

No. 612,797.

Patented Oct. 18, 1898.

G. W. CHALMERS.
INCANDESCENT GAS BURNER.

(Application filed Dec. 13, 1897.)

(No Model.)

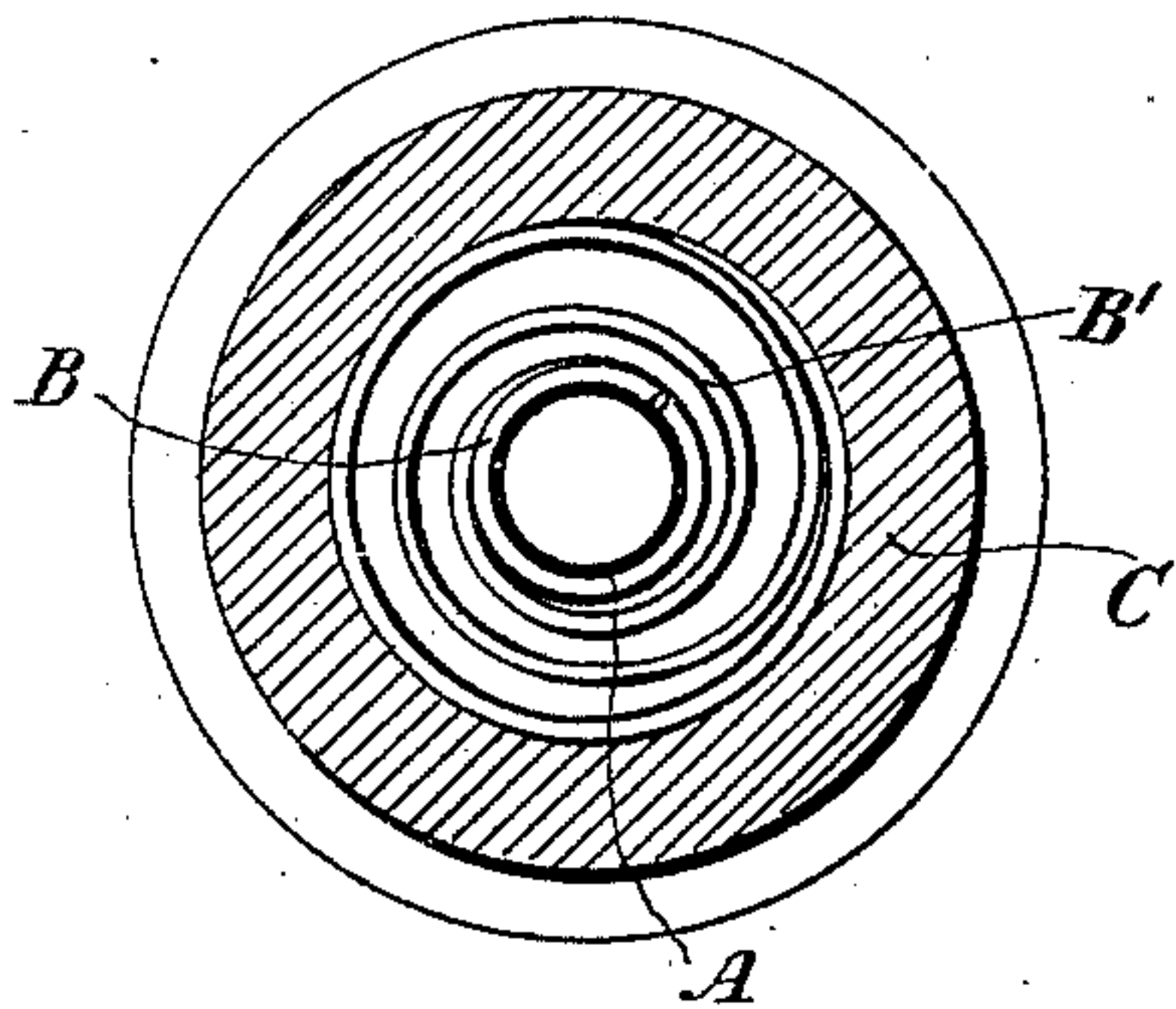


Fig. 2.

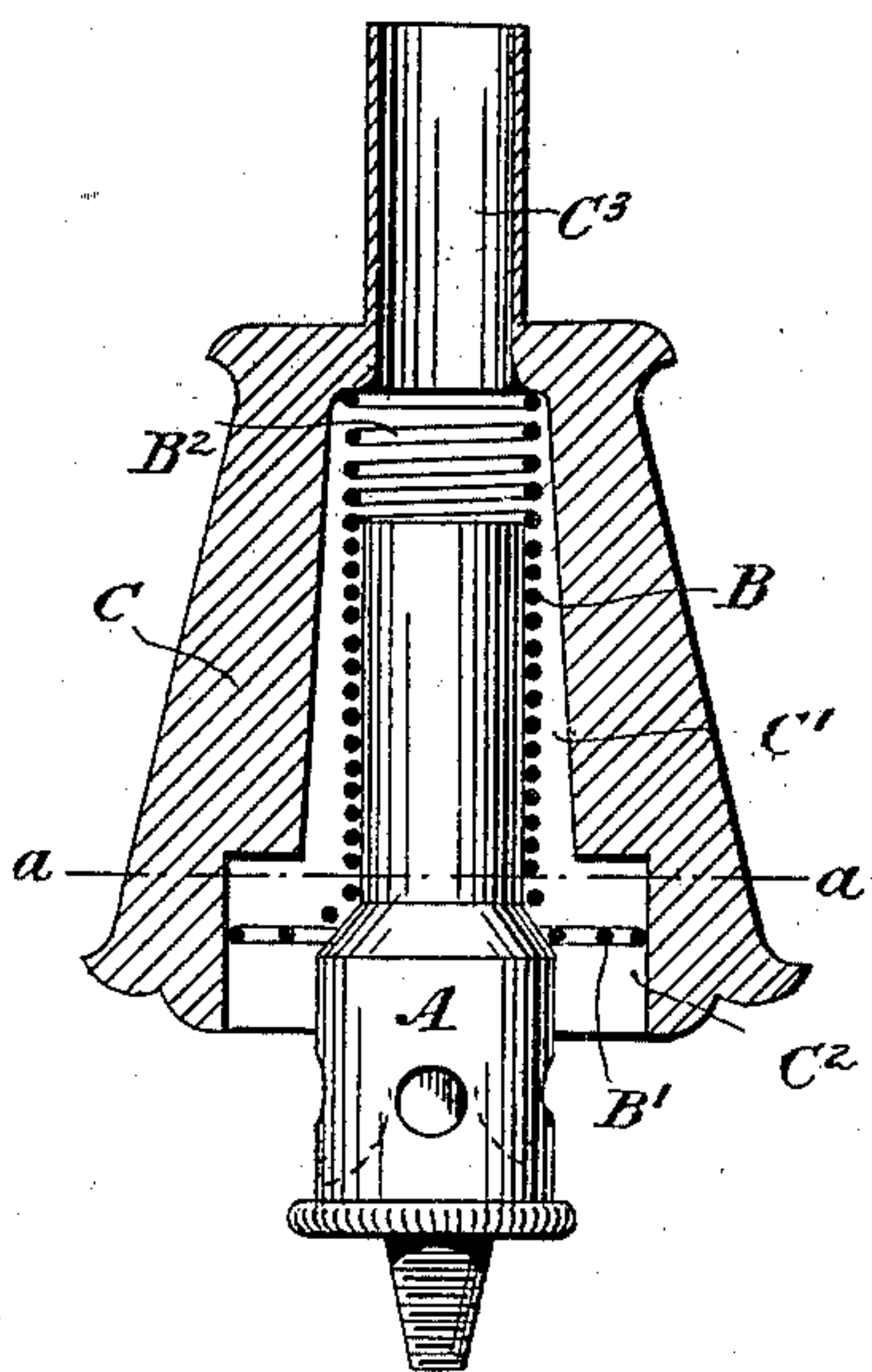


Fig. 1.

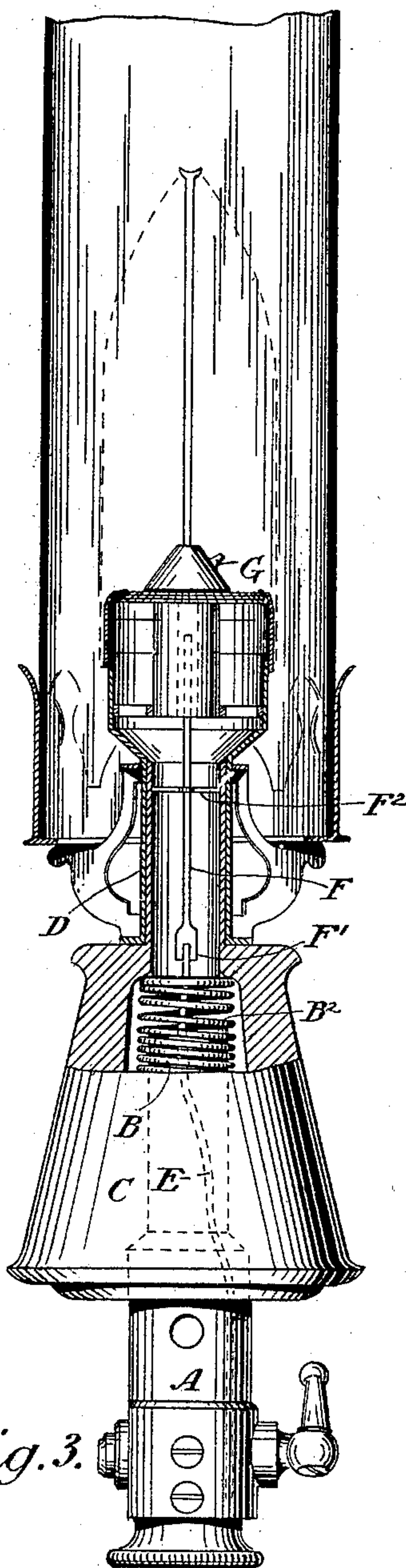


Fig. 3.

Witnesses:-
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UNITED STATES PATENT OFFICE.

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INCANDESCENT GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 612,797, dated October 18, 1898.

Application filed December 13, 1897. Serial No. 661,594. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WHITWELL CHALMERS, a subject of the Queen of Great Britain, and a resident of No. 55 Gamon street, Footscray, in the Colony of Victoria, have invented certain new and useful Improvements in or Connected with Incandescent Gas-Burners wherein Fragile Mantles are Used, of which the following is a specification.

10 This invention has been devised for the purpose of providing means for overcoming certain objections which are found to exist in the employment of the usual incandescent gas-light mantles and their fittings—viz., the liability of such mantles to crumble or break to 15 pieces when the fittings receive shocks or vibrations. I provide an intermediary "shock-receiver" which cushions and absorbs any sudden concussions and prevents the same 20 being communicated to the fragile mantle. By my invention the life of a mantle is thus considerably lengthened, and such mantles may, in connection with my invention, be employed in certain places and under certain 25 conditions in which they at present must be excluded—for instance in manufactories, vessels, streets, and other places where vibration is present.

30 The appliance or apparatus embodying my invention is cheaply constructed and not liable to get out of order.

In order to make my invention clear, I shall describe same with reference to the accompanying sheet of drawings, in which—

35 Figure 1 shows a vertical section of one form of appliance embodying my invention. Fig. 2 is a sectional plan on line *a a* of Fig. 1, while Fig. 3 is an elevation, partly in section, illustrating means of connecting the 40 pilot-light with my antivibratory appliance.

In the drawings, A represents the usual Bunsen tube employed in connection with incandescent mantle-fittings, such Bunsen tube being screwed or secured onto the usual gas 45 connections. Upon this Bunsen tube a spiral spring B is placed, such spring being preferably arranged to encircle and closely fit upon the said Bunsen tube and having at its bottom a portion B', turned into volute form, 50 such portion forming a base and which rests upon the reducing portion of the Bunsen tube. While the parts B B' are preferably

in one piece, this is not essential. The parts B B' are in effect two separate springs acting at right angles to each other. The spiral 55 spring is arranged, preferably, with its convolutions near the base close together and somewhat spread out toward the top B², so as to allow air to freely pass in and extend above the said Bunsen tube. This spring is arranged to support a weighted body or inert 60 mass C, of metal or other material, and preferably about one and one-half pounds in weight. This weighty body is recessed out at C' for the reception of the spiral spring 65 and has near its bottom an enlarged recess C², in which the extending or volute base B' lies, said base being arranged to press lightly upon the sides of the said recessed part, so as to assist in keeping the weighted mass in 70 a true or plumb position, at the same time allowing of slight sway in any direction. The weighty mass or body C is open at its top and provided with a tube C³, communicating with said opening, said tube being for the purpose 75 of receiving the ordinary crown D, Fig. 3, carrying the burner, mantle, &c.

Although I prefer the form of inert body or mass above described, I may construct the same of any other tasty or convenient form 80 which would preserve the equilibrium of the chimney as effectually and conserve and inclose a free passage for the gas.

It will be seen that the body C depends from the top of spring B and that the greater part 85 of the weight is below the point of support.

E, Fig. 3, represents the ordinary pilot-tube, which with the Bunsen tube A is connected with the gas-supply service. This tube E passes up within the Bunsen tube and spiral 90 spring B and projects for a short distance above it. I provide a similar tube F, which terminates in an enlarged mouth F', and in this said mouth the aforesaid pilot-tube E terminates without being in contact with it. 95 This tube F is supported, preferably, by a cross-bar F², attached to it and which rests upon the top of the Bunsen tube. The tube F projects into the burner and is in communication with small jet G, or it may be fixed rigidly to the 100 top portion of the burner.

I do not limit myself to the form of spring shown between the Bunsen tube and the heavy body C.

In practice when the fittings receive a shock or concussion such as that given by an accidental blow or otherwise, which would in the ordinary way be communicated to and break the fragile mantle, such concussion is (when my invention is used) received and rendered ineffectual by the spring B and the heavy inert body C and no harm will result to the said mantle.

By means of the enlarged mouth of the hanging pilot-tube F a certain amount of vibratory movement is allowed for the fitting, so that concussions which may be received by the Bunsen tube A are not communicated through the medium of the tube to the crown D and its friable mantle.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. The combination of a heavy body, a mantle supported thereby, the combustion portion of a burner and an inclosed interposed spring directly supporting the body and mantle and forming the only support of said heavy body.

2. The combination of a heavy body, the combustion portion of a burner and a mantle supported thereby, a gas pipe or fitting and an inclosed interposed spring solely supporting the body, burner and mantle.

3. The combination of a hollow open-bottomed body C, a gas-tube therein, a spring on said tube and supporting body C, and a burner and mantle supported on said body.

4. The combination of a gas-tube A, a hollow open-bottomed body C having a tubular extension C³, a burner held by said extension, and a spring supporting body C.

5. The combination of a gas-tube A, a hollow open-bottomed body C, a burner supported thereon, a pilot-tube, a small tube F with bell F' into which the pilot-tube extends, and a spring supporting said body.

6. The combination of a gas-burner, a mantle therefor, a movable heavy body hollow and open at the bottom and from which the burner and mantle are supported, a spring within and supporting said heavy body, and means for connecting the burner to a gas-tube.

7. The combination of a Bunsen tube adapted to be secured to a gas-supply pipe, a gas-burner, a mantle therefor, a heavy body hollow and open at the bottom depending from the burner, and a spring between the burner and mantle and the Bunsen tube.

8. The combination of a gas-burner, a mantle, a heavy body depending from said burner, a tube adapted to be connected with a gas-supply pipe, a spring supporting said heavy body vertically, and a spring steadying said heavy body horizontally but adapted to yield slightly as set forth.

Signed at Melbourne, in the Colony of Victoria, this 11th day of October, 1897.

GEORGE WHITWELL CHALMERS.

Witnesses:

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