(No Model.)

T. E. STEVENS.

BALANCED ELECTRIC DROP LIGHT HANGER.

No. 492,847. Patented Mar. 7, 1893.

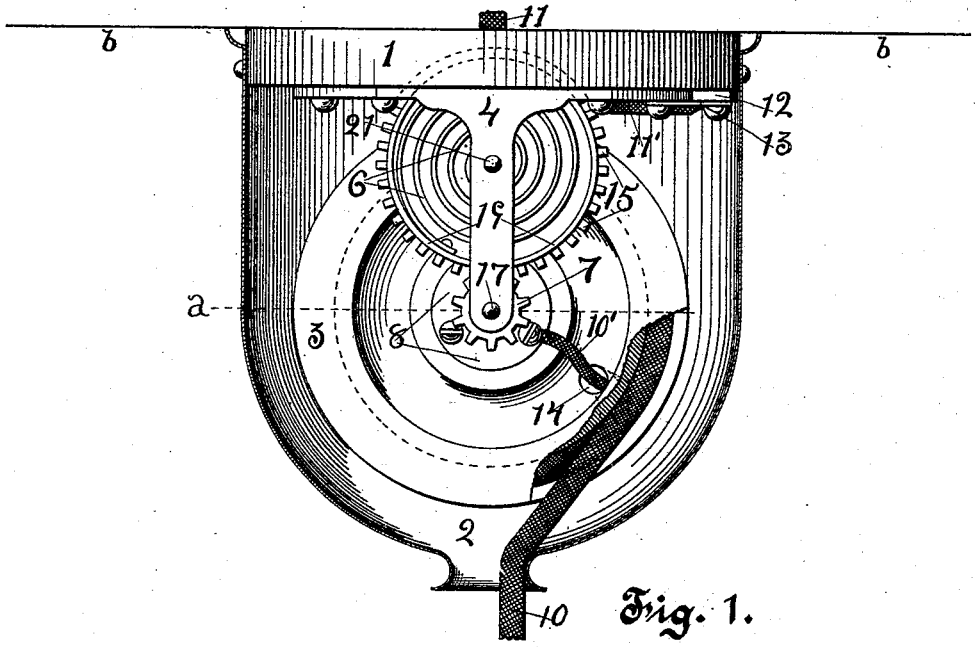
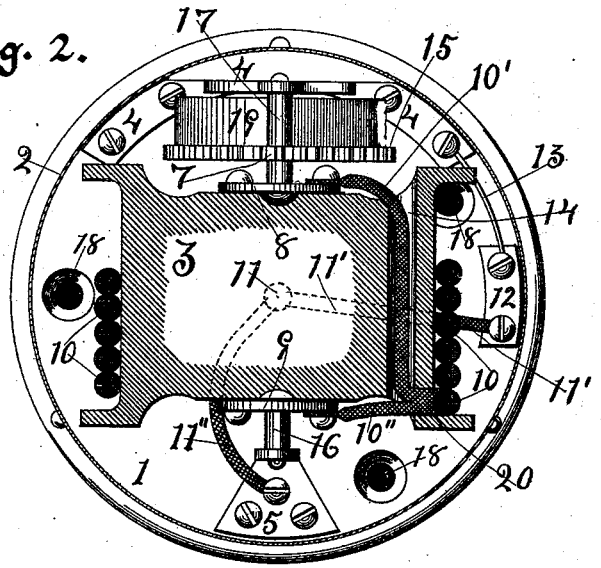


Fig. 1.

Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

TRUMAN E. STEVENS, OF BLAIR, ASSIGNOR OF ONE-HALF TO W. J. C. PUTNAM CRAMER, OF OMAHA, NEBRASKA.

BALANCED ELECTRIC-DROP-LIGHT HANGER.

SPECIFICATION forming part of Letters Patent No. 492,847, dated March 7, 1893.

Application filed June 21, 1892. Serial No. 437,476. (No model.)

To all whom it may concern:

Be it known that I, TRUMAN E. STEVENS, a citizen of the United States, residing at Blair, in the county of Washington and State of Nebraska, have invented a new and useful Balanced Electric-Drop-Light Hanger, of which the following is a specification.

My invention relates to improvements in balanced hangers for electric drop-lights, and the objects of my invention are, to make a perfect balance between the weight of the light and the tension of a coil spring supporting the same, also to simplify the mode of completing the electric circuit through the suspending apparatus. I attain these objects by the mechanism illustrated in the accompanying drawings in which—

Figure 1, is a side view of the apparatus suspended from a level ceiling. one half of the inclosing case cut away. Fig. 2 is a bottom view, the casing cut away below the broken line *a* of Fig. 1, and showing a horizontal section of the spool 3 cut through the apertures 14 and 20.

Similar numerals refer to similar parts throughout the several views.

A wooden ceiling plate 1, of the form shown, has the screw holes 18, 18 and 18, to receive screws by which it is attached to the ceiling *b*, and has a pair of metallic hangers 4 and 5 attached by screws to the lower face and near opposite edges of the plate 1. The wooden spool 3, is journaled horizontally between the lower ends of the hangers, which I prefer to do by attaching a short stud 16. riveted centrally in the stud plate 9, screwed to the end of the spool, its projecting end pivoted in the lower end of the hanger 5, a similar but longer stud 17, is attached in like manner to the opposite end of spool and pivoted in the lower end of hanger 4; this stud 17 has the small cog-wheel 7 rigidly mounted thereon near the spool and set to engage the larger cog-wheel 15 which is actuated by the coil spring 6; an inward projecting stud 21, is rigidly riveted in the hanger 4 directly above and in line with the stud or shaft 17; on this the large cog-wheel is pivoted and to it one end of the spring 6 is attached, the other end being attached to the wheel. The barrel or casing 19 inclosing the spring 6 is not absolutely necessary as the outer end of the spring may be fastened to a stud projecting from the face of the cog-wheel near its periphery. The duplex-pliable conducting line 10 has the terminals at its free end connected with the light the opposite end inserted through the aperture 20 from the periphery of the spool; the two lines 10′ and 10″ composing the double line 10 are then separated line 10′ carried through the horizontal aperture 14 in the spool and the end electrically connected with the metallic stud plate 8 the end of the single line 10″ connected with the stud plate 9 in a like manner. A duplex line 11 connected with the source of electricity is brought down through an opening in ceiling plate 1, and the single lines 11′ and 11″ are separated, 11″ is electrically connected with the hanger 5, and 11′ with the hanger 4 by the way of the plate 12 and the fuse 13 as shown. It will be understood that the lines 11′ and 11″ may be run separately as also the lines 10′ and 10″, being twisted together to coil on the spool and in all instances each line to be separately insulated electric conductors. also that the stud plates 8 and 9 with the journal-studs 16 and 17 are made of a good electric conducting metal as also are the hangers 4 and 5. By the use of the small cog-wheel attached to the spool and engaging a larger cog-wheel actuated by the spring 6, I reduce and adjust the range or scope of action of the spring so that its tension exactly balances the weight of the line line 10—with the light suspended on its free end—, at any point of elevation of the lamp; the increasing weight of the dependent part of the line as the light is lowered being in exact proportion to the increased tension of the spring; further this construction admits the use of a short spring so coiled that its different folds do not come in contact with each other hence the usual friction is avoided and the action of the spring more positive. It will be seen that the electric circuit is completed from line 10′ by the way of the stud-plate 8 having the stud 17 journaled in the hanger 4, connected by the fuse 13 with the terminal plate 12 of line 11′; in like manner 10″ is connected with 11″ by the stud-plate 9 having the stud 16 journaled in the lower end of the hangers 5 of line 11″, the points of connec-

tion between the moving and stationary parts being the journals at the extreme ends of the studs revolving in the lower ends of the hangers. The metal casing 2 of the form shown is screwed to the periphery of the wooden plate 1 to protect the working parts from dust and give a neat appearance; an aperture at the lower extremity accommodates the suspending line 10 and the casing being spheric in form at its lower end, and set near the flanges of the spool prevents the line from becoming displaced.

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

In a balanced electric drop light hanger the combination of the metal hangers 4 and 5 depending from the wooden ceiling plate 1, the wooden spool 3 provided with the metal studs 16 and 17 journaled in the hangers, the cog-wheel 15 set to engage the cog-wheel 7 on the shaft-stud 17, the hangers connected with an electric circuit, the duplex pliable conducting line 10 consisting of lines 10′ and 10″ and adapted to wind on the spool, its free end electrically connected with an electric lamp, the opposite end inserted through the aperture 20 near the flange of the spool, line 10″ electrically connected with the stud 16, line 10′ inserted through the aperture 14 and electrically connected with the stud 17, the coil spring 6 set to actuate the cog-wheel 15 and its tension adjusted to balance the depending line and lamp at any elevation or depression of the lamp substantially as shown and described.

Signed at Blair, in the county of Washington and State of Nebraska, this 18th day of June, 1892.

TRUMAN E. STEVENS.

Witnesses:
W. E. DAVID,
CLARK O'HANLON.