PULL OUT LADDER FOR TRUCKS

Field

The utility model relates to the technical field of automobiles, especially, relate to an automobile-used drawing ladder.

The present invention relates to a pull-out ladder designed for vehicles, and more particularly, to a retractable ladder system that facilitates easy access to elevated surfaces on a variety of vehicles.

Background of the Invention

The ladder is a practical tool convenient for an operator to climb. At present, the common vehicle-mounted ladder has two types of fixed type and movable type. The former has fixed installation position and also needs enough installation space, and the latter has no position limitation in use, but needs to be reinstalled every time of use, and is inconvenient to use. Although the vehicular ladder on the existing market mostly has folding and hidden functions, and designs the pull ladder with the handrails, the handrails of the existing pull ladder need the user to fold independently, and the operation is very inconvenient.

Therefore, there is a need to design a pull ladder for a vehicle, which can make the handrail be unfolded or folded simultaneously with stepping so as to facilitate the folding and unfolding of the pull ladder.

Pickup trucks and similar vehicles with a cargo box mounted to the vehicle frame present an obstacle to entry by an individual due to the height of the cargo box above the surface upon which the truck rests. The use of oversized tires on such pickup trucks elevates the cargo box even higher above the support surface, further magnifying the obstacle. Pickup trucks almost universally contain a tailgate at the rear of the cargo box that is hinged to the bed of the cargo box across the rear thereof. The tailgate normally contains a mechanism allowing the tailgate to open to a coplanar condition with the floor or bed of the cargo box. Although the open tailgate provides a low point for entry into the cargo box compared to the upright sides of the cargo box, any step or ladder mechanism must extend beyond the end of the tailgate for access by an individual entering the cargo box via the tailgate.

Objects of the invention

The primary objective of the present invention is to provide a pull-out ladder for vehicles that is compact, lightweight, and capable of being easily extended and retracted as needed. The ladder system should be adaptable to different vehicle configurations, ensuring compatibility with various models and types.

Additionally, the invention aims to enhance user convenience by offering a secure and stable climbing surface while minimizing the impact on the vehicle's overall design and performance. The ladder should be durable, weather-resistant, and require minimal maintenance.

Summary of the Invention

An object of the utility model is to provide a vehicle pull ladder makes the handrail can expand or pack up simultaneously with marking time to receive and release of pull ladder.

To achieve the purpose, the utility model adopts the following technical proposal:

the utility model provides an automobile-used drawing ladder, include:

the ladder comprises a drawing ladder frame, wherein a guide rail is arranged in the drawing ladder frame and extends along the length of the drawing ladder frame;

the first step comprises a first pedal, and the first pedal is arranged on the guide track in a sliding manner;

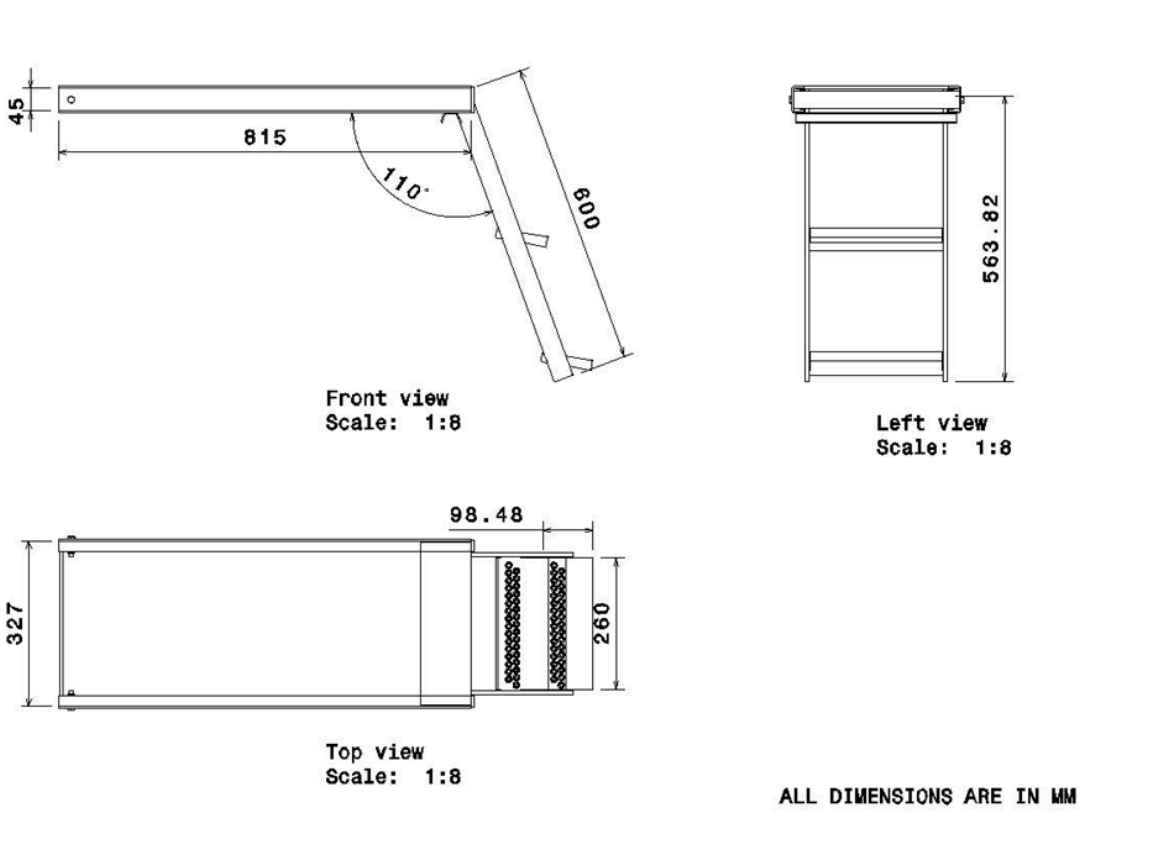
the second step comprises two groups of supporting rods and a plurality of second pedals, the two groups of supporting rods are arranged at intervals, the plurality of second pedals are arranged between the two groups of supporting rods at intervals along the length direction of the supporting rods, one ends of the two groups of supporting rods are hinged with one end of the first pedal, and the two groups of supporting rods can be arranged on the guide rails in a sliding mode, so that the second step can be pulled out of or pushed into the pull ladder frame;

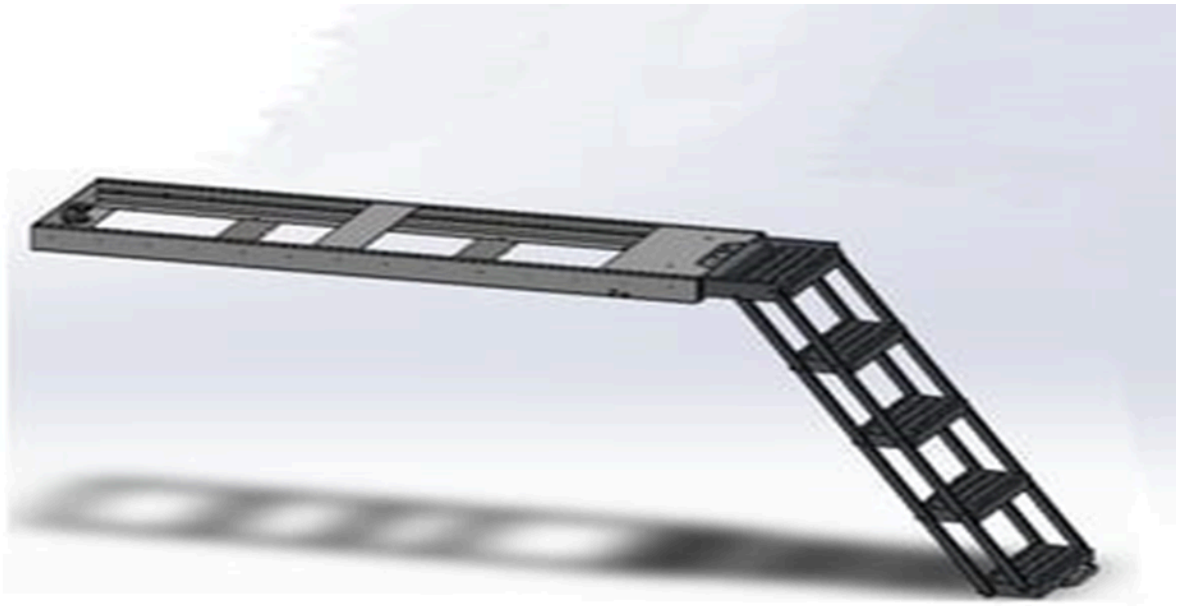
the first connecting piece is connected to one side of the first pedal and extends along the direction in which the second pedal pulls out the pull ladder frame;

the first handrail is hinged to the first connecting piece, and the first handrail and the first connecting piece can be hidden in the pull ladder frame; and

the first synchronizing assembly is configured to enable the first handrail and the second step to be unfolded or folded simultaneously and comprises a first connecting rod, a second connecting rod and a triangular connecting plate, one end of the first connecting rod is hinged to one group of the supporting rods, the other end of the first connecting rod is hinged to the triangular connecting plate, one end of the second connecting rod is hinged to the first handrail, the other end of the second connecting rod is hinged to the triangular connecting plate, and the triangular connecting plate is hinged to the first connecting piece.

Brief Description of the Drawings





- Front view: This view shows the entire staircase from the front, including the landings and all the steps.
- Left view: This view shows the staircase from the left side, including the width of the stairs and the depth of the landings.
- Top view: This view shows the staircase from above, looking down on the treads and risers.

Detailed Description of the Invention

The present invention will be described in further detail with reference to the accompanying drawings and examples. It is to be understood that the specific embodiments described herein are merely illustrative of the invention and are not limiting of the invention. It should be further noted that, for the convenience of description, only some of the structures related to the present invention are shown in the drawings, not all of the structures.

In the description of the present invention, unless expressly stated or limited otherwise, the terms "connected," "connected," and "fixed" are to be construed broadly, e.g., as meaning

permanently connected, detachably connected, or integral to one another; can be mechanically or electrically connected; either directly or indirectly through intervening media, either internally or in any other relationship. The specific meaning of the above terms in the present invention can be understood in specific cases to those skilled in the art.

In the present disclosure, unless expressly stated or limited otherwise, the first feature "on" or "under" the second feature may comprise direct contact between the first and second features, or may comprise contact between the first and second features not directly. Also, the first feature being "on," "above" and "over" the second feature includes the first feature being directly on and obliquely above the second feature, or merely indicating that the first feature is at a higher level than the second feature. A first feature being "under," "below," and "beneath" a second feature includes the first feature being directly under and obliquely below the second feature, or simply meaning that the first feature is at a lesser elevation than the second feature.

In the description of the present embodiment, the terms "upper", "lower", "right", etc. are used in an orientation or positional relationship based on that shown in the drawings only for convenience of description and simplicity of operation, and do not indicate or imply that the device or element referred to must have a particular orientation, be constructed and operated in a particular orientation, and thus, should not be construed as limiting the present invention. Furthermore, the terms "first" and "second" are used only for descriptive purposes and are not intended to have a special meaning.

In order to further improve the safety of the user when climbing the vehicular extension ladder, the vehicular extension ladder is further provided with a second handrail (not shown in the figure), the second handrail is positioned on one side of the first pedal 21 away from the first handrail 5, and the second handrail is arranged opposite to the first handrail 5 and can be unfolded or folded simultaneously with the second step 3; it is conceivable that the second armrest is deployed or stowed by a second synchronizing assembly having the same structure as the first synchronizing assembly 6.

The automobile-used pull ladder utilizes the connecting rod principle, realizes synchronous unfolding and folding of the handrail and the step, is very convenient to use and has high safety.

It is obvious that the above embodiments of the present invention are only examples for clearly illustrating the present invention, and are not intended to limit the embodiments of the present invention. Numerous obvious variations, rearrangements and substitutions will now occur to those skilled in the art without departing from the scope of the invention. And are neither required nor exhaustive of all embodiments. Any modification, equivalent replacement, and improvement made within the spirit and principle of the present invention should be included in the protection scope of the claims of the present invention.