

(No Model.)

T. E. STEVENS.
BALANCED ELECTRIC DROP LIGHT HANGER.

No. 492,847.

Patented Mar. 7, 1893.

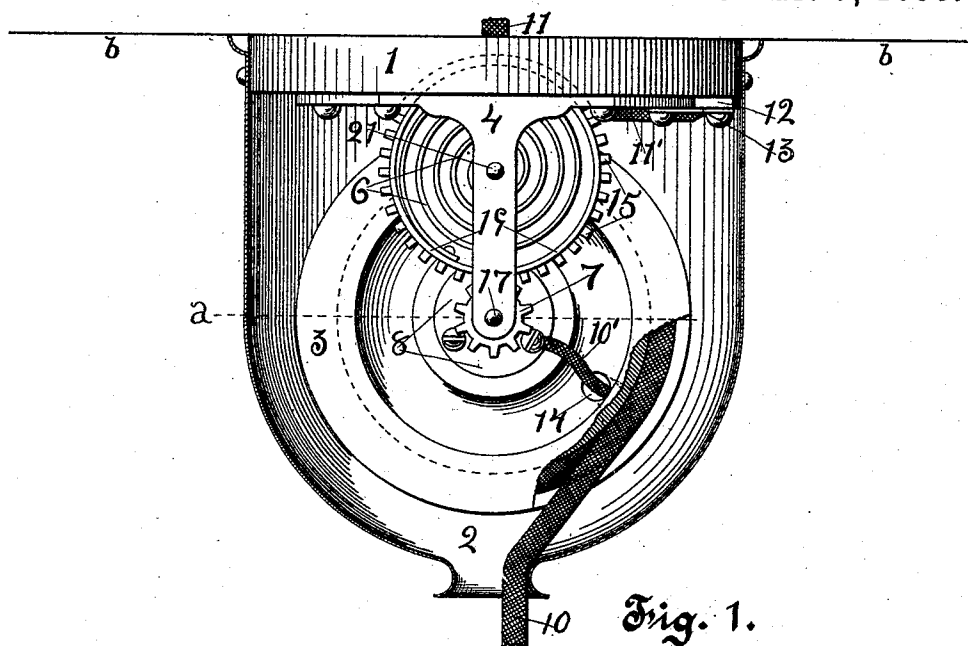
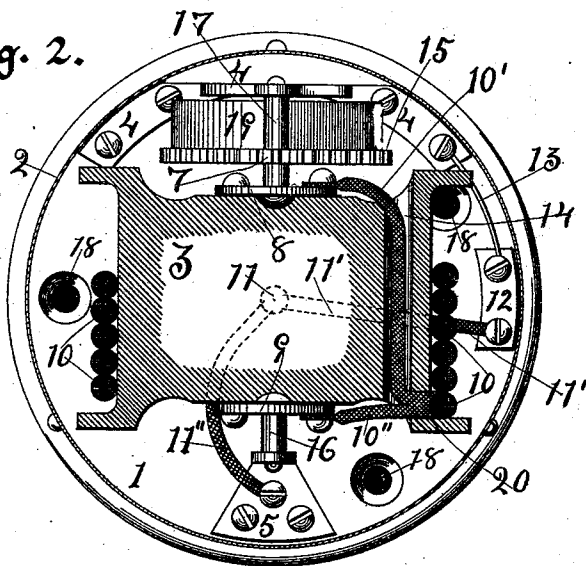


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

TRUMAN E. STEVENS, OF BLAIR, ASSIGNOR OF ONE-HALF TO W. J. C.
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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 nec-

essary 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 55
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 60
horizontal aperture 14 in the spool and the
end electrically connected with the metallic
stud plate 8 the end of the single line 10'' con-
nected with the stud plate 9 in a like manner.
A duplex line 11 connected with the source of 65
electricity is brought down through an open-
ing in ceiling plate 1, and the single lines 11'
and 11'' are separated, 11'' is electrically con-
nected with the hanger 5, and 11' with the
hanger 4 by the way of the plate 12 and the 70
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 in-
stances each line to be separately insulated 75
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 80
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 ten-
sion exactly balances the weight of the line
line 10—with the light suspended on its free 85
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 ex-
act proportion to the increased tension of the
spring; further this construction admits the 90
use of a short spring so coiled that its differ-
ent 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 95
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 con-
nected with 11'' by the stud-plate 9 having 100
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
 5 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
 10 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
 15 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
 20 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 25 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
 30 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. 35

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

TRUMAN E. STEVENS.

Witnesses:

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CLARK O'HANLON.