June 9, 1936. C. M. WARNER 2,043,312

GUARD RAIL HOLDER

Filed April 26, 1935 2 Sheets-Sheet 1

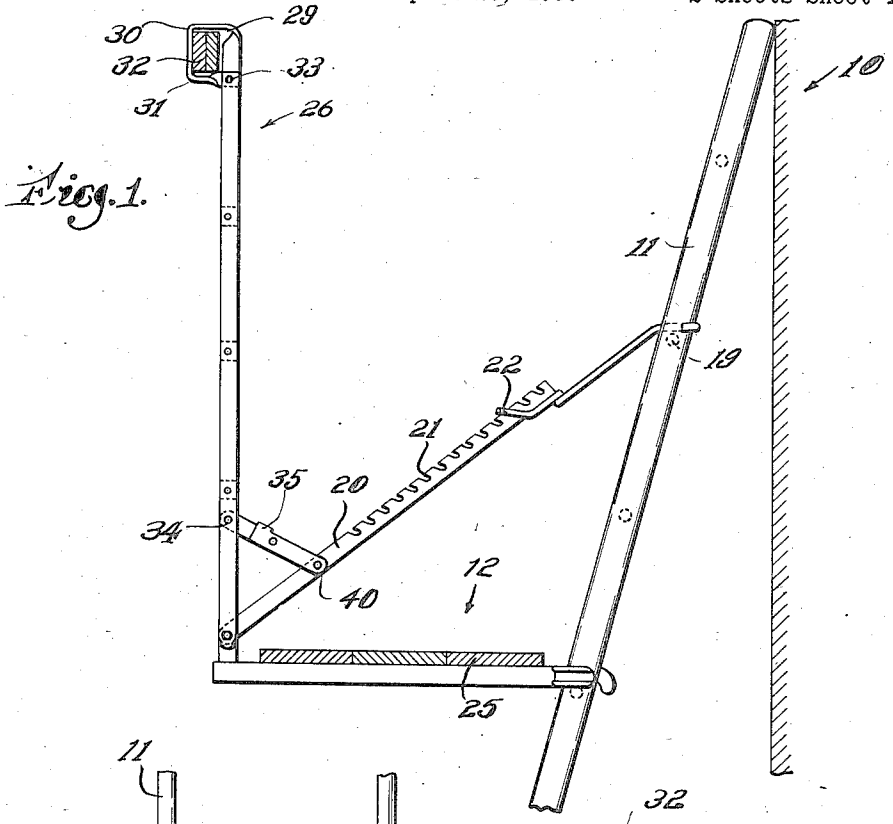


Fig. 1.

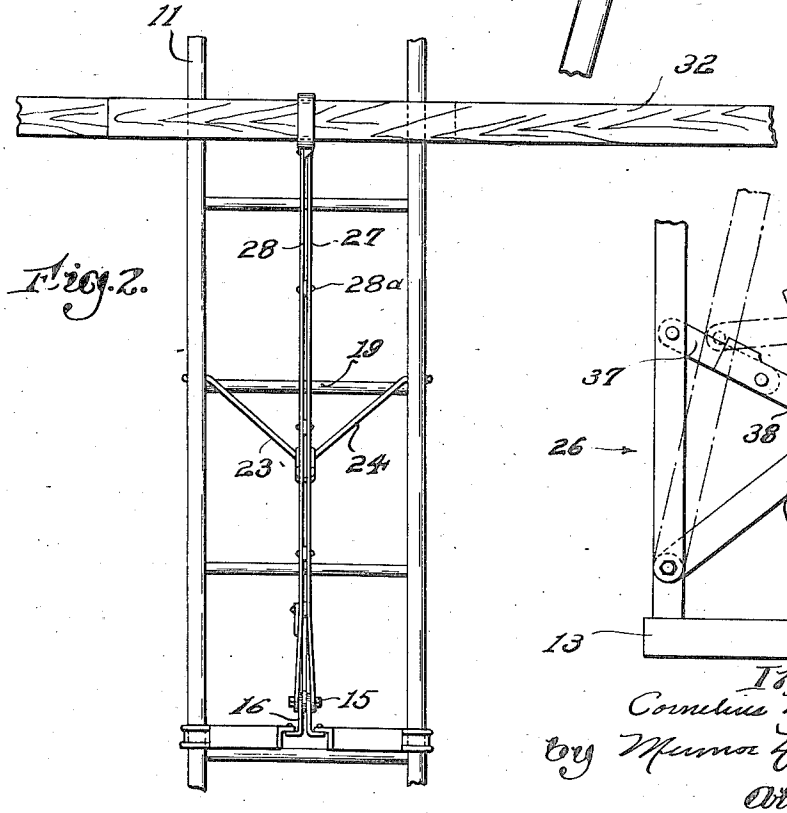


Fig. 2.

Fig. 3.

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Filed April 26, 1935 2 Sheets-Sheet 2

Fig. 4.

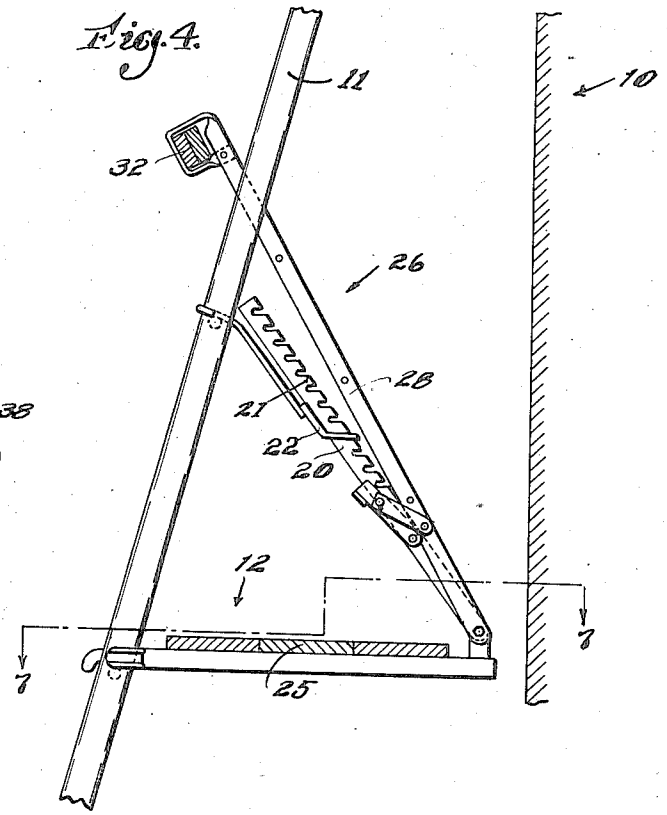


Fig. 5.

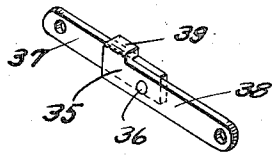


Fig. 6.

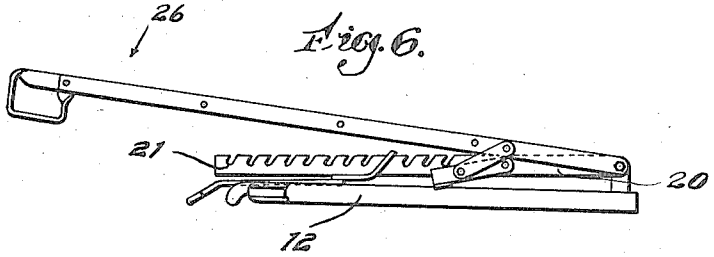
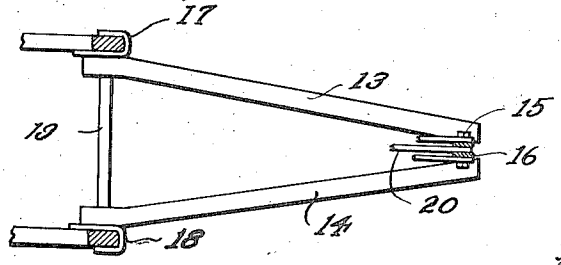


Fig. 7.



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GUARD RAIL HOLDER

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Application April 26, 1935, Serial No. 18,319

5 Claims. (Cl. 304—10)

My present invention relates to guard rail holders, and more particularly to guard rail holders for ladder jacks.

It has been customary to provide ladder jacks so called to be used with a pair, or more, of ladders supported inclined against the side of the building to provide supporting points for a staging. It is highly desirable that there also be provided with such a staging, some form of safety rail for men working on the said staging and some attempt has been made to provide such a safety rail by locating ropes or cords somewhat above the staging and having their ends secured to standard members disposed at the ends of the staging. Such an arrangement is not entirely satisfactory as is the case with certain other arrangements for effecting this purpose. It is necessary to provide means which will comprise an effective guard rail and yet will not be too complex or difficult to assemble. I have designed a rigid guard rail holder of a collapsible nature associated with a ladder jack to the effect that the ladder jack and guard rail holder will comprise one complete unit and may be assembled in one operation. One other fact may be mentioned with respect to the demand for such a guard rail member by pointing out that in many States a rigid guard rail member of very particular specifications as to strength, height and the like which must be complied with. My improved guard rail has been designed to meet these requirements.

The principal object of my invention is therefore, an improved guard rail holder.

Another object is an improved guard rail holder for use with ladder jacks.

Another object is an improved guard rail holder for use with ladder jacks which is associated with said ladder jack in a collapsible manner.

Still another object is a guard rail holder of the character described which may be utilized at either side of the ladder and meet with standard safety requirements,

And still another object is a guard rail holder which may be used with several types of ladder jacks to perform the function specified.

Other objects and novel features comprising the construction and operation of my invention will appear as a description of the same progresses.

In the drawings illustrating the preferred embodiment of my invention,

Fig. 1 is a side elevation of my guard rail holder associated with a ladder jack secured to an inclined ladder having staging members supported thereon.

Fig. 2 is a front elevation of the view shown in Fig. 1.

Fig. 3 is an enlarged fragmentary view showing in side elevation the junction of the guard rail holder with the ladder jack and more particularly indicating in broken lines an intermediate position of the guard rail holder partially collapsed and a link member partly opened up.

Fig. 4 is a side elevation of the guard rail holder associated with the ladder jack disposed against the inner side of an inclined ladder.

Fig. 5 is a detail perspective view of a link member used for tying the guard rail member to the ladder jack tongue.

Fig. 6 shows the ladder jack and guard rail holder associated in a collapsed position and,

Fig. 7 is a plan view taken on the line 7—7 of Fig. 4.

Referring more in detail to the drawings, 10 indicates generally a wall or working surface against which is inclined a ladder 11 having a ladder jack member generally denoted by the numeral 12. Ladder jack 12 comprises two arms 13 and 14 horizontally disposed against the ladder 11 at some predetermined point which converges outwardly to form a V shaped member having their extremities secured together by means of a bolt 15 which passes through bosses 16 raised on the said extremities 13 and 14 and having openings therein. The inner extremities of the arms 13 and 14 are provided with angle members 17 and 18 which are adapted to encircle the side rails of the ladder 11 with the inner extremities 13 and 14 being disposed over a rung 19 of the ladder 11. Referring again to the outer extremities of the arms 13 and 14, it will be noted that a tongue member 20 has been pivotally secured between the bosses 16 by means of the bolt 15. The tongue member 20 comprises a narrow strip member having slots 21 cut therein along its upper edge. Slidably secured along the outer end of the tongue member 20, has been disposed a collar 22 which is adapted to engage in any of the slots 21, and thereby holds said tongue securely at the extreme end of the collar member 22, the upper end of the collar member being secured to retaining members 23 and 24 which are adapted to pass over a rung 19 and clasp the rear side of the side rails of the ladder 11.

The structure described up to the present point comprises one form of a ladder jack, with which my improved guard rail, which I am about to describe, may be used and it will be seen that such a ladder jack comprises means for receiving staging members 25 as shown in Figs. 1 and 4

when two of these jacks are associated with a pair of ladders disposed at some distance apart against a wall. I have purposely discussed in some detail the construction of this ladder jack in order to show later the applicability of my guard rail holder to it, but I wish to state at this time that I contemplate using my guard rail holder with other ladder jacks although it has not been thought necessary to illustrate other forms of these jacks in the present drawings.

26 indicates generally my improved guard rail holder which is formed preferably of metal and comprises two flat strips 27 and 28 of such metal bolted together at several points as 28A for further strength and rigidity.

The strip 28 is considerably longer than strip 27 and has been folded horizontally at 29 and vertically at 30 and again horizontally at 31 to comprise a rail holder member adapted to receive a guard rail as 32 illustrated in Figs. 1, 2, and 4. The extremity of strip 27 is located against the reversely bent end of strip 28 and the two are securely bolted at 33 through the lower point on the strip 28.

It will be noted that the lower extremities of strips 27 and 28 have been left unsecured to provide for their being yoked over the outer sides of the bosses 16 and may be secured by the bolt 15.

It should be observed here that it is possible to thus yoke strips 27 and 28 over the bosses 16 and secure them thereto and then make use of the same bolt 15 to secure these elements 27 and 28 and the tongue 20 altogether. It is suggested that the same yoke arrangement may be utilized with other types of jacks where bosses as 16 are not present, by providing a separate bolt for yoking these extremities somewhat differently but none the less effectively although possibly the same collapsible features would not be inherent.

I have further provided for bolting, at 34, a link member 35 pivotally secured between the strips 27 and 28. This link member 25 comprises two flat strips of metal 37 and 38 linked together at 36, in such a manner that strip 38 will rotate above the pin 36 and over the strip 37. Strip 38 is provided with an overlapping portion 39 which is adapted to engage over the top edge of strip 37 when the two strips are in horizontal position with respect to each other, thereby allowing the link member to be broken upwardly but preventing any downward movement further than the horizontal position. The outer extremity of the strip 38 has been pivotally pinned at 40 to tongue 20.

In operation, my improved holder member 26 will be associated with a ladder jack 12 in a collapsible state as shown in Fig. 6. In this position the whole member will be transported up the ladder and affixed at a desired point thereon by locating angle members 17 and 18 against the sides of ladder 11 in the manner shown in Fig. 7. Then retaining members 23 and 24 are hooked around in back of the sides of ladder 11 as shown in Figs. 1 and 2 and the tongue member 20 and holder 26 are pivoted upward on the bolt 15 and collar 22 is advanced along the tongue 20 to engage with the slots 21 when the side arms 13 and 14 have been brought into a horizontal position.

The guard rail member 26 is then swung upward on its pivot 15 to a vertical position or nearly a vertical position, such that the outer side of the folded over portion of the guard rail will be approximately disposed as nearly in alignment as possible with the extremities of arms 13 and 14. It will be noted that when the guard rail assumes this position, the link member 35 has become opened to form a straight member which rigidly holds the guard rail member in a fixed position with respect to the tongue 20.

Similarly now a second jack member and guard rail holder would be assembled on a second ladder disposed at some distance from the first ladder and then staging members 25 would be laid across the arms 13 and 14 of the two respective jacks. The guard rail holders 26 are then in position to receive guard rail members 32 which pass through and are supported by the bent over portion of strip 28 thereby providing an effective guard rail of a height of more than three feet, which is accepted as being the standard height specification in some states. To demount the guard rail holder, it is only necessary to withdraw timbers 32, pull the link member 25 up out of horizontal relation and allow the guard rail holder members to fall inwardly on the pivot 15.

Should it be desired to mount the jack and guard rail holder member on the inner side of the ladder as may very well be, the same manner of assembly may be followed throughout with only difference being that the holder member 26 is allowed to incline towards and project throughout the ladder in the manner illustrated in Fig. 4 and the guard rail holder member itself will assume the position such that when finally settled, it will be supported partly upon the tongue member and partly upon that rung above which the said tongue member is attached so that there will be ample means for projecting the timbers 32 through the guard rail holder as shown in Fig. 4. It should also be added that as the guard rail holder must receive the guard rails in an inclined position, its length must be such that when so inclined and supporting the timbers, they will still be disposed a distance of three feet or over, above the staging level, as has been clearly illustrated in Fig. 4. The approximate length of the guard rail member will therefore range over three feet to effect this double utility. In all devices of this character, it is extremely important that we combine a strong and cheap mechanism with ease of assembly and simplicity in mounting and to this effect and in this connection, I wish to draw attention to the fact that there is no adjustment or operations to be performed in assembling my guard rail member. The only adjustment present being of course, the tongue adjustment with the sliding collar member and the link member 35 serving to take care of the guard rail member in whatever position it may be found. While I have shown the guard rail member particularly applied to the V-shaped jack illustrated and secured thereto by means of bolts and link member, it should be understood that I propose to apply a guard rail holder of the same general type to other ladder jack members in connection with which various modifications in the construction thereof may be resorted to in keeping with the spirit of my invention.

Having thus described my invention, what I claim is:

1. A guard rail member for use with ladder jacks comprising an upright member having a collar portion at one end adapted to receive a guard rail member therethrough, said upright member composed of two flat strips bolted together at intervals and having their extremities

free, said free extremities of said upright member having openings located therethrough and being pivotally secured between adjacent lug members located on the converging extremities of horizontal arms in said ladder jack.

2. In a ladder jack comprising V-shaped horizontal arms, a tongue member adapted to be inclined when in an operative position and a collar adjustment for suspending said tongue and maintaining said V-member in a horizontal position, a guard rail holder pivotally engaged at the outer extremities of said V-shaped member and collapsibly associated with said tongue member by a link mechanism.

3. A guard rail holder for use with stagings comprising an upright member formed from two flat strips of metal bolted together, one of these strips being reversely folded upon itself to comprise a collar for receiving a guard rail, the other end of said upright member comprising two free ends having openings therethrough adapted to be pivotally yoked to a staging support and a stay member associated with said upright member at a point above the point of engagement of the free ends of the upright member with the staging support, and fastened to said staging support member.

4. A combination ladder jack and guard rail holder for use with a ladder as a staging support comprising two supporting members having their inner ends adapted to be collared above the side rails of a ladder and having their outer ends converging and bolted together, a tongue member having one extremity engaged at the outer ends of said support members and means for adjustably suspending the other end of said tongue member from a higher point on the said ladder in an inclined manner, a guard rail holder comprising an upright member having its lower end engaged at the outer end of said ladder jack and its upper end provided with means for receiving and supporting a guard rail, having a link member pinned at one end to said tongue member and the other end to said upright member.

5. In a ladder jack comprising horizontal arms, a tongue member secured at one end between the said arm extremities and adapted to be inclined when in an operative position, a collar adjustment member for suspending said tongue and maintaining said arms in a horizontal position, a guard rail holder pivotally engaged at the outer extremities of said V-shaped member and collapsibly associated with said tongue by a link mechanism, said link mechanism comprising two straps pinned at their inner extremities and adapted to open and lock in a straight line.

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