United States Patent [19]

Kelly

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[54] **SAFETY ATTACHMENT FOR LADDER**

[76] Inventor: **Herbert Kelly,** 300 Seville Ave., Coral Gables, Fla. 33134

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[52] **U.S. Cl.** **182/93,** 182/107
[51] **Int. Cl.** **E06c 5/36,** E06c 7/48
[58] **Field of Search** 182/93, 108, 107, 214

[56] **References Cited**

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Primary Examiner—Reinaldo P. Machado
Attorney, Agent, or Firm—Lloyd J. Andres

[57] **ABSTRACT**

A conventional ladder means with the upper ends of the parallel side members terminating in a pair of right and left brackets, which brackets retain the end portions of an adjustable abrasive coated front belt for contact against the front side of a pole or tree with a second adjustable strap means pivotally secured to opposite brackets for snugly surrounding the rear portion of said pole or tree for preventing displacement of the ladder when in use.

5 Claims, 4 Drawing Figures

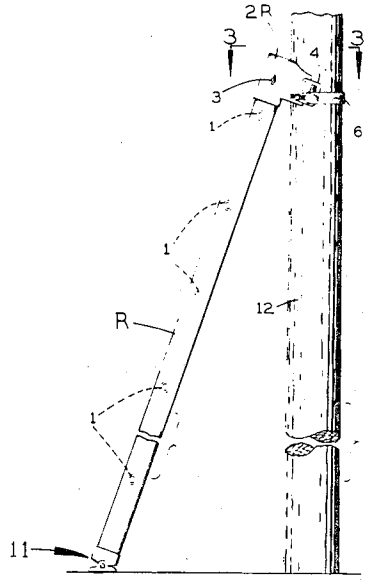
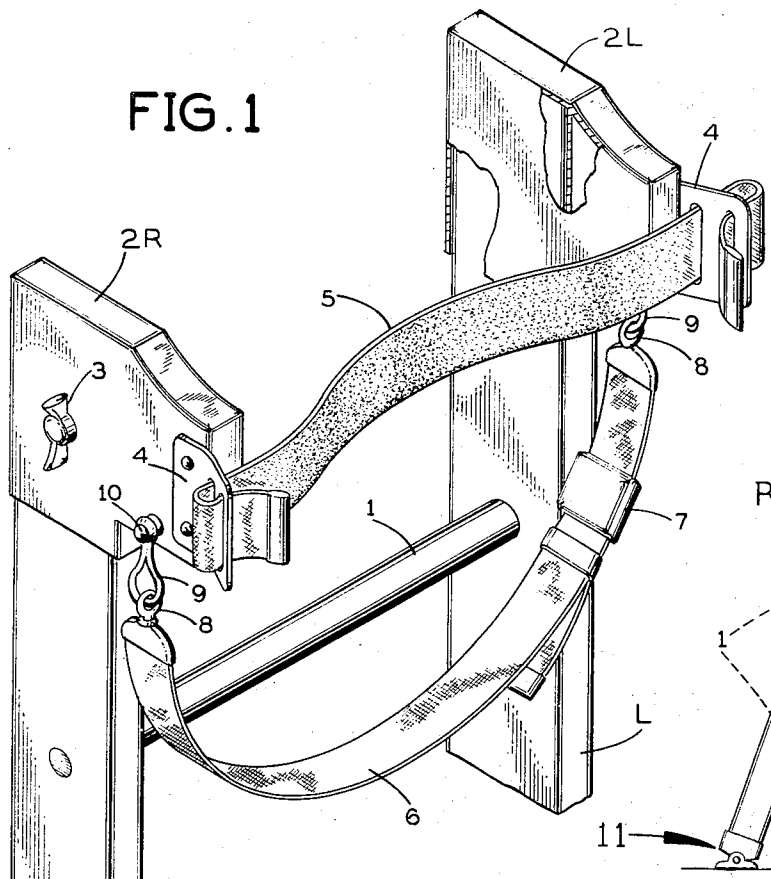


FIG. 1



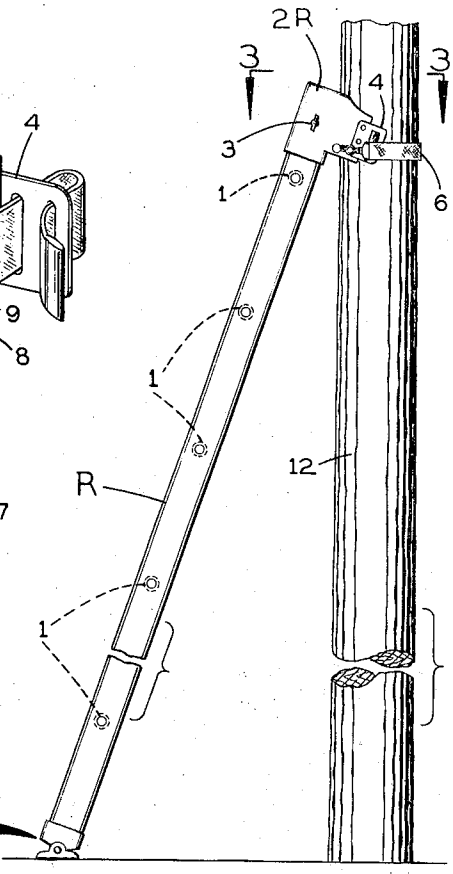


FIG. 2

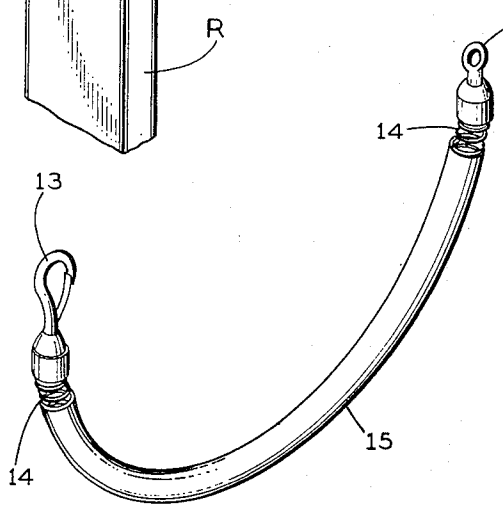


FIG. 4

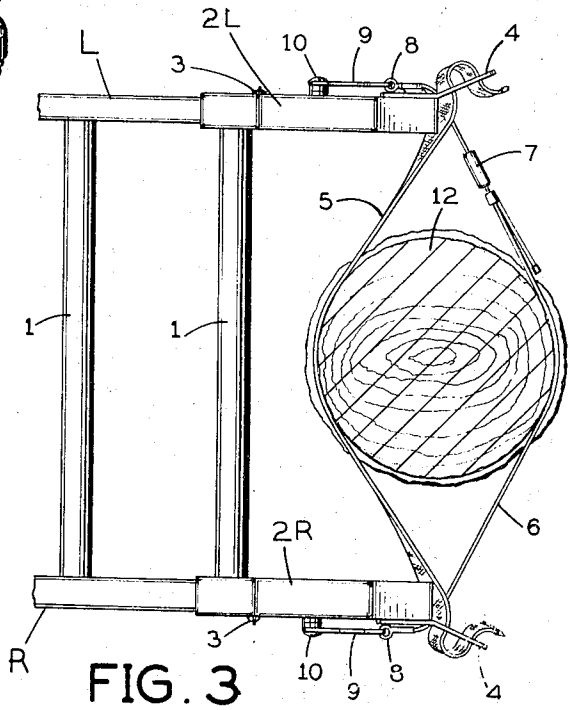


FIG. 3

SAFETY ATTACHMENT FOR LADDER

This invention relates in general to ladders having a pair of parallel side members of wood or metal and with equispaced transverse rungs, or steps, which include an attachment on the upper end portion of said members for holding an adjustable front and an adjustable rear strap for securing the upper end of the ladder to a pole or tree.

Prior to this invention many serious accidents occurred as a result of the top end of the ladder slipping from gravitational contact with the pole or tree, particularly the extension type ladder.

The present invention overcomes the dangers of slippage and provides a steady rung footing where work, such as telephone and power distribution, is required. A principal object of the invention is the provision of a metal bracket attachment to the upper end portion of each of the side members. Each bracket is provided with a pair of slots for adjusting a transverse inner belt, preferably impregnated with abrasive material, positioned around the front portion of the pole or tree, including a second two piece belt provided with an adjustable buckle. One end of each piece terminates in a pivotal means secured on a stud in each bracket for snug attachment around the rear portion of the pole or tree.

These and other objects and advantages in one embodiment of the invention are described and shown in the following specification and drawing, in which:

FIG. 1 is a fragmentary perspective view of a ladder including the fastening means therefor in reduced scale.

FIG. 2 illustrates a ladder secured by the fastening means shown in FIG. 1 to a typical pole.

FIG. 3 is a cross sectional plane view taken through section line 3—3, FIG. 2.

FIG. 4 illustrates an alternate form of spring means within a rubber tube as an alternate replacement for the adjustable outer belt shown in FIG. 1.

Referring to FIG. 1, a conventional ladder has longitudinal like right and left side members equipped with transverse equi-spaced rungs 1 and terminating in end brackets 2L and 2R, each of which brackets are secured to a wooden ladder by wood type thumb screws 3. An inward extension 4 on each bracket 2R has rivets secured to each bracket 2R and 2L for adjustably retaining the front strap 5. The strap is preferably made from fabric reinforced rubber or other elastomer with abrasive granular material, such as tungsten carbide, imbedded in the outer side thereof. The rear strap assembly 6 is preferably made of strong fabric in two sections including a high friction type buckle 7 for adjusting the length thereof and each end of the strap terminates in an eye 8 which is secured to a link 9 pivotally attached to each bracket 2R by a shoulder rivet 10.

FIG. 2 illustrates the ladder with a pivotal non-slip foot assembly 11 and attached to a typical pole 12 by straps 5 and 6 with the latter manually tightened and locked by the buckle 7, better shown in FIG. 2, which illustrates the forward wrap of belt 5 and the final outer wrap of strap assembly 6.

Where the ladder is used consistently on poles of near equal diameter, such as telephone or power line poles, the outer strap may be repladed by a coil spring

with the ends thereof threaded and swagged in an eye 8*a* at one end and a snap fastener 13 at the opposite end, with a spring 14 covered by a rubber tube 15. The eye 8*a* is permanently fastened on one of the links 9 whereas the snap fastener is readily applied and removed from the opposite link 9 when desired.

Although the coil spring ladder retainer is practical for use with near equal diameter poles, the strap 6 provides for use with large variations in diameter with equal safety for the user.

It is to be noted that the thumb screw with wood screw threads may be replaced by machine screw threads and/or a bolt and nut, particularly when a metal ladder is used.

It is to be understood that certain modifications in construction are intended to come within the teachings and scope of the above specification.

Having described my invention, I claim:

1. A safety attachment for a ladder having right and left parallel side members and equi-spaced rungs or steps therebetween comprising a right and left metal bracket member extending rearward from the upper end portion of each said right and left member,

a front strap retainer extending from the rear end of each of said metal members with each having a pair of close parallel related vertical slots therein,

a front strap of predetermined width and uniform thickness adjustably secured at each end thereof through each said pair of slots for forming against the front periphery of the pole against which the ladder is supported,

a second rear strap having a buckle means therein for adjustment of the strap with the opposite outer ends of the strap pivotally secured to each said bracket member whereby the ladder is retained at a predetermined angle against a pole or tree when the said second strap is secured and made taut by said buckle means around the outer side of said pole or tree for stabilizing the ladder for manual use.

2. The construction recited in claim 1 including a first strap made from a fabric reinforced elastomer material with granular abrasive molded on the outer side thereof for producing high friction against the portion of a facing curved front side of said pole or tree.

3. The construction recited in claim 1 whereby each opposite end of said second strap is connected by an eye means therein engaged with a link means pivotally connected to each corresponding said left and right bracket member.

4. The construction recited in claim 1 wherein said second strap is made from high tensil fabric material and the buckle means is of the hinged friction type.

5. The construction recited in claim 1 wherein said second strap is replaced by a coiled tension spring of predetermined length and diameter and elasticity and covered by a rubber tubing and terminating at one end in an eye means secured by a link means to the left said bracket member and the opposite end thereof connected to a snap fastener for manual engagement with said link means pivotally secured to the right said bracket member.

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