

No. 670,258.

Patented Mar. 19, 1901.

G. TRESSENREUTER.
BUNSEN BURNER.

(Application filed Aug. 21, 1900.)

(No Model.)

Fig. 1.

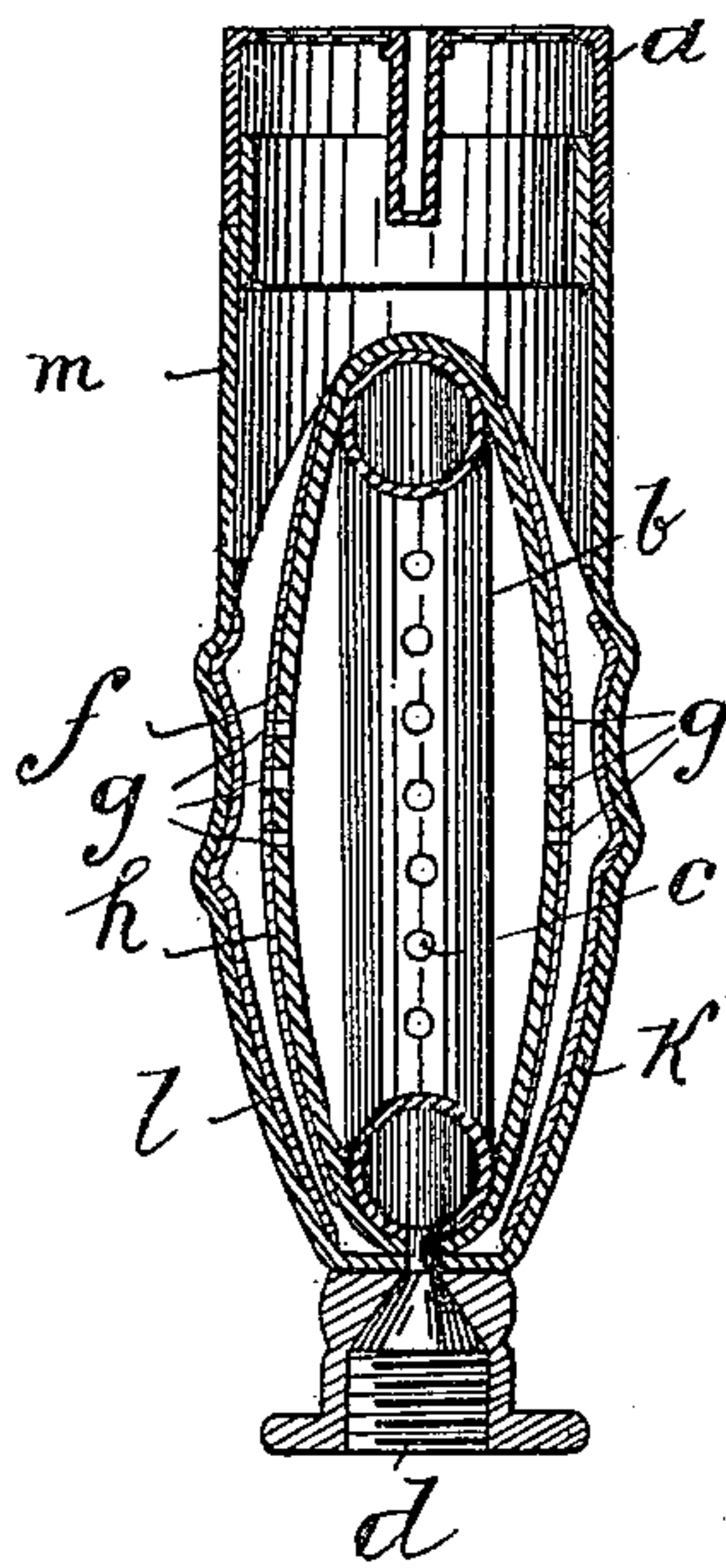


Fig. 2.

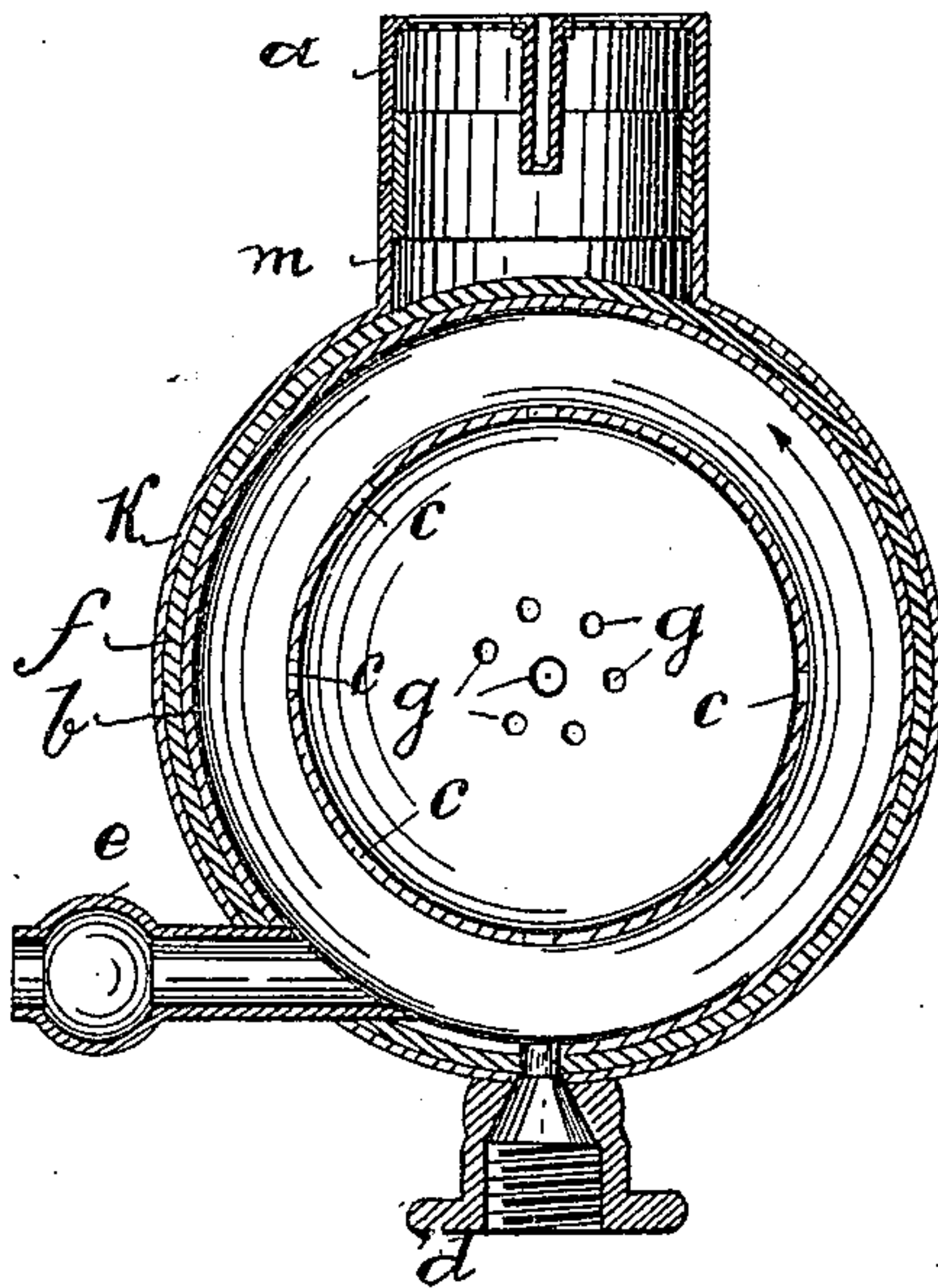


Fig. 3.

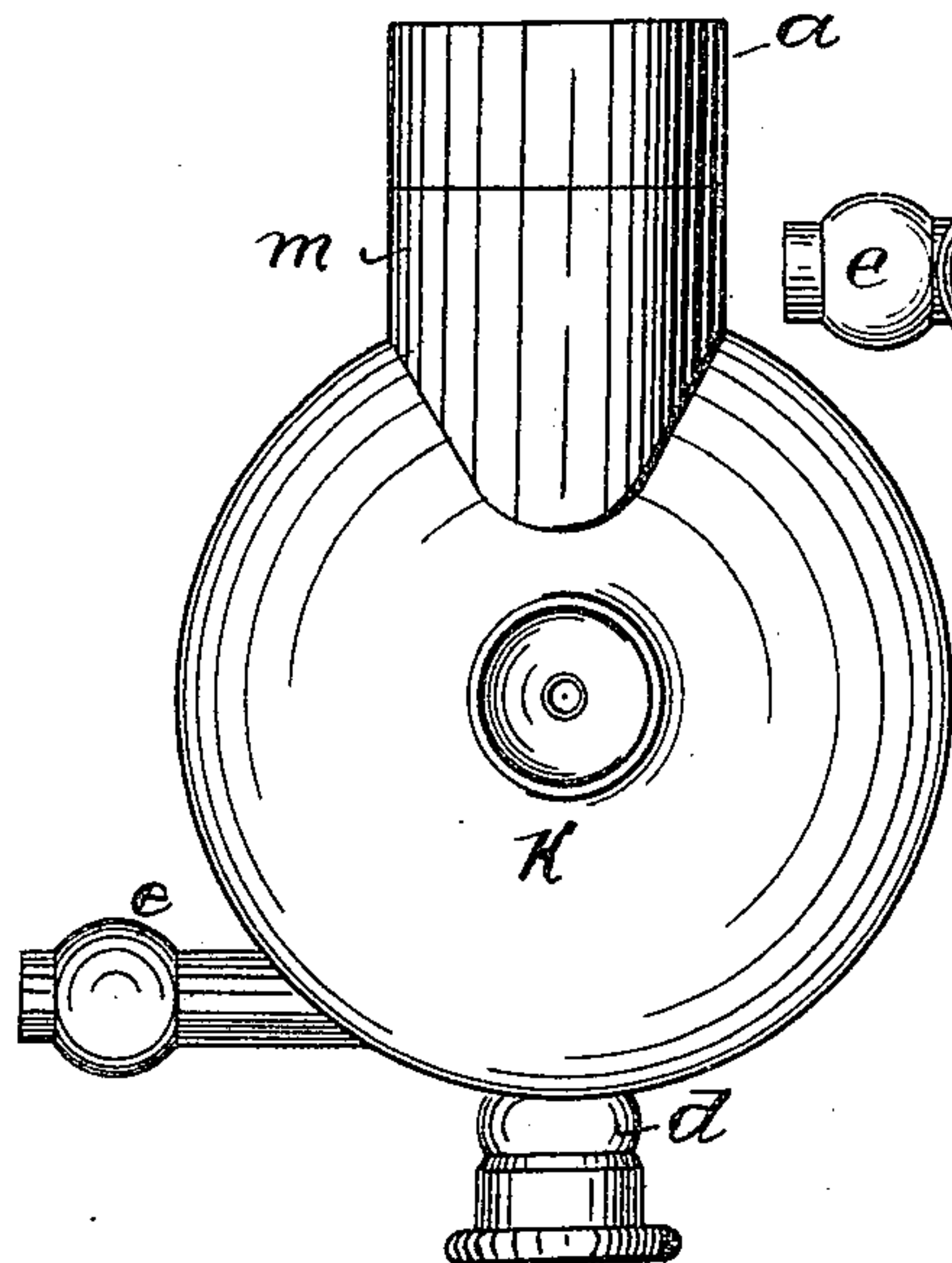
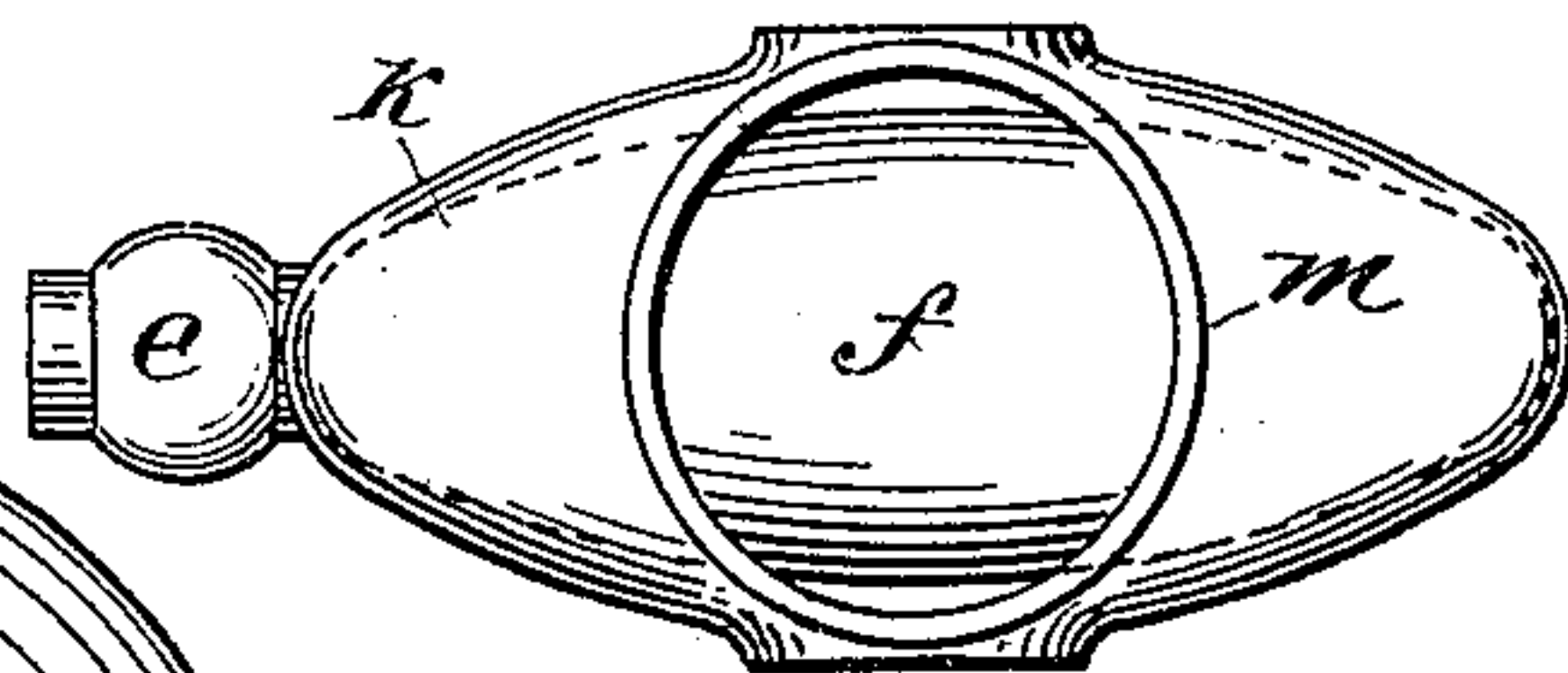


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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BUNSEN BURNER.

SPECIFICATION forming part of Letters Patent No. 670,258, dated March 19, 1901.

Application filed August 21, 1900. Serial No. 27,550. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV TRESENREUTER, a subject of the Emperor of Germany, residing in Berlin, Germany, have invented certain new and useful Improvements in Bunsen Burners, of which the following is a specification.

This invention relates to a burner of the Bunsen type for use with incandescent mantles or other purposes, the object of the invention being to provide means for producing an exceptionally thorough mixture of the gas with air introduced under pressure and avoid the noise caused in other burners of this kind working with air under pressure and obviate other disadvantages.

The invention consists of a Bunsen burner comprising an exterior casing, an interior casing, an annular tube within the latter, means for admitting air under pressure to said tube, means for admitting gas under pressure to said tube, said tube and interior casing being provided with openings, and a burner-tube and cap connected with said exterior casing. The invention consists, further, of certain other combinations of parts, which will be more fully described and claimed hereinafter.

In the accompanying drawings, Figure 1 is a sectional elevation of the burner. Fig. 2 is a section at right angles to Fig. 1. Fig. 3 is a side elevation of the burner; and Fig. 4 is a top view with the cap removed.

Similar letters of reference indicate corresponding parts.

k indicates the exterior and *f* the interior casing of the burner. Within the interior casing is a tubular ring *b*, which is provided at its inner circumference with openings *c*. To this annular tube *b* the gas-supply pipe may be connected by means of a nipple *d*, and the air-supply pipe is connected therewith by means of the air-inlet tube *e*. The casing *f* is provided at both sides with outlet-openings *g* and with a felt covering *h*, having openings corresponding with the openings *g*. The outer casing *k* is provided at the inside with a lining of felt *l* and connects at its upper part with the cylindrical burner-tube *m*, which carries the burner-cap *a*. The felt coverings are made of any suitable sound-dead-

ening material, preferably a non-conductor of heat, so as to deaden the sound of the passing gas and prevent the burner from becoming heated.

The operation is as follows: The illuminating-gas enters through the nipple *d* and air through the tube *e* into the annular tube *b*. The current of air is under strong pressure and carries the gas along with it and moves it forward around the ring *b*, as indicated by the arrow in Fig. 2. In this way the two elements, air and gas, are very thoroughly mixed. That portion of the mixture which has not passed through the small openings *c* is always seized again by the current of air entering constantly at *e*, and in this way the mixing is carried on without interruption and in a vigorous manner. The mixture passing out in streams through the openings *c* is freshly and completely mixed again by the meeting together of the different streams and then passes through the openings *g* into the space between the interior and exterior casings, and from there it flows into the burner-tube *m* and cap *a* and is burned at the upper side of the screen of said cap.

If the burner is attached to an ordinary gas-service pipe under the usual conditions and employing a mantle, a very high illuminating power is obtained. Moreover, the mantles will not be damaged or blown away, and all disturbing noise is avoided. No damage to the interior of the burner or entry of atmospheric air to the flame is possible, as the whole of the apparatus is hermetically closed, and by increasing the air-pressure it is possible at any time to increase the intensity of the light in a corresponding degree. It is obvious that the burner can also be applied for cooking, heating, and other purposes for which burners of the Bunsen type are employed.

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

1. A Bunsen burner, consisting of an exterior casing, an interior casing, an annular tube within the latter, means for admitting air under pressure to said tube, means for admitting gas under pressure to said tube, said tube and the interior casing being provided with

openings, and a burner tube and cap connected with said exterior casing, substantially as set forth.

2. A Bunsen burner, consisting of an exterior casing, an interior casing, both of said casings being provided with a suitable covering of a sound-deadening material, an annular tube within the interior casing, means for admitting air thereto, means for admitting gas thereto, said tube and interior casing being provided with openings, and a burner tube and cap connected with the exterior casing, substantially as set forth.

3. A Bunsen burner, consisting of an exterior casing, an interior casing, both of said casings being provided with a suitable covering of a sound-deadening non-conductor of heat, an annular tube within the interior casing, means for admitting air thereto, means for admitting gas thereto, said tube and in-

terior casing being provided with openings, and a burner tube and cap connected with the exterior casing, substantially as set forth.

4. A Bunsen burner, consisting of an exterior casing, an interior casing, an annular tube within the latter, means for admitting air under pressure to said tube, means for admitting gas thereto, said tube being provided with openings at its inner circumference, openings in the interior casing, and a burner tube and cap connected with the exterior casing, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

GUSTAV TRESENREUTER.

Witnesses:

HENRY HASPER,

WILLIAM MAYNER.