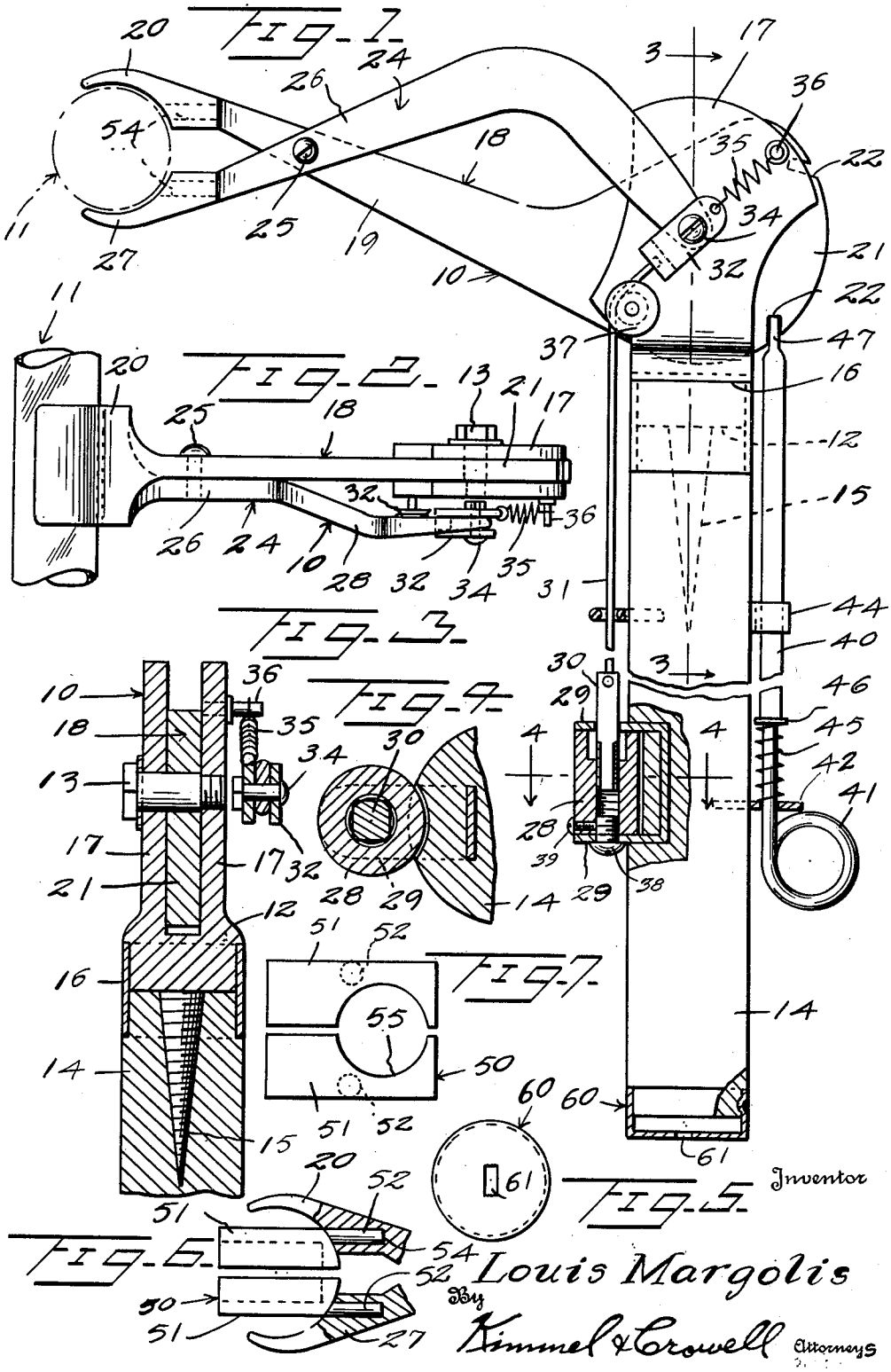
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MECHANICAL DEVICE FOR RELAMPING FLUORESCENT FIXTURES

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MECHANICAL DEVICE FOR RELAMPING FLUORESCENT FIXTURES

Louis Margolis, Washington, D. C.

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2 Claims. (Cl. 294—20)

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This invention relates to a mechanical device for removing and installing fluorescent lamps in the fixtures therefor.

The use of fluorescent lamps has become quite widespread in commercial and other types of dwellings and there are many types of installations in which the lamps are fixed to the ceiling a considerable distance from the floor, thus requiring a ladder or stand to reach the lamps for removing and installing them. In factories and other places, it is frequently impractical to use such stands as furniture or equipment may be located at such places as it would be desirable to place the ladder. Further, the moving of ladders, etc., is very cumbersome and awkward and it is desirable to provide in place of ladders, etc., an extension device to produce the result achieved by poles and spring-pressed fingers or other devices used on conventional round incandescent light bulbs.

The poles and lamp removing devices as used on round or substantially spherical light bulbs obviously cannot be used or modified to remove the elongated tubular light bulbs used on fluorescent lights, and it is an object of this invention to provide a means for removing and installing fluorescent light bulbs from fixtures out of normal reach of a person.

Another object of this invention is to provide a gripping tool which may be attached to a pole of suitable length for gripping and turning an elongated fluorescent light bulb in its fixture and means at the lower end of the pole for actuating the gripping tool by an operator.

A further object of this invention is to provide a tool of the kind to be more particularly described hereinafter, having gripping jaws, for gripping a fluorescent light bulb or similar object, pivotally secured to one end of a pole, and means for locking the jaws in a selected pivoted position, the jaws being rockable in their unlocked position for rotating the bulb in its socket.

Still another object of this invention is to provide a device of this kind having an adapter for insertion in the jaws whereby the starter plug may be removed or installed in the fixture and having a wrench for adjusting the louvres of the fixture.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

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In the drawings,

Figure 1 is a side elevation, partly broken away and partly in section, of a mechanical device for re-lamping fluorescent fixtures constructed according to an embodiment of my invention,

Figure 2 is a top plan view,

Figure 3 is a vertical section taken on the line 3—3 of Figure 1,

Figure 4 is a fragmentary horizontal section taken on the line 4—4 of Figure 1,

Figure 5 is a bottom plan view of the louvre wrench,

Figure 6 is a fragmentary side elevation of the jaws with the starter plug adapters in place; and

Figure 7 is a front elevation of the starter plug adapters.

Referring to the drawings, the numeral 10 designates generally a device for relamping fluorescent light fixtures wherein an elongated tubular light bulb 11 is used. The relamping device 10 is formed with a supporting member 12 which is adapted to be fixed to one end of a pole 14, of suitable length. The supporting member 12 is formed with a downwardly extending tapered screw or bolt 15 which engages securely in the end of the pole 14 for fixing the member 12 thereon and a short section of tubing or sleeve 16 is provided at the upper end of the pole or rod 14 about the member 12 and pole 14 to hold the pole against splitting and to further secure the member 12 thereon. The supporting member 12 is provided on its upper end with upwardly extending laterally spaced apart arms 17, thus forming a bifurcated supporting member 12.

A jaw member 18 is pivotally mounted between the arms 17 by a pivot pin or bolt 13 which extends through the arms and is formed with an elongated lever arm 19. The outer end of the lever arm 19 is provided with a gripping jaw 20 fixed or formed thereon and the rear or inner end of the arm 19 is enlarged and shaped in a segmental arcuate plate 21 having annularly spaced apart notches 22 along the periphery.

A second jaw member 24 is pivotally mounted on the first jaw member 18 by a pin or bolt 25 which extends through the lever arm 19 and lever arm 26 of the member 24. A jaw 27 is

fixed on the outer end of the jaw member 24 confronting the jaw 20 for gripping the light bulb 11 therebetween. The lever arm 26 of the jaw member 24 is offset intermediate its length, as at 28, and bent at right angles to lie adjacent the arms 17 of the base 12 outwardly thereof with the outer end of the arm 26 coincident with the pivot point 13 in the normal position of the device 10. By such an arrangement both arms may be pivoted in unison relative to the rod or handle 14 and the arm 24 may be pivoted relative to the arm 18 at any position of the arm 18 in relation to the handle 14.

The jaw member 24 is rocked about its pivot 25 for gripping the bulb 11 between the jaws 20 and 27 by an operator holding the lower end of the pole 14. A knurled nut 28 is rotatably supported between the arms of a U-shaped supporting plate 29 which is fixed in the lower end of the pole, the arms of which extend outwardly from one side. The nut 28 is rotatably secured by a screw 38 engaging through the lower arm of the support 29, the screw 38 being fixed to the nut 28 by a set screw 39 engaging through the side of the nut. A square shaft 30 having the corners thereof threaded to engage in the nut 28 engages through the nut for sliding motion relative to the pole 14 upon rotation of the nut. The sliding motion of the shaft 30 is translated to the jaw member 24 by a cable or cord 31 which is fixed at one end of the arm 26 coincident with the pivot 13. A U-shaped clip 32 is secured loosely to the arm 26, adjacent the pin 13, by a bolt 34 which extends through the arms of the clip 32, one being on each side of the lever 26, and the pivot member 24, and the cable 31 is fixed to the bight of the clip 32. One arm of the clip 32 extends beyond the member 34 for attaching an end of a spring 35. The other end of the spring 35 being fixed to the adjacent arm 17 by a pin 36 for constantly pulling the lever 26 upwardly and the jaw 27 downwardly to the open position. A pulley 37 is carried by the supporting member 12 below and forwardly of the pivot 13 over which the cable 31 is trained for reaching the lever 26 from the side of the handle 14.

A locking lever or rod 40 is slidably carried by the rod 14 opposite from the knurled nut 28, and is formed with a looped finger grip or handle 41 at its lower end. The rod 40 is slidably supported between brackets 42 and 44 and is constantly urged upwardly by a spring 45 between the lower bracket 42 and a shoulder 46 on the rod 40. The upper end of the rod 40 is flattened as at 47, and is engageable in the slots 22 of the plate 21 for locking the plate 21 and jaw member 18 in selected position. The slots 22 are so located on the plate 21 that the arm 18 may be locked in a position at substantially right angles to the handle 14 or in alignment with the handle in the other pivoted and locked position. By pulling the handle 41 downwardly the end of the rod 40 or keeper 47 is pulled from the slot 22 and the arm 18 is free to be moved to another pivoted position relative to the handle 14.

In the use and operation of this relamping device 10, the jaw member 18 will be initially locked in the extended or aligned position by the keeper 47, and the jaws 20 and 27 will be opened by rotating the nut 28. The jaws will then be placed on opposite sides of the lamp 11 and

tightened down by rotating the nut 28 until sufficient force is exerted on the jaw member 24 to grip the tube 11 securely between the jaws. The handle 41 is pulled downwardly then to unlock the jaw member 18, and the bulb 11 is rotated in its plugs by pushing the handle 14 upwardly and the jaw member 18 is rotated to its right angular position as shown in Figure 1, at which time the bulb 11 may be readily removed from its fixture. The installation procedure is obviously performed by reversing the removal as outlined above.

Most fixtures for fluorescent lights are equipped with a starting plug which is to be replaced from time to time. In order to remove and install such plugs in elevated fixtures, an adapter 50 may be used on this device 10. The adapter 50 consists of a pair of blocks 51 generally rectangular in shape, which have a rearwardly extending lug 52 extending from the center of the length of the rear side of each block 51 near the upper edge. The lug 52 is adapted to extend into a bore or recess 54 in the jaws 20 and 27 for securing the blocks 51 therein. Each block 51 is formed with a forwardly opening semi-circular recess or cut-out 55 on one side of the center line and the cut-outs 55 register with each other to provide jaws for gripping the starter plug, not shown.

As certain fixtures, as one described in my copending application for a fluorescent light fixture filed of even date herewith, are provided with pivoted locked closures, and it is desired at certain times to open said closures, a key 60 is fixed on the lower end of the rod or handle 14 whereby the pole may be reversed and the key 60, having a slot 61 for engaging the closure operating means may be engaged with the lock or latch therefor.

I do not mean to confine myself to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claims.

Having thus described my invention, what I claim is—

1. A relamping device of the kind described comprising a handle, a supporting member fixed on said handle, a lever member pivotally mounted on said supporting member, a second lever member pivotally secured between the ends thereof to said first lever member and spring pressed to released position, each of said lever members including a gripping jaw on the outer end thereof, said second lever member terminating substantially adjacent the pivot point of said first lever member, means for locking said first lever member in selected pivoted position, means for rocking said second lever member, said locking means including a spring-pressed locking member engageable in keeper slots in said first lever member, and an elongated rod on said locking member extending to a point adjacent the inner end of said handle whereby the latter may be disengaged by an operator at the lower end of said handle.

2. A relamping device comprising an elongated handle, a pair of ears carried by the outer end of said handle, a lever pivotally secured between said ears, a second lever rockably carried between the ends thereof by said first lever, a gripping jaw carried by each lever, releasable locking means operable from the inner end of said handle and engageable with said first lever for locking the latter in selected angular posi-

tion, a spring constantly urging said second lever to rock to released position, a flexible member connected at one end to said second lever adjacent the end of said second lever oppositely disposed from said gripping jaw and extending lengthwise of said handle, and threaded lever adjusting means carried by said handle adjacent the inner end thereof and engaging said flexible member whereby to rock said second lever relative to said first lever.

LOUIS MARGOLIS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
673,191	Arthur	Apr. 30, 1901
1,853,598	Birkenmaier	Apr. 12, 1932
2,367,003	Carson	Jan. 9, 1945
2,393,880	Beard	Jan. 29, 1946
2,427,842	Diver	Sept. 23, 1947