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Dunbar, SR. et al.

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(54) **RIISING RAMP JACK MECHANISM**

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(76) Inventors: **Lewis Edward Dunbar SR.**, Glen Daniel, WV (US); **Jason Wayne Dunbar**, Glen Daniel, WV (US); **Vernon Odell Maggard**, Piney View, WV (US)

Correspondence Address:
LEWIS E. DUNBAR SR.
P.O. BOX 351
GLEN DANIEL, WV 25844 (US)

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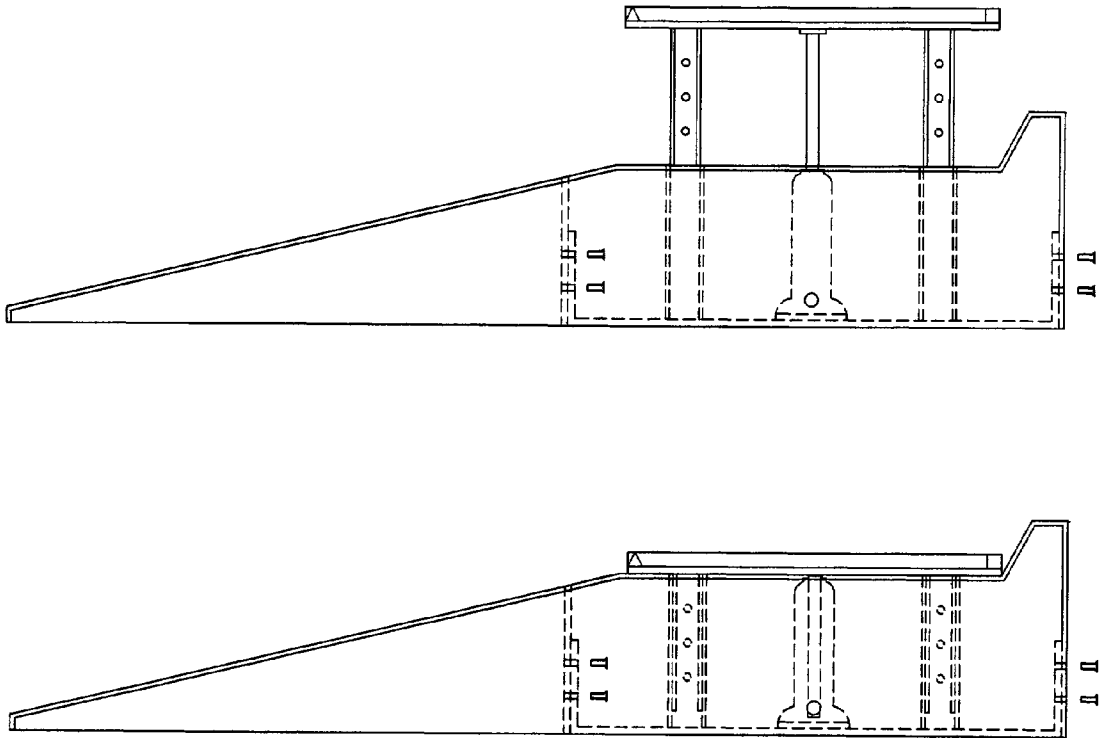
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(57) **ABSTRACT**

A high strength-lifting device designed to be an addition or option to standard automotive ramps is provided. The lifting device is a multi piece, all metal unit that will be built into the top plain area of standard automotive ramps. The core component of the lifting device is a jack mechanism, which provides the lift. The lifting surface of the jack is attached to a rectangular lifting plate, which the vehicle is driven upon. A wheel stop is built into the lifting plate along with two or four safety supports to add safety, support and stability. When a vehicle is driven on standard automotive ramps using the Rising Ramp Lifting device, you are able further elevate the vehicle to gain more room to do routine maintenance and or repairs.



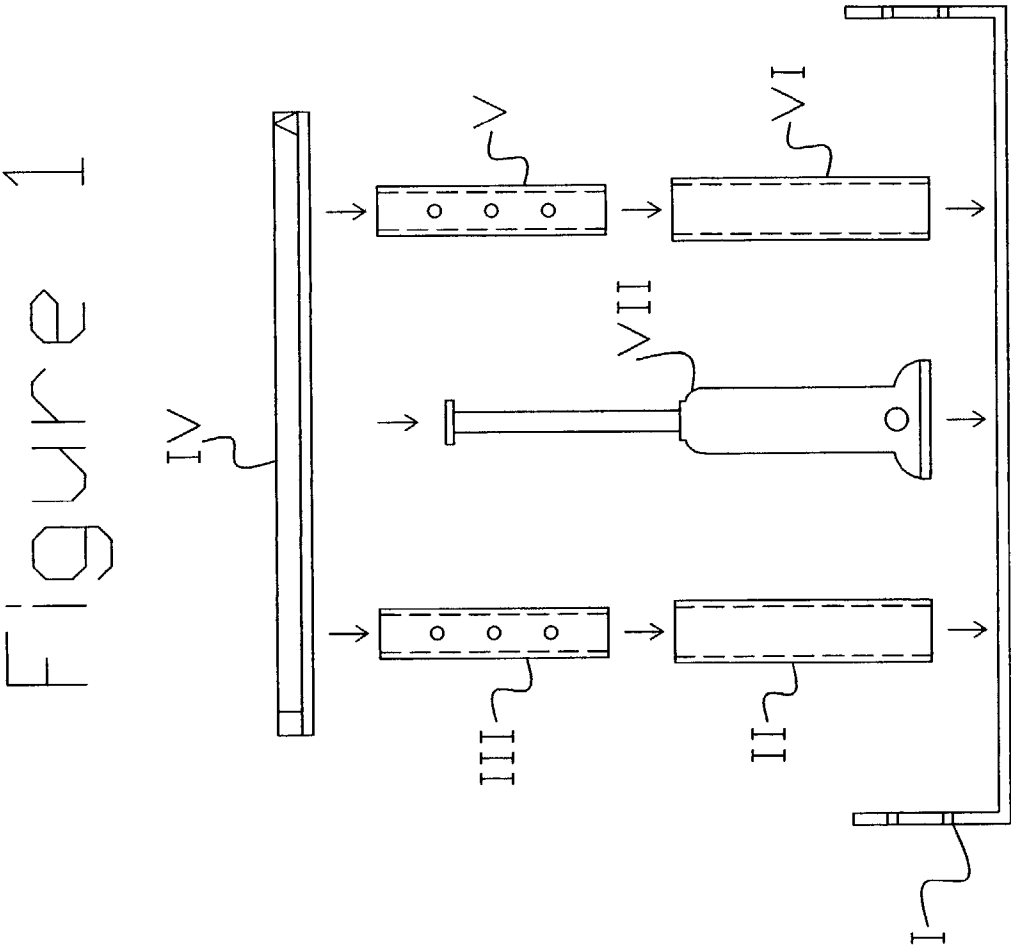


Figure 2

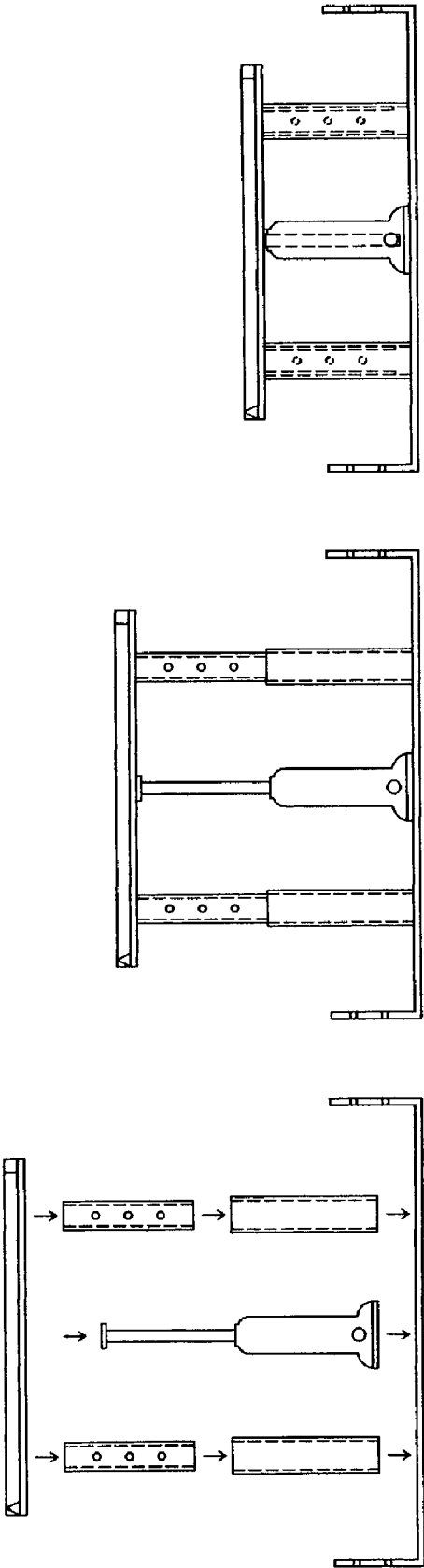


Figure 3

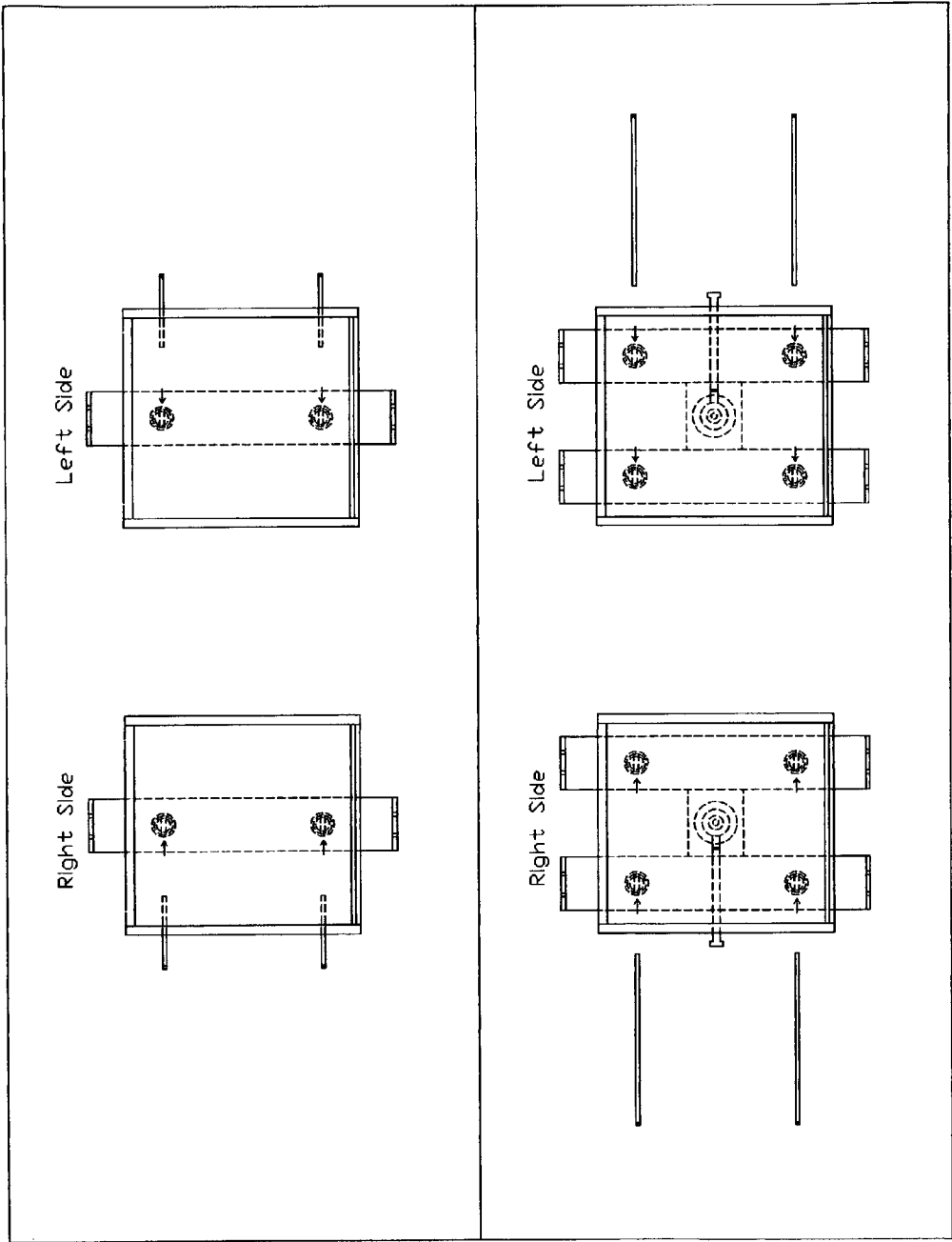


Figure 4

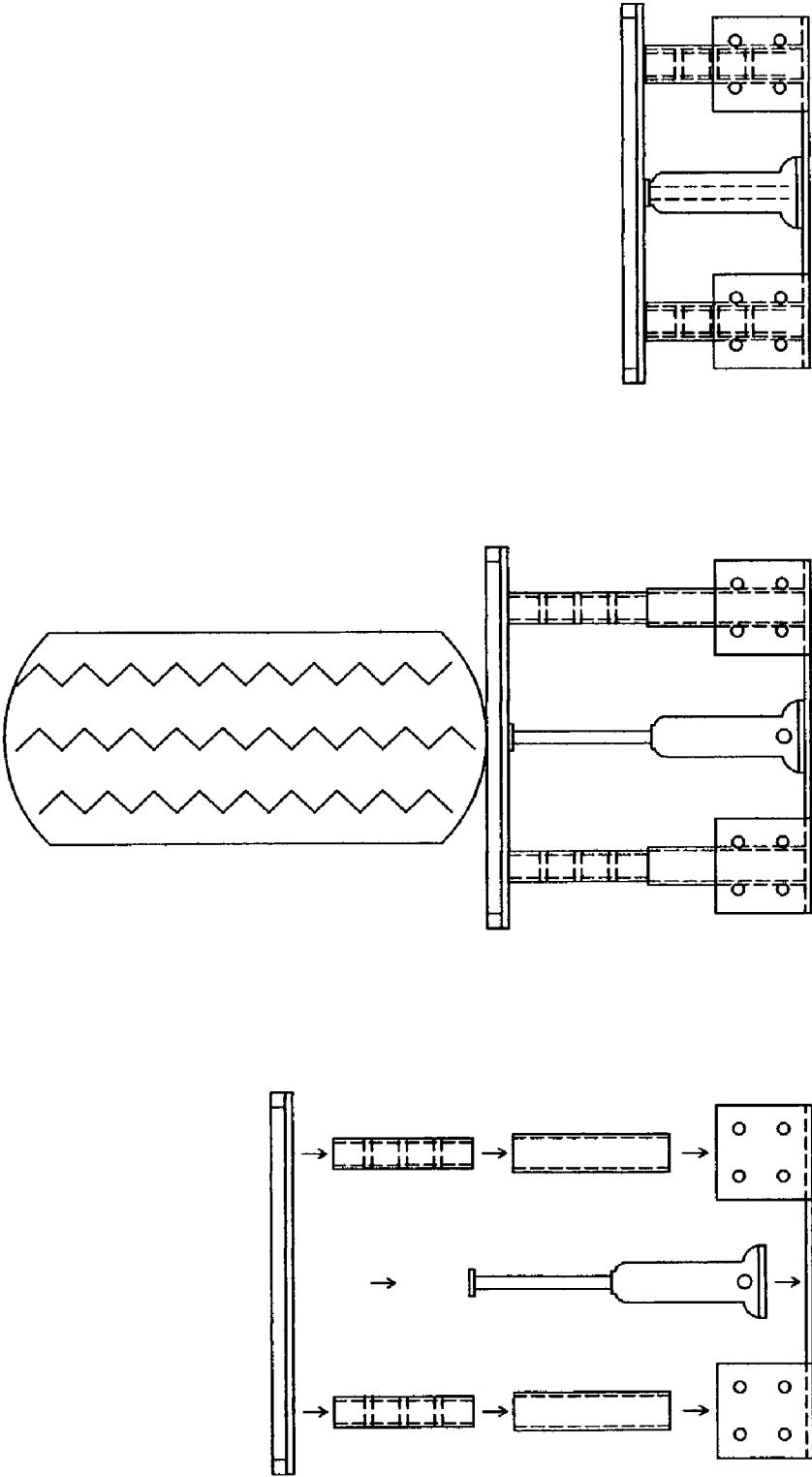


Figure 5

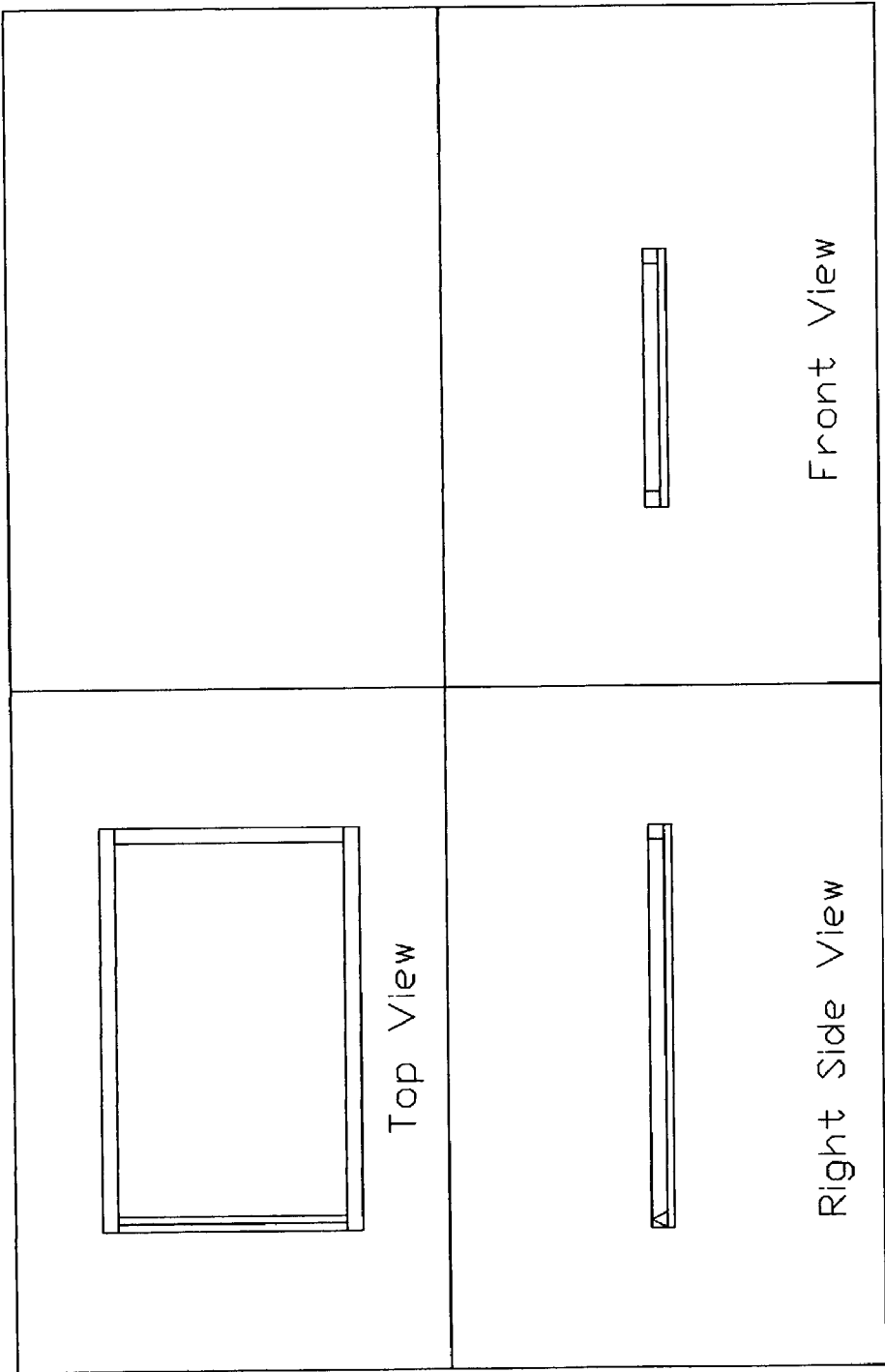


Figure 6

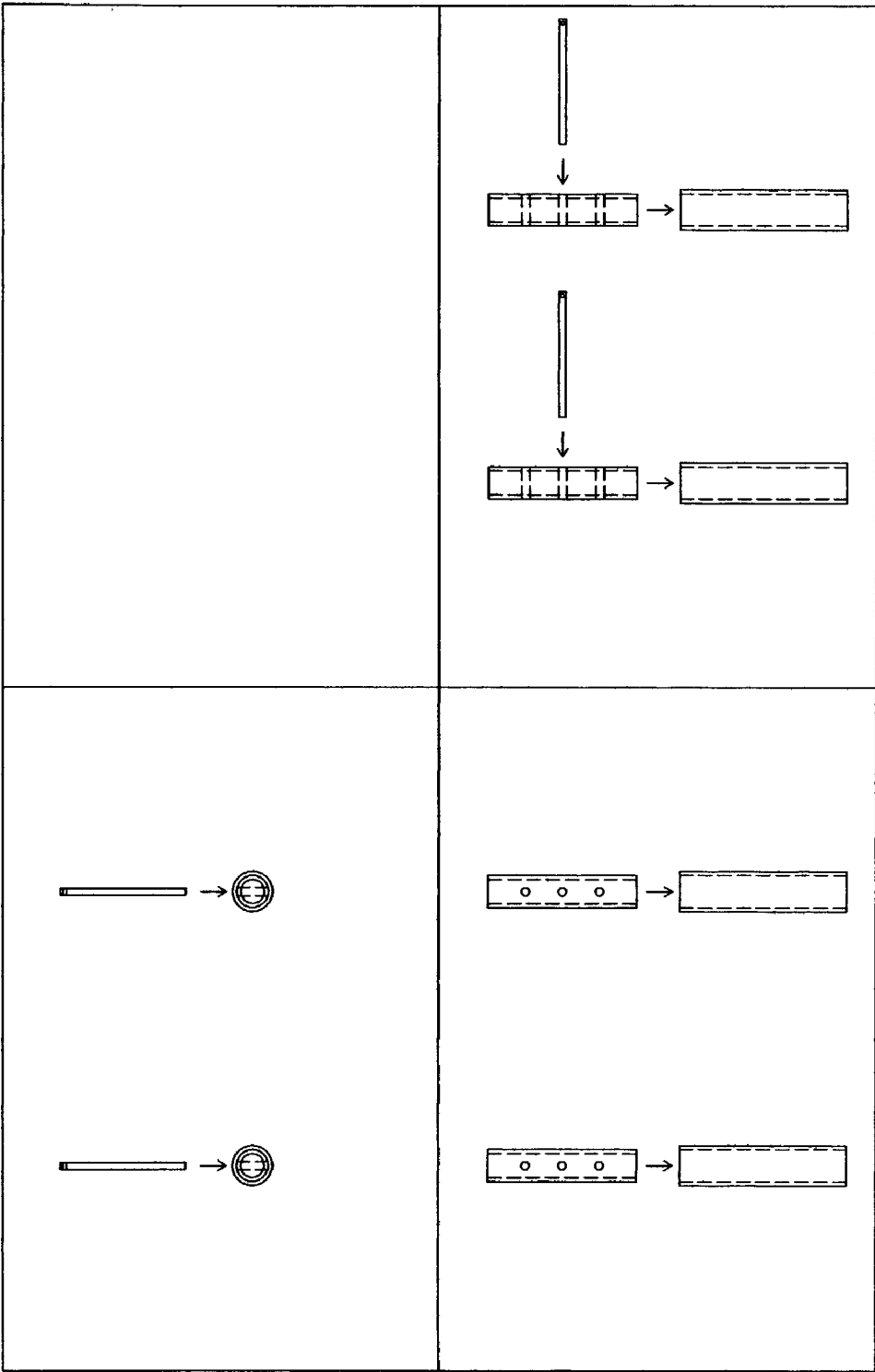


Figure 7

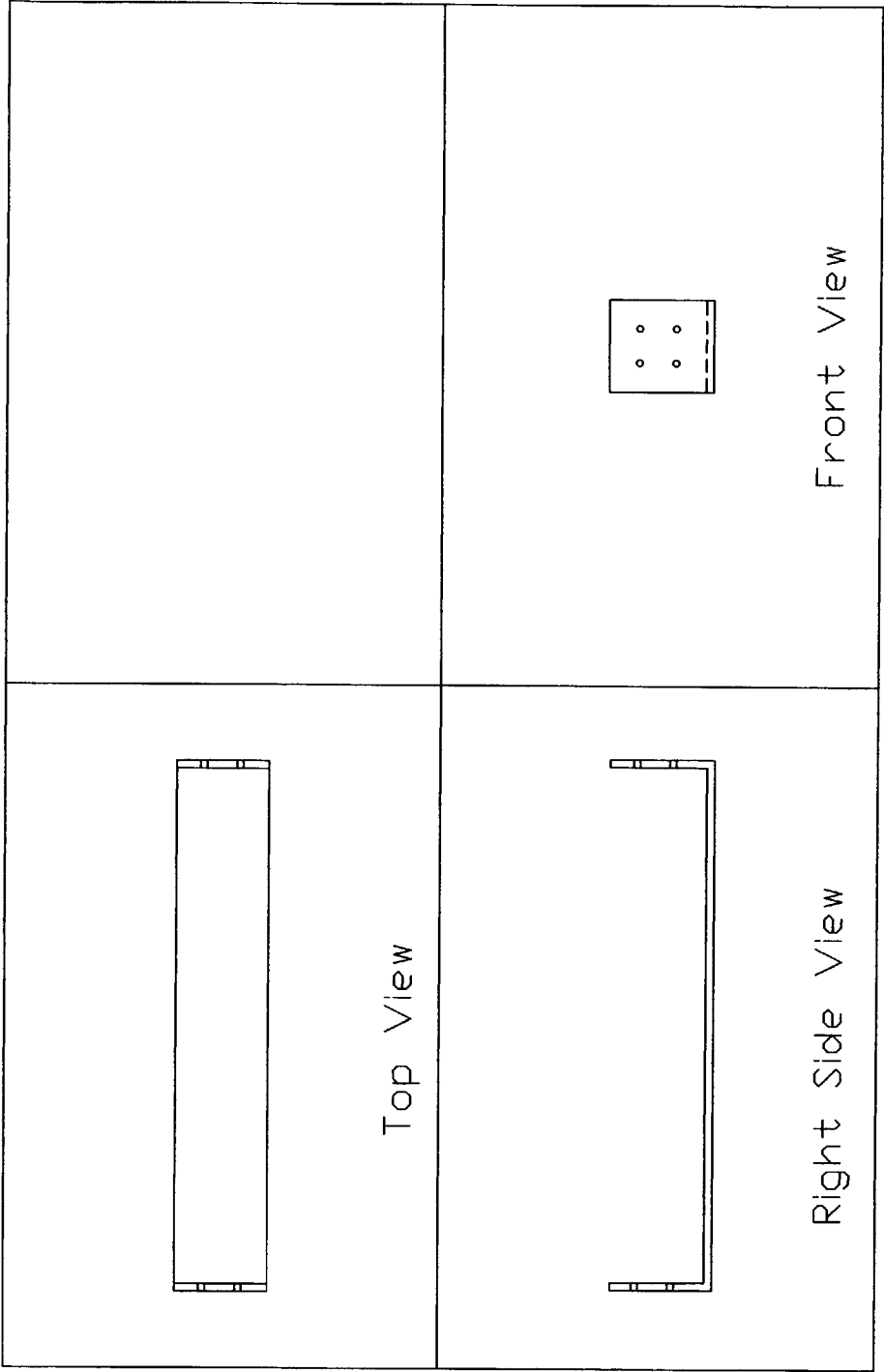
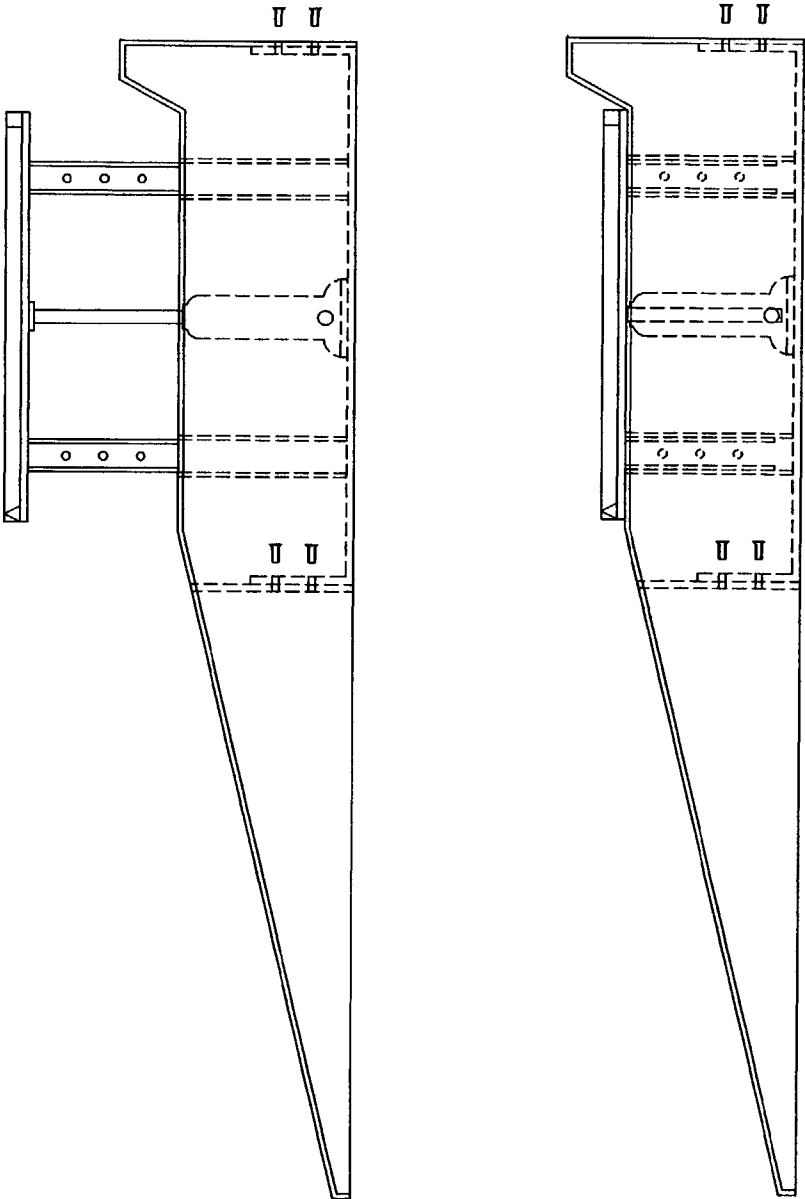


Figure 8



RISING RAMP JACK MECHANISM

BACKGROUND OF THE INVENTION

[0001] 1. Field of Invention

[0002] The present invention is an addition or option to current automotive service ramps. This invention will safely provide additional workspace beyond what current automotive ramps provide.

[0003] 2. Description of Prior Art

[0004] Current automotive service ramps provide a fixed amount of lift which depends on the type and manufacturer of the ramp. If these ramps are used on vehicles that are built low to the ground the lift provided by conventional ramps are of little help for repairs or inspections. Conventional ramps are useful on vehicles that are not built low to the ground but even then a little extra room would be helpful. A few extra inches of working room would make repair easier. The extra leverage gained by a few extra inches of workspace could make repairs must faster and reduce strain.

SUMMARY OF THE INVENTION

[0005] With the above in mind, the 'Rising Ramp' lifting device was created. This device can be either an addition or option for conventional automotive ramps.

[0006] The objective of this device is to provide additional lifting capabilities above and beyond what the ramp itself can provide. This device can either be built into a conventional ramp or as an added option for ramps built to accept this device.

[0007] Another objective of this invention is to provide the extra lift capacity safely. The 'Rising Ramp' lifting device has several redundant safety features, which include the lifting device, the safety bars, wheel stops and the ramp itself.

[0008] Additionally the 'Rising Ramp' lifting device was made with as few moving parts as possible, all metal construction, a non-skid surface and no special tools to operate the lifting mechanism.

BRIEF DESCRIPTION OF DRAWINGS

[0009] FIG. 1 View of all components

[0010] FIG. 2 Side view of all components, view of lifting device at full height, view of lifting device fully collapsed.

[0011] FIG. 3 Top view of lifting device. With 2 & 4 safety supports.

[0012] FIG. 4 Front view of all components, view of lifting device at full height, view of lifting device fully collapsed.

[0013] FIG. 5 View of lifting plate.

[0014] FIG. 6 View of safety supports.

[0015] FIG. 7 Top view, right side view & front view of base bracket.

[0016] FIG. 8 Rising Ramp lifting device built into conventional automotive ramp.

[0017] I. Base Bracket: (FIG. 1, item I) The Base Bracket is a thin, long, narrow peace of material with both ends bent

upward. The Base Bracket is the base or frame of the Rising Ramp Lifting Device. The two or four safety supports and lifting device are attached to the central region of the base bracket, while the vertical sides of the base bracket has holes drilled in it, used to fasten the Rising Ramp Lifting Device to the Automotive Ramp.

[0018] II. Front Safety Support Outer Sleeve: (FIG. 1, items II) The front safety support outer sleeve is a long cylindrical shaped hollow tube, located near the front of the Rising Ramp lifting device. The purpose for the front safety support outer sleeve is for the inter sleeve to slide up and down in while the lifting mechanism is lifting or lowering the automobile. The outer sleeve is also used to hold the weight of the vehicle when the pins are inserted into the Inter Sleeve of the Safety Supports in case the lifting mechanism fails. In the event of a failure the pin will rest on top of the Outer Sleeve, thus preventing the automobile from falling and causing serious injury.

[0019] III. Front Safety Support Inter Sleeve: (FIG. 1, items III) The front safety support inter sleeve is a long cylindrical shaped hollow tube with several horizontal holes drilled thru both sides for the safety pins to be placed. It is located closest to the front part of the Rising Ramp lifting device. The purpose of the front safety support inter sleeve is to move up and down inside the outer safety support sleeve while the jack mechanism move the vehicle up or down. The front safety support inter sleeve is attached to the bottom of the lifting plate of the Rising Ramp lifting device. After the lifting device is lifted to the desired height, the pin are to be inserted in the front safety support inter sleeve to prevent the collapse of the automobile.

[0020] IV. Lifting Plate: (FIG. 1, item IV) The lifting plate is a thin, flat, rectangular peace of material that has a railing, used for a wheel stop, surrounding the outer edge. The purpose of the lifting plate is to serve as a platform for the tire of the automobile to set on. Both the Front and Rear inter safety support sleeve will be attached to the bottom of the plate along with the lifting mechanism. The lifting mechanism will either lift or lower the lifting plate, thus lifting or lowering the vehicle. For safety purposes the lifting plate will be coated with a rough textured skid proof material to prevent tire slips.

[0021] V. Rear Safety Support Inter Sleeve: (FIG. 1, Item VI) The rear safety support inter sleeve is a long cylindrical shaped hollow tube with several horizontal holes drilled thru both sides for the safety pins to be placed. It is located closest to the rear part of the Rising Ramp lifting device. The purpose of the rear safety support inter sleeve is to move up and down inside the outer safety support sleeve while the lifting mechanism moves the vehicle up or down. The rear safety support inter sleeve is attached to the bottom of the lifting plate of the Rising Ramp lifting device. After the lifting device is lifted to the desired height, the pin are to be inserted in the rear safety support inter sleeve to prevent the collapse of the automobile.

[0022] VI. Rear Safety Support Outer Sleeve: (FIG. 1, item V) The rear safety support outer sleeve is a long cylindrical shaped hollow tube, located near the rear of the Rising Ramp lifting device. The purpose for the rear safety support outer sleeve is for the inter sleeve to slide up or down in while the lifting mechanism is lifting or lowering the automobile. The outer sleeve is also used to hold the

weight of the vehicle when the pins are inserted into the Inter Sleeve of the Safety Supports in case the lifting mechanism fails. In the event of a failure the pin will rest on top of the Outer Sleeve, thus preventing the automobile from falling and causing serious injury.

[0023] VII. Lifting Mechanism: (**FIG. 1**, item VII) The actual lifting mechanism will be some sort of commercially available bottle jack. The driving action of the jack will depend on the manufactures preference. Types of jacks that can be used are hydraulic, pneumatic, or screw driven. The lifting mechanism is located in the center of the base bracket and lifting plate between the front and rear safety supports. The bottom of the lifting mechanism is attached to the base bracket and the top is attached to the lifting plate. Its purpose is to provide lift to the lifting plate in order to raise or lower an automobile.

What is claimed is:

1. A high strength, all metal construction, multiple piece lifting device made as an addition or option to standard automotive service ramps, comprising of,

- (a) a lifting mechanism, (**FIG. 1** item VII) which provides the lift this is the only mechanical moving part of the lifting device, lift capacity will depend on the type of lifting mechanism used during the manufacturing process. This mechanism can be either a screw, hydraulic, or pneumatic type jack.
- (b) integrated safety bars (**FIG. 1** items II, III, V, VI) built into the mechanism, which adds safety, stability and strength.
- (c) a lifting plate with a non-skid surface (**FIG. 1** item IV) a wheel stop is also a part of the lifting base.
- (d) no special tools required in the operation of the lifting mechanism.
- (e) several redundant safety features which include the jack's lifting capacity, the integrated safety bars with pins, and the automotive ramp itself.
- 2. The lifting device of claim 1 can be manufactured as either a part of or an option for standard automotive service ramps that have been designed to accept the rising ramp lifting device.
- 3. The lifting device of claim 1 will be protected from outside elements in the lowered position due to the fact that the device is designed to be integrated into or added as an option later into the automotive service ramp itself the lifting device will only be partially exposed when the device is in the raised position.
- 4. The lifting device of claim 1 whereby the lifting plate and base bracket are covered with a corrosive and wear resistant flexible material.
- 5. The lifting device of claim 1 has three holes drilled into each front safety support inter sleeve (**FIG. 1** III & V) these holes are used for the safety pins which will be inserted into the safety support inter sleeves once the device is lifted to the desired height.
- 6. The lifting device of claim 1 can be built with either two or four safety supports (**FIG. 3**) depending on the needed load capacity for the lifting device and the automotive ramps into which it will be integrated into or added as an option to.
- 7. The lifting device of claim 1 once integrated into or added as an option to automotive service ramps designed to accept the device will provide extra room for repairs, maintenance an inspections of the under side of vehicles. The extra room will provide a work environment that could reduce strain and provide added leverage for the user.

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