

No. 741,119.

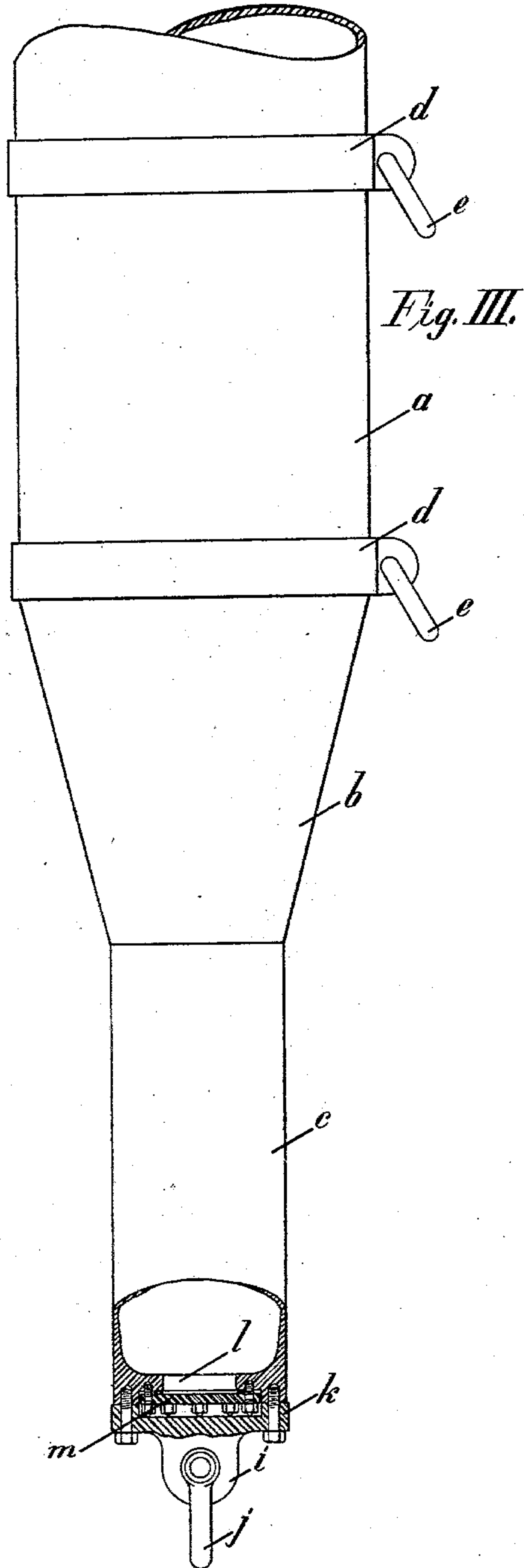
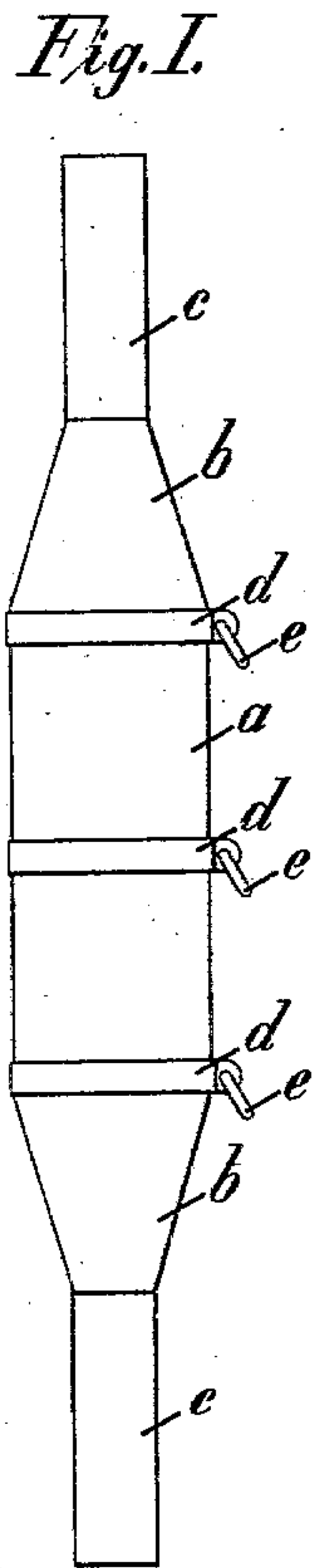
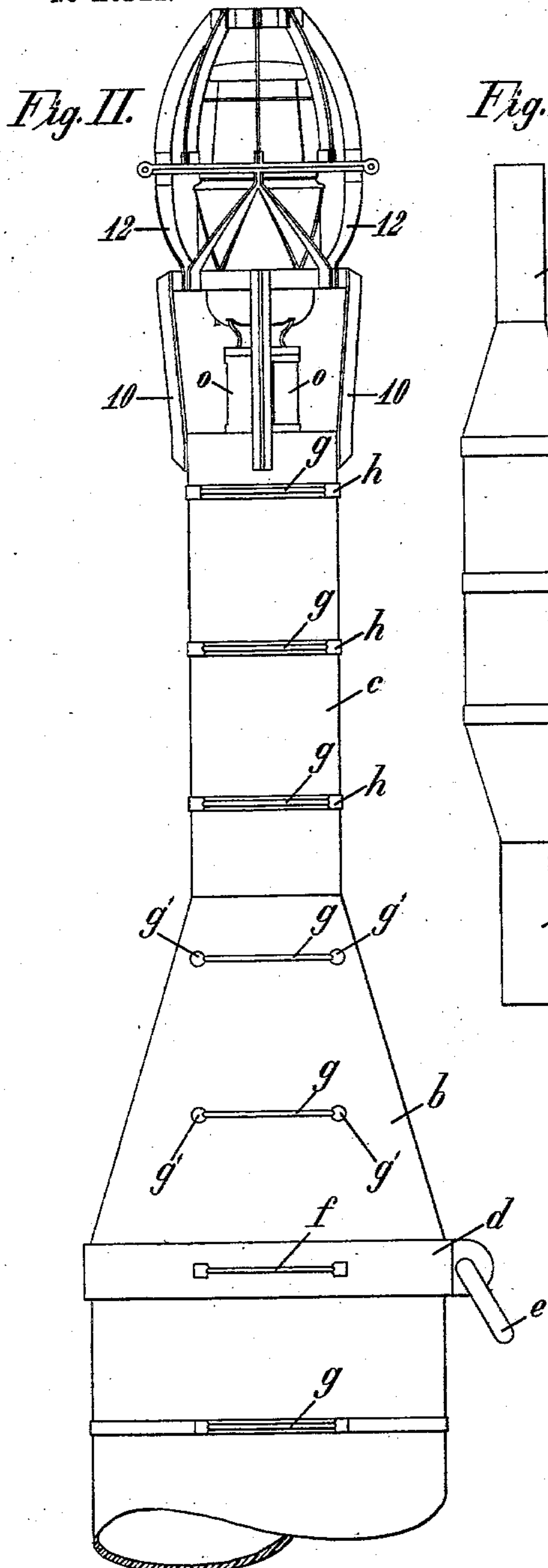
PATENTED OCT. 13, 1903.

R. M. DIXON.
GAS BUOY.

APPLICATION FILED APR. 16, 1902.

2 SHEETS—SHEET 1.

NO MODEL.



WITNESSES:

E. J. Schroeder Jr.
Edward H. Hump

INVENTOR

Robert M. Dixon

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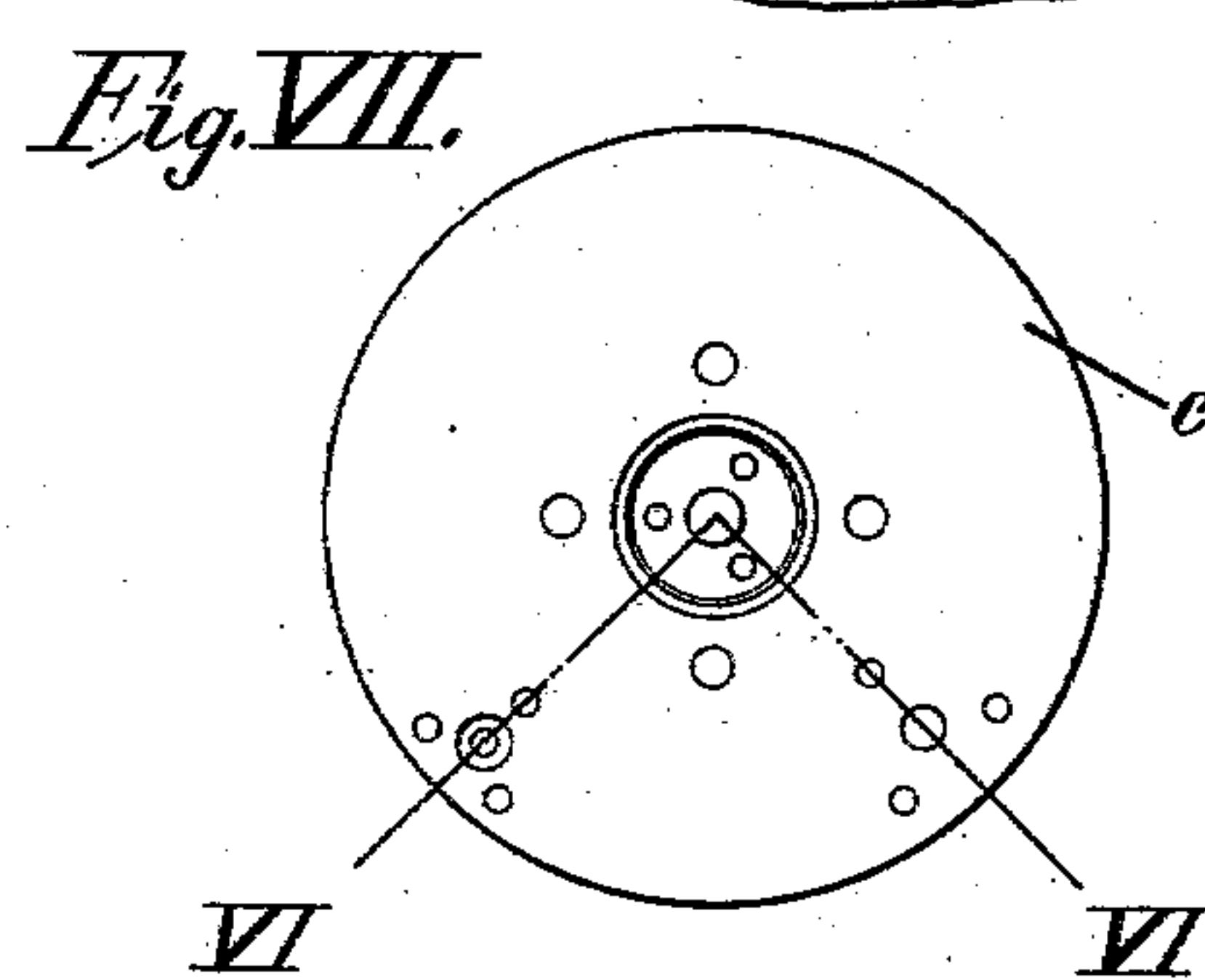
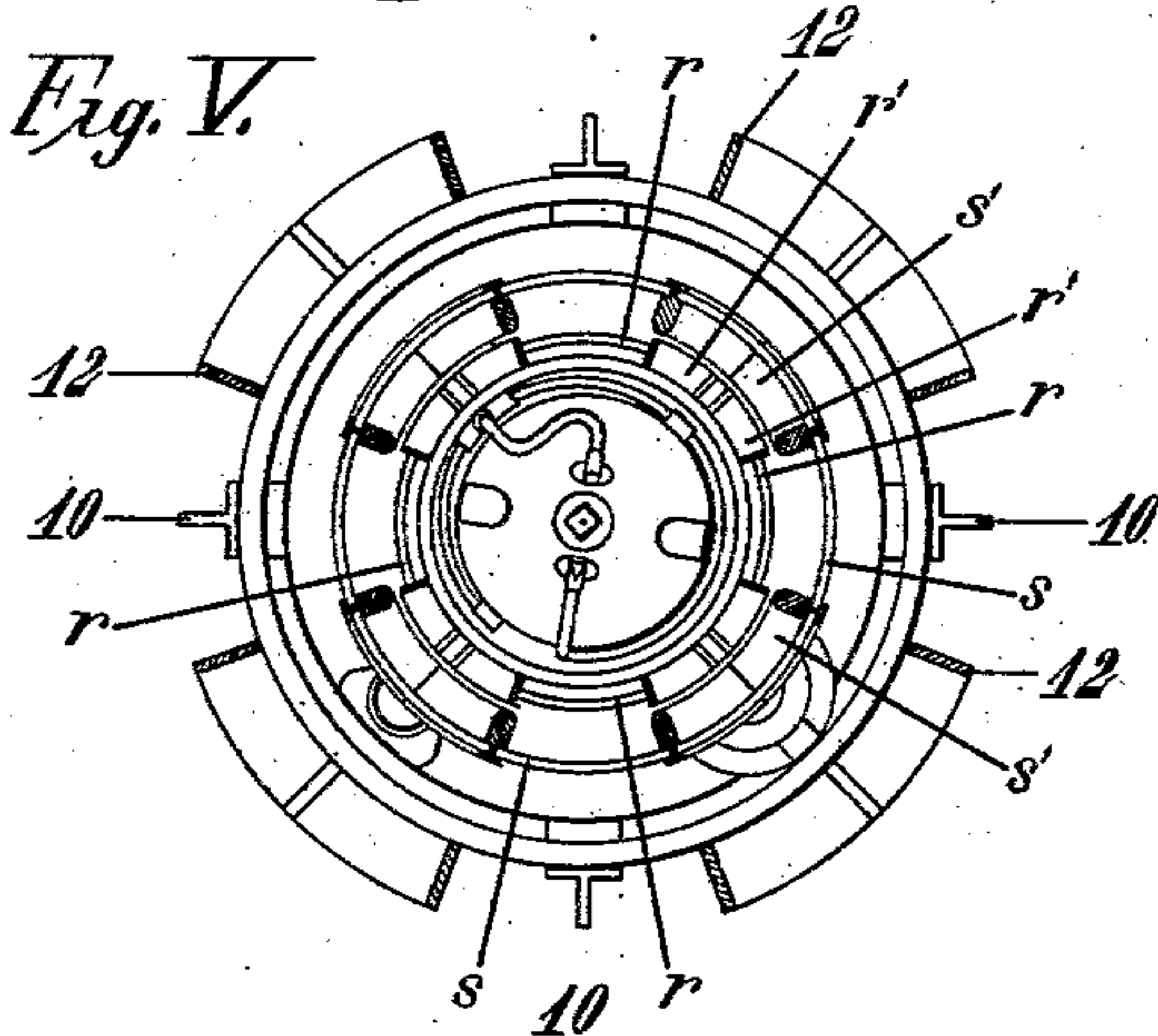
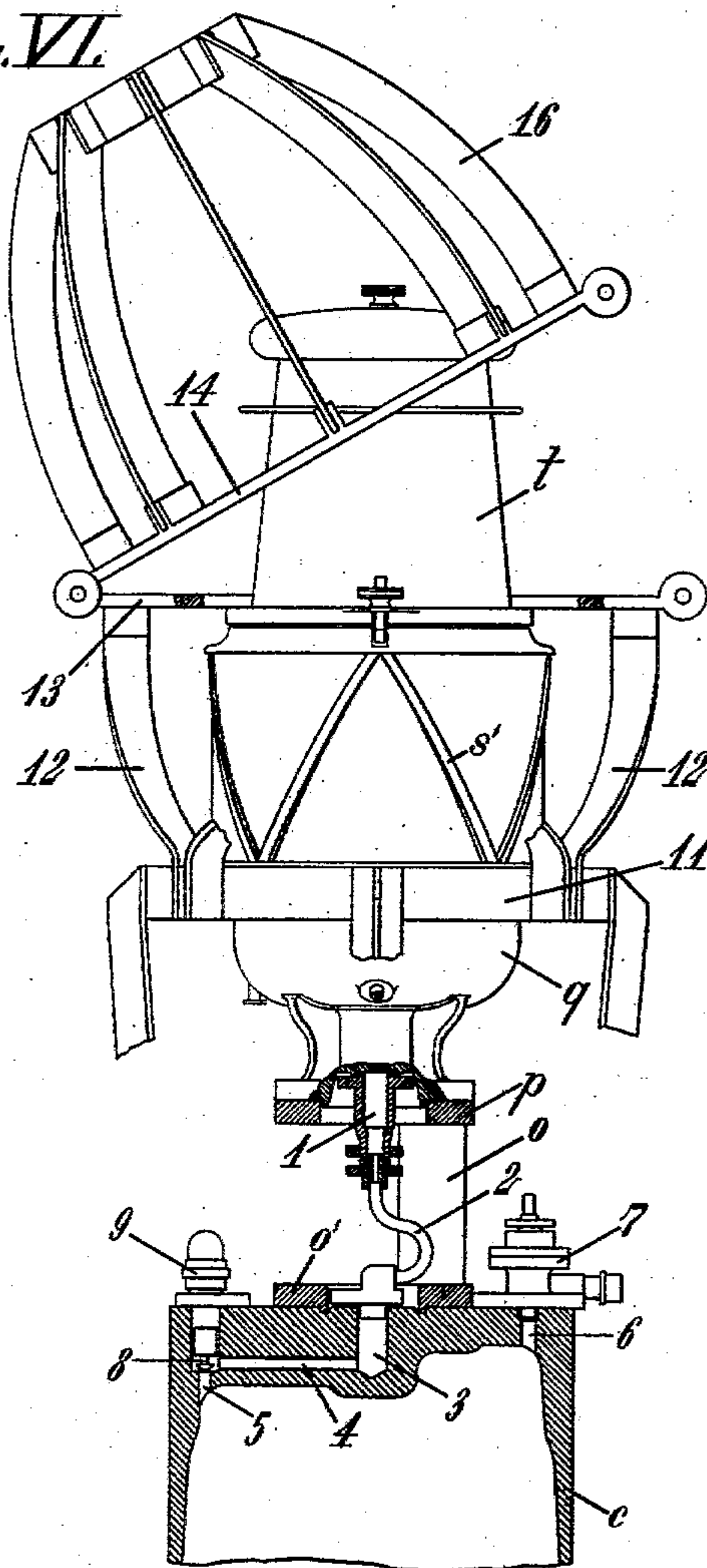
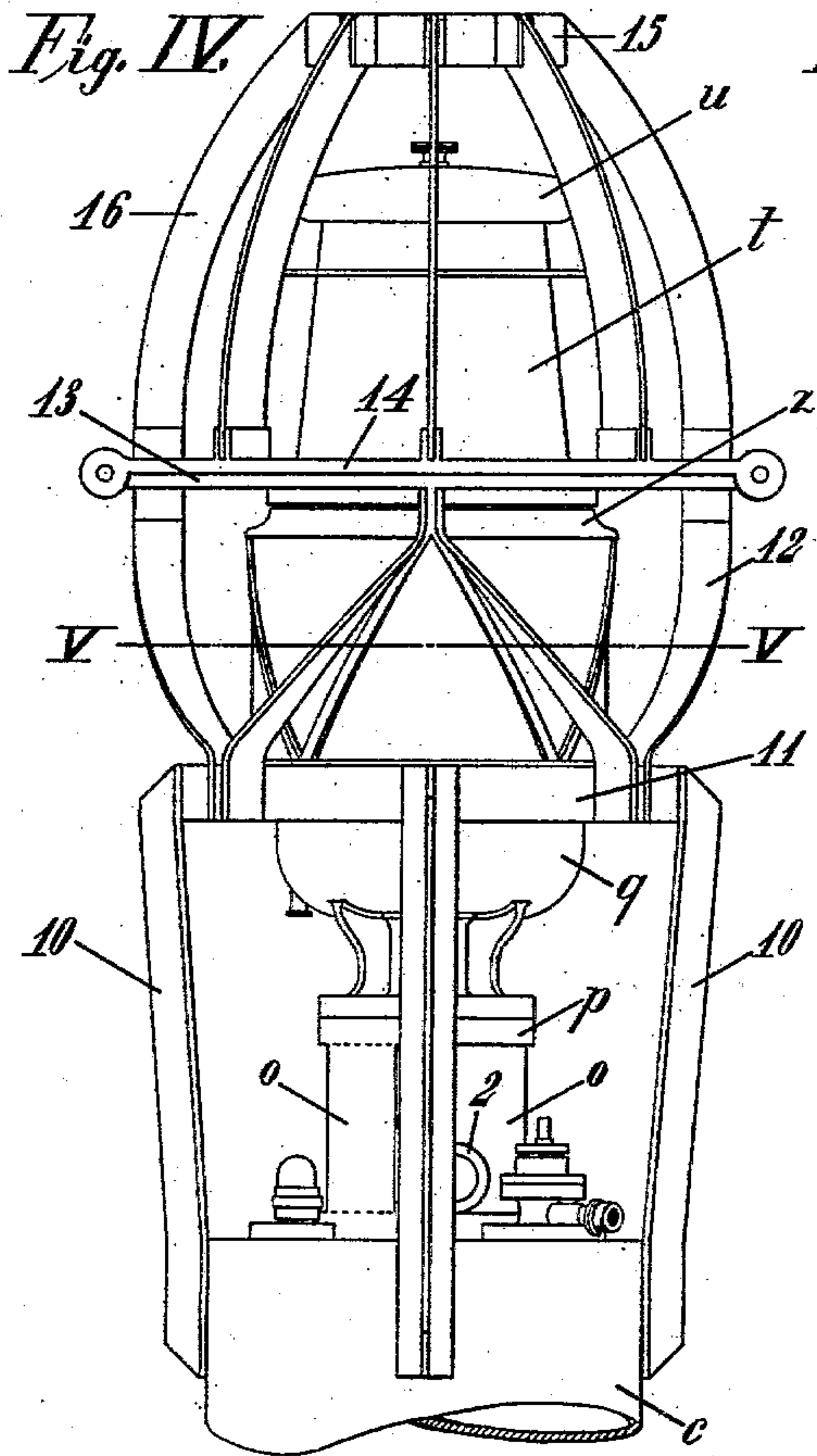
Thomson, Crain, Emley & Rubins
ATTORNEYS.

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GAS BUOY.

APPLICATION FILED APR. 16, 1902.

NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

E. J. Schroeder, Jr.
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UNITED STATES PATENT OFFICE.

ROBERT M. DIXON, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO
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GAS-BUOY.

SPECIFICATION forming part of Letters Patent No. 741,119, dated October 13, 1903.

Application filed April 16, 1902. Serial No. 103,127. (No model.)

To all whom it may concern:

Be it known that I, ROBERT M. DIXON, a citizen of the United States, and a resident of East Orange, Essex county, New Jersey, have
5 invented certain new and useful Improvements in Gas-Buoys, of which the following is a specification.

My invention relates to gas-buoys, and has for its particular object to produce gas-buoys
10 of a new and improved construction. In employing the term "gas-buoy" I desire to be understood as including all such forms of buoy as within the limitations of the prior art may be the equivalent either mechanically,
15 functionally, or structurally of gas-buoys.

My invention is further designed to improve the details of construction of buoys generally.

In the accompanying drawings I have
20 shown one form of buoy in which my invention is embodied, the same being shown as a spar-buoy and being the best form of my invention at present known to me.

In the drawings, Figure I shows the general form and proportions of the buoy, the lantern and cage being omitted. Fig. II is an elevation, on a larger scale, of the upper end of the buoy, showing the lantern and cage. Fig. III is a broken-away view on the same
30 scale as Fig. II, showing the lower end of the buoy. Fig. IV is an elevation, on a still larger scale, of the extreme upper end of the buoy with the lantern and cage. Fig. V is a horizontal section on the line V V of Fig. IV. Fig. VI
35 is a broken-away detail view of the construction shown in Fig. V, the lantern-cage being partly opened and the filling and shut-off valves being shown in section, the section being taken on line VI VI of Fig. VII and being
40 a developed section taken on the two planes at angles with each other; and Fig. VII is a plan view of the upper end of the buoy-body with the lantern and valves removed.

Referring for the present to Figs. I, II, and
45 III, the buoy-body is shown as consisting of a hollow middle section *a*, preferably of cylindrical form, from which project hollow intermediate sections *b*, of tapering form, terminating in substantially cylindrical hollow end

sections *c*. The various sections are welded to each other, and the middle section *a* has shrunk thereon suitable hoops *d*, provided with hoisting-rings *e*. On the uppermost of these rings *d* a suitable loop *f* is mounted,
55 and at intervals along the body similar loops *g g* are provided. These loops *g* and *f* serve as steps for the convenience of the workmen who fill the buoys with gas and adjust the flames, it being understood that the buoys
60 are at times filled with gas from a tender *in situ*. Some of the steps *g* are carried upon suitable bands *h*, shrunk upon the upper cylindrical end section, and others secured to bosses *g'*, welded to conical intermediate section *b*
65 of the buoy. The lower end of the buoy is provided with a suitable shackle *j*, turning freely in a lug *i*, integral with a plate *k*, bolted or otherwise suitably secured to the lower end of the buoy-body and forming the bot-
70 tom thereof. The buoy-body is provided with an opening *l* at the lower end, which opening is closed by a suitable packed or gasketed plate *m*, constituting a false bottom of the buoy and bolted or otherwise suitably secured
75 thereto. A pair of standards or brackets *o* are mounted on a platform *o'* on the upper end of the buoy-body and serve to support an apertured platform *p*, upon which the regulator casing or body *q* is mounted. The lantern is
80 provided interiorly with lenses *r*, which may be held in place by suitable astragals *r'*. *s'* represents the astragals of the lantern, which serve to fix the glasses *s* in place. The astragals of the lens and of the lantern are in the
85 same "radial sections," by which term I mean to indicate that starting from the center of the lantern the radii passing through the astragals of the lens will also pass through the astragals of the lantern, so that there will be
90 as little interference with the beam of light radiated as possible. It will also be noted that as the astragals of the lens and lantern are in line with each other the astragals of the lantern may be made thicker than those
95 of the lens without interfering with the beam of light. The glassware of the lantern and lens is surmounted by a suitable ring casting *z*, which supports draft-producing devices (not shown) which are inclosed by a hood *t*,
100

and an outer cap *u*, which are also supported from the said ring casting. The lower end of the regulator-casing is provided with a suitable nipple 1, to which a flexible metallic tube 2 is connected, which tube is in fluid-conducting communication with a passage 3 in the buoy-head, which communicates with a lateral passage 4, communicating with another passage 5, which receives gas from the interior of the buoy. A suitable passage 6 is also provided in the buoy-head and communicates with a filling-valve 7. The shut-off valve 8 is adapted to be brought against a seat at the upper end of the passage 5, being manipulated from the outside by means of a key-stem covered by a cap 9.

The flexible pipe 2 serves to prevent the gas connections to the lantern from opening should the buoy pound against the bottom or a solid object, and the shut-off valve 8 serves to shut off the gas from the lantern when it is desired to extinguish the light of the buoy. Normally, however, the buoys are designed to burn day and night, as they are placed over ledges and other obstructions to navigation in exposed places. The lantern and its feeding and regulating devices are protected from the impact of floating objects—logs, spars, and floating ice or the like—by means of a suitable metallic cage. This cage may be described as follows: Suitable uprights or brackets 10 are mounted on the upper end of the buoy-body and serve to support a base-ring 11. These uprights serve to protect the regulator-standards and the valves and pipe connections. The lantern itself is inclosed within the upper part of the cage above the base-ring 11. The upper part of the cage is in two parts, the lower part consisting of inclined members 12, which are or may be mounted upon the base-ring 11 and united to and supporting at their upper ends a ring 13. These members 12 are in the same radial sections as the astragals of the lantern, as will be clearly seen from the plan view of Fig. V, so that they will be in the shadow cast by the astragals of the lantern and will not obstruct the light and at the same time efficiently serve to protect the lantern. The upper section of the cage is shown as consisting of a pair of rings 14 and 15, united by the curved members 16, sur-

rounding the hood of the lantern and efficiently serving to protect the said hood.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a spar-buoy, the combination of a hollow middle section, tapering intermediate sections, and end sections, the said sections being secured together, closures for the end sections, a shackle secured to the lower end of the said spar-buoy by fastenings independent of the end closure, a gas-lantern mounted upon the upper end of the spar-buoy, and a protecting-cage for the said lantern mounted upon the said spar-buoy independently of the said lantern, the lantern being adapted to have movement under the stress of weather independent of the movement of the cage, and a flexible fluid-conducting connection intervening between the lantern and the spar-buoy.

2. The combination of a hollow buoy-body having end closures, a lantern mounted on the upper end thereof, of anchoring means for said buoy, embodying in its structure a shackle, a plate secured to the lower end of the said buoy independently of the gas-tight closure at the lower end of the said buoy and forming the connection between the shackle and the said buoy.

3. A lantern and cage structure adapted for use with spar-buoys, comprising a lantern having a lens, lantern-glasses surrounding the said lens and having astragals, and a cage surrounding the lantern having protecting-bars, the astragals of the lantern and the protecting-bars lying in the same radial section, whereby a minimum interference with the beam of light radiated will be achieved.

4. The combination of a buoy, a lantern mounted thereon and receiving gas therefrom, a filling-valve for the buoy having an inlet to the buoy independent of the gas-outlet from the buoy to the lantern, and a turn-off valve located in the buoy in the gasway of the outlet to the lantern, the said turn-off valve having an operating portion extending outside of the buoy so as to be operated therefrom.

R. M. DIXON.

Witnesses:

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GEO. E. MORSE.