

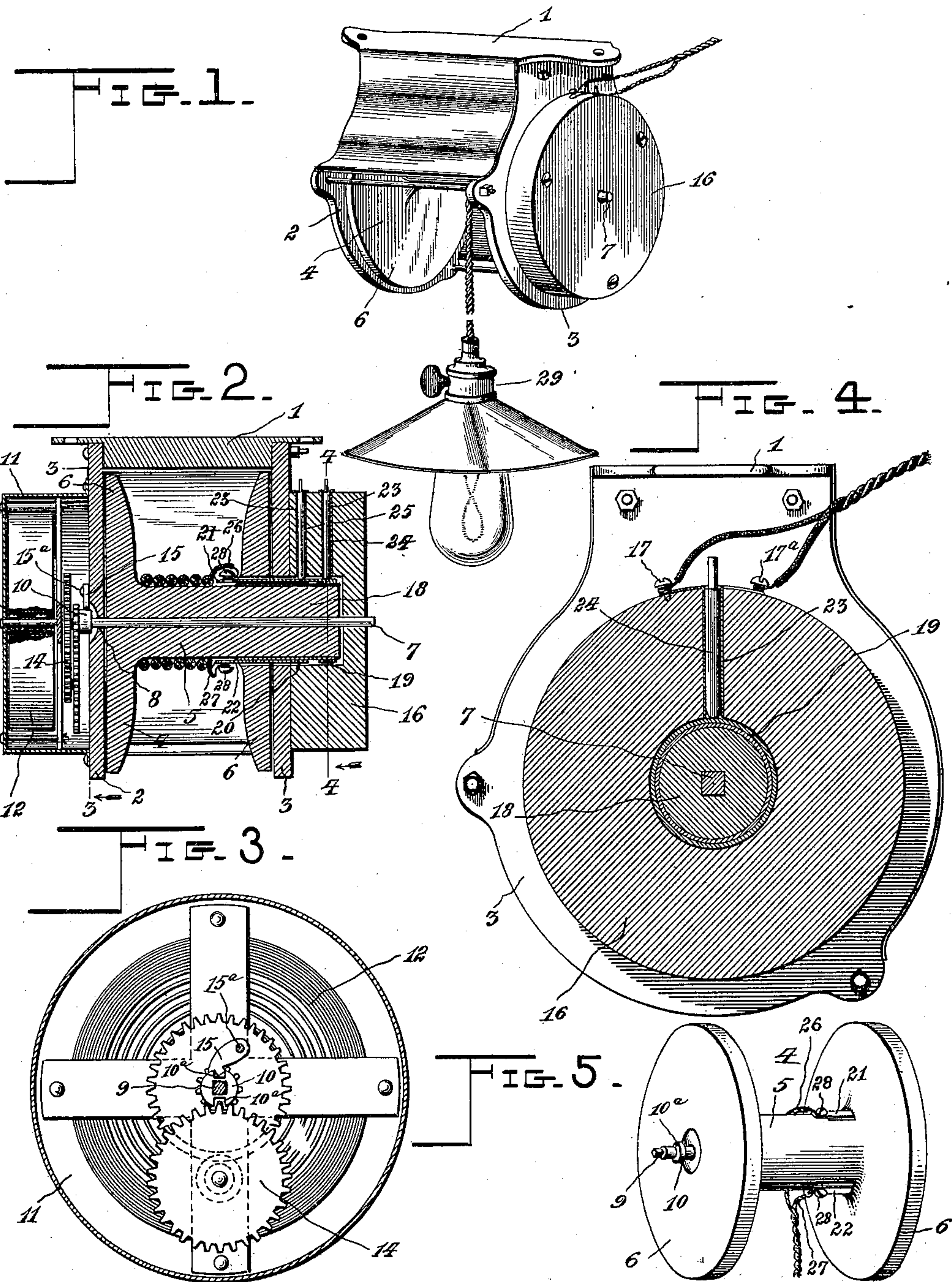
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Patented July 25, 1899.

W. N. THORP & F. G. NORMART.
ADJUSTABLE HANGER FOR INCANDESCENT LAMPS.

(Application filed Aug. 12, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM N. THORP AND FRANK G. NORMART, OF FRESNO, CALIFORNIA.

ADJUSTABLE HANGER FOR INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 629,406, dated July 25, 1899.

Application filed August 12, 1898. Serial No. 688,458. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM N. THORP and FRANK G. NORMART, citizens of the United States, residing at Fresno, in the county of Fresno and State of California, have invented a new and useful Adjustable Hanger for Incandescent Lamps, of which the following is a specification.

Our invention relates to improvements in adjustable hangers for incandescent lamps; and the prime object of said invention is to provide a simple construction by which an incandescent electric lamp may be suspended from a ceiling and maintained at any desired height without involving any interruption to the current required to maintain the light.

Further objects of the invention are to provide means which on the lowering of the lamp places a spring under tension sufficient to raise the lamp when required and also to provide means by which the action of the spring may be restrained to allow the lamp to be suspended at any required point convenient to the user.

With these ends in view the invention consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, we have illustrated the same in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of a hanger for an incandescent lamp constructed in accordance with our invention. Fig. 2 is a vertical sectional elevation of the same, taken in the plane of the axis of the reel or drum. Fig. 3 is a vertical cross-section at right angles to Fig. 2 and on the plane indicated by the dotted line 3 3 of said figure. Fig. 4 is a vertical transverse section on the plane indicated by the dotted line 4 4 of Fig. 2. Fig. 5 is a detail perspective view of the reel or drum.

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

1 designates a ceiling-block which is provided with the depending plates 2 3, which are parallel to each other and are spaced apart a sufficient distance to accommodate between themselves the reel or drum on which is coiled

a cable formed by twisting together the conductors required to supply the current to a lamp, said cable serving to suspend the lamp and adapted to be coiled on the reel or drum. The ceiling-block, with its plates 2 3, constitute the framework on which all the operative parts of the hanger are mounted, and this block or its plates may be made of hard rubber, porcelain, or other suitable insulating material.

The reel or drum 4 is journaled in the plates 2 3, between which said drum is arranged, and this drum consists of the spool 5, the head 6, and the shaft 7. The shaft or arbor 7 is extended beyond the heads, and its ends are fitted loosely in openings which constitute the bearings 8 for the drum in the plates 2 3. One end of this shaft is prolonged beyond the bearing and is made square or polygonal in cross-section, as at 9, for the reception of one member of the train of multiplying-gearing, and on this shaft is rigidly secured a disk 10, which is provided with notches 10^a at diametrically opposite points in its periphery.

To the outside of one of the plates is rigidly secured a drum or casing 11, which houses the helical spring 12, the inner end of which spring is secured to a shaft 13, that is suitably journaled in the drum and the frame-plate. Between the spring-shaft and the shaft or arbor of the reel is a train of multiplying-gearing 14, one member of which is secured to the spring-shaft 13 and another member is attached to the polygonal end 9 of the drum-shaft. This train of multiplying-gearing imparts the motion of the spring when it reacts to the drum, and said gearing also transmits the motion of the drum to the spring when the lamp-cable is uncoiled from the drum, so that the lowering of the lamp places the spring under tension sufficiently to raise the lamp when required. The rotation of the drum under the influence of the spring is restrained by a dog or pawl 15, which is hung or pivoted, as at 15^a, to the drum or casing, and the hook-shaped end of this pawl is arranged to engage with the notched disk 10 on the drum-shaft.

On the frame-plate, opposite to the spring casing or drum 11, is rigidly secured a housing 16, and on the outside of this housing is mounted the binding-posts 17 17^a, to which

are connected the conductors of the main or circuit which supplies the current of electric energy to the lamp. One end or head of the drum or reel is provided with a boss 18, which
 5 is extended or prolonged into the housing 16, and to this boss is firmly secured the conducting-rings 19 20, which are spaced a suitable distance apart and insulated electrically one from the other. The ring 19 is provided with a
 10 metallic tongue 21, which is extended through one head of the reel and carried along the spool, on one side thereof; but the other ring 20 has a like metallic tongue 22, which is carried along the spool and through the head
 15 thereof on the opposite side to the tongue 21, whereby the rings are arranged parallel to each other, and the tongues thereof are disposed on opposite sides of the spool. The housing 16 carries or sustains a pair of metallic guide-tubes 23, which are in electrical
 20 contact or engagement with the binding-posts 17 17^a, and through these guide-tubes pass the conducting stems or pins 24 25. These stems or pins rest upon and make electrical
 25 connection with the metallic rings 19 20 of the reel or drum, and said pins are also in electrical contact with the guide-tubes 23, so that the current is conducted from the posts 17 17^a, the guide-tubes, the stems or pins,
 30 the rings, and the tongues to the conductors of the suspension-cable. The conductors 26 27 are fastened electrically by the screws 28 to the tongues 21 22, and these conductors are twisted or intertwined together to produce a
 35 cable adapted to suspend the lamp 29.

The cable is adapted to be coiled on the rotatable drum or reel for the suspension of the lamp at any required height, and the rotation of this drum does not interrupt the
 40 current from the main to the lamp, because the circuit is completed under all rotations of the drum through the pins or stems, the rings, and the tongues. To lower the lamp, the cable is pulled down, and as it uncoils
 45 from the reel the latter is rotated in a direction to free the pawl from the notched disk and through the gearing to actuate the helical spring for putting the latter under tension. As the lamp reaches this desired position
 50 the pawl drops into engagement with the disk, thus restraining the reel from rotation under the action of the spring; but to raise the lamp and coil the cable on the reel the cable is pulled slightly and rotates the drum
 55 a limited distance sufficient to clear the pawl from the notched disk, after which the drum is allowed to rotate rapidly under the influence of the spring until the cable has been

sufficiently coiled on the reel and the lamp raised to the desired elevation. 60

Changes may be made in the form of some of the parts while their essential features are retained and the spirit of the invention embodied. Hence we do not desire to be limited to the precise form of all the parts as shown, 65 reserving the right to vary therefrom.

Having thus described the invention, what we claim is—

1. An incandescent-lamp hanger having a rotatable reel or drum, conducting-rings fixed 70 to said reel or drum and provided with tongues to which are attached the conductors of a suspension-cable, guide-tubes supported on a frame in which the reel is mounted, and stems in electrical engagement with said guide- 75 tubes and with the conducting-rings, substantially as described.

2. In an incandescent-lamp hanger, the combination with a frame having binding- 80 posts, of a reel journaled in the frame, conducting-rings secured to the reel and having tongues disposed on opposite sides of the axis thereof, guide-tubes supported by the frame in electrical engagement with the binding- 85 posts, conducting-stems loosely fitted in said guide-tubes to establish electrical connection from the binding-post to the conducting-rings on the reel, and a suspension-cable having its conductors attached individually to the 90 tongues, substantially as described.

3. In an incandescent-lamp hanger, the combination with a frame having a housing and a spring-casing on its opposite sides, of a reel journaled in said casing and provided 95 at one end with a boss which extends into the housing, conducting-rings fast with the reel-boss and having tongues disposed on opposite sides of the reel-hub, conducting-stems supported in the frame-housing and electrically fitted to the conducting-rings of the reel- 100 boss, a suspension-cable connected to said tongues, a spring-controlled shaft housed within the casing and disposed on the opposite side of the frame from the conducting- 105 stems, and ratchet-controlled multiplying-gearing between the spring-shaft and the reel-shaft, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

WILLIAM N. THORP.
FRANK G. NORMART.

Witnesses:

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