May 22, 1956 C. S. NEYRA 2,746,628

LADDER SUPPORT

Filed Oct. 23, 1953

Fig. 1

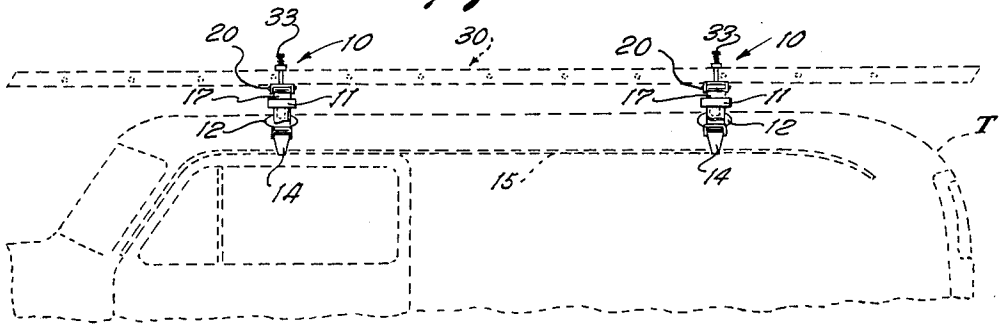


Fig. 2

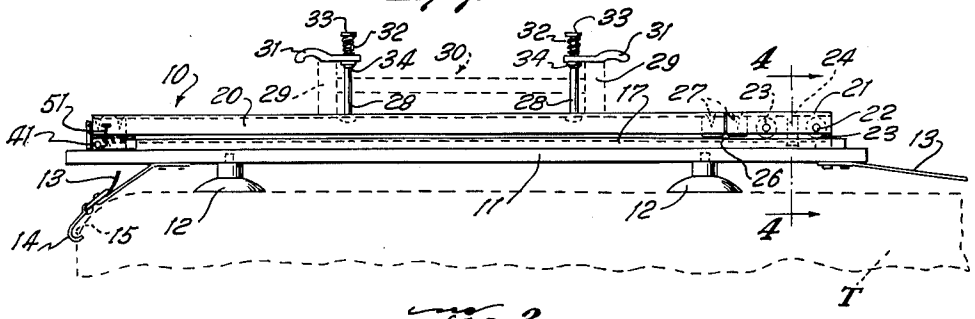


Fig. 3

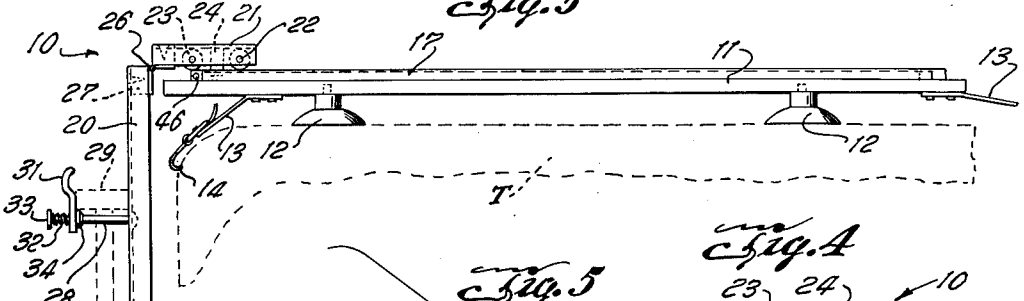


Fig. 5

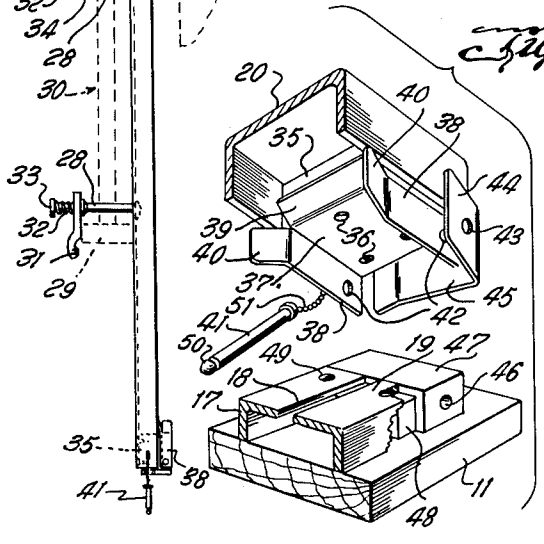
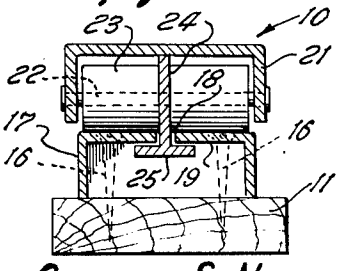


Fig. 4



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LADDER SUPPORT

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7 Claims. (Cl. 214—450)

This invention relates to ladder carriers and more particularly to apparatus for supporting and carrying ladders on trucks.

Heretofore, tradesmen whose work requires them to employ ladders for reaching high places, such as roofs of houses and the like, have found it necessary to send two workmen on jobs which would ordinarily require the services of but one were it not for the removal of a heavy ladder from its mounting on the top of a truck and its replacement which requires effort usually too strenuous for a single workman.

It is, therefore, the principal object of the invention to provide a ladder carrier for trucks so designed and constructed that a single workman, without undue effort may remove a heavy ladder from the top of a truck and replace the same without manual assistance.

Another object of the invention is to provide a ladder carrier of inexpensive construction which is easily secured to the top of a vehicle such as a panel truck.

Broadly, the invention is comprised of a pair of mounting members supported in spaced apart relationship transversely on the top of a truck, each mounting member consisting of a stationary lower section and an upper section parallel with and movable longitudinally with respect to the lower section and provided with a hinge enabling the movable upper section, which supports the ladder, to be moved to a position where it will be parallel with the side of the truck and thus dispose the ladder supported on the movable sections in a position to be easily lifted from the carrier and as easily replaced thereon for restoring it to its original position atop the truck.

Other objects will become manifest as the description proceeds when considered with the annexed drawing wherein:

Figure 1 is a fragmentary side elevational view of a truck, in dotted lines, showing the invention mounted thereon.

Figure 2 is a fragmentary end elevation of the truck, in dotted lines, showing a side view of one of the two identical ladder supports of the invention.

Figure 3 shows the invention in a position to present the ladder for removal from the carrier.

Figure 4 is a transverse sectional view taken on line 4—4 of Figure 2, and

Figure 5 is an expanded view in perspective of related parts of the latch at one end of each supporting assembly for holding the sections thereof against relative displacement.

Continuing with a more detailed description of the drawing, reference numeral **10** denotes generally each of the complementary supporting assemblies constituting the ladder carrier and which are of identical construction, hence corresponding parts will carry identical reference numerals.

While the drawing shows two of the supporting assemblies, it is evident that more than two may be employed, if necessary or desirable, and each of the supporting assemblies is comprised of a rail **11** of wood or metal which

may be secured transversely across the top of a truck T by the usual means consisting of a rubber suction cup **12** and anchoring straps **13** having hooks **14** on their ends engaging under the drain channel **15** skirting the top of the truck.

Secured to the rail **11** by screws or other suitable means **16** is an inverted channel member **17** having a longitudinal slot **18** in its web **19** terminating short of its ends. The above described elements constitute what is referred to as the lower or stationary section of the carrier.

Disposed above the channel member **17** is a complementary channel member **20**. The channel member **20** has a short tail portion or section **21** of the same cross-sectional shape as the member **20** but has mounted therein on transverse shafts **22** a pair of rollers **23** which roll upon the web **19** of the channel member **17** of the lower section. The channel member **20** is connected to the channel member **17** through the medium of the tail section **21** by means of an inverted T-shaped lug **24**, as shown in Figure 4 so affixed to the undersurface of the tail section **21** that its leg will extend downwardly through the slot **18** in the web of the channel member. The bar **25** of the lug **24** slidably underlies the web **19** and prevents movement of the tail portion **21** except in a longitudinal direction.

The tail portion **21** of the upper section of the support is attached by means of a hinge **26** to an adjacent end of the channel member **20**, the plates of the hinge **26** being secured to filler blocks **27** which are affixed in adjacent ends of members **20** and **21**.

It is evident from the foregoing that the upper section of the support, composed of members **20** and **21**, may be moved freely along the top of the lower section or channel member **17**, also, that when the hinged end of the upper section rides off the end of the lower section, it will drop down to a position at right angles to the stationary upper section, as shown in Figure 3.

Affixed perpendicularly to the midsection of the channel member **20** is a pair of spaced apart studs **28**, on the outside of each of which rests a leg **29** of a ladder **30** which ladder extends across and is supported by both of the supports **10**. Rotatably mounted on each stud **28** is an arm **31** which in operative position extends outwardly and is biased against a leg of the ladder by a compression spring **32** surrounding the stud **28**, bearing at one end against the arm **31** and at its opposite end against a head **33** on the stud. A collar **34** on the stud below the arm **31** limits longitudinal displacement of the arm on the stud. In this manner the ladder **30** is held on the carrier whether atop the truck or in the position shown in Figure 3. It requires only rotation of the arms to an inner position to free the ladder for removal from the carrier or for its replacement thereon.

In Figure 5 is shown details of the latching means by which the upper section is held against displacement from its position atop the stationary lower section. This structure consists of a block **35** secured within the free end of channel member **20** and to this block is secured, by means of screws **36** a plate **37** having side flanges **38** and an inner end flange **39**. The ends **40** of the side flanges **38** are outwardly divergent and the end flange **45** downwardly turned, serving as a guide when the upper section of the carrier is moved from the extended position shown in Figure 3 to the position shown in Figures 1 and 2, the flared portions of the plate directing the free end of the member **20** onto the outer end of member **17**. When positioned atop member **17**, the upper section is secured thereto by means of a pin **41** which is thrust through holes **42** (Figure 5) in flanges **38** of plate **37**, through a hole **43** in a flange **44** of an end plate **45** and through a matching hole **46** bored through a block **47** which is secured to an end of the member **17** by a reduced extension **48**

of the block entering the end of the member **17** and secured thereto and to the rail **11** by screws **49**.

The pin **41** has an annular groove **50** adjacent its free end and when the pin is inserted through the matched holes described, the groove **50** receives an edge of the hole **43** in the angular flange **44** of the end plate **45**, which is made of spring steel. This holds the pin **41** against release from latching position until the flange **44** is pressed down to align the holes, whereupon the pin can be freely moved. A short length of chain **51** serves to connect the pin **41** with the member **20** to prevent loss or misplacement.

It is evident from the foregoing, without need for a description of function, that a single workman grasping a leg of the ladder **30** at a point midway between the two supports **10** may, with little effort, lower the ladder to the position shown in Figure 3 where it can be lifted easily from the supports and as easily replaced. After its replacement, the ladder is pushed up to a position atop the truck, guiding the free ends of the top sections **20** onto the adjacent ends of the bottom sections **17** by the flanges **38—39** on plate **37**. When in position, the pin **50** is inserted to secure the sections one to the other.

Manifestly, the construction as shown and described is capable of some modification and such modification as may be construed to fall within the scope and meaning of the appended claims is also considered to be within the spirit and intent of the invention.

What is claimed is:

1. A ladder carrier for a truck comprising a pair of ladder supports, each consisting of a batten secured transversely of the top of said truck, an inverted channel member affixed longitudinally to said batten and having a longitudinal slot in its web terminating short of its ends, said channel member defining a stationary lower section, an upper section slidable longitudinally on said lower section, a short tail section hinged to one end of said upper section, an inverted T-shaped lug carried by said tail section and extending into the slot of said lower section to hold said upper section for displacement to a position at right angles to said lower section to dispose said upper section in a plane parallel with a side of said truck and means on each of said supports for retaining a ladder transversely across said supports.

2. A ladder carrier for a truck comprising a plurality of supports sustaining a ladder lengthwise on the top of said truck, said supports each comprising a mounting rail fixed transversely to said truck top, an inverted channel member secured lengthwise on said mounting rail and having a longitudinally continuous slot in its web, said channel member defining a lower section, an upper section disposed longitudinally on said lower section, movable longitudinally on said lower section, a tail portion hinged at one end to an end of said upper section and connected slidably thereto through the slot of said lower section whereby the latter will be capable of movement to a position perpendicular to said lower section and means on said upper section for holding a ladder against displacement on said carrier.

3. A ladder carrier for a truck comprising a plurality of relatively spaced ladder supports on the top of said truck each support comprising a mounting rail secured transversely to said truck top, a lower section and an upper section, said lower section comprising an inverted channel member having a longitudinal slot in its web, means connecting said upper section to said lower section through said slot for movement of said upper section longitudinally of said lower section and into a position perpendicular to said lower section and means on the upper section of each of said supports for holding a ladder against displacement on said carrier.

4. The structure of claim 3, said connecting means comprising, a tail portion hinged to one end of said upper section in axial alignment therewith and having a substantially T-shaped lug slidably engaging said lower section through said longitudinal slot in said lower section.

5. In a ladder carrier for a truck, a pair of spaced apart ladder supports mounted transversely on the top of said truck, each of said supports comprising a mounting rail secured transversely to the top of said truck, an inverted channel member affixed to said truck top and having a longitudinal slot terminating short of its end, a second channel member movable longitudinally on said inverted channel member, a tail portion hinged to an end of said second channel member in axial alignment therewith, a lug carried by said tail portion and slidably disposed in the slot of said channel member to hold said second channel member against other than longitudinal movement on said inverted channel member and adapted to support said second channel member from and at right angles to an end of said inverted channel member when said second channel member is moved beyond the supporting end of said inverted channel member, a pair of spaced apart studs mounted perpendicularly on said second channel member for retaining a ladder thereon and having spring biased means engaging portions of said ladder to prohibit displacement of the ladder from said studs.

6. The structure of claim 5, and means carried jointly by an end of said inverted channel member and an end of said second channel member cooperating to guide said ends into juxtaposition when said second channel member is moved into superposed parallelism with said inverted channel member.

7. The structure of claim 6, a locking pin removably extending through matching openings in said guide means to hold the adjacent ends of said channel members in juxtaposition, said pin having an annular groove adjacent one end thereof and releasable spring means engaging said groove for securing said pin against longitudinal displacement.

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