Sept. 17, 1946. A. L. CIPER ET AL 2,407,869

ELEVATED HANGER AND LAMP LOWERING AND HOISTING MEANS

Filed Jan. 8, 1945 3 Sheets-Sheet 1

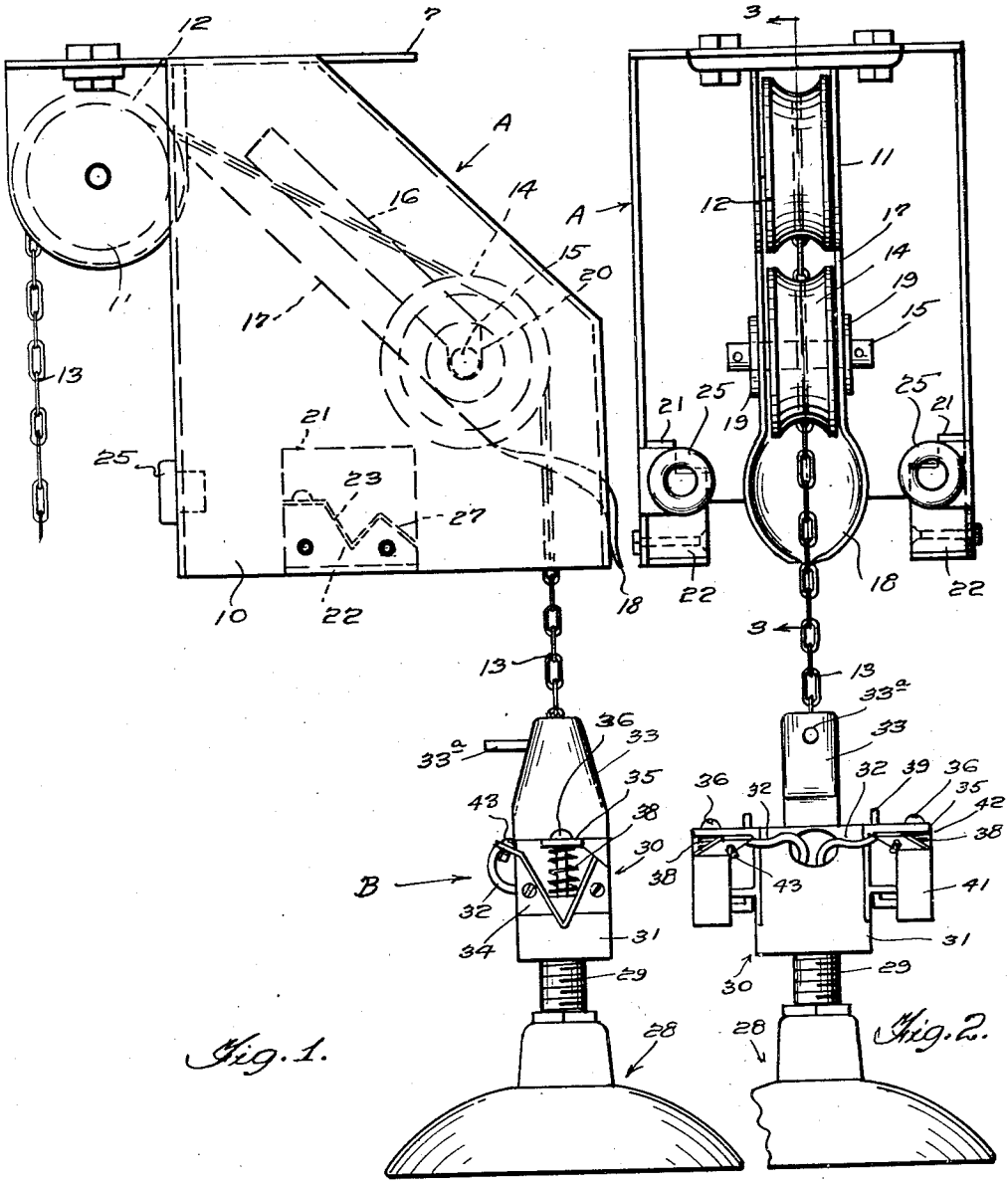


Fig. 1.

Fig. 2.

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Filed Jan. 8, 1945 3 Sheets-Sheet 2

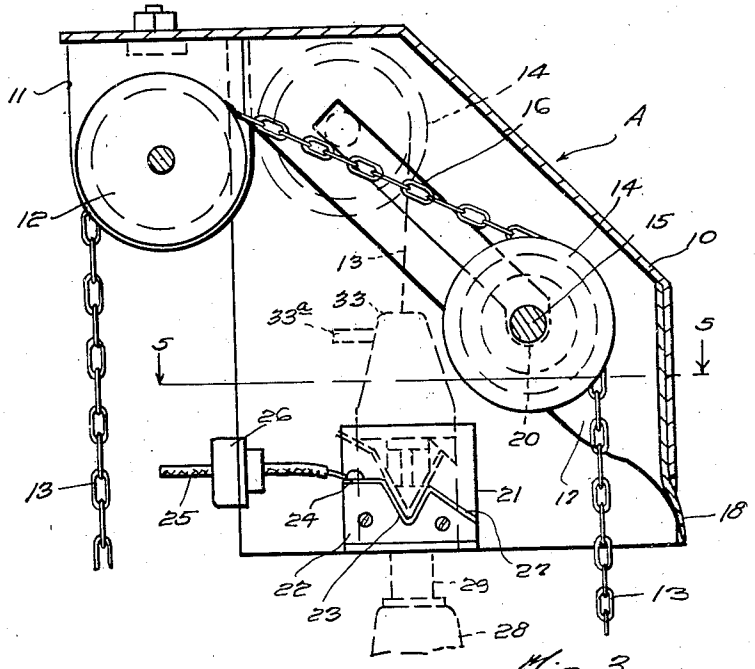


Fig. 3.

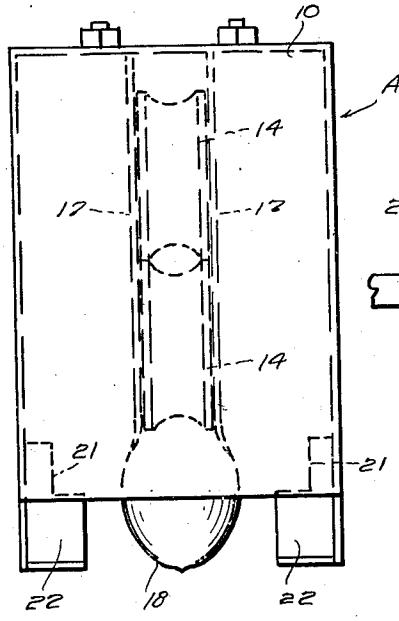


Fig. 4.

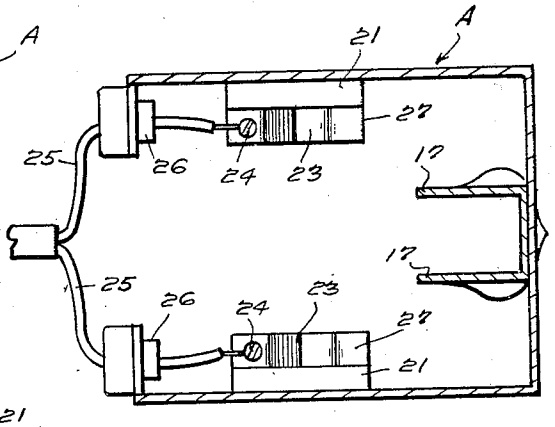


Fig. 5.

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Filed Jan. 8, 1945 3 Sheets-Sheet 3

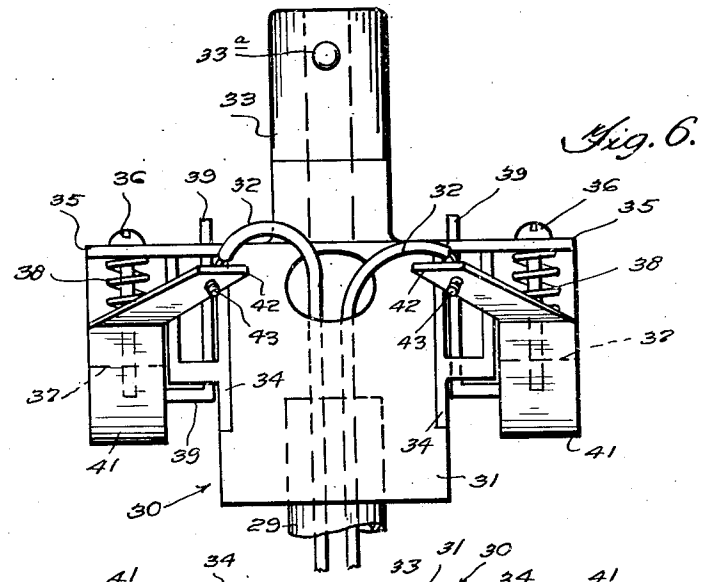


Fig. 6.

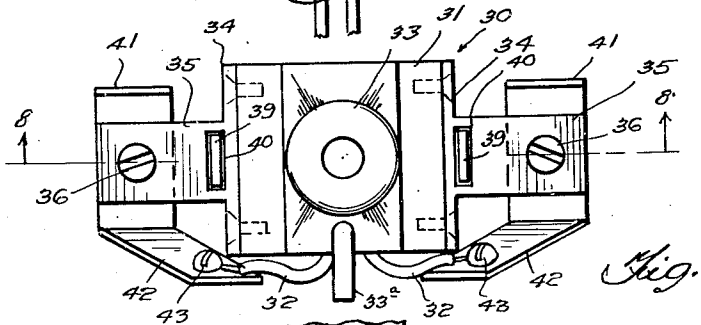


Fig. 7.

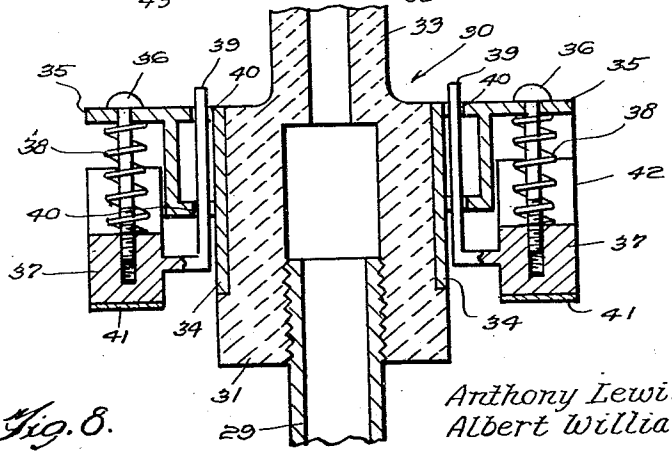


Fig. 8.

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UNITED STATES PATENT OFFICE

2,407,869

ELEVATED HANGER AND LAMP LOWERING AND HOISTING MEANS

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Application January 8, 1945, Serial No. 571,888

8 Claims. (Cl. 248—319)

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This invention relates to hangers of an elevated type such as are used for flood lights, arc lamps and similar illuminating equipment, the same having more particular reference to elevated styles such as are used for high indoor and out-of-doors purposes.

Needless to say, we are aware that many and varied forms and styles of elevated hangers have been adopted, used and patented. Usually, they have to do with a suitable adapter head structure which is fixedly supported at the desired elevation, the same having circuit make and break means for coaction with the liftable and lowerable lamp, and chain and pulley means being employed for raising and lowering the lamp and properly opening and closing the electric circuits.

In carrying out the principles of the instant invention, we have evoked the adoption and use of a number of seemingly distinguishable and appropriate improvements. That is to say, novelty is predicated, on the one hand, on a hanger characterized by a hood-like casing, this having a novel pulley and track arrangement to accommodate the lamp-lifting and lowering chain so as to swing the lamp clear of the circuit make and break means in the casing and also to properly return same in order to close the circuit with ease and expediency, all of the parts coordinating in properly timed and sequential relationship.

Novelty is, in addition, predicated upon the hood-like hanger which is so constructed as to coact with a pilot-like guide and director extension on the lamp fixture means, thus insuring efficient travel of the fixture and lamp in relation to the hanger during the disconnecting and re-engaging steps or stages.

Another object of the invention has to do with the provision of a special structural arrangement forming the make and break means, the fixture on the lamp having properly spring-cushioned contact members such as allow for slight rocking of the lamp in relation to the hanger while still maintaining, at all times, perfect circuit and current-feeding control.

Other features and advantages will become more readily apparent from the following description and the accompanying illustrative drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the same:

Figure 1 is a side elevational view of a lamp and hanger assemblage constructed in accordance with the principles of the instant invention,

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the lamp and associated fixture means being shown in a lowered position for making of repairs, etc.

Figure 2 is a rear elevational view, that is, a view of Figure 1 observing the same in a direction from left to right.

Figure 3 is a central vertical sectional and elevational view, this taken on the plane of the line 3—3 of Figure 2, looking in the direction of the arrows.

Figure 4 is a front end elevation of Figures 1 and 3, observing same in the direction from right to left.

Figure 5 is a horizontal section on the plane of the line 5—5 of Figure 3, looking downwardly in the direction of the arrows.

Figure 6 is an enlarged fragmentary elevational view of the lamp fixture means.

Figure 7 is a top plan view of the same.

Figure 8 is a section on the plane of the vertical line 8—8 of Figure 7.

Referring now to the drawings by distinguishing reference numerals, it will be seen that the complete structural assemblage is divisible into two major aspects; namely, the hanger assembly or means A on the one hand, and the lamp means B on the other. Novelty is predicated upon these phases A and B singly and collectively.

Referring first to means A, this comprises, as before indicated, a casing-like head. It is in the form of a suitable hood 10, this of appropriate shape, dimensions and material. It is here shown as of rectangular, box-like form open at its bottom and open on the left or rear end portion, as indicated in Figures 2 and 3. Starting with the rear upper end, we provide depending ears 11 for a sheave 12 over which a lifting and lowering chain 13 is trained. This chain then passes over a complemental movable or shiftable pulley 14, the latter provided with a shaft 15 whose end portions extend through inclined guide slots 16 in the spaced parallel guide walls 17. These guide walls are inclined from the rear forwardly and downwardly and coact with a delivery and feeder lip 18. The tracks form a slideway for the pulley 14 which is held in place by washers 19 which bridge the guide slots 16. It will be noted that the lower ends of the guide slots are provided with lateral notches 20 which serve as seats for the shaft-ends when the pulley 14 is in its lamp-lowering or "down" position. The pulley and track arrangement form a sort of a lifting and lowering carriage arrangement for the lamp means B. Before describing the latter, we would direct attention to the blocks 21 mounted on the

inner surfaces of the side walls of the hood, these having ledge-like extensions or shoulders **22**, the latter provided with opposed V-shaped seats **23**. Metal contact strips are mounted on the shoulders **22**, these strips indicated at the points **24** and having electric wires **25** suitably connected thereto, the wires extending through appropriate fixed guides **26**. The contact strips are bent to conform to the contour of the upper edge of the shoulder **22**. The intermediate portion is of V-shaped form and therefore fits down in the V-shaped adapter seat. Referring to Figure 3, it will be seen that the front or leading ends of the contact strips incline to the angular degree denoted at the points **27**, and these elements **27** constitute miniature ramps functioning in a manner to be hereinafter covered.

The lamp means B is characterized by a suitable shade or reflector **28** connected by a threaded nipple or pipe **29** to the special, lifting, lowering and self-accommodating fixture **30**. This is brought out to advantage in Figure 8 and comprises a substantially central hub of rectangular form, as indicated at **31**, the same being of hollow form to accommodate the wires **32** which lead downwardly therethrough, as shown in Figure 6. The upper end is provided with a pilot extension **33** of proper shape, that is, suitably tapered to coact with the aforementioned pilot lip **18** in the front wall of the hood, that is, the hanger hood. Suitable right angled brackets **34** are fastened to opposite ends of the body **31** and include outstanding horizontal limbs **35** which serve as hangers for bolts **36**, the latter being connected to V-shaped blocks **37** and surrounded by cushioning springs **38**. Referring further to Figure 7, it will be noted that the cushioning and accommodating V-shaped blocks **37** are provided with L-shaped guides whose vertical portions **39** extend up through guide holes in the brackets **34**, said guide holes being denoted at the points **40**. The accommodating blocks **37** are covered with the contact strips **41**, these being shaped to conform to the blocks and having extensions **42** which are fashioned to accommodate the connection **43** for the wires **32**, as shown in Figures 6 and 7.

Looking at the fixture means in a unitary sense, for example, as seen in Figure 2, it is of substantially T-shaped form and merely serves to suspend the shade **28** and connecting means **29**. The fixture has a pilot finger **33***a* on its top or crown portion which is an important guide and feeder element for the fixture while it is either being lowered down and out for repairs, or raised up and put into the hood again for lighting purposes. The extending arm portions of the T-fixture are of the cushioned spring accommodation construction seen in Figure 8 in which it will be observed that the spring-pressed shoes or blocks **37** rest in the V-shaped seats **23** of the circuit make and break contacts on the interior of the hood. Or to put it otherwise, the arms of the T-shaped fixture reach out and bridge the space between the side walls of the hood and the contact shoes **37** seat in the V-shaped notches. A slight lateral swing of the lamp is thus permitted and the springs **38** take up the slack and therefore serve to constantly maintain the desired self-accommodating circuit retaining results.

It is obvious from Figure 3 that when the lamp is suspended in the hanger hood (as shown very lightly in dotted lines) the depending end of the chain is in a substantially perpendicular line.

In operation, and as before indicated, it is evident that the lateral or projecting pilot finger on the pilot extension of the head, that is, the finger **33***a*, acts as a guide and a mechanical helper, so to speak, for engaging and lifting the so-called free rolling pulley **14** up and out of the keeper notches **20**. It then comes into contact with and rides against the periphery of said pulley **14** and the pulling action on the chain causes the pulley, followed by the lamp, to ride up in the guide tracks. This "riding" movement continues until the pulley reaches the upper ends of the slots **16** where the pulley stops. Then, when a tight pull on the chain is made, the finger fulcrums against the periphery of the pulley, whereby the head swings from a perpendicular or vertical hanging position and tilts slightly and overhangs the V-shaped seats **23**. Then with a quick release of the chain, the head with its V-shaped contacts, folds down into the V-shaped seats, anchors, and provides the desired positive electrical contacts between coacting parts. On the other hand, with a slight pull on the chain, assuming that the lamp is seated in said seats, the head is raised slowly while suspended by the chain and when the contact finger again strikes the pulley, it will naturally swing back to a vertical position and away from the V-shaped seat. While in this suspended state, the head can be slowly lowered out of the hood until clear. The aforementioned ramps **27** take no part in the engaging of the hanger because the head on its ride up the guide tracks is free and above said ramps. However, the sloped ramps and the hood act only as declining guides in case the lamp should be lifted up and then lowered too fast.

We have not attempted to stress the composition of materials used in the construction of the various parts or the precise relative dimensions. These are factors which will have to be worked out along experimental lines, for example, the possibilities we found to be practicable in the experimental structure which is now in use.

A careful consideration of the foregoing description in connection with the invention as illustrated in the drawings will enable the reader to obtain a clear understanding and impression of the alleged features of merit and novelty sufficient to clarify the construction of the invention as hereinafter claimed.

Minor changes in shape, size, materials and rearrangement of parts may be resorted to in actual practice so long as no departure is made from the invention as claimed.

We claim:

1. In a lamp hanger and lifting and lowering assemblage of the class described, a hanger hood, a relatively fixed pulley mounted in said hood, guide means mounted in said hood, a traveling pulley cooperable with said guide means and movable toward and from the fixed pulley, a chain trained over the pulleys and having depending reaches, one for hand manipulation purposes and the other to suspend a lamp, the front end of said hood being provided with a pilot and guide lip to coact with a complemental part on a lamp fixture, there being opposed shoulders mounted on the inner surfaces of the walls of said hood, these serving as suspension seats and being provided with contact strips.

2. In a lamp hanger and lifting and lowering assemblage of the class described, a relatively fixed hanger hood, a stationary pulley fixedly mounted at a predetermined point in said hood, a pair of spaced parallel slotted guides fixedly mounted in the interior upper portion of said

hood, the lower end portions of said slots being formed into lateral keeper seats, a traveling pulley, said pulley having an axle and the ends of said axles being mounted in said guide slots and cooperable with said keeper seats, and being movable toward and from said stationary pulley, a chain trained over both pulleys and having depending reaches, one for hand manipulation purposes for raising and lowering a lamp, and the other to suspend the lamp, the front end of said hood being provided with a pilot and guide lip to coact with a complemental part on a fixture provided on said lamp, there being opposed shoulders mounted on the interior surfaces of the walls of said hood, these serving as suspension seats and being provided with contact strips, said strips and seats being of V-shaped form.

3. As a component part of an elevated lamp hanger assemblage of the class described, a relatively fixed hood, open at its bottom, and open at its rear, a pair of shouldered lamp fixture mounts secured to the inner surfaces of the side walls of said hood in opposed relation, the shouldered portions having inverted V-shaped notches forming seats, contact strips mounted on the upper edges of said shoulders and having their intermediate portions fitted into said seats, the frontal ends inclining outwardly and downwardly to serve as miniature lamp disconnecting and reengaging ramps, electric wires connected with said contact strips, a pair of spaced parallel slotted guides mounted in the internal upper portion of said hood, the lower ends of the slots being directed laterally and constituting keeper seats, a pulley slidably mounted between the slotted plates and having an axle movable in the slots and also adapted to rest in said seats, and a fixed pulley also mounted in the hood for coaction with the movable pulley, said pulleys being adapted to accommodate a chain, and said chain being employed for lifting and lowering purposes, the movable pulley being forced up in the slots by the action of the elevated incoming fixture means on the lamp.

4. In a structural assemblage of the class described, in combination, hood means, lamp fixture contact-equipped mounts in said hood means, a movable pulley mounted in the hood and movable outwardly and downwardly, said pulley being adapted to accommodate hoist and lowering chains, and a lamp including a fixture, said fixture including an upstanding extension, the extension being engageable with the front end wall of the hood, said extension also being provided with a lateral finger, said finger being

engageable with said pulley, whereby when the fixture is lifted up into the hood, the finger engages and forces the pulley upwardly and rearwardly to an out-of-the-way position to permit temporary anchorage of the fixture in the hood.

5. In a structure of the class described, a hood including spaced parallel side walls having contact-equipped fixed mounts, said mounts having V-shaped seats, a lamp fixture mounted transversely between the walls of the hood and having V-shaped contacts removably seated in said V-shaped seats.

6. As a component part of an assemblage of the class described, a lamp fixture comprising a body having an upstanding projection, said projection constituting a pilot-guide and being provided on one side with a lateral guide and pulley-actuating finger, said body being of general T-shaped form and including brackets, said brackets having spring-pressed pins suspended therefrom and having guide openings, V-shaped contact shoes, said shoes being connected with said spring-equipped pins, and said shoes having guides slidably engageable with the guides in said brackets.

7. In a lamp hanger and lifting and lowering assemblage of the class described, a hanger hood, a relatively fixed pulley mounted in said hood, guide means mounted in said hood, a traveling pulley mounted in said guide means and movable toward and from the fixed pulley, a single chain trained over both pulleys and having depending reaches, one for hand manipulation purposes and the other to suspend a liftable and lowerable lamp, and opposed shoulders fixedly mounted on the inner surfaces of the walls of said hood, these serving as suspension seats and being provided with contact strips.

8. As a component part of an elevated lamp hanger assemblage of the class described, a relatively fixed hood, open at its bottom, open at its rear and otherwise enclosed, a pair of shouldered lamp fixture mounts secured to the inner surfaces of the side walls of said hood in opposed relation, the shouldered portions having inverted V-shaped notches forming seats, contact strips mounted on the upper surfaces of said shoulders and having V-shaped intermediate portions fitted in and conforming to said seats, the frontal ends of said strips inclining outwardly and downwardly to serve as miniature lamp disconnecting and reengaging ramps, and electric wires connected with said contact strips.

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