

No. 688,697.

Patented Dec. 10, 1901.

H. W. ROYAL.
INCANDESCENT GAS BURNER.

(Application filed Apr. 26, 1901.)

(No Model.)

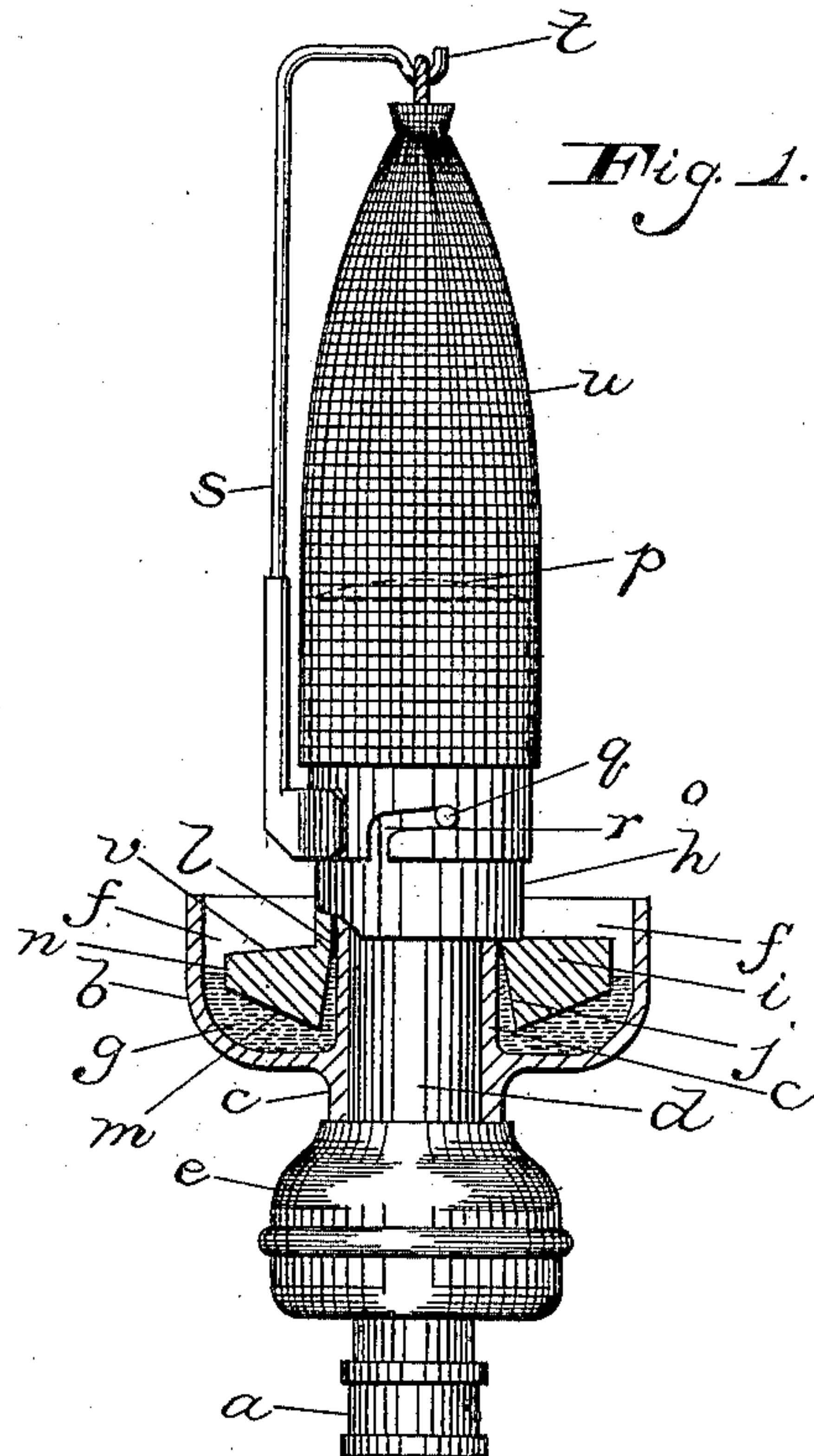


Fig. 2.

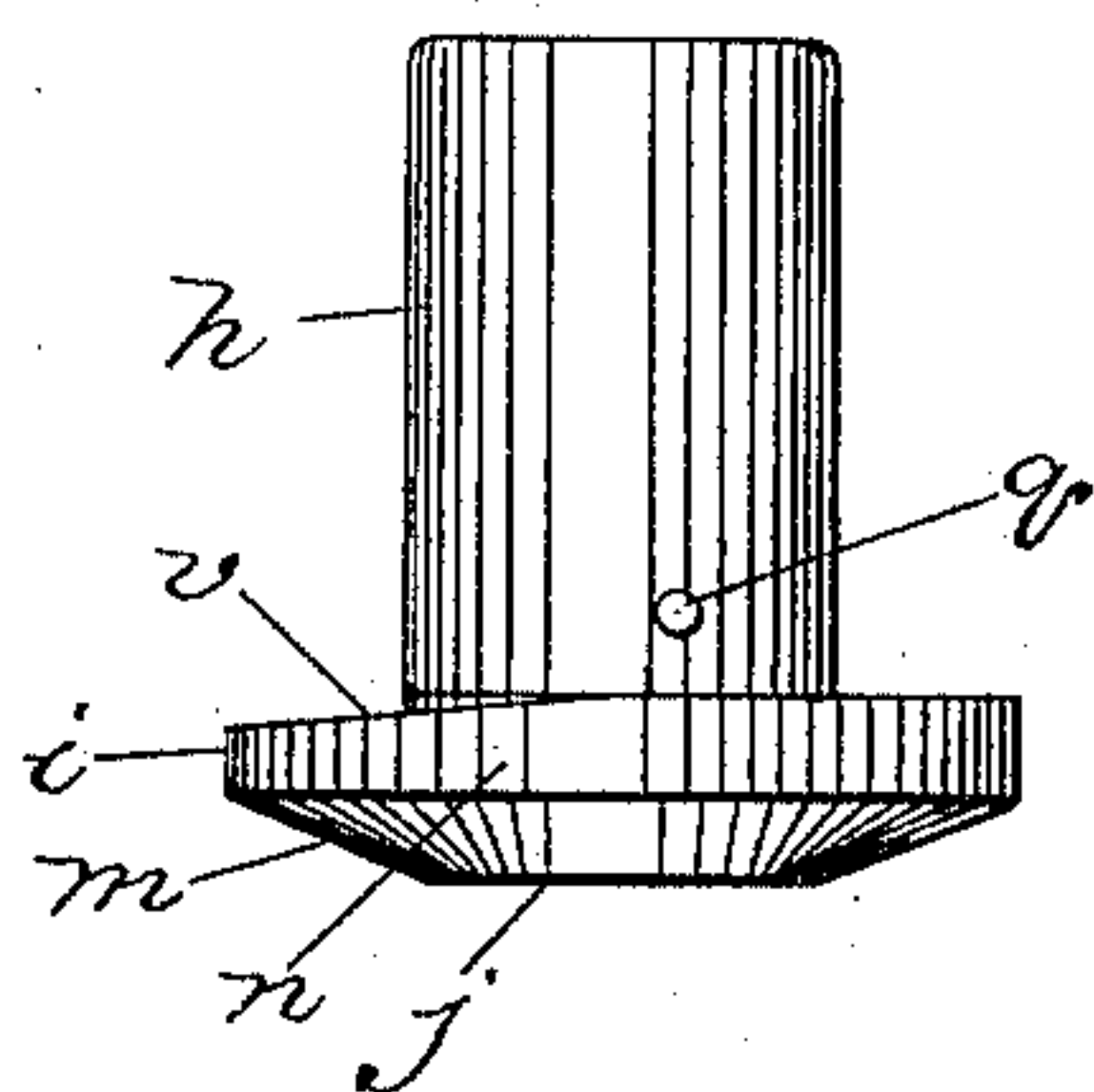


Fig. 3.

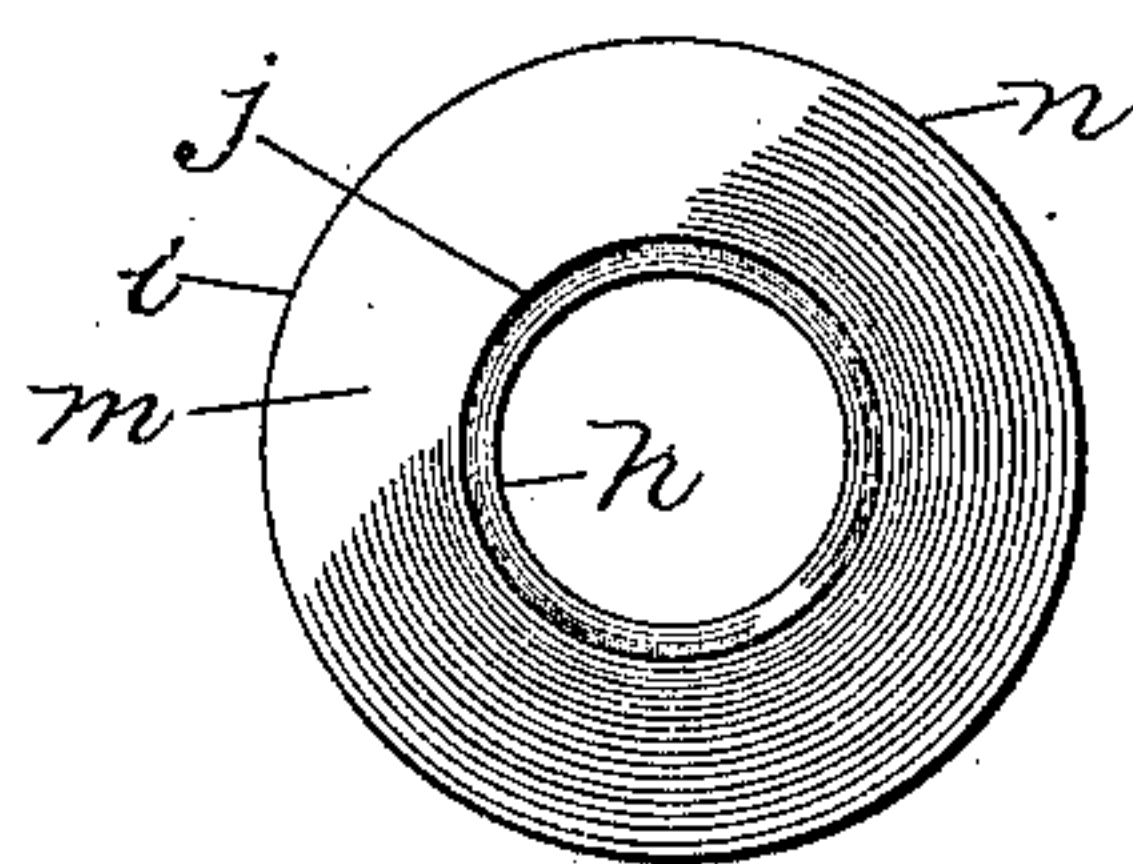
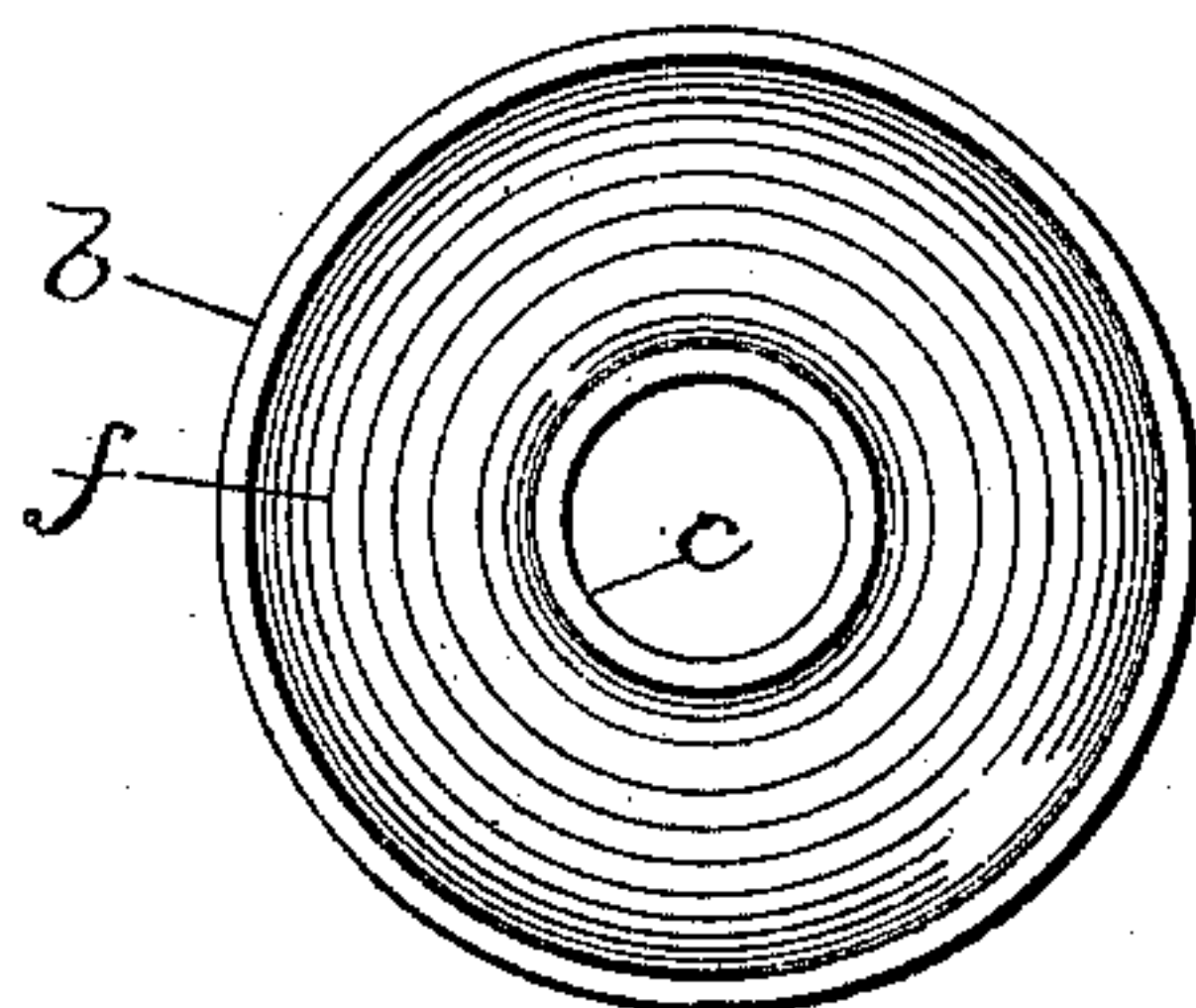


Fig. 4.



Witnesses.
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INCANDESCENT GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 688,697, dated December 10, 1901.

Application filed April 26, 1901. Serial No. 57,562. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. ROYAL, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Incandescent Gas-Burners, of which the following is a specification.

This invention relates to gas-burners of that class in which a refractory mantle is brought to a high state of incandescence. These mantles are composed of extremely fragile material, and a slight concussion or shock given the gas-burner will often be imparted to the mantle and cause it to break.

The object of this invention is to provide a sensitive antivibratory support for the mantle, which will protect the latter from the effects of concussions or shocks to which the lamp may be subjected.

The invention consists in certain constructions, arrangements, and combinations of the parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of an incandescent lamp provided with my improved antivibratory mantle-support, which latter is shown partly in section. Fig. 2 is a detail side elevation of the float of the said antivibratory mantle-support. Fig. 3 is a bottom plan view of the same. Fig. 4 is a detail top plan view of the cup adapted to receive said float.

Referring to the drawings, the letter *a* designates a burner of the ordinary type, intended to be secured to a gas-bracket. A stationary cup *b* is provided with an upward-projecting central tubular socket *c*, which is fitted tightly over the gas-tube *d* of said burner and is supported with its lower edge resting on the shutter *e* of the latter. The central socket *c* forms an annular well *f*, which surrounds said socket and is intended to receive a small quantity of metallic mercury *g*, as indicated in Fig. 1. A tubular float *h* (shown in detail in Figs. 2 and 3) surrounds the gas-tube *d* and the socket *c* of said cup *b*, and said float is provided at its lower end with an outwardly-extending annular base *i*, which rests upon and floats in the mercury *g* in the said cup. The circular

inner wall *j* of said base is outwardly and downwardly beveled, as shown in Fig. 1, and at its upper small part *l* fits snugly around the socket *c* and with just sufficient accuracy to permit a free up-and-down movement of the float and to permit only a very slight direct lateral movement of the same, and the lower and larger part *m* of said inner wall of the base flares away from the socket *c*, but surrounds it, all for a purpose hereinafter described.

A jacket *o* is provided with the usual wire-sieve cap *p* and is secured by any suitable means, such as the pin *q* and bayonet-slot *r*, to the tubular body portion of the float *h*. The mantle suspension-rod *s* is attached to said jacket and extends above the same, and from the upper hooked end *t* of said rod is suspended the incandescing mantle *u*, which preferably extends with its lower end surrounding the said jacket.

One side of the base *i* of the float *h* is made lighter than the diametrical opposite side to compensate for the weight of the suspension-rod *s* upon the light side by cutting away the upper surface of the base *i*, as shown at *v*; but the invention is not confined to that particular construction, as other expedients to equalize the weight may be used.

It is intended that the cup *b* shall also serve as the support or base for the chimney-gallery, which latter, however, forms no part of the present invention and for this reason is not shown.

It is to be especially noted that as the inner wall *j* of the float-base *i* is beveled, as before described, the mercury *g* will form an upwardly-tapering cushion between the upwardly-projecting portion of the cup-socket *c* and the said float, and said cushion tapers to almost nothing at the upper edge *l* of said wall, so that the mercury cushion will allow the float *h* to slightly oscillate, but will prevent shocks or concussions upon the socket from being imparted to the float. It is also to be noted that by forming the base *i* with a beveled bottom wall *m* the float may oscillate without the outer wall of its base coming in contact with the bottom of the cup.

By the construction and arrangement of parts hereinbefore described the mantle is

protected from the effects of any shocks or concussions to which the burner may be subjected.

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

1. In a lamp adapted to use an incandescent mantle, the combination of a stationary cup provided with a well surrounding a gas-tube of the lamp; metallic mercury in said cup; and a tubular float in said cup and adapted to carry or support the mantle, said float being provided with an inclined inner wall surrounding the inner wall of said well, whereby the mercury will form a tapering cushion between said two walls, as set forth.

2. In a lamp of the character described, the combination with a gas-tube of the lamp, of a cup provided with a socket by which it may be inserted over said gas-tube, and also provided with a well surrounding said socket; metallic mercury in said well; and a float in said mercury adapted to carry or support the mantle, said float being provided with an annular outwardly-extending base having an inner circular wall surrounding said socket, and said inner wall being beveled downwardly and outwardly from said socket, whereby the mercury forms an upwardly-tapering cushion between said socket and wall.

3. In a lamp of the character described, the combination of a cup, *b*, provided with a socket, *c*, and well, *f*; and float, *h*, provided with an annular base, *i*, adapted to float in said cup, and which base has a beveled inner wall, *j*, and a bottom wall, *m*, beveled upwardly from the lower edge of said inner wall, as set forth.

4. In a lamp adapted to use an incandescing mantle, the combination with a gas-tube of the lamp, of a cup provided with a socket fitting around said gas-tube and said cup also

provided with a well surrounding said socket; metallic mercury in said well; and a tubular float in said mercury adapted to support the mantle and having an opening which receives said socket, the wall of said opening and the exterior wall of said socket being arranged with respect to each other so as to form a tapering space between them, whereby the mercury will form a tapering cushion between said two walls.

5. In a lamp adapted to use an incandescing mantle, the combination with a gas-tube of the lamp, of a cup provided with a socket fitting around said gas-tube and also provided with a well surrounding said socket; metallic mercury in said well; and a float-base in said mercury carrying means to support the mantle and having an opening which receives said socket, said float-base having a greater vertical thickness at the socket-opening than at its outer edge, and said variation in thickness being produced by the conformation of the bottom surface.

6. In a lamp adapted to use an incandescing mantle, the combination with a gas-tube of the lamp, of a cup provided with a socket fitting around said gas-tube and also provided with a well surrounding said socket; metallic mercury in said well; and a float in said mercury adapted to support the mantle and having an opening which receives said socket, said float having an inclined bottom surface whereby the same will have a greater depth in the mercury near the socket-opening than at the outer edge.

In testimony whereof I affix my signature in the presence of two witnesses.

HENRY W. ROYAL.

Witnesses:

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CHARLES L. VIETSCH.