(No Model.)

M. J. PICKETT & L. EWING.

GAS BURNER FOR FURNACES.

No. 549,013. Patented Oct. 29, 1895.

Fig. 1.

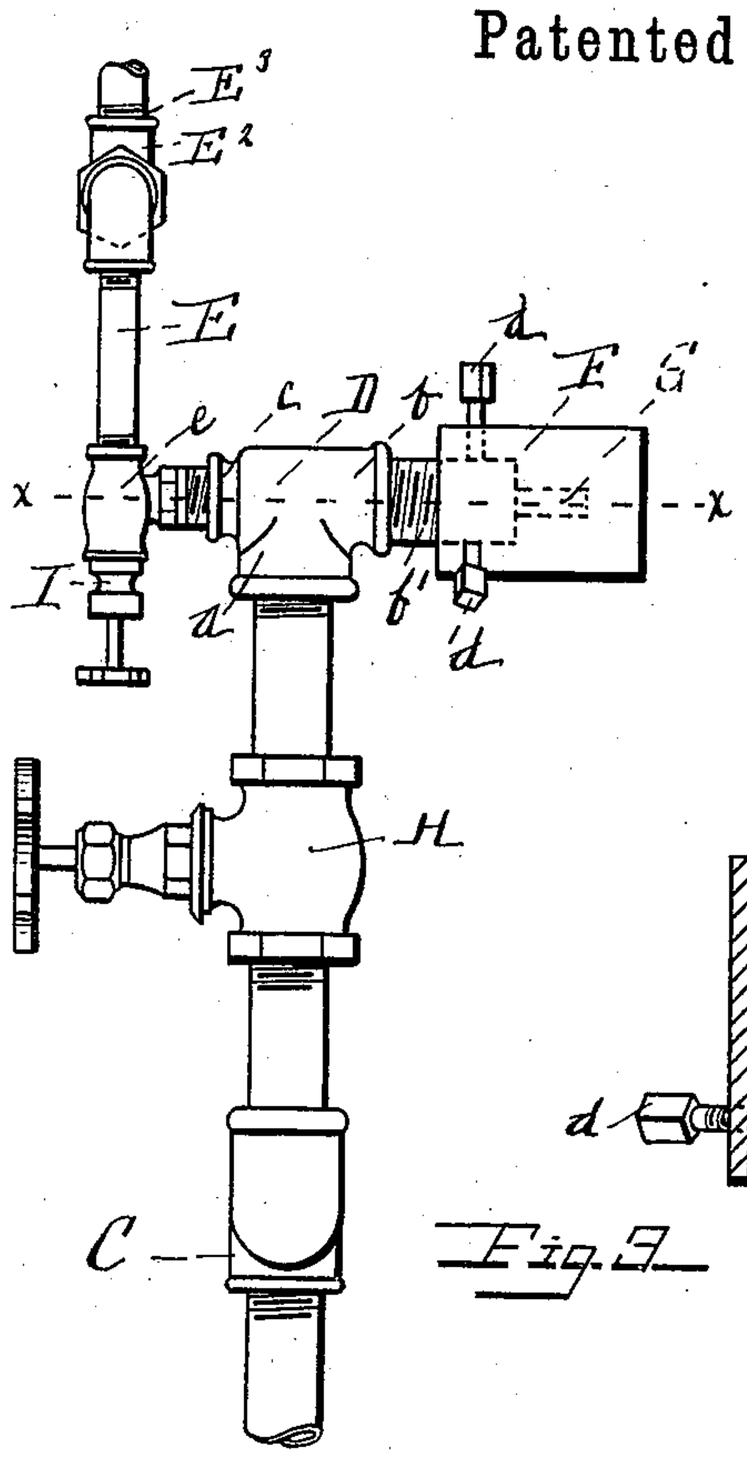


Fig. 3.

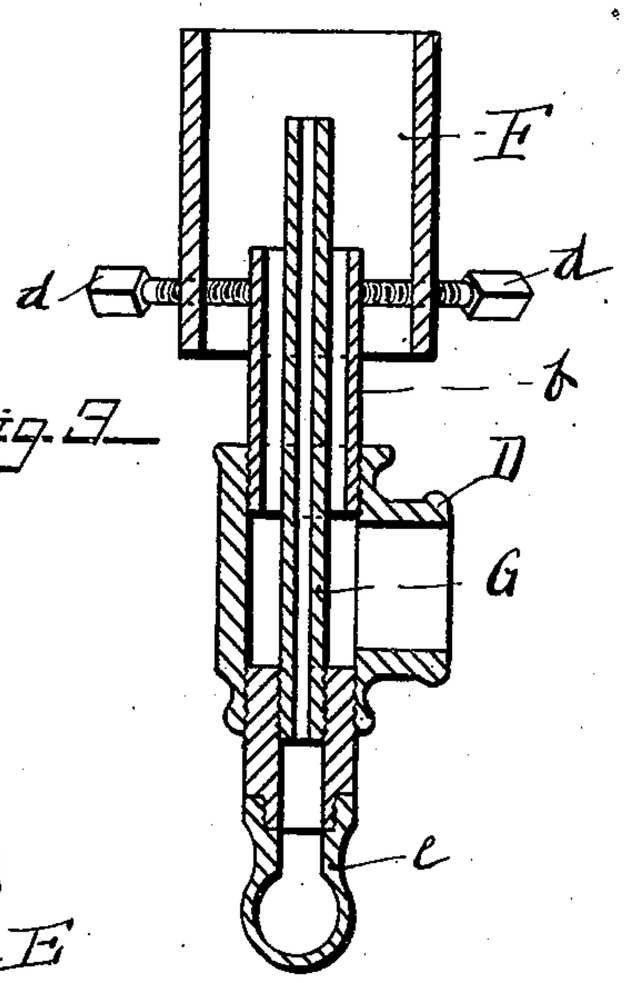
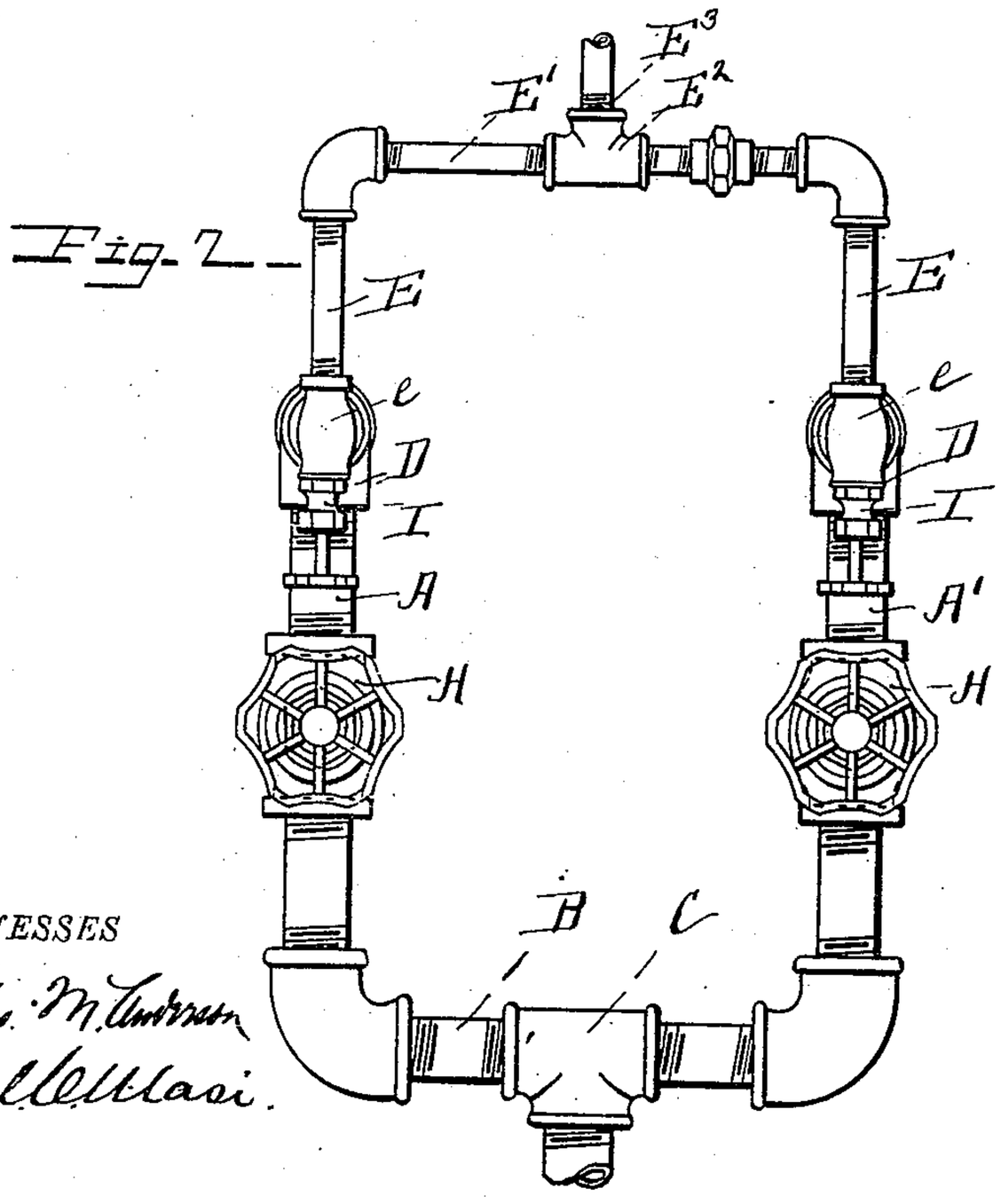


Fig. 2.



WITNESSES

Geo. M. Anderson

Phil. C. Adams.

INVENTORS

M. J. Pickett,

Lorin Ewing.

by E. W. Anderson

his Attorney

UNITED STATES PATENT OFFICE.

MORRIS J. PICKETT AND LORIN EWING, OF ANDERSON, INDIANA.

GAS-BURNER FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 549,013, dated October 29, 1895.

Application filed June 2, 1893. Renewed September, 3, 1895. Serial No. 561,358. (No model.)

To all whom it may concern:

Be it known that we, MORRIS J. PICKETT and LORIN EWING, citizens of the United States, residing at Anderson, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Gas-Burners for Furnaces; and we do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view partly broken away. Fig. 2 is a front view; and Fig. 3 is a horizontal section taken on line *x x*, Fig. 1.

This invention has relation to certain new and useful improvements in gas-burners for furnaces, the object being to provide an improved burner of this character wherein the gas is mixed with air and steam at the point of combustion; and the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the claim.

The burner, as shown in the accompanying drawings, consists of two branches A A′, connected by the transverse arm B, to which the gas is supplied by a T-pipe C, having a connection with a gas-main or other source of supply. (Not shown.) At the end portion of each branch is a T D, to one arm *a* of which the branch A or A′ is connected, the arm *b* having a nipple *b′* secured therein, which forms the gas-escape, and the arm *c* having a connection with a steam-supply pipe E. Supported upon said T around the nipple *b′* is a mixing chamber or cylinder F, open at both ends and held in place by the screw-bolts *d* or by other suitable means. Projecting up through the T and nipple into said cylider or chamber and terminating just short of the forward end thereof is a small jet-pipe G, which at its lower end connects with the steam-pipe E. Said jet-pipe is of sufficiently small diameter to leave an annular opening between it and the wall of the nipple, so that the gas may escape freely therethrough. In each arm or branch A A′ is a globe-valve H, by means of which the supply of gas to the burner is controlled. The steam-pipe E is also formed in two branches, one of which leads to each mixer and is connected thereto by the T's *e e*, said branches being united by the transverse arm E′, to which steam is supplied by means of a T E^2, having a connection E^3 with the boiler. (Not shown.) The T's *e e* are each supplied with a globe-valve I, by means of which the supply of steam to the mixers is controlled.

The two branches A A′ are shown as being parallel with each other and with the branches of the steam-pipe E, the mixers projecting at right angles therefrom, so that the latter may be readily introduced into the furnace.

The operation is as follows: The gas enters the mixing-chamber from the nipple *b′* and is mixed with air drawn in through the open end of the cylinder. In passing through the mixer the gas and air become highly heated, and, coming in contact with the jet of steam from the pipe G, are projected into the furnace with great velocity, becoming ignited and producing an intense heat, the point of combustion being at the extremity of the jet-pipe from which the flames are projected into the furnace.

The amount and intensity of the fire and the length of flame can be regulated by turning the valves to admit more or less gas or steam.

The velocity and quantity of air supplied at the point of combustion is regulated by the steam-jet.

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

The herein decribed gas burner, comprising the two branches A, A′, the transverse connecting arm B, its supply T C, a T D at the end portion of each branch A, A′, a nipple *b′* secured in one arm of each of said T's and forming a gas escape, the steam pipe E also having two branches united by the arm E′ which is provided with a steam supply E^2, jet pipes G connected at one end with the respective branches of the said steam pipe, and

at the other end extending up through said nipple, an open-ended cylinder F supported around each of said nipples and projecting a short distance beyond the extremity of the jet pipe, and means for controlling the supply of gas and steam, said gas and steam pipes being arranged in the form of a rectangle, substantially as specified.

In testimony whereof we affix our signatures in presence of witnesses.

MORRIS J. PICKETT.
LORIN EWING.

Witnesses:
JAMES WELLINGTON,
D. C. CHIPMAN,
WM. J. NORTON.