O. RODRIGUEZ.

GLOBE MANIPULATOR.

APPLICATION FILED DEC. 8, 1917.

1,311,776.

Patented July 29, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

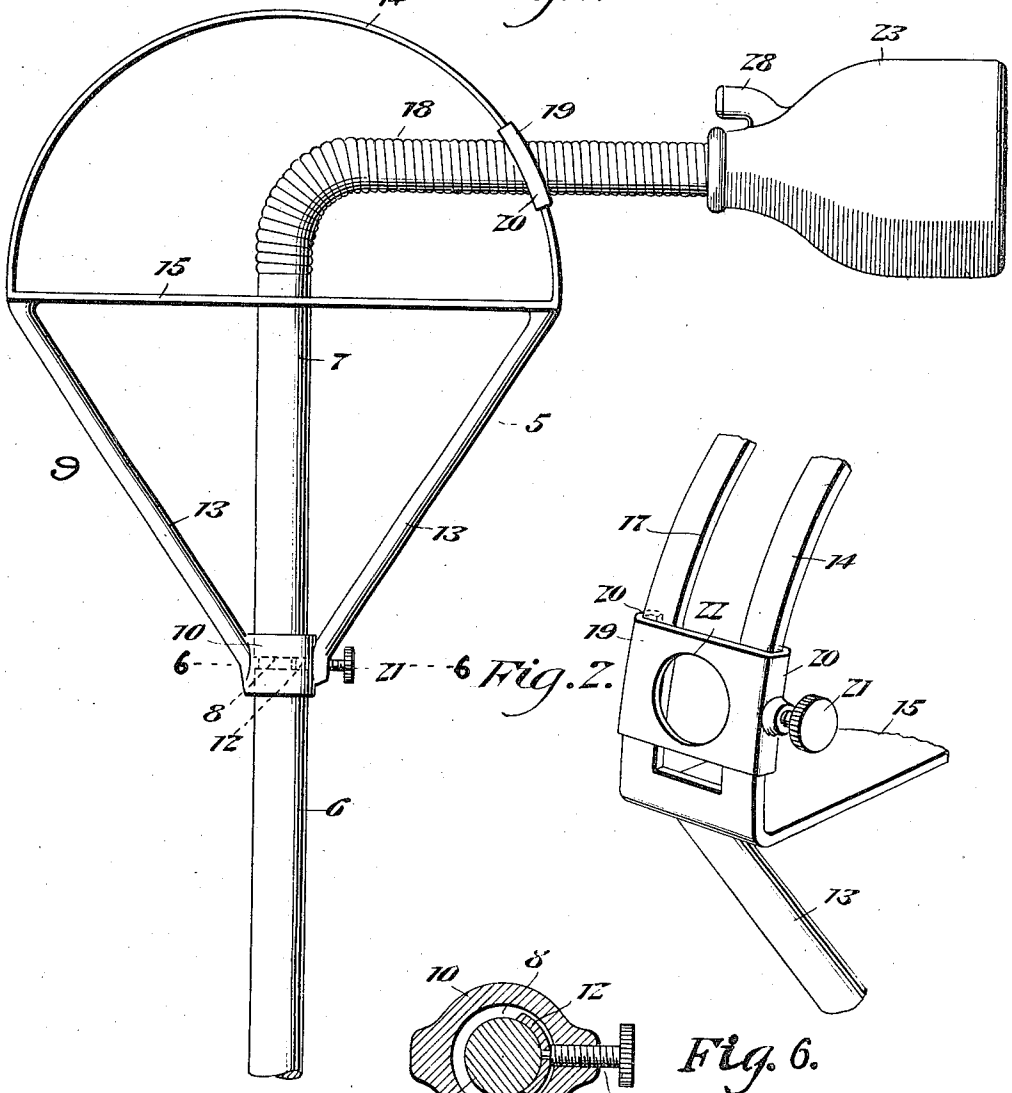



Fig. 2.







Fig. 6.

Witnesses

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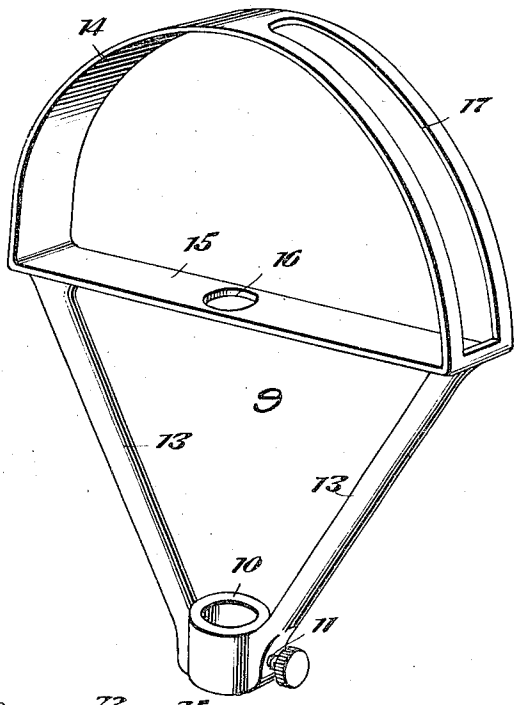
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2 SHEETS—SHEET 2.

Fig. 5.



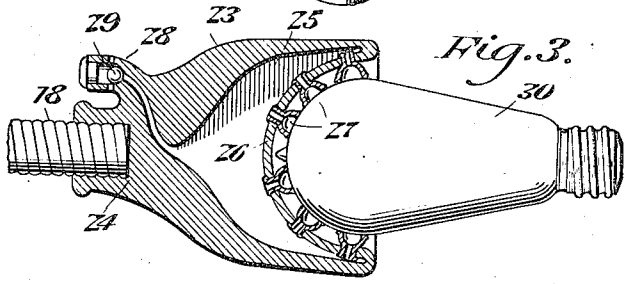




Fig. 3.

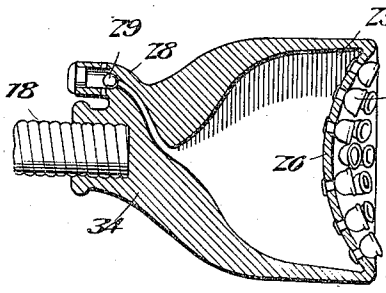



Fig. 4.

Witnesses

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# UNITED STATES PATENT OFFICE.

OSCAR RODRIGUEZ, OF NEW YORK, N. Y.

## GLOBE-MANIPULATOR.

1,311,776. Specification of Letters Patent. Patented July 29, 1919.

Application filed December 8, 1917. Serial No. 206,253.

*To all whom it may concern:*

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

This invention relates generally to globe manipulators and is primarily designed for connecting electric light bulbs to or releasing the same from ceiling and wall fixtures.

The primary object of the invention resides in the provision of a device of the above stated character so designed to enable the installation or removal of electric light-bulbs positioned either in ceiling or wall fixtures in an easy and efficient manner and without any liability of damaging or braking the bulb.

A further object of the invention, among the other features, contemplates the provision of a globe gripping member capable of adhering to the globe to not only hold the globe thereto, but further facilitates the globe being connected with or removed from the fixtures in an efficient and durable manner.

A still further object of the invention resides in the provision of means for adjustably holding the globe gripping member at various angles with respect to its support for convenience in the application of globes in wall fixtures, installed at points not convenient for the operator to reach.

Another object of the invention resides in the production of a flexible shaft for connecting the globe gripping member with the support, which not only tends to adapt the gripping member for various adjustments, but further serves to transmit movement to the globe gripping member after the globe has been screwed "home" to release the gripping member from the globe without any liability of marring or damaging the same.

With the above and other objects in view, the invention consists in the novel features, details of construction and combination of parts which will hereinafter be more fully set forth, illustrated in the accompanying drawings and pointed out in the appended claims.

Figure 1 is a side elevation of the manipulator constructed for use;

Fig. 2 is a detail perspective view illustrating the manner of connection of the frame with the support;

Fig. 3 is a longitudinal sectional view taken through the globe gripping member and showing a bulb associated therewith;

Fig. 4 is a view similar to Fig. 3 indicating the flexed position of the diaphragm by dotted lines;

Fig. 5 is a perspective view of the frame removed from the support; and

Fig. 6 is a section taken on the line 6—6 of Fig. 1.

Referring more particularly to the accompanying drawing, the manipulator as its entirety is denoted by the character 5 comprising a support 6 adapted to be utilized as a handle for lifting or conveying the manipulator from place to place and substantially circular in cross section, having provided therein at a point adjacent its upper end 7 an annular groove 8. The character 9 denotes a skeleton frame provided at its base with a tubular collar 10 in which is threaded a fastener 11 and upon the adjustment of the fastener in one direction the contact 12 will embrace and be seated in the annular groove 8 of the support and mount the frame thereon for loose rotary movement. Diverging from the collar 10 at diametric points are the limbs of the frame, indicated by the character 13, and having formed integral therewith at their upper ends, a yoke 14 curved on the arc of a circle. Formed integral with the frame at the point of intersection of the yoke with the limbs is a transverse reinforcing member 15 provided with a centrally located opening 16 alining vertically with the collar 10 and through which the upper end 7 of the support projects, for a purpose to be hereinafter more fully stated. The yoke 14 is provided with an arcuate guide slot 17 in which the flexible shaft 18 operates which shaft has a seal tight connection at its inner end with the extreme upper end of the support 6 at a point above the reinforcement 15. Movably mounted over the yoke 14 is a locking member 19 preferably constructed of metal and provided at its opposite ends with U-shaped guides 20 engaging over the opposite ends of the yoke 14, for slidably associating the locking member therewith, and threadedly mounted in one of the guide flanges is a fastener 21 adapted to contact with one of

the side edges of the yoke and establish a locking action of the locking member 19 with the yoke. Centrally formed in the locking member and in registry with the slot 17 of the frame is an opening 22 through which the shaft projects. Consequently it is manifest, that the adjustment of the locking member 19 in the arc of a circle, will flex the shaft 18 and retain the shaft at an angle with respect to the support 6, upon the tightening of the fastener 21 with the yoke 14. This action is advantageous, more especially, when it is desired to utilize the manipulator for the connection or disconnection of electric light bulbs from side wall fixtures.

23 denotes a globe gripping member preferably constructed of rubber or the like compressible material and provided in the lower end thereof with a contracted throat 24 in which the free end of the flexible shaft 18 is inserted in such a manner as to establish a seal tight connection between the gripping member and this shaft. Provided in the outer end of the gripping member is a vacuum chamber 25 and the material forming the walls of this chamber gradually decreases in thickness from the throat 24 to the outer end thereof and thence is inturned to provide in the extreme outer end of the chamber a spaced flexible diaphragm 26, on which is supported a plurality of suction cups 27. Formed on one side of the gripping member 23 at a point adjacent the throat 24 is a nipple 28 having supported therein a check valve 29 which permits the air to escape from the vacuum chamber upon the compression of the diaphragm 26 when placed in contact with the globes or bulbs 30. After the compression of the diaphragm when, the air has escaped through the nipple 28 the check valve 29 will automatically close, causing the diaphragm 26 to snugly adhere to the globe 30, through the provision of the suction cups 27, and maintaining sufficient gripping action to the bulb to facilitate a complete connection or disconnection of the bulb with or from either ceiling or wall fixtures. Assuming the gripping member to be adjusted in the position shown in Fig. 1, that is, adapted for fixtures installed on the side walls of dwellings, buildings or the like places, after the bulb 30 has been screwed "home", the release of the gripping member from the bulb may be had without any liability of damaging or breaking the same. By imparting a further rotary movement to the support 6, the flexible shaft 18 will transmit movement to the gripping member 23 sufficiently to release its adhering gripping action with the bulb. Obviously, the manipulator is capable of the identical operation, whether the device is employed for ceiling or wall lights.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of construction and the method of operation will be readily apparent to these skilled in the art to which the invention relates, and while I have described the principles of operation of the invention together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made when desired as are within the scope of the appended claims.

What is claimed as new, is:—

1. A manipulator for fragile articles embodying a support, and a compressible member provided with a series of suction cups having connection with the support and with which the article engages.

2. A manipulator for globes comprising a support, a gripping member therefor, said gripping member being provided in one end with a series of suction cups, and a valve in the opposite extreme end of said gripping member.

3. A manipulator for globes comprising a support, a gripping member therefor, said gripping member being provided with a flexible diaphragm, and a series of suction cups carried by said diaphragm.

4. A manipulator embodying a support, a gripping member carried by said support, a vacuum chamber formed in one end of the gripping member, the material forming the walls of said chamber gradually decreasing in thickness to provide therein a flexible diaphragm, and a plurality of suction cups mounted on said diaphragm.

5. A manipulator comprising a support, a gripping member therefor, a flexible shaft connected at one end with the support and at its opposite end with said gripping member, a slotted frame carried by the support and through which one end of said shaft projects, and a locking member slidable on said frame for holding the gripping member in various adjusted positions.

6. A manipulator comprising a support, a gripping member therefor, a flexible shaft for connecting the gripping member with said support, a slotted yoke carried by the support through which the shaft projects and operates, and an apertured locking member slidably mounted on said yoke, a portion of the shaft projecting through the aperture of said locking member.

7. A manipulator for fragile articles comprising a support, a gripping member having connection therewith and provided with a vacuum chamber having an outlet opening out at one side thereof, and a check valve for controlling said outlet.

8. A manipulator for fragile articles comprising a support, a gripping member having connection with said support and pro-

vided in its outer end with a chamber, and a flexible diaphragm obstructing the receiving end of said chamber and with which the fragile article engages.

9. A manipulator for fragile articles comprising a support, a gripping member having connection with said support and provided in its outer end with a chamber, and a diaphragm formed contiguous with the walls of the chamber, said diaphragm being positioned within said chamber and in spaced relation with the walls thereof and with which the fragile article engages.

In testimony whereof I affix my signature.

OSCAR RODRIGUEZ.