

(No Model.)

2 Sheets—Sheet 1.

J. FRANKLIN.
LAMP.

No. 395,969.

Patented Jan. 8, 1889.

Fig. I.

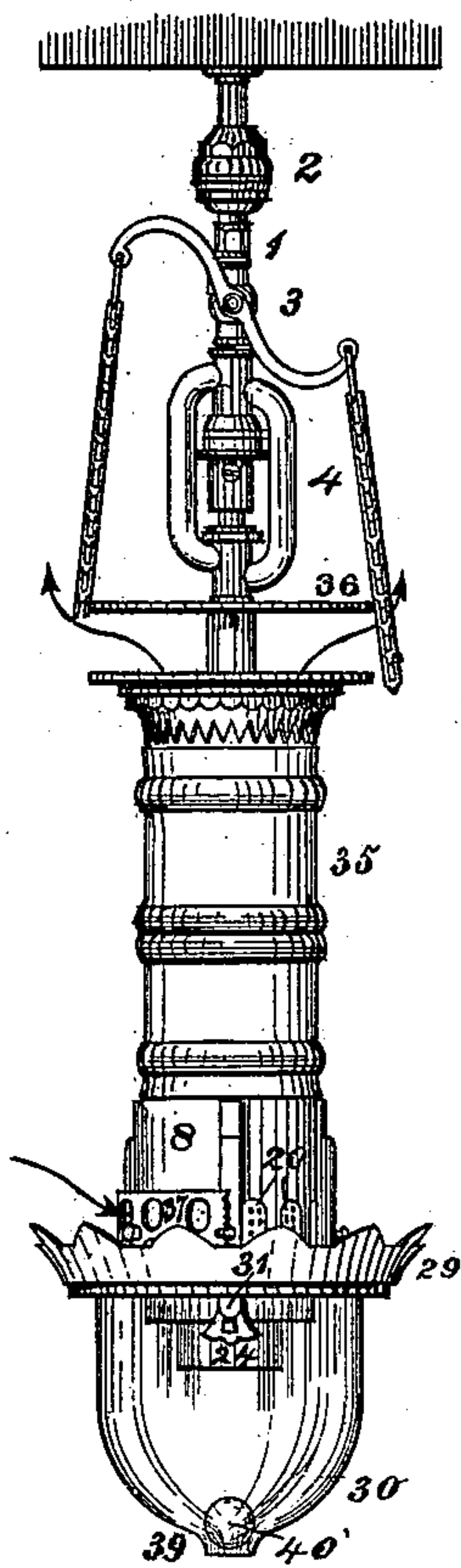


Fig. II.

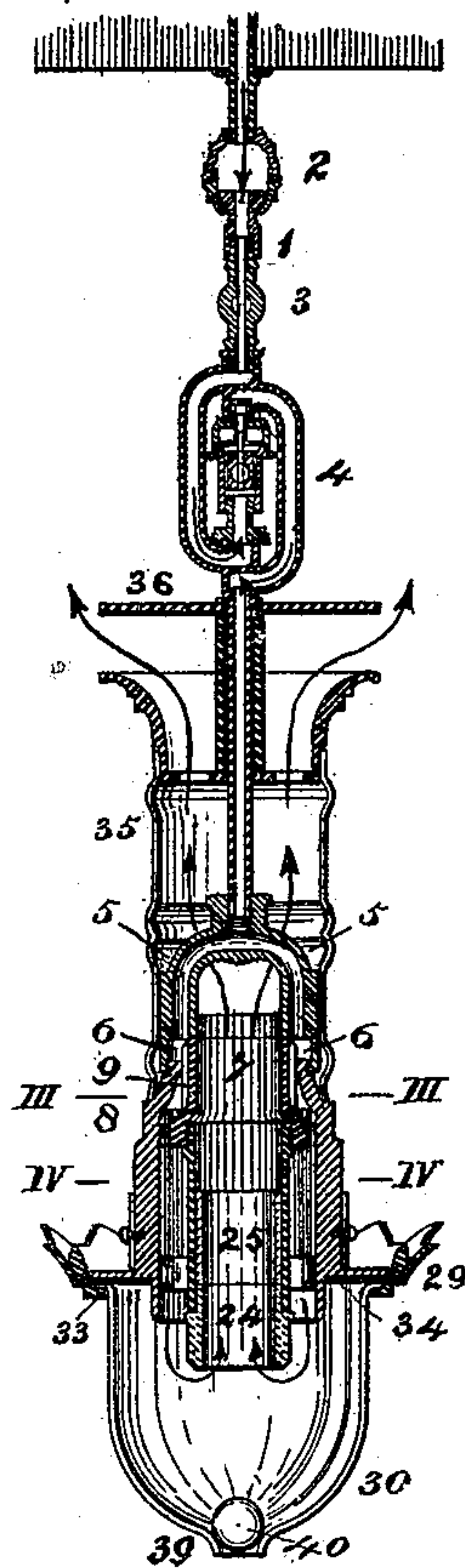


Fig. X.

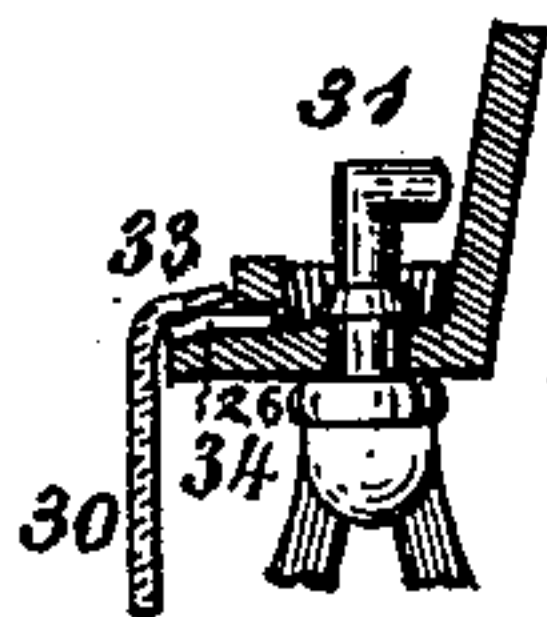


Fig. V.

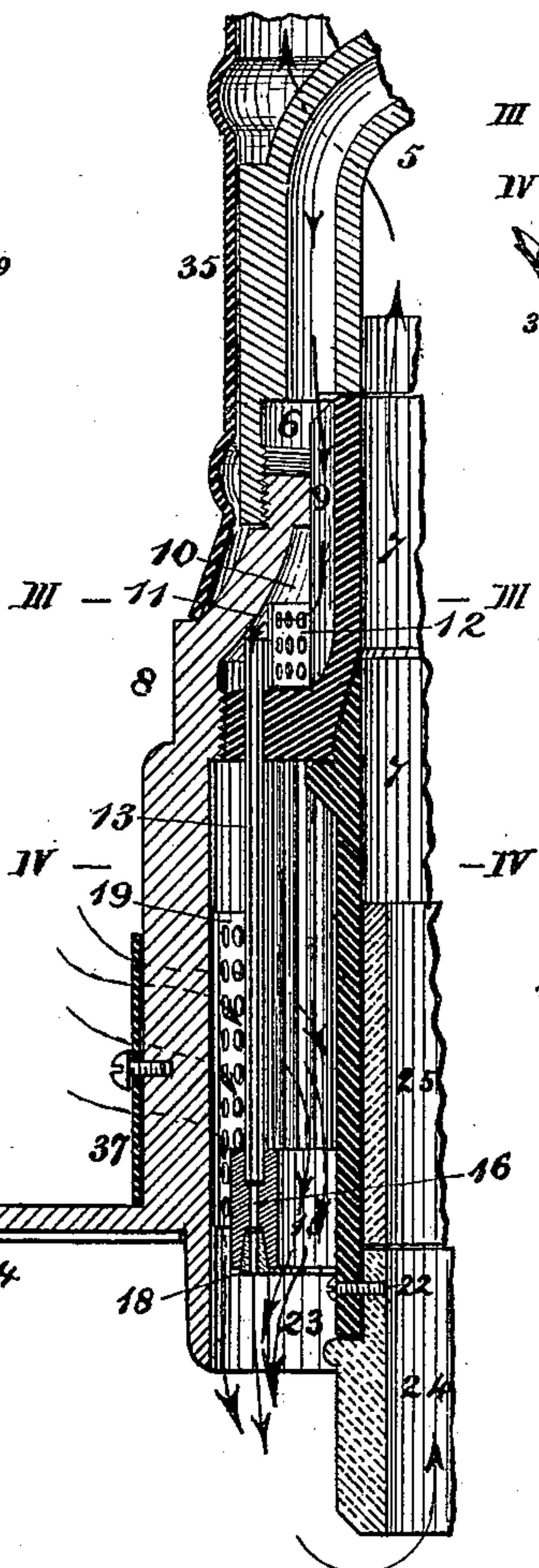


Fig. III.

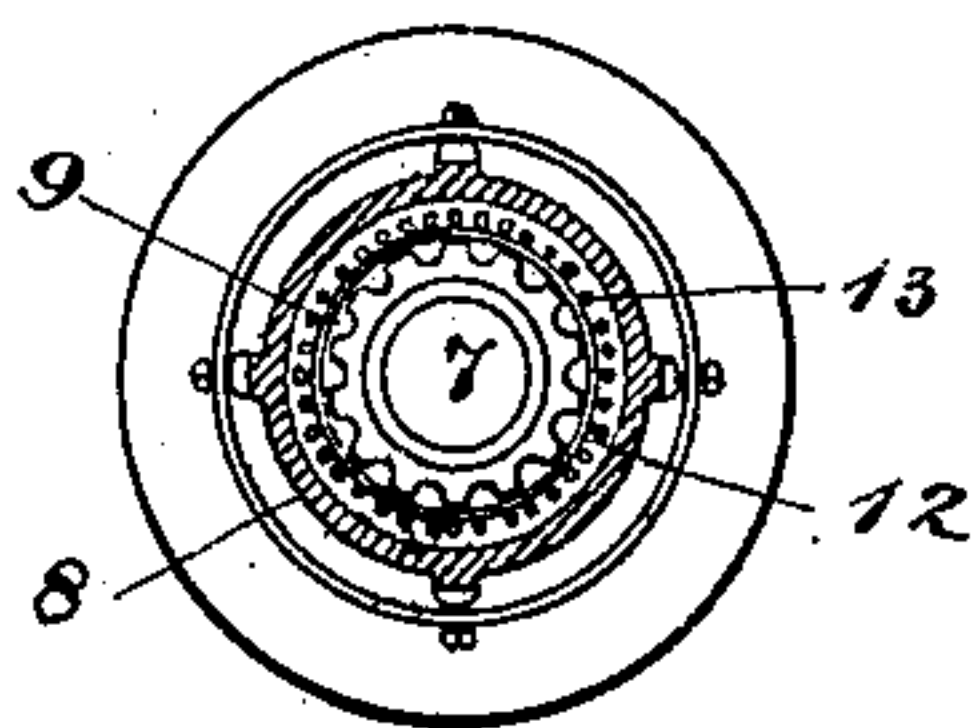
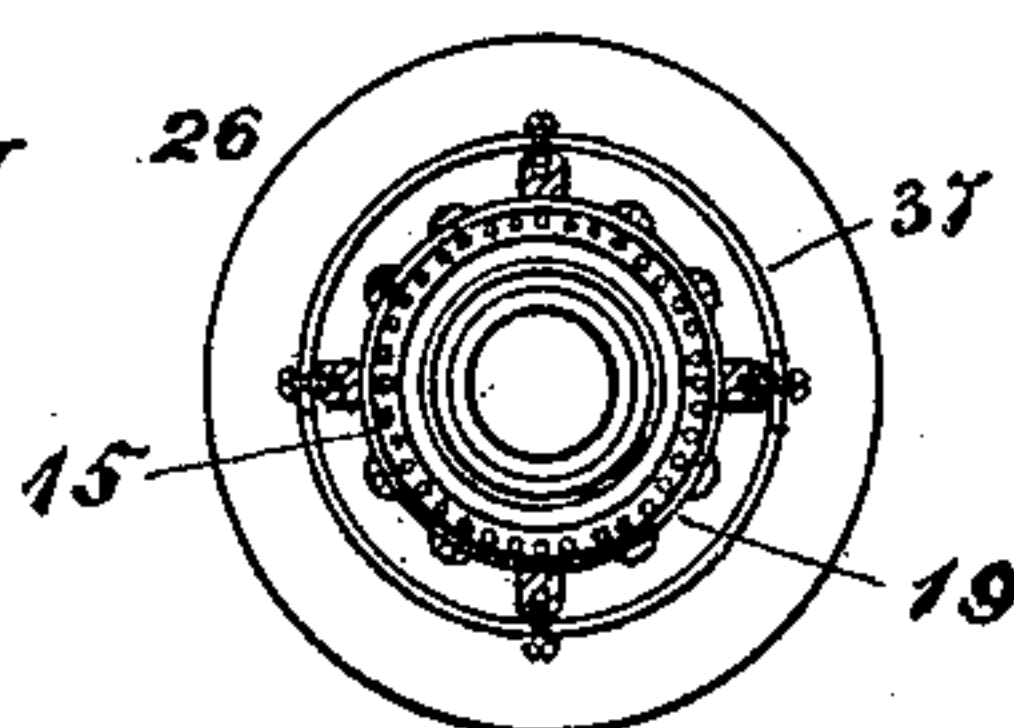


Fig. IV.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. VI.

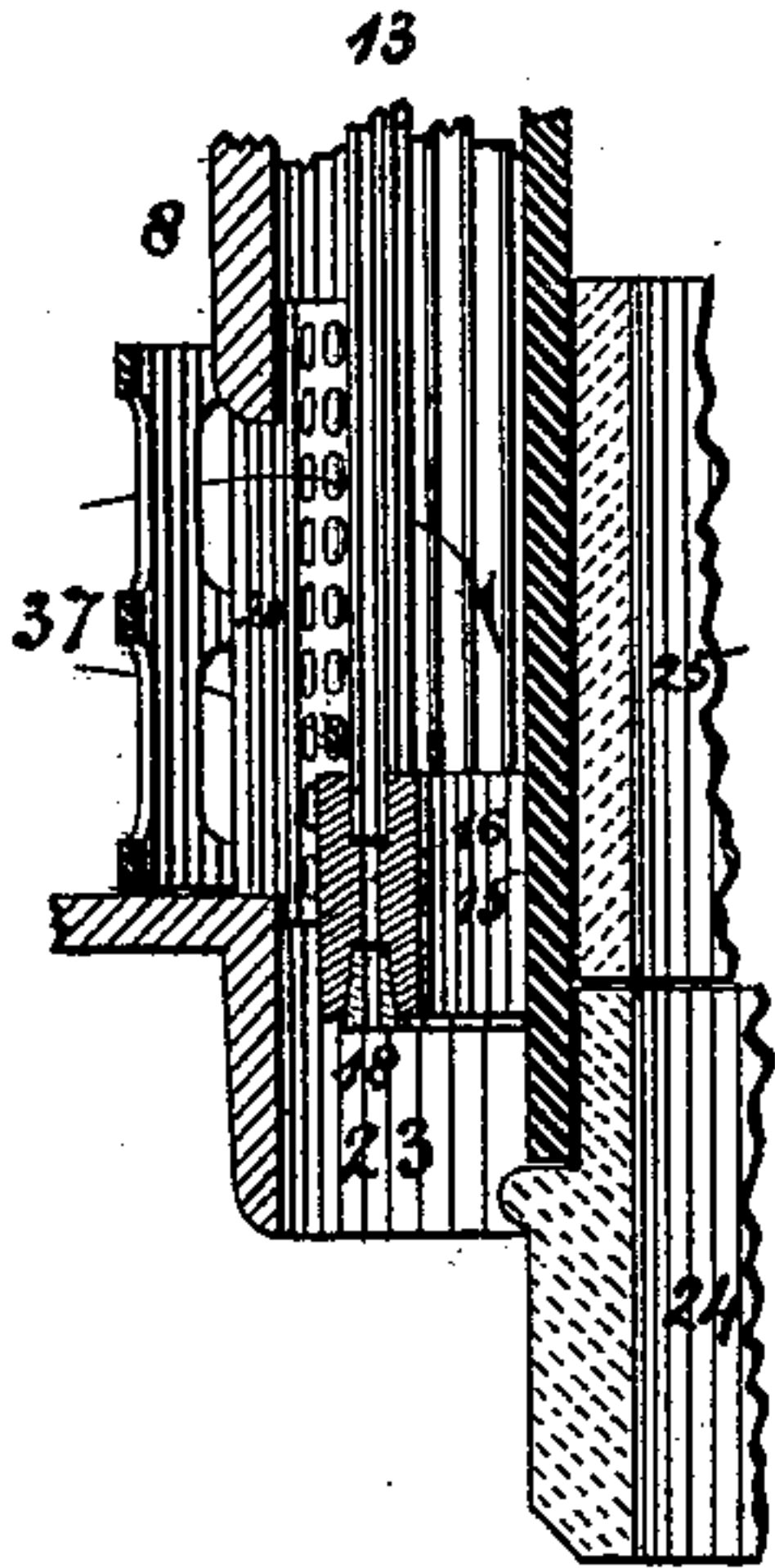


Fig. VII.

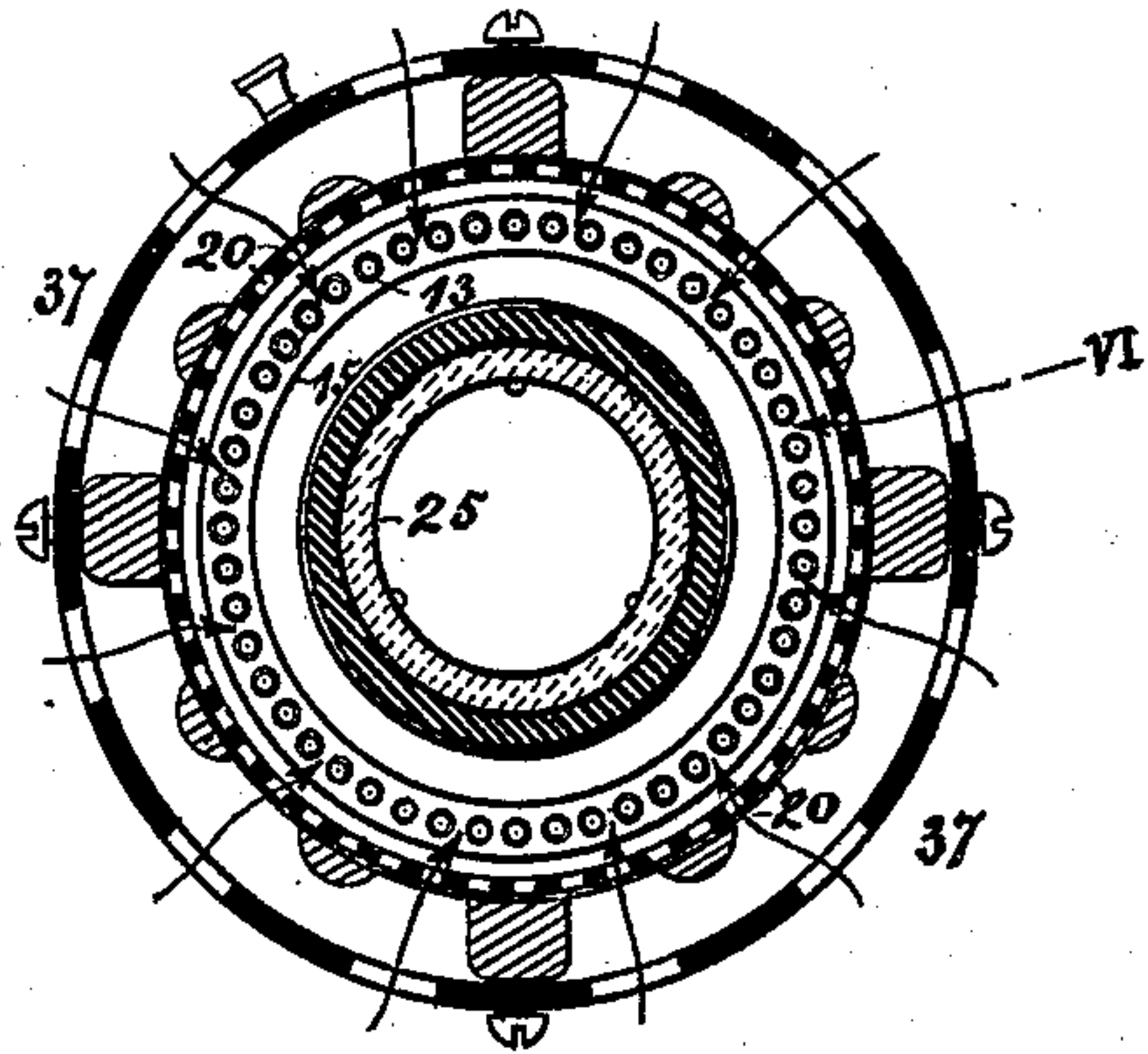


Fig. IX.

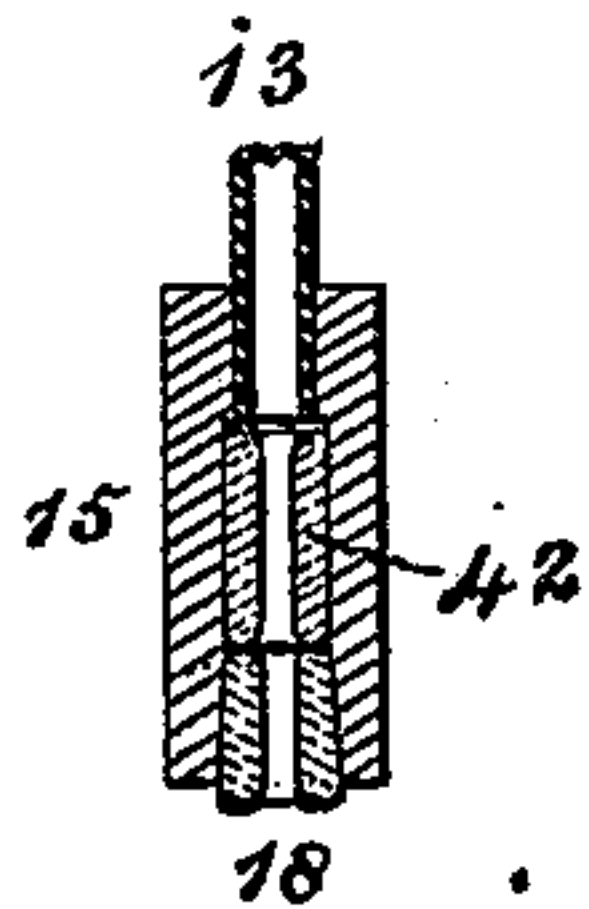


Fig. VIII.

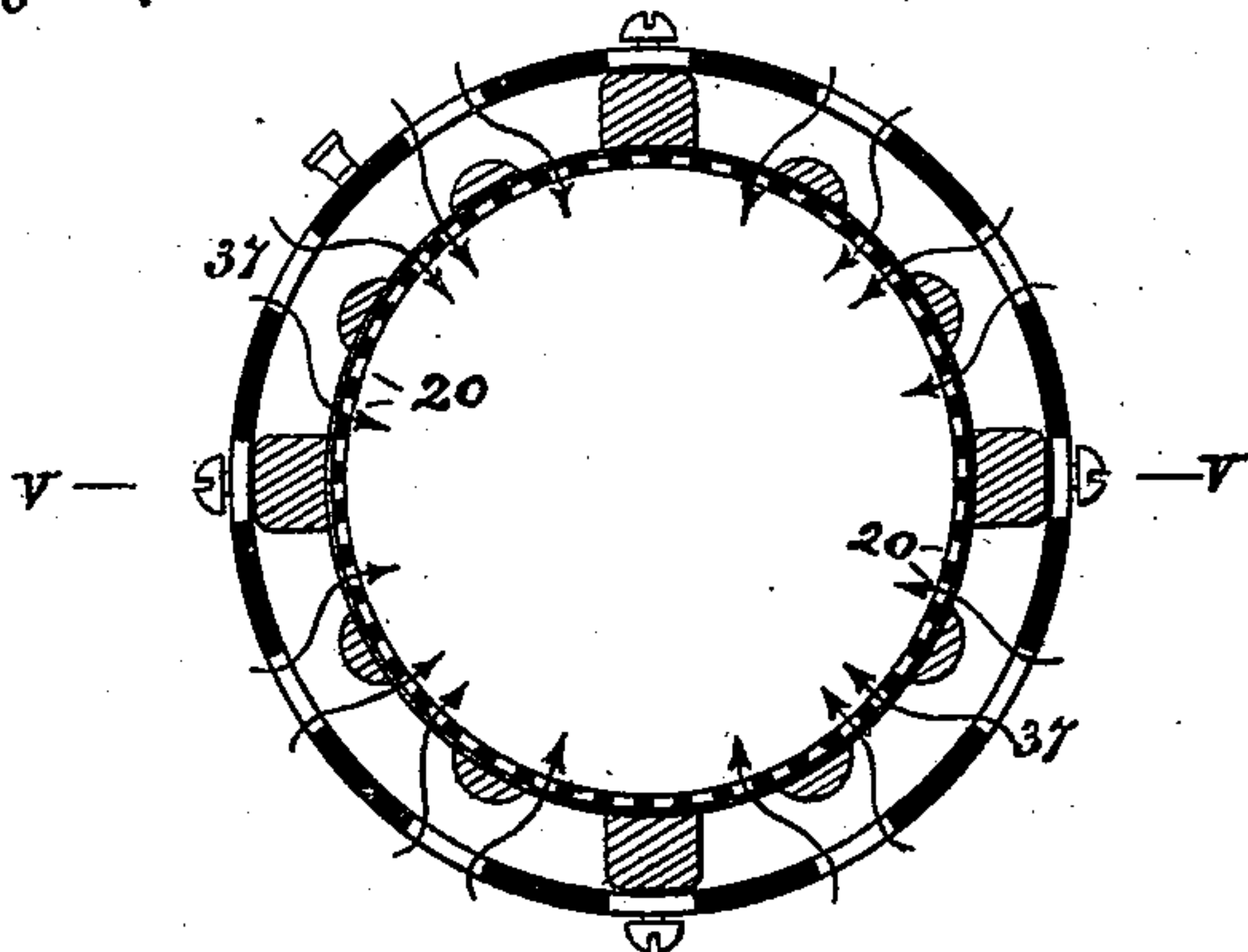
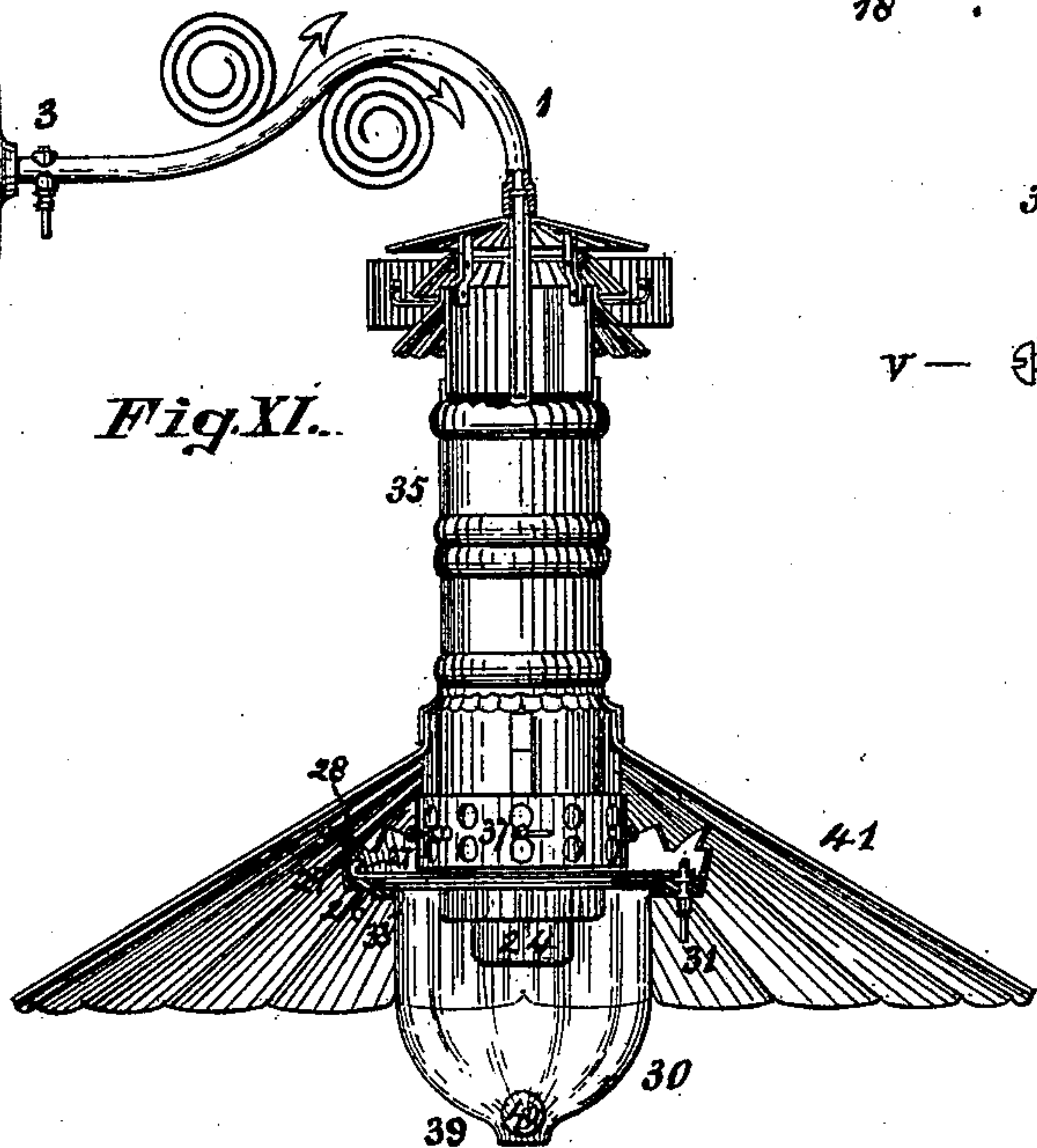


Fig. XI.



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UNITED STATES PATENT OFFICE.

JOHN FRANKLIN, OF CINCINNATI, OHIO.

LAMP.

SPECIFICATION forming part of Letters Patent No. 395,969, dated January 8, 1889.

Application filed February 7, 1888. Serial No. 263,306. (No model.)

To all whom it may concern:

Be it known that I, JOHN FRANKLIN, of Cincinnati, Hamilton county, Ohio, have invented new and useful Improvements in Lamps, of which the following is a specification.

My invention relates to improvements in those shadowless gas-lamps in which an inverted annular burner (protected from ascending air-gusts by an inverted "globe") surrounds an inverted tubular deflector which becomes incandescent in use, and which constitutes the flue-throat, and in which the entering gas is preheated by contact with the flue-walls, and both it and the draft-air supplied in divided and equalized currents wholly from above.

In the accompanying drawings, Figure I is a side elevation, and Fig. II is an axial section, of a lamp illustrating my invention. Figs. III and IV are sections on the lines III and IV of Fig. II, respectively. Figs. V and VI are partial sections on the lines V and VI, Fig. VIII, and VI VI, Fig. VII, respectively. Figs. VII and VIII are horizontal sections which show the draft-air-controlling register in two different positions. Fig. IX represents a modification of the gas-ajutage. Fig. X is a section of part of the globe-holder. Fig. XI is a partially-sectionized side view of my lamp adapted for outdoor use.

My lamp is suspended from the ceiling or a bracket by its gas-pipe 1, which may have a flexible union, 2, so as to permit the lamp to hang plumb, and a customary stop and regulating cock, 3. It may also have a current-governor, 4. The gas-pipe 1 separates below into branches 5, that discharge into an annular chamber, 6, between flue 7 (which is located centrally of the lamp) and an external shell, 8.

In order to both preheat and divide into numerous symmetrical streamlets the entering gas, the annular chamber 6 communicates all around the flue by means of vertical channels 9 in the outer flue-wall between vertical flutings or ribs distributed equally around the wall with an annular sediment-chamber, 10, which is separated from the concentric annular distributing-chamber 11 by removable annular foraminous screen 12, which detains in said chamber 10 the grosser impuri-

ties that would be liable to choke the burner-tubes.

The burner-tubes 13 are arranged in an annular group whose tops are some distance above the floor of the annular chamber 11, through which said tubes extend perpendicularly downward into a ring, 15, which has a series of gas-duets, 16, that correspond to the orifices of said burner-tubes, and which communicate below with like orifices of as many tips, 18, of lava or like refractory material secured in counterbore of said ring.

Screened ports 20 of shell 8 permit entrance of draft-air in many finely-divided equal streams or currents all around in the annular interstices both outside and inside the group of burner-tubes and between said tubes, as indicated by dotted arrows, so as to insure the intimate mingling of the draft-air with the minute jets of preheated gas that escape from the tips 18.

The shell 8 and the flue 7, both extending below the burner-tips, confine the gaseous discharges within an intensely-heated annular space, 23, which receives equally at every part of it constant accessions of descending draft-air, which take the place of the vitiated portions that escape into the flue with the other products of combustion.

Attached to the lower end of the flue 7 and partially lining the same is a tubular deflector, 24, composed of any suitable substance—such as highly-refractory fire-tile. This deflector constitutes the throat of the flue, and, becoming in use heated to incandescence, operates to perfect the combustion and to increase the luminosity, while at the same time protecting the flue 7 from direct contact with the flames.

The deflector is attached by any suitable means—such as by screws 22, or by a bayonet-joint. Said deflector preferably extends some distance lower than the gas-ajutages, in order that the main portion of the flames may have the greatest possible illuminative effect. Said tubular fire-tile preferably consists of two parts, as shown—to wit, the already-described deflector proper, 24, and a supported upper section or bushing, 25, which lines the flue, in the manner shown.

The deflector having at lower end a material of a non-conductive character and a bush-

ing or sleeve placed above, as shown in the drawings, is very necessary. The advantages of having these in two parts are, first, to allow for expansion and contraction of the material, and, secondly, they are placed in the casing in such a way as to keep the deflector-holder comparatively cool and free from the chance of getting too hot and causing the metal of said deflector-holder to scale and deposit in the globe, which without the said bushing is bound to occur. This feature of my invention is most necessary to the successful working of a lamp having with a downward flame a central upward draft.

A collar, 26, on the shell has a pintle, 27, for a hook, 28, that extends from the holder 29 of the inverted glass globe or bulb 30. A button, 31, on the other side of the holder, engaging in a notch of the collar, fastens the holder, and with it the outturned flange 33 of the globe, in the manner represented. An asbestos gasket, 34, between the collar 26 and the globe-flange 33 serves to cushion said flange and to exclude air. A jacket, 35, operates to retain the flue heat, and by this and the added height of the chimney to increase draft-suction. Such conservation of flue heat furthermore secures efficient preheating of the entering gas. A coping, 36, prevents direct contact of the products of combustion with the exposed portions of the gas-fixtures.

An annular register, 37, is capable of circumferential adjustment to either the position shown in Fig. VII, in which, the register-ports being opposite the draft-openings 20, the draft-air has free entrance thereto, or the position shown in Fig. VIII, in which, the imperforate portions of the register being opposed to said openings, the draft-air is compelled to take circuitous paths. The condition shown in Fig. VII is adapted for calm

weather or for indoor use. The condition shown in Fig. VIII is adapted for outdoor use in gusty weather.

To facilitate lighting, the glass globe, instead of being wholly closed, has a funnel-formed bottom, 39, for the insertion of a lighted match, which being withdrawn an automatically-acting glass ball or valve, 40, closes the orifice.

In out-of-door use my lamps are provided with a conical or other suitable hood, 41, which serves to protect the globe from contact of hail and rain and to reflect the light.

My above-described lamp is susceptible of various modifications. For example, the governor, the coping, and the flexible union may be omitted, as in the form shown in Fig. XI; or other forms of flexible joint may be substituted for the ball and socket, as shown in Fig. II. This burner-ring 15 may be counter-bored to receive lining tubes or bushings 42 of lava or other refractory substance of slow thermal conductivity, in order to prevent transmission of destructive heat to the burner-tubes 13.

The lamp may be built up of pieces secured together, as represented, or in any other manner that will enable ready dismemberment for examination, cleansing, or repair.

I claim as new and of my invention—

The combination of the ring 15, the burner-tubes 13, the lava tips 18, and the bushing 42, composed of lava or other refractory non-conductor.

In testimony of which invention I hereunto set my hand.

JOHN FRANKLIN.

Witnesses:

GEO. H. KNIGHT,
JOHN DOUGLAS.