D. L. WEBB.

ELECTRIC LAMP SOCKET AND BULB REMOVER AND REPLACER.

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Fig. 1

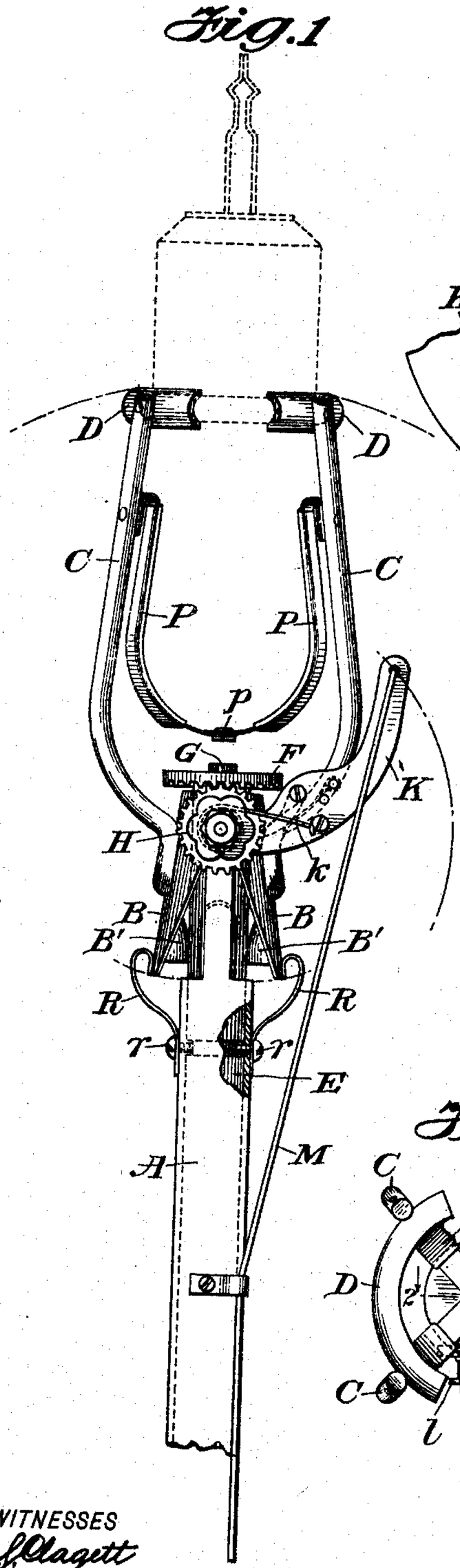

Fig. 2

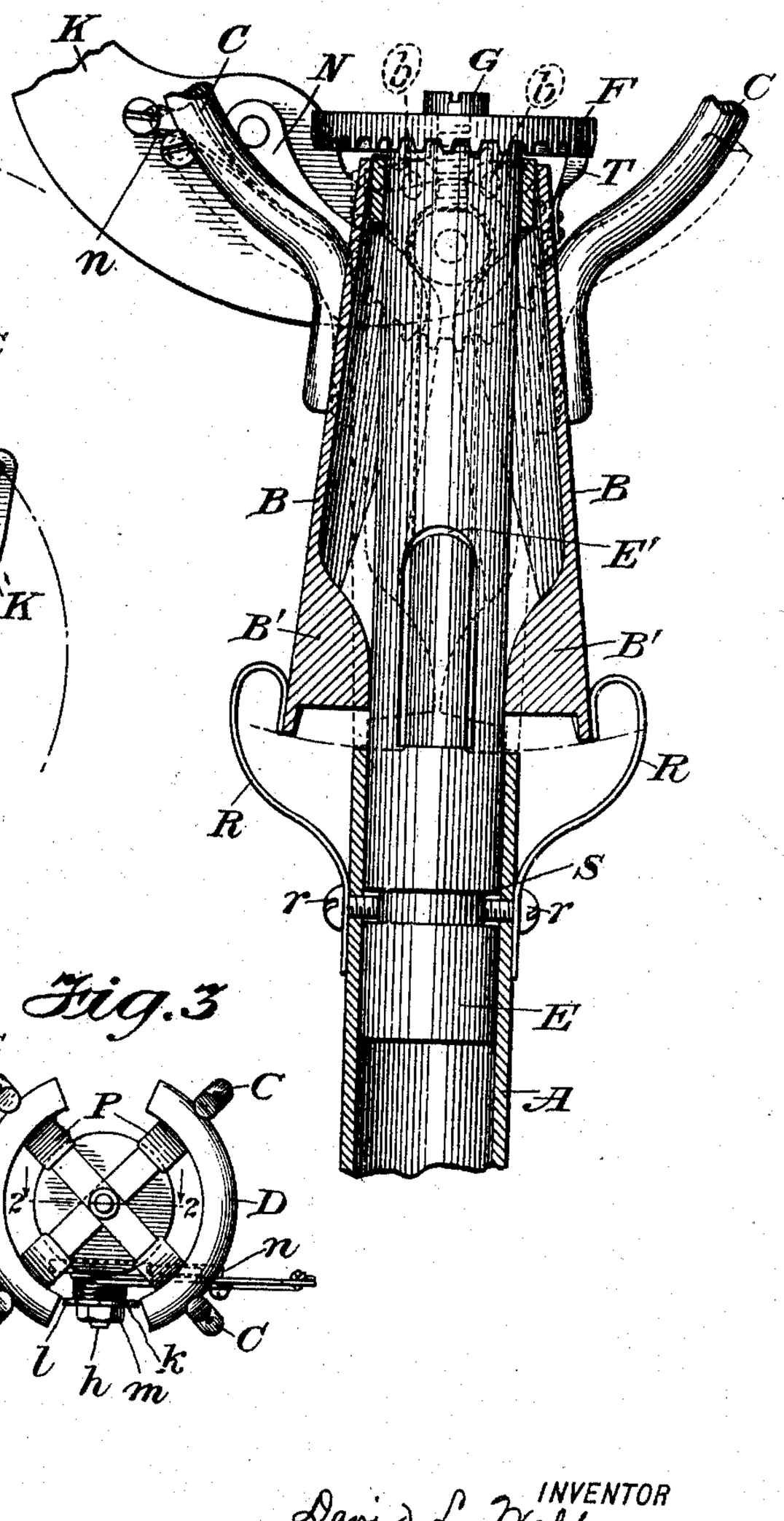

Fig. 3

WITNESSES

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ELECTRIC-LAMP SOCKET AND BULB REMOVER AND REPLACER.

No. 927,908. Specification of Letters Patent. Patented July 13, 1909.

Application filed January 25, 1909. Serial No. 474,134.

To all whom it may concern:

Be it known that I, DAVID L. WEBB, a citizen of the United States, residing at Brooklyn, in the county of Queens and State of New York, have invented a new and useful Improvement in Electric-Lamp Socket and Bulb Removers or Replacers, of which the following is a specification.

My invention relates to improvements in devices adapted to remove or replace lamp-sockets and lamp-bulbs, and particularly to remove or replace tungsten lamps and sockets. The commercial tungsten socket is removed or replaced by forcing its stem into an opening adapted to receive it, while the lamp is adapted to be screwed into the socket. Such sockets and lamps are much heavier and larger than the ordinary well-known form of Edison incandescent lamp. Moreover, owing to the delicacy of the filament in the tungsten lamps, such lamps have to be removed or replaced with great care.

The objects of this invention are, first, to provide an improved device whereby lamp-sockets may be firmly grasped for removal or replacement; second, to provide means for removing or replacing lamps having delicate filaments and which require great care in handling; third, to provide a device that comprises positive means for locking the socket or lamp-engaging members in an engaging position.

Other and further objects will more definitely appear from the detailed description to follow.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical view of my improved device showing it in engagement with a tungsten lamp-socket. Fig. 2 is a vertical section of a part of my device taken on the line 2—2 of Fig. 3. Fig. 3 is a top view.

The sectional view is taken looking in the direction of the little arrows at the ends of the section lines.

Similar letters of reference refer to similar parts throughout the several views.

Referring to the drawings, A represents the handle, the upper part of which is a hollow cylinder and preferably made of metal. Fitting down into the upper end of the handle A and adapted to rotate therein is the stem E, which carries at its upper extremity the gear F secured to the stem E by the screw G. The plane of rotation of the gear F is at right angles to the axis of the stem E. Secured to the upper end of the handle A are a pair of movable members B B, suitably secured at their upper extremities to the handle A by screws *b b* so as to permit of the movement of these members as though pivoted at their upper ends. Such movement is indicated in Figs. 1 and 2 by dotted lines. Each member B carries a pair of jaws or fingers C C to the upper extremities of which are secured socket-engaging members D D. These socket-engaging members are shaped so as to engage a lamp-socket, or as shown in the drawings to engage and embrace the lower edge of a tungsten lamp-socket. That part of the handle A which lies beneath the movable members B B is cut away on opposite sides so as to permit the movable members B B to engage the stem E as hereinafter shown. Each movable member B carries on its lower inside face a boss B^1 which is adapted to engage depressions or openings E^1 E^1 in the stem E. Each boss B^1 is so shaped in cross-section that when the stem E is rotated each boss B^1 will be easily forced out of the depressions or openings E^1 E^1 until it rests against the stem E. To the handle A is secured the gear H adapted to engage said gear F and by its rotation to operate the gear F and thus rotate the stem E. This gear H, the plane of which is at right angles to the plane of the gear F is loosely mounted upon a threaded screw *h* and held in place by the lever K, coil spring *k*, washer *l* and nut *m*. The coil spring *k* is secured at its inner end to the screw *h* while its other end is secured to the lever K in order to return the lever to its normal position as shown in Fig. 1, after it has been drawn down. The lever K is drawn down by means of the cord M, which movement tends to rotate the gear H by means of a pawl N held in engagement with the gear H by the spring *n*.

Secured to the inner faces of the jaws or fingers C C are a pair of springs P P, each spring being secured at one end to a finger C and at the other end to the opposite finger C, the said springs being so shaped as to receive the lamp bulb when in an engaging position and crossing each other at the point *p* where they are suitably secured to each other. These springs P P have a two-fold function, first, to form lamp-engaging mem-

bers to engage and embrace the lamp-bulb; second, to throw the jaws or fingers and hence the socket-engaging members in a disengaging position when released by the rotation of the stem E. In order to further protect the lamp-bulb and its filament from injury, I cover the springs P P with rubber, although any other suitable material may be used for that purpose. To further assist the movable members B B to assume a normal position, and hence the socket-engaging members to assume an open or disengaging position, I provide springs R R secured at one end to the handle A by screws *r r* while the upper ends of said springs R R press against the lower end of the movable members B B. The screws *r* pass through the handle A and engage an annular groove S in the stem E to prevent any vertical displacement of the stem E.

In order to prevent the disengagement of the socket or lamp-engaging members, when the same are in the closed or engaging position, I provide locking means, consisting of a spring pawl T secured to one of the movable members B, or to the handle A, if preferred, so as to engage the gear F and prevent its backward rotation. When the socket or lamp-engaging members are in their closed or engaging position, they are positively held in engagement by this pawl T which prevents the backward rotation of the gear F and the stem E. If it is desired to open the socket or lamp-engaging members, the lever K is drawn down sufficiently to rotate the stem E through ninety degrees when the bosses B^1 B^1 will engage the depressions or openings E^1 E^1.

While I have described and shown a device embodying my invention in the form preferred by me, it is apparent that the device is capable of considerable structural variation without, however, departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is:—

1. In an apparatus for removing or replacing lamp-sockets, the combination of a handle, movable members secured to said handle, a rotatable stem mounted in said handle and adapted to operate said movable members, jaws secured to said movable members and thrown in and out of operative position by the movement of said members, socket-engaging members secured to said jaws, and means for rotating said stem.

2. In an apparatus for removing or replacing lamp-sockets, the combination of a handle, movable members secured to said handle, jaws secured to said movable members, socket-engaging members secured to said jaws, a rotatable stem mounted in said handle and adapted to operate said movable members, means for throwing the socket-engaging members in a disengaging position, and means for rotating said stem, whereby said jaws are closed.

3. In an apparatus of the class described, the combination of a handle, a rotatable stem mounted therein, movable members secured to said handle and adapted to be engaged by said stem, a gear carried by said stem, a second gear secured to said handle to actuate said first gear, means for actuating said second gear, engaging members carried by said movable members, and means for throwing said engaging members in a disengaging position.

4. In an apparatus of the class described, the combination of a handle, a rotatable stem mounted therein, movable members secured to said handle and adapted to be engaged by said stem, a gear carried by said stem, means for actuating said gear, jaws carried by said movable members and operated thereby, and means for throwing said jaws in a disengaging position.

5. In an apparatus for removing or replacing lamp-bulbs, the combination of a handle, a rotatable stem mounted in said handle, movable members secured to said handle and adapted to be operated by the rotation of said stem, jaws carried by said movable members, a plurality of springs secured to said jaws and adapted to engage the lamp-bulb, and means for rotating said stem.

6. In an apparatus for removing or replacing lamp-bulbs the combination of a handle, a rotatable stem mounted in said handle, movable members secured to said handle and adapted to be operated by the rotation of the stem, jaws carried by said members, a plurality of springs secured to said jaws and adapted to engage the lamp-bulb, means independent of said springs for throwing said springs in a disengaging position, and means for rotating said stem.

7. In an apparatus of the class described, the combination of a handle, movable members secured to said handle, a rotatable stem mounted in said handle and adapted to operate said movable members, jaws carrying engaging members secured to said movable members and thrown in and out of operative position by the movement of said latter members, means for rotating said stem, and means for locking said engaging members in an engaging position.

8. In an apparatus of the class described, the combination of a handle, movable members secured to said handle, a rotatable stem mounted in said handle and adapted to operate said movable members, jaws carrying engaging members secured to said movable members and thrown in and out of operative position by the movement of said latter members, and means for actuating said movable members.

9. In an apparatus of the class described, the combination of a handle, a rotatable

stem, movable members secured to said handle and adapted to be operated by the rotation of said stem, jaws carrying engaging members secured to said movable members and adapted to be thrown in an engaging position by the rotation of the stem, means for rotating said stem, and means for throwing the engaging members in an open or disengaging position.

10. In an apparatus of the class described, the combination of a handle, a rotatable stem carried by said handle, movable members secured to said handle and adapted to be engaged by said stem, a gear carried by said stem, a second gear secured to said handle for actuating said first gear, means for actuating said second gear, engaging members carried by said movable members, means for locking said engaging members in an engaging position, and means for throwing said engaging members in a disengaging position.

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