May 5, 1964 W. L. WHIPPLE 3,131,928

FIXTURE HOLDER

Filed June 20, 1962

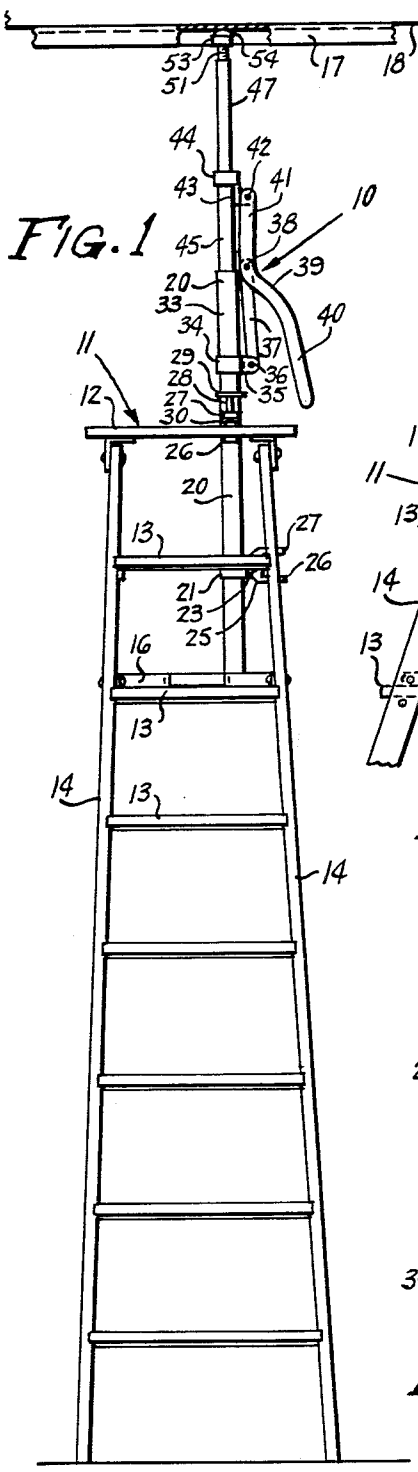


FIG. 1

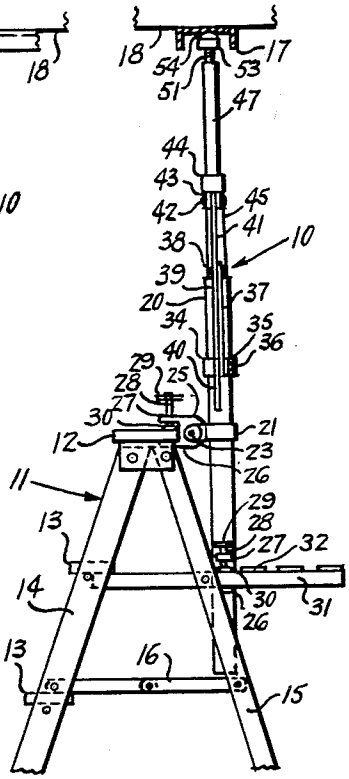


FIG. 2

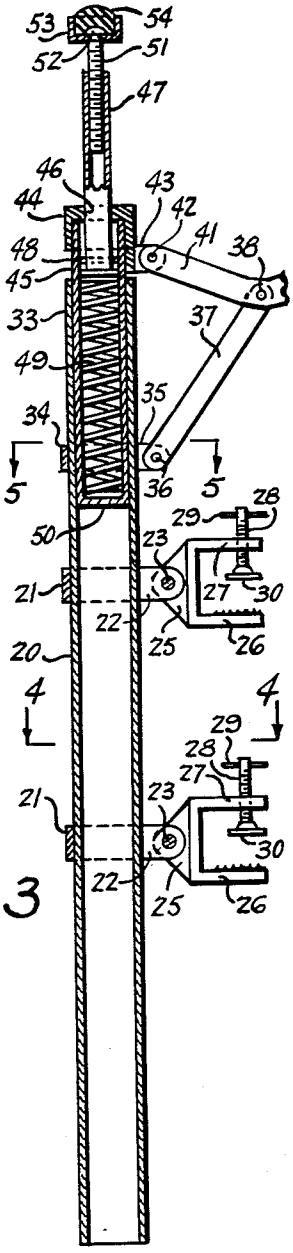


FIG. 3

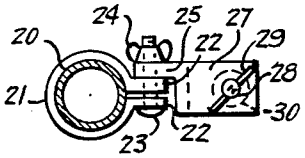


FIG. 4

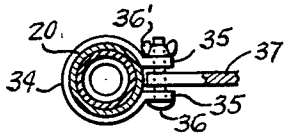


FIG. 5

INVENTOR.
WALTER WHIPPLE
BY
Kimmel & Crowell
ATTORNEYS.

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FIXTURE HOLDER

Walter L. Whipple, 1015 North Blvd., Idaho Falls, Idaho

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This invention relates to a fixture holder, and has as its primary object the provision of an apparatus by means of which an electrician may hold an elongated fixture, such as a fluorescent light support in position against the ceiling while working on one or the other ends thereof during installation or repair.

An additional object of the invention is the provision of a device of this character which may be readily adjusted to accommodate different heights of fixtures at different ceiling heights.

A further object of the invention is the provision of a device of this character which, when set, will hold a fixture without further adjustment.

Still another object of the invention is the provision of a device of this character which may be readily attached to the upper steps of a conventional step ladder, thus avoiding the necessity of additional floor and ceiling supporting means or the like.

Still another object of the invention is the provision of a device of this character which may be readily removed when the necessity for its use no longer exists.

Still other objects reside in the combinations of elements, arrangements of parts, and features of construction, all as will be more fully pointed out hereinafter and disclosed in the accompanying drawings wherein there is shown a preferred embodiment of this inventive concept.

In the drawings:

FIGURE 1 is a side elevational view of the device of the instant invention shown as applied to the top steps of a step ladder, and supporting a fixture in place against the ceiling, the fixture being partially broken away to show constructional details.

FIGURE 2 is a fragmentary side elevational view of the construction of FIGURE 1 in extended position, with portions of the step ladder and portions of the fixture being broken away.

FIGURE 3 is an enlarged vertical sectional view taken substantially through the center line of the device showing the interior construction thereof.

FIGURE 4 is a sectional view taken substantially along the line 4—4 of FIGURE 3 as viewed in the direction indicated by the arrows; and

FIGURE 5 is a sectional view taken substantially along the center line of 5—5 of FIGURE 3 as viewed in the direction indicated by the arrows.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Having reference now to the drawings in detail, the support of the instant invention is generally indicated at 10, and is shown as mounted on a step ladder, generally indicated at 11, and including a top step 12 and successive lower steps 13. The latter is of conventional style including divided rails 14 and 15 held in extended position by the usual brace 16. The device of the instant invention is adapted to hold any sort of elongated fixture 17 in position against the ceiling 18 of a room or the like during installation, modification, or repair, without the necessity of the operator or workman employing his hands for this purpose.

Referring now in detail to the device of the instant invention, the same is comprised of an elongated tubular member 20 which is provided with a pair of slidable clamping rings 21 positioned about the periphery thereof, each ring being provided as shown best in FIGURE 4 with a pair of ears 22 which are apertured to receive a

bolt 23 which is provided with a clamping wing nut 24. The bolt 23 also extends through a suitable aperture in a tongue 25 of a clamping bracket, which includes a pair of opposed jaw members 26 and 27, the latter of which is apertured to receive an adjusting screw 28 having a handle pin 29 and a clamping foot 30 thereon. The arrangement is thus such that the clamping rings 21 may be moved, by loosening wing nut 24 to any desired position along the length of tubular member 20, and clamped securely in position, the jaws 26 and 27 then extending on opposite sides of the step 12 and one of the steps 13, or alternatively, one or more of the steps 13, or as shown in FIGURE 2, to one of the side rails 31 of a bucket supporting bracket 32 such as is conventional with step ladders of this character.

Similarly, it will be seen from a consideration of FIGURES 1 and 2, that the rings 21 may be rotated so that the jaws 26 and 27 extend either in the same directions or are angularly disposed relative to each other.

Tubular member 20 also carries adjacent its upper end 33 a movable split ring 34, as best shown in FIGURE 5, from the ends of which extend apertured lugs 35. A bolt 35 is fitted through the apertures in lugs 35 and forms a pivot for one end of a link 37. A wing nut 36' on bolt 36 clamps ring 34 to tubular member 20. The other end of link 37 is pivoted as by a pin 38 to the offset portion 39 of an elongated handle member including an operating end 40 adapted to be moved by hand, and a pivotally mounted end 41.

The pivotally mounted end 41 is pivoted as by a pivot 42 to a depending portion 43 of an end cap 44 which is mounted on a sleeve 45 telescopically movable within tubular member 20. End cap 44 is apertured as at 46 to receive a rod 47, which is secured therein by means of a pin 48, and which is biased upwardly by a relatively heavy compression spring 39 which seats against the bottom 50 of sleeve 45.

The top portion of rod 47 is internally threaded to receive a screw 51, which is rotatably mounted therein, and which carries at its outer or upper end a head 52 which is engaged by a circular cap member 53 containing a rubber cushion or other suitable resilient element 54 which is adapted to engage against the fixture 17 when in use. Head 52 may be readily changed in an obvious manner to accommodate different fixtures if necessary.

From the foregoing the use and operation of the device should now be readily understandable. Clamping brackets 26 and 27 are suitably adjusted and secured by means of screws 28 and clamping heads 30 to the steps or other portions of the ladder 11 as may be desired. Tube 20 is adjusted by rings 21 to bring head 52 within 4 to 6 inches of the ceiling with the handle 40 in the position of FIGURE 3. Retraction of handle 40 to the position of FIGURE 1 extends sleeve 45 and its associated mechanism. A heavy or light degree of upward pressure may be obtained by the fine adjustment of movable ring 34, which varies the degree of compression of spring 49. When handle 40 is in the position of FIGURE 3, the weight of the fixture 17 is supported by cap 44 resting on tube 20, leaving ring 34 free for fine adjustment. The operator may then work thereon without any further necessity of supporting the fixture by the hands, or by any other means. After the fixture 17 has been completely installed, or repaired, or operated on in such other manner as may be necessary, simply raising the handle 40 will retract the sleeve 45 into the tubular member 20, and by loosening the screws 28 by means of the handle members 29 the device may be removed from the ladder for subsequent use in another location. Obviously, if desired, the device may remain permanently affixed to the ladder, and adjusted only in accordance with the

ceiling height, or the fixture which is being operated upon.

While this invention has been particularly described in connection with a step ladder, it is to be understood that it may be used for other purposes and with other supports, as for example, the device may be clamped to a conventional scaffold plank as used by many mechanics.

From the foregoing it will now be seen that there is herein provided an improved fixture holder which accomplishes all the objects of this invention, and others, including many advantages of greater practical utility and commercial importance.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative, and not in a limiting sense.

I claim:

1. A support for fixtures comprised of a first tubular member, means for securing said tubular member to the upper step of a step ladder, a sleeve telescopically mounted in said tubular member, a fixture holding rod extending upwardly from said sleeve, a spring in said sleeve biasing said rod upwardly, a first lug connected to said sleeve, a second lug connected to said tubular member, a handle having an offset portion pivotally connected to said first lug, and a link pivoted at one end to said offset portion of said handle and at its other end to said second lug whereby movement of said handle downwardly extends said sleeve relative to said tubular member and by an over-center action holds said sleeve and hence said rod in extended position.

2. A support for fixtures comprised of a first tubular member, means for securing said tubular member to the upper step of a step ladder, a sleeve telescopically mounted in said tubular member, a fixture holding rod extending upwardly from said sleeve, a spring in said sleeve biasing said rod upwardly, a first lug connected to said sleeve, a second lug connected to said tubular member, a handle having an offset portion pivotally connected to said first lug, and a link pivoted at one end to said offset portion of said handle and at its other end to said second lug whereby movement of said handle downwardly extends said sleeve relative to said tubular member and by an over-center action holds said sleeve and hence said rod in extended position, said sleeve having an end cap through which said rod extends and to which said first lug is secured.

3. A support for fixtures comprised of a first tubular member, means for securing said tubular member to the upper step of a step ladder, a sleeve telescopically mounted in said tubular member, a fixture holding rod extending upwardly from said sleeve, a spring in said sleeve biasing said rod upwardly, a first lug connected to said sleeve, a second lug connected to said tubular member, a handle having an offset portion pivotally connected to said first lug, and a link pivoted at one end to said offset portion of said handle and at its other end to said second lug whereby movement of said handle downwardly extends said sleeve relative to said tubular member and by an over-center action holds said sleeve and hence said rod in extended position, said sleeve having an end cap through which said rod extends and to which said first lug is secured, said rod having an internally threaded bore at its upper end, a screw carried in said bore, and a rubber fixture engaging head carried by the upper end of said screw.

4. A support for fixtures comprised of a first tubular member, means for securing said tubular member to the upper step of a step ladder, a sleeve telescopically mounted in said tubular member, a fixture holding rod extending upwardly from said sleeve, a spring in said sleeve biasing said rod upwardly, a first lug connected to said sleeve, a second lug connected to said tubular member, a handle having an offset portion pivotally connected to said first lug, and a link pivoted at one end to said offset portion of said handle and at its other end to said second lug whereby movement of said handle downwardly extends said sleeve relative to said tubular member and by an over-center action holds said sleeve and hence said rod in extended position, said sleeve having an end cap through which said rod extends and to which said first lug is secured, said means for securing said tubular member to said step comprising linearly adjustable clamping brackets on said tubular member.

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