

(No Model.)

J. WILSON & A. MASON.
PETROLEUM BURNER.

No. 438,512.

Patented Oct. 14, 1890.

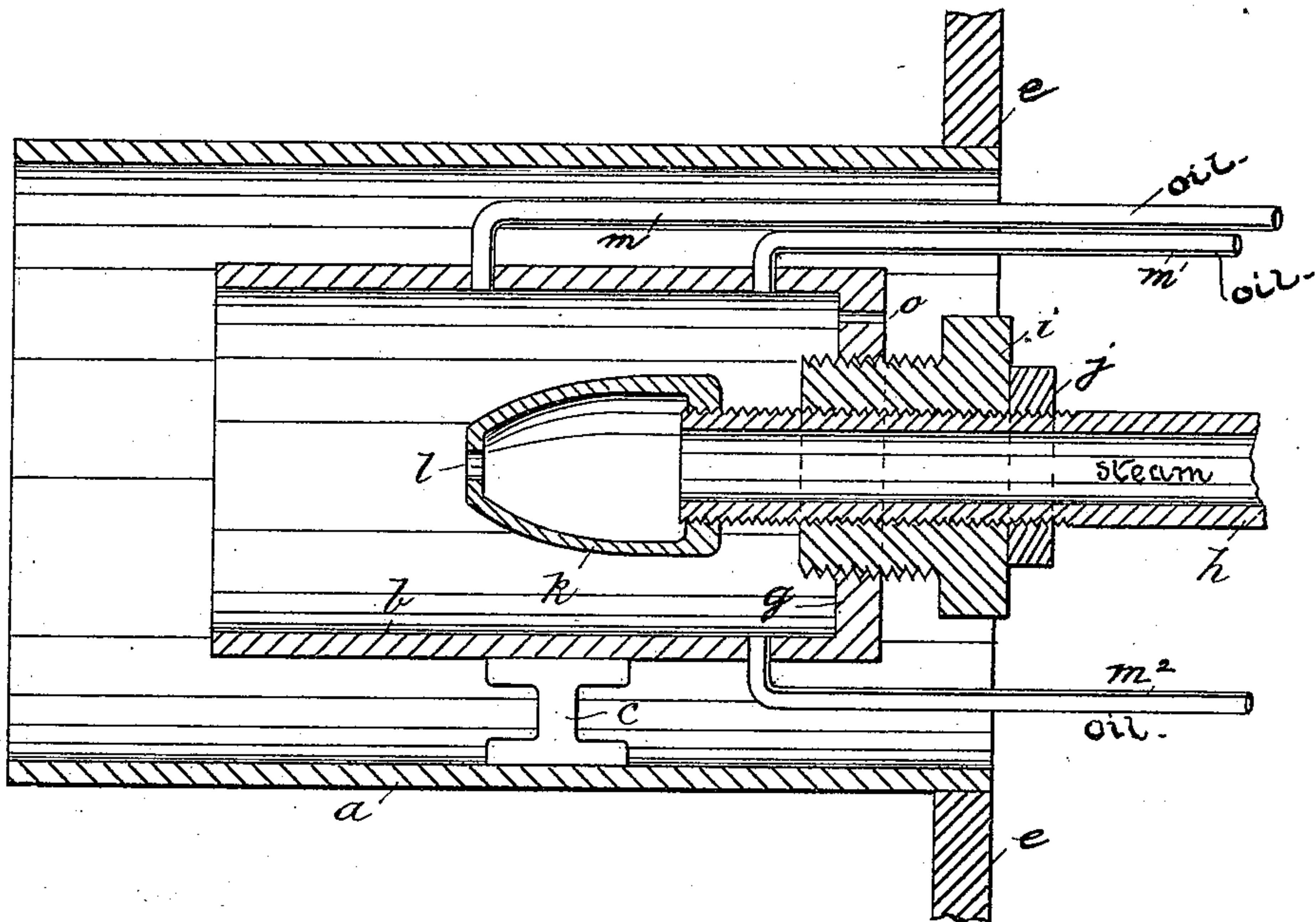


FIG. 1.

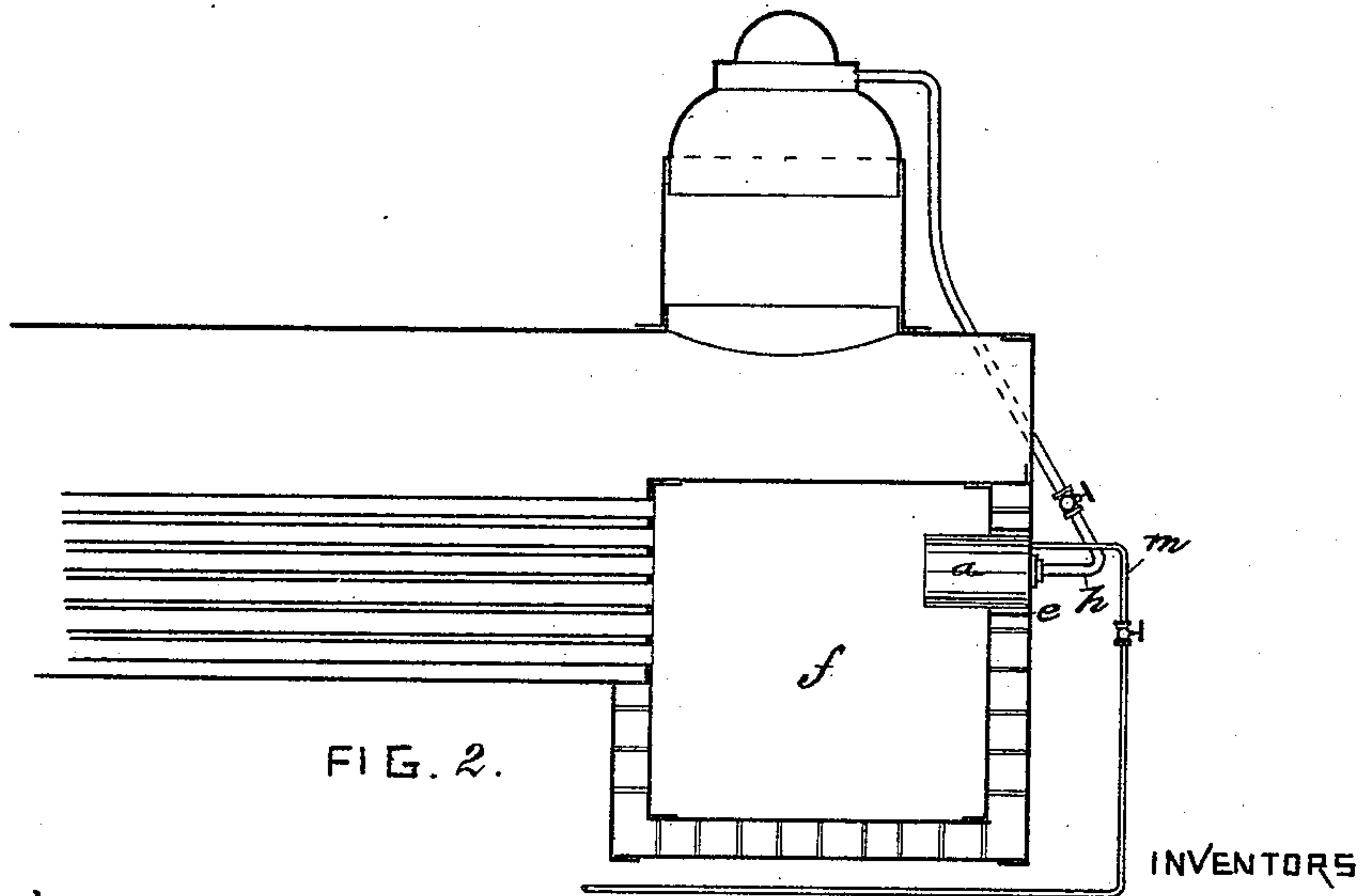


FIG. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

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PETROLEUM-BURNER.

SPECIFICATION forming part of Letters Patent No. 438,512, dated October 14, 1890.

Application filed June 8, 1888. Renewed March 26, 1890. Serial No. 345,624. (No model.)

To all whom it may concern:

Be it known that we, JOHN WILSON and ALLAN MASON, citizens of the United States, and residents of New York city, in the county and State of New York, and Brooklyn, Kings county, New York, respectively, have invented certain new and useful Improvements in Petroleum-Burners, of which the following is a specification.

10 This invention consists of a petroleum-burner for the combustion of hydrocarbon fuel in steam-boilers and other furnaces, the objects of which are to simplify and cheapen the construction and to facilitate the adjust-
15 ments for operations and for renewal and repairs, all as hereinafter fully described, reference being made to the accompanying drawings, in which—

20 Figure 1 is a sectional elevation of the burner in full size or thereabout; and Fig. 2 is a sectional elevation of part of a steam-boiler, showing the application of the burner, which is represented in side elevation on a reduced scale.

25 In the first place, we provide the tube *a* for the body, shell, or container of the burner, and also for the air-inlet conductor, in which we fit an inner smaller burner-tube *b* concentrically and secure it thereto with any approved holder or holders *c*, the said outer
30 tube being open throughout its length, except as obstructed by the inner tube *b*, and being constructed and adapted to connect at its outer end with the front plate or door *e* of the furnace *f* by screw-threads or other approved means suitable for the mounting of the burner in position, and the inner tube
35 being closed with a cap or head *g* at its outer end, which is preferably located a short distance within the outer end of the exterior tube. Into the head of this inner tube we fit the injector-tube *h* by the detachable bush *i* and a check-nut *j*, said injector-tube having an adjustable and detachable nozzle-cap *k* on its inner end, in which the issue-orifice *l* for controlling the jet is made, the bush being screwed in the head *g* and the tube screwed in the bush, and for introducing the oil we prefer
45 to connect the oil-feeding tube *m* through the upper side of tube *b*, so that the oil will drip on the tip of the nozzle, so as to flow into

or upon the jet of steam or steam and air at the issue, whereby we obtain the best results in spraying the oil and mixing the oil and steam for combustion; but we may introduce 55 the oil farther back through the feeding-tube *m'* or into the lower part through a feeding-tube *m''*.

By fitting the injector-tube *h* adjustably in the bush *i* we can shift it forward and backward readily with relation to tubes *b* and *a* for regulating the action, and by connecting said injector-tube to the head of tube *b* by the detachable bush *i* we can readily take 65 out the injector-tube to change or repair the tip *k*, which is desirable, particularly for changing, to vary the size of the issue *l* for different grades or qualities of oil and for different volumes of steam or air, as may be required for different conditions or circumstances of the case. 70

The check-nut binds the injector-tube firmly in the bush. The bush may also be provided with a check-nut; also, the tip *k*, if desired. The head of tube *b* may be perforated for allowing air to enter through said tube also, if preferred, as represented at *o*. 75

What we claim, and desire to secure by Letters Patent, is—

The combination, with a furnace-chamber, 80 of the open outer supporting and air-inlet tube *a*, attached to the furnace door or plate, the tube *b*, located in the tube *a* and supported centrally therein by a stud *c* and having the outer end closed with a head or cap, 85 the injector-tube *h*, passing through the head or cap of tube *b* and supported therein by a detachable bush *i* and check-nut *j*, in which said injector-tube is fitted with a running thread for adjustment lengthwise, the tip *l*, 90 detachably connected to the inner end of the injector-tube, and the oil-inlet pipe connected through the side of tube *b*, substantially as described.

Signed at New York city, in the county of New York and State of New York, this 12th day of April, A. D. 1888. 95

JOHN WILSON.
ALLAN MASON.

Witnesses:

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