

No. 633,259.

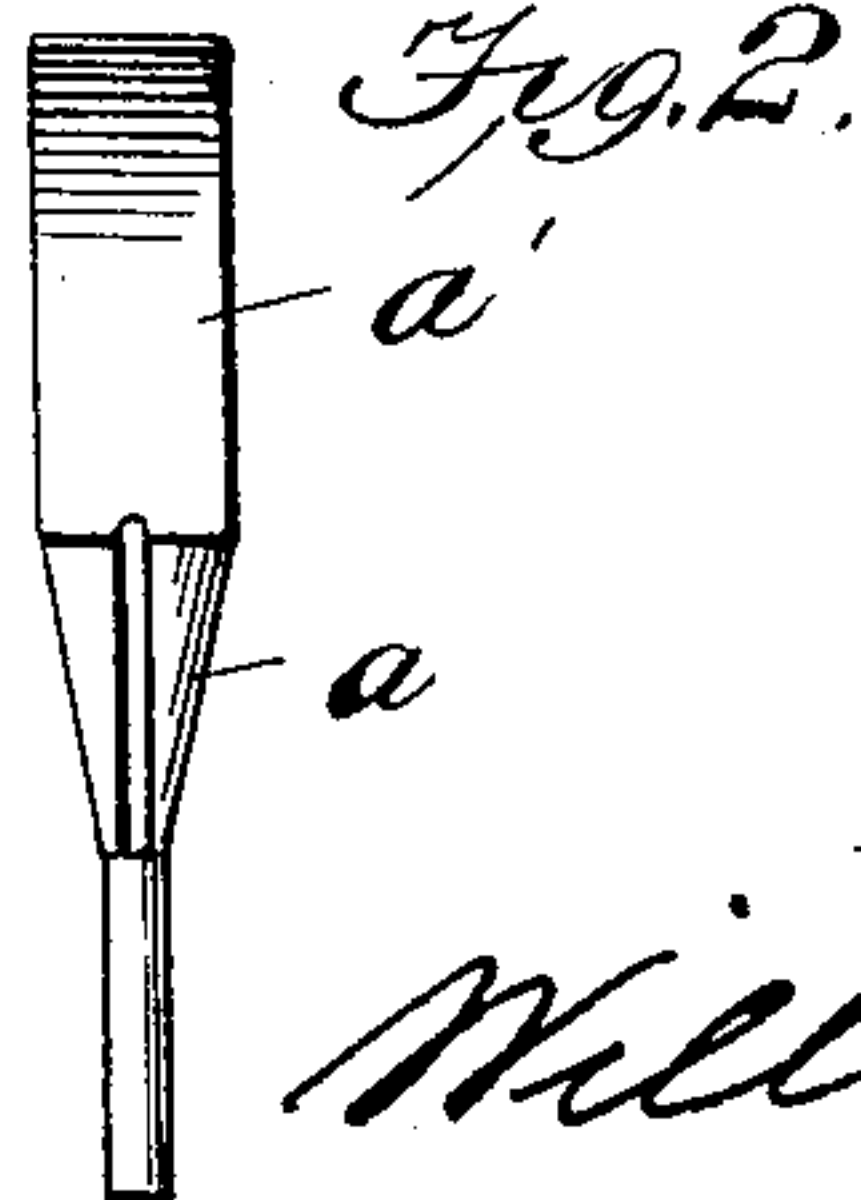
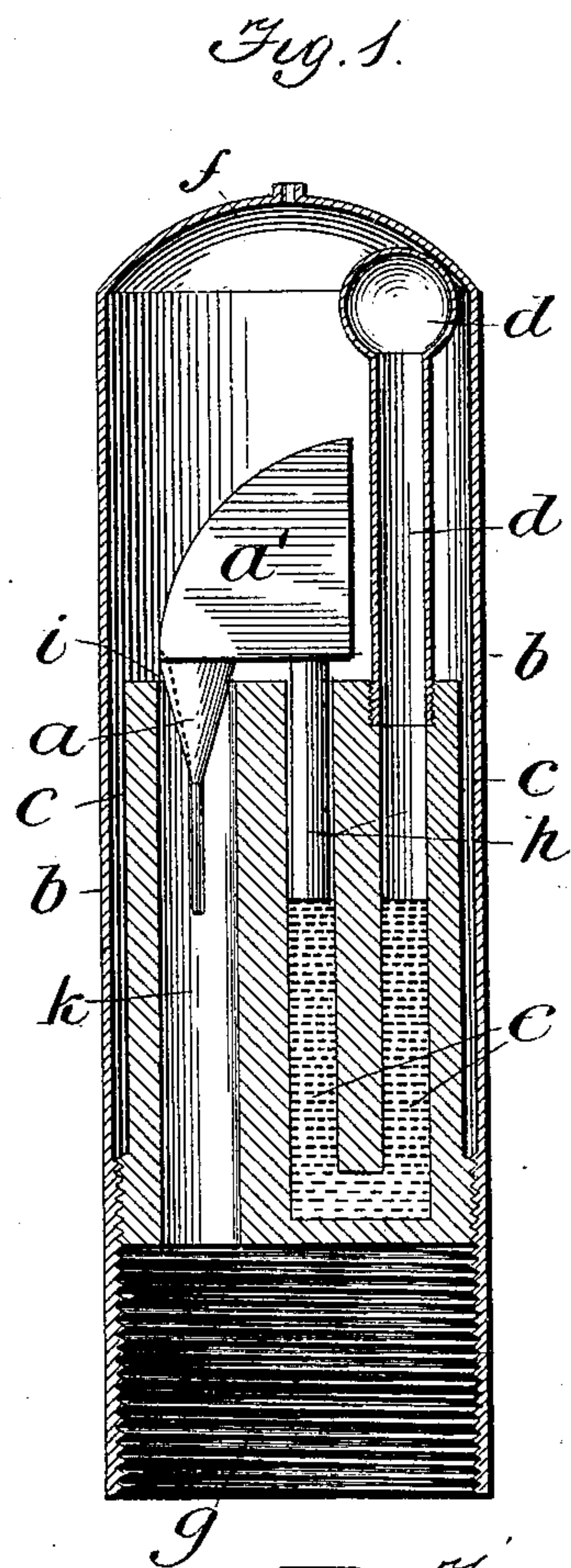
Patented Sept. 19, 1899.

W. E. BOORAEM.

GAS BURNER.

(Application filed June 30, 1898.)

(No Model.)



Witnesses.  
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Inventor.  
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# UNITED STATES PATENT OFFICE.

WILLIAM E. BOORAEM, OF NEW YORK, N. Y.

## GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 633,259, dated September 19, 1899.

Application filed June 30, 1898. Serial No. 684,897. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. BOORAEM, a citizen of the United States, residing in New York, in the county of New York and State of New York, have invented a new and useful Improvement in Gas-Burners, of which the following is a specification.

This invention relates generally to gas-burners, and more particularly to a construction adapted to prevent the escape of gas in case the light should become extinguished in an accidental or improper manner.

Another object of the invention is to provide for a limited passage of gas to the burner in order that it can be lighted in the proper manner.

With these various objects in view the invention consists in the peculiar construction of the various parts and in their novel combination and arrangement, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings, Figure 1 is a longitudinal view, partly in section, the burner proper being omitted. Fig. 2 is an elevation of the cone-valve A, showing the groove which permits a small amount of gas to escape when said valve is closed.

In carrying out my invention I employ an outer shell or cylinder *b*, threaded at its lower end, as shown at *g*, for connections to the supply-pipe, and at its upper end the said shell is arched or dome-shaped and provided with a central opening for the attachment of an ordinary burner. A block or longitudinal body *c* is secured in the outer shell *b* by having its lower end threaded into the lower threaded end of the shell *b*, and this cylindrical block or body is formed with a vertical passage-way *k*, through which the gas passes, and a conical or needle-shaped valve *a* is located in the upper end of this passage-way for the purpose of cutting off the supply of gas whenever the light becomes extinguished, said valve being connected to a block *a'*, which carries a plunger *h*, located in one branch of a U-shaped passage-way *e*, produced in the block or body portion, a reservoir *d* being se-

cured in the opposite branch, said reservoir consisting, essentially, of a tube having a bulb *d'* at the upper end, which is located adjacent to the dome-shaped top of the shell *b*. The U-shaped passage-way is filled to a definite extent with mercury or other expansible material. The cone or needle shaped valve *a* is provided with a slight groove or recess *i* to permit a limited amount of gas to always pass through the passage *k* to the burner in order that the said burner can be lighted whenever desired; but the amount of gas which escapes in this manner is not sufficient to prove injurious.

As soon as the burner is lighted the heat from the flame acts immediately upon the air or other expansive fluid within the reservoir and in turn upon the expansive fluid contained in the U-shaped passage and the plunger is elevated, which of course elevates the valve and permits a free passage of the gas to the burner. The moment the flame becomes extinguished the heat therefrom ceases and the expansive fluids immediately contract and the plunger descends, carrying with it the valve and closing the upper end of the passage *k*, except by the groove *i*.

It will thus be seen that I provide an exceedingly simple and efficient means for automatically cutting off the flow of gas in case the flame becomes accidentally extinguished.

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

1. A gas-burner comprising a shell to which the burner is attached, a body or block located in said shell and having a passage-way for the gas, a valve located at the end of said passage, a U-shaped passage having a plunger located in one branch and connected to the valve, and a reservoir connected to the opposite branch of the U-shaped passage, and the expansive fluid or fluids contained within the U-shaped passage, substantially as shown and described.

2. In a gas-burner, the combination with a shell, of a block or cylindrical body within the said shell, and having a straight passage



for the gas, a U-shaped passage adapted to receive an expansive fluid, reservoir connected to one branch of the U-shaped passage, a cone-valve located in the top of the gas-passage, and having a recess or groove to permit  
5 a limited escape of the gas, a plunger located in the adjacent branch of the U-shaped passage, and a block connecting the said plunger

and cone-valve, substantially as and for the purpose described.

New York, N. Y., June 29, 1898.

WILLIAM E. BOORAEM.

In presence of—

JAMES J. BRENNAN,  
THOMAS BRENNAN.