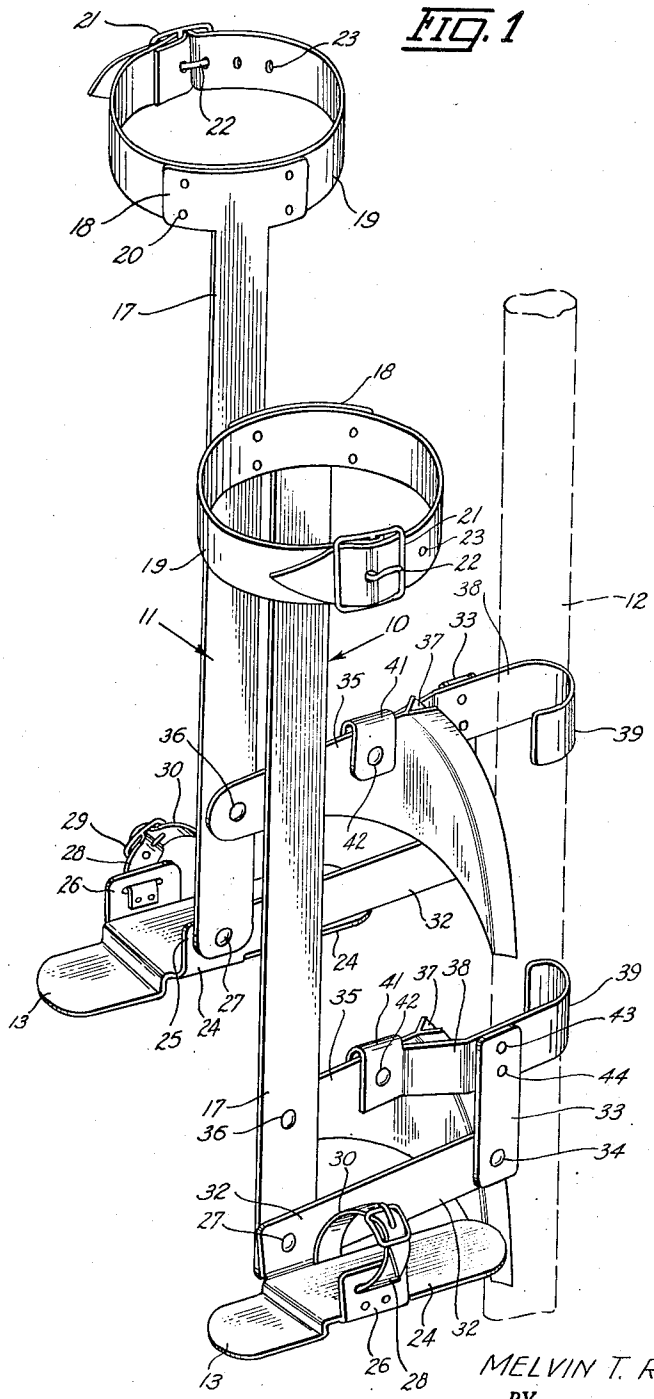
Sept. 24, 1957 M. T. ROLFSMEYER 2,807,400

MAST CLIMBING DEVICE

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FIG. 1



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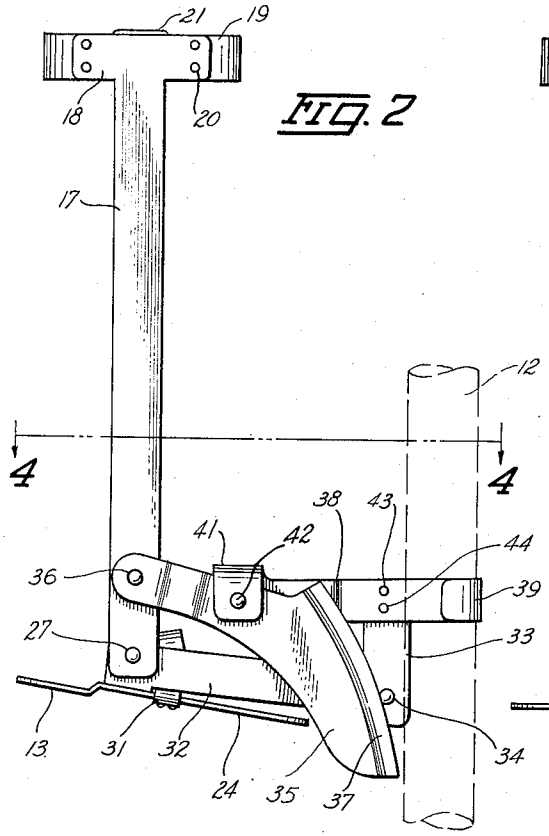


FIG. 2

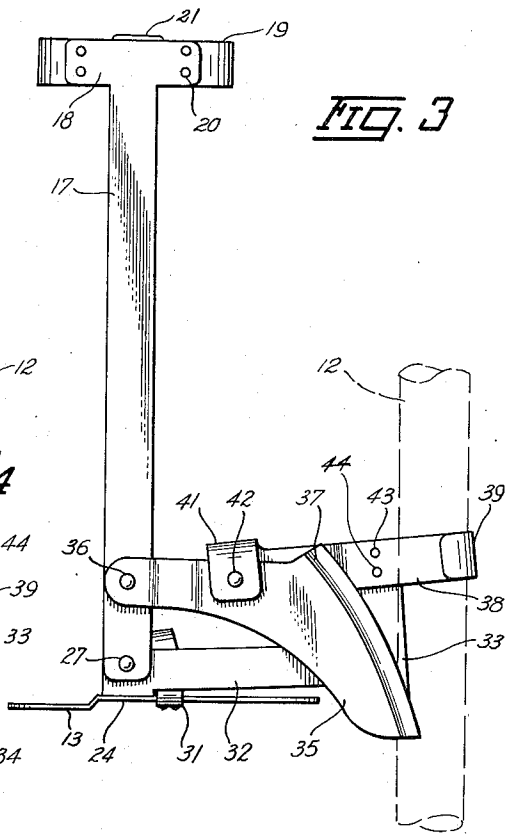


FIG. 3

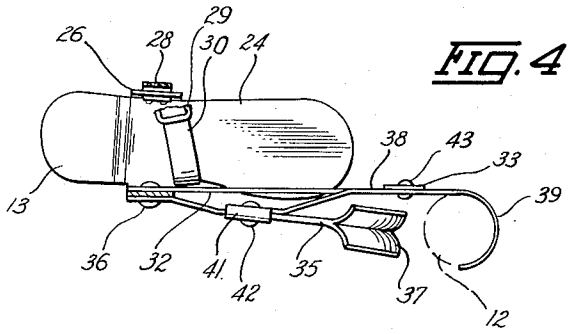


FIG. 4

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MAST CLIMBING DEVICE

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Application December 18, 1953, Serial No. 399,029

3 Claims. (Cl. 227—26)

This invention relates to a mast climbing device particularly adapted for climbing television aerials, flag poles and the like.

It is an object of the present invention to provide a mast climbing structure so formed and shaped as to be operable upon a small diameter pipe structure which will release and grip in accordance with the movement of the legs of the climber ascending or descending the pipe structure.

It is another object of the invention to provide a mast climbing device adapted for use on a pipe structure wherein movement up or down the pipe structure can be effected in substantially the same manner as a lineman uses a cleat on ascending or descending large diameter wood poles.

Other objects of the invention are to provide a mast climbing device adapted to be worn on the legs and feet of a climber which is of simple construction, inexpensive to manufacture, has a minimum number of parts, easy to apply to the leg, easy to manipulate, light in weight, efficient and effective in use.

Other and further features and objects of the invention will be more apparent to those skilled in the art upon a consideration of the accompanying drawings and following specifications, wherein is disclosed a single exemplary embodiment of the invention, with the understanding, however, that such changes may be made therein as fall within the scope of the appended claims, without departing from the spirit of the invention.

In said drawings:

Figure 1 is a perspective view of two mast climbing devices located on a mast or pipe structure with one above the other.

Figure 2 is a side elevational view of one of the mast climbing structures, the one which is applied to the left foot, with the locking member released from the mast and the foot bearing member tilted forwardly and downwardly.

Figure 3 is a side elevational view of one of the mast climbing devices with the foot bearing member elevated at the toe to effect engagement of the releasable grip member with the pipe to support the climber.

Figure 4 is a transverse sectional view taken on line 4—4 of Figure 2.

Referring now to the drawings, and particularly to Figure 1, 10 and 11 respectively generally represent right and left leg mast climbing devices arranged upon a mast or pipe 12 in the manner that they are applied thereto to ascend or descend the pipe. The device 11 will now be described in detail, but it will be understood that the device 10 is of similar construction except that it is adapted for use on the right leg.

The mast climbing device 11 comprises a vertically extending brace member 17 having a T-formation 18 on its upper end to which a leather strap 19 is attached by rivets 20. This strap 19 is adapted to be extended around the upper part of the lower leg and just below the knee.

The strap has a buckle 21 with pin 22 adapted to enter the openings 23 in one end of the strap 19.

On the lower end of the brace member 17 there is pivoted a foot pedal 24 so that it can be tilted fore and aft. The pedal has upwardly bent lugs 25 and 26. The connection of the pedal 24 with the lower end of the brace 17 is effected by means of a rivet 27 secured to the upstanding lug 25.

The lug 26 carries a strap portion 28 having a buckle 29. Another strap portion 30 extends from the underside of the pedal 24 where it is connected as indicated at 31 and extends upwardly to be joined with the buckle 29 to be rigidly secured to the left foot within the pedal 24. The pedal 24 extends sufficiently forward to accommodate the toe of a climber's shoe and is dropped downwardly at the rear as indicated at 13 to accommodate the heel of the shoe.

The lug 25 has a forwardly extending arm portion 32 that extends outwardly beyond the forward end of the pedal and to which is pivotally connected a link 33 by means of a rivet 34.

A forwardly extending arcuate shaped grip arm 35 is pivotally connected by means of a rivet 36 to the opposite face of the brace 17 above the pivot connection 27 of the pedal 24 therewith. This grip arm 35 has a forward V-shaped groove formation 37 that engages the curved face of the pipe 12.

To grip the opposite face of the pipe is a hook arm 38 that has a hook formation 39 adapted to surround and grip the mast or pipe 12. This hook arm 38 has a bent lug formation 41 that is pivotally connected by a rivet 42 with the arcuate shaped grip arm intermediate its length thereof and which serves to maintain an angular relationship between the arcuate shaped member 35 and the hook arm 38 in such a way as to prevent collapse of the same relative to each other. Limited movement, however, is permitted between the grip arm and the hook arm 38.

The upwardly extending link 33 on the end of the pedal operated arm 32 is rigidly connected by rivets 43 and 44 with the hook arm 38. Upon tilting the pedal portion 24 forwardly, the hook arm 38 will be pivoted downwardly with respect to the pipe and through the rivet 42 the grip arm 35 will be released from the pipe, as shown in Figure 2.

Upon the climber's placing weight upon the heel of the shoe, the pedal 24 will be moved upwardly so that the arm 32 through the link 33 will lift the hook arm 38 and the grip arm 35 through the rivet 42 in such a manner that the grip arm 35 will engage the mast, in the manner as shown in Figure 3, so as to prevent the climber from slipping thereupon. First, one device is engaged with the pipe and then the other. Adequate control of the device can be had by the climber's leg so that the device can be removed from the pipe and again easily hooked about the same as steps are taken upon the pipe. A sliding action of each device can be effected upon the pipe, if desired. However, with each engagement or disengagement, the foot of the climber serves to engage or disengage the grip arm 37.

Similar numerals have been placed on the right leg device 10 for the corresponding parts of the left device.

It will be apparent that there has been provided a simple mast climbing device which can be applied to the legs of the climber and wherein the mast or pipe can be ascended or descended in the manner similar to the manner in which a lineman ascends and descends a telephone pole with wood cleats.

Although I have described a specific embodiment of my invention, it is apparent that modifications thereof may be made by those skilled in the art. Such modifica-

tions may be made without departing from the spirit and scope of my invention as set forth in the appended claims.

I claim as my invention:

1. A mast climbing device comprising a vertically extending brace member, strap means on the upper end of the brace member for attaching the same to the upper part of the lower leg of a climber, a pedal pivotally connected to the lower end of the brace member, means for securing the foot upon said pedal, a hook arm adapted to be extended about one side of a pipe, an arcuate shaped grip arm pivotally connected to the brace member and adapted to engage the opposite side of a pipe, said arcuate shaped grip arm having said hook arm pivotally connected thereto and linkage means extending between the pedal and said hook arm to effect the release of the grip arm upon tilting the foot pedal relative to the lower end of the brace member.

2. A mast climbing device comprising a vertically extending brace member, strap means on the upper end of the brace member for attaching the same to the upper part of the lower leg of a climber, a pedal pivotally connected to the lower end of the brace member, means for securing the foot upon said pedal, a hook arm adapted to be extended about one side of a pipe, an arcuate shaped grip arm adapted to engage the opposite side of a pipe, said arcuate shaped grip arm pivotally connected to the brace member above the pedal, said hook arm being pivotally connected to said grip arm and link means connecting said hooked arm and said pedal to effect the release of the grip arm upon tilting the foot pedal relative to the lower end of the brace member, said grip arm having a vertically extending arcuate shaped grip portion of V-formation for receiving the face of the pipe, said hook arm having a bent over portion serving as a shoulder to limit the relative angular movement of the hook arm and grip arm.

3. A mast climbing device comprising a brace member adapted to extend along the side of the lower leg, strap means on the upper end of the brace member for securing the same to the upper part of the lower leg, a pedal pivotally connected to the lower end of the brace member at one side thereof, strap means upon said pedal for securing the foot of the climber thereto, said pedal having a rigidly connected forwardly extending operating arm, a link pivotally connected to the forward end of said arm and extending upwardly therefrom, an arcuate shaped grip arm pivotally connected to the brace member above the foot pedal and on the opposite face thereof, said grip arm having a gripping portion thereon adapted to engage with the face of a pipe, a hook arm having a bent over portion and rivet pin means extending through said bent over portion and said hook arm to pivotally connect said hook arm to the grip arm, said bent over portion serving as a stop to limit the angular movement relative to the hook arm and the grip arm, and said link connected to the forwardly extending arm on the pedal being rigidly connected to the hook arm to effect release of the hook and grip arms upon the foot pedal being tilted forwardly and downwardly.

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