

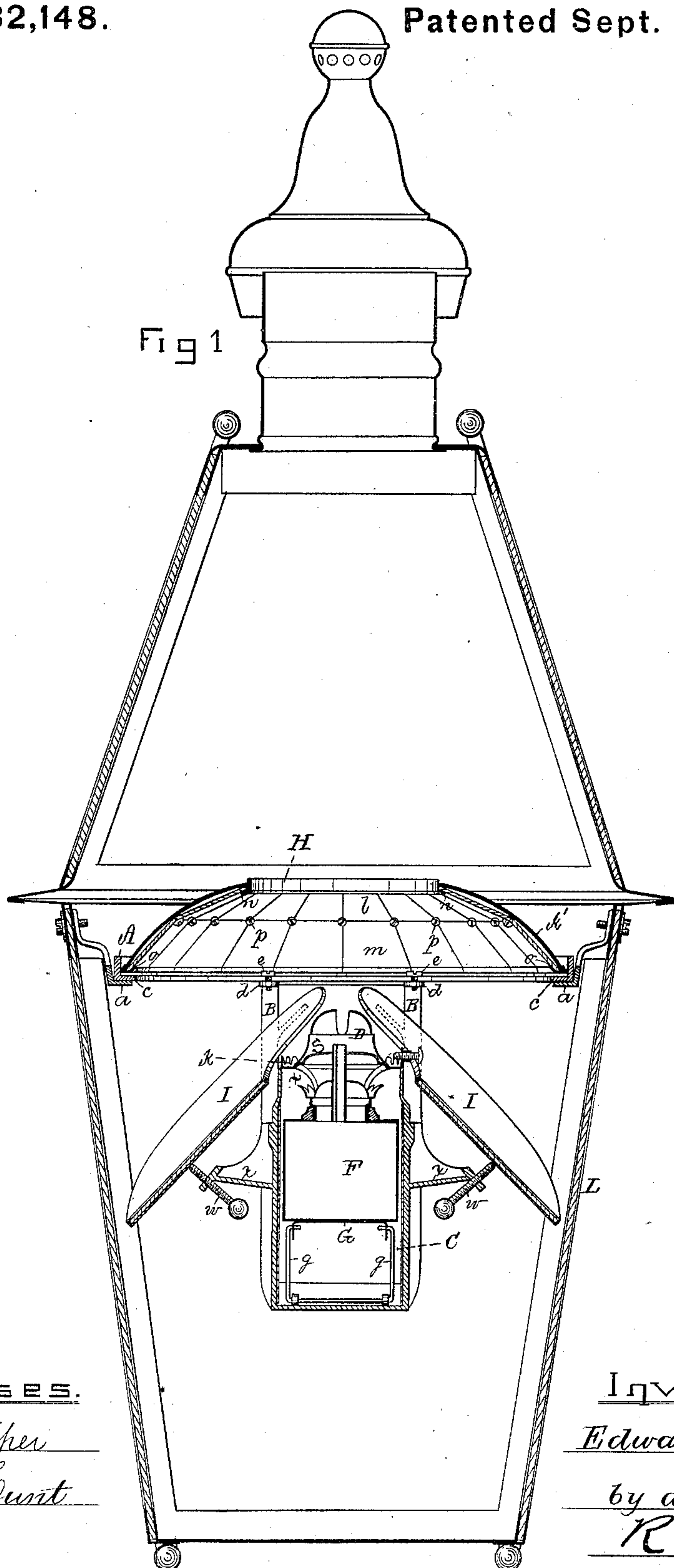
(No Model.)

3 Sheets--Sheet 1.

E. S. RITCHIE.  
Street Lighting Apparatus.

No. 232,148.

Patented Sept. 14, 1880.



Witnesses.

*S. N. Piper*  
*W. W. Lunt*

Inventor.

*Edward S Ritchie*

by attorney.

*R. H. Eddy*

(No Model.)

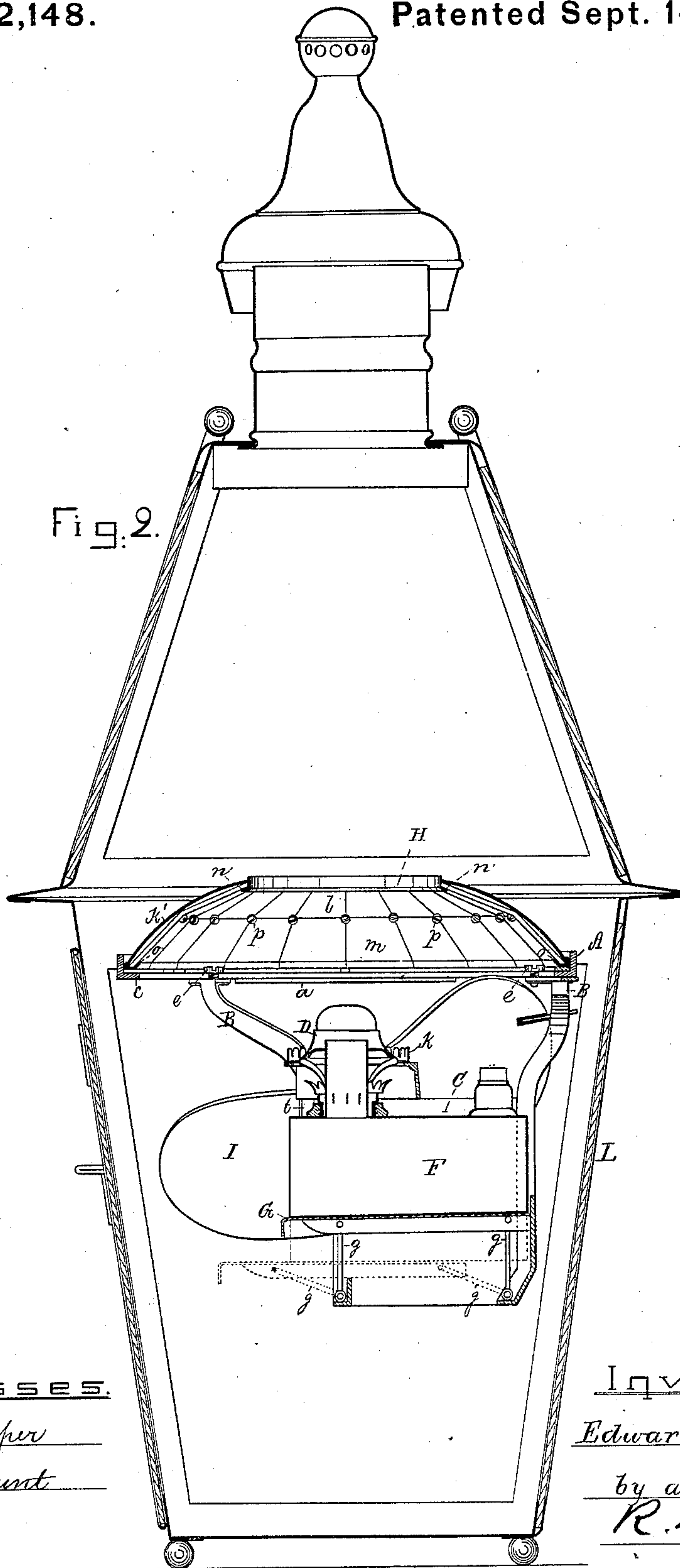
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Fig. 2.



Witnesses.

S. N. Piper  
Wm. W. Lunt

Inventor.

Edward S. Ritchie

by attorney

R. H. Eddy

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Fig. 3.

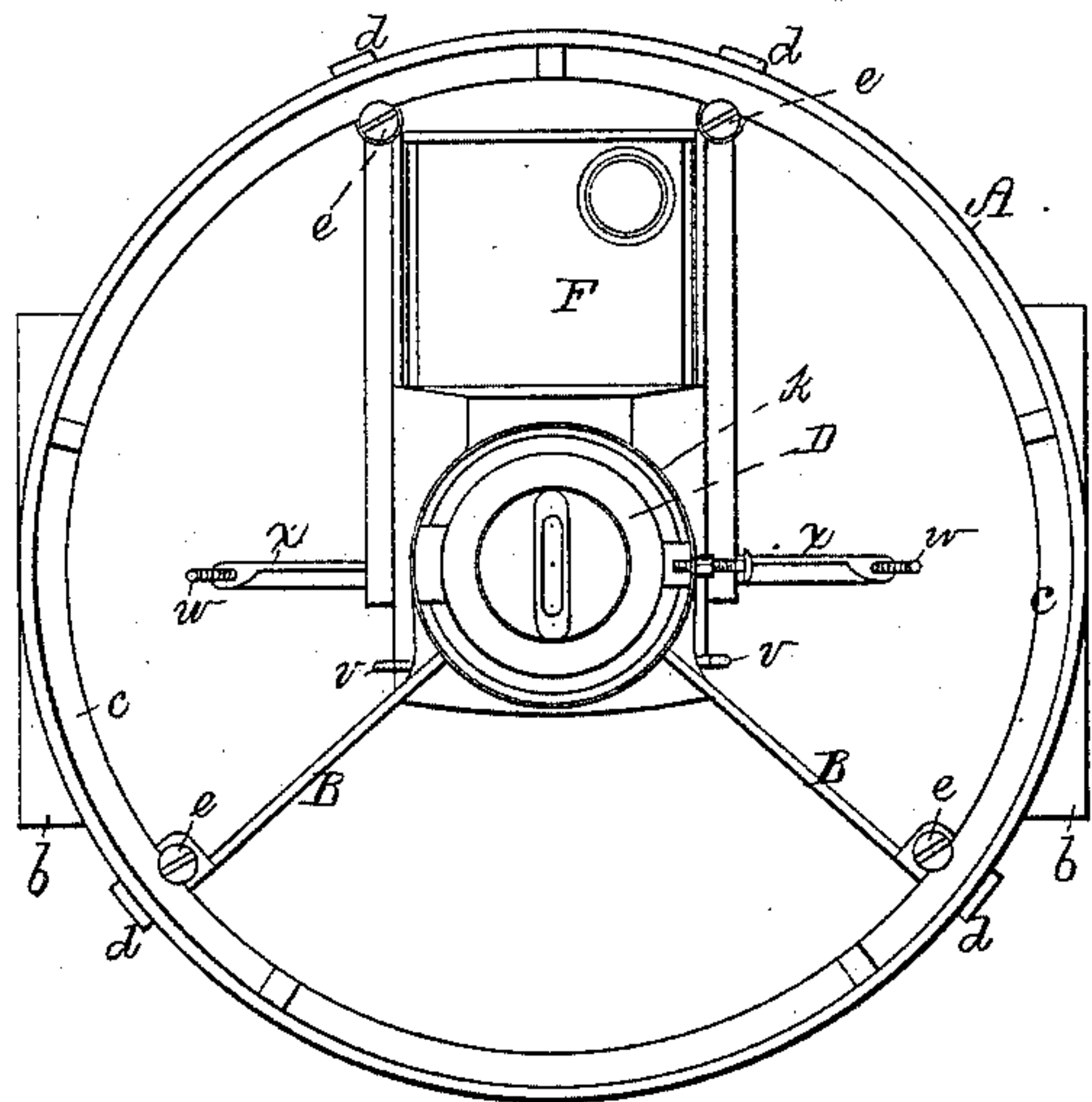


Fig. 4.

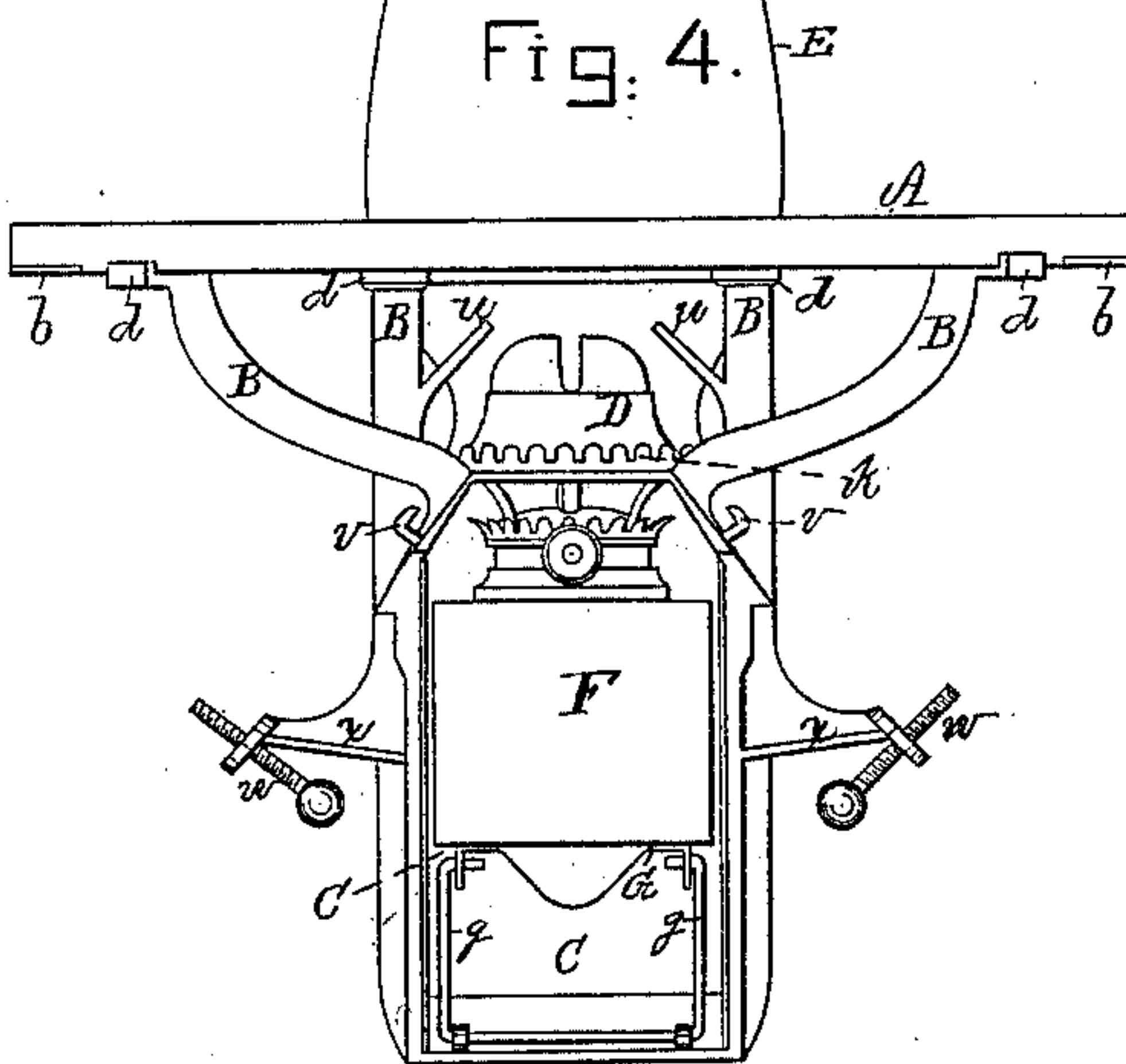


Fig. 5.

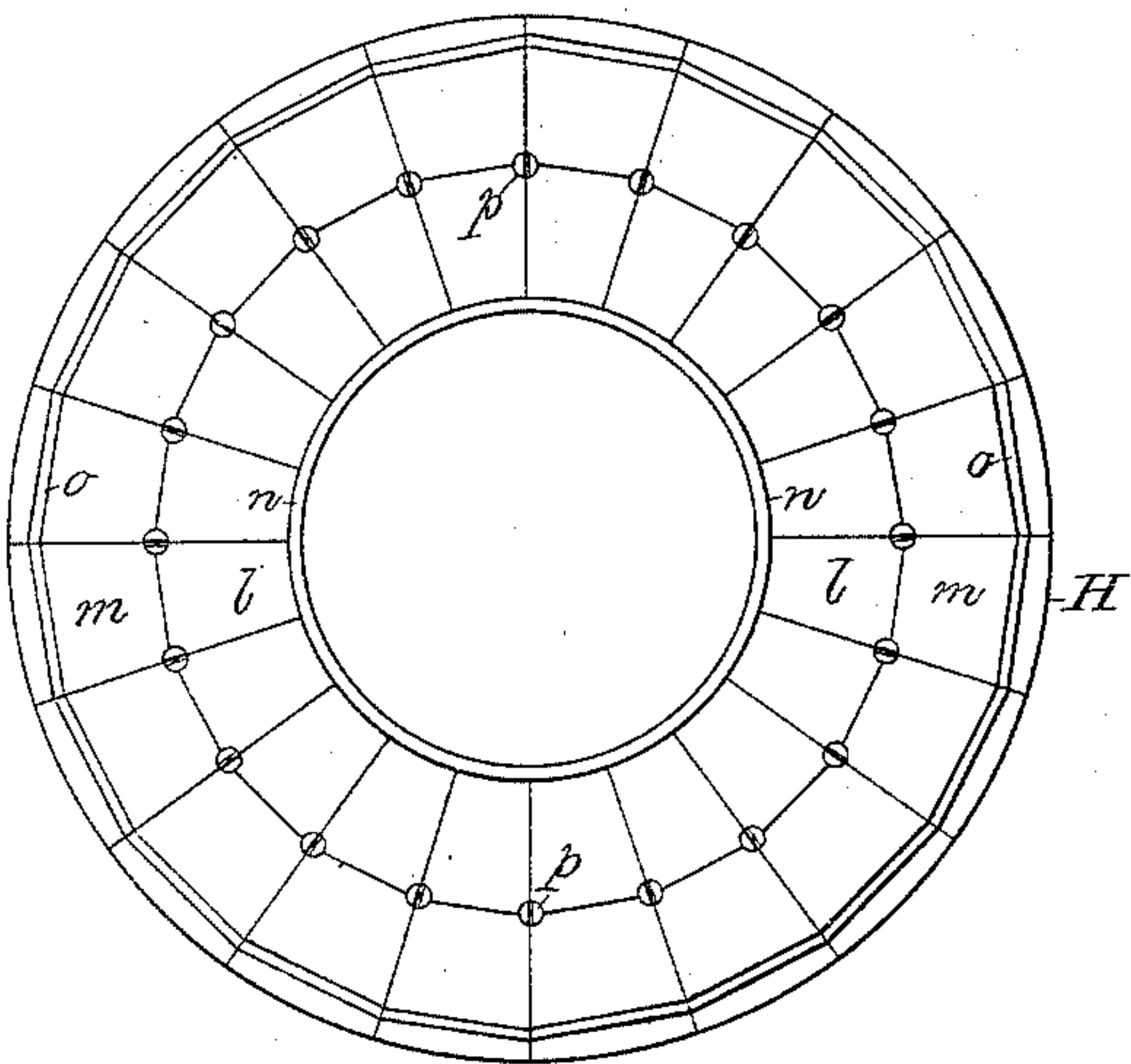


Fig. 6.

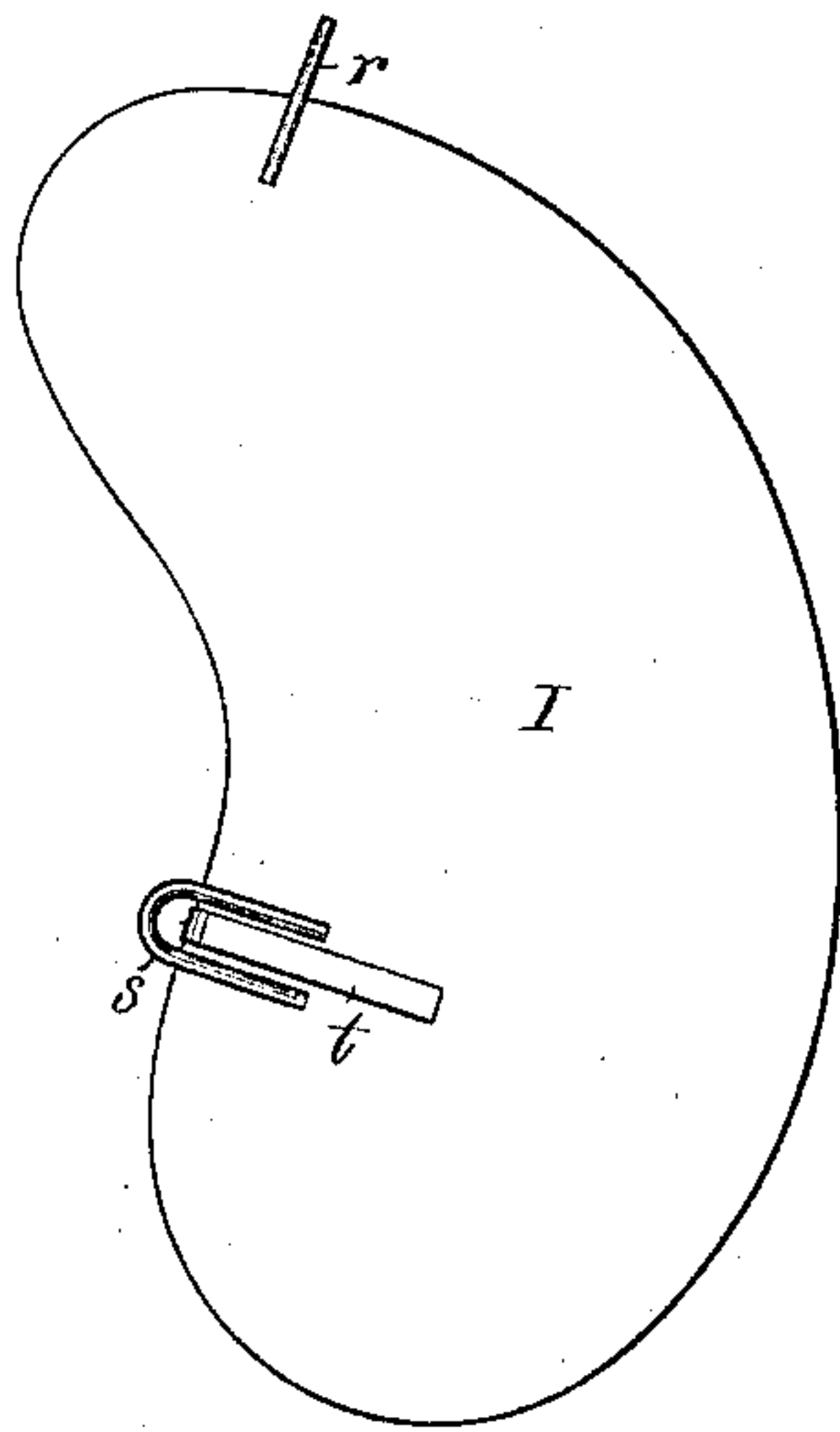
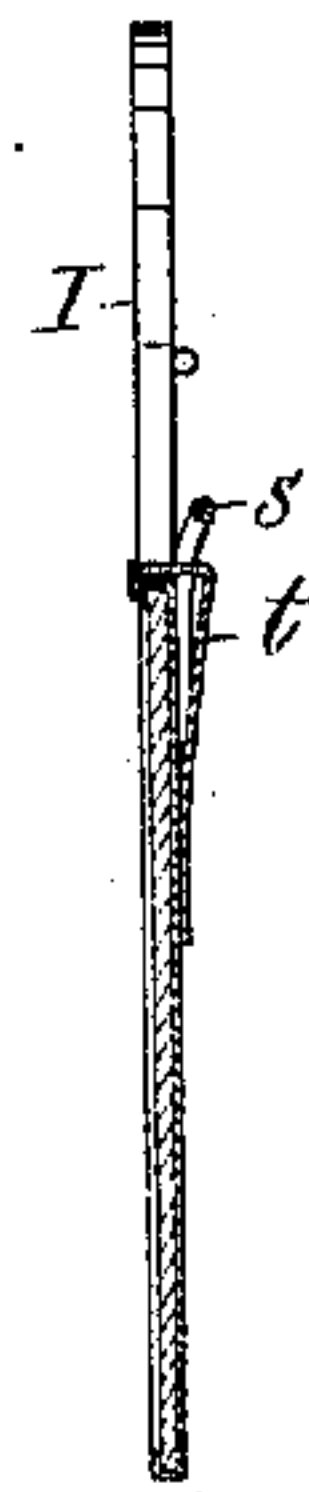


Fig. 7.



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S. N. Piper  
W. W. Lunt

Inventor.

Edward S. Ritchie

by attorney.

R. H. Eddy.



# UNITED STATES PATENT OFFICE.

EDWARD S. RITCHIE, OF BROOKLINE, MASSACHUSETTS.

## STREET-LIGHTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 232,148, dated September 14, 1880.

Application filed July 3, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD S. RITCHIE, of Brookline, in the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Apparatus for Lighting Streets or Places; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figures 1 and 2 are vertical transverse sections, at right angles to each other, of a street-lantern provided with my invention. Fig. 3 is a top view, and Fig. 4 a front elevation, of the lighting apparatus excepting its reflectors. Fig. 5 is an under-side view of the dome or multi-faced reflector. Fig. 6 is an inner-side view of one of the auxiliary reflectors; and Fig. 7 is a transverse section of such reflector, taken through its fastening loop or eye and retaining-spring, to be hereinafter described.

The nature of my invention is duly set forth in the claims hereinafter made.

In Figs. 1 and 2 of the drawings, L denotes the body of a street-lantern, made, in the usual manner, with glass panes and a door. This lantern-body I provide at two of its opposite sides with shelves *a a*, projecting therefrom and arranged as represented, such shelves being for the support of the annulus A and its attachments. The said annulus A, I provide with flanges *b b*, to project from its outer periphery at opposite parts thereof and rest upon such shelves, the flanges and shelves being formed of sufficient length to prevent the said annulus from being turned around horizontally within the lantern-body. The said annulus has an inner flange, *c*, extending from it at its lower edge. Attached to the annulus are four stationary arms, B, which extend down to a lamp stall or receptacle, C, shoulders *d* being extended up from such arms in manner and with respect to the annulus as shown. The arms are fastened to the annulus by set-screws *e*, screwed into them, the heads of the said screws lapping upon the inner flange of the annulus. Such means of applying and confining the ring to the arms are to admit of the lamp and its reflectors being turned around and adjusted within the lantern-body as circumstances may require to cause the beams of light from the reflectors to flow

in the proper directions for lighting a street or a place to the best advantage.

The lamp stall or receptacle C, attached to the arms, is open at its front end. There is fixed to the lamp-stall, and arranged therewith as shown, a lamp-cone, D, surrounded by a flange or supporter, *k*, for a glass chimney, E.

The lamp represented at F is entirely separate from the stall and its cone, and such lamp is constructed so as to enable it to be readily inserted into or withdrawn from the stall, as occasion may require, the said lamp being of a kind generally in use for burning kerosene or petroleum. The lamp rests upon a platform, G, connected to the stall by two sets of parallel arms, *g*, jointed to it and the stall in order to enable the said platform to be moved relatively to the stall as one of the rulers of a draftsman's duplex parallel ruler usually does relatively to its fellow. When the platform is at its lowest position it is so far below the stationary cone as to allow the lamp to be placed on the platform with the top of the wick below the cone, the lamp being against the back of the stall. On lighting the lamp and pushing the platform backward it, with the lamp upon it, will be forced upward, so as to carry the lamp-wick properly up to and into the cone.

The platform and lamp, when in their highest positions, should abut against the back of the stall, in which case each of the arms *g* should stand vertically or a little inclining inward toward the said back.

In the drawings the lamp is represented as having to its wick-tube a foraminous concavo-convex air strainer or distributor, S, it being supported by small standards *x*. It is removable with the lamp, and is a common appendage to kerosene-burners, and therefore needs no further description.

The multi-face dome-reflector (shown at H in Figs. 1, 2, and 5) is concavo-convex or dome-shaped, and is composed of an external metallic dome, *k'*, open at top, as shown, and two or three series of trapezoidal glass facets or separate reflectors, *l m*, arranged as shown. These latter are held in place against the inner surface of the dome *k'* by flanges *n o* at the edges of the dome and by headed rivets or bosses *p*, each arranged as represented at four



of the meeting corners of the facets. Two series of the facets only are shown in the drawings.

When three sets are used the middle series are held in place by the rivets or bosses. The flanges lap upon the reflectors *l m*, each boss or rivet being inserted and fixed in the dome, so that the head of the boss shall lap on four of the said facets or reflectors, all being as shown.

The two auxiliary or plane reflectors are represented at I I, each being provided with a journal, *r*, projecting from its edge, such journal being to enter a Y or rest projecting from an arm of the stall. Furthermore, there is to each of the said reflectors, at its inner edge, a loop or eye, *s*, and, if desirable, a retaining-spring, *t*, the latter being formed and arranged with respect to the said eye and the reflector in manner as represented. These appliances to the flat or plane reflectors are to aid in supporting them in their places, which they do in connection with inclined projections *u u* and with hooks *v v* and screws *w w*. The projections *u u* are extended from the rear arms, B, in manner as represented, to form with them Y's, the hooks *v v* being projected from the cone-supporter, as shown. The screws *w w* screw through two arms, *x x*, extending in opposite directions from the stall. The journal of each plane reflector rests upon one of the projections *u* and against its arm, the eye or loop of the reflector being hitched upon one of the hooks *v*, against which the spring *t* bears, in order to keep the reflector-eye from accidentally getting off the hook. The reflector rests upon the upper end of the screw *w*. By means of such screw the angle of inclination of the reflector to the horizon may be varied for beams of light, when reflected, to flow in the proper direction.

The rays proceeding from the flame of the wick of the lamp and passing upward are intercepted by the multi-face dome-reflector and are reflected downward upon the auxiliary reflectors, by which such rays are again reflected in opposite directions horizontally, or about

so, as may be required to illuminate a street or place to the best advantage, there appearing to an observer on the street or place many separate reflections of the flame, or as though there were many such flames to the burner. The light thus dispersed from the flame is found in practice to be highly effectual in illuminating the street. The said lantern is to be supposed to be sustained by a post or other suitable support.

Although I have herein described and have represented in the drawings a peculiar construction of the multi-face dome-reflector, I wish it understood that I do not herein make any claim thereto, because it is my intention to do such in another application for a patent which I contemplate making.

What I claim as my invention is as follows:

1. The lamp-stall separate from the lamp, and provided not only with the burner-cone, but with the dome-reflector-supporting annulus, all substantially as set forth.

2. The dome-reflector-supporting annulus having the internal flange, as described, in combination with the lamp-stall and the arms extending therefrom, and provided with clamp-screws, as and arranged as set forth.

3. The lamp-supporting platform, combined with the stall by arms pivoted to both, and arranged substantially as and for the purpose set forth.

4. The auxiliary reflectors, each provided with the journal and the eye or equivalents, and the holding-spring, as and arranged as set forth.

5. The lamp-stall provided with the projections and hooks and adjusting-screws for supporting the auxiliary reflectors, as set forth.

6. The combination of the multi-face light-reflecting dome and the auxiliary plane reflectors with the lamp-stall provided with the cone and the reflector-supporting ring, all being as and arranged substantially as set forth.

EDWARD S. RITCHIE.

Witnesses:

R. H. EDDY,  
L. N. MILLER.