F. H. PRINTISS.

INCANDESCENT BULB REMOVER AND REPLACER.

APPLICATION FILED APR. 29, 1914.

1,121,759.

Patented Dec. 22, 1914.

2 SHEETS—SHEET 1.

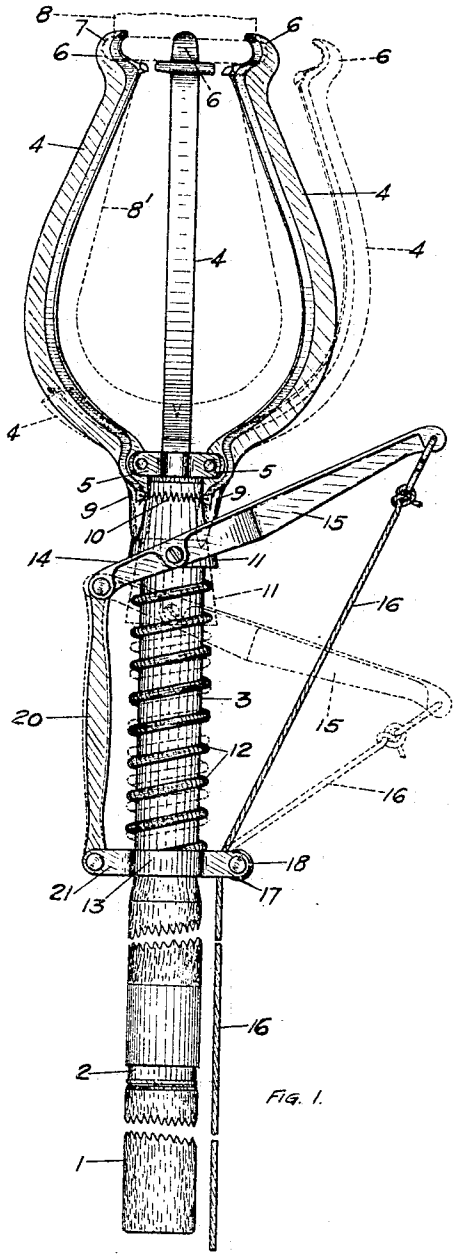


FIG. 1.

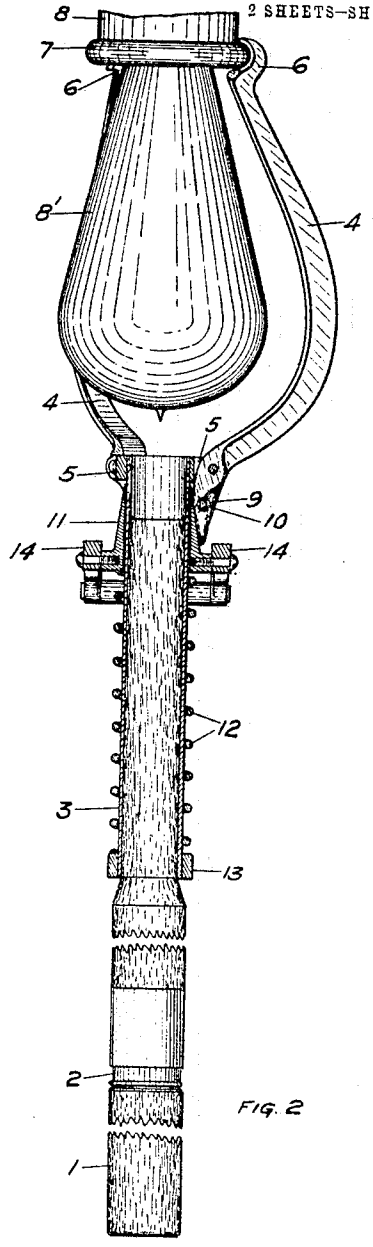


FIG. 2

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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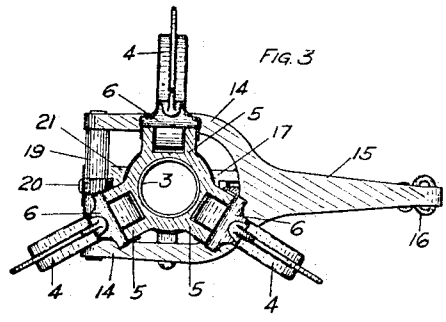


FIG. 3

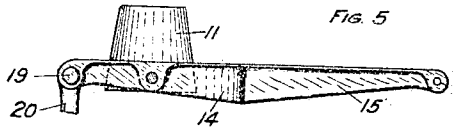


FIG. 5

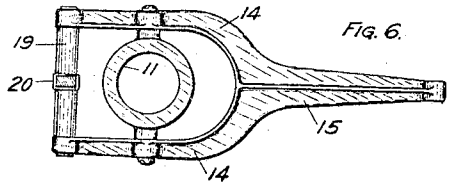


FIG. 6.

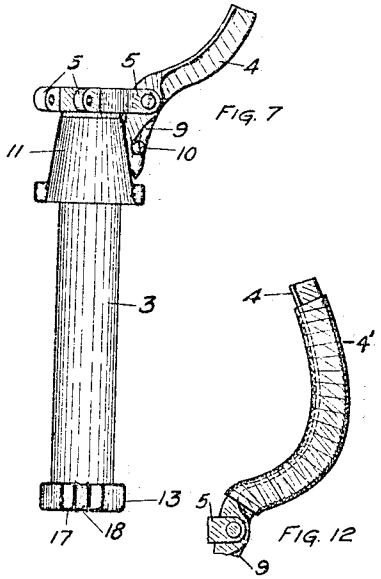


FIG. 7

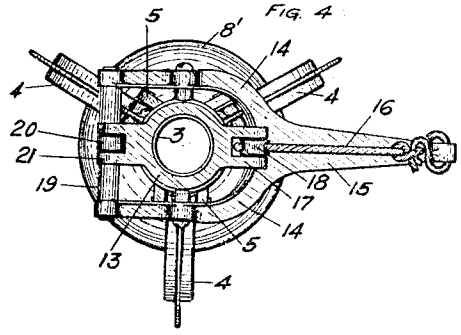


FIG. 4

FIG. 8

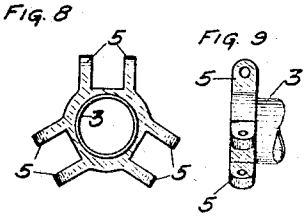


FIG. 9

FIG. 10.

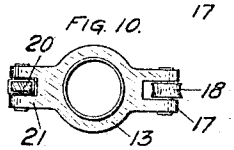


FIG. 12

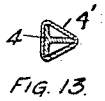


FIG. 13.

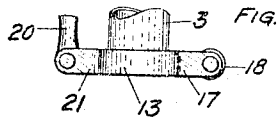


FIG. 11.

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UNITED STATES PATENT OFFICE.

FREDERICK HAROLD PRINTISS, OF PITTSFIELD, MASSACHUSETTS, ASSIGNOR OF FIFTY-ONE ONE-HUNDREDTHS TO THE G. C. A. MANUFACTURING COMPANY, OF PITTSFIELD, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

INCANDESCENT-BULB REMOVER AND REPLACER.

1,121,759. Specification of Letters Patent. **Patented Dec. 22, 1914.**

Application filed April 29, 1914. Serial No. 835,133.

To all whom it may concern:

Be it known that I, FREDERICK HAROLD PRINTISS, a citizen of the United States, residing at Pittsfield, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Incandescent-Bulb Removers and Replacers, of which the following is a specification.

This invention relates to improvements in apparatus for removing and replacing electric lamp-sockets and bulbs.

The present form of embodiment of the invention herein shown and described is particularly adapted for application to incandescent lamps of the type in general use for lighting streets and highways and which are detachably secured at one end to a slip-plug or socket removable with the lamp.

The objects of the invention are, primarily, to provide a manually operable device for quickly and safely removing and replacing lamp-sockets and bulbs placed beyond the reach of the operator's arm, and, secondarily, to secure the advantages in durability, mechanical precision, and clamping power of specific structural improvements.

In the preferred form of embodiment of my invention shown in the accompanying drawings, Figure 1. is a side elevation of the assembled device operatively engaged with a lamp-socket and lamp, the dotted lines indicating the relative positions of the parts actuated in operation; Fig. 2, a longitudinal vertical section of the same at an angle of 90°; Fig. 3, a top plan view; Fig. 4, a bottom plan view; Figs. 5 and 6, side and top views, respectively, of the adjusting lever and clamp thrust; Fig. 7, a side view showing the relative position of the clamp thrust with reference to the feet of the clamps; Fig. 8 and 9, detailed top and side views, respectively, of the clamp-supporting jaws; Figs. 10 and 11, top and side views, respectively, of the collar at the lower extremity of the handle extension, and Figs. 12 and 13, side and cross-sectional views, respectively, of one of the clamps inclosed in a protective covering.

As shown, the handle 1 is preferably constructed of a number of jointed sections detachably secured together, as at 2, and is provided at its upper extremity with a tubular extension 3 of metal, which carries at its outer end a plurality of clamps, 4, 4, etc., preferably three in number and of elliptical formation. Said clamps are distributed around the wall of said extension and pivoted at their lower ends to suitable jaws 5, 5, etc. provided thereon, the upper ends of the clamps being formed or provided with socket-engaging jaws 6, 6, etc., constructed to receive an annular shoulder 7 formed on the outer wall of the lamp-socket 8. The lower ends of the clamps 4, 4, etc., are extended downward at an angle from the body of the clamp to form feet 9, 9, etc., which are adapted to engage the wall of the handle extension 3, suitable means being provided to actuate the feet inward, such as a coil-spring 10 inclosing the feet and secured in stationary position thereon, the inward movement of the feet operating to spread the clamps 4, 4, etc.

Mounted to slide on the handle extension 3, is shown a clamp-thrust or spreader in the form of a bushing 11, having a wall of graduated thickness, tapering to an edge at the top, said bushing being actuated upward to spread the feet 9 of the clamps 4, 4, etc., in opposition to the force of the spring 10, by means of a main coil-spring 12 inclosing the handle extension 3 and extending from the thrust 11 downward to a fixed stop or collar 13 provided at the lower extremity of said extension. Pivoted to opposite sides of the base or lower end of the thrust 11, is a yoke 14 inclosing the thrust and forming the rear end of an arm or lever 15 supporting at its outer end a manipulating cord 16, which is suitably secured thereto and extended downward to the bottom of the handle 1, being preferably drawn through a jaw 17 provided laterally on the collar 13 and carrying a grooved roller 18, upon which the cord operates. The outer ends of the yoke 14, or bifurcated portion of the lever 15, are extended beyond the thrust 11 and united by a bar 19 pivoted at opposite ends thereto, said bar being connected centrally to a rod 20 which is extended downward and pivoted at its lower end in a jaw 21 provided laterally on the collar 13 opposite the jaw 17.

To operate the clamps 4 for the removal of the lamp-socket 8 and bulb 8', the lever 15 and thrust 11 are drawn downward against the action of the main-spring 12 by

means of the cord 16. As the thrust 11 is actuated downward with the lever 15, the upper ends of the clamps 4 are thrown apart out of operative position under the influence of the spring 10, which draws the feet 9 into engagement with the handle extension 3. The consequent spreading of the clamps 4 is sufficient at the maximum limit to readily permit the free introduction of the lamp 8′ through the jaws 6. The lever 15 and thrust 11 are now gradually released, and under the force of the main-spring 12 are elevated to their former positions, the feet 9 being displaced outward by the introduction of the thrust 11 and consequently contracting the clamps whereby the jaws 6 at the upper extremity of the clamps firmly engage the socket 8 around the shoulder 7. The force exerted by the operator for removing the lamp-socket reacts upon the clamps, the latter being held positively in fixed operative position against outward displacement by the thrust or spreader which is pinned for the time being by the clamp feet in its given position, independently of the exertion of the main-spring. Hence a positive and not yielding means secures the clamping arms in their given operative position during the removal of the lamp-socket and bulb. The curvature of the clamps is predetermined with reference to the contour of the lamp 8′ so that these parts are kept clear from contact at all points. My device is constructed to anticipate and conform to slight variations in the diametrical measurement of commercial lamp-sockets. A protective covering 4′ of woven fabric, rubber or other suitable material, as shown in Figs. 12 and 13, for the clamps 4 may be employed as an additional precaution, if desired, against breakage, although such is not deemed necessary in the present form of my device. The reverse of the foregoing operation is required to replace the lamp-socket and lamp in operative position after repairs.

I claim:—

1. A device of the class described comprising, in combination, a handle, clamping arms pivoted to the handle and provided at their upper ends with jaws for gripping a lamp socket, the lower ends of said arms being extended downward into position for engagement with the handle, a reciprocatable sleeve thrust provided on the handle and having inclined sides for projection under the lower extensions of the clamping arms, means for actuating the lower extensions of the clamping arms normally inward, spring means for imparting to the sleeve thrust a rapid movement upward into position under the lower extensions of the clamping arms, and means for reversing the action of the sleeve thrust, including a lateral arm secured to the handle and arranged for direct bearing on said thrust.

2. A device of the class described comprising, in combination, a handle, clamping arms pivoted to the handle and extending beyond its upper end and having lower extensions extending below the points of support, means for throwing the clamping arms into operative position, including a sleeve mounted on the handle for spreading the lower extensions of the clamping arms, and a spring provided on the handle for imparting to the sleeve a rapid upward movement, and means for throwing the clamping arms out of operative position, including a reciprocating lever secured to the handle and arranged to actuate the sleeve downward, and separate spring means for actuating the lower extensions of the clamping arms normally inward.

3. In a device of the class described, the combination of a handle, arms pivoted to the handle and having pedal extremities, spring means for actuating said extremities convergently, a tubular member mounted to move lengthwise of the handle and having tapering side walls for projection under the pedal extremities of the arms, a horizontally arranged lever pivoted intermediate its ends to said tubular member and movably secured at one end to a fixed support, means secured to the opposite end of the lever for actuating the lever and said tubular member downward and separate spring means for actuating the tubular member into and out of engagement with said pedal extremities of the arms, said arms being thrown into and out of operative position by the movements of the tubular member.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

FREDERICK HAROLD PRINTISS.

Witnesses:
JNO. J. WHITTLESEY,
W. R. GARDENER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."