No. 869,836. PATENTED OCT. 29, 1907.

J. GAYNOR.

GLOBE MANIPULATOR.

APPLICATION FILED FEB. 15, 1907.

Fig. 1.

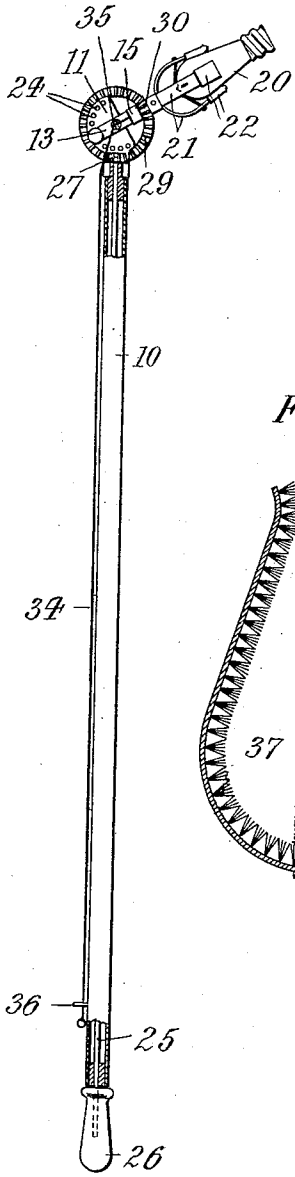


Fig. 2.

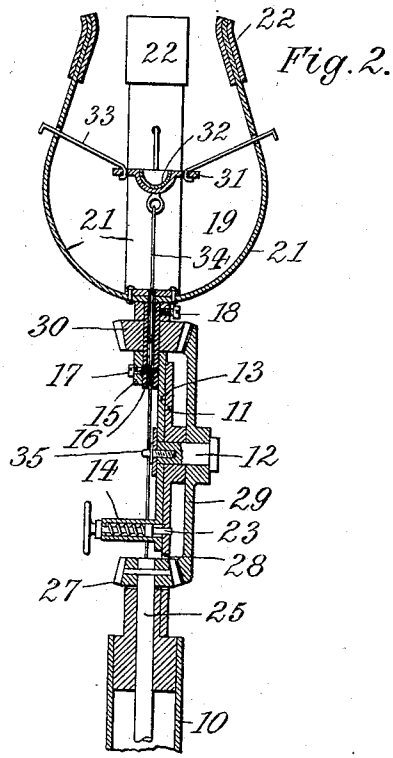


Fig. 4.

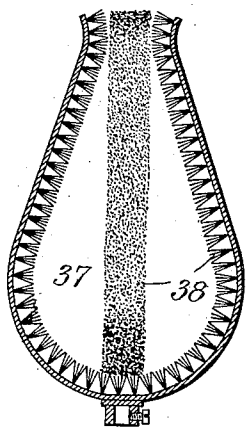
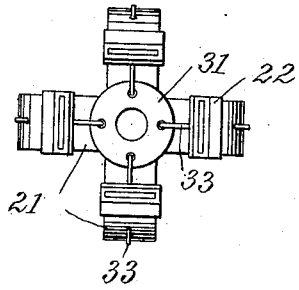


Fig. 3.



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UNITED STATES PATENT OFFICE.

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GLOBE-MANIPULATOR.

No. 869,836. Specification of Letters Patent. Patented Oct. 29, 1907.

Application filed February 15, 1907. Serial No. 357,470.

To all whom it may concern:

Be it known that I, JOSEPH GAYNOR, a citizen of the United States, residing at New York city, county and State of New York, have invented new and useful Improvements in Globe-Manipulators, of which the following is a specification.

This invention relates to an apparatus for rotating electric light bulbs located at inaccessible places or at a distance from the operator with a view of screwing them into their sockets or removing them therefrom.

The apparatus is so constructed that the clasp which engages the bulb may be first set and locked to its handle at any angle desired, and may be rotated by means independent of the handle after being thus set and locked. In this way the screwing and unscrewing manipulation is greatly facilitated and any breakage of the bulb, owing to any uncontrolled movement after being released from its socket, is prevented.

In the accompanying drawing: Figure 1 is a side view, partly in section, of my improved globe manipulator; Fig. 2 is a detail longitudinal section of the clasp and adjoining parts; Fig. 3 a top view of the clasp, and Fig. 4 a detail longitudinal section of the brush-attachment.

To the upper end of a tubular hand-rod 10 is rigidly affixed a plate or frame 11, shown to be made of segmental form. Over one face of plate 11, turns on a fixed pivot 12, a two-arm lever 13, provided at one end with a tubular stem 14, and at the other end with a bearing 15. This bearing receives a shaft 16, rotatably held thereto by a set screw 17 that passes through the bearing and engages a circumferential groove of the shaft. Upon shaft 16 there is removably mounted by screw 18, a clasp 19 adapted to grasp an electric light bulb 20. Clasp 19 is preferably composed of a number of resilient fingers 21, which are padded at their upper ends as at 22. Through tubular stem 14 extends a spring-influenced locking pin 23, adapted to engage either one of a number of circumferential perforations or indentations 24 of plate 11. By the means described, lever 13, and consequently clasp 19, may be freely turned on pivot 12 and locked at any desired angle to rod 10. In this way the device may be set to readily engage bulbs 20, mounted at various angles to the operator.

Through the rod 10 extends a spindle 25 carrying a handle 26 at its lower end, and a bevel gear wheel 27 at its upper end, such wheel being accommodated by a slot 28 of plate 11. Wheel 27 intergears with a wheel 29 turning on pivot 12, and separated from lever 13 by the intervening plate 11. Wheel 29, in turn, engages a bevel gear wheel 30 fast on shaft 16 of clasp 19. By rotating lever 13 on its pivot 12, such lever will be made to swing over the face of plate 11, and so revolve clasp 19 as to set it at whatever angle desired to rod 10. During such motion of the lever, wheel 30 will travel along wheel 29, and remain in permanent engagement therewith, at whatever final position may be selected for the clasp. It will thus be seen that after the clasp has been set and locked by lever 13 and pin 23, in the manner described, and has been projected over a bulb 20, it may be axially rotated, to turn the latter in either direction without turning hand rod 10, motion being transmitted from handle 26 to clasp 19, by spindle 25 and wheels 27, 29 and 30.

In order to provide a support for the tip of bulb 20, and to obtain means for contracting the fingers 21 around the latter, there is centered in clasp 19, a plate or cap 31, cushioned as at 32. Cap 31 is movably suspended within the clasp by means of arms 33 pivoted at their inner ends to the cap, and projecting with their headed outer ends through perforations of fingers 21. If clasp 19 is projected over a bulb 20, cap 31 will thus form a firm bearing or support for the bulb, which considerably facilitates the manipulation of the device. The cap moreover provides means for contracting the fingers 21 around the bulb in case an unusually firm grasp is desired. To this effect a string 34 extends from cap 31 through shaft 16 and through eyes 35, 36 of pivot 12 and rod 10 respectively, to the hand of the operator. A pull on this string will contract arms 33 and produce the desired contraction of fingers 21 and the consequent firmer grip on the bulb.

Clasp 19 may be removed from shaft 16 and replaced by a clasp 37 provided with brushes or similar cleaning or polishing devices 38 on its inner face (Fig. 4). This clasp 37 is fitted to the apparatus whenever inaccessible bulbs are to be cleaned or polished.

I claim:

1. A device of the character described, comprising a hollow hand rod, a plate carried thereby, a lever rotatable over the plate, means for locking the lever to the plate at different angles, an axially rotatable clasp secured to the lever, a first gear wheel carried by the clasp, a second gear wheel along which the first gear wheel is movable, a spindle rotatable within the rod, and means for operatively connecting said spindle to the second gear wheel, substantially as specified.

2. A device of the character described, comprising a rod, a clasp carried thereby, a plate movable within the clasp, and means for connecting said plate with the clasp, substantially as specified.

3. A device of the character described, comprising a rod, a perforated clasp carried thereby, a plate movable within the clasp, and headed arms pivoted to the plate and engaging the clasp-perforations, substantially as specified.

4. In an instrument for applying or removing electric lamp bulbs, the combination of two members adjustable to different angles in respect to one another, a shaft carried by each of said members, means for rotating one of said shafts, interposed bevel gears whereby movement can be transmitted from one shaft to the other in any position of adjustment of the latter, and bulb-clamping devices carried by the latter shaft.

5. In an instrument for applying or removing electric light bulbs, the combination of two members adjustable to different angles in respect to one another and each carrying a shaft, means for locking said members in their different positions of angular adjustment, means for rotating

one of said shafts, means for transmitting rotative movement from said shaft to the other in any position of adjustment of the latter, and bulb-clamping devices carried by the latter shaft.

6. In an instrument for applying or removing electric light bulbs, the combination of two members adjustable to different angles in respect to one another, a shaft carried by each member, means for rotating the shaft of one member, means for imparting rotative movement from said shaft to that carried by the other member, a bulb-clamping device on the latter shaft, and means mounted upon said shaft-carrying member for expanding and contracting said clamping device.

7. In an instrument for applying or removing electric lamp bulbs, the combination of two members adjustable to different angles in respect to one another and each carrying a shaft, means for rotating one of said shafts, means for imparting rotative movement therefrom to the other shaft in any of its positions of adjustment, and a bulb-clamping device carried by the latter shaft.

Signed by me at New York city, (Manhattan,) N. Y., this 14th day of February, 1907.

JOSEPH GAYNOR.

Witnesses:

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