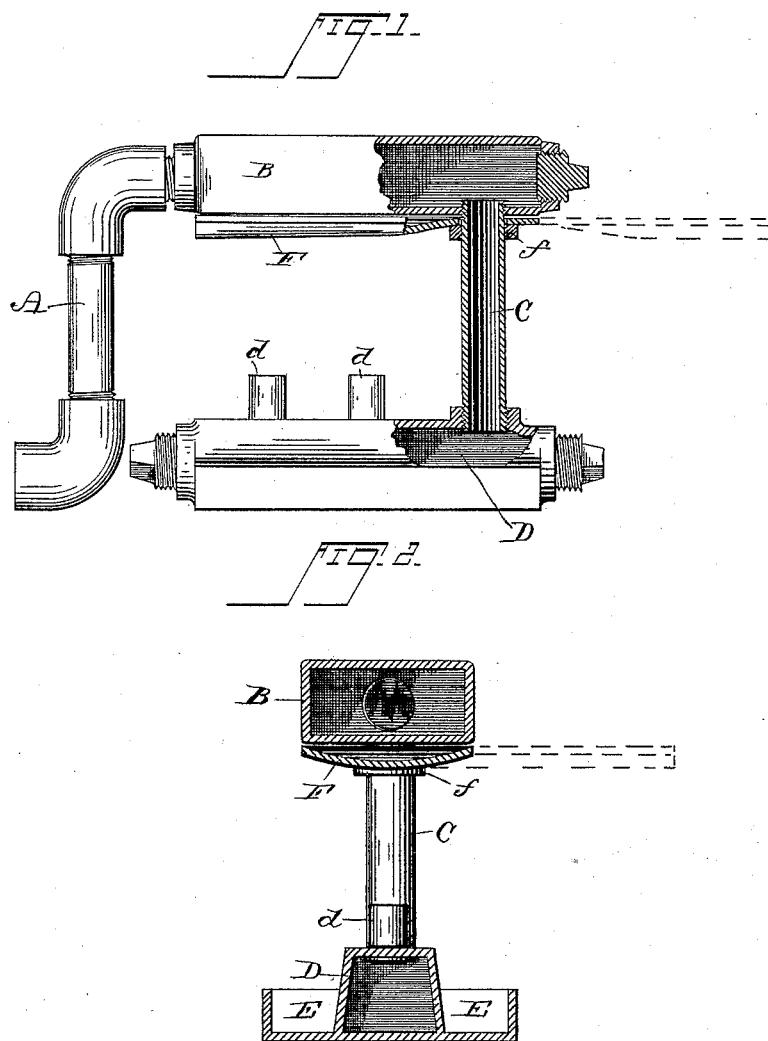


(No Model.)

G. LITTLEFIELD.
VAPOR GENERATING BURNER.

No. 421,411.

Patented Feb. 18, 1890.



Witnesses
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Alfred V. Sage

Inventor
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UNITED STATES PATENT OFFICE.

GEORGE LITTLEFIELD, OF BURLINGTON, WISCONSIN.

VAPOR-GENERATING BURNER.

SPECIFICATION forming part of Letters Patent No. 421,411, dated February 18, 1890.

Application filed October 5, 1889. Serial No. 326,111. (No model.)

To all whom it may concern:

Be it known that I, GEORGE LITTLEFIELD, a citizen of the United States, residing at Burlington, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Vapor-Generating Burners, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has for its object to provide a vapor-generating burner of such construction that, while a proper supply of vapor to the burner will always be afforded, an oversupply or overheating—such as will tend to cause the burner to “blow” or the generating-chamber to become incrustated—will be avoided. To this end my improved generator is provided with a swinging or movable shield, which may be interposed between the burner proper and the bottom of the generating-chamber when desired, and removed from such position when necessary, as when the burner is first lighted and more heat to warm up the generating-chamber is desired.

In the drawings, Figure 1 is a side view, partly broken away, of my improved generator and burner; and Fig. 2 is a transverse section of the same.

A denotes a feed-pipe for conveying crude petroleum or other liquid hydrocarbon to the generating-chamber B, which latter has an area in cross-section considerably larger than that of the feed-pipe.

C is a connecting-pipe through which the vapor passes from the generating-chamber B to the burner-chamber D, the latter being provided with one or more burner-jets *d*.

Surrounding the burner-chamber D is the primary generating-pan E.

Pivoted on the pipe C is a movable or swinging shield F, preferably of proper form and size to cover the bottom of the generating-chamber B, and slightly separated therefrom, preferably by being slightly curved, as shown in Fig. 2. When the shield is not required for use to cut off a portion of heat from the burner jet or jets, it may be swung aside, as shown in dotted lines in the drawings. As herein shown, the shield F is sustained in position adjacent to the chamber B by the col-

lar or washer *f* on the pipe C; but it may be otherwise movably supported in such a manner that it may be interposed between the burner or burners proper and the generating-chamber or be swung aside from such position, as may be desired. The shield F is of proper size to cover the entire bottom of the generating-chamber, or substantially so, and is preferably curved transversely, as shown, so as to form an air-chamber between itself and the bottom of the said generating-chamber, to which it is closely adjacent.

In the operation of my generator and burner the oil, when first turned on, passes from the feed-pipe A to the generating-chamber B, and then down the pipe C to the burner-chamber, and a small quantity escapes from the burner jet or jets into the primary generating-pan E, where, being ignited, it soon makes sufficient heat to vaporize the incoming oil in the generating-chamber; but when the latter has become heated to a certain point the said shield is swung into position between the burner jet or jets and the generating-chamber to prevent such overheating of the latter as will cause the jet or jets to blow by reason of too rapid vaporization of the oil or other hydrocarbon, or to prevent such overheating as will cause objectionable incrustation on the bottom of the inside of the said chamber. Thus with the use of my movable or swinging shield, the full heat of the burner jet or jets may be utilized when desired, or their heat against the generating-chamber may be moderated to any desired degree by bringing the shield more or less fully into position between the jet or jets and generating-chamber.

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

1. In a vapor-generating burner, the combination, with the generating-chamber, of a movable shield arranged below the bottom of said chamber and above the burner jet or jets, said shield being of a size equal to the area of the said bottom, or approximately so, and being adapted to be swung aside when desired, substantially as and for the purpose set forth.

2. The combination, with the vapor-generating chamber B, the connecting-pipe C, and

the burner jet or jets, of the swinging shield
F, arranged closely adjacent to the bottom of
the said chamber and being substantially
equal in area to the said bottom, and being
5 adapted to turn on said pipe as a pivot, so as
to be swung aside when desired, substantially
as set forth.

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

GEORGE LITTLEFIELD.

Witnesses:

ALBERT F. RANSOM,
FRANK J. AYERS.