(No Model.)

M. A. FOSTER.

JET ATTACHMENT FOR FURNACES.

No. 405,956. Patented June 25, 1889.

Fig. I.

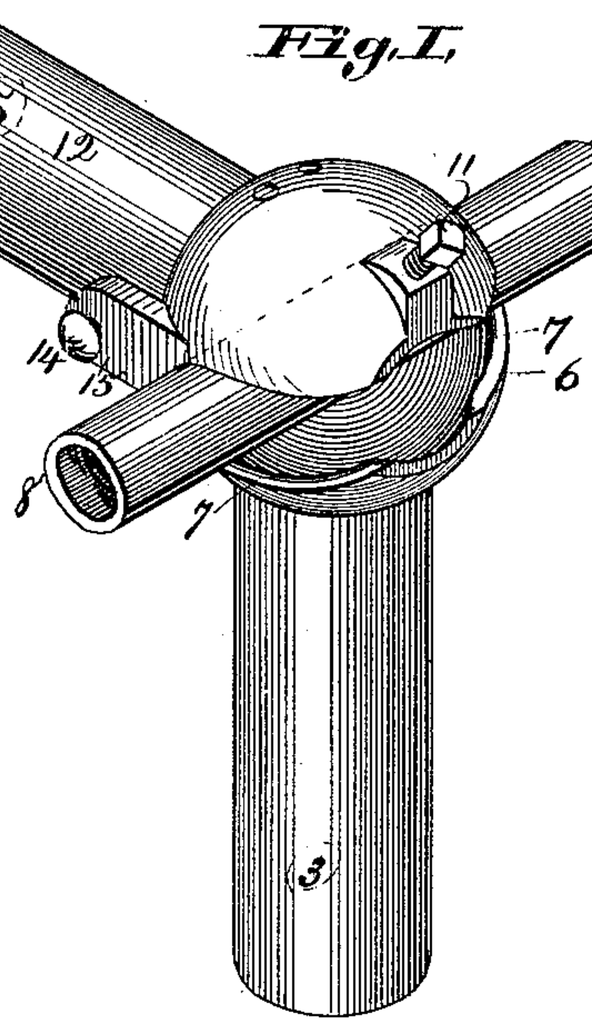


Fig. II.

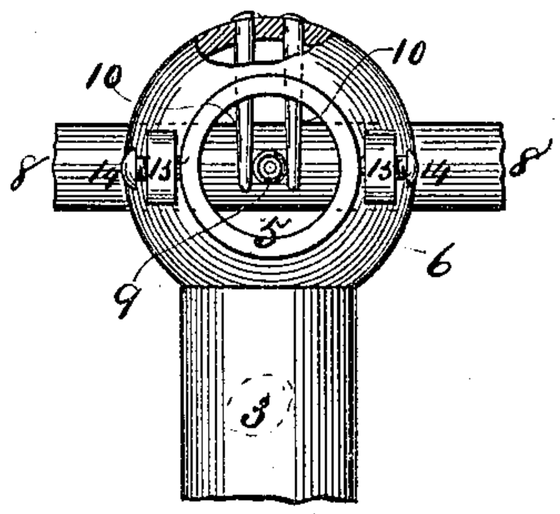
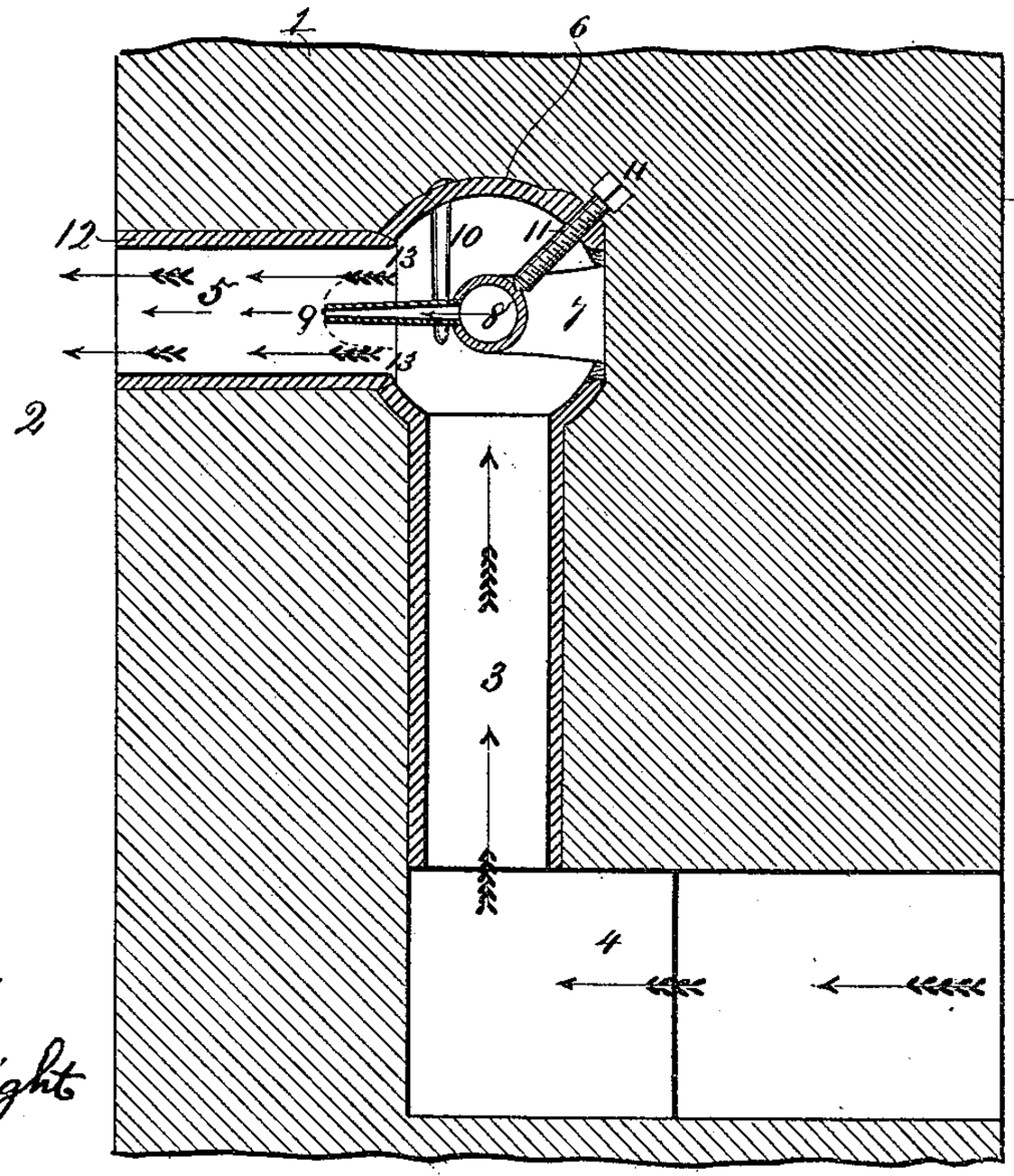


Fig. III.



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UNITED STATES PATENT OFFICE.

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JET ATTACHMENT FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 405,956, dated June 25, 1889.

Application filed February 26, 1889. Serial No. 301,257. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL A. FOSTER, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Jet Attachments for Furnaces, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This is a device which may be made of any kind of metal, preferably of iron, or the body of it may, in some cases, be made of stoneware. It is intended for insertion in the wall of any furnace where it is intended to inject air, or air mixed with steam, or other fluid.

Figure I is a perspective view of the device. Fig. II is a front view with part broken out. Fig. III is an axial section at III III, Fig. II, showing the device inserted in a furnace-wall.

The furnace-wall is shown at 1. The combustion-chamber of the furnace is at 2. The device has a body with induction-passage 3, and a head 6, containing a globular chamber.

7 is a slot made in the rear part of the head, and extending around both sides to admit a pipe 8, carrying a jet-nozzle 9.

10 are two pins extending downward from the top of the globular chamber of the head and bearing against the sides of the jet-nozzle 9, and thus insuring the proper position of the nozzle in the chamber. The front of the pipe 8 may also bear against the pins, as shown.

11 is a set-screw bearing at its point against the rear side of the pipe 8, and holding it to its bearings against the ends of the slot 7.

The eduction-passage 5 is in a separate tube 12, which is tapered at the inner end 13 to fit a flaring socket in the front side of the head. The tube 12 is held in position by set-screws 14, which work in lugs 15, cast upon the head. The points of the screws bear against the sides of the tube 12. This construction allows the tube 12 to be set at any angle with the body within given limits. In a more simple form the tube 12 is made in one piece with the head.

The jet-pipe 8 may be connected with a steam-generator or with an air-compressor, and the escape of the jet through the nozzle 9 would cause the air to flow through the passages 3 and 5. Where steam or heated air is used in the jet-pipe 8, the air passing through the chamber in the head 6 is heated in the chamber by contact with the pipe 8.

It will be seen that the device can be applied after the jet-pipe 8 is fixed in position, the pipe entering the slot 7; also, that the pipe 8 may be removed at any time without disturbance of the device in the brick-work of the furnace, only sufficient of the brick-work being removed to allow the set-screw 11 to be screwed upward and the pipe drawn backwardly from the slot 7.

I claim as my invention—

1. The attachment for furnaces having the induction and eduction passages 3 and 5, and a central head 6 with slot 7, adapted to receive a jet-pipe 8, having a jet 9, substantially as and for the purpose set forth.

2. The combination, with the induction and eduction passages 3 5, and the central head 6, having an opening therethrough, of a jet-pipe passing through said opening and having the jet 9, and a set-screw adapted to impinge said pipe, whereby the jet 9 may be held in the proper position, substantially as set forth.

3. The attachment for furnaces having the induction and eduction passages 3 and 5, the central head 6, having the slot 7, a jet-pipe 8, projecting through said slot and having a jet 9 projecting therefrom, and the pins 10, substantially as and for the purpose set forth.

4. The combination, in an attachment for furnaces, of a device adapted to be inserted in the wall of the furnace, of an induction-passage 3 in communication with the outer air, an eduction-passage 5, discharging into the fire-chamber, a central head 6, adapted for the passage of a jet-pipe and having the slot 7, pins 10, and set-screw 11, all substantially as and for the purpose set forth.

5. The attachment for furnaces having the induction-tube with passage 3, discharging into the chamber of a head 6, adapted for the passage of a jet-pipe 8 with a jet 9, and

an eduction-tube 12, movable on a joint at 13 and secured in position by the set-screws 14, substantially as set forth.

6. The attachment for furnaces having the induction-tube with passage 3, discharging into the chamber of a head 6, adapted for the passage of a jet-pipe 8 with jet 9, and an eduction-tube 12, movable at its base 13, for the purpose set forth.

MICHAEL A. FOSTER.

Witnesses:
SAML. KNIGHT,
THOMAS KNIGHT.