

[54] **ANTI-SLIP LADDER ATTACHMENT**

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[58] **Field of Search**..... 182/107, 108, 111,
182/214

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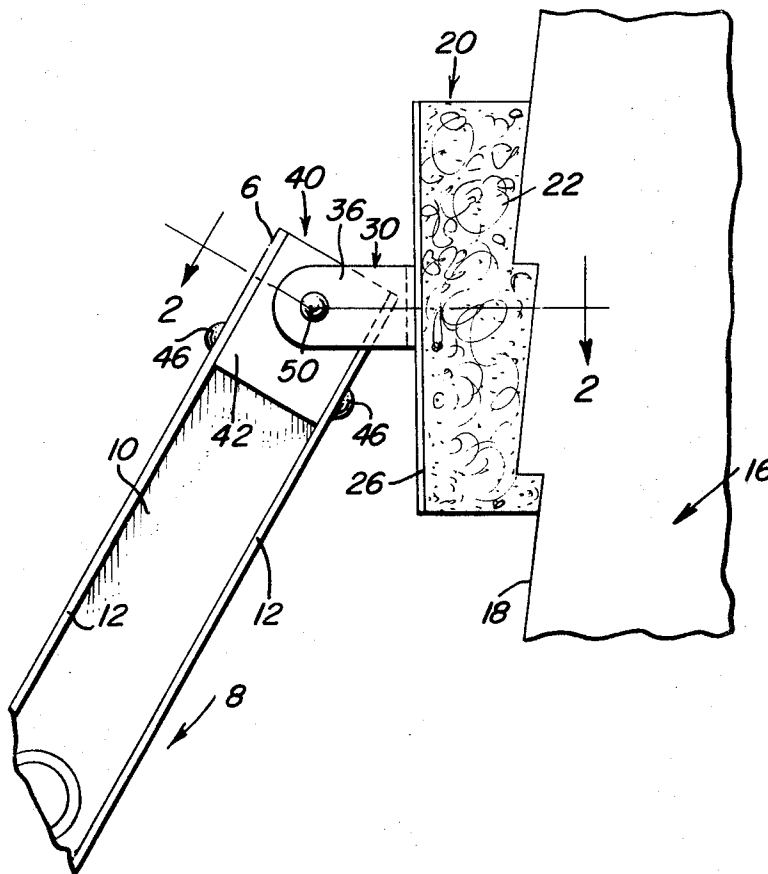
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[57] **ABSTRACT**

A safeguarding attachment for the upper end portion of a side rail of a ladder expressly constructed and adapted to minimize marring the exterior surface of aluminum or equivalent siding and which reduces the likelihood of accidental and dangerous slipping of the inclined upper end of the ladder. The attachment is characterized, broadly stated, by a compressibly resilient pad having a forward surface adapted to reside against the siding-covered wall surface and a rearward side or surface provided with a rigid backing plate. A bracket has one end secured to the backing plate. An adapter is pivotally connectible to the desired ladder rail. An adjacent end of the bracket is pivotally connected to the adapter. Attachment means functions to operatively secure the adapter to the side rail. In addition connecting means functions to pivotally anchor the adapter on the ladder rail.

10 Claims, 3 Drawing Figures



ANTI-SLIP LADDER ATTACHMENT

The present invention relates to a structurally novel attachment which lends itself to practical and reliable use on an upper end portion of a side rail of a conventional-type inclined ladder and has to do, more particularly, with a self-adapting compressibly resilient pad which minimizes the likelihood of the ladder slipping out of place and, in addition, minimizes the likelihood of marring or damaging the siding-covered wall surface.

The idea of providing inclined ladder rails with cushioned attachments is old and well known. For background purposes and to assist in evaluating the features and advantages of the instant invention attention is directed to the cushioned anti-skid and anti-scuff rail hoods disclosed in U.S. Pat. No. 2,904,128 granted to Galen Boham et al. A broadly similar compressibly resilient anti-slipping and anti-marring device is revealed in U.S. Pat. No. 3,062,319 granted to Allen J. Wright. These two reference patents will suffice, it is submitted, to acquaint the reader with the general state of the art to which the present invention relates.

Briefly the safeguarding attachment herein disclosed functions in a safe and reliable manner to reduce marring and damaging of the exterior surface of siding panels to a minimum and, in addition, reduces the likelihood of accidental slippage of an inclined extension or equivalent ladder. Each attachment embodies a compressibly resilient pad which has a forward surface which is adapted to reside against a wall surface. It also has a rearward side or surface which is provided with a rigid backing plate. A bracket is fixed to the backing plate at one end. The other end of the bracket is connected to an adapter which, in turn, is pivotally and operatively mounted on an upper end portion of one of the ladder side rails. The adapter is pivotally bolted or otherwise connected to the side rail on which it is anchored.

In carrying out the principles of the invention the pad takes the form of a substantially rectangular block of rubber, preferably foam rubber. The forward and rearward surfaces of the block are flat and the forward surface is deformable and conforms to the shape of the siding surface. The bracket is L-shaped and the adapter is channel-shaped in cross section, one leg or arm of the bracket being pivotally riveted and bracketed on the ladder rail.

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.

FIG. 1 is a view in side elevation showing one side rail of a conventional-type ladder, a surface of the building wall and the safeguarding and anti-slipping ladder attachment constructed and used in accordance with the principles of the present invention.

FIG. 2 is a suitably enlarged view taken on the plane of the irregular section line 2—2 of FIG. 1, looking in the direction of the indicating arrows.

FIG. 3 is an exploded perspective view showing all of the component parts and how they are individually constructed in readiness for cooperative assembling and use.

With reference to FIGS. 1 and 3 the upper end portion 6 of the ladder rail 8 takes the form of a channel-type rail embodying, as is usual, a web 10, spaced parallel side flanges 12 and a rung 14 as shown in FIG. 2. These are component parts of a conventional aluminum or equivalent lightweight extension or similar inclined ladder. The wall structure is denoted at 16 and the surface against which the ladder is propped and inclined is denoted at 18. The wall may be covered by wooden sheathing or aluminum siding (not detailed) as the case may be.

The essence of the concept herein under consideration pertains to the aforementioned safeguarding ladder attachment and also, for simplification a single attachment is herein disclosed as is evident.

The aforementioned pad comprises an elongated rectangular block of rubber 20 (FIG. 3) which is preferably an adaptation made from an appropriate grade of foam rubber. The forward face or surface 22 is normally flat as is the rearward surface 24. When in use the surface 22 resides firmly against the wall surface and takes the form of said surface in the manner shown in FIG. 1. The flat rearward surface is completely covered by a permanently attached rectangular backing plate 26 having screw-threaded bolt holes as at 28. An L-shaped attaching and mounting bracket is provided and is denoted at 30 and comprises a short leg or arm 32 which is superimposed upon the coating surface of the backing plate 26. Here again bolt holes 34 are provided to accommodate headed fasteners 35 which in actual practice may be suitably screw threaded or otherwise formed for securing the leg 32 in place as brought out best in FIG. 2. The long leg or arm of the bracket is denoted at 36 and is provided with an appropriate rivet hole 38. The adapter which is designed and adapted for the purposes intended is denoted by the numeral 40 and comprises an appropriate rigid metal clip which is referred to as a channel-shaped clip. It embodies a web 42 and lateral side flanges 44. The flanges 44 extend codirectionally from web 42, and fit between the aforementioned flanges 12, the respective flanges being pivotally bolted together by bolts 46 passing through the bolt holes provided therefor and assembled by retaining nuts 48. The manner in which the respective flanges 12 and 44 coact and are pivotally bolted together is brought out in FIGS. 1 and 2. The manner in which the apertured leg or arm 36 is associated with the web of the clip is brought out best in FIG. 2. It will be noted that an appropriate rivet 50 well serves the purposes, one end of the shank of the rivet being peened in place as denoted at 52. Appropriate washers 54 are provided here to assist in assembling and pivotally joining the leg 36 to the web 42.

Each component part has been carefully selected to carry out its prescribed function in the overall combination with the result that all of the parts contribute a proportionate share to providing the attachment desired, that is, a satisfactory attachment between the side rail of a ladder and self-adapting cushion or pad. By using foam rubber the siding, if made of aluminum, will not be scarred or undesirably dented. Equally and perhaps more important foam rubber guards against slipping and hence the inclined ladder is maintained in a given safe-to-use position. It follows that the invention well serves the purposes for which it has been carefully devised and used.

It will be evident that the views of the accompanying drawing show but a single rail and the complementary anti-slip attachment therefor and that, in actual practice, each rail will be provided with a duplicated attachment. To the ends desired, the aforementioned rubber or equivalent pad 20 will be of a size (about 16% inches in length) in order to span the usual space between the left (not shown) and right ladder rails as indicated in FIGS. 2 and 3 whereby to provide the over-all cushioning and anti-slipping result desired. This aspect of the concept, even though not illustrated, is significantly important.

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.

What is claimed as new is as follows:

1. For use in a manner to minimize marring and damaging the exterior surface of siding and also to reduce the likelihood of slipping of side rails of an inclined ladder, a safeguarding attachment for the upper end portion of a ladder side rail comprising, in combination:

- a. a compressibly resilient pad having a forward surface adapted to reside against a wall surface and a rearward surface provided with a rigid backing plate;
- b. an L-shaped bracket having a pair of legs, one leg being affixed to the backing plate;
- c. a channel-shaped clip adapter embodying a web and lateral flanges extending codirectionally from the web and arranged for cooperating with flanges of a channel-type ladder side rail;
- d. attachment means for operatively securing the flanges of the adapter to an upper end portion of the side rail; and
- e. connecting means attached to the other bracket leg for pivotally anchoring the bracket on said web.

2. The ladder attachment defined in and according to claim 1, and wherein said pad comprises a block of rubber, the forward and rearward surfaces of said block being flat.

3. The ladder attachment defined in and according to claim 1, and wherein said pad comprises a substantially rectangular block of foam rubber, the forward and rearward surfaces of said block being flat and said forward surface being conformable in shape to the shape of a siding-covered surface against which it resides when being used.

4. The ladder attachment defined in and according to claim 1, wherein the clip flanges are arranged for fitting between the ladder side rail flanges and are provided with opposed holes arranged for facilitating pivotal anchoring of the adapter to the side rail, and the L-shaped bracket legs are a short leg and a long leg, the short leg abutting and secured to a coacting surface of the back-

ing plate and the long leg joined to a median surface of the web.

5. The ladder attachment defined in and according to claim 4, wherein said pad comprises a block of rubber, the forward and rearward surfaces of said block being flat.

6. The ladder attachment defined in and according to claim 4, wherein said pad comprises a substantially rectangular block of foam rubber, the forward and rearward surfaces of said block being flat and said forward surface being conformable in shape to the shape of a siding-covered surface against which it resides when being used.

7. A safeguarding attachment for the upper end portion of a channel-type side rail of a ladder comprising, in combination:

- a. a foam rubber pad, said pad being block-like in form and having forward and rearward substantially flat surfaces, the rearward flat surface being covered by a securely attached backing plate;
- b. an L-shaped bracket embodying a pair of legs, a one leg superimposed on a median portion of the backing plate and affixed thereto;
- c. an adapter comprising a substantially channel-shaped clip, said clip embodying a web and a pair of lateral spaced, codirectionally extending, parallel flanges;
- d. pivoting and connecting means for securing an end portion of the other leg of said bracket to the adapter, said means comprising means for pivotally connecting a free end portion of the other leg of said bracket to a median portion of the web of said clip, the other leg of said bracket being arranged parallel to the web of said clip; and
- e. means for securing the clip flanges to flanges of a channel-type ladder side rail.

8. The structure defined in and according to claim 7, wherein the clip flanges are arranged for fitting between the flanges of a channel-type ladder side rail, the other leg of the bracket is longer than the one leg thereof, and the means for pivotally connecting the bracket to the adapter comprises a headed rivet passed through holes provided therefor in said other leg and in the web and companion washers surrounding the shank portion of said rivet and coacting with inward and outward surfaces of said web and a coacting surface of said other leg.

9. The structure as defined in claim 8, wherein the means for connecting flanges is provided with opposed holes arranged in the clip flanges for facilitating pivotal anchoring of the adapter to a channel-type ladder side rail.

10. The structure as defined in claim 7, wherein the means for connecting flanges is provided with opposed holes arranged in the clip flanges for facilitating pivotal anchoring of the adapter to a channel-type ladder side rail.

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