Dec. 16, 1952 H. J. KNIBBS 2,621,846

STOWABLE TRUCK LADDERS

Filed Aug. 16, 1951

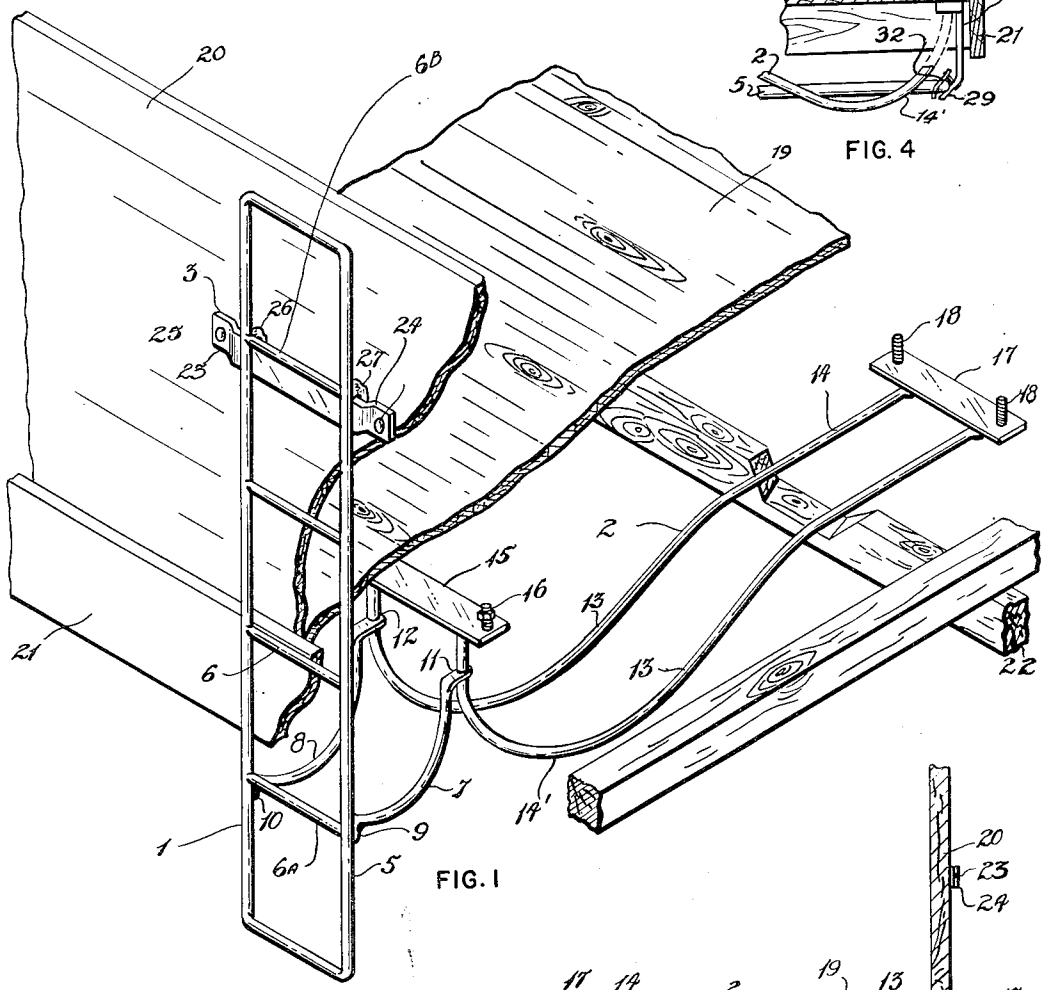


FIG. 1

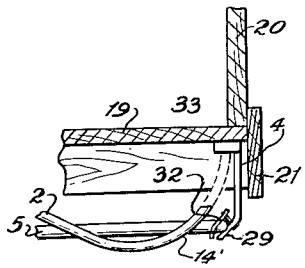


FIG. 4

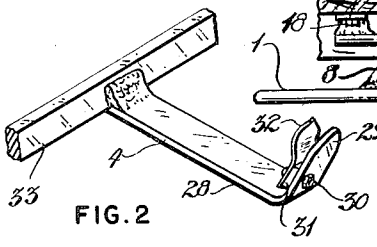


FIG. 2

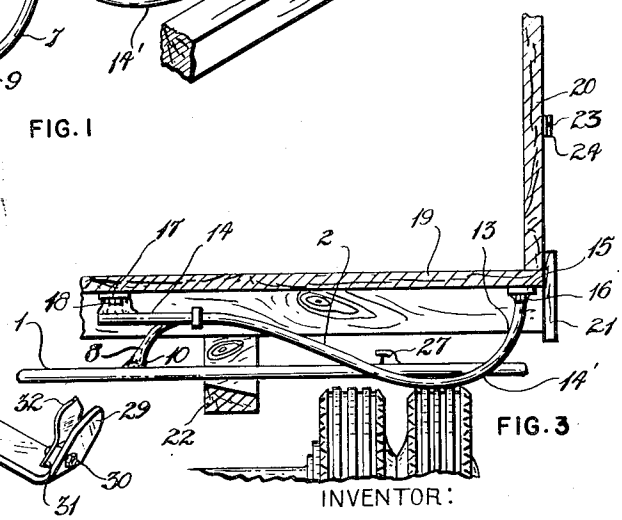


FIG. 3

INVENTOR:
HENRY J. KNIBBS
BY Fetherstonhaugh & Kent.
His Atty's

Patented Dec. 16, 1952 2,621,846

UNITED STATES PATENT OFFICE

2,621,846

STOWABLE TRUCK LADDER

Henry J. Knibbs, Huntoon, Saskatchewan, Canada

Application August 16, 1951, Serial No. 242,154

5 Claims. (Cl. 228—48)

1

My invention relates to truck ladders, particularly to a stowable truck ladder, an object of which is to provide a device of the character herewithin described, which affords operators of automotive trucks, particularly such trucks as are equipped with relatively smooth sides, a convenient means for gaining access to the truck deck from ground level, without further extra equipment.

A further object of my invention is to provide a device of the character herewithin described, which is equipped with self-contained means for storage of the device in an accessible location, with no sacrifice of otherwise usable space.

Another object of my invention is to provide a device of the character herewithin described, which whilst making possible the hereinbefore described convenience, avoids projections or protrusions which would otherwise create a hazard to other vehicles or persons.

A still further object of my invention is to provide a device of the character herewithin described, which is simple and economical to manufacture and install and which is obviously well suited to the purposes for which it is intended.

With the foregoing objects in view, and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings in which:

Figure 1 is a partial perspective cut-away view of my device in situ as installed upon a truck.

Figure 2 is a perspective view of a component part of my device, to wit a stowage clip, normally in a substantially vertical position, although depicted horizontally.

Figure 3 is a vertical section through a portion of the truck body to reveal my device in situ in the vehicle, in stowage position.

Figure 4 is a fragmentary side elevation of part of Figure 3 showing the ladder engaging the stowage clip illustrated in Figure 2.

In the drawings like characters of reference indicate corresponding parts in the different figures.

With the change from conventional stake-bodied trucking vehicles to modern grain-hauling bodies, so-called streamlined bodies and other numerous varieties having smooth sides, the operator of such vehicles is very often seriously

2

inconvenienced and hampered in his efforts by the difficulty of clambering into the vehicle body from ground level. A ladder, for the express purpose of overcoming this difficulty, becomes very essential. A problem then arises due to the conflicting desires, on the one hand to have a ladder convenient for use, and on the other hand, to conserve as much space for revenue producing cargo as possible.

My device meets both these conditions admirably. The proper ladder for the purpose is provided as part of the device. It is stowed in space that is normally waste and it is possible to make the ladder instantly available without shifting cargo, or otherwise, experiencing delay prior to entry into the load carrying space of the vehicle.

Proceeding now to describe my invention in detail, reference to the drawings will reveal that my device comprises four separate components which are combined when assembled upon the truck with which it is to be utilized.

The said components are first, the ladder 1, the stowage rack 2, truck side support cleat 3, and the stowing spring clamp 4.

The said ladder component 1 is fabricated of tubing or cylindrical rod, formed to an endless frame 5 of elongated, rectangular, configuration. A multiplicity of rungs 6 of the same material, are welded or similarly secured within aforesaid frame 5 and spaced in accordance with conventional practice.

Two mounting braces 7 and 8 on the two sides of the aforesaid ladder 1 are attached to the longitudinals of the frame 5, thereof, at a point adjacent to the lowest rung 6a of the ladder. The means of attachment is welding or the like, and the material is the same as that from which the aforesaid ladder is itself composed.

The two braces 7 and 8 are substantially of the same size and conformation, and extend rearwise and parallel to each other, but in parallel planes perpendicular to the plane through the longitudinal axis of the ladder frame 5. The said braces are of curvilinear contour, so as to carry support of the ladder rearwise and upwards. At the point of attachment said braces are upset and formed into enlarged bosses 9 and 10 for increased bearing area. The other ends of said braces are also upset, but are flattened, given a right-angulated bend, and provided with apertures 11 and 12. Each of said apertures is large enough to provide clearance for slideable engagement upon a rod of the same cross-section as that of the stowage rack rails 13.

The stowage rack 2, then is an assembly in

which the aforementioned rails 13 are the essential members. Said rails are composed of the same or similar cylindrical material as the other, previously described component. Each of the rails is a combination of a straight portion 14, and a portion 14' of curvilinear configuration. At the forward, or ladderwise end, each of said rails is welded, or otherwise similarly secured, to a mounting plate 15, which is provided with mounting bolts and nuts 16 by means of which the stowage rack 2 is mounted. The aforesaid rails are welded to the mounting plate at a separation equivalent to the separation of the aforementioned braces 7 and 8. Likewise, they extend rearwise, in two parallel, substantially vertical planes, to the point of attachment to rear mounting plate 17, after being separately threaded through apertures 11 and 12 in the braces. Each of the rails is secured by welding or the like to the said rear mounting plate which is provided with mounting bolts and nuts 18 by means of which the rear end of the said rack is mounted upon the truck.

The rack 2 is mounted on the underside of truck deck 19 and positioned so that the ladder, when erected, is at the desired location on the truck, and properly contiguous to the side 20, thereof. When in stowage, underneath said truck deck, the ladder 1 is retained quite close to said deck undersurface. The curvilinear portion of the rack rails 13 and 14, lowers the ladder end as the ladder is drawn forward prior to its erection, an amount sufficient to permit clearance for the said ladder under the edge of the trim facing piece 21 of the truck body. Due to its length, the ladder must be provided for by modification of the longitudinal stringer 22 of the truck to accommodate the ladder. A portion 23 of said stringer is cut away to facilitate the undersurface stowage of the ladder.

When erected, the ladder is supported upon the previously mentioned truck side support cleat 3. This is simply a strap of metallic material, each end of which is offset a suitable amount to provide mounting flanges 23 and 24 through which bolt apertures are provided for mounting bolts 25 by means of which said cleat is mounted on the truck side and located at a point above the aforesaid ladder location. To serve as a means of support for the said ladder when erected, two hooks 26 and 27 are affixed to the upper sections of the ladder frame longitudinals, adjacent to the uppermost rung 6b. These hooks are welded to the ladder frame, and combine with the aforementioned cleat to suspend the ladder when erected.

Finally, the stowing spring clamp 4 is comprised of several members. The stationary clamp spring portion 28, is of flat, rectangular spring stock, the lower end of which is profiled to a foliated end 29 and angulated at said foliated end. At said angulated and foliated end, a bolt aperture for bolt 30 is provided. This bolt secures a substantially square spacer block, 31, which separates the above mentioned foliated end and the movable separate clamp end 32. This clamp end is profiled to conform to the foliated profile of the lower end 29 of stationary clamp spring portion 28, and is also apertured for, and secured by bolt and nut 30, to the aforesaid lower end 29. The separate clamp end is also offset and radiused to the same curvature as the aforementioned ladder frame 1.

The upper end of the stationary spring is welded or similarly attached to cross member 33 by means of which the entire stowing spring clamp assembly 4 is mounted upon the underside of the truck deck, and positioned so as to be available for securing the ladder 1 in stowing position.

The manner of using my device will be apparent from the foregoing description and from the drawings to which numerous references have been made. The ladder hooks 26 and 27 are shown securing the ladder to the aforesaid truck side support cleat 23. The ladder is maintained in vertical position by means of the braces 7 and 8, which are, in turn, supported upon the vertical portions of rails 13.

To place ladder in stowing position it is first detached from support cleat 23 by slightly elevating the ladder to disengage the hooks 26 and 27. The apertures 11 and 12 in the brace ends are then permitted to slide along the spatial path traced out by the configuration of the rails 13 until the ladder frame is completely contained within the truck, and in substantially, horizontal posture. By slightly advancing the ladder in this position, the upper rung will engage with clamp 4 and will be retained securely.

To erect the ladder, said clamp is caused to release the ladder rung by exerting pressure upon said ladder rung to withdraw the ladder frame. The ladder is then drawn forward and outwardly from beneath the truck deck by means of sliding along rails 13 and 14, at the same time, the foremost and topmost end of said ladder frame is elevated until the ladder is in vertical position. The ladder hooks 26 and 27 are then manipulated and the ladder is ready for use.

Since various modifications can be made in my invention as hereinabove described, and many apparently widely different embodiments of same made within the spirit and scope of the claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

What I claim as my invention is:

1. A demountable ladder for use on truck bodies and the like, comprising in combination, a ladder, means to support said ladder when in the vertical position against the side of said truck body and a stowage rack underneath the body of said truck, said rack including means coacting with said ladder whereby the latter may be slid underneath said truck body when not in use, said stowage rack comprising a pair of spaced and parallel rails, each of said rails including a horizontal portion and a curvilinear portion, said curvilinear portion extending downwardly, outwardly, and thence upwardly with relation to the underside of the vehicle body, said rails being secured in spaced relationship to the underside of said truck body, said horizontal and curvilinear portion being adapted to guide the ladder upwardly and outwardly to the vertical position against the side of the vehicle, and downwardly and inwardly against the underside of the vehicle as desired.

2. The device according to claim 1 which includes a spring-loaded clamp secured to one end of said rails, said clamp being engageable by the top rung of said ladder when same is in the stowage position.

3. A demountable ladder for use on truck bodies and the like, comprising in combination, a ladder, means coacting between the ladder and the side of the vehicle body to support said ladder when in the vertical position against the side

of said truck body and a stowage rack underneath the body of said truck, said rack including means coacting with said ladder whereby the latter may be slid underneath said truck body when not in use, said last mentioned means including a pair of curved braces extending outwardly and upwardly from the sides of said ladder, said braces being apertured and slidably engageable upon said rack for the purpose herein specified.

4. A demountable ladder for use on truck bodies and the like, comprising in combination, a ladder, means coacting between the ladder and the side of the vehicle body to support said ladder when in the vertical position against the side of said truck body and a stowage rack underneath the body of said truck, said rack including means coacting with said ladder whereby the latter may be slid underneath said truck body when not in use, said stowage rack comprising a pair of spaced and parallel rails, each of said rails including a horizontal portion and a curvilinear portion, said curvilinear portion extending downwardly, outwardly and then upwardly with relation to the underside of the vehicle body, said rails being secured in spaced relationship to the underside of said truck body, said last mentioned means including a pair of curved braces extending rearwardly and outwardly from the sides of said ladder, said braces terminating in apertured ends slidably engageable with said rails, said horizontal and curvilinear portion being adapted to guide the ladder outwardly and upwardly to the vertical position against the side of the vehicle, and downwardly and inwardly against the underside of the vehicle as desired.

5. The device according to claim 4 in which said means to support said ladder includes an offset cleat secured to the side of said truck body and hooks extending from the sides of said ladder engageable over said cleat.

HENRY J. KNIBBS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,279,329	King	Apr. 14, 1942
2,487,660	McCann	Nov. 9, 1949
2,492,063	Schofield	Dec. 20, 1949

FOREIGN PATENTS

Number	Country	Date
516,683	Germany	Jan. 26, 1931