

(No Model.)

S. A. BARRETT.
HYDROCARBON BURNER.

No. 582,515.

Patented May 11, 1897.

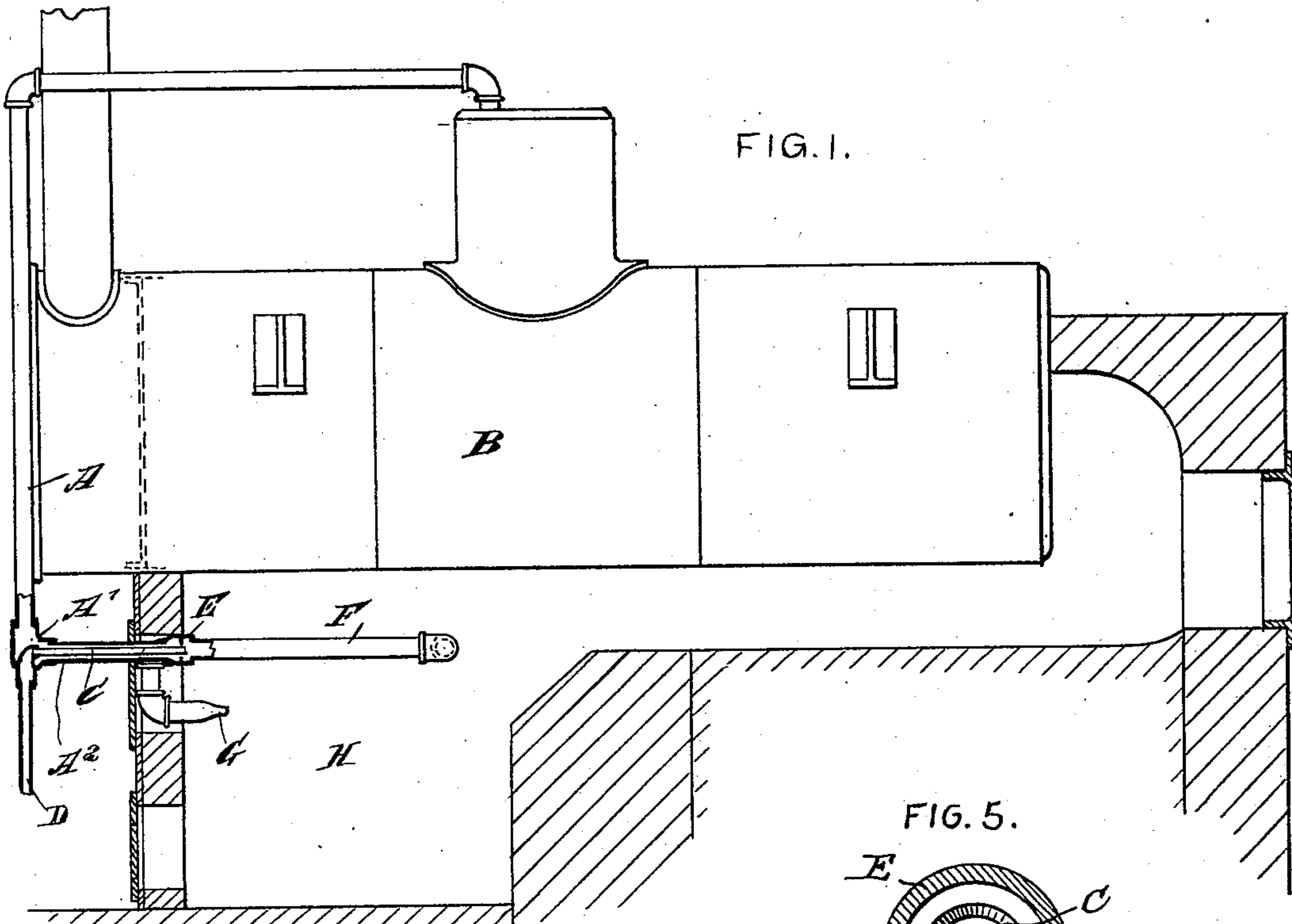


FIG. 2.

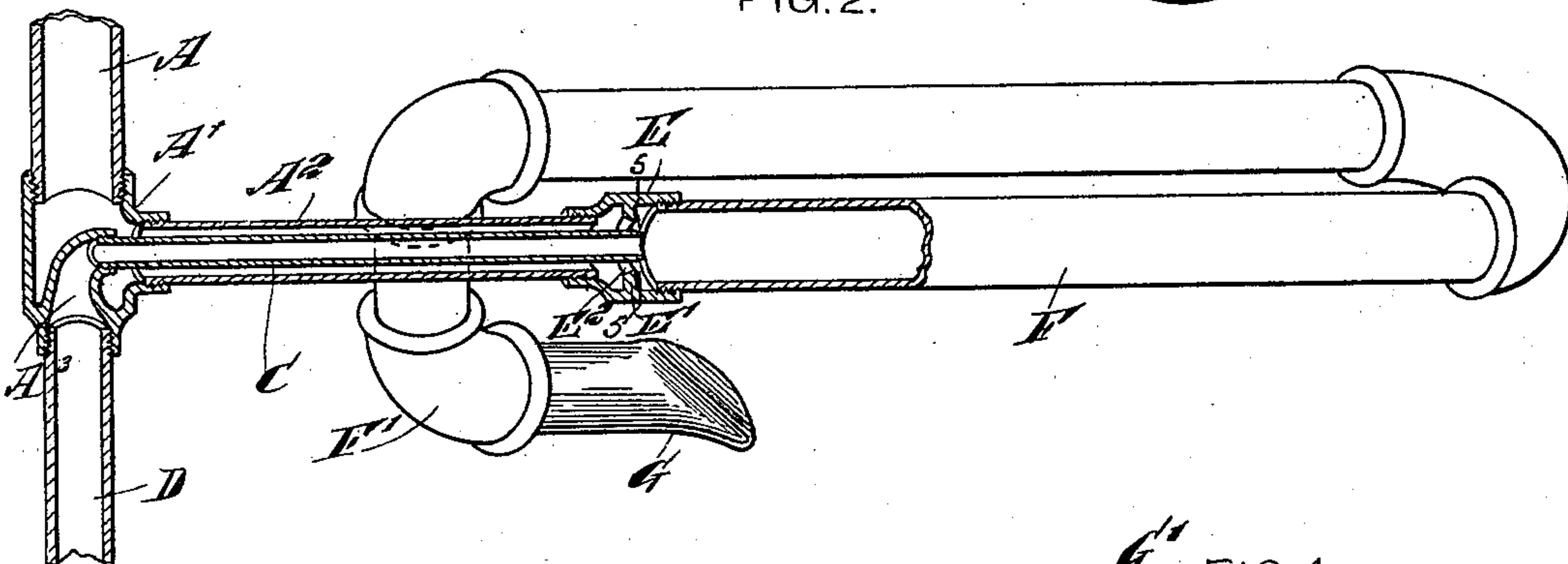


FIG. 3.

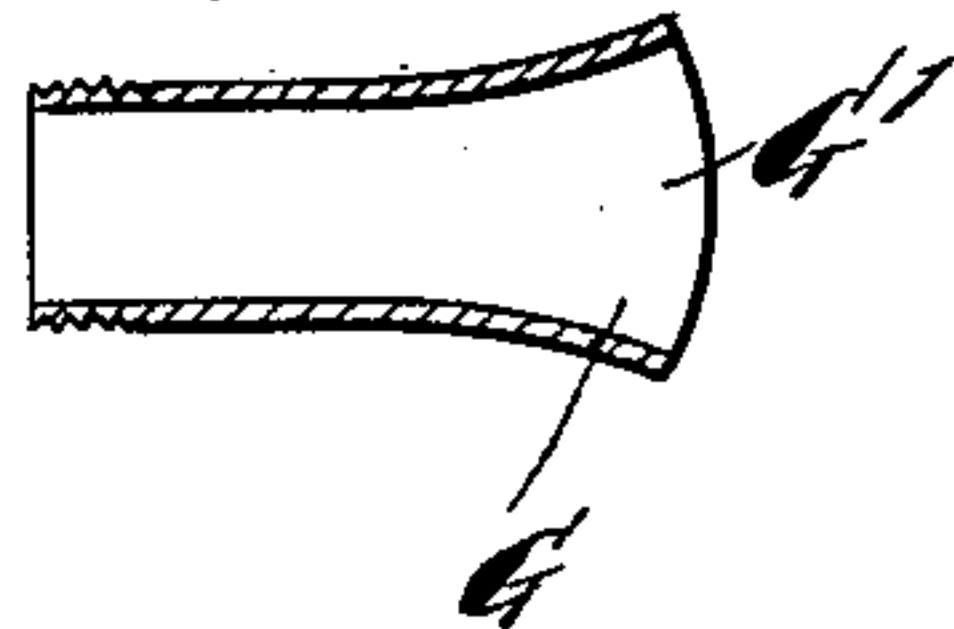


FIG. 4.

WITNESSES:

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UNITED STATES PATENT OFFICE.

SIMEON A. BARRETT, OF SAN BERNARDINO, CALIFORNIA.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 582,515, dated May 11, 1897.

Application filed October 3, 1896. Serial No. 607,758. (No model.)

To all whom it may concern:

Be it known that I, SIMEON A. BARRETT, of San Bernardino, in the county of San Bernardino and State of California, have invented a new and Improved Hydrocarbon-Burner, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved hydrocarbon-burner which is simple and durable in construction, very effective in operation, and more especially designed for burning crude oil of a low gravity without danger of forming an asphaltum or other residue, and consequently avoiding clogging of the burner.

The invention consists principally of an oil-feed pipe surrounded by a steam-supply pipe to cause the steam to spray the oil at the end of the oil-supply pipe, and a retort extending from the said pipes and feeding the burner extending under the retort.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of the improvement as applied. Fig. 2 is an enlarged perspective view of the improvement, partly in section. Fig. 3 is an enlarged sectional plan view of the burner-nozzle, and Fig. 4 is a sectional side elevation of the same. Fig. 5 is an enlarged sectional view on the line 5 5 of Fig. 2.

The steam-pipe A, connected with the dome of the boiler B, is provided at its end with a T A', from which extends horizontally a branch pipe A², surrounding an oil supply or feed pipe C, secured at its inner end in an offset A³, formed within the T A', and connected by the pipe D with a suitable oil-supply for causing the oil to flow through the pipe C, surrounded by the steam-pipe A².

On the outer end of the pipe A² is secured a nipple E, in which is fastened one end of a retort F, made in the form of a coil of pipe extending horizontally, with the end F' bent downward to support a burner G, having a

contracted and flaring mouth G', reaching under the retort F, as is plainly shown in the drawings. The nipple E is provided with a transverse partition E', having a conical opening E², through which extends the extreme end of the oil-feed pipe C, so that the steam passing through the pipe A² and the opening E² is deflected downward upon the extreme end of the pipe C, and consequently the steam engages and sprays the oil passing out of the pipe C. The sprayed oil moves forward with the steam in the retort F, so that the steam is superheated and the oil is brought to the point of vaporizing. The mixture formed finally passes through the mouth G' of the burner G to be ignited and burned in the fire-box H of the boiler B.

It is understood that the flame produced by the burning mixture at the mouth of the burner G' spreads horizontally in a fan-like form under the retort F, so as to heat the same and the mixture passing through it. The heat of the flame also heats the boiler B, so as to generate the water contained therein into steam, part of which is used for spraying the oil and forming a mixture with the same, as above explained.

It will be seen that by the arrangement described the burner converts the oil into the best condition possible for burning without altogether converting it into a gas, so as to leave no deposit or asphaltum or other residue in the retort F, and consequently clogging of the latter is entirely prevented.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

In a hydrocarbon-burner, a branch pipe, a retort, a nipple secured to the branch pipe and connected to the retort, the nipple having an interior diaphragm with a centrally-disposed orifice, the walls of which converge from the branch pipe toward the retort, and a feed-pipe passing through the branch pipe and having its opposite end projected into the opening in the diaphragm, substantially as described.

SIMEON A. BARRETT.

Witnesses:

SUMPTER F. ZOMBRO,
EDWARD E. THOMPSON.