

May 15, 1923.

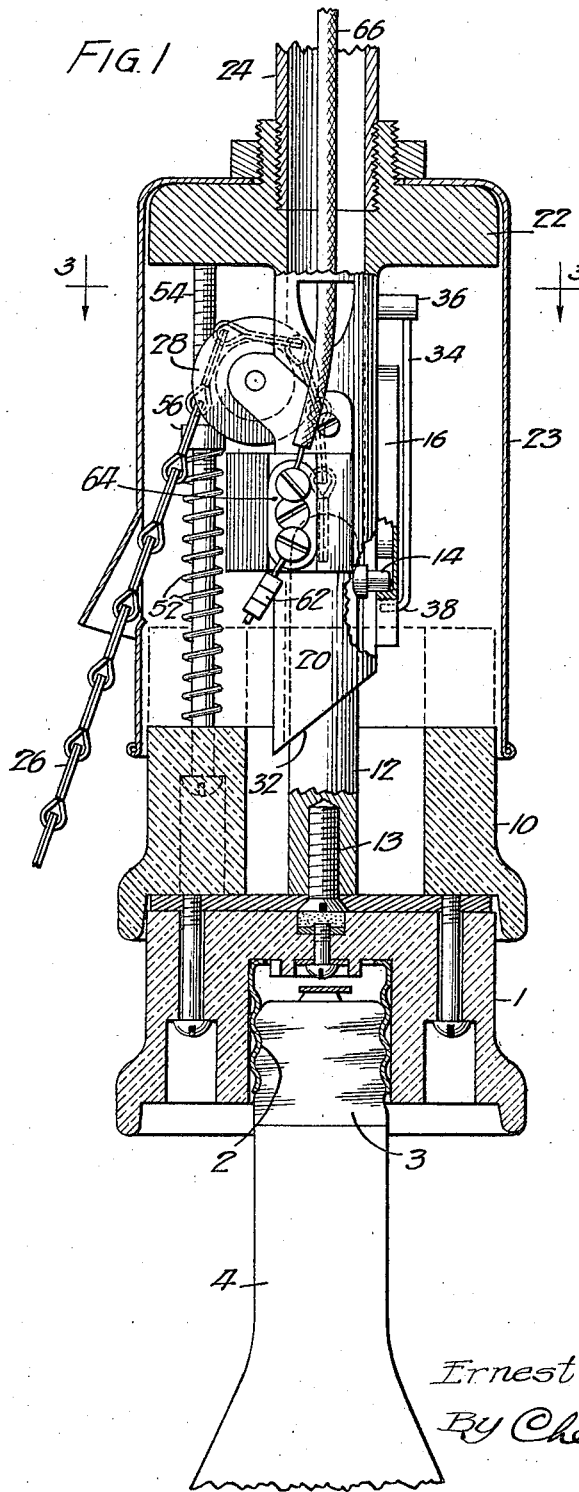
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E. M. LARKINS

LAMP HANGER

Filed Dec. 30, 1920

3 Sheets-Sheet 1



Inventor:
Ernest M. Larkins
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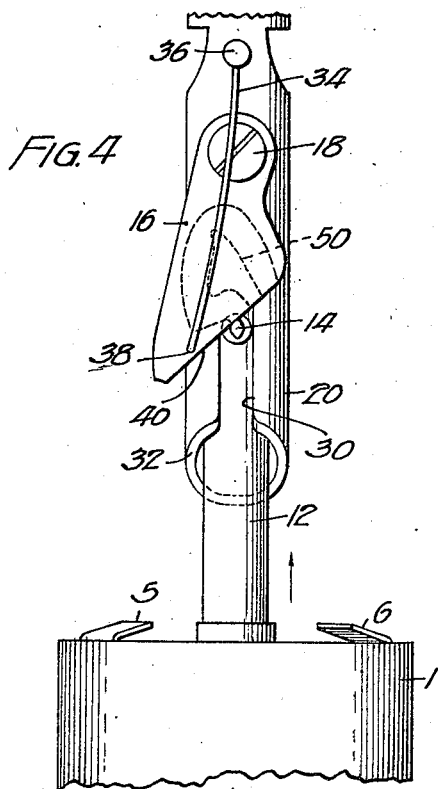
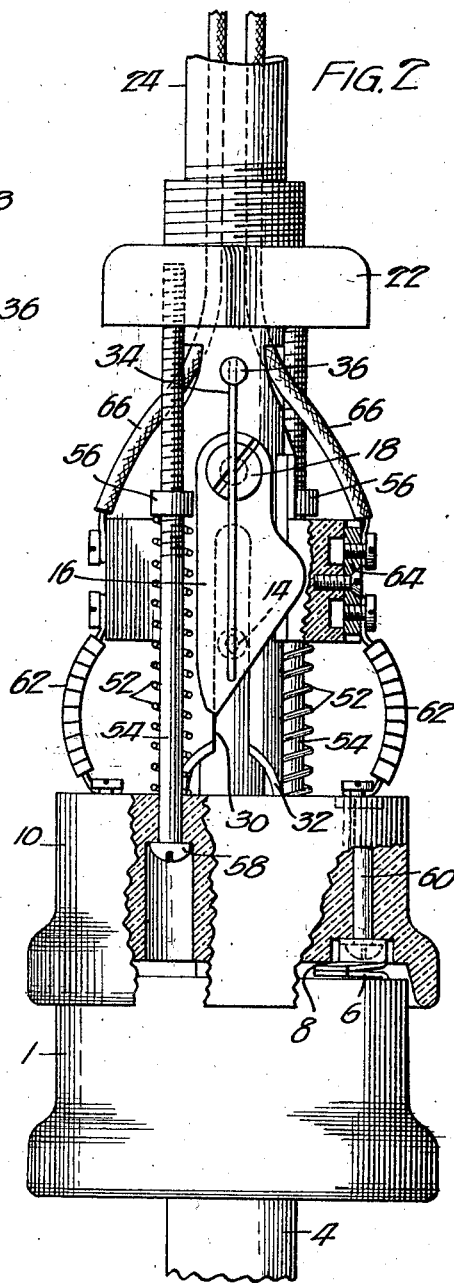
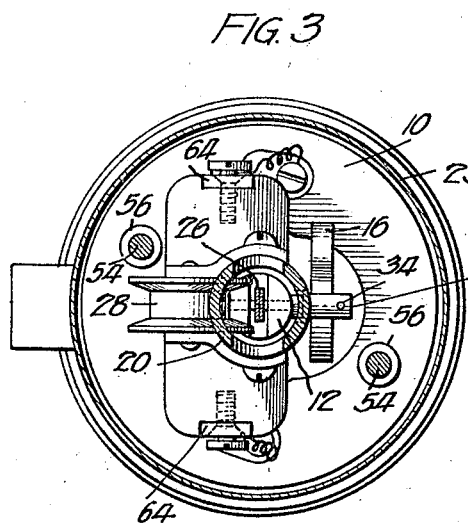
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FIG. 5

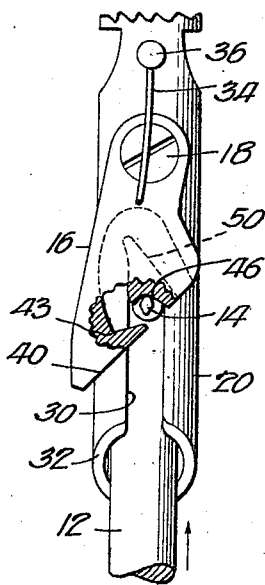


FIG. 6

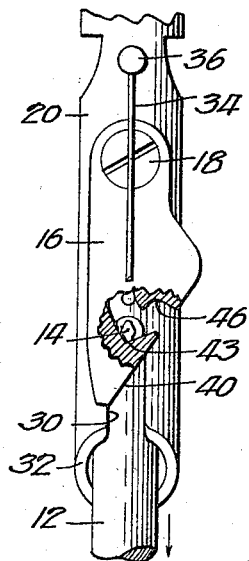


FIG. 7

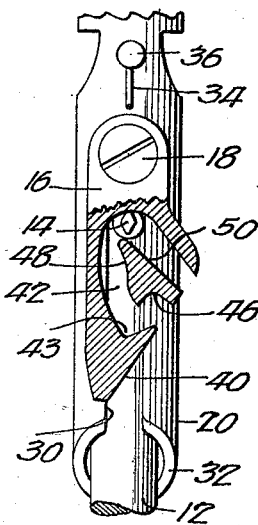


FIG. 8

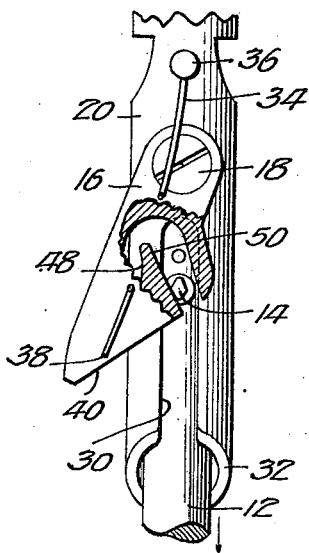
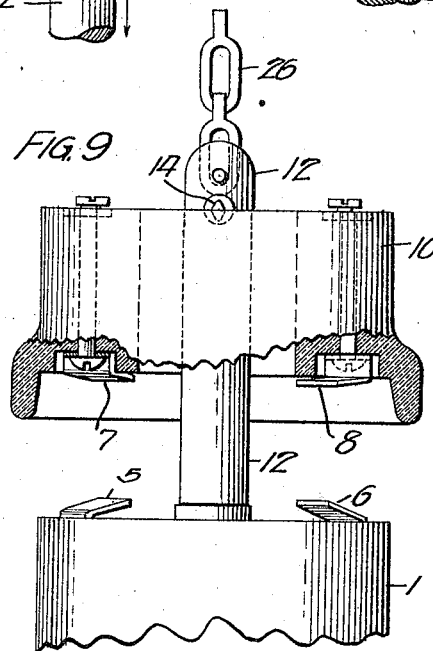


FIG. 9



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UNITED STATES PATENT OFFICE.

ERNEST MILTON LARKINS, OF SOUTH BEND, INDIANA, ASSIGNOR TO GEORGE CUTTER COMPANY, OF SOUTH BEND, INDIANA, A CORPORATION OF INDIANA.

LAMP HANGER.

Application filed December 30, 1920. Serial No. 433,998.

To all whom it may concern:

Be it known that I, ERNEST M. LARKINS, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented a certain new and useful Improvement in Lamp Hangers, of which the following is a specification.

My invention relates to lamp hangers and is particularly useful in connection with devices sometimes known as automatic cut-out sockets. In this class of devices the lamp is supported in a vertically movable socket and the vertical movement of the socket is effected by means of a cord or chain passing thru over a pulley mounted in a stationary supporting member. When the operator pulls down on the cord, the socket and lamp are raised and the lamp terminals are put into electrical engagement. At the same time the socket and its support become inter-engaged so that the operator may release the cord or chain and leave the lamp lighted. Another pull on the cord causes the socket to be released, after which it and the lamp may be lowered by paying out on the cord or chain. The object of my present invention is to provide a simple and compact mechanism by which these general movements may be accomplished.

I accomplish this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of my complete device.

Figure 2 is a side elevation partly in section showing the parts illustrated in Figure 1 with the hood removed. This view is taken looking towards the left in Figure 1.

Figure 3 is a plan section on the line 3—3 Figure 1.

Figures 4 to 8 inclusive show successive movements of the catch and cooperating parts of the lamp socket.

Figure 9 is a side elevation partly in section showing a portion of the lamp socket and the cooperating portion at the base of the supporting member.

Like numerals denote like parts thruout the several views.

In the form chosen to illustrate the invention the device has a lamp socket 1 of porcelain or other insulating material, the center being chambered and provided with a metallic threaded shell 2 for receiving the

base of an electric lamp 4. The socket is provided with two terminals 5 and 6 in the ordinary manner for engagement with corresponding terminals 7 and 8 in the base 10 of the hanger. An upstanding stem 12 is fastened to socket 1 by means of a screw 13 or other suitable fastening device. Projecting from the side of the stem, near the upper portion, is a pin 14 which is adapted to cooperate with a catch 16 for supporting the socket. Said catch is suspended by a screw pin 18 from a tube 20 which is integral with or rigidly fastened to a disc 22 near the top of the device. Among other things, the disc forms a support for a housing 23 in which the operating parts are enclosed. The disc is centrally apertured and screws onto the lower end of a pipe or conduit 24 by which the entire apparatus is supported.

Stem 12 and the parts carried thereby are raised and lowered by means of a chain or cord 26 which passes over a pulley 28 mounted on tube 20 somewhat below disc 22, as best shown in Figures 1 and 3. The stem is guided in the upper portions of its travel by tube 20 which has a vertical slot 30 in the side in which the pin travels. In order to enable the pin always to find the slot when the stem rises from beneath, the lower end of the tube is cut obliquely thus forming a cam surface 32 which tends to steer the pin toward the lower end of the slot.

The catch 16 above mentioned is free to swing upon pin 18 although it is constantly urged toward normal position by a spring 34 which at its upper end is rigidly fastened to tube 20 by a post 36 or other suitable form of fastening means. This spring is in the form of a light, resilient rod and at its lower end has a bend 38, the point of which is inserted into the lower end of the catch, as best shown in Figure 1. The catch in the form illustrated is what may be regarded as a compound shrouded cam having bottom cam 40 at its lower end adapted to be engaged by pin 14 as the latter rises. Above cam 40 within the camway 42 is a depression 43 which forms a seat for pin 14. The construction is such that after the pin 14 has entered slot 30 and continues to rise, it will first engage cam 40 and force the catch toward the left, Figures 2 to 8. As soon as the pin gets above the upper end of the cam the spring 34 swings the catch back to normal

position, after which if the operator slightly lowers the stem 12, the pin will rest in seat 43. The operator is prevented from raising the pin too far by a stop 46 located above the upper end of the cam. The action is illustrated in Figure 5.

Farther up in the camway there is formed a cam 48 best shown in Figures 5 to 8. It is so formed that if the operator again pulls the cord after the pin has become seated in seat 43, the pin will engage cam 48 and swing the catch toward the right. After the rising pin passes the upper end of cam 48, spring 34 returns the catch to normal position shown in Figure 7. After this if the operator pays out on the cord and permits the pin 14 to descend, it will engage the cam surface 50 and throw the catch toward the left as illustrated in Figure 8. This portion of the camway is open at the bottom and hence there is nothing to prevent the pin from being lowered as far as the operator wishes. In other words, the stem and the lamp socket are now released and the lamp may be lowered to a point where the operator can reach it for cleaning or renewal.

From the foregoing it will be clear that the catch is completely automatic in its operation. If the operator wants to suspend the lamp from the hanger all he has to do is to pull on the cord 26 and raise the pin 14 as far as it will go. He then slacks off on the cord whereupon the catch will automatically take hold. Then if he wishes to release, he pulls down on the cord so that the pin will move upward a slight distance, causing it to rise above the upper end of the cam 48, after which the pin may be lowered out of the camway and out of the slot 30. It will be evident that the various cams are prevented from forcing the pin 14 laterally for the reason that the pin is guided by the walls of the slot 30. Thus it may be said that the guide slot 30 holds the pin to its work when acting upon the cam. It will also be noted that the catch is small in size and that its cams are thoroughly protected from the weather both on account of the fact that the catch itself is enclosed within the housing 23 and the further fact that the cams are formed internally in the catch.

It will be observed also that during the different stages of movement the catch swings first in one direction from neutral, then returns to neutral, then swings in the opposite direction from neutral and then returns to neutral and then when the pin is being finally released, swings in the same direction it did at first. The catch may be regarded as having a neutral axis—that is, a line which passes up through the catch when the latter is in neutral position and which is coincident with the line traveled by

the pin 14 in rising. The cams 40, 48 and 50 cross this line in alternate directions and the seat 46, which is vertically between the first and second cams, lies aside from this neutral axis in the direction of the trend of the first or bottom cam.

I have provided means for preventing the pin from becoming accidentally dislodged from its seat 43 in the catch. These means comprise helical compression springs 52 best shown in Figures 1 and 2. They encircle rods 54 which are threaded at their upper end to screw tightly into the disc 22. At the upper end the springs abut adjustable collars 56 and at the lower end rest upon the top of the base 10 so as to urge it downward and thereby hold the pin 14 seated in the seat 43. The rods are slidable in base 10 so as to permit the base and the stem to rise sufficiently to affect the releasing action of the pin from the catch. The downward movement of the base 10 from disc 22 is limited by the heads 58 formed at the lower end of the rods as best shown in Figure 2.

It will be unnecessary to describe the electric connections in detail, as devices of this general character are known. It is sufficient for the present purpose to say that the contacts 7 and 8 are energized through rods 60 which are connected by flexible connectors 62 and terminal blocks 64 to the supply conductor 66.

The operation has already been described and it is evident that the lamp is automatically put into circuit by simply raising it as far as it will go in the first instance. When it is desired to disconnect and lower the lamp all that is necessary is to exert a slight pull on the operating cord or chain 26, thus enabling the lamp socket to release itself from the catch and enabling it to be thereafter lowered as far as desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A lamp hanger having a supporting member, a pendant catch pivotally supported therefrom and adapted to swing in two opposite directions from a neutral position, a spring adapted to restore the catch to neutral position, and a lamp socket having means whereby it may be raised and lowered and having a stem with a laterally projecting pin, the catch having three cams crossing its neutral axis in alternate directions, the catch having a seat for the pin above the first, lowermost, cam and a stop for the pin located aside from the neutral axis in the direction of the trend of the first cam to prevent the continued rise of the pin without first lowering it, the third, uppermost, cam being open at the bottom to release the pin.

2. A lamp hanger having a supporting member provided with a tube arranged vertically and having a slot in the side, a lamp

socket adapted to be raised and lowered
relatively to the supporting member and
having a stem adapted to enter said tube, a
pin projecting from the side of the stem
5 and adapted to travel in said slot, and a
catch pivotally mounted on the tube outside
of the slot and having a cam at the bottom,
and a seat above said cam, and a stop above
said cam and seat the catch also having a
releasing cam near the upper end of the 10
camway, the camway having a cam-like side
adapted to swing the catch aside as the pin
rises to thereby bring the releasing cam be-
neath the pin prior to the descent of the
latter. 15

In witness whereof, I have hereunto sub-
scribed my name.

ERNEST MILTON LARKINS.