Aug. 7, 1945. H. D. ELWOOD 2,381,812

FIRE ESCAPE APPARATUS FOR AERIAL LADDER TRUCK

Filed July 21, 1943 2 Sheets-Sheet 1

Fig. 1

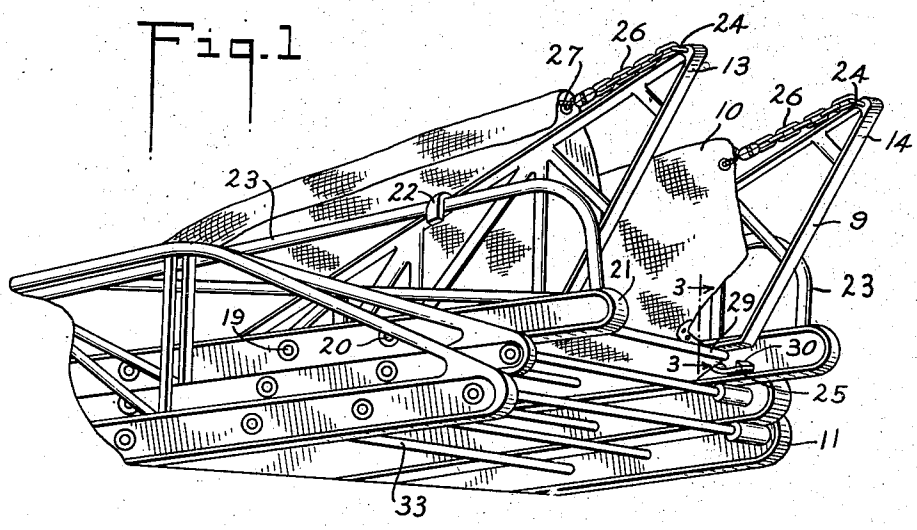


Fig. 2

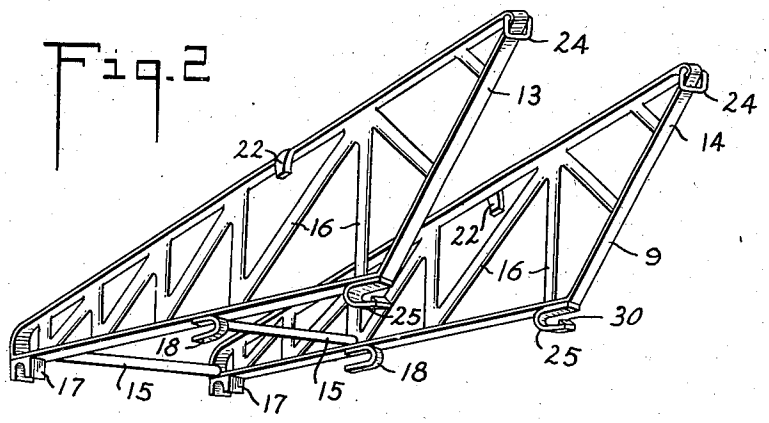
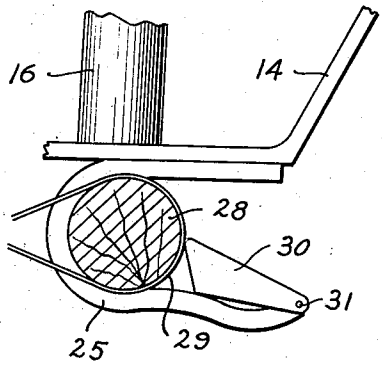


Fig. 3



INVENTOR
Harland D. Elwood
BY Edward M. Apple
ATTORNEY

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FIRE ESCAPE APPARATUS FOR AERIAL LADDER TRUCK

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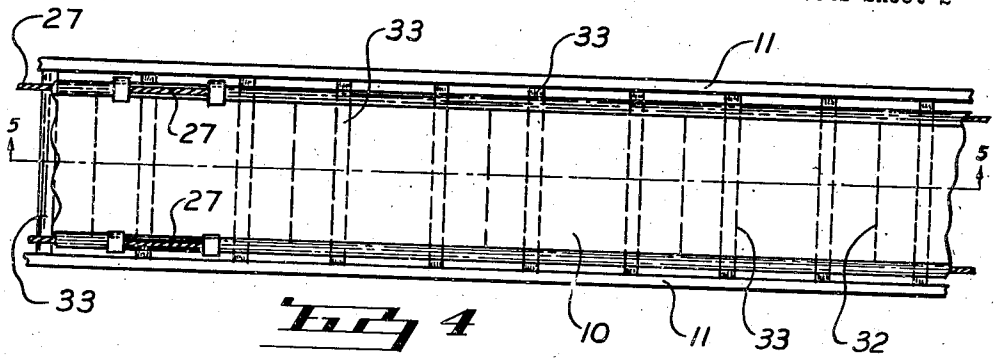


Fig 4

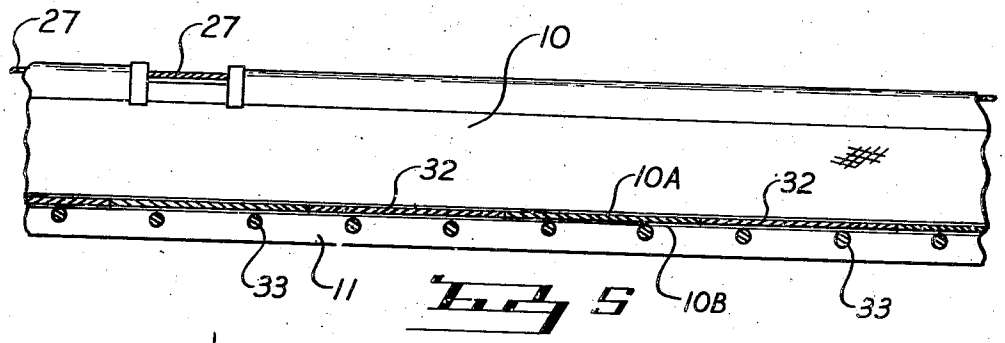


Fig 5

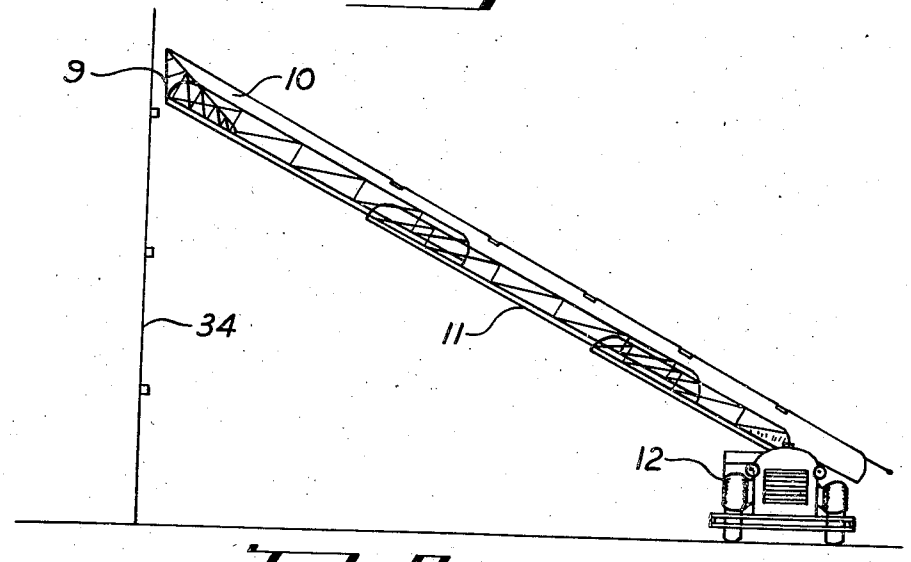


Fig 6

INVENTOR.
HARLAND D. ELWOOD
BY Edward M. Apple
HIS ATTORNEY

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UNITED STATES PATENT OFFICE

2,381,812

FIRE ESCAPE APPARATUS FOR AERIAL LADDER TRUCKS

Harland D. Elwood, Detroit, Mich., assignor to Lewis A. Eastman, Wyandotte, Mich.

Application July 21, 1943, Serial No. 495,616

7 Claims. (Cl. 227—39)

This invention relates to fire escape apparatus and particularly to a fire escape chute and means for mounting it to the ladder of an aerial ladder fire truck.

An object of the invention is to provide a flexible fire escape chute, which can be mounted at the end of an aerial ladder, and can be projected outwardly and upwardly from the fire truck to a roof, window, or other opening in a building, so that persons may be evacuated rapidly from different parts of the building without the necessity of having the rescuers enter the building.

Another object of the invention is the provision of a fire escape chute which may be readily attached to a conventional aerial ladder, without out making any changes to the ladder.

A further object of the invention is the provision of a flexible chute which is provided with reinforcing means adapted to cooperate with the rounds of a ladder to support the chute when the same is in use.

The foregoing and other objects and advantages of the invention will appear as the description proceeds, reference being made to the drawings, in which:

Fig. 1 is a perspective view of a device embodying my invention in carrying position on an aerial ladder, which is mounted on a ladder truck not shown.

Fig. 2 is a perspective view of the chute supporting frame shown in Fig. 1, with the chute removed and detached from the ladder.

Fig. 3 is an enlarged fragmentary detail, partly in section, taken substantially on the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary plan view of the chute in position on the ladder.

Fig. 5 is a section taken substantially on the line 5—5 of Fig. 4.

Fig. 6 is a front elevational view of a ladder truck on which is mounted an extension ladder equipped with my device and ready for use.

Referring now more particularly to the drawings (Figs. 1 and 2) it will be understood that in the embodiment herein disclosed, my invention resides in a special chute supporting frame 9, and a chute 10, which are adapted to be mounted on an aerial ladder 11, which is carried in the usual manner on a fire truck 12 (Fig. 6).

The chute supporting frame 9 (Figs. 1 and 2) is preferably made with two vertical side members 13 and 14 held in spaced relation by tie members 15, which may be welded or otherwise secured in place. The side members 13 and 14 are each made of strap metal formed as shown in Fig. 2, and reinforced by hollow tubing struts 16, which are secured in place by welding or other suitable means. The side members 13 and 14 (Fig. 2) are provided with U-shaped brackets 17 and 18, which are adapted to respectively engage the rungs 19 and 20 of the upper section 21 of the ladder 11 (Fig. 1). In securing the frame 9 in position on the ladder 11, the brackets 18 are first hooked over the rung 20, and the brackets 17 are then set in position over the rung 19 so that the frame 9 rests thereon of its own weight.

Inasmuch as the working forces are always downward the frame 9 cannot be dislodged from the ladder 11, without reversing the operations just described. Each side member 13 and 14 is provided along its upper edge with a hook or bracket 22 which is adapted to engage the hand rail 23 of the ladder 11. Each side member 13 and 14 is also provided with chute supporting members 24 and 25. The members 24 are preferably rings to which the chute chains 26, supporting the cables 27, are attached and the members 25 are U-shaped members adapted to engage the rod 28, which passes through a tunnel 29 formed at the upper end of the bottom of the chute 10. The rod 28 is prevented from being displaced from the members 25 by the dogs 30 which are pivoted as at 31 (Fig. 3).

The chute 10 is similar in construction to my improved flexible chute disclosed in my co-pending application S. N. 495,613, filed July 21, 1943, but in this embodiment the chute 10 is provided with a double bottom 10A and 10B (Fig. 5) between which are carried a plurality of stiff abutting panels 32 made of a plywood or other suitable material. The panels 32 are of such size and so placed that each panel covers two rungs 33 of the ladder 11. This provides a continuous smooth surface to the bottom of the chute 10, when it is in position for use, and permits a human being to slide down the chute 10 without feeling the irregularities of the ladder 11 which supports it. By the same token the chute may be folded with ease.

In use the aerial ladder is carried and projected in the conventional manner as shown in Fig. 6, in which the wall of a building is indicated at 34. The chute 10 may be left attached to the ladder 11 or it may be carried separately and attached at the scene of action. As the ladder 11 is projected outwardly and upwardly the chute 10 is unfolded as required,

Ladder men or other attendants on the ground may handle the lower end of the chute as described in my co-pending application referred to above.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. The combination with an aerial ladder, of a flexible chute, and means for mounting the chute to the ladder, the said chute mounting means comprising a frame secured to the rounds of the ladder, said frame having side members extending beyond the end of the ladder, and said side members having means for supporting the sides of the flexible chute.

2. The combination with an aerial ladder, of a flexible chute, and means for mounting the chute to the ladder, the flexible chute being provided with a plurality of flat rigid reinforcing members in its bottom, said reinforcing members being arranged to ride on the rounds of the ladder when the chute is in use.

3. The combination with an aerial ladder, of a flexible chute, and means for mounting the chute to the ladder, the flexible chute being provided with a plurality of flat rigid panels enclosed within the layers of material comprising the bottom of the chute.

4. The combination with an aerial ladder, of a flexible chute, and means for mounting the chute to the ladder, the flexible chute being provided with a plurality of flat rigid panels enclosed within the layers of material comprising the bottom of the chute, said panels being positioned end to end, and each panel being of sufficient length to cover at least two rounds of the ladder.

5. The combination with an aerial ladder, of a frame for attaching a flexible chute, said frame having members adapted to engage the rounds of the ladder and brackets for engaging the side rails of the ladder.

6. The combination defined in claim 5 in which the said frame is provided with means to lock the frame to the ladder, and side members which overhang the end of the ladder, the said side members being provided with means to support the sides of a flexible chute.

7. The combination with an aerial ladder of a frame, means to secure said frame to the ladder, and a flexible chute secured to said frame and extending along said ladder, said chute having a plurality of rigid panels secured in its bottom, each of said panels being adapted to cover at least two rounds of said ladder to effect a continuous, smooth surface.

HARLAND D. ELWOOD.