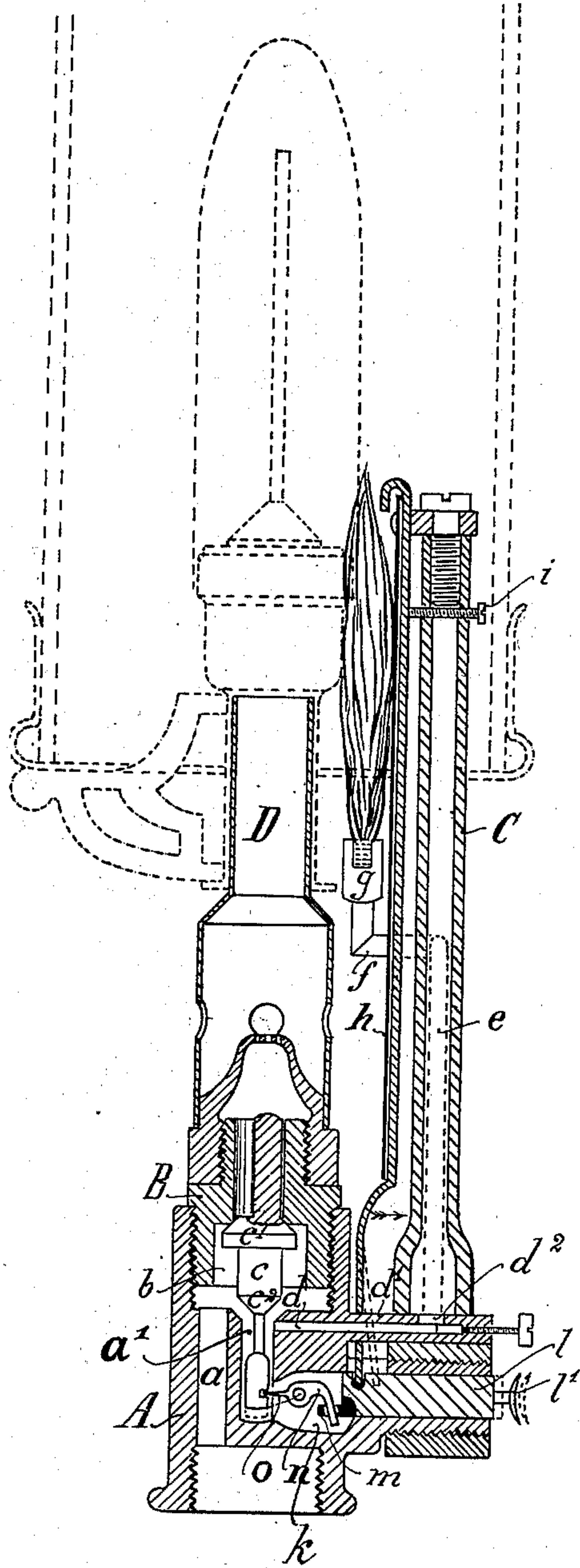


No. 656,385.

Patented Aug. 21, 1900.

R. BEESE.  
SELF IGNITING GAS BURNER.  
(Application filed June 27, 1899.)

(No Model.)



Witnesses.

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# UNITED STATES PATENT OFFICE.

RICHARD BEESE, OF DRESDEN, GERMANY.

## SELF-IGNITING GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 656,385, dated August 21, 1900.

Application filed June 27, 1899. Serial No. 722,031. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD BEESE, architect, a subject of the Emperor of Germany, residing at 13 Gluckstrasse, Dresden, in the Kingdom of Saxony, German Empire, have invented certain new and useful Improvements in Self-Lighting Gas-Burners, of which the following specification, together with the accompanying drawing, forming an inseparable part thereof, is a full and clear description.

The drawing shows in vertical section a gas-burner provided with my invention.

From the drawing it will be seen that I employ a head A, provided with a vertical opening *a*, which in turn leads to a cut-away section *b*, the head having the inner surface of its walls screw-threaded and adapted to receive the lower hollowed end of a cap B, thereby forming a small chamber in the upper portion of said head. Mounted in said head is a valve-stem *c*, the upper end of which enters a certain distance within a central vertical opening in cap B, while at its lower end it passes downwardly into a registering vertical opening *a'*, formed in the said head A. It will be thus understood that the said valve is susceptible of a vertical reciprocating movement. Formed on said valve and near its end is the valve-cone *c'*, which when raised tightly closes the cap-opening, thus shutting off any flow of gas therethrough. A predetermined distance below said cone the valve-stem is cut away, forming a cone *c''*, which when said valve is depressed presses snugly against the walls of opening *a'*, closing thereby the same to any outflow of gas. Formed in the said head A and preferably at right angles to the aforesaid openings is a passage *d*, connecting at its outer end with a tube *d'*, which latter, passing through a hollow rod *e*, is, by means of an opening *d''*, in connection therewith. At a suitable position on said rod and connecting with the passage therein is an elbow-pipe *f*, having in its upper end a sponge of platinum *g* or other self-igniting mass, as desired. Fastened to said rod *e* is a depending compound plate *h*, preferably composed of two or more materials differently expanding at a given heat—for example, iron and copper—and engaging at its lower end a reciprocating plunger *l*, moving in a suitable guide, and connected at its inner end by a

nose *m* with a bell-crank lever *n* and its other arm *o*, the guide being provided with a cut-away section *k*, allowing free play of said lever. The latter in turn is connected with and adapted to move the double valve *c* aforesaid upwardly or downwardly. The lower end of the said valve-stem *c* snugly fills the opening *a'*, so as to prevent any escape of gas there-through, while on the outer end of the plunger *l* is fastened a button *l'*. On the upper screw-threaded portion of the cap B is screwed the common main burner D.

The operation of my invention will be clearly understood from the foregoing description and following statement. Desiring to ignite the flame, the cock is opened, whence the gas passing into head A through opening *a* into chamber *b* is there checked, as valve *c* is in its upper position; but a small and minimum amount is allowed to pass through the upper portion of opening *a'*, through passage *d*, tube *d'*, opening *d''*, rod *e*, through pipe *f*, and upon the self-igniting mass *g*, thereby producing a small flame, which in turn gives heat to the compound plate *h*. The latter owing to the different expansion of its metal layers deviates from its normal position, thereby moving the plunger *l*, whose nose *m* raises the adjacent end of the bell-crank lever *n*, depressing valve-stem *c*, and opening valve *c'*, and so allowing the gas to pass to the burner, where it is ignited by the small flame. As valve-stem *c* is now depressed, the flow of the gas to the igniting mass *g* is checked until the small flame is extinguished; but the plate *h* remains deviated under action of the heat of the main flame. Should the main flame be extinguished through any cause while the cock is open, the same may be re-ignited by pressing the button *l'*, whence a limited gas-flow is again brought to act upon the igniting mass.

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

1. In a new and improved self-igniting gas-burner, the combination of a head provided with openings, a burner secured thereto, a double valve working in said head, a self-igniting mass, means for carrying a gas-current from said head to said mass, a compound metal plate adjacent to said mass and adapt-



ed through the unequal expansion of its plates to deviate from its normal position a plunger actuated by said deviation, a bell-crank lever in connection with said plunger  
5 and adapted to so operate said valve as to simultaneously open said burner and close said current to said mass, substantially as described.

2. In a new and improved self-igniting gas-  
10 burner, the combination of a head provided with openings, a burner secured thereto, a double valve working in said head, a self-igniting mass, means for carrying a gas-current from said head to said mass, a compound  
15 metal plate adjacent to said mass and adapt-

ed through the unequal expansion of its plates to deviate from its normal position, a plunger actuated by said deviation, a bell-crank lever in connection with said plunger and adapted to so operate said valve as to  
20 simultaneously open said burner and close said current to said mass, a button in connection with said plunger to reignite by means of the small flame the light-flame unintentionally extinguished while the compound  
25 plate is yet deviated.

RICHARD BEESE.

Witnesses:

HERNANDO DE SOTO,  
PAUL ARRAS.