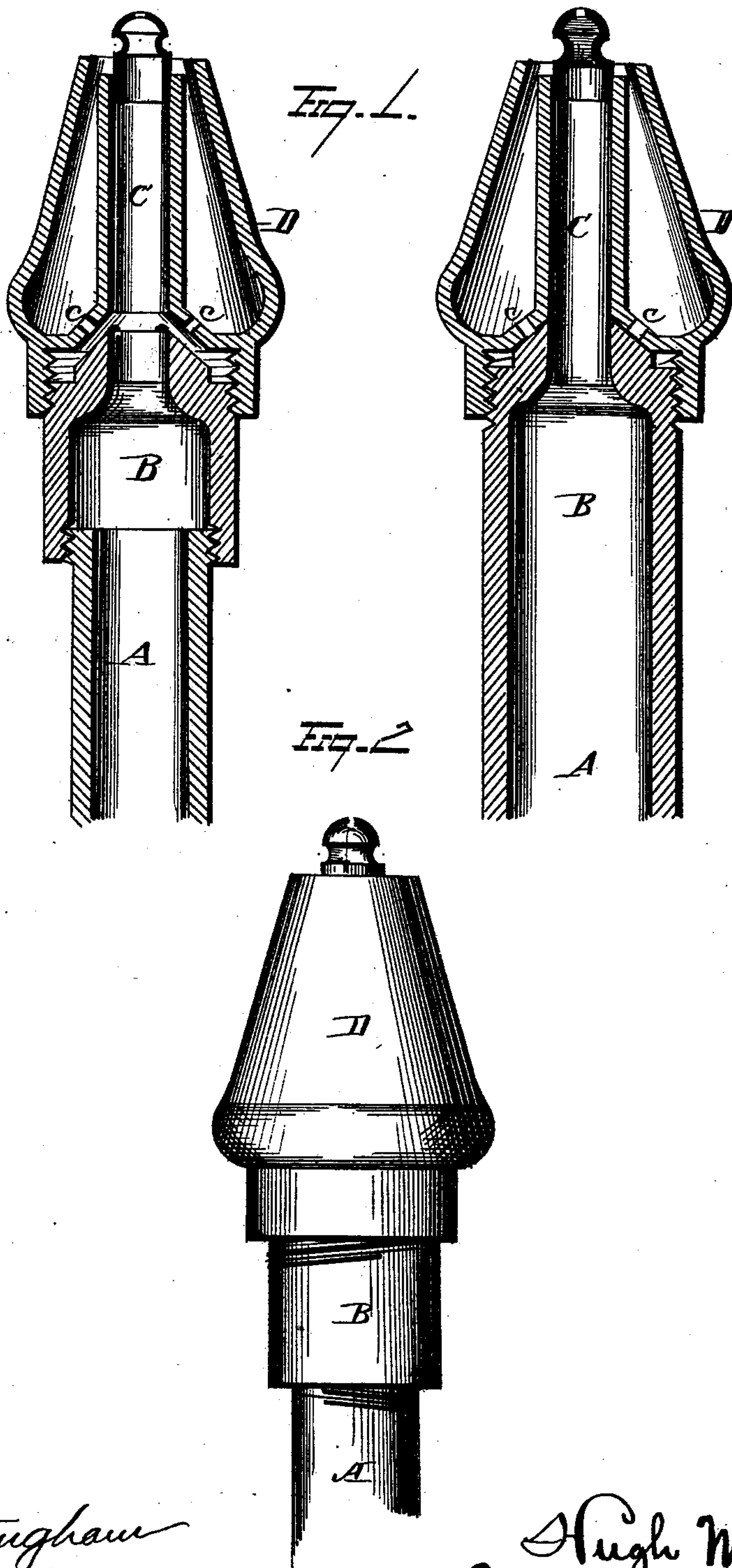


H. McCONNELL.
Vapor and Gas Burner.

No. 215,143.

Patented May 6, 1879.



WITNESSES
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UNITED STATES PATENT OFFICE.

HUGH McCONNELL, OF CLEVELAND, OHIO.

IMPROVEMENT IN VAPOR AND GAS BURNERS.

Specification forming part of Letters Patent No. **215,143**, dated May 6, 1879; application filed October 10, 1878.

To all whom it may concern:

Be it known that I, HUGH McCONNELL, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Vapor-Gas Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to a new and useful improvement in gas-burners, designed more especially as a burner for gasoline vapor, though equally well adapted for all gas-burners and vapor-burners.

My invention consists in combining with the burner a shell surrounding the same, and extending to near the top of the burner, the shell and burner being fastened rigidly together and the burner perforated at its base, so that a portion of the gas entering from the pipe below may pass up between the shell and the burner, and thus prevent blowing of the flame, said holes opening beneath upon a valve-seat, and the upper end of the pipe is shaped in the form of a conical valve. The shell and burner are connected with the pipe by a screw-joint, which enables the valve end of the pipe to be brought snugly against the valve-seat, and thus close the small holes, or by slightly loosening the valve from the valve-seat to permit any desired amount of gas to be fed up through the shell.

In the drawings, Figure 1 is a longitudinal section of the gas-burner having the features of my invention. Fig. 2 is a perspective view of the burner complete.

A is the gas-pipe. B is the lower section of the burner adjacent to the pipe, though, if desired, this may be simply a continuation of the top of the pipe. If, however, it is made the continuation of the end of the pipe, it would require that that section of the pipe be specially fitted therefor. For convenience in the manufacture and adaptation of the burners, I prefer to provide them with the section B, which may be readily attached to any gas-pipe as ordinary burners are attached. C is the burner proper.

D is a shell or case surrounding the burner, and extending to an opening near the top of the burner. *c* represents holes at the base of the burner C, which open into the space between the shell D and the burner. The lower end of the burner is formed into a valve-seat, preferably conical, as shown in the drawings, though it may be of any other desired form.

The upper end of the section B is formed in the shape of a valve, the counterpart of the valve-seat, so that they may close snugly upon each other. If, therefore, the gas is found to burn without the blowing noise which generally attends the use of the vapor-burner, the openings *c* may be entirely closed by screwing the shell D down, so as to bring the valve and valve-seat snugly together. If, however, the blowing accompanies the burning of the vapor or gas, the shell may be slightly unscrewed, thereby separating, to any desired degree, the valve from the valve-seat, and permitting a greater or less amount of gas to pass through the openings *c*.

The operation of this device will be readily understood. It has been discovered that where the blowing noise accompanies the burning of vapor from a vapor-burner, it can be overcome by causing a slight flow of the vapor around the base of the main flame; but if more gas escapes around the base of the flame than is absolutely required for the purpose of stopping the noise, the excess of gas would be wasted to no purpose, and it is for this reason that the adjustment is effected for opening and closing the openings *c*, to permit a greater or less flow of gas through them.

It will be observed that by the construction here shown the slightest amount of adjustment of the valve-seat from the valve will open the whole space around the conical valve, and consequently the object may be accomplished by my device with a minimum amount of adjustment between the shell and the section B. This is important, for if the parts required to be turned to a very great extent it would be apt to loosen the joint, so as to permit an escape of the gas at the joint; but by my device a turn of ever so slight a degree will open the entire surface between the valve and its seat, while by a greater turn the gas may be caused to flow with any desired

freedom. Therefore, when the burner is attached and the vapor ignited, if the pressure in the meter is sufficient to cause the gas to blow, the valve may be opened just enough to overcome the blowing sound, and in this way it may be adjusted in any locality to suit any pressure that may exist in the pipes or meter at that particular place.

Another important object accomplished by my invention is, that as the burner is permanently attached to the shell, no matter what adjustment may be effected between the valve and its seat, the burner and shell will always have precisely the same relation to each other. This is necessary in order that there shall be uniformity of action in all burners, regardless of the pressure of gas, and regardless of the adjustment between the valve and its seat.

Moreover, all adjustments are accomplished by turning the burner and shell upon the section B, and there is no screw or other obstacle projecting at the side to mar the general conformation of the burner.

I am aware that it is not new to provide an annular chamber about a gas-burner and admit gas within said chamber, from whence it

is fed to the point of combustion, and hence I make no broad claim to such construction.

What I claim is—

1. The combination, with a burner constructed with an outwardly-flaring perforated ring or flange and an outer shell surrounding the burner, of section B, the upper end of which conforms to the shape of the perforated ring or flange of the burner, substantially as set forth.

2. The combination, with the burner proper, perforated at its base, and a surrounding shell fastened permanently thereto, of a section, B, tapped into the base of the burner and shell, said section having its upper end made in the form of a valve-seat to close upon or open the said perforations by turning the said burner-section about the portion B, substantially as and for the purposes described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HUGH McCONNELL.

Witnesses:

JNO. CROWELL, Jr.,
WILLARD FRACKER.