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Mounting System For Truck Bed Racks

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Mounting System For Truck Bed Racks

ABSTRACT

Bed racks are commonly attached to pickup trucks for additional storage and transport options. This disclosure describes a mounting system that enables attachment of a rack to inward rolled sheet metal rails, outward rolled sheet metal rails, and T-slot rails without modifications to the truck body. An additional bracket is provided to attach a rack crossbar to an outward bed rail. The additional bracket is attached to the crossbar bracket which creates a vertical face against an outside edge of the bed rail. Studs are provided in the additional bracket that, when combined with slots in the crossbar bracket, enable the width to be adjusted for vehicles of different sizes. A clamp is provided on an outboard side of the vertical bracket that clamps the outward bed rail and the additional bracket. Slots in the additional bracket enable the clamp to move up or down to accommodate different bed rail geometries. The mounting system is also compatible with T-slot and inward bed rails.

KEYWORDS

- Mounting system
- Truck bed rail
- Bracket
- Bed Rack
- Pickup truck
- T-Slot
- Inner clamp
- Outer clamp

BACKGROUND

Bed racks are commonly attached to pickup trucks to increase their storage capacity and for additional storage and transport options. Sporting equipment, tools, electronic equipment, etc. can be transported by attaching such equipment to the bed of a pickup truck using a bed rack system that is connected to bed rails provided on the truck.

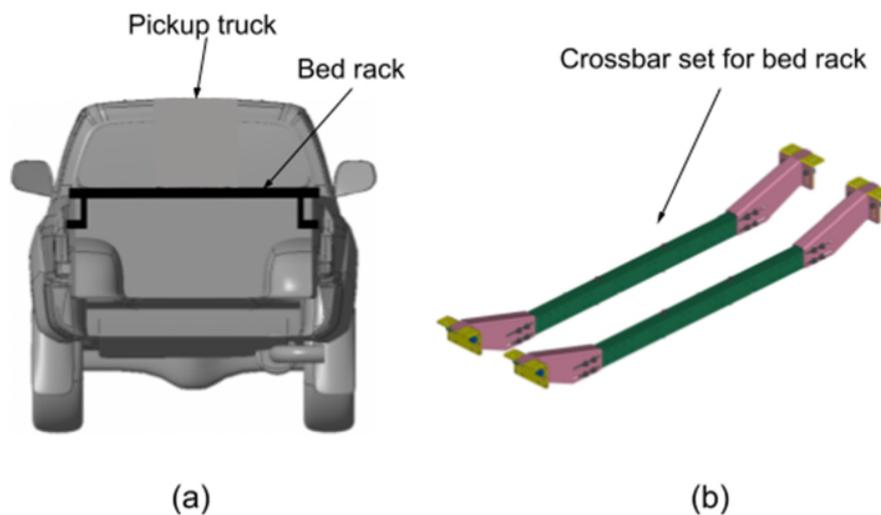


Fig. 1: Truck bed racks used for storage and transport of equipment

Fig. 1 illustrates an example pickup truck and a bed rack, as well as an example crossbar set utilized to connect the bed rack to bed rails provided on the pickup truck. Different types of bed rail construction, e.g., inward rolled sheet metal, outward rolled sheet metal, and T-slot rails, etc. are utilized on pickup trucks, depending on the model and manufacturer of the pickup truck.

DESCRIPTION

In some use cases, pickup trucks are rented based on local availability and the rack system adopted for use is required to be attachable to the different types of bed rails.

Additionally, an attachment method that does not permanently modify the vehicle (e.g. drill holes in the bed rails) can enable easy and efficient operation.

This disclosure describes a mounting system for attaching truck bed racks to a variety of bed rail designs utilized in pickup trucks. The mounting system enables attachment of a rack to inward rolled sheet metal rails, outward rolled sheet metal rails, and T-slot rails without modifications to the truck body.

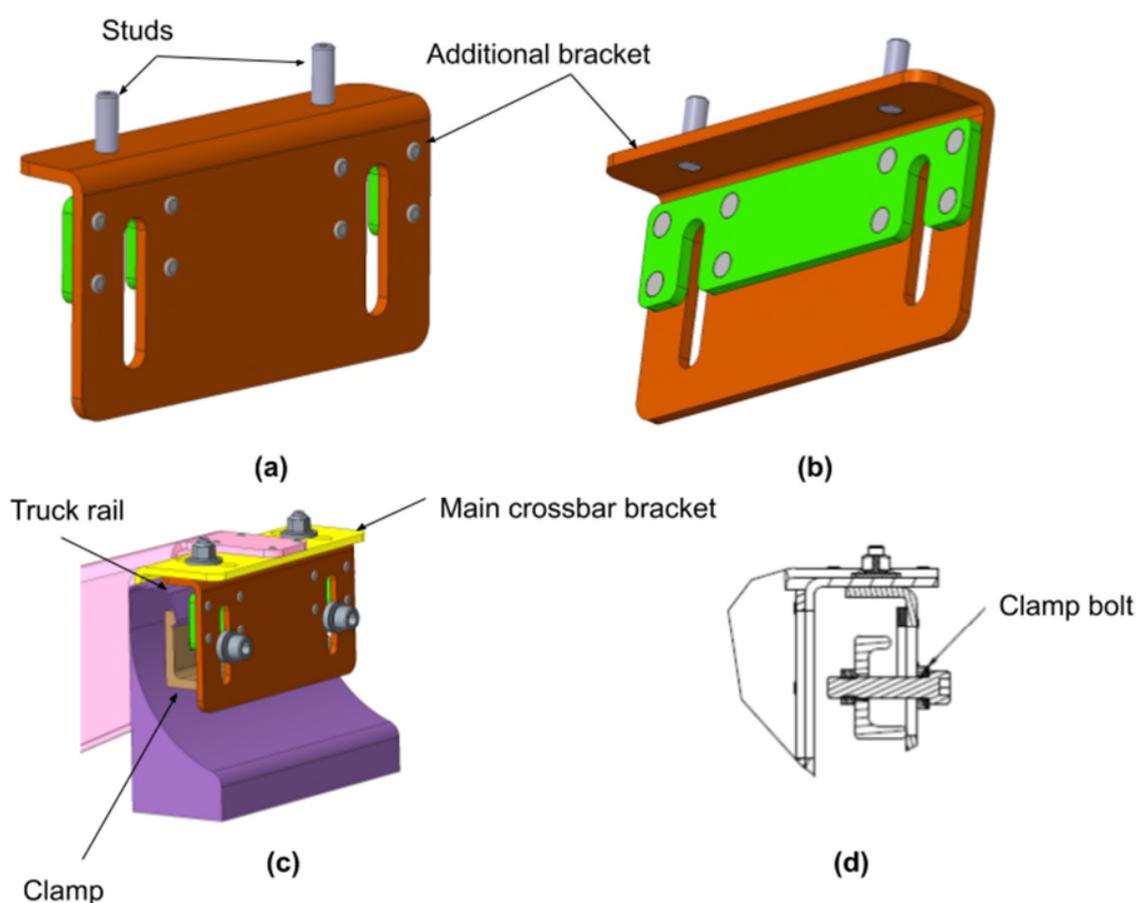


Fig. 2: Views of additional bracket utilized to attach the crossbar to outer bed rail

Figs. 2(a) and 2(b) depict different views of an additional bracket that can be utilized to attach the crossbar of the rack to an outward (outer) bed rail of a pickup truck. Fig. 2(c) depicts attachment of the rack to the outward rail of a pickup truck. To connect to a truck that is

provided with an outward bed rail, the additional bracket (shown in brown) is attached to the main crossbar bracket (shown in yellow) which creates a vertical face against an outside edge of the bed rail.

Studs are provided in the additional bracket that, when combined with slots in the main crossbar bracket, enable the width of the attachment to be adjusted for vehicles of different sizes. A clamp is provided on an outboard side of the vertical bracket that clamps the outward bed rail and the additional bracket. Slots in the additional bracket enable the clamp to move up or down to accommodate different bed rail geometries, see Fig. 2(d).

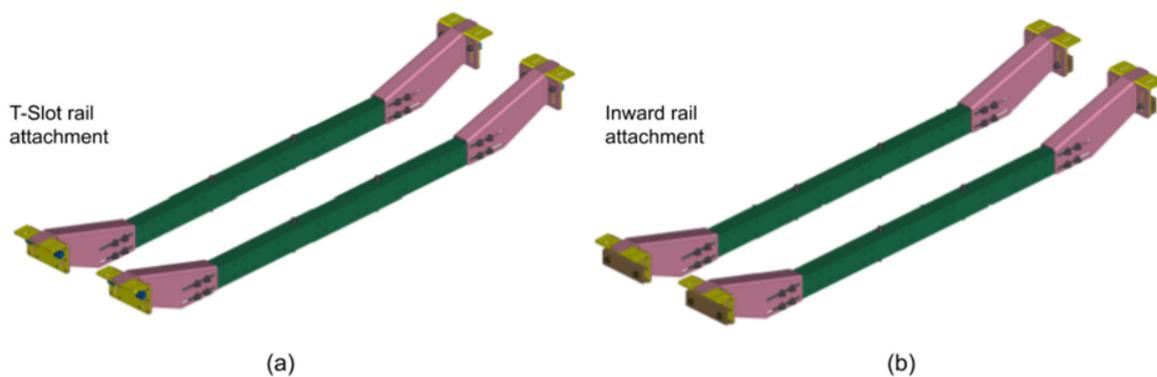


Fig. 3: Crossbar attachments to (a) T-slot rails; and (b) inward bed rail

Fig. 3 depicts the example mounting system in use with T-slot rails and inward (inner) bed rails, per techniques of this disclosure.

T-Slot Rails: Some pickup trucks are provided with a track already installed on an inner side of each bed rail. As depicted in Fig. 3(a) a T-nut is slid into the track which bolts to a vertical plate on the rack system.

Inward Bed Rails: Some pickup trucks are provided with an inward bed rail, wherein the bed rail is rolled inward to create an exposed inner edge on the inside of the truck bed. As depicted in Fig. 3(b), a clamp is used to clamp the vertical face of the rack to the inner edge of the rail.

CONCLUSION

Bed racks are commonly attached to pickup trucks for additional storage and transport options. This disclosure describes a mounting system that enables attachment of a rack to inward rolled sheet metal rails, outward rolled sheet metal rails, and T-slot rails without modifications to the truck body. An additional bracket is provided to attach a rack crossbar to an outward bed rail. The additional bracket is attached to the crossbar bracket which creates a vertical face against an outside edge of the bed rail. Studs are provided in the additional bracket that, when combined with slots in the crossbar bracket, enable the width to be adjusted for vehicles of different sizes. A clamp is provided on an outboard side of the vertical bracket that clamps the outward bed rail and the additional bracket. Slots in the additional bracket enable the clamp to move up or down to accommodate different bed rail geometries. The mounting system is also compatible with T-slot and inward bed rails.