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2,608,336

ADJUSTABLE LADDER STILT

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FIG. 1.

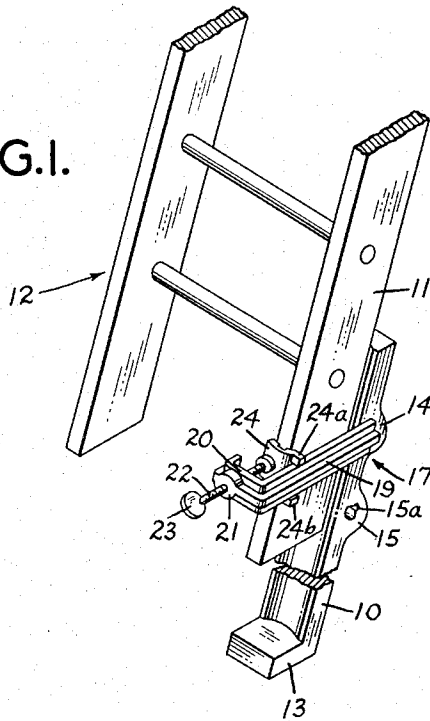


FIG. 3.

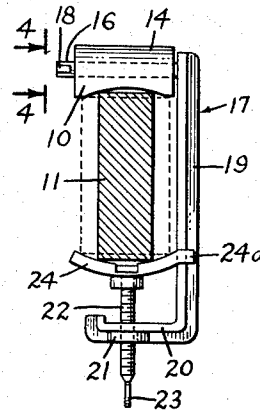


FIG. 2.

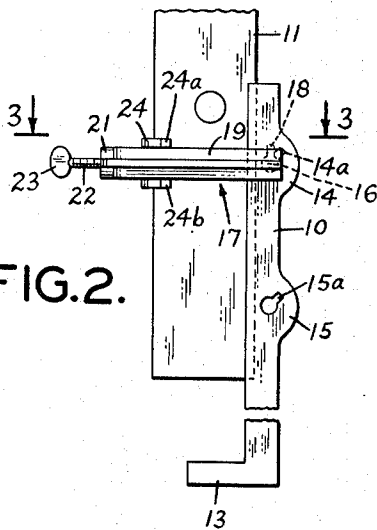
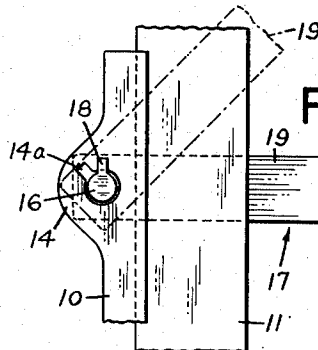


FIG. 4.



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ADJUSTABLE LADDER STILT

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2 Claims. (Cl. 228—63)

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This invention relates to improvements in extensions for the legs of ladders to facilitate their use on uneven ground or other supports.

Several different types of ladder leg extensions have been devised heretofore for use either with conventional ladders or with step ladders. These prior ladder leg extensions have not been universally usable, that is, an extension constructed for one ladder cannot be used readily with another type of ladder having legs of different cross-sectional dimensions. Moreover, the prior ladder leg extensions have not had adequate clamping means to assure the rigidity of the extension so that with most of the prior extensions, some tilting or slipping of the extension can take place upon the application of vertical or lateral loads to the ladder. For that reason, the prior devices have given a feeling of instability to the ladder and generally have not been all that might be desired.

The present invention comprises an extension provided with a clamping member of such nature that the extension can be used with substantially any kind of ladder or step ladder having leg thicknesses varying from an inch to an inch and three-eighths or even thicker and of varying widths. Also, the new ladder extension has a novel clamping arrangement which can be seated tightly against the ladder leg to clamp the extension in position and which clamps more strongly as weight is applied to the ladder so that slippage of the extension is effectively prevented under all conditions.

For a better understanding of the present invention, reference may be had to the accompanying drawings, in which:

Fig. 1 is a perspective view of a portion of the ladder showing the extension embodying the present invention connected to one leg thereof;

Fig. 2 is a view in side elevation of the new ladder leg extension shown attached to a portion of a leg of a ladder;

Fig. 3 is a view in cross-section taken on line 3—3 of Fig. 2; and

Fig. 4 is a view taken on line 4—4 of Fig. 3.

A typical form of ladder leg extension embodying the invention consists of an elongated bar-like member or shank 10 adapted to fit against the edge or back of the leg 11 of the ladder 12 to permit the ladder to be used on uneven ground or floors. The shank 10 is provided with a right-angularly related foot portion 13 of sufficient length and width to afford an adequate footing on the ground.

The shank 10 is provided with a pair of semi-

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cylindrical bosses 14 and 15 on its back which form bearings for receiving the arm 16 of a U-shaped member 17. The arm 16 is cylindrical and can be inserted in either of the bearings 14 or 15 for rotation therein. The arm 16 is retained detachably in the bearing 14 or 15 by means of a suitable fastening device such as a nib 18 at the outer end of the arm 16 to slip through slots 14a and 15a in bearings 14 and 15 thus insuring that the clamp member can be easily changed from one bearing to the other or from one side of the shank to the other so that the shank or bar can be used on either leg of the ladder. The slots 14a and 15a, as shown in Fig. 4, are arranged so that when the member 17 is in clamping position, the nib or tooth 18 is out of alignment with the slots to prevent accidental release of the member 17 from the shank.

The base 19 of the U-shaped member 17 extends generally perpendicular to the extension or shank 10 and its outer arm 20 extends generally parallel to the arm 16. The arm 20 is provided with an enlargement 21 which is internally threaded to receive a clamping screw 22 having a head 23 on its outer end to facilitate its rotation. The inner end of the screw 22 carries a rigid, concavo-convex plate 24 which is rotatably mounted on the end of the screw 22 in any desired way, as for example, by swaging over the end of the screw. The plate 24 has a pair of extensions 24a and 24b to engage opposite sides of the base 19 of the member 17 to prevent the plate from rotating with the screw 22.

The opposing face 25 of the shank 10 also has a concave curvature of about the same radius as the curvature of the opposing face of the clamping member 24. By providing such curved surfaces or faces on the clamping plate 24 and the shank 10, these elements will suitably engage ladder legs of varying thickness as shown in full and in dotted lines in Fig. 3 and prevent twisting of the extension as a whole relative to the ladder leg 11.

In use, the U-shaped member 17 can be connected to the shank 10 by inserting the arm 16 in either of the bearing bosses 14 or 15, bearing 15 being commonly used. The bearing 14 is used for the utmost extension of the stilt. With the ladder adjusted so the rungs are horizontal, the shank 10 may be adjusted to bring its foot 13 into contact with the ground or other supporting surface and the clamping screw 22 is then tightened to clamp the leg 11 firmly between the surface 25 and the clamping member 24. Ordinarily, the clamping pressure will be sufficient to retain

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the extension in fixed relation to the ladder leg 11. However, if the ladder is formed of hard, smooth wood or metal or the clamping screw only slightly tightened, the ladder leg may have some tendency to slip. Such slippage is prevented by the pivotal movement of the clamping member 17. This pivoting movement draws the clamping plate 24 toward the shank 10 so that any tendency of the leg to slip down relative to the shank 10 can result only in an increase in the resistance to slippage.

It will be understood that the clamp base 19 should be placed on the outer side of the ladder leg so that the ladder rungs will not interfere with vertical adjustment of the stilt.

The extension described above is useful with and fits many different types of ladders. It also is convenient to transport and store because the U-shaped member 17 or members can be removed readily or folded down against the shank 10 thereby reducing the space occupied by the extension.

It will be understood that while one size with an extension shank 24 inches long will serve practically every purpose, the extension may be made in various sizes and of various types of materials, for example, either wrought or malleable steel, ductile iron, aluminum, magnesium or alloys of aluminum or magnesium, etc. and it may be made in larger size for especially heavy ladders. Therefore, the form of extension disclosed herein should be considered as illustrative and not as limiting the scope of the following claims.

I claim:

1. An extension leg attachment for a ladder comprising an elongated extension member having a front side engageable with a ladder leg, a substantially U-shaped bracket having one arm extending transversely through said member and another substantially parallel arm in front of said member, means on said member rotatably receiving said one arm to permit swinging move-

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ment of said bracket around the axis of said one arm, a clamping screw adjustably mounted in said another arm for movement toward and away from said member, and means on the inner end of said screw to engage said ladder leg and clamp it against said front side of said member.

2. An extension leg attachment for a ladder comprising an elongated extension member having a transversely concave front surface engageable with a ladder leg, said extension member having at least one hole extending transversely therethrough behind said front surface, a rigid, substantially U-shaped bracket having one arm rotatably mounted in said hole and another substantially parallel arm in front of said front surface, means detachably retaining said one arm in said hole to enable said bracket to be secured to and detached from said member and said one arm to be inserted into said hole from either end of said hole, and a clamping screw adjustably mounted in said other arm for movement toward and away from said member to clamp said member to and release it from a ladder leg.

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