

J. F. BARKER.
GAS BURNER.

No. 105,768.

Patented July 26, 1870.

FIG. 1



FIG. 2

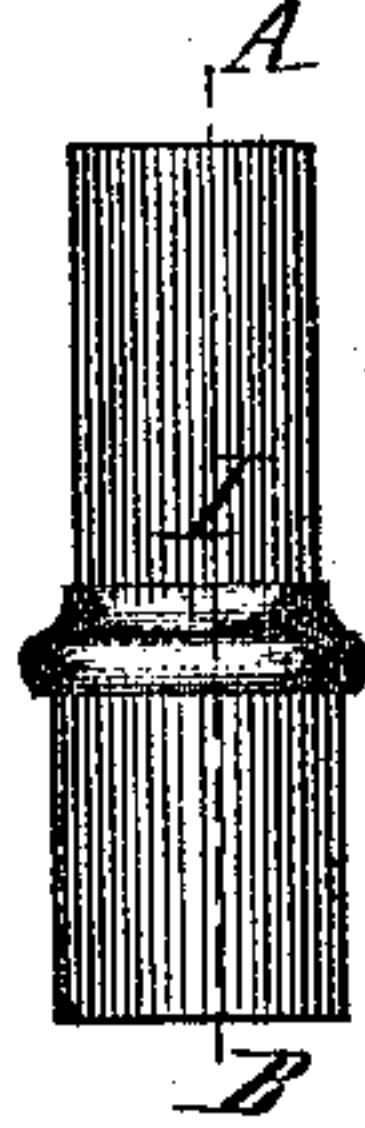


FIG. 3

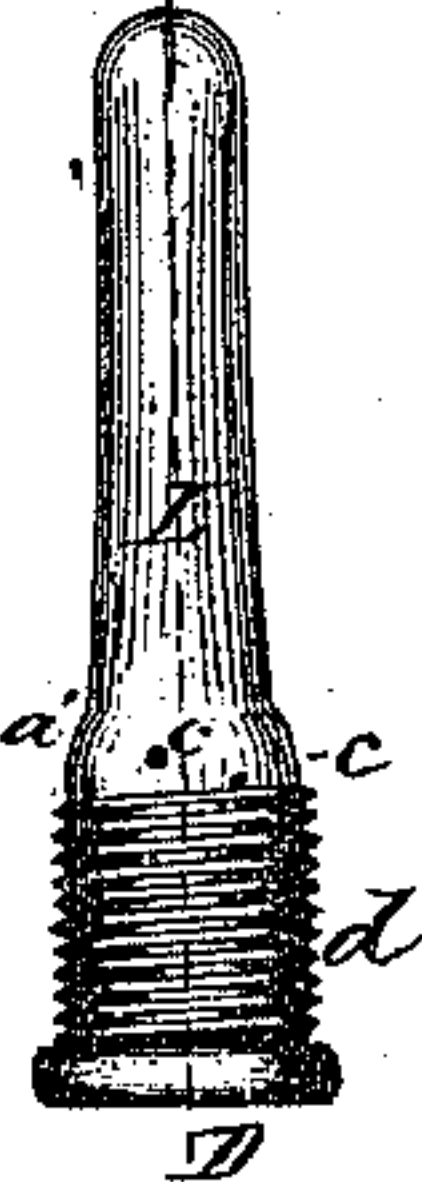


FIG. 4

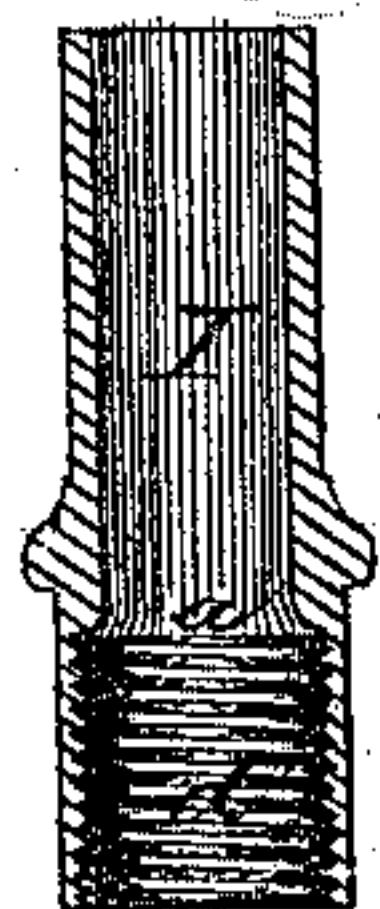


FIG. 5

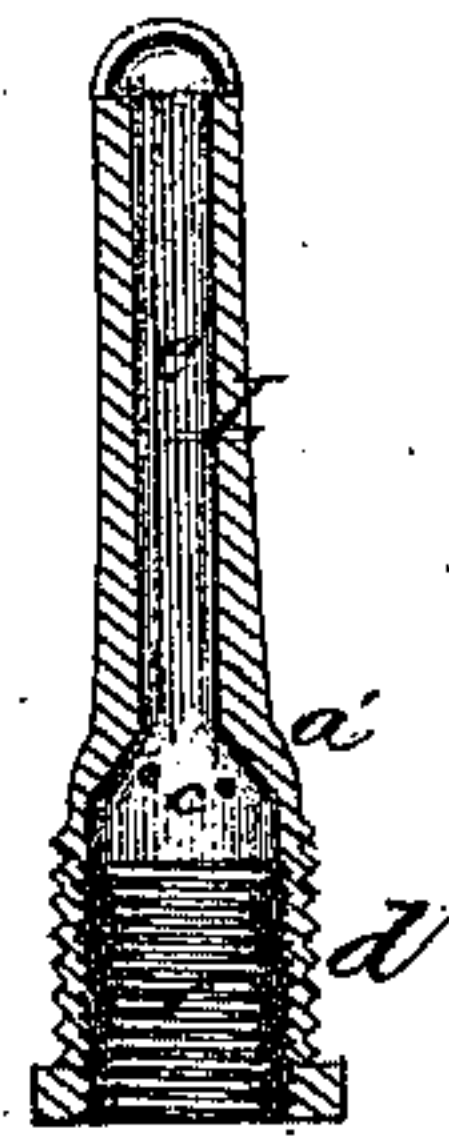


FIG. 6

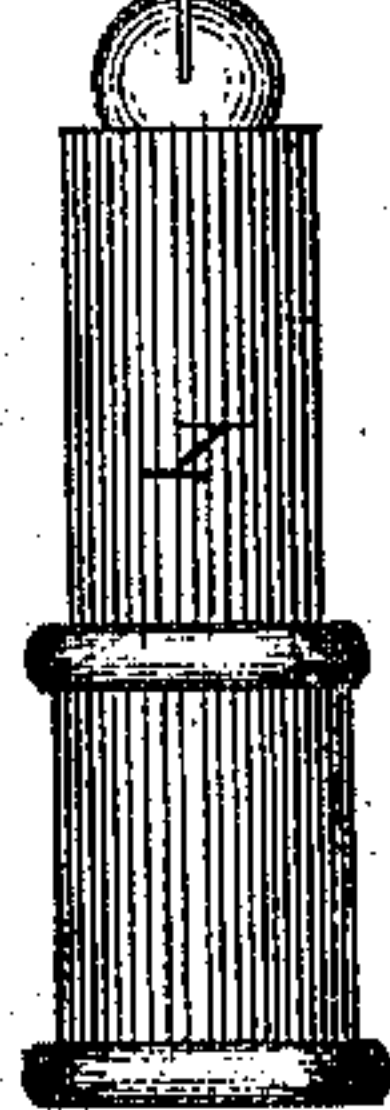


FIG. 7



FIG. 8

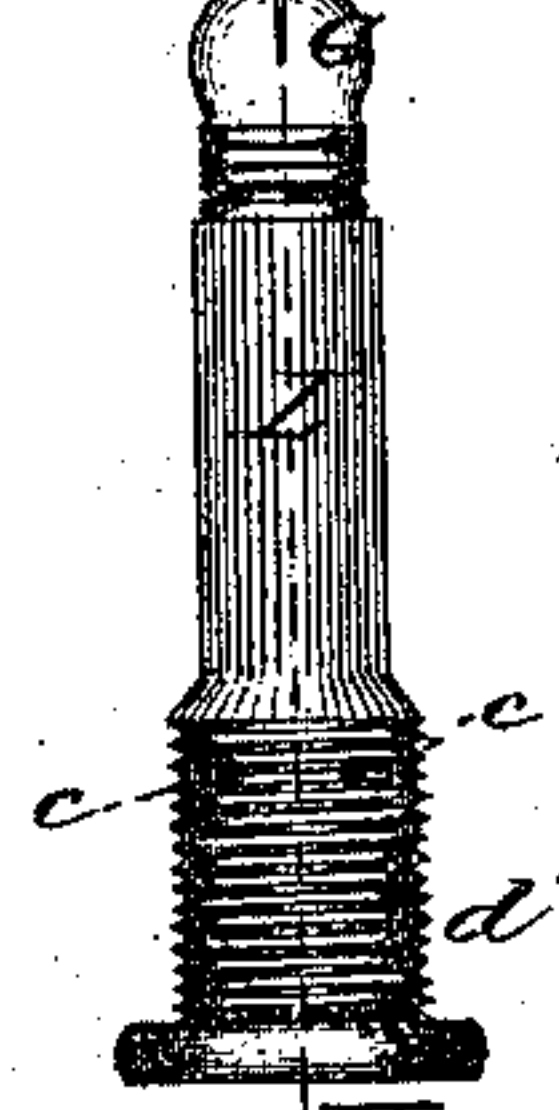


FIG. 9

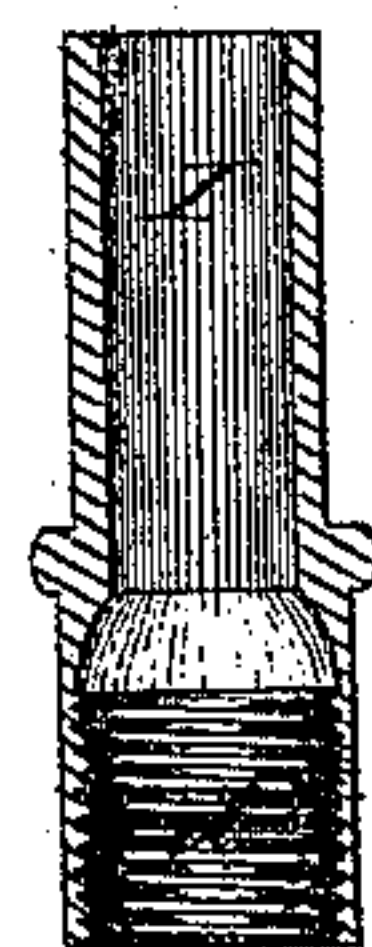
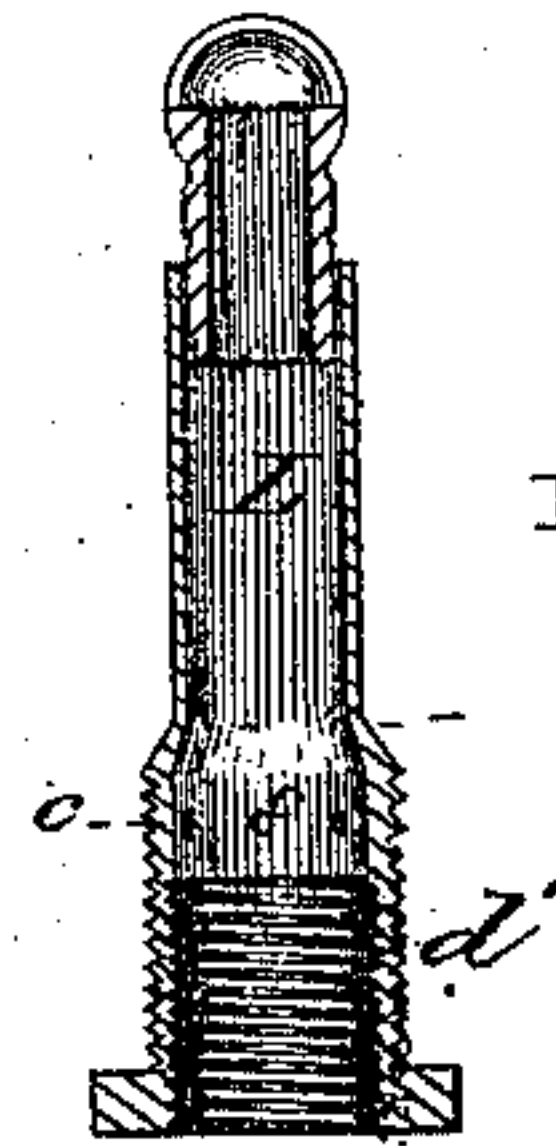


FIG. 10



Witnesses.

J. A. Curtis
Charles B. Howard

John F. Barker Inventor,

UNITED STATES PATENT OFFICE.

JOHN F. BARKER, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN GAS-BURNERS.

Specification forming part of Letters Patent No. **105,768**, dated July 26, 1870.

To all whom it may concern:

Be it known that I, JOHN F. BARKER, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new Improvement in Gas-Burners; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of one modification of my invention. Fig. 2 is a side view of the shell. Fig. 3 is a side view of the burner. Fig. 4 is a vertical longitudinal section of the shell through line A B of Fig. 2. Fig. 5 is a vertical longitudinal section of the burner through line C D of Fig. 3. Fig. 6 is a side view of another modification of my invention. Fig. 7 is a side view of the shell. Fig. 8 is a side view of the burner. Fig. 9 is a vertical longitudinal section of the shell through line E F of Fig. 7, and Fig. 10 is a vertical section through line G H of Fig. 8.

My invention relates to a device for regulating the flow of carbureted air or gas from the burner to its point of combustion; and it consists of a burner having a screw-thread made upon its lower part, upon which is fitted to turn freely thereon a shell or tube, also having a screw-thread upon its interior lower part, and the bore of said tube or shell is somewhat larger in diameter than the diameter of the upper part of the burner upon which it turns.

A series of perforations are made in the lower part of the burner, so that when the burner is made or set for the combustion of carbureted air or gas of any certain quality the flame may be increased or diminished by turning the shell either up or down, as the case may be, the shell, in its movements up or down, either closing or opening the holes or perforations and letting out or stopping the flow of the gas through the said holes as it is moved up or down.

In the use of carbureted air for illuminating purposes it is almost always the case that when the gasoline is first placed within the generator it gives off a much greater amount of vapor, and the air, in passing through the generator, absorbs a greater amount of the carbon, and consequently becomes more thor-

oughly charged with and is much richer in the illuminating qualities of the gasoline than when the generator has been charged for a greater length of time, and as a result the carbureted air is sometimes too rich to make a desirable light, with the same amount passing out the burner; and at other times, as when the generator has been charged a longer time, the carbureted air flowing through the burner is deficient in illuminating-power, and the light or flame produced is not uniform in its power or steadiness, and is sometimes liable to produce a smell of smoke when too rich in carbon. My invention is designed to obviate all difficulty in this respect, as the burner is set or made to let out at the tip the minimum quantity of gas that will produce a good flame, and as the gasoline remains longer in the generator and becomes weaker in its illuminating qualities, the outertube or shell may be turned so as to let out more gas and increase the flame without liability to smoke.

That others skilled in the art may be enabled to make and use my invention, I will now proceed to describe its construction and mode of operation.

In the drawings, L represents the main part of the burner, which is made similar to the common burner, except that the lower part has a screw-thread made upon the outside and inside.

Figs. 1, 2, 3, 4, and 5 represent one modification, in which L is the burner, having the usual screw-thread made upon the lower interior part, by which to secure it to the pipe. At *a'* is a conical shoulder or seat upon the exterior, (shown in Figs. 3 and 5,) and a screw-thread, *d*, made upon the exterior of the lower end, and the small holes *c* are made either at the seat *a'* or just below it. I is a shell or tube, the inside diameter of its upper part being somewhat greater than the outside diameter of the part L, and upon the interior of the tube, at *a*, is a conically-shaped seat, made to fit upon the exterior seat, *a'*, upon the burner L. A screw-thread, *d*, is made upon the interior of the lower part of the tube I, which fits the thread *d'* upon the exterior of the burner L.

The operation of this modification is as follows: When the tube I is turned entirely onto the burner L, the inner seat, *a*, fits down upon the shoulder *a'* of the burner L, and the only

place of egress for the gas is through the slot at the tip. When the gasoline is fresh or new, this slot will be quite sufficient to supply the flame; but as the gasoline becomes more exhausted of its carbon the tube or shell I may be turned up a little, so that the seat *a* shall be raised slightly from the shoulder *a'*, and more or less of the gas will pass out through the holes *c* and pass up between the tube I and the burner L as the tube I is turned up or down, and when the gas which escapes through the holes *c* and passes up between the tube and burner reaches the top it unites with that passing out the slot at the tip, increasing the volume and flame. In this device the gas, after passing out through the holes *c*, is prevented from passing down between the tube and burner by the screw-threads *d* and *d'* upon the inside of the tube and outside of the burner.

In the modification shown in Figs. 6, 7, 8, 9, and 10 both the burner and regulating-tube are similar to that already described, except that the thread *d'* upon the outside of the burner L is carried up higher, and the holes *c* are made below the top of the outer thread, but above the top of the inside thread. The thread upon the inside of the tube I is not so long as the outside thread upon the burner L, but is considerably less, so that when the tube I is turned entirely down on the burner the holes will be above the thread on the inside of the tube, as there is no inside seat in the tube I to operate upon a beveled or conical exterior shoulder upon the burner L, as in the other modification.

The operation of this modification is as follows: If the flame be too weak, the tube I is turned down upon the burner L until the top of the inside thread of the tube begins to pass below the holes *c*, when the gas will escape and pass up between the tube and burner and

increase the flame, as before. If it should be desirable to stop the escape of gas through the holes *c*, it is only necessary to turn up the tube upon the burner, and when the thread inside the tube covers the holes *c* then there will be no escape of gas.

It will be seen that the principles of the operation of both modifications are very much alike and are intended to accomplish the same object, although the tube turns up in the first case to let out more gas, while it turns down in the second case, both being equivalent, however, in their operation, and accomplish the same result.

I am aware that gas-burners have been heretofore made to give an additional supply of gas to the flame; but in those that I have seen they consisted of more pieces and were considerably more expensive to manufacture, and in their operation the burner revolved with the tube, this causing the flame to revolve also. This is very objectionable, as it is often desirable to have the flame stand in one particular direction. In this device the flame does not turn in the least, while the whole burner may consist of only two pieces, and is cheaply made, and its operation and effect are perfect.

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

An improved gas-burner consisting of the burner or pillar L, having holes *c c* therein, and provided with the movable or adjustable shell or tube I, all constructed and operating substantially as and for the purpose herein described and specified.

JOHN F. BARKER.

Witnesses:

T. A. CUSTIS,
M. L. BOYNTON.