration) **17** stowed in its stair/rampway storage well **8C** (also see **FIG. 10**), the vertically mounted hydraulic

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cylinder **18**, mounted to the Xoskeleton **8**, and attached to and lifting the windshield frame **10**, which simultaneously lifts the hood platform **11**, extending the internal telescoping perforated legs **19A** and **19B**, and external telescoping leg sleeves **12A** and **12B**, which attach to the front hood platform **11**, and lock to support and hold it and the mounted extension platform **16** in position.

FIG. 14 depicts the windshield ramp **9**, windshield frame **10**, hood platform **11**, and mounted extension platform **16** aligned and extended to full ramp position by the vertically mounted hydraulic cylinder **18**.

FIG. 15 depicts the HARAS from a front left side view with the windshield ramp **9**, disconnected and raised from the windshield frame **10** in a vertical position, with removable perimeter railing **20**.

FIG. 16 depicts the stair/rampway **17**, and stair/rampway rail attaching mechanism **17A** comprised of a standard vehicle door latch, being lifted by one person.

FIG. 17 depicts the stair/rampway **17**, and stair/rampway rail attaching mechanism **17A** comprised of a standard vehicle door latch, being attached to the hood platform perimeter rail **11A**.

FIG. 18 depicts the stair extension **21** being attached to the stair/rampway **17**.

FIG. 19 depicts the stair extension **21**, and stair/rampway **17** raised to full height

FIG. 20 depicts the HARAS configured with a stair/rampway **17**, mounted onto the Xoskeleton **8** by means of the stair/rampway rail attaching mechanism **17A**, and stair/rampway mounting bracket **22**, and connected to the windshield frame **10** so that it is elevated by the right vertically mounted hydraulic cylinder **18B**, and capable of being depressed to rest on the hood platform **11**.

FIG. 21 depicts the stair/rampway **17**, connected to the windshield frame **10** and Xoskeleton **8**, and fidly elevated by the vertically mounted hydraulic cylinders **18A** and **18B**.

FIG. 22 depicts a rear view of the elevated stair/rampway **17** with the ramp side up

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and combined with another stair/rampway **17** to provide a broader ramp.

FIG. 23 depicts the stair/rwnpway configuration **17**, with the stair side up to provide an easily ascendable broad staircase.

FIG. 24 depicts the auto-locking leg assembly being closed. With die release of the lever **23** the connected wedge **24** releases the auto locking pin **25**, which allows the pin to be inserted into one of the perforations of **19A** thereby locking the telescoping leg **19A**.

FIG. 25 depicts the auto-locking leg assembly being opened. With the pulling of the release lever **23** the connected wedge **24** retracts the auto locking pin **25**, from the perforated internal telescoping leg **19A** thereby allowing the telescoping leg to slide freely.

FIG. 26 depicts the Xoskeleton **8**, removed from the vehicle.

FIG. 27 depicts the stair/rampway **17** attached to the hood perimeter rail **11A**, by means of the stair/rampway rail attaching mechanism **17A**.

FIG. 28 depicts the vertically mounted hydraulic cylinder **18**, mounted to the Xoskeleton **8**, and the windshield frame **10**.

FIG. 29 depicts a close up of the windshield frame connecting hinge **10B**, windshield frame hinge pin **10D**, the hood platform **11** hinge platform connecting hinge **11C**, Xoskeleton **8**, windshield frame hydraulic cylinder mount block **10F** connected to hydraulic cylinder **18B** by means of the hydraulic cylinder mounting pin **18D**.

FIG. 30 depicts a close up of the windshield frame **10**, windshield ramp **9**, Xoskeleton **8**, windshield frame connecting hinge **10G**, windshield ramp connecting hinge **9A** windshield frame connecting pin **101**, Xoskeleton connecting hinge **8D**, Xoskeleton connecting pin **8F**.

FIGS. 31-34 illustrate a three-piece sectional Xoskeleton **8**. As shown in **FIGS. 31-32**, Xoskeleton **8** supports windshield frame **10** and hood platform **11**, and includes rear portion **81**, central portion **82**, and front portion **83** joined together at interfaces **84-85** by conventional tool-mounted hardware or quick-release pins, as discussed above.

FIG. 33 shows front portion **83** that attaches to the lower front of the vehicle via

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Pit-Boss Grill Guard **7** (not shown) or other similar means. An upper part of front portion **83** includes one half of interface **85**, with the other half of interface **85** being at the front end of central portion **82**.

Likewise, **FIG. 34** shows rear portion **81** that attaches to the lower rear of the vehicle via THP **1**/RRP **2** (not shown) or other similar means. An upper part of front portion **81** includes one half of interface **84**, with the other half of interface **84** being at the rear end of central portion **82**.

In the narrative of the foregoing detailed description, one embodiment of the invention has been described. Many other embodiments are possible. For example, the hood platform could be extended utilizing a hydraulically extendable sub platform providing additional height and reach for the overall system. Scissor jacks, screw jacks, or racks and pinions could replace the hydraulic cylinder assemblies illustrated as the means of raising and lowering the windshield ramp and hood platform. Or, principles of the invention can be adapted to create a lifting capability for the ramp and platform section in order to accommodate the raising and lowering for people, products , and materials along a vertical axis. These and many, many other modifications can be made without departing from the principles of the invention, for definition of which reference will be made to the appended claims.

Mission Ex. 1002-00104

I CLAIM:

1. A height adjustable platform system for vehicles, comprising:

a substantially horizontal platform for mounting parallel to the roof of a vehicle;

a first support for said platform extending between said platform and a lower rear support on said vehicle;

a second support for said platform extending between said platform and a lower front support on said vehicle; and

at least one height adjustable personnel support mounted to said platform, wherein at least two of said platform, first support, and second support are separable, sectional elements.

2. The height adjustable platform system for vehicles of claim 1, wherein said at least one height adjustable personnel support is a ramp pivotally mounted to said platform.

3. The height adjustable platform system for vehicles of claim 1, wherein all three of said platform, first support, and second support are separable, modular elements.

4. The height adjustable platform system for vehicles of claim 1, wherein said first support further includes a series of steps to form a ladder.

5. The height adjustable platform system for vehicles of claim 4, wherein said ladder is movably mounted so as to allow access to the rear of said vehicle.

6. The height adjustable platform system for vehicles of claim 4, wherein an upper surface of said steps includes high traction aluminum weep decking.

7. The height adjustable platform system for vehicles of claim 1, wherein an upper surface of said platform includes high traction aluminum weep decking.

8. The height adjustable platform system for vehicles of claim 1, wherein an upper surface of said at least one height adjustable surface includes high traction aluminum weep decking.

9. The height adjustable platform system for vehicles of claim 1, further

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comprising a brush guard for mounting on the front of the vehicle and a rear platform for mounting to the lower rear of the vehicle.

10. The height adjustable platform system for vehicles of claim 1, wherein said lower front and rear support are selected from the group consisting of vehicle frame members, brush guards, platforms, and bumpers.

11. The height adjustable platform system for vehicles of claim 1, further comprising running boards mounted to said vehicle.

12. The height adjustable platform system for vehicles of claim 11, wherein said running boards are retractably mounted.

13. The height adjustable platform system for vehicles of claim 11, wherein said running boards are mounted with quick release pins.

14. The height adjustable platform system for vehicles of claim 2, wherein said ramp comprises a hydraulically lifted platform.

15. The height adjustable platform system for vehicles of claim 14, wherein said ramp further comprises a pivoting windshield ramp.

16. The height adjustable platform system for vehicles of claim 14, wherein said ramp further comprises an extension for said hydraulically lifted platform.

17. The height adjustable platform system for vehicles of claim 14, wherein said ramp further comprises a ladder attachment for said hydraulically lifted platform.

18. The height adjustable platform system for vehicles of claim 14, wherein said ramp further includes telescoping supports spaced from a hydraulic lifting mechanism of said hydraulically lifted platform.

19. The height adjustable platform system for vehicles of claim 1, further comprising removable rails for said horizontal platform.

20. The height adjustable platform system for vehicles of claim 1, wherein said a second support for said platform extending between said platform and a lower front support on said vehicle approximates the contour of the vehicle hoodline and windshield.

Mission Ex. 1002-00106

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		
	Attorney Docket Number	180720
	Application Number	16/688,884
	Filing Date	November 19, 2019
	Inventor(s)	Joshua Clemente
	Group Art Unit	3634
	Examiner Name	TBD

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	Cite No.[1]	DOCUMENT NUMBER Number - Kind Code[2] (If Known)	PUBLICATION DATE OR ISSUE DATE MM-DD-YYYY	NAME OF PATENTEE
		6,832,667 B1	12-21-2004	Kahre et al.
		8,622,173 B2	01-07-2014	Fuqua et al.

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] (If Known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	T[6] (✓)
		WO 01/97919 A1	12-27-2001	Clemente	

OTHER DOCUMENTS

EXAMINER INITIALS	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article, title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

EXAMINER SIGNATURE		DATE CONSIDERED	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1]Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.pto.gov or MPEP 901.4. [3]Enter Office that issued the document, by the two-letter code (WIPO standard ST.3). [4]For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6]Applicant is to place a check mark here if English Language Translation is attached.

KWK/srh

Mission Ex. 1002-00107

UNITED STATES PATENT AND TRADEMARK OFFICE

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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/688,884	11/19/2019	Joshua Clemente	180720 (306317-00001)

CONFIRMATION NO. 6650

23363
Lewis Roca Rothgerber Christie LLP
PO BOX 29001
Glendale, CA 91209-9001

PUBLICATION NOTICE



Title:VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

Publication No.US-2020-0157884-A1
Publication Date:05/21/2020

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently https://portal.uspto.gov/pair/PublicPair. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Mission Ex. 1002-00108

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UNITED STATES DEPARTMENT OF COMMERCE
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/688,884	11/19/2019	Joshua Clemente	180720 (306317-00001)	6650

23363 7590 04/29/2021

Lewis Roca Rothgerber Christie LLP
PO BOX 29001
Glendale, CA 91209-9001

EXAMINER
CHIN-SHUE, ALVIN CONSTANTINE

ART UNIT	PAPER NUMBER
3634	

NOTIFICATION DATE	DELIVERY MODE
04/29/2021	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PLPrivatePair@lrrc.com
pto@lewisroca.com

Mission Ex. 1002-00109

Office Action Summary	Application No. 16/688,884	Applicant(s) Clemente, Joshua	
	Examiner ALVIN C CHIN-SHUE	Art Unit 3634	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-17 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☐ Claim(s) _____ is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☑ Claim(s) 1-17 are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

Mission Ex. 1002-00110

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-16, drawn to a vehicle-mounted access system, classified in E06C 5/04.

II. Claim 17, drawn to a method of deploying a vehicle-mounted access system, classified in B66F 11/04.

The inventions are independent or distinct, each from the other because:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the product, as set forth in claim 1, can be used in a process without a touchscreen interface.

Restriction for examination purposes as indicated is proper because all the inventions listed in this action are independent or distinct for the reasons given

above and there would be a serious search and/or examination burden if restriction were not required because one or more of the following reasons apply:

(a) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;

(b) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);

(c) the prior art applicable to one invention would not likely be applicable to another invention.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of an invention to be examined even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention**.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under

37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103 or pre-AIA 35 U.S.C. 103(a) of the other invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALVIN CONSTANTINE CHIN-SHUE whose telephone number is (571)272-6828. The examiner can normally be reached on Mon-Fri 8.00-5.00.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katherine Mitchell can be reached on 28800. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ALVIN C CHIN-SHUE/
Primary Examiner, Art Unit 3634

Information:	
Total Files Size (in bytes):	97992

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt

EFS ID:	42944037
Application Number:	16688884
International Application Number:	
Confirmation Number:	6650
Title of Invention:	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM
First Named Inventor/Applicant Name:	Joshua Clemente
Customer Number:	23363
Filer:	Daniel A. Salgado/Sheila Harter
Filer Authorized By:	Daniel A. Salgado
Attorney Docket Number:	180720 (306317-00001)
Receipt Date:	09-JUN-2021
Filing Date:	19-NOV-2019
Time Stamp:	16:34:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response to Election / Restriction Filed	180720Response.pdf	97992 2d585585bda3e64cf31cabdc4f88947fbfa0f998	no	1

Warnings:

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

I hereby certify that this correspondence is being EFS-Web transmitted to the United States Patent and Trademark Office on June 9, 2021 at or before 11:59 p.m. Pacific Time under the Rules of 37 CFR § 1.8.

/Sheila R. Harter/
Sheila R. Harter

Appl No.	: 16/688,884	Confirmation No. 6650
Inventor	: Joshua Clemente	
Filed	: November 19, 2019	
Title	: VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM	
TC/A.U.	: 3654	
Examiner	: Alvin Constantine Chin-Shue	
Docket No.	: 180720	
Customer No.	: 23363	

RESPONSE TO RESTRICTION REQUIREMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Post Office Box 29001
Glendale, CA 91209-9001
June 9, 2021

Commissioner:

In response to the Office action of April 29, 2021, Applicant hereby elects Claims 1-16, drawn to a vehicle-mounted access system, without traverse.

Applicant reserves the right to pursue the non-elected claims in a divisional application.

Respectfully submitted,

LEWIS ROCA ROTHGERBER CHRISTIE LLP

By /Daniel Salgado/
Daniel A. Salgado
Reg. No. 76,283
626/795-9900

DAS/srh

Mission Ex. 1002-00117

Bibliographic Data

Application No: 16/688,884

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged: /ALVIN C CHIN-SHUE/ Examiner's Signature | Initials

Title: VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/19/2019	182	3634	180720 (306317-00001)
RULE			

APPLICANTS

INVENTORS

Joshua Clemente, Philadelphia, PA, UNITED STATES

CONTINUING DATA

This application has PRO of 62770022 11/20/2018

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

12/05/2019

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STATE OR COUNTRY

UNITED STATES

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Glendale, CA 91209-9001
UNITED STATES

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		
	Attorney Docket Number	180720
	Application Number	16/688,884
	Filing Date	November 19, 2019
	Inventor(s)	Joshua Clemente
	Group Art Unit	3634
	Examiner Name	TBD

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	Cite No.[1]	DOCUMENT NUMBER Number - Kind Code[2] (If Known)	PUBLICATION DATE OR ISSUE DATE MM-DD-YYYY	NAME OF PATENTEE
		6,832,667 B1	12-21-2004	Kahre et al.
		8,622,173 B2	01-07-2014	Fuqua et al.

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	Cite No.[1]	Foreign Patent Document Country Code[3] - Number[4] - Kind Code[5] (If Known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	T[6] (✓)
		WO 01/97919 A1	12-27-2001	Clemente	

OTHER DOCUMENTS

EXAMINER INITIALS	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article, title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

EXAMINER SIGNATURE	/ALVIN C CHIN-SHUE/	DATE CONSIDERED	08/26/2021

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1]Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.pto.gov or MPEP 901.4. [3]Enter Office that issued the document, by the two-letter code (WIPO standard ST.3). [4]For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6]Applicant is to place a check mark here if English Language Translation is attached.

KWK/srh

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.C.C/

Mission Ex. 1002-00119

CPCI B60P1/43 20130101

INT-CL-CURRENT:

TYPE	IPC	DATE
IPCP	B60P1/43 20060101	
IPCS	B64F1/315 20060101	

ABSTRACT:

The vehicle has a walling path (12) on its chassis (2) which consists of telescopic sections (18-20) which are vertically movable up and down about a swivel axis (12). In the aircraft (33) side end the path has a section (28) joined to the path telescopic section (14). The aircraft side section can be swivelled and arrested w.r.t. the telescopic path section. The aircraft side section may contain aircraft contacting extension (34) swivelable about an axis (35) orthogonal to its walling surface (21).

PUB-NO: DE004400741A1

DOCUMENT-IDENTIFIER: DE 4400741 A1

TITLE: Vehicle for evacuating people from aircraft

PUBN-DATE: July 20, 1995

PATENT-FAMILY-ID: 6507799

APPLICANT:

NAME	COUNTRY
TREPEL HEBE FOERDERTECH	DE

APPL-NO: DE 4400741 A

APPL-DATE: January 13, 1994

PRIORITY-DATA:

PRIORITY-NO	PRIORITY-APPL-DATE
DE 4400741 A	19940113

CPC-CURRENT:

TYPE	CPC	DATE
CPCI	B64F1/315	20130101

Nummer: DE 44 00 741 A1
Int. Cl.[6]: B 64 F 1/30
Offenlegungstag: 20. Juli 1995

FIG.2

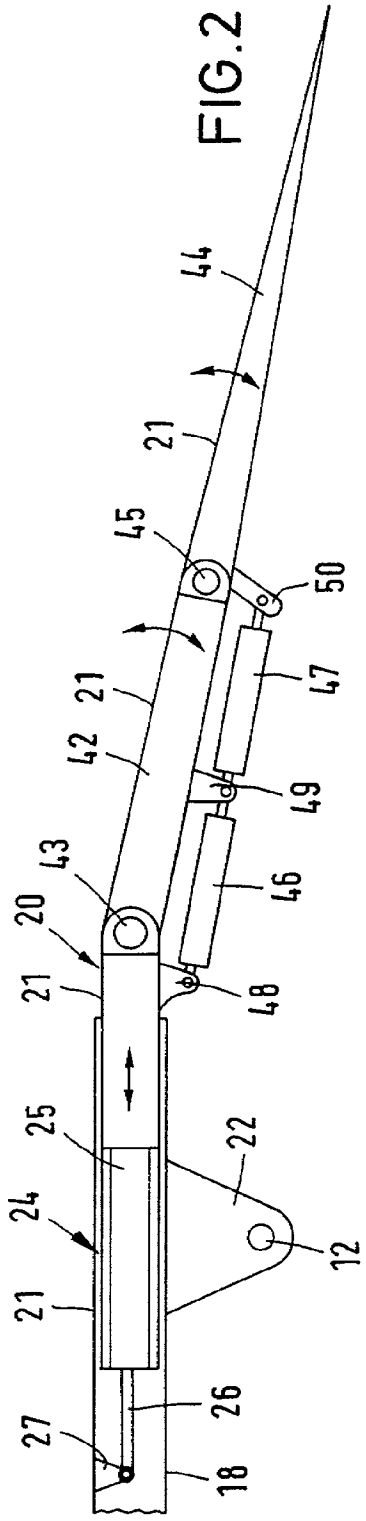
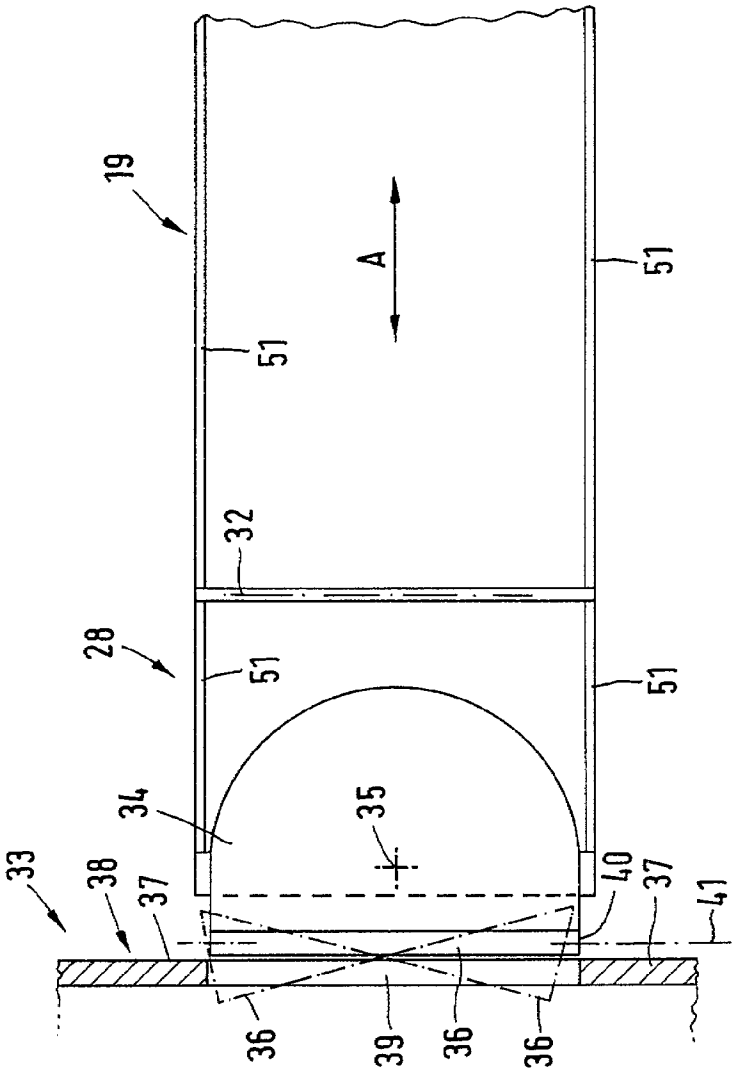


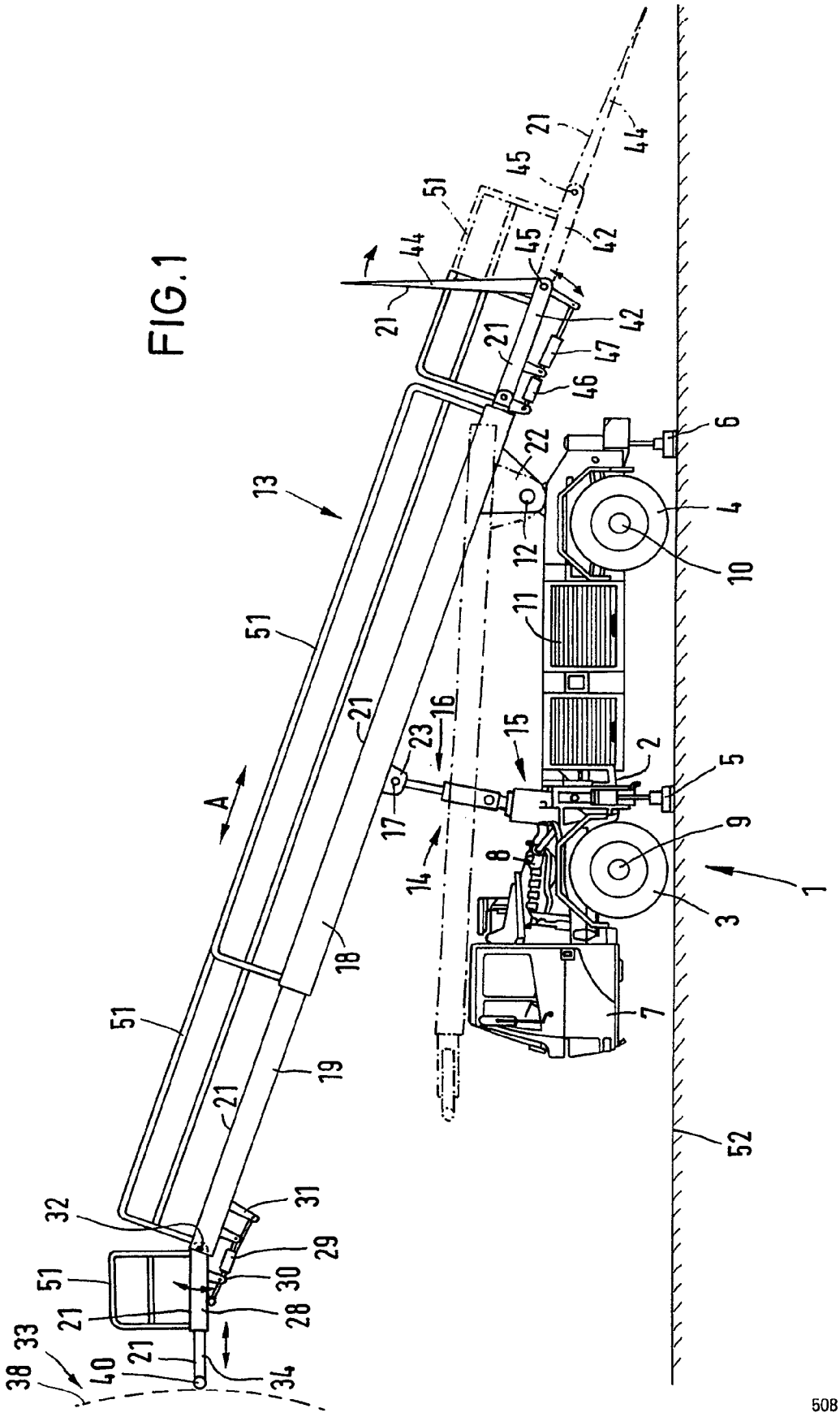
FIG.3



Mission Ex. 1002-00122

Nummer: DE 44 00 741 A1
Int. Cl.[6]: B 64 F 1/30
Offenlegungstag: 20. Juli 1995

FIG.1



508 029/64

Mission Ex. 1002-00123

18 und des bodenseitigen Laufstegabschnittes 20 darstellen. Anschließend wird der bodenseitige Laufstegabschnitt 20 so weit aus dem chassisseitigen Laufstegabschnitt 18 herausgefahren, bis die Verlängerung 44 mit ihrem freien Ende den Boden 52 berührt. Bei dem nunmehr zur Evakuierung bereiten Fahrzeug können die zu evakuierenden Personen das Flugzeug 33 verlassen und betreten zunächst die im Bereich des Laufstegabschnittes 28 und der Verlängerung 34 horizontal ausgerichtete Lauffläche 21, können sich in diesem Bereich des Laufsteges 13 orientieren, um dann über die geneigt angeordnete Lauffläche 21 des Laufsteges 13 im Bereich der Laufstegabschnitte 19, 18, 20, 42 und der Verlängerung 44 den Laufsteg hinabzugehen. Um sicherzustellen, daß die Personen auf dem Laufsteg 13 nicht ausgleiten, ist dessen Lauffläche 21 als rutschfester Belag ausgebildet.

Das Überführen des Fahrzeuges in dessen Fahrstellung erfolgt nach der Evakuierung der Personen im umgekehrten Sinne wie vorstehend aufgezeigt.

Patentansprüche

1. Fahrzeug zum Evakuieren von Personen aus Flugzeugen mit folgenden Merkmalen:
   - ein verfahrbares Chassis (2),
   - einen im Chassis (2) gelagerten, um eine Schwenkachse (12) anhebbaren und absenkbaren Laufsteg (13), der in Laufrichtung (A) aus- und einfahrbare Laufstegabschnitte (19, 18, 20) aufweist.

2. Fahrzeug nach Anspruch 1, bei dem der Laufsteg (13) im Bereich seines an das Flugzeug (33) anzulegenden Endes einen schwenkbar an einen aus- und einfahrbaren Laufstegabschnitt (19) angelenkten, flugzeugseitigen Laufstegabschnitt (28) aufweist, sowie Mittel (29) zum Verschwenken und Mittel (29) zum Festhalten des flugzeugseitigen Laufstegabschnittes (28) relativ zu diesem aus- und einfahrbaren Laufstegabschnitt (19) vorgesehen sind.

3. Flugzeug nach Anspruch 2, bei dem im flugzeugseitigen Laufstegabschnitt (28) eine an das Flugzeug (33) anlegbare Verlängerung (34) gelagert ist.

4. Fahrzeug nach Anspruch 3, bei dem die Verlängerung (34) um eine senkrecht zu deren Lauffläche (21) angeordnete Achse (35) schwenkbar in dem flugzeugseitigen Laufstegabschnitt (28) gelagert ist.

5. Flugzeug nach einem der Ansprüche 1 bis 4, bei dem der Laufsteg (13) mindestens zwei zentrale teleskopierbare Laufstegabschnitte (18, 19) aufweist, wobei der eine teleskopierbare Laufstegabschnitt (18) im Bereich seines flugzeugfernen Endes im Chassis (2) schwenkbar gelagert ist und an diesem teleskopierbaren Laufstegabschnitt (18), beabstandet zu dessen Schwenkachse (12), sowie am Chassis (2) ein Huborgan, insbesondere ein hydraulisch wirksamer Hubzylinder (14) angreift.

6. Fahrzeug nach Anspruch 5, bei dem in dem einen Laufstegabschnitt (18) der flugzeugseitige Laufstegabschnitt (19) teleskopierbar gelagert ist.

7. Fahrzeug nach einem der Ansprüche 1 bis 6, bei dem der Laufsteg (13) im Bereich seines dem Boden (52) zugewandten Endes eine an einen aus- und einfahrbaren Laufstegabschnitt (20) angelenkte, auf den Boden (52) auflegbare Verlängerung (42, 44) aufweist, wobei die Verlängerung (42, 44) parallel zur chassisseitigen Schwenkachse (12) des Laufsteges (13) schwenkbar angelenkt ist, sowie Mittel (46, 47) zum Festhalten und Mittel (46, 47) zum Verschwenken der bodenseitigen Verlängerung (42, 44) relativ zu dem zugeordneten Laufstegabschnitt (20) vorgesehen sind.

8. Fahrzeug nach Anspruch 7, bei dem die auf den Boden (52) auflegbare Verlängerung (42, 44) an einen dritten teleskopierbaren Laufstegabschnitt (20) schwenkbar angelenkt ist, der in dem chassisseitigen Laufstegabschnitt (18) gelagert ist.

9. Fahrzeug nach Anspruch 7, bei dem im chassisseitigen Laufstegabschnitt (18) ein dritter teleskopierbarer Laufstegabschnitt (20) gelagert ist, mit dem ein bodenseitiger Laufstegabschnitt (42) schwenkbar verbunden ist, dessen bodenseitiges Ende die Verlängerung (44) aufnimmt, wobei die Schwenkachsen (45, 43) von Verlängerung (44) und bodenseitigem Laufstegabschnitt (42) bzw. bodenseitigem Laufstegabschnitt (42) und drittem teleskopierbarem Laufstegabschnitt (20) parallel zur Schwenkachse (12) des chassisseitigen Laufstegabschnitts (18) angeordnet sind, sowie Mittel (46, 47) zum Festhalten und Mittel (46, 47) zum Verschwenken des bodenseitigen Laufstegabschnittes (42) relativ zum dritten teleskopierbaren Laufstegabschnitt (20) sowie der Verlängerung (44) relativ zum bodenseitigen Laufstegabschnitt (42) vorgesehen sind.

10. Fahrzeug nach einem der Ansprüche 1 bis 9, bei dem das Ausfahren und Einfahren der teleskopierbaren Laufstegabschnitte (18, 19, 20) mittels Stellelementen, insbesondere mittels hydraulischen Hubzylindern (24) und/oder Kettentrieben erfolgt.

11. Fahrzeug nach einem der Ansprüche 1 bis 10, bei dem der Laufsteg (13) auf beiden Seiten Geländer (51) aufweist, die sich im wesentlichen über die gesamte Lauflänge des Laufsteges (13) erstrecken.

Hierzu 2 Seite(n) Zeichnungen

Mission Ex. 1002-00124

Der Laufsteg 13 weist drei in Laufrichtung, d. h. in Begehrichtung, die durch den Doppelpfeil A verdeutlicht ist, aus- und einfahrbare Laufstegabschnitte 18, 19 und 20 (Laufstegabschnitt 20 siehe Fig. 2) auf. Diese sind teleskopierbar ausgebildet, womit der flugzeugseitige Laufstegabschnitt 19 über nicht dargestellte Führungen im chassisseitigen Laufstegabschnitt 18 und der bodenseitige Laufstegabschnitt 20 über nicht dargestellte Führungen im chassisseitigen Laufstegabschnitt 18 verschieblich gelagert ist. Im Bereich des bodenseitigen Laufstegabschnittes 20 weist der chassisseitige Laufstegabschnitt 18 auf der der Lauffläche 21 des Laufsteges 13 abgewandten Seite einen Lageransatz 22 zur Aufnahme der Schwenkachse 12 auf, um die der Laufsteg 13 mit seinem chassisseitigen Laufstegabschnitt 18 schwenkbar ist. In Abstand zum Lageransatz 22 ist an der der Lauffläche 21 des chassisseitigen Laufstegabschnittes 18 abgewandten Seite dieses Abschnittes ein weiterer Lageransatz 23 angeordnet, den die Schwenkachse 17 der Kolbenstange 16 durchsetzt. Ein- und ausgefahren werden der flugzeugseitige Laufstegabschnitt 19 und der bodenseitige Laufstegabschnitt 20 mittels Hydraulikzylindern, wobei nur der Hydraulikzylinder 24 zum Ein- und Ausfahren des bodenseitigen Laufsteges 20 in der Fig. 2 gezeigt ist. Der eigentliche Zylinder 25 des Hydraulikzylinders 24 ist im bodenseitigen Laufstegabschnitt 20 gelagert und es greift die Kolbenstange 26 des Hydraulikzylinders 24 schwenkbar an einem mit dem chassisseitigen Laufstegabschnitt 18 verbundenen Lageransatz 27 an.

Wie insbesondere der Darstellung der Fig. 1 und 3 zu entnehmen ist, weist der Laufsteg 13 im Bereich seines an ein Flugzeug 33 anzulegenden Endes einen schwenkbar an den flugzeugseitigen Laufstegabschnitt 19 angelenkten, weiteren flugzeugseitigen Laufstegabschnitt 28 auf. Dieser ist mittels eines Hubzylinders 29 verschwenkbar, der schwenkbar an Lageransätzen 30 und 31 angreift, die an der Unterseite des Laufstegabschnittes 28 und des Laufstegabschnittes 19 angeordnet sind. Die parallel zu der Schwenkachse 12 angeordnete Schwenkachse des Laufstegabschnittes 28 ist mit der Bezugsziffer 32 bezeichnet.

Im Laufstegabschnitt 28 ist eine an das Flugzeug 33 anlegbare Verlängerung 34 gelagert, die in Art eines Drehtellers ausgebildet ist. Die Verlängerung 34 ist um eine senkrecht zu deren Lauffläche 21 angeordnete Achse 35 schwenkbar im Laufstegabschnitt 28 gelagert und im wesentlichen in Art eines Halbkreises ausgebildet, dessen gerade Stirnkante 36 an die Außenhaut 37 der Wandung 38 des Flugzeuges 33 im Bereich einer Ausstiegsöffnung 39 legbar ist. Fig. 3 verdeutlicht, daß entsprechend dem Winkel, den die Wandung 38 des Flugzeuges 33, bezogen auf dessen Längsrichtung, mit dem Laufsteg 13 einschließt, die Verlängerung 34 mehr oder weniger verschwenkt wird, so daß die Stirnkante 36 der Verlängerung 34 über deren ganze Länge an der Außenhaut 37 der Flugzeugwandung 38 anliegt. Mit strichlierten Linien sind zwei von vielen anderen möglichen Stellungen der schwenkbaren Verlängerung 34 zur Anlage der Stirnkante 36 an ein entsprechend ausgerichtetes Flugzeug 33 verdeutlicht. Die Stirnkante 36 wird durch eine Rolle 40 gebildet, die um eine Achse 41 im Drehtellerabschnitt der Verlängerung 34 schwenkbar ist und zu einem beschädigungsfreien Anfahren des Laufsteges 13 an das Flugzeug 33 beitragen soll.

Insbesondere der Darstellung der Fig. 2 ist zu entnehmen, daß mit dem bodenseitigen Laufstegabschnitt 20 ein weiterer bodenseitiger Laufstegabschnitt 42 über eine parallel zur Schwenkachse 12 angeordnete Schwenkachse 43 und mit dem bodenseitigen Ende des Laufstegabschnittes 42 eine Verlängerung 44 über eine parallel zur Schwenkachse 43 angeordnete Schwenkachse 45 verbunden ist. Die Verlängerung 44 ist dabei, ausgehend von der Schwenkachse 45, keilförmig verjüngend ausgebildet. Zum Verschwenken des Laufstegabschnittes 42 und der Verlängerung 44 sind zwei Hydraulikzylinder 46 und 47 vorgesehen, wobei der Hydraulikzylinder 46 an einem an der Unterseite des Laufstegabschnittes 20 angeordneten Lageransatz 48 und einem an der Unterseite des Laufstegabschnittes 42 angeordneten Lageransatz 49 schwenkbar angreift sowie der Hydraulikzylinder 47 am Lageransatz 49 und einem an der Unterseite der Verlängerung 44 angeordneten Lageransatz 50 schwenkbar angreift.

Die Hydraulikzylinder zum Verfahren der Ständer 5 und 6, der Hydraulikzylinder 14 zum Verschwenken des chassisseitigen Laufstegabschnitts 18, die Hydraulikzylinder zum Aus- und Einfahren der teleskopierbaren Laufstegabschnitte 18 und 20, die Hydraulikzylinder 29, 46 und 47 zum Verschwenken der Laufstegabschnitte 28 und 42 sowie der Verlängerung 44 sind mittels des Hydraulikaggregates beaufschlagbar, wobei darauf verzichtet wurde, die bekannten Komponenten des Hydrauliksystems bis ins einzelne zu verdeutlichen. Das Festhalten der genannten Teile in ihren Fahr- bzw. Schwenkpositionen erfolgt auf bekannte Art und Weise durch das hydraulische Arretieren der Hydraulikzylinder.

Wie der Darstellung der Fig. 1 und 3 zu entnehmen ist, sind beidseitig der Lauffläche 21 des Laufsteges 13 im Bereich der Laufstegabschnitte 28, 19, 18, 20 und 42 Geländer 51 angebracht.

Im Fahrzustand des Fahrzeuges befindet sich der Laufsteg 13 in der in Figur zusätzlich verdeutlichten eingefahrenen Position, in der der chassisseitige Laufstegabschnitt 18 bis geringfügig oberhalb des Fahrerhauses 7 abgesenkt ist und der flugzeugseitige Laufstegabschnitt 19 sowie der bodenseitige Laufstegabschnitt 20 in diesen eingefahren sind. Der weitere flugzeugseitige Laufstegabschnitt 28 ist in eine solche Position verschwenkt, daß dessen Lauffläche 21 parallel zur Aufstandsfläche des Fahrzeugunterbaus 1 auf dem Boden 52 orientiert ist. Die Verlängerung 44 ist in die Lotrechte zum Boden 52 verschwenkt. Der weitere bodenseitige Laufstegabschnitt 42 kann mit seinem verlängerungsseitigen Ende geringfügig zum Boden hin geneigt sein, um die Bauhöhe des Fahrzeuges im Bereich der Verlängerung 44 zu minimieren.

Sind Personen aus einem Flugzeug zu evakuieren, verfährt das Fahrzeug zum Flugzeug 33 und wird über die Stützen 5 und 6 hydraulisch aufgeständert und dabei über nicht dargestellte Mittel horizontal nivelliert. Entsprechend der Position des Fahrzeuges zum Flugzeug wird dann der chassisseitige Laufstegabschnitt 18 soweit erforderlich angehoben und der flugzeugseitige Laufstegabschnitt 19 soweit erforderlich ausgefahren, ferner der weitere flugzeugseitige Laufstegabschnitt 28 soweit erforderlich in die Horizontale verschwenkt, wobei sich die Rolle 40 der Verlängerung 34 unter Berücksichtigung der Position des Flugzeuges 33 relativ zum Fahrzeug an die Außenhaut 37 des Flugzeuges 33 anlegt. Anschließend werden der weitere bodenseitige Laufstegabschnitt 42 und die bodenseitige Verlängerung 44 in eine solche Position verschwenkt, daß diese Teile die in Fig. 1 zusätzlich angedeutete, geradlinige Verlängerung des chassisseitigen Laufstegabschnittes

Mission Ex. 1002-00125

Beschreibung

Die Erfindung betrifft ein Fahrzeug zum Evakuieren von Personen aus Flugzeugen.

Die Evakuierung von Personen aus Flugzeugen erfolgt in aller Regel mittels Flugzeugrutschen, die im Bereich der Flugzeugtüren vom Flugzeug herabgelassen werden. Fälle, in denen Personen evakuiert werden müssen, sind vielfältig denkbar, beispielsweise dann, wenn ein Flugzeug beim Landen über die Landebahn hinausgelangt ist. Die Evakuierung muß unter komplizierten Bedingungen beherrscht werden, beispielsweise aufgrund des in aller Regel nicht befestigten Bodens und der damit verbundenen Schräglage des Flugzeuges, sowohl in Längsrichtung als auch in Querrichtung, ferner wegen eventueller Defekte am Flugzeug, beispielsweise infolge des gebrochenen Flugzeugfahrgestelles und der auch aus diesem Grunde bedingten Schräglage des Flugzeuges gegenüber seiner Normalposition.

Nachteilig ist bei den genannten Flugzeugrutschen, daß sie einerseits nur vom Flugzeug aus aktivierbar sind, andererseits bei Verwendung solcher Flugzeugrutschen die Gefahr besteht, daß sich die zu evakuierenden Personen in erheblichem Umfang verletzen. Dies deshalb, weil infolge der Paniksituation Personen in zu kurzen Abständen über die Rutschen abgleiten und mit noch im Bereich des unteren Endes der Fahrzeugrutschen befindlichen Personen zusammenprallen.

Es ist Aufgabe der vorliegenden Erfindung, ein Fahrzeug anzugeben, das bei baulich einfacher Gestaltung und kostengünstiger Ausführung eine wirksame, sichere Evakuierung von Personen aus Flugzeugen gestattet.

Die Erfindung schlägt hierzu ein Fahrzeug zum Evakuieren von Personen aus Flugzeugen vor, das ein verfahrbares Chassis sowie einen im Chassis gelagerten, um eine Schwenkachse anhebbaren und absenkbaren Laufsteg aufweist, der in Laufrichtung aus- und einfahrbare Laufstegabschnitte besitzt.

Wesentliches Merkmal der vorliegenden Erfindung ist somit der im verfahrbaren Chassis schwenkbar gelagerte, anhebbare und absenkbare Laufsteg. Diese Gestaltung ermöglicht es, zum Evakuieren von Personen mit dem Fahrzeug so dicht wie möglich an das Flugzeug heranzufahren und, ausgehend von dieser Position, den Laufsteg von der abgesenkten Ruhestellung in die gewünschte, mehr oder weniger ausgefahrene Hubposition der Laufstegabschnitte zu überführen. Die Personen können somit über den, entsprechend der angefahrenen Türhöhe ausgerichteten Laufsteg das Flugzeug verlassen.

Der Laufsteg kann dabei auf die unterschiedlichste Art und Weise gestaltet sein. So geht eine grundsätzliche Gestaltung davon aus, daß der Laufsteg mehrere teleskopierbare Laufstegabschnitte aufweist, von denen einer schwenkbar im Chassis gelagert ist, wobei beabstandet zur Schwenkachse des Laufstegabschnittes an diesem sowie am Chassis mindestens ein Huborgan angreift, insbesondere ein als hydraulisch wirkender Hubzylinder ausgebildetes Huborgan. Gemäß einer grundsätzlichen weiteren Gestaltung des Laufsteges können mit den im Evakuierungszustand zur Horizontalen geneigt angeordneten teleskopierbaren Laufstegabschnitten weitere Laufstegabschnitte schwenkbar verbunden sein, so daß der Laufsteg im Andockbereich an das Flugzeug horizontal ausgerichtet und im Bodenbereich exakt auf den Boden abgesenkt werden kann. Hierzu kann beispielsweise das bodenseitige Ende des Laufsteges als schwenkbare, plattenförmige Verlängerung ausgebildet sein.

Das Ausfahren und Einfahren der teleskopierbaren Laufstegabschnitte erfolgt mittels Stellelementen, die insbesondere als hydraulische Hubzylinder und/oder Kettentriebe ausgebildet sind. Bekannte Arretiervorrichtungen dienen dem Blockieren der teleskopierbaren Laufstegabschnitte nach Erreichen von deren gewünschten Positionen. Die teleskopierbaren Laufstegabschnitte sind mittels Führungen ineinandergeführt. Das Verschwenken und Festhalten der dem Flugzeug und dem Boden zugeordneten Laufstegabschnitte erfolgt über separate Mittel, die insbesondere als hydraulisch wirksame, in ihrer jeweiligen Stellposition arretierbare Zylinder ausgebildet sind.

Aus Sicherheitsgründen sollte der Laufsteg auf beiden Seiten mit Geländern versehen sein, die sich im wesentlichen über die gesamte Lauflänge des Laufsteges erstrecken. Dies bedeutet, daß in den durch die Schwenkverbindungen vorgegebenen Knickbereichen des Laufsteges geringfügige Abschnitte des Laufsteges ohne Geländer vorgesehen sein können. Auf ein Geländer kann insbesondere auch im Bereich der bodenseitigen Verlängerung des Laufsteges verzichtet werden.

Das eigentliche Fahrzeug ist bevorzugt als geländegängiges Kraftfahrzeug ausgebildet. Es sollte daher auch eine Mehrpunktabstützung aufweisen, auf der das Fahrzeug bei Erreichen der Einsatzposition abgestützt und möglichst horizontal ausgerichtet werden kann.

Wenn das Fahrzeug nicht im Einsatz ist, ist der Laufsteg in eine im wesentlichen horizontal ausgerichtete Position abgesenkt und es sind die einzelnen Laufstegabschnitte eingefahren, so daß die eingefahrene Laufsteglänge nur geringfügig länger als die Länge des Chassis ist.

Weitere Merkmale der Erfindung sind in den Unteransprüchen, der Beschreibung der Figuren und den Figuren selbst dargestellt, wobei bemerkt wird, daß alle Einzelmerkmale und alle Kombinationen von Einzelmerkmalen erfindungswesentlich sind.

In den Figuren ist die Erfindung anhand einer bevorzugten Ausführungsform beispielsweise dargestellt, ohne auf diese beschränkt zu sein. Es zeigt:

Fig. 1 das erfindungsgemäße Fahrzeug zum Evakuieren von Personen in einer schematischen Darstellung, von der Seite gesehen,

Fig. 2 den bodenseitigen Bereich des Laufsteges von der Seite gesehen, in einer vergrößerten Darstellung und

Fig. 3 den flugzeugseitigen Bereich des Laufsteges in einer Draufsicht gesehen, in einer vergrößerten Darstellung.

Fig. 1 zeigt den Fahrzeugunterbau **1**, der im wesentlichen aus dem Chassis **2**, in diesem über Vorder- und Hinterachsen **9**, **10** gelagerten Vorder- und Hinterrädern **3**, **4**, diesen zugeordneten Stützen **5**, **6**, einem Fahrerhaus **7**, einem dahinter angeordneten Motor **8** sowie einem zwischen Vorder- und Hinterachsen **9**, **10** angeordneten, auf dem Chassis **2** gelagerten Hydraulikaggregat **11** besteht. Im Bereich der Hinterachse **10** ist um eine parallel zur Hinterachse angeordnete Schwenkachse **12** ein Laufsteg **13** schwenkbar im Chassis **2** gelagert. Verschwenkt wird der Laufsteg **13** mittels eines hydraulisch wirkenden Hubzylinders **14**, dessen Zylinder **15** um eine parallel zur Schwenkachse **12** angeordnete Achse schwenkbar im Chassis **2** gelagert ist und dessen teleskopierbare Kolbenstange **16** um eine gleichfalls parallel zur Schwenkachse **12** angeordnete Achse **17** an der Unterseite des Laufsteges **13** angreift.

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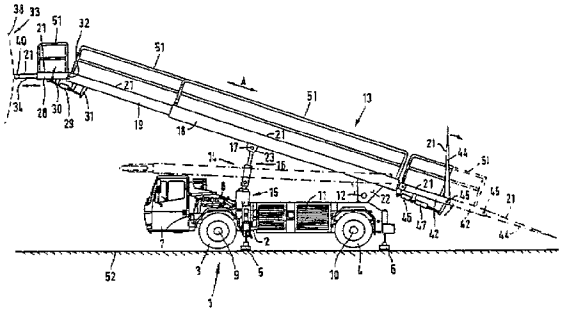
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(72) Erfinder:
Antrag auf Nichtnennung

(54) Fahrzeug zum Evakuieren von Personen aus Flugzeugen

(57) Die Erfindung schlägt ein Fahrzeug zum Evakuieren von Personen aus Flugzeugen (33) vor, das ein verfahrbares Chassis (2) aufweist sowie einen im Chassis gelagerten, um eine Schwenkachse (12) anhebbaren und absenkbaren Laufsteg (13), der in Laufrichtung (A) aus- und einfahrbare Laufstegabschnitte (18, 19) aufweist.
Das erfindungsgemäße Fahrzeug ermöglicht es bei dessen baulich einfacher Gestaltung und kostengünstiger Ausführung eine wirksame, sichere Evakuierung von Personen aus Flugzeugen durchzuführen.



DE 44 00 741 A1

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

BUNDESDRUCKEREI 05. 95 508 029/64 7/29

Mission Ex. 1002-00127

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EAST Search History

EAST Search History (Prior Art)

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L5	80	("1890940" | "1898826" | "1899742" | "20040052622" | "2005990" | "20110148057" | "20120263561" | "20130181091" | "20160221510" | "2116470" | "2586531" | "2946397" | "3013681" | "3058607" | "3563342" | "3621935" | "3672549" | "4058243" | "4059281" | "4062464" | "4139078" | "4161997" | "4170331" | "4234285" | "4239438" | "4344508" | "4408680" | "4603908" | "4618083" | "4738582" | "4751981" | "4827742" | "4858725" | "4877108" | "4909352" | "4953757" | "5009350" | "5048641" | "5064022" | "5071308" | "5104280" | "5172952" | "5297912" | "5421495" | "5447408" | "5469933" | "5518357" | "5538100" | "5632591" | "5743702" | "5791857" | "5850891" | "6003633" | "6012545" | "6029750" | "6092972" | "6257534" |	US-PGPUB; USPAT; USOCR	OR	ON	2021/08/26 11:01

ABSTRACT:

A step-ladder which provides access to an aircraft for the passenger is mounted on the chassis of a motor vehicle so that it can be positioned close to the aircraft. The actual ladder forms one link of a parallelogram. The ladder and its parallel link are pivoted at their lower ends to the vehicle chassis with the end part of the chassis forming part of the parallelogram. The upper ends of the ladder (2) and link (26) are pivoted to the platform (3) which forms the fourth link of the parallelogram. The step-ladder is raised and lowered by a hydraulic cylinder. ADVANTAGE - The step-ladder is suitable for use with any size of aircraft.

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Fluggasttreppe

Die Erfindung betrifft eine Fluggasttreppe auf einem insbesondere fahrbaren Untergestell, die mittels einer Hubvorrichtung in Gebrauchsstellungen unterschiedlicher Höhe und Neigung anhebbar ist und deren Treppenwangen je ein Paar von Parallelogrammstangen umfassen, an denen die Treppenstufen so angelenkt sind, daß sie in jeder Gebrauchsstellung im wesentlichen horizontal sind, wobei sich an das obere Ende der Treppe eine Übergangsplattform anschließt, an die die Parallelogrammstangen der Treppe zu gemeinsamer Neigungseinstellung der Übergangsplattform und der Treppenstufen angelenkt sind.

Bei bekannten Bauarten wird die Übergangsplattform von der Treppe getragen; die Hubvorrichtung greift dementsprechend an der Treppe an. Bei einer Treppenausführung der eingangs genannten Art setzt dies voraus, daß die Last von den Parallelogrammstangen in den Treppenwangen aufgenommen wird, was in anbetracht ihres geringen gegenseitigen Abstandes zu hoher Beanspruchung führt, zumal bei einer weit auskragenden Übergangsplattform. Das Problem wird noch dadurch erschwert, daß

ein möglichst großer Höheneinstellbereich erwünscht ist. Dies drängt den Konstrukteur, den Anlenkpunkt der Treppe am Untergestell möglichst weit hinten vorzusehen. Entsprechend groß ist dort das bei Belastung der Übergangsplattform zu übertragende Moment.

Die Erfindung will eine Fluggasttreppe der eingangs genannten Art schaffen, bei der die Funktionen der Lastaufnahme und der Neigungseinstellung der Plattform und der Treppenstufen einfach und wirkungsvoll erfüllt werden und gleichzeitig ein weiter Höheneinstellbereich ermöglicht wird.

Die erfindungsgemäße Lösung besteht darin, daß die Hubvorrichtung an der Übergangsplattform angreift und das obere Ende der Treppe von der Übergangsplattform getragen ist.

Durch den Angriff der Hubvorrichtung an der Übergangsplattform wird die Treppe entlastet. Die Treppe kann entsprechend leichter ausgeführt sein. Dies gilt insbesondere für die Parallelogrammstangen, die der Neigungseinstellung der Treppenstufen dienen.

Die Hubvorrichtung kann auch zur Einstellung der Neigung der Übergangsplattform herangezogen werden. Da die Neigung der Treppenstufen der Neigung der Übergangsplattform passiv folgt, kann in diesem Fall die Verbindung des unteren Endes der Treppe mit dem Untergestell sehr einfach ausgeführt sein. Es genügt, wenn sie nahe ihrem unteren Ende verschiebbar auf einer Stütze des Untergestells aufliegt.

Für die Neigungseinstellung mittels der Hubvorrichtung sieht die Erfindung vorzugsweise ein Gestänge-Gelenkviereck vor, dessen Stellung die Neigung der Übergangsplattform bestimmt, indem diese die obere Horizontalstange des Gelenkvierecks bildet oder damit verbunden ist. In einer ersten Ausführung

kann das Gelenkviereck in seiner Gesamtheit mittels eines besonderen Antriebs schwenkbar sein, um die Neigungseinstellung zu bewirken. Dabei wird die Verbindung zwischen dem Gelenkviereck und dem Untergestell möglichst weit hinten vorgesehen, damit bei einem vorgegebenen maximalen Schwenkwinkel, der durch die größtmöglichen Neigungswinkel der Übergangsplattform und der Treppenstufen vorgegeben ist, ein möglichst großer Höheneinstellbereich am äußeren Ende der Übergangsplattform erreicht wird.

Bei einer anderen Ausführungsform der Erfindung sind die unteren Gelenkpunkte des Gelenkvierecks mit dem Fahrgestell verbunden und ist das Gelenkviereck derartig unsymmetrisch ausgeführt, daß jedem Aufrichtzustand eine vorbestimmte Neigungseinstellung der Übergangsplattform zugeordnet ist. Bspw. kann das Gelenkviereck ähnlich einem Parallelogramm aber mit einer gegenüber der hinteren Stange verkürzten vorderen Stange oder mit einem geringeren Horizontalabstand der unteren Gelenkpunkte als der oberen Gelenkpunkte ausgeführt sein, so daß beim Aufrichten des Vierecks gleichzeitig eine Änderung der Plattform- und Stufenneigung stattfindet, und zwar in dem Sinne, daß bei geringen Einstellhöhen die Übergangsplattform zum freien Ende hin sich absenkt, bei mittlerer Höheneinstellung horizontal ist und bei maximaler Höheneinstellung zum freien Ende hin ein wenig ansteigt. Bei einer anderen Ausführungsform wird das Gelenkviereck von einer Schere gebildet, also von zwei einander überkreuzenden und im Überkreuzungspunkt gelenkig miteinander verbundenen Streben, von denen je ein Ende fest und ein anderes Ende in einer Führung gleitbar mit dem Untergestell bzw. mit der Übergangsplattform verbunden ist. Diese Schere ist so unsymmetrisch ausgeführt, daß sich die soeben erläuterte Neigungsverstellung der Übergangsplattform der Treppenstufen beim Anheben ergibt.

Es ist nicht erforderlich, daß das Gelenkviereck vollständig gesondert von der Treppe ausgeführt ist; diese kann vielmehr in das Gelenkviereck einbezogen sein. Bspw. kann die hintere

Stange des Gelenkvierecks von der Treppe gebildet sein, insbesondere von deren hinterer Parallelogrammstange. Es kann sogar das gesamte Gelenkviereck von den Parallelogrammstangen der Treppe gebildet sein. Voraussetzung ist in beiden Fällen, daß die Treppe von den Hubkräften entlastet bleibt. So sind bspw. Ausführungen denkbar, bei denen die Hubvorrichtung von einer Übergangsplattform angreifenden Einzelstütze gebildet ist, während davon gesondert das die Neigung bestimmenden Gelenkviereck vorgesehen ist, in das die Treppe einbezogen ist. Bei Verwendung einer Einzelstütze, die zumindest an ihrem Fuß oder an ihrem oberen Ende gelenkig ist, kann die Neigungseinstellung der Plattform nicht durch diese Einzelstütze erfolgen. Dies geschieht vielmehr durch das Gelenkviereck. Zu diesem Zweck kann ein unterer Gelenkpunkt des Gelenkvierecks über eine die Neigung bestimmende Führung mit dem Untergestell verbunden sein.

Wenn von dem Gelenkviereck, der Einzelstütze und dergleichen im Singular gesprochen wird, so soll dadurch nicht ausgeschlossen werden, daß die Teile in der Mehrzahl nebeneinander bspw. in doppelter Ausführung beiderseits der Treppe bzw. der Übergangsplattform angeordnet sind.

Die Erfindung wird im folgenden näher unter Bezugnahme auf die Zeichnung erläutert, die vorteilhafte Ausführungsbeispiele veranschaulicht. Es zeigen:

Fig. 1 die Seitenansicht einer Fluggasttreppe mit Parallelogramm-Hubgestell,
Fig. 2 eine Variante der Ausführung gemäß Fig. 1,
Fig. 3 die Ausführung gemäß Fig. 2 in unterschiedlichen Funktionsstadien,
Fig. 4 eine Variante der Ausführung nach Fig. 2 und 3,
Fig. 5 eine Fluggasttreppe, bei der die Hubvorrichtung scherenartig ausgeführt ist,
Fig. 6 eine schematische Einzeldarstellung der Scheren,
Fig. 7 eine Ausführung, bei welcher die Treppe an der

Bildung der hinteren Stange des Gelenkvierecks beteiligt ist,

Fig. 8 eine Ausführung, bei welcher das Gelenkviereck von dem Parallelogrammgestänge der Treppe gebildet ist, und

Fig. 9 die vergrößerte Darstellung eines Details der Fig. 8.

In allen Ausführungsbeispielen erhebt sich auf dem Fahrzeug 1 die Treppe 2, an deren oberes Ende sich die Übergangsplattform 3 anschließt. Diese Teile können, wie in Fig. 5 dargestellt, mit einer Verkleidung versehen sein. Wie gleichfalls in dieser Fig. gezeigt, kann die Übergangsplattform 3 durch Änderung der Treppenneigung auf unterschiedliche Höhen eingestellt werden. Damit die Einstellung der Stufen unabhängig ist von der Treppenneigung, sind die Stufen 4 an Parallelogrammstangen 5, 6 angelenkt, die den Seitenwangen der Treppe zugeordnet sind. Diese sind über Gelenkpunkte 7, 8 mit der Übergangsplattform 3 verbunden. Dies ermöglicht es, die Treppen auf unterschiedliche Neigungen einzustellen und dennoch die Stufen und die Übergangsplattform etwa horizontal zu halten.

Wenn man die Treppenneigung ändert und die Treppenstufen horizontal hält, ändert sich das Verhältnis von Stufenhöhe zu Stufentiefe, für das behördlich gewisse Grenzen vorgeschrieben sind. Dadurch werden der Neigungsverstellung der Treppe Grenzen gesetzt. Diese können dadurch ausgeweitet werden, daß die Treppenstufen nicht genau horizontal gehalten werden, sondern zusätzlich im Rahmen der behördlich zugelassenen Grenzen (+/- 5°) geneigt werden. Bei geringen Einstellhöhen werden die Stufen und die Übergangsplattform so geneigt, daß sie sich nach vorne hin senken, während sie bei großen Einstellhöhen so geneigt werden, daß sie nach vorne hin ansteigen. Dies erkennt man leicht bei den in Fig. 5 dargestellten zwei Höheneinstellungen. Der zur Verfügung stehende Höheneinstellungsbereich wird dadurch beträchtlich erweitert. Dabei ist es im allgemeinen zweckmäßig, die Stufenneigung gleich

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derjenigen der Übergangsplattform zu wählen; unbedingt erforderlich ist dies jedoch nicht.

Im Ausführungsbeispiel gemäß Fig. 1 wird die Übergangsplattform 3 von einem Parallelogrammgestänge getragen und geführt, das aus der unteren Horizontalstange 8, der hinteren Stange 9, der vorderen Stange 10 und der oberen Stange 11 besteht, die mit der Übergangsplattform 3 verbunden ist. Am Gelenkpunkt 12 zwischen den Stangen 8 und 9 ist das Parallelogramm mit dem Fahrgestell verbunden. Dieser Gelenkpunkt ist soweit hinten angeordnet, wie dies mit Rücksicht auf die Treppenlänge möglich ist, d.h. etwa über dem hinteren Treppenende. Um für einen gegebenen Schwenkwinkel einen möglichst großen Größeneinstellbereich an der Übergangsplattform zu gewinnen, ist der Gelenkpunkt 12 über die Treppe 2 und vorzugsweise auch über das Fahrgestell des Fahrzeugs 1 angehoben.

Das Parallelogrammgestänge 8, 9, 10, 11 führt die Übergangsplattform 3 und - abhängig von dieser - die Treppenstufen 4 zu sich selbst parallel. Um die Vergrößerung des Höheneinstellbereichs - wie weiter oben erläutert - durch zusätzliche Neigung der Übergangsplattform 3 und Stufen 4 zu nutzen, ist die untere Stange 8 über den vorderen Gelenkpunkt 13 hinaus verlängert und an ihrem vorderen Ende 14 über einen Zylinderantrieb 15 mit dem Fahrgestell verbunden. Mittels dieses Antriebs kann das Parallelogrammgestänge und mit ihm die Übergangsplattform 3 insgesamt verschwenkt werden, so daß sich die erwähnte Neigungsverstellung der Übergangsplattform 3 der Treppenstufen 4 ergibt. Am vorderen Ende 14 der Stange 8 greift auch der Zylinderantrieb 16 zum Aufrichten des Parallelogrammgestänges an. Die Höhen- und Neigungsverstellungen erfolgen zweckmäßigerweise synchron und in vorbestimmter gegenseitiger Abhängigkeit.

Da die Last der Übergangsplattform 3 und des oberen Endes der Treppe 2 von dem Parallelogrammgestänge 8-11 übernommen wird,

kann die Treppe 2 sehr leicht ausgeführt sein. Sie liegt unten lose auf einem Anschlag des Fahrgestells.

Die zu der Ausführungsform gemäß Fig. 1 gegebene Erläuterung gilt auch für diejenige nach Fig. 2 und 3. Der Unterschied besteht darin, daß die hintere Stange 19 des Parallelogrammgestänges zwischen ihren Enden, die die Gelenkpunkte 7 und 12 bilden, nicht geradlinig, sondern derart abgewinkelt geführt ist, daß sie bei der Treppe 2 verläuft und sich mit deren hinterer Parallelogrammstange 6 zu einer Stabeinheit vereinigen kann, an der auch die einzelnen Stufen der Treppe im hinteren Auflagepunkt gelagert sind. Die Wirklinie der hinteren Stange 19 ist jedoch gegenüber Fig. 1 unverändert.

In Fig. 3 sind die einzelnen Hubbereiche 20, 21, 22 dargestellt. Im Bereich 20 findet ausschließlich Parallelschiebung der Übergangsbrücke und der Treppenstufen statt. In den Bereichen 21 und 22 tritt eine positive bzw. negative Neigungsverstellung hinzu. Dies ist ein Beispiel von nicht synchroner Höhen- und Neigungsverstellung.

Die Ausführungsform gemäß Fig. 4 gleicht derjenigen gemäß Fig. 2 und 3 mit dem Unterschied, daß der Gelenkpunkt 13 des Trägerparallelogramms über eine verstellbare Hebelanordnung 23 mit dem Fahrzeugrahmen verbunden ist. Der untere Stab zwischen den Gelenkpunkten 12 und 13 wird durch den Fahrzeugrahmen ersetzt.

In der Ausführungsform gemäß Fig. 5 ruht die Übergangsplattform 3 vollständig auf der Schere 41, die von zwei Stäben 42 und 43 gebildet ist, die am Kreuzungspunkt 44 gelenkig miteinander verbunden sind und jeweils an einem Ende 45 bzw. 46 mit dem Fahrgestell bzw. der Übergangsbrücke fest verbunden sind, während das andere Ende 47, 48 in einer Gleitführung 49 bzw. 50 parallel zum Fahrgestell bzw. zu der Übergangsbrücke verschiebbar ist. Ein Zylinderantrieb 51 spreizt die Schere zum Anheben der Übergangsbrücke. Die beiden Extremstellungen

der Schere und der Übergangsbrücke sind in der Darstellung angegeben.

Die Schere ist nicht symmetrisch aufgebaut, wie sich insbesondere aus der Schemadarstellung in Fig. 6 ergibt. Vielmehr ist die Stange 42 an ihrem oberen Ende um den Winkelbetrag 52 zu der anderen Stange hin abgewinkelt und verkürzt. Daraus ergeben sich die geometrischen Beziehungen der Extremlagen, die in Fig. 6 schematisch angedeutet sind und in der unteren Extremlage zu einer nach vorne fallenden und in der oberen Extremlage zu einer nach vorne steigenden Neigung der Übergangsplattform führen.

Die Treppenstufen stellen sich aufgrund der Verbindung des Parallelogrammgestänges der Treppe mit der Übergangsplattform parallel zu dieser ein. Das untere Ende der Treppe 2 ist in einer am Fahrgestell festen, waagerechten Kulissenführung 53 gehalten und kann sich bei Hubbewegungen in Längsrichtung frei bewegen.

Der Vorteil dieser Anordnung liegt in der nahezu vertikalen Hub- und Senkbewegung des vorderen Übergangspunktes 54 der Übergangsplattform.

In der Ausführung gemäß Fig. 7 ist der Hubantrieb 24 als Einzelstütze unter der Übergangsplattform 3 angeordnet und ist das Trägerparallelogramm 25, 26, 27, 28 asymmetrisch verzerrt. Der vordere Stab 26 ist gegenüber dem hinteren Stab 25 verkürzt. Dadurch ergibt sich eine kinematische Verknüpfung der Hubbewegung mit der Verstellung der Neigung der Übergangsplattform 3 zwischen den mit durchgezogenen und gestrichelten Linien in Fig. 7 gezeichneten Extremstellungen. Die Lage des Gelenkpunktes 29 kann auf der Winkelhalbierenden 30 zwischen der oberen und der unteren Lage der Stange 26 beliebig gewählt werden, ohne daß sich dadurch die kinematischen Verhältnisse wesentlich ändern. Auf diese Weise läßt sich eine Anpassung an die baulichen Gegebenheiten erreichen.

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Da bei dieser Ausführung die Höheneinstellung und die Neigungsverstellung kontinuierlich und zwangsläufig verknüpft erfolgt, ist lediglich ein Hubantrieb 24 erforderlich.

Die hintere Stange 25 des Gelenkvierecks 25, 26, 27, 28 bildet auch eine der beiden Parallelogrammstangen der Treppe 2. Der untere, hintere Drehpunkt 31 beider Parallelogramme ist identisch. Der vordere Drehpunkt 32 des Treppenparallelogramms ist frei.

In der Ausführung gemäß Fig. 8 wird die Last der Übergangsplattform wiederum größtenteils durch die als Antrieb ausgebildete Einzelstütze 24 übernommen. Ihr hinteres Ende stützt sich auf dem Trägerparallelogramm 33, 34, 35, 36 ab, das auch gleichzeitig das Parallelogrammgestänge für die Treppe 2 bildet. Sein unterer, hinterer Gelenkpunkt 37 ist feststehend am Fahrgestell angeordnet. Der vordere untere Gelenkpunkt 38 ist gegenüber dem Fahrgestell frei. Um die kinematische Bestimmtheit der Anordnung festzulegen, ist daher eine zusätzliche Einrichtung erforderlich. Diese wird von einer Führungsverbindung zwischen dem unteren Ende der vorderen Stange 34 mit dem Fahrgestell gebildet, die so ausgebildet ist, daß jeder Hubeinstellung der Übergangsplattform eine Neigungseinstellung zugeordnet ist. Diese Führung wird im dargestellten Beispiel von der Gleitrolle 39 am unteren Ende der Parallelogrammstange 34 und einer am Fahrgestell festen Gleitführung 40 gebildet, in deren Längsrichtung sich die Gleitrolle frei bewegen kann. Bei Höhenverstellung dreht sich das Parallelogramm um den Gelenkpunkt 37. Die vordere Stange 34 bewegt sich parallel zur hinteren Stange 33. Dabei verschiebt sich die Rolle 39 innerhalb der Führung 40 und wandert je nach Verschwenkungsrichtung nach oben bzw. unten und stellt so zwangsweise die positive bzw. negative Neigung ein.

Schutzansprüche

1. Fluggasttreppe auf einem insbesondere fahrbaren Untergestell (1), die mittels einer Hubvorrichtung in Gebrauchsstellungen unterschiedlicher Höhe und Neigung anhebbar ist und deren Treppenwangen je ein Paar von Parallelogrammstangen (5, 6; 19; 25; 33, 34) umfassen, an denen die Treppenstufen (4) so angelenkt sind, daß sie in jeder Gebrauchsstellung im wesentlichen horizontal sind, wobei sich an das obere Ende der Treppe eine Übergangsplattform (3) anschließt, an die die Parallelogrammstangen der Treppe (2) zu gemeinsamer Neigungseinstellung der Übergangsplattform (3) und der Treppenstufen (4) angelenkt sind, dadurch gekennzeichnet, daß die Hubvorrichtung an der Übergangsplattform angreift und das obere Ende der Treppe (2) von der Übergangsplattform (3) getragen ist.

2. Fluggasttreppe nach Anspruch 1, dadurch gekennzeichnet, daß die Hubvorrichtung die Neigung der Übergangsplattform bestimmt.

3. Fluggasttreppe nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Treppe (2) nahe ihrem unteren Ende verschiebbar auf eine Stütze des Untergestells aufliegt.

4. Fluggasttreppe nach einem der Ansprüche 1 bis 3, dadurch gekennzeichnet, daß die Hubvorrichtung für die Übergangsplattform (3) ein Gestänge-Gelenkviereck umfaßt, dessen obere Horizontalstange (11) von der Übergangsplattform (3) oder einem mit dieser verbundenen Teil gebildet wird.

5. Fluggasttreppe nach Anspruch 4, dadurch gekennzeichnet, daß das Gelenkviereck zur Einstellung der Neigung der Übergangsplattform (3) und der Treppenstufen (4) um einen weit hinten am Untergestell angeordneten Anlenkpunkt (12) in seiner Gesamtheit schwenkbar ist.

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6. Fluggasttreppe nach Anspruch 5, dadurch gekennzeichnet, daß gesonderte Antriebe (15, 16) zum Aufrichten und zum Neigen des Parallelogrammgestänges vorgesehen sind.

7. Fluggasttreppe nach Anspruch 6, dadurch gekennzeichnet, daß die untere Horizontalstange (8) des Parallelogrammgestänges über den Anlenkpunkt (13) der vorderen Stange (10) hinaus nach vorne verlängert ist und ihr vorderes Ende (14) einerseits mit dem Untergestell und andererseits mit dem gegenüberliegenden Teil des Parallelogrammgestänges über je einen Arbeitszylinder verbunden ist.

8. Fluggasttreppe nach Anspruch 4, dadurch gekennzeichnet, daß die unteren Gelenkpunkte (29, 31; 37, 39; 45, 47) des Gelenkvierecks mit dem Fahrgestell verbunden sind und das Gelenkviereck derart unsymmetrisch ausgeführt ist, daß jedem Aufrichtzustand eine vorbestimmte Neigungseinstellung der Übergangsplattform (3) zugeordnet ist.

9. Fluggasttreppe nach Anspruch 8, dadurch gekennzeichnet, daß das Gelenkviereck als Schere (41) ausgebildet ist.

10. Fluggasttreppe nach Anspruch 1, dadurch gekennzeichnet, daß die Hubvorrichtung von einer Einzelstütze (24) gebildet ist und die Neigung der Übergangsplattform (3) und der Treppenstufen (4) von einem Parallelogrammgestänge bestimmt ist, von dem wenigstens eine Stange (25, 33, 34) von einer der Parallelogrammstangen der Treppenwangen gebildet ist.

11. Fluggasttreppe nach Anspruch 10, dadurch gekennzeichnet, daß das Parallelogrammgestänge von den Parallelogrammstangen (33, 34) der Treppenwangen gebildet ist.

12. Fluggasttreppe nach Anspruch 10 oder 11, dadurch gekennzeichnet, daß das untere Ende einer der Stangen (33) des Gelenkvierecks ein am Untergestell festes Gelenk (37)

aufweist, während das untere Ende der anderen Stange (34) mit dem Untergestell über eine die Neigung der Übergangsplattform (3) und der Treppenstufen (4) bestimmende Führung (39, 40) verbunden ist.

13. Fluggasttreppe nach einem der Ansprüche 1 bis 12, dadurch gekennzeichnet, daß das Gelenkviereck oder ein Teil desselben um einen gegenüber dem Fahrgestell und/oder der Treppe angehobenen Punkt (12) schwenkbar ist.

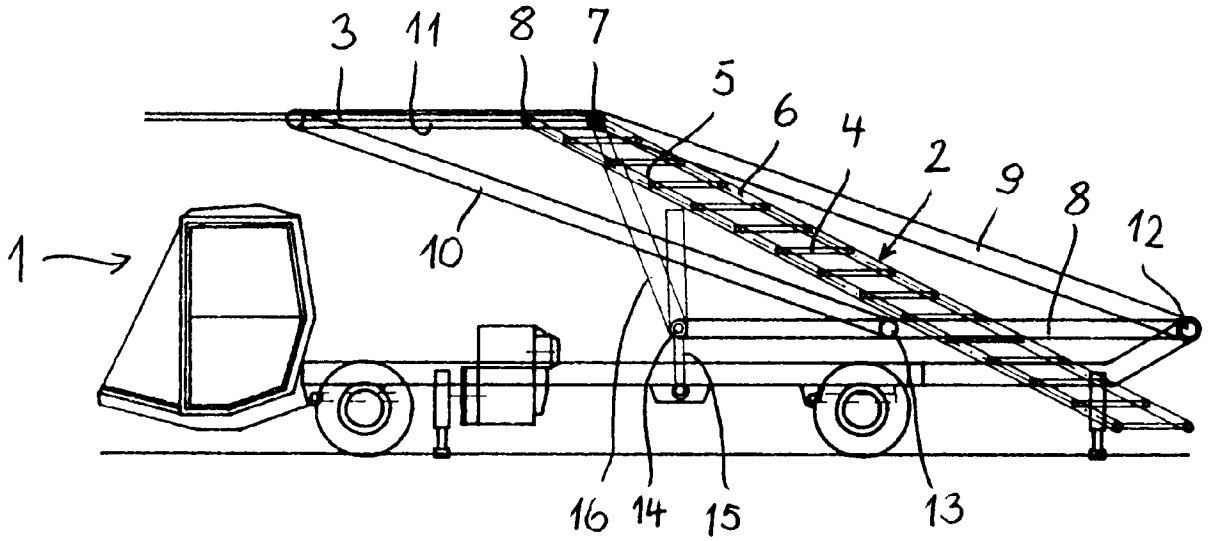


Fig. 1

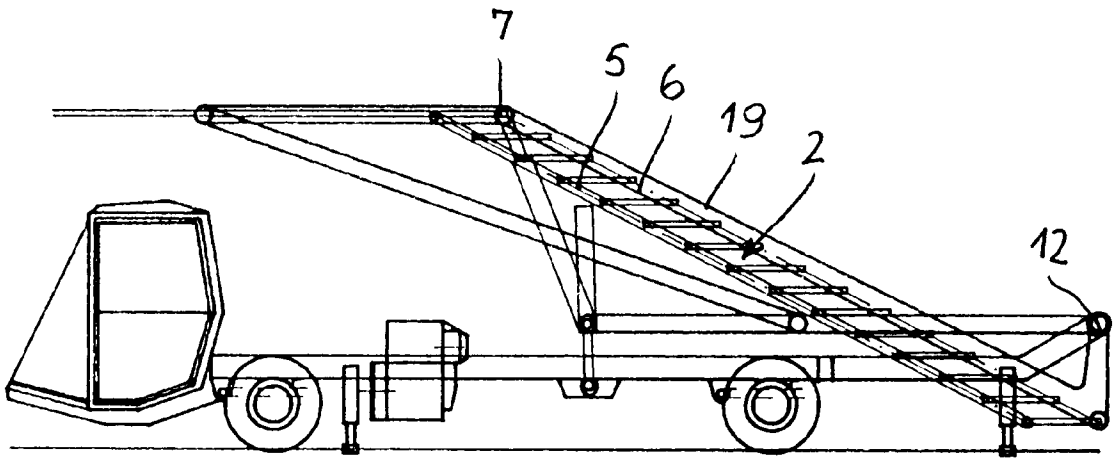


Fig. 2

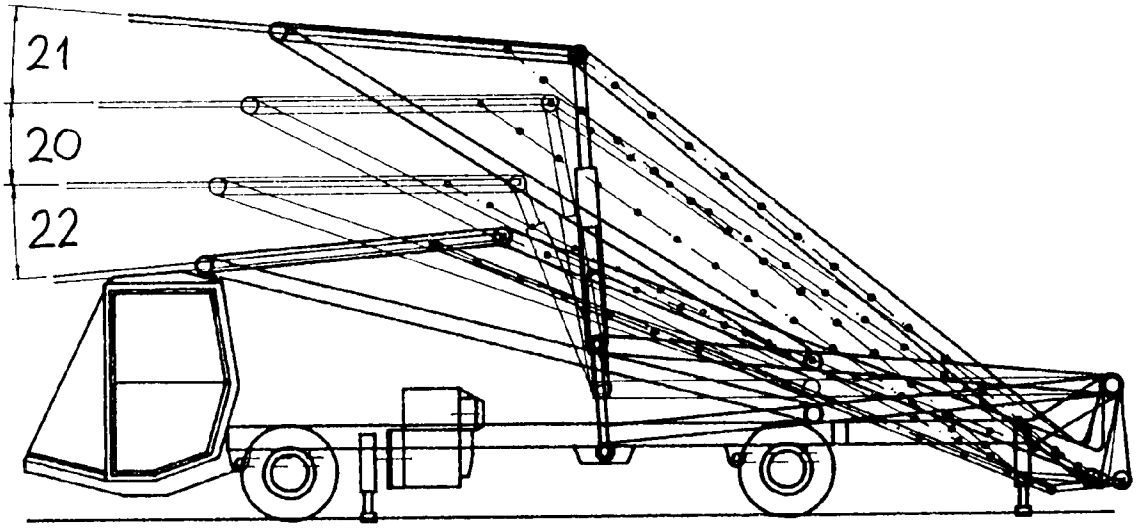


Fig. 3

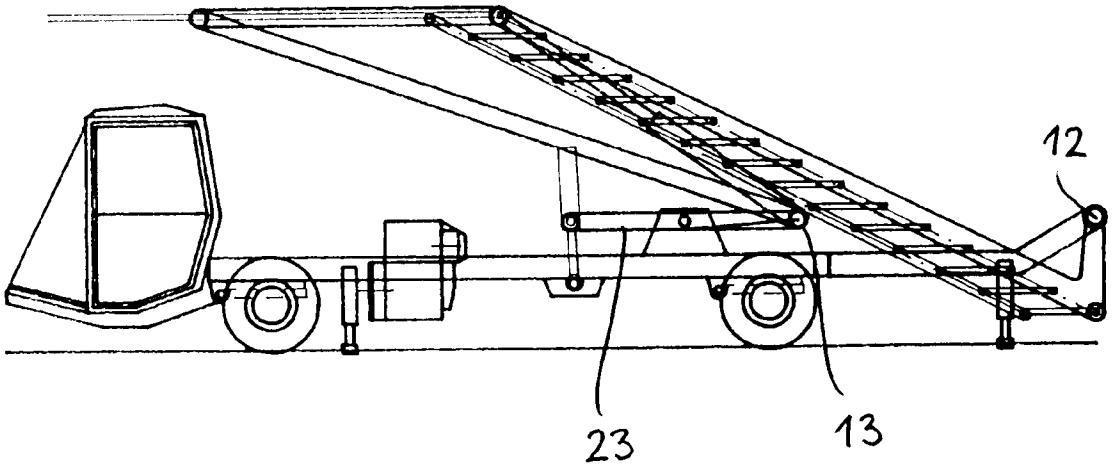


Fig. 4

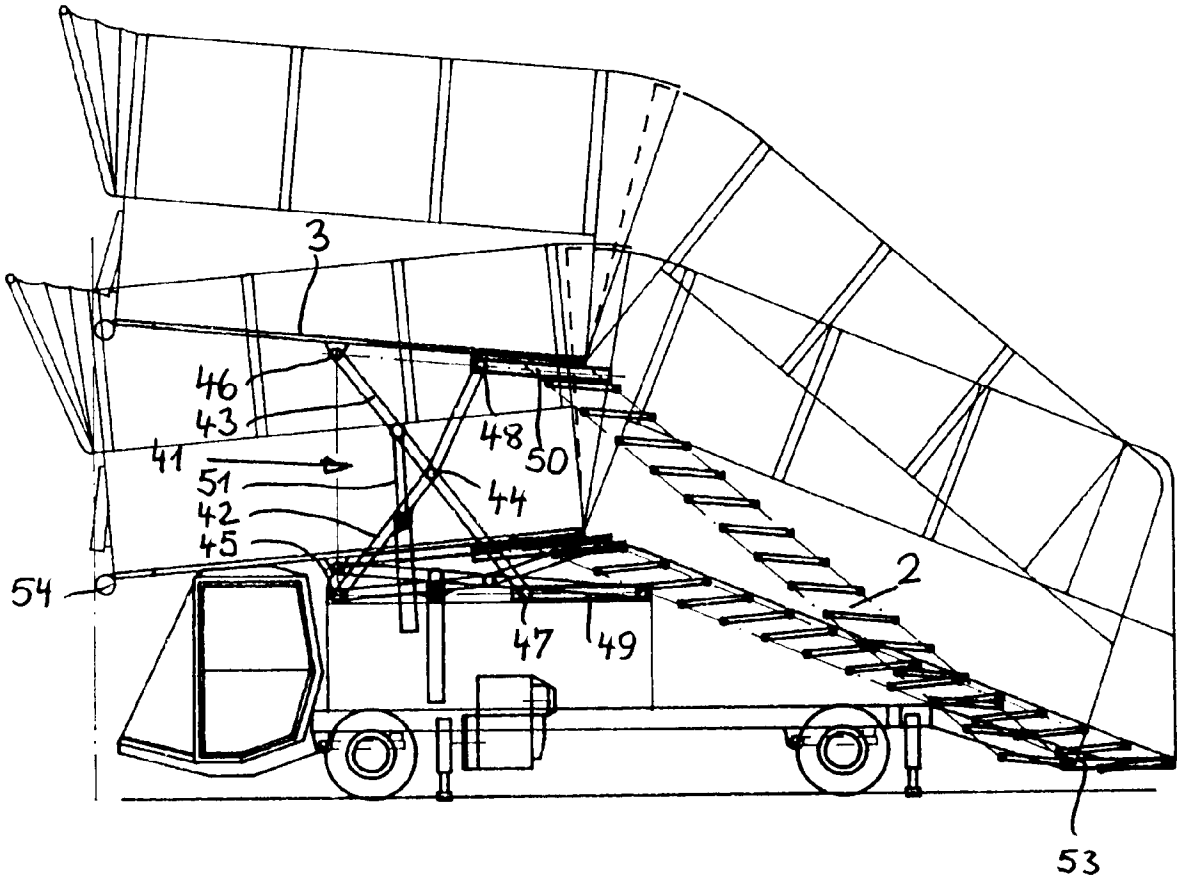


Fig. 5

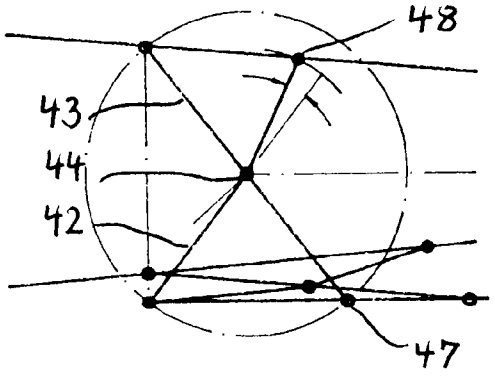


Fig. 6

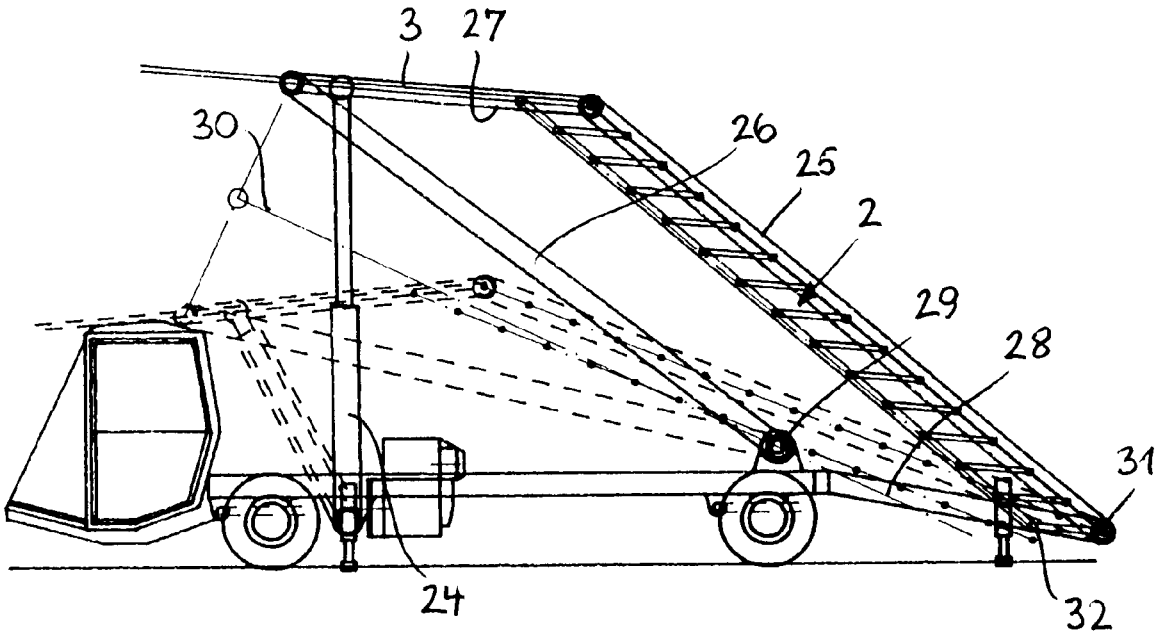


Fig. 7

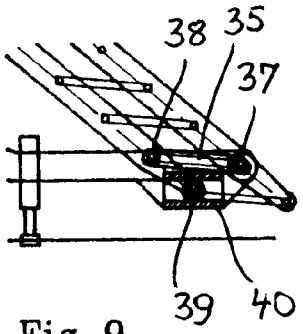


Fig. 9

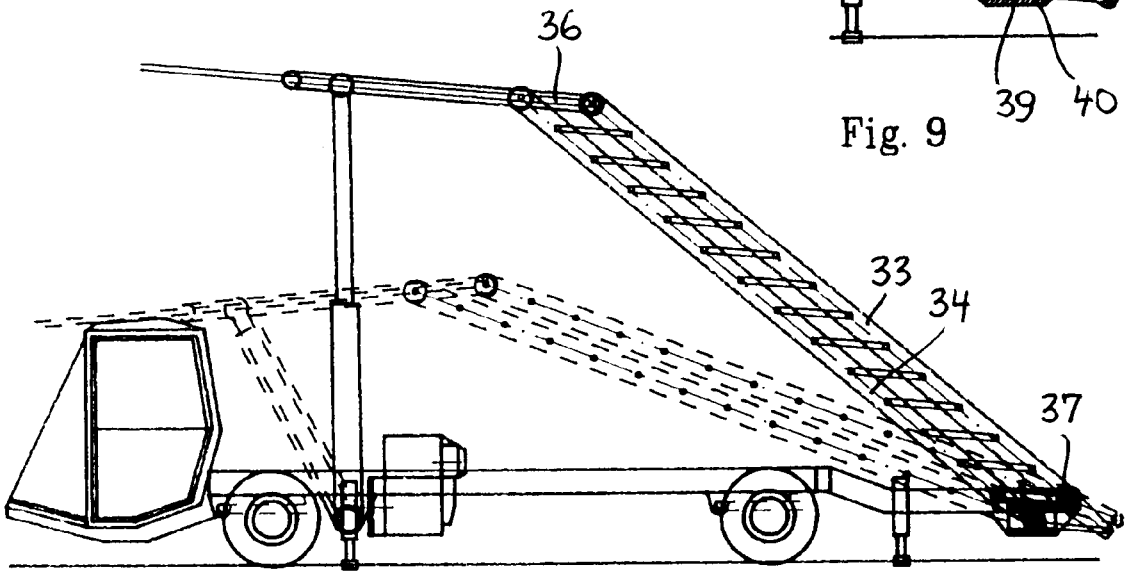


Fig. 8

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/688,884	Clemente, Joshua
	Examiner	Art Unit
	ALVIN C CHIN-SHUE	3634

CPC - Searched*		
Symbol	Date	Examiner
B64F 1/315. E06C 5/04; 1/39; 5/36; 5/44; 7/16; 7/183.	08/26/2021	ACS

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
see attached search history	08/26/2021	ACS

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
B64F	1/315.	08/26/2021	ACS
E06C	5/04	08/26/2021	ACS

/ALVIN C CHIN-SHUE/ Primary Examiner, Art Unit 3634	

Mission Ex. 1002-00150

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/688,884	Clemente, Joshua
	Examiner	**Art Unit**
	ALVIN C CHIN-SHUE	3634

☑ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10												
2	2	11	11												
3	3	12	12												
4	4	13	13												
5	5	14	14												
6	6	15	15												
7	7	16	16												
8	8	17	17												
9	9														

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	17	
/ALVIN C CHIN-SHUE/ Primary Examiner, Art Unit 3634	26 August 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Mission Ex. 1002-00151

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/688,884	Clemente, Joshua
	Examiner	**Art Unit**
	ALVIN C CHIN-SHUE	3634

INTERNATIONAL CLASSIFICATION					
CLAIMED					
E06C	/	5	/	04	
NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	17	
/ALVIN C CHIN-SHUE/ Primary Examiner, Art Unit 3634	26 August 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20210826

Mission Ex. 1002-00152

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/688,884	Clemente, Joshua
	Examiner	**Art Unit**
	ALVIN C CHIN-SHUE	3634

CPC						
Symbol					**Type**	**Version**
E06C	/	5	/	04	F	2013-01-01
B64F	/	1	/	315	I	2013-01-01
E06C	/	5	/	36	I	2013-01-01
E06C	/	5	/	44	I	2013-01-01
E06C	/	7	/	16	I	2013-01-01
E06C	/	1	/	39	I	2013-01-01
E06C	/	7	/	183	I	2013-01-01

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	17	
/ALVIN C CHIN-SHUE/ Primary Examiner, Art Unit 3634	26 August 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20210826

Mission Ex. 1002-00153

Notice of Allowability	Application No. 16/688,884	Applicant(s) Clemente, Joshua	
	Examiner ALVIN C CHIN-SHUE	Art Unit 3634	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 6/9/21.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-17 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some* c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/ALVIN C CHIN-SHUE/
Primary Examiner, Art Unit 3634

Mission Ex. 1002-00154

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Withdrawn claim 17 has been re-joined.

The following is an examiner's statement of reasons for allowance:

The prior art does not show the means for lifting the inclinable access structure comprising movable hinge carriages configured to move along a plurality of track channels; a lifting mast being connected to the distal end of the inclinable access structure by forward tension elements and being connected to the fixed base structure by rear tension, and the actuator connected between the movable hinge carriages and the fixed base structure and configured to move the movable hinge carriages to raise the distal end of the inclinable access structure via the forward tension elements, the lifting mast, and the rear tension elements.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

The prior art does not show the means for lifting the inclinable access structure comprising movable hinge carriages configured to move along a plurality of track channels; a lifting mast being connected to the distal end of the inclinable

access structure by forward tension elements and being connected to the fixed base structure by rear tension, and the actuator connected between the movable hinge carriages and the fixed base structure and configured to move the movable hinge carriages to raise the distal end of the inclinable access structure via the forward tension elements, the lifting mast, and the rear tension elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALVIN CONSTANTINE CHIN-SHUE whose telephone number is (571)272-6828. The examiner can normally be reached on Mon-Fri 8.00-5.00.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katherine Mitchell can be reached on 28800. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ALVIN C CHIN-SHUE/
Primary Examiner, Art Unit 3634

Notice of References Cited	Application/Control No. 16/688,884	Applicant(s)/Patent Under Reexamination Clemente, Joshua	
	Examiner ALVIN C CHIN-SHUE	Art Unit 3634	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-3605943-A	09-1971	Beaudet	E06C5/04	182/66.2
*	B	US-1162413-A	11-1915	Sperling	E06C5/04	182/68.1
*	C	502484	08-1893	Dederick		
*	D	US-8631905-B2	01-2014	Parrish; Jack	E06C7/183	182/127
*	E	US-8813911-B2	08-2014	Fuqua; Charles L.	B66F11/044	182/69.6
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N	DE-9116020-U1	04-1993	DE	Name not available	B64F1/315
	O	DE-4400741-A1	07-1995	DE	Name not available	B64F1/315
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Mission Ex. 1002-00158

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Mission Ex. 1002-00159

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

23363 7590 09/01/2021

Lewis Roca Rothgerber Christie LLP
PO BOX 29001
Glendale, CA 91209-9001

EXAMINER
CHIN-SHUE, ALVIN CONSTANTINE

ART UNIT	PAPER NUMBER
3634	

DATE MAILED: 09/01/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/688,884	11/19/2019	Joshua Clemente	180720 (306317-00001)	6650

TITLE OF INVENTION: VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	MICRO	$300	$0.00	$0.00	$300	12/01/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

Mission Ex. 1002-00160

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

23363 7590 09/01/2021
Lewis Roca Rothgerber Christie LLP
PO BOX 29001
Glendale, CA 91209-9001

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/688,884	11/19/2019	Joshua Clemente	180720 (306317-00001)	6650

TITLE OF INVENTION: VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	MICRO	$300	$0.00	$0.00	$300	12/01/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHIN-SHUE, ALVIN CONSTANTINE	3634	182-064100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

Mission Ex. 1002-00161

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any changes of address)

23363 7590 09/01/2021

Lewis Roca Rothgerber Christie LLP
PO BOX 29001
Glendale, CA 91209-9001

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Sheila R. Harter	(Typed or printed name)
/Sheila R. Harter/	(Signature)
October 13, 2021	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/688,884	11/19/2019	Joshua Clemente	180720 (306317-00001)	6650

TITLE OF INVENTION: VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	MICRO	$300	$0.00	$0.00	$300	12/01/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHIN-SHUE, ALVIN CONSTANTINE	3634	182-004100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Lewis Roca Rothgerber Christie LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies .....

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 031728

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
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NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Daniel Salgado/ Date October 13, 2021

Typed or printed name Daniel Salgado Registration No. 76,283

PTOL-85 Part B (08-18) Approved for use through 01/31/2020 OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Mission Ex. 1002-00162

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/688,884	11/19/2019	Joshua Clemente	180720 (306317-00001)	6650

23363 7590 09/01/2021

Lewis Roca Rothgerber Christie LLP
PO BOX 29001
Glendale, CA 91209-9001

EXAMINER	
CHIN-SHUE, ALVIN CONSTANTINE	
ART UNIT	PAPER NUMBER
3634	

DATE MAILED: 09/01/2021

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Mission Ex. 1002-00163

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	180720IssueFeeTransmittal.pdf	208118 fd9d0bb80b31711c6d791f2e45554d7abe23ce91	no	1
Warnings:					
Information:					
2	Miscellaneous Incoming Letter	180720RFA.pdf	98618 bf7e9c7797e37677fdcd7dde177bc35250ce9313	no	1
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	37820 826ba857653c0669601e7516aac4fa4d8719ad7d	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	344556		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Electronic Acknowledgement Receipt

EFS ID:	44020651
Application Number:	16688884
International Application Number:	
Confirmation Number:	6650
Title of Invention:	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM
First Named Inventor/Applicant Name:	Joshua Clemente
Customer Number:	23363
Filer:	Daniel A. Salgado/Sheila Harter
Filer Authorized By:	Daniel A. Salgado
Attorney Docket Number:	180720 (306317-00001)
Receipt Date:	13-OCT-2021
Filing Date:	19-NOV-2019
Time Stamp:	15:07:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$300
RAM confirmation Number	E20210CF08301526
Deposit Account	031728
Authorized User	Sheila Harter

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.21 (Miscellaneous fees and charges)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**300**

Electronic Patent Application Fee Transmittal

Application Number:	16688884
Filing Date:	19-Nov-2019
Title of Invention:	VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM
First Named Inventor/Applicant Name:	Joshua Clemente
Filer:	Daniel A. Salgado/Sheila Harter
Attorney Docket Number:	180720 (306317-00001)

Filed as Micro Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY ISSUE FEE	3501	1	300	300

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

I hereby certify that this correspondence is being EFS-Web transmitted to the United States Patent and Trademark Office on October 13, 2021 at or before 11:59 p.m. Pacific Time under the Rules of 37 CFR § 1.8.

/Sheila R. Harter/
Sheila R. Harter

Appl No.	: 16/688,884	Confirmation No. 6650
Inventor	: Joshua Clemente	
Filed	: November 19, 2019	
Title	: VEHICLE-MOUNTED ELEVATED ACCESS SYSTEM	
TC/A.U.	: 3634	
Examiner	: Alvin Constantine Chin-Shue	
Docket No.	: 180720	
Customer No.	: 23363	

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Post Office Box 29001
Glendale, CA 91209-9001
October 13, 2021

Commissioner:

Applicant believes the Examiner's stated reasons for allowance are unnecessary. The applicant does not necessarily agree with each statement in the reasons for allowance. While applicant agrees that the claims are allowable, applicant does not acquiesce with each statement in the reasons for allowance, that patentability requires each stated feature exactly as expressed by the Examiner, nor that each stated feature is required for patentability.

Respectfully submitted,
LEWIS ROCA ROTHGERBER CHRISTIE LLP

By /Daniel Salgado/
Daniel A. Salgado
Reg. No. 76,283
626/795-9900

DAS/srh

115439938.1

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/688,884	11/16/2021	11174677	180720 (306317-00001)	6650

23363 7590 10/27/2021

Lewis Roca Rothgerber Christie LLP
PO BOX 29001
Glendale, CA 91209-9001

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 100 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

INVENTOR(s) (Please see PAIR WEB site http://pair.uspto.gov for additional inventors):

Joshua Clemente, Philadelphia, PA;

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.