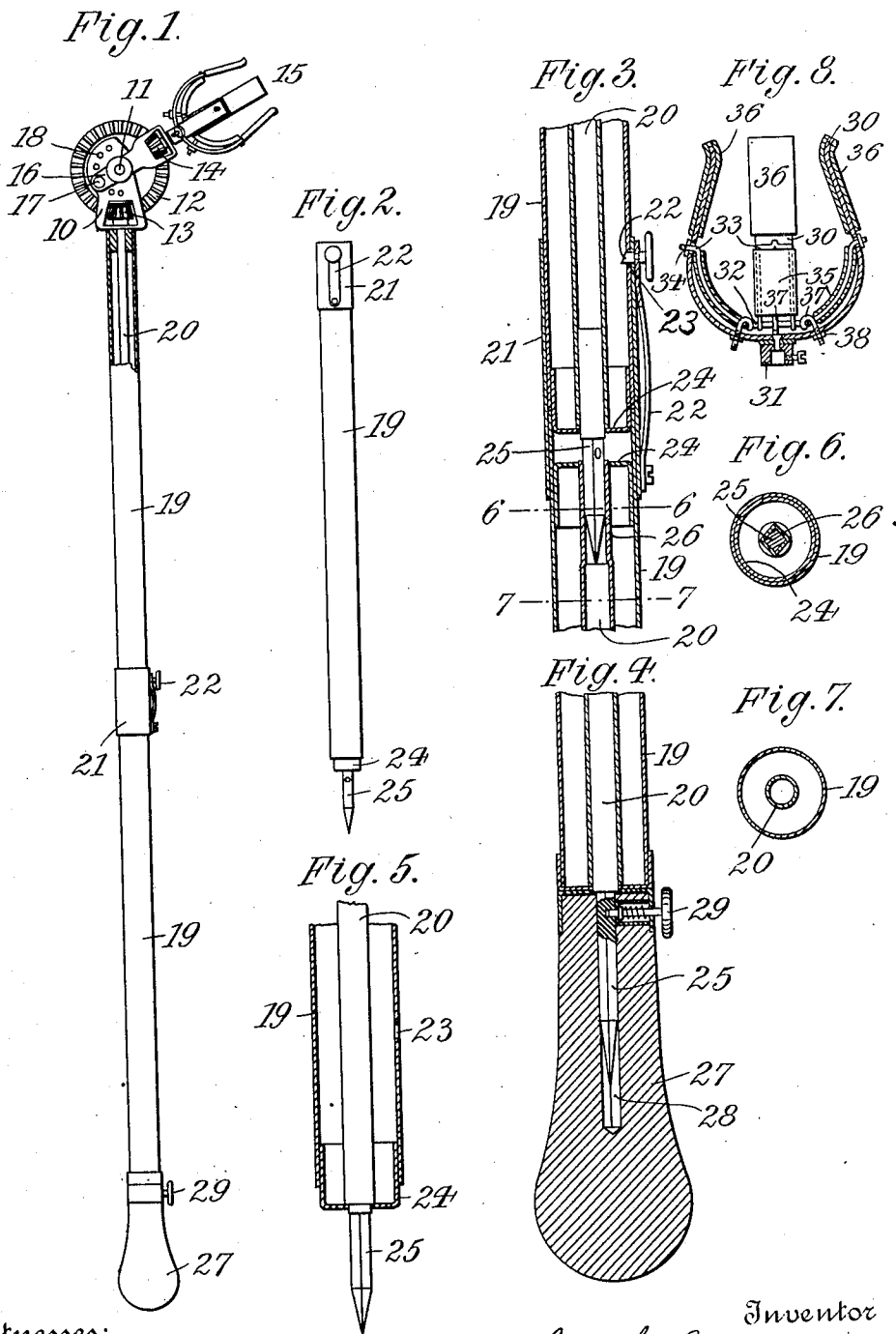


J. GAYNOR.
GLOBE MANIPULATOR.
APPLICATION FILED MAY 6, 1908.



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UNITED STATES PATENT OFFICE.

JOSEPH GAYNOR, OF NEW YORK, N. Y.

GLOBE-MANIPULATOR.

No. 895,625.

Specification of Letters Patent.

Patented Aug. 11, 1908.

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To all whom it may concern:

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

This invention relates to a globe manipulator of the class described in Patent No. 869,836, issued to me October 29, 1907.

The object of the present invention is more particularly to provide a ready adjustment of the manipulator to varying distances between the operator and the globe to be turned.

A further object is to so construct the clasp that it will obtain a firm hold upon the globe during the screwing and unscrewing operation.

In the accompanying drawing: Figure 1 is a front elevation, partly in section, of a globe manipulator embodying my invention; Fig. 2 a side view of one of the removable stem-sections; Fig. 3 a detail of the coupling between two adjoining stem-sections; Fig. 4 a similar view of the handle coupling; Fig. 5 a detail of the lower end of one of the stem-sections; Fig. 6 a cross section on line 6—6, Fig. 3; Fig. 7 a cross section on line 7—7, Fig. 3; and Fig. 8 a longitudinal section through the clasp.

Briefly stated, the globe manipulator, as more fully described in the patent hereinabove referred to, consists of a stem carrying a frame 10 to which is pivoted at 11 a toothed wheel 12 which may be rotated by an inter-gearing wheel 13 operable by means of a spindle turning in the stem. Wheel 12 imparts rotary motion by wheel 14 to the clasp 15 that is adapted to grasp the globe to be manipulated. Clasp 15, together with its wheel 14, turns in an arm 16 that may be set at various angles by means of a pin 17 engaging either one of a number of openings 18 formed in frame 10. After the clasp has been set to the angle desired, it is rotated through wheels 13, 12, 14 to couple or uncouple the bulb.

In practice, the light bulbs are located at varying heights above the floor and consequently at varying distances from the operator, so that it is desirable to provide means for readily adjusting the reach of the instrument. To effect this adjustment the stem is composed of a suitable number of separa-

ble sections which are adapted to be coupled to each other so that by removing or adding a suitable number of sections, the aggregate length of the stem may be varied. Each section is composed of a tubular rod 19 within which is rotatable a spindle 20. The rod 19 of the uppermost section carries the frame 10, while the spindle of such section carries the wheel 13. All the other stem-sections are provided at their upper end with upwardly extending tubular sleeves 21 adapted to receive the lower ends of the adjoining sections. A spring-catch 22 mounted on sleeve 21 and adapted to engage a perforation 23 of the stem-section telescoped by the sleeve, serves to removably connect the adjoining stem-sections to each other.

The spindles of the various stem-sections are so constructed that when the latter are coupled, the spindles will also become automatically coupled so that the rotating movement imparted by the operator to the lowermost spindle is transmitted to the uppermost spindle and consequently to the clasp 15. To accomplish this result, each spindle is provided with a lower squared section adapted to be received within a correspondingly squared socket formed in the upper end of the spindle next below. As shown, each spindle 20 is rotatably centered within tubular rod 19 by bearings 24, and is made hollow for the purpose of reducing its weight. Into the lower end of spindle 20 is tightly fitted a pin 25 projecting below rod 19 and made of angular form throughout its exposed end. Pin 25 is adapted to be received by a squared socket 26 formed at the upper end of the adjoining stem section, so that when the sections are coupled by means of the sleeves 21, the spindles will become simultaneously coupled. To rotate the sectional spindle, constructed as described, there is provided a handle 27 having a squared bore 28 for the reception of the pin 25 of the lowermost stem-section. Handle 27 is removably attached to this pin by a spring catch 29, so that as the stem is held with one hand and the handle is turned with the other hand, the desired rotating movement is imparted to clasp 15.

It will be seen that by the construction described, any suitable number of stem-sections may be attached to each other, so as to readily vary the aggregate length of the tool. Furthermore, the coupling means are such that the necessary rigidity between adjoining

stem-sections is obtained, while the necessary co-action between adjoining spindle-sections is insured.

Clasp 15 is composed of a suitable number
 5 of resilient jaws 30 fast on a hub 31. Near
 their base the jaws inclose a ring 32 grasped
 by the lower ends of frames 33, the upper
 ends of which are connected to jaws 30 at a
 suitable distance below their top, as at 34.
 10 Frames 33 are surrounded by soft rubber
 pads 35, while the upper ends of the jaws,
 above such pads, are surrounded by anti-friction
 caps 36 made of harder rubber. These
 caps permit the clasp to be readily slipped
 15 over a bulb without breaking the same, while
 the soft rubber pads will obtain a firm hold on
 the bulb after the clasp has become seated.
 In this way any slipping of the clasp around
 the bulb, during the rotation of the latter, is
 20 prevented. To permit the clasp to be set to
 bulbs of different sizes, ring 32 is engaged by
 hooks 37 passing through jaws 30 and carrying
 nuts 38 on their outer threaded ends.
 By manipulating these nuts, ring 32 may be
 25 drawn down to contract jaws 30 by frames
 33, and thereby reduce the diameter of the
 clasp to the desired extent.

I claim:

1. A device of the character described,
 30 comprising a series of tubular rods, inclosed
 rotatable spindles, means for coupling the
 rods, means for simultaneously coupling the
 spindles, and a clasp operatively connected
 to one of said spindles, substantially as speci-
 35 fied.

2. A device of the character described,
 comprising a pair of tubular rods, a first
 spindle rotatable in the first rod and having a
 projecting angular end, a second spindle ro-
 40 tatable in the second rod and having a
 squared socket adapted to receive said end,

and a clasp operatively connected to one of
 said spindles, substantially as specified.

3. A device of the character described,
 comprising a pair of tubular rods, a first 45
 spindle rotatable in the first rod and having a
 projecting angular end, a second spindle ro-
 tatable in the second rod and having a
 squared socket adapted to receive said end,
 a clasp operatively connected to one of said 50
 spindles, and a handle adapted to be oper-
 ably connected to the other spindle, substan-
 tially as specified.

4. A device of the character described,
 comprising a series of tubular rods, inclosed 55
 bearings, spindles rotatable therein, means
 for coupling the rods, means for simulta-
 neously coupling the spindles, and a clasp
 operatively connected to one of said spindles,
 substantially as specified. 60

5. A device of the character described,
 comprising a clasp having spring jaws, soft
 rubber pads at the lower ends of said jaws,
 and anti-friction pads at the upper ends
 thereof, substantially as specified. 65

6. A device of the character described,
 comprising a clasp having spring jaws, a ring
 inclosed thereby, frames connected to said
 jaws and to the ring, and pads mounted on
 the frames, substantially as specified. 70

7. A device of the character described,
 comprising a clasp having spring jaws, a ring
 inclosed thereby, frames connected to said
 jaws and to the ring, pads mounted on the
 frames, and means for adjusting the ring, 75
 substantially as specified.

Signed by me at New York city, (Manhat-
 tan,) N. Y., this 5th day of May, 1908.

JOSEPH GAYNOR.

Witnesses:

W. R. SCHULZ,
 FRANK V. BRIESEN.