(No Model.)

C. S. FORD.

GAS BURNER.

No. 362,829. Patented May 10, 1887.

FIG. 1

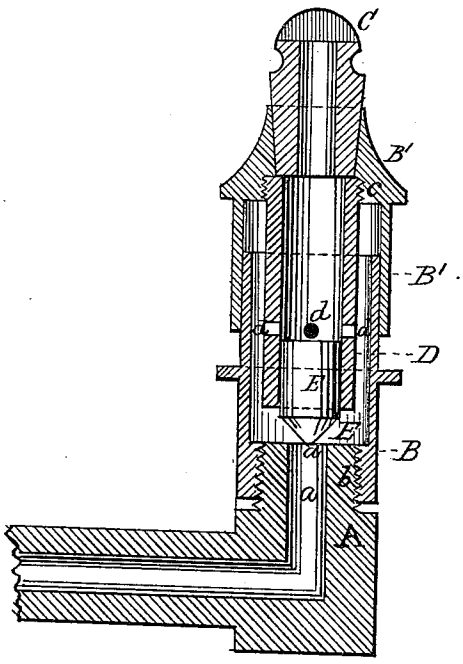


FIG. 2

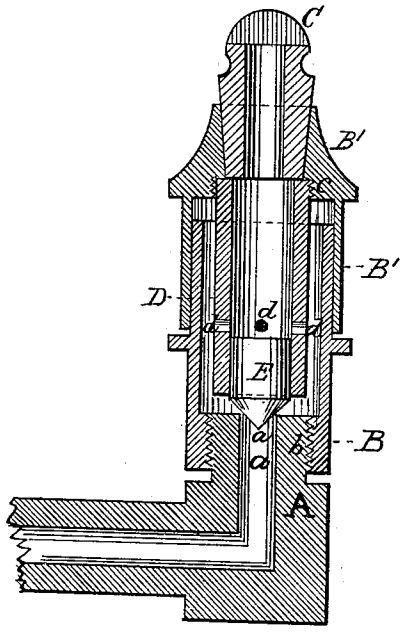
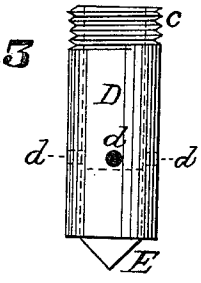


FIG. 3



Witnesses

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Inventor.

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UNITED STATES PATENT OFFICE.

CHARLES S. FORD, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOSEPH S. DOWNIE, OF SAME PLACE.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 362,829, dated May 10, 1887.

Application filed September 27, 1886. Serial No. 214,704. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. FORD, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Gas-Burners, of which the following is a specification.

My invention has for its object a construction of burner that will permit of adjustment in such a manner as to regulate the amount of gas allowed to pass through, to change the position of the broad side of the flame, and to provide means for the removal of the upper portion for the purpose of cleansing the bore of impurities that may collect therein, and repacking the same with fibrous material, without the necessity of removing the standing pillar from the nozzle of the gas-pipe.

My invention consists in the combination, with a permanent or rigidly-attached pillar of a gas-burner surrounding the nozzle of a gas-pipe, of a supplemental pillar provided with an internal adjustable or hollow screw-stem which extends downward sufficiently to permit of the removable elastic plug situated within the lower end of its bore being brought with its face to cover the orifice of the nozzle of the gas-pipe, or the connected pillar, stem, and plug slightly raised from contact with said orifice, allowing gas to flow into an annular space surrounding said stem and through orifices in its walls to the tip, thereby controlling the outflow of gas from said nozzle of the gas-pipe. The removable plug is for the purpose of allowing access to the bore of the cylinder to pack or remove fibrous material inserted therein, as will be more fully understood from the following description.

In the accompanying drawings, which make a part of this specification, Figure 1 is a vertical section of my improved burner. Fig. 2 is a like view, the pillar B′, with its connected cylinder D and plug E, being brought nearly down upon the end of the nozzle A. Fig. 3 is a side view of the cylinder and plug.

Like letters of reference in all the figures indicate the same parts.

A is the nozzle of a gas-pipe, having a central bore, *a*, to which the pillar B is connected by the screw-thread *b*. The pillar B is cylindrical in shape and of such diameter upon its upper end as to fit within the bore of the supplemental pillar B′, placed thereon, forming what is technically known as a "ground joint" between the two portions.

The pillar B′ is provided with the customary steatite outlet-tip C upon its upper end, and vertically arranged within its bore is located the cylinder or hollow stem D, connected thereto by means of the screw-thread attachment *c*. This cylinder has the removable rubber plug E situated within the central bore at its lower end, that slightly projects therefrom. The cylinder is provided with circular orifices *d* through its wall immediately above the upper end of the plug E.

The operation of the burner is as follows: The pillar B is connected to the nozzle A by the screw-thread attachment, and a tight joint formed. Then the supplemental pillar, with the tip C, cylinder D, and plug E, is placed upon its upper end and gradually pushed down until the lower face of the plug E closes over the orifice of the bore *a* of the nozzle A. The gas is then turned on from the key in the pipe, and the supplemental pillar, with its connected cylinder and plug, is slightly raised, removing the face of the plug from the orifice of the bore *a* of the nozzle, permitting of the passage of the current of gas into the annular space and through the cylinder by the orifices *d* to the tip, and by elevating or depressing the pillar B′ upon its joint the quantity of gas permitted to flow may be accurately adjusted as the face of the plug is brought to or away from the orifice *a*, controlling the outflow from the nozzle of the gas-pipe. At the same time the broad side of the flame may be placed in any desired position.

By my construction of burner for regulating the flow of gas directly at the orifice of the nozzle A by means of the altitudinal adjustment of the rubber plug E the tendency the pressure of gas has to cause a hissing sound, or inequality of flame produced from the tip, is avoided by providing a length of distance for the gas to travel before it reaches the point of ignition.

The lower surface of the rubber plug E, being flexible in its nature, permits the same to adapt itself to any inequalities or eccentricities of the orifice of the bore of the nozzle.

Besides, the supplemental pillar, with the cylinder and plug, may be readily removed from connection with the standing pillar for the purpose of removal of impurities that may collect therein and repacking of the cylinder with fibrous material when necessary without the aid of pipe-tongs to remove the standing portion or danger of injuring the joint.

I am aware that various devices have been constructed for adjustment of burners to regulate the amount of gas flowing from the tip both from the pillar and service-pipe with internal vertical tubes and cups capable of partial rotary movement; but my invention relates especially to an independent or loose supplemental upper pillar connected to the fixed pillar by a ground joint and capable of rotary movement thereon, and having a vertical cylinder located centrally therein, which has a plug in its lower end that is caused to rest upon, or nearly so, within the outlet-orifice of the standing pillar, and a series of holes in its wall, through which the gas escapes to the tip.

The essential features of this burner wherein it differs from and possesses advantages over those of previous construction are the removable pillar connected with the standing portion upon the gas-pipe by a ground joint capable of easy rotary motion and permitting access to the interior, and the internal cylinder or hollow stem connected to the cap-piece by a screw-thread, whereby it is readily adjusted as to length or removed, and a removable elastic plug within the lower end of its bore to permit of packing or withdrawal of fibrous material in said bore, and whereby said plug may be caused to have its face directly over the orifice of the nozzle of the gas-pipe and in contact therewith, or slightly elevating the upper connected parts, thereby controlling the outflow at that point. Another feature is the removable elastic plug, the face of which readily adapts itself when a slight pressure is exerted to any inequalities of bore of nozzle, renewal when worn, and access to the bore of the stem without mutilation.

I claim as my invention and desire to secure by Letters Patent—

The combination, with the standing portion B, of the removable pillar B′, connected therewith by means of a ground joint, and provided with the adjustable hollow stem D, surrounded by an annular space and having orifices *d* in its walls, and removable elastic plug E in the lower end of its bore, which is caused to cover or be slightly raised from the nozzle of the gas-pipe, controlling the outflow at that point, substantially as herein shown and described.

CHARLES S. FORD.

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