

E. J. ACHÉE.
HYDROCARBON INJECTOR BURNER.
APPLICATION FILED SEPT. 8, 1909.

945,899.

Patented Jan. 11, 1910.

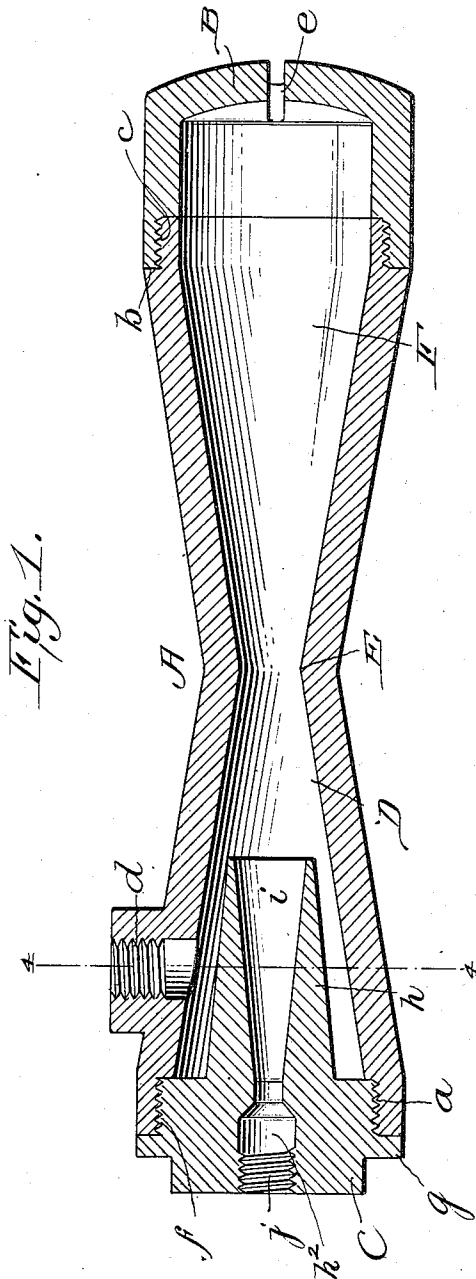


Fig. 3.

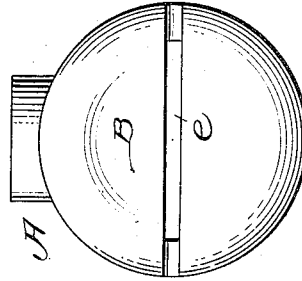


Fig. 4.

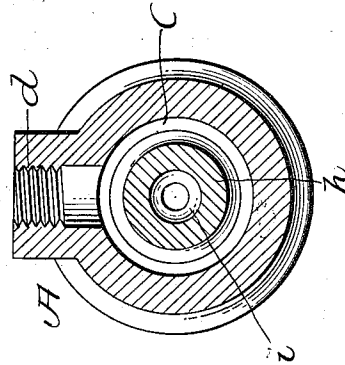
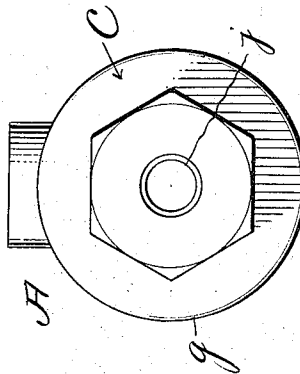


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

EMYGDE J. ACHÉE, OF BAYOU GOULA, LOUISIANA.

HYDROCARBON INJECTOR-BURNER.

945,899.

Specification of Letters Patent.

Patented Jan. 11, 1910.

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To all whom it may concern:

Be it known that I, EMYGDE J. ACHÉE, citizen of the United States, residing at Bayou Goula, in the parish of Iberville and State of Louisiana, have invented new and useful Improvements in Hydrocarbon Injector-Burners, of which the following is a specification.

My invention has to do with what are commonly known as hydrocarbon injector burners; and it contemplates the provision in a burner, of the kind stated, of a simple and inexpensive construction, whereby the efficiency of the burner is increased and the same is well adapted to withstand the hard usage to which hydrocarbon injector burners are ordinarily subjected.

The invention also contemplates constructing the burner in such manner that the same may be expeditiously and thoroughly cleared of collected sediment when occasion demands; and it will be fully understood from the following description and claim when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is a longitudinal central section of a hydrocarbon injector burner constructed in accordance with my invention. Fig. 2 is a rear end elevation of the burner. Fig. 3 is a forward end elevation of the same. Fig. 4 is a transverse section taken in the plane indicated by the line 4-4 of Fig. 1.

Similar letters of reference designate corresponding parts in all of the views of the drawings.

As will be readily observed by reference to Fig. 1, my novel burner comprises a major intermediate section A, a forward end section B, and a rear end section C.

The major section A is interiorly threaded at its rear end, as indicated by *a*, and is exteriorly shouldered and threaded at its forward end, as indicated by *b* and *c*, respectively, and near its rear end said section A is provided with a threaded port *d* designed for the connection of a conduit (not shown) which may lead from a suitable source of hydrocarbon supply to feed the burner with hydrocarbon by gravity or by pressure as is deemed most expedient. From the inner or forward end of the threaded bore *a* the interior portion D of the section A is tapered or gradually reduced in diameter to a point E at or adjacent the middle of the section, and from the said point E to

a point at or adjacent the forward end of the section the interior portion F is gradually increased in diameter, all for an important purpose hereinafter set forth.

The forward section B is in the form of a cap and is screwed on the forward end of the section A and is provided with an eduction aperture *e* which preferably, though not necessarily, extends diametrically across its forward end as shown.

The rear section C is threaded at *f* to engage the thread *a* of section A, and is exteriorly shouldered at *g* to bring up against the rear end of the section A. It will also be observed by comparison of Figs. 1 and 4 that the section C is provided with a forward reduced and exteriorly tapered portion *h*, and in the said section C is formed a bore made up of a rear large portion *h*² and a forward portion *i* that communicates with the large portion *h*² and is gradually increased in diameter from said point of communication to the forward end of the section. At its rear end the large portion *h*² of the said bore communicates with a threaded bore *j*, designed for the connection of a conduit (not shown) that is designed, in turn, to lead from a suitable source of steam supply.

By virtue of the described bore in the section C it will be manifest that steam in passing through the said bore will expand within certain limits and consequently will be more thoroughly commingled with oil supplied to the rear portion D of the interior of section A. It will also be manifest that the commingled oil or hydrocarbon and steam will pass to the contraction E and that after passing the said contraction the mixture will expand in the forward portion F of said interior and its elements will be more thoroughly mixed until it passes forcibly out through the portion of the section B in which the eduction aperture *e* is formed. It will further be noted that the contraction E serves the important function of retarding the steam until the same is supplied with its proper quota of hydrocarbon, with the result that the formation of a highly inflammable mixture is assured.

When the end sections B and C are removed from the major and intermediate section A, the interiors of the said sections B and C may be expeditiously cleaned as may also the interior of the section A, the latter being then open at its opposite ends and

being smooth and entirely free of obstructions intermediate its contraction E and its forward end and between said contraction and the interior abutment near its rear end, and hence adapted to be quickly and thoroughly cleaned.

In addition to the practical advantages hereinbefore ascribed to my novel burner, it will be readily appreciated that the construction of the burner is simple and inexpensive and that as a whole it is well adapted to withstand the usage to which hydrocarbon injector burners are ordinarily subjected.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

The herein described hydrocarbon injector burner consisting of a major intermediate section interiorly threaded at its rear end and having an abutment at the inner end of said thread, and exteriorly threaded at its forward end and having an inlet for hydrocarbon near its rear end and also having an interior that is free from obstruction and is gradually reduced in diameter from the said rear abutment to a point at its

middle and that is free from obstruction and is gradually increased in diameter from the latter point to its forward end, a cap-shaped section threaded on the forward end of the intermediate section and having an eduction aperture, and a rear section threaded into the rear end of the intermediate section and against said rear abutment and having a forward reduced portion that is exteriorly tapered forwardly and also having a bore including a rear large portion adapted to be connected with a source of steam supply, and a forward portion that is gradually increased in diameter to the forward end of the rear section; the said forward end of the rear section being located at an intermediate point in the length of the rear portion of the interior of the intermediate section.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EMYGDE J. ACHÉE.

Witnesses:

JULES KLING,
THOS. C. GRACE.