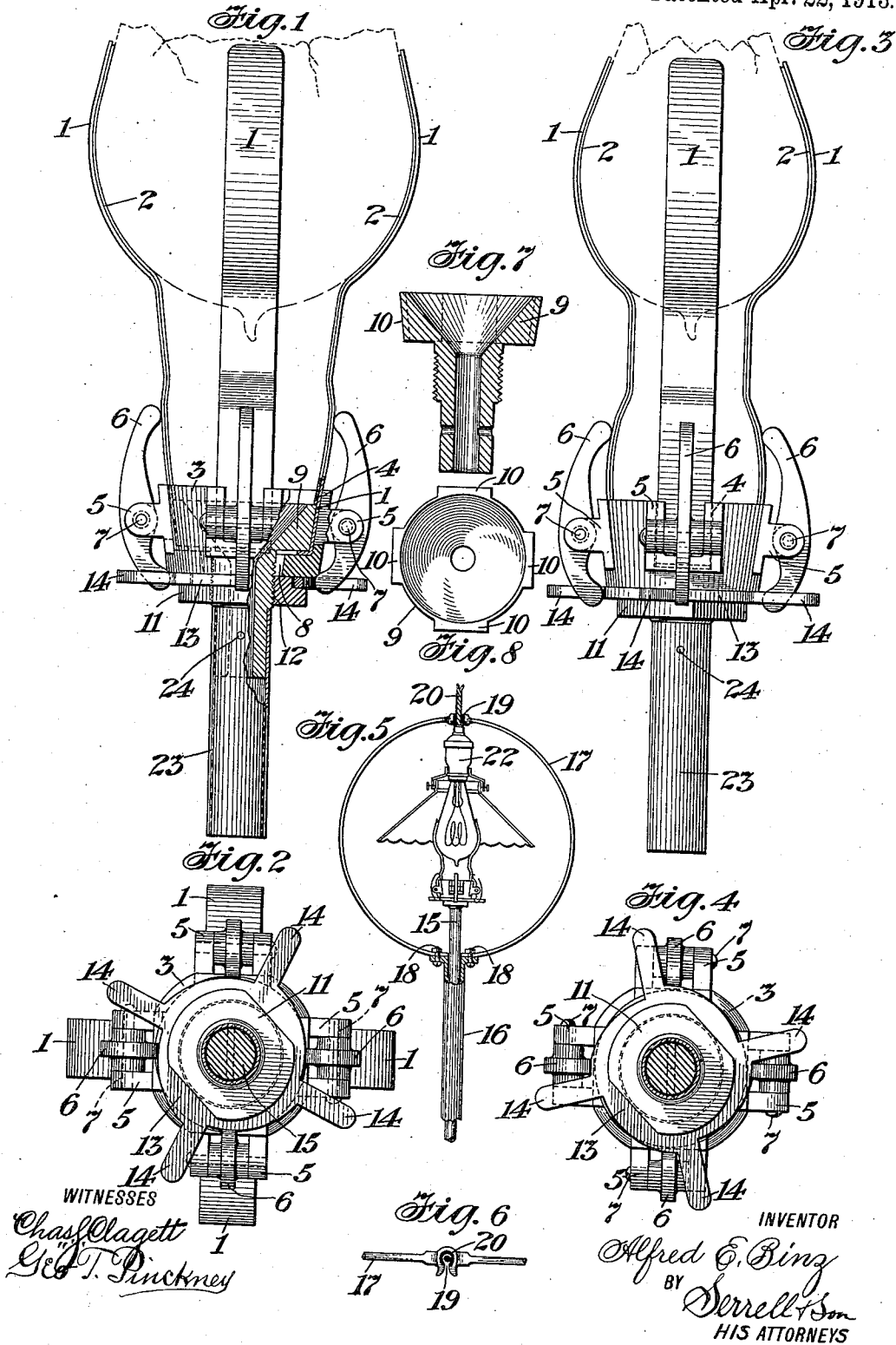


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 INCANDESCENT LAMP MANIPULATOR.
 APPLICATION FILED DEC. 31, 1912.

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UNITED STATES PATENT OFFICE.

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INCANDESCENT-LAMP MANIPULATOR.

1,059,705.

Specification of Letters Patent.

Patented Apr. 22, 1913.

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To all whom it may concern:

Be it known that I, ALFRED E. BINZ, a citizen of the United States, residing at Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Incandescent-Lamp Manipulators, of which the following is a specification.

My invention relates to improvements in devices for removing and inserting incandescent-lamps of varying sizes, where the sockets are located out of reach of the operator by hand; and it is particularly adapted for use in handling lamps which are suspended by the conductor wires and which require that the socket be held steady when a lamp is removed or inserted.

An important feature of my invention is the adjustability of the gripping fingers and binding the same in any adjusted position, so as to render the device capable of handling lamps of various dimensions and shapes.

In the accompanying drawings Figure 1 is an elevation partly in broken section showing the device in position for use upon lamps of large size. Fig. 2 is a bottom plan view of the device in the position shown in Fig. 1, the handle and its surrounding tube being shown in cross section. Fig. 3 is an elevation of the device in position for use upon lamps of small size. Fig. 4 is a bottom plan view of the device in the position shown in Fig. 3, the handle and its surrounding tube being in cross section. Fig. 5 is an elevation showing the application of the device to swinging or suspended lamps. Fig. 6 is a plan view of the top of the yoke detached and broken away at its sides illustrating the notch or recess in which the conductor wires may be passed. Fig. 7 is a central vertical section of the center-piece detached, and Fig. 8 is a plan view of the same.

Similar reference characters indicate like parts throughout the several views.

1 represents spaced apart gripping fingers. These fingers are preferably flat spring

metal, and their inner surfaces are covered with soft material 2, such for instance as kid or leather.

3 indicates a holder, preferably of substantially circular exterior formation and cup shaped interiorly. The inner surface of the holder 3 is provided with spaced recesses 4 adapted to receive the lower parts of the gripping fingers 1. On the outer surface of the holder 3 at the rear of each recess 4 are bifurcated lugs 5 and between these lugs are pivotally secured levers 6 by means of pivot pins 7. In the bottom of the holder 3 there is a central opening 8.

9 indicates a center-piece provided with spaced squared projections 10 on the outer surface of its upper part adapted to fit into the recesses 4 in the holder 3. The center-piece 9 is undercut and rounded immediately below the projections 10 so that the center-piece rests upon the bottom of the holder 3 while its rounded shank extends through the central opening 8 in the bottom of the holder.

That portion of the outer surface of the center-piece 9 which comes within the opening 8 in the holder, is smooth and corresponds with the inner surface of the opening; and immediately below the opening 8 the outer surface of the rounded shank of the center-piece is provided with a screw-thread 12 for a predetermined distance, below which screw-threaded portion the surface is round and smooth to its lower end.

11 is a nut adapted to screw upon the screw-threaded portion 12 of the center-piece 9. This nut has a smooth and round outer surface extending through a central opening in a ring shaped eccentric cam 13, and said nut is flanged on its lower extremity so that when screwed to place, it holds the said cam 13 between its flanged edge and the under surface of the bottom of the holder 3 and provides a double bearing for said cam ring when rotated. The cam ring 13 is provided with spaced projections 14 which are adapted to be grasped by the oper-

ator in rotating the ring, and between these projections the cam 13 has like peripheral eccentricities.

The lower ends of the pivoted levers 6 rest against the periphery of the cam ring 13 between the projections 14, while the upper ends of the levers 6 bear against the respective gripper fingers 1, and it will thus be readily seen that by turning the cam ring 13 in one direction, the lower ends of the levers 6 bearing against its eccentric periphery will be forced outward, thus throwing their upper ends forward and pressing the upper ends of the gripping fingers 1 inward toward each other; and that by turning the cam 13 in the opposite direction the action of the levers will permit the spring fingers to move backward or away from each other at their upper ends, and that by these means the gripping fingers may be set for use upon lamps of various sizes.

Gripping fingers of different lengths and shapes may of course be used in the holder, and in cases where the bulb of the lamp is broken, the base of the lamp may be unscrewed from the socket by employing gripping fingers of the proper character.

By means of the combined action of the eccentric cam 13 and levers 6, the gripping fingers 1 are locked in any position they may be set until released by turning the cam.

In operating my invention the gripping fingers are set for use upon a certain size of lamp and then when it is desired to remove a lamp of that size on a rigid support the fingers are simply pressed over the bulb which they grip with sufficient firmness to allow the lamp to be unscrewed from its socket, by simply turning the handle 15 in the proper direction; and when it is desired to insert a lamp, the bulb is simply pressed between the gripping fingers and raised to place where it is screwed into the socket by turning the handle 15 in the right direction, and when this is done, the fingers are drawn from the bulb by a slight pull upon the handle 15.

The soft material 2, covering the inner faces of the fingers 1 prevent injury to the glass bulbs and also prevent the fingers slipping when turned with a bulb between them.

In order that my invention may be used upon swinging lamps, or those supported by the conductor wires, equally as well as upon fixed lamps, I provide an outer tube 16 into which the handle 15 slidably fits, and to the upper end of this tube 16 I secure a yoke 17 adapted to be passed over a lamp shade and hold the fixture steady while a lamp is either being removed or inserted. This yoke 17 consists of a bowed member, the ends of which are secured to the top of the tube 16 at opposite sides by bolts 18 or in any suitable manner. In the top of this yoke at the

center part a notch or recess 19 preferably of "key-hole" shape is provided, into which the conductor wires 20 pass when the yoke is passed over the shade 21 and then by pulling down upon the tube 16, with one hand the yoke 17 is drawn down upon the top of the lamp socket 22 whereby it may be held steady, while a lamp is either being inserted or removed by operating the handle 15 with the other hand. It is preferred to cover the inside of the recess 19 and also the under surface of the yoke 17 at this point, with an insulating material.

The inner portion of the upper part of the center-piece 9 is preferably cup-shaped, which not only lessens its weight, but also adapts it to receive the end of a bulb where the device is used upon lamps of such a size or shape that might bring the end of the bulb in contact with the upper surface of the center-piece were it solid at that point.

23 is a tube forming a receptacle for the upper section of the handle 15. This tube 23 fits over the smooth rounded lower portion of the shank of the center-piece 9, and is secured thereto by a pin 24 or by any suitable means.

The extreme lower ends of the gripping fingers 1 may be bent inward at right angles so as to come between the upper surface of the bottom of the holder 3 and the undercut portion of the center-piece 9 as shown in the sectional part of Fig. 1, whereby these fingers will be more firmly held in place. The handle 15 may be of any length desired.

I claim as my invention:

1. In a device for manipulating incandescent lamps, and in combination, gripping fingers, a holder provided with spaced recesses receiving the lower part of said fingers and having a central opening in its bottom, a center-piece within said holder bearing against said fingers and having an undercut portion resting upon the upper surface of the bottom of the holder and a rounded portion extending through the opening in the bottom of the holder, a part of said rounded portion being provided with a screw-thread and its lower part smooth, levers pivotally connected to the holder, a rotatable eccentric cam acting upon said levers, and a nut adapted to screw upon the screw-threaded portion of the center-piece and retain the parts in their operative positions.

2. In a device for manipulating incandescent lamps, and in combination, gripping fingers, a holder provided with spaced recesses receiving the lower part of said fingers and having a central opening in its bottom, a center-piece within said holder bearing against said fingers and having an undercut portion resting upon the upper surface of the bottom of the holder and a

rounded portion extending through the opening in the bottom of the holder, a part of said rounded portion being provided with a screw-thread and its lower part smooth, 5 levers pivotally connected to the holder, a rotatable eccentric cam acting upon said levers, a nut adapted to screw upon the screw-threaded portion of the center-piece and retain the parts in their operative positions, and a handle attached to the smooth 10 portion at the lower part of the center-piece.

Signed by me this 27th day of December, 1912.

ALFRED E. BINZ.

Witnesses:

BERTHA M. ALLEN,
GEO. T. PINCKNEY.

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