(No Model.)

A. L. AVERY.

INJECTOR BURNER.

No. 488,646. Patented Dec. 27, 1892.

Fig. 1.

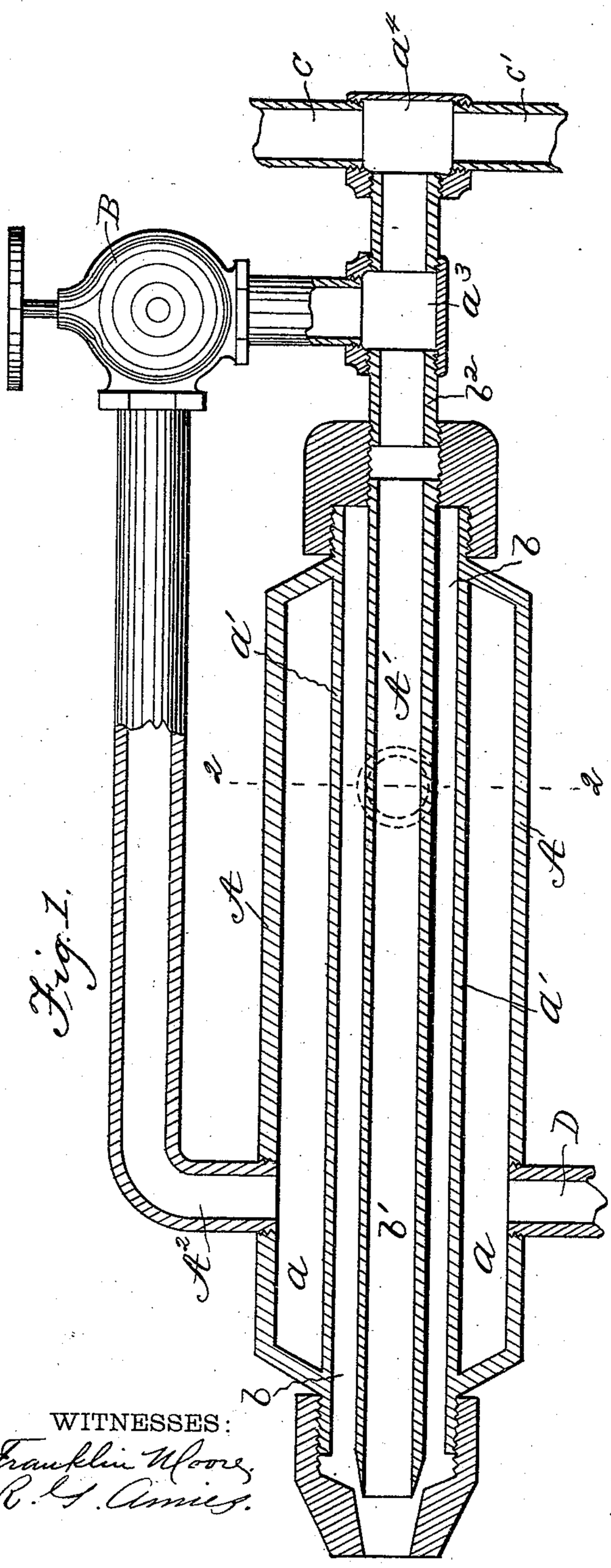
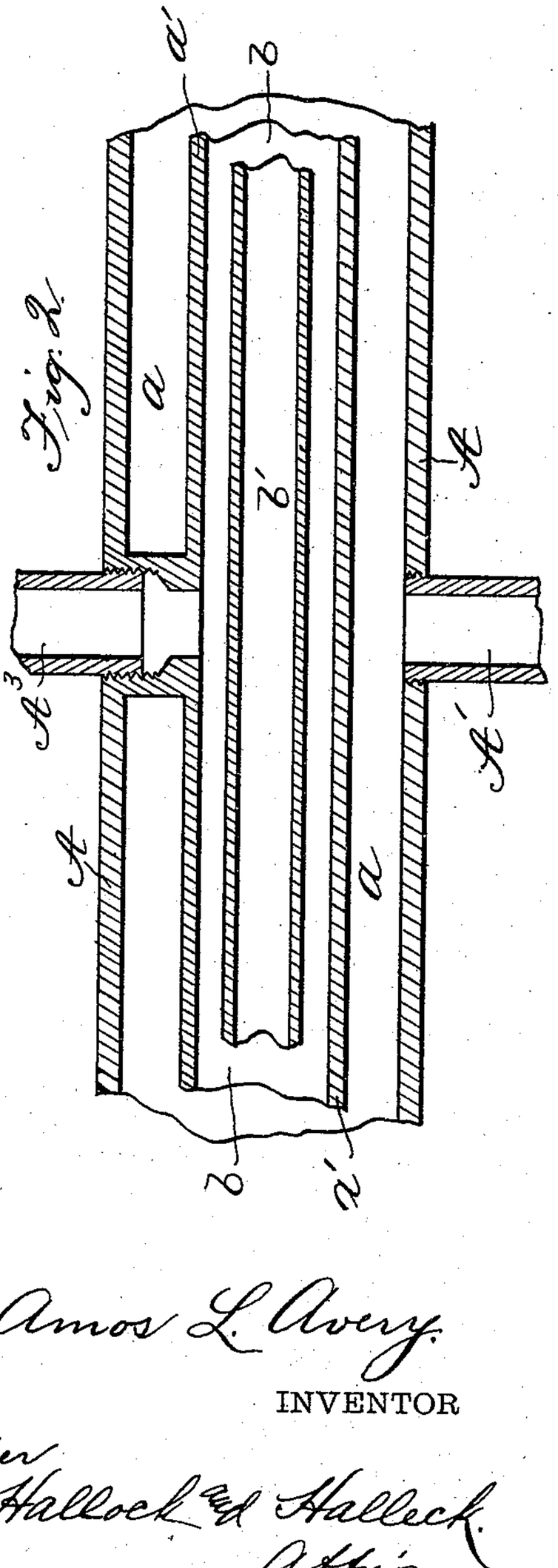


Fig. 2.



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UNITED STATES PATENT OFFICE.

AMOS L. AVERY, OF BRADFORD, PENNSYLVANIA.

INJECTOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 488,646, dated December 27, 1892.

Application filed February 1, 1892. Serial No. 419,891. (No model.)

To all whom it may concern:

Be it known that I, AMOS L. AVERY, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Injector-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 appertains to make and use the same.

My invention relates to oil burners, and especially to that class in which the oil is converted into a gas, mixed with air and forced into the boiler by a steam jet.

The object of my invention is to provide a device that will be simple of construction and easy of operation.

The invention therefore consists in certain new and novel constructions and arrangements, which will be fully described in the specification and pointed out in the claims, reference being had to the accompanying drawings wherein—

Figure 1 represents a sectional view of my device, and Fig. 2 a section on line 2—2 Fig. 1.

A represents the main barrel or part of the burner, which is preferably round but may be any desired shape and is divided into two chambers *a*, the outer chamber, is for oil and entirely surrounds the inner chamber *b*, which is for steam, said compartments are separated by a wall or partition *a'*. A' is the oil delivery pipe and is connected to the ordinary oil tank or reservoir (not shown) and supplies oil to the chamber *a*.

A^2 is a pipe for conveying off the gas, and is coupled to the upper side of barrel A, extends backward and is provided with the cock B which regulates the flow of gas to the burner.

A^3 is the steam supply pipe and leads from a boiler (not shown in the drawings) to the steam chamber *b* as clearly shown in Fig. 2. Extending through chamber *b* is pipe *b'* which is connected with the cock B by pipe b^2 and T coupling a^3. Into the outer end of this T coupling is secured by a nipple, another T coupling a^4 carrying pipes *c*, *c'* which supply hot and cold air respectively to the burner.

D is a drip pipe located on the under side of chamber *a* for the purpose of carrying off the water which is separated from the oil.

The operation of the device is as follows: Oil is admitted into chamber *a* through pipe A' and steam into chamber *b* through pipe A^3. The heat of the steam converts the oil into a gas which passes up through pipe A^2 and cock B to pipe *b'*. The gas is drawn through the tubes by the suction caused by the escape of steam at the opening b^2. The gas in passing through pipe *b* draws air through the coupling a^4 in the same manner in which it is drawn to the mouth of tube *b* by the steam.

From the foregoing it will be clearly seen that the gas is thoroughly mixed with air before passing into tube *b* and mixed with steam at the mouth of the burner.

What I claim is:

1. In an oil burner the barrel A divided into two chambers *a* and *b* the former encircling the latter, each having its respective supply pipe for oil and steam, said oil chamber having an outlet pipe A^2 through which the gas is conveyed to pipe *b'* substantially as shown.

2. In an oil burner a main barrel A having a steam and an oil compartment the former within the latter said oil compartment having an outlet pipe A^2 which conveys the gas to pipe *b'* said gas being drawn through said pipes by the escaping steam jet at b^2, and the pipes *c*, *c'* for supplying hot and cold air respectively to the burner substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

AMOS L. AVERY.

Witnesses:

JOHN E. FENNERTY,

JOHN BARRY.