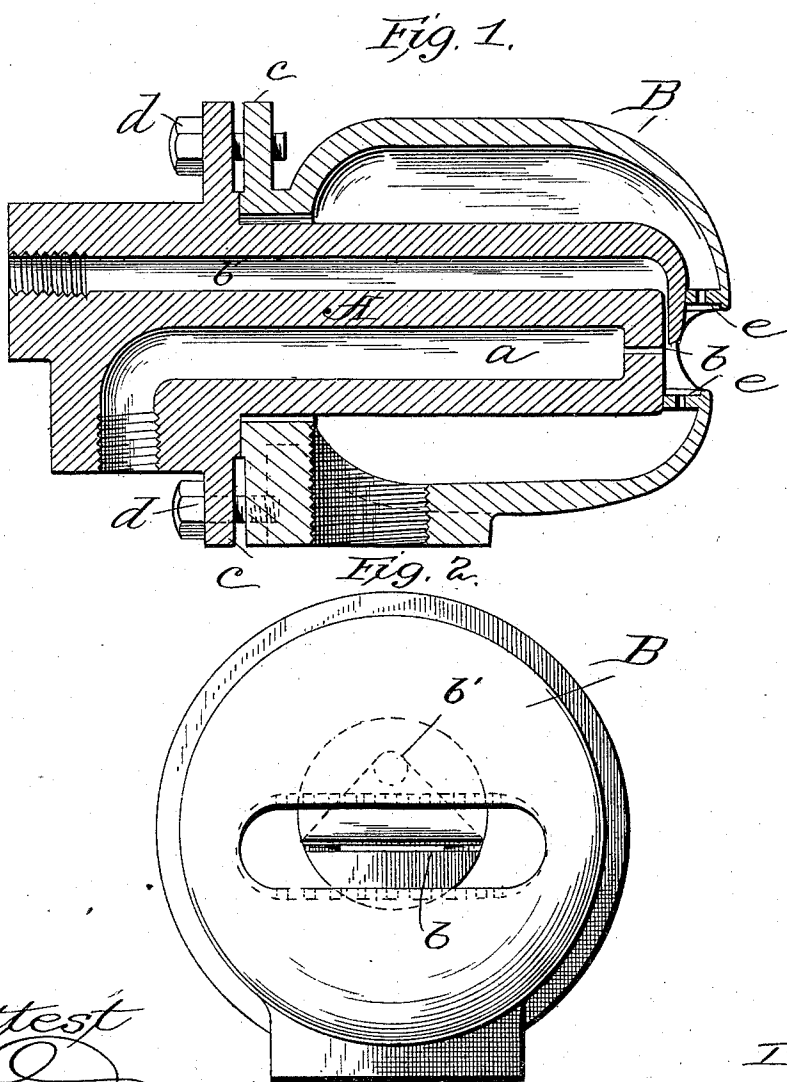


(No Model.)

E. GOODMAN.  
OIL BURNER.

No. 535,000.

Patented Mar. 5, 1895.



Attest  
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*Att'y.*

# UNITED STATES PATENT OFFICE.

EMANUEL GOODMAN, OF POCAHONTAS, VIRGINIA.

## OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 535,000, dated March 5, 1895.

Application filed March 5, 1894. Serial No. 502,385. (No model.)

*To all whom it may concern:*

Be it known that I, EMANUEL GOODMAN, a citizen of the United States of America, residing at Pocahontas, in the county of Tazewell and State of Virginia, have invented certain new and useful Improvements in Oil-Burners, of which the following is a specification.

My invention relates to a hydrocarbon burner and is designed to provide a simple form of burner for the use of oil as a fuel combined with steam and air which shall be very effective in use and adapted to be used in any situation where it is desirable to use oil as fuel.

I have aimed to make my burner of few parts and of such simple construction as to make it durable in use and economical to make.

My invention consists in a casting having a passage for the oil and a passage for the steam, these passages extending parallel with the oil passage discharging above the outlet for the steam and of a shell surrounding the end of the first casting so as to form a chamber around the same and this chamber I connect with a hot air supply and provide feed openings at the front end thereof so as to promote the combustion of the oil and steam by discharging jets of hot air at the point of combustion.

In the accompanying drawings Figure 1, is a longitudinal vertical section of the burner, and Fig. 2, is a front view of the same with some of the parts in dotted lines.

In the figures I have shown my improved burner as composed of two castings, the first A having two channels one for the oil and one for the steam and it will be understood that proper connections are made to an oil supply and a steam supply. The steam supply and the oil supply may be located at any convenient point and any ordinary connections be made with the channels. The steam issues from its channel *a* through an elongated slit *b* at the front end thereof and this slit extends entirely across the end of the casting as shown in Fig. 2, so that the steam not only issues directly in front, but is also ejected at each corner in the shape of a fan.

The channel *b'* for the oil extends the entire length of the casting, but at its front end as shown in the figures the passage is contracted and is directed downwardly so as to feed the oil in a thin film directly above the discharge opening for the steam so that the steam receives the oil as it is fed and atomizes it breaking it up thoroughly so that the steam and oil become intermingled in the form of vapor.

The shell B surrounds the front end of the burner and is bolted to the casting A by lugs *c* and bolts *d*. This shell forms a chamber around the casting A covering the front end except at the mouth of the burner where an elongated opening is left for the flame to issue. The space formed by the shell is in connection with the hot air supply and this hot air is fed to the mingled steam and oil through a series of perforations in a flange *e* extending inwardly around the opening of the shell B.

It will be understood that the oil supply, the steam supply and the hot air supply are all regulated by suitable valves and thus there may be a thorough mixture of the ingredients in regulated quantities and thus a combustion be promoted.

What I claim is—

An oil burner, consisting of a casting A, a steam passage through the same terminating in a flaring slit, an oil steam passage having a flaring exit at right angles to the passage directly above the exit of the steam passage, a shell B forming a chamber around the casting A, an air supply for said chamber, a flame opening in said shell flanges *e* closing the passage from the air chamber to the flame opening and a series of perforations in said flanges for feeding the air from the said chamber across the line of the steam and oil exits, substantially as described.

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

E. GOODMAN.

Witnesses:

JOS. FORREST,  
WALTER DONALDSON.