

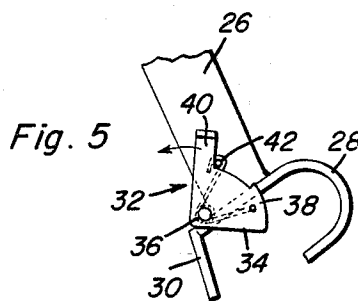
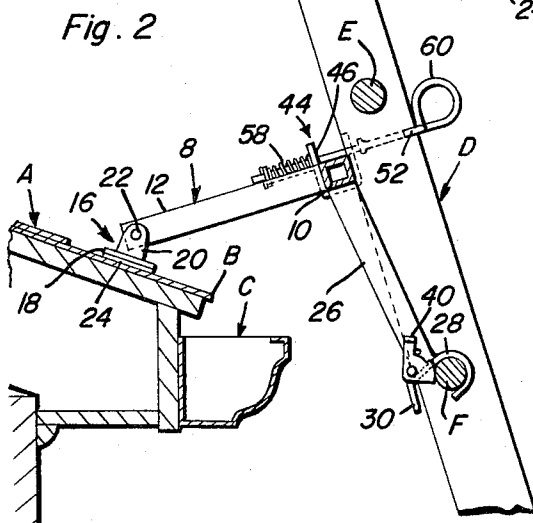
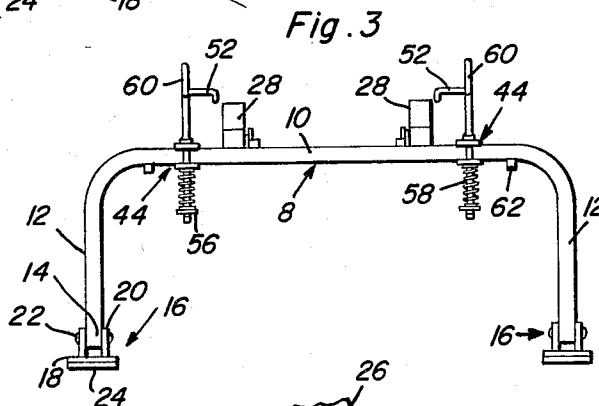
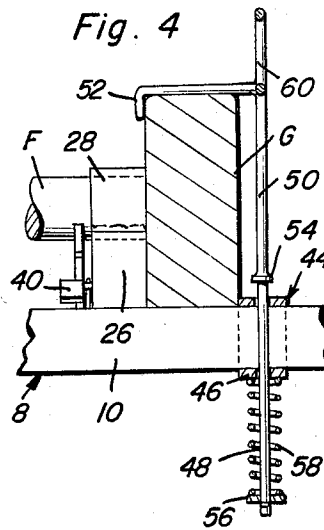
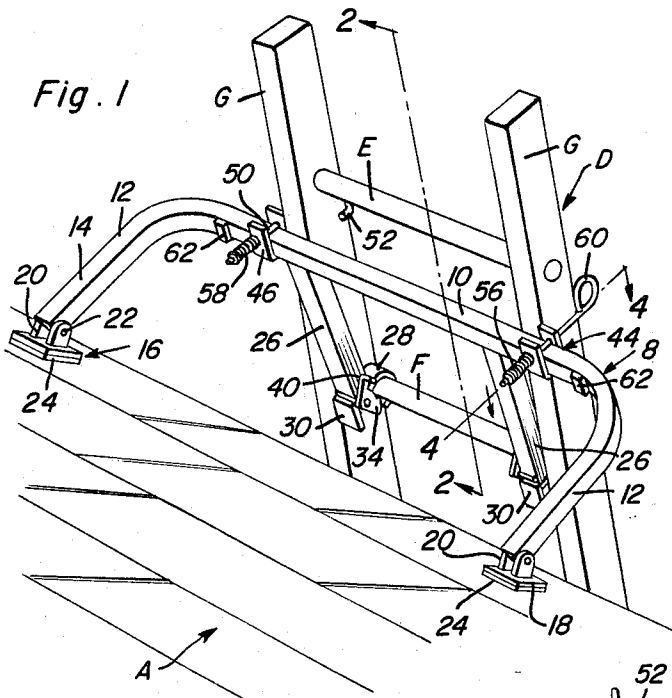
Nov. 29, 1966

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3,288,249

GUTTER BRIDGING LADDER ATTACHMENT

Filed June 4, 1965



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3,288,249

GUTTER BRIDGING LADDER ATTACHMENT

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Filed June 4, 1965, Ser. No. 461,361

7 Claims. (Cl. 182-214)

This invention relates to a readily applicable and removable attachment for the upper end portion of a ladder which is expressly designed and structurally adapted to permit the upper end of the leaning ladder to bridge over the usual gutter and eaves of a roof in a manner to safely cope with the ever existing instability problem and side-wise slipping hazard present as a result of the limited points of contact of the ladder rails with the rim of the gutter or the edge of the overhang of a roof without a gutter, as the case may be.

Briefly, the attachment is characterized by a novel U-frame embodying a bight portion which spans the space between and extends outwardly beyond the stiles or rails of the ladder, the leg portions of said frame projecting at right angles beyond the rails and having terminal means to rest firmly atop the roof surface. The means preferred for best and reliable results comprises aptly suitable rests or brackets. To the ends desired each bracket embodies a foot plate having an anti-skid pad which resides with security on the roof surface. This plate is unique in that it has ear-like lugs which straddle and are pivotally mounted on the oriented end of the coacting leg with the result that the plate is self-adjustable for best results.

This invention features, in addition to the above, novel means which is carried by the bight portion of the U-frame and which serves to join the same to end portions of a selected rung inwardly of the rails. More specifically, this means is in the form of integral right angularly depending struts which constitute braces. The lower ends of these are provided with hooks to engage over the rung and also with spring loaded latches which assist in making the connection between the hooks and the chosen rung.

Another improvement resides in the provision of pivoted latches which have cam-like edges to engage the convex surface of the rung and which have available fingerpieces to assist in handling the latches.

The invention in addition features rail clamping devices, more particularly a pair of U-shaped clips which are adjustable on the bight portion of the frame and which accommodate spring-biased portions of rail engaging hooks. More explicitly the hooks are engageable with the rails and are provided with shanks and the shanks are slidable in the clips and are provided with fingergrrips.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a view in perspective showing a fragmentary portion of a roof, showing a conventional painter's-type ladder and, more particularly, the attachment and how it is constructed and applied and readied for use;

FIGURE 2 is a view with parts in section and elevation taken approximately on the plane of the vertical section line 2-2 of FIGURE 1 looking in the direction of the arrows;

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FIGURE 3 is a top plan view on a smaller scale of the attachment by itself, that is detached from the ladder;

FIGURE 4 is an enlarged fragmentary detail section on the plane of the section line 4-4 of FIGURE 1; and

FIGURE 5 is a fragmentary elevational view detailing, on a slightly enlarged scale, the lower end construction of one strut or brace and the hook and latch means co-operable therewith.

Referring first to FIGS. 1 and 2 it will be seen that the building roof is denoted by the reference character A, the overhanging edge at B and the underlying trough or rain gutter at C.

The ladder which is of conventional construction is denoted at D and embodies, as usual, vertically spaced horizontal rungs E and F interposed and fastened between the side rails or stiles G.

The attachment comprises a first unit which is attachable to the rails and rungs of the ladder and serve to support the same in its usual inclined working position but in such a way that it clears and bridges over and extends up beyond the gutter C in the manner shown in FIG. 2. With this invention it can be assumed that normally the ladder would rest upon the rim or edge of the gutter C or, if there were not gutter, on the overhang or eaves edge B of the roof A. With the invention in use this dangerous and hazardous condition is overcome. To this end the means above mentioned comprises a horizontally disposed one-piece U-shaped frame 8 having a bight portion 10 which spans the space between the rails and in fact projects beyond the rails and is provided with lateral legs 12. This unit is preferably of tubular metal as suggested in FIG. 2. The free terminal end portions 14 of the legs are provided with self-adapting brackets. Each bracket is the same in construction and one bracket is denoted by the numeral 16. It comprises a flat generally rectangular plate 18 having a pair of ears or lugs 20 which straddle the terminal 14 and are hinged or pivoted in place thereon as at 22. The bottom or underneath side of the plate is provided with a non-skid pad or cushion 24 which resides in immediate or direct contact with the surface of the roof.

The novel bracketed or foot-equipped frame 8 is secured by novel means to the rung F on the one hand and to the rails or stiles G on the other hand. To accomplish this the bight portion is provided with depending right angularly disposed struts 26 which are also tubular in cross-section and are of requisite length to assume the usable position and relationship shown in FIG. 2. Each strut constitutes a satisfactory brace and is provided at its lower end with means for ready connectible and detachable association with the rung F. This means is characterized primarily by a suitably positioned hook 28 which is engageable over the rung and is provided at one end with an appropriate guide or pilot element 30 which assists in lining up the hook with the rung. The hook is held against displacement by a practical simple latch 32 of the type shown in FIG. 5 and which comprises a sector-shaped plate 34 pivoted at 36 and having a cam-like edge 38 to engage the surface of the rung and provided with a suitable fingergrip 40 to assist in handling the same, there being an appropriate stop and spring at 42 which normally urges the latch to its retaining position. Thus with these

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latch-equipped braces or struts the bight portion of the frame can be connected with the rung of the ladder. The bight portion is also connectible with the rails by way of a pair of clamps. Each clamp is the same in construction and one clamp is denoted by the numeral 44 and comprises a U-shaped clip 46 which is shiftably slidable on the bight portion and whose components are apertured to accommodate the part 48 of the shank 50 of a hook 52 which is properly angled and made to swing over an edge portion of the rail as shown in FIG. 4 in particular. The numeral 54 designates a stop and 56 designates a washer to retain the coil spring 58 in place. The spring encircles the shank portion 48 between the washer 56 and one component part of the clip 46. The end of the shank opposite to the spring loaded end is provided, that is adjacent to the hook 52 with a finger ring 60. This ring will assist in attaching and detaching the hook and also in shifting and adjusting the clip of the clamp. It should be noted in this connection that the bight portion of the frame is provided at ends thereof with suitable outstanding limit stops 62 which serve to limit the outward shifting movement of the hook-equipped clamps 44.

It will be helpful in evaluating the subject matter of this invention to note that the foot brackets 16 are attached to their supporting legs 12 by hinging pivots. This foot construction permits use of the device with the same security and non-damage to the roof or gutter regardless of the pitch of the roof and is a feature of the overall concept. The feet can be and preferably are faced with rubber or an appropriate non-skid pad for assistive use on metal or slate roofs where greater friction for more insurance against sidewise slipping of the latter is perhaps required.

The degree of movement or arc travel by the latch 32 (FIG. 5) is controlled by stop means and is held against the top at all times by the spring means. Pressure against the rung of the ladder moves the latches so that the rung may pass through and into the rung hook but will not come out of the rung hook until the latches are intentionally released by hand.

It will be evident, too, that this invention is easily adjustable to ladders with varying widths and it attaches with little or no difficulty. To attach, simply slip the open side of the rung hook onto the rung to be used and push downward past the latches. Move the rail clamps to outermost positions, swing the support or frame to contact the beam or rail of the ladder. Now slide the clamps inward as far as possible, pull up on the clamp and depress the spring and twist until the clamps are in position and then release. The spring takes care of the clamping and the load holds the device firm. Consequently, the ladder can now be set in position and used with confidence.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A gutter bridging ladder positioning and position stabilizing attachment comprising: a horizontally elongated U-shaped frame embodying a bight portion adapted to span the space between the rails of the ladder, and legs at the ends of said bight portion, said legs having free end portions provided with pivotally mounted foot-like brackets, said brackets being self-levelling and designed and adapted to rest firmly atop the roof surface, means carried by said bight portion and functioning to detachably connect the same with a selected rung on said ladder, and additional means also carried by said bight portion and adapted to detachably connect said U-frame with portions of said rails in a plane above the plane of the selected

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rung, said additional means comprising a pair of rail abutting clamps slidably adjustably mounted on said bight portion, each clamp embodying a spring-biased rail engaging hook spaced from and adjustable toward and from said bight portion and rail.

2. The structure according to claim 1, and wherein said clamp also includes a stirrup-like clip saddled on and shiftable on said bight portion, said hook having a shank slidable on said clip and having a finger grip to facilitate the steps of engaging and disengaging said hook.

3. A gutter bridging ladder positioning and position stabilizing attachment comprising: a horizontally elongated U-shaped frame embodying a bight portion adapted to span the space between the rails of the ladder, and lateral legs at the ends of said bight portion, said legs having free end portions provided with pivotally mounted foot-like brackets, said brackets being self-levelling and designed and adapted to rest firmly atop the roof surface, a pair of rigid struts having upper ends joined to said bight portion and depending at right angles therefrom, said frame constituting and providing a prop for said ladder and being adapted to assume a position at right angles to the axes of the rails of the ladder, said struts providing braces and having adapters at their lower ends, said adapters each having a rung-engaging hook and a pivotally mounted spring-loaded latch opposed to, spaced from and designed and adapted to abut an oriented rung, and additional means also carried by said bight portion and functioning to detachably connect said bight portion and consequently said U-frame with portions of the rails of said ladder above the plane of said rung, each bracket comprising a flat rigid plate defining and providing a foot, said plate having a bottom surface covered with an anti-skid pad, the top surface having a pair of upstanding ear-like lugs and pivotally joined to a coacting free lower end of the leg to which said bracket is connected, said additional means comprising a pair of rail-abutting clamps slidably adjustably mounted on said bight portion, each clamp embodying a spring-biased rail engaging hook spaced from and adjustable toward and from said bight portion and rail.

4. The structure according to claim 3, and wherein said clamp also includes a stirrup-like clip saddled on and shiftable on said bight portion, said hook having a shank slidable on said clip and having a finger grip to facilitate the steps of engaging and disengaging said hook.

5. A gutter bridging ladder positioning and position stabilizing attachment comprising: a horizontal elongated U-shaped frame embodying a bight portion adapted to span the space between and engage against the rails of a ladder, and the legs at the ends of said bight portion, said legs having free end portions adapted to rest firmly against a surface, means carried by said frame and functioning to detachably connect the same with a selected rung on said ladder, and additional means also carried by said frame and adapted to detachably connect said frame with portions of said rails in a plane above the plane of the selected rung, said additional means comprising a pair of rail abutting clamps slidably adjustably mounted on said bight portion, each clamp embodying a spring-biased rail engaging hook spaced from and adjustable toward and from said bight portion and rail.

6. A gutter bridging ladder positioning and position stabilizing attachment comprising: a horizontally elongated U-shaped frame embodying a bight portion adapted to span the space between and abut against the rails of a ladder, a pair of rigid lateral legs at the ends of said bight portion, said legs having free end portions adapted to rest firmly atop a roof surface, a pair of transversely spaced rigid struts having upper ends rigidly fixed to said bight portion and depending at generally right angles therefrom, said frame constituting and providing a prop for said ladder and being adapted to assume a position at right angles to the axes of the rails of the ladder, said struts providing braces and having adapters at their lower

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ends for engagement with a lower rung at a pair of spaced points therealong, said adapters being in the nature of downwardly directed hooks for engagement over and with the top and opposite sides of the lower rung so as to maintain the vertical position of the frame and retain the rung therein.

7. The structure according to claim 6, and including a pair of rail-abutting clamps mounted on said bight portion, each clamp embodying a spring-biased rail engaging hook spaced from and adjustable toward and from said bight portion and rail.

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