

(No Model.)

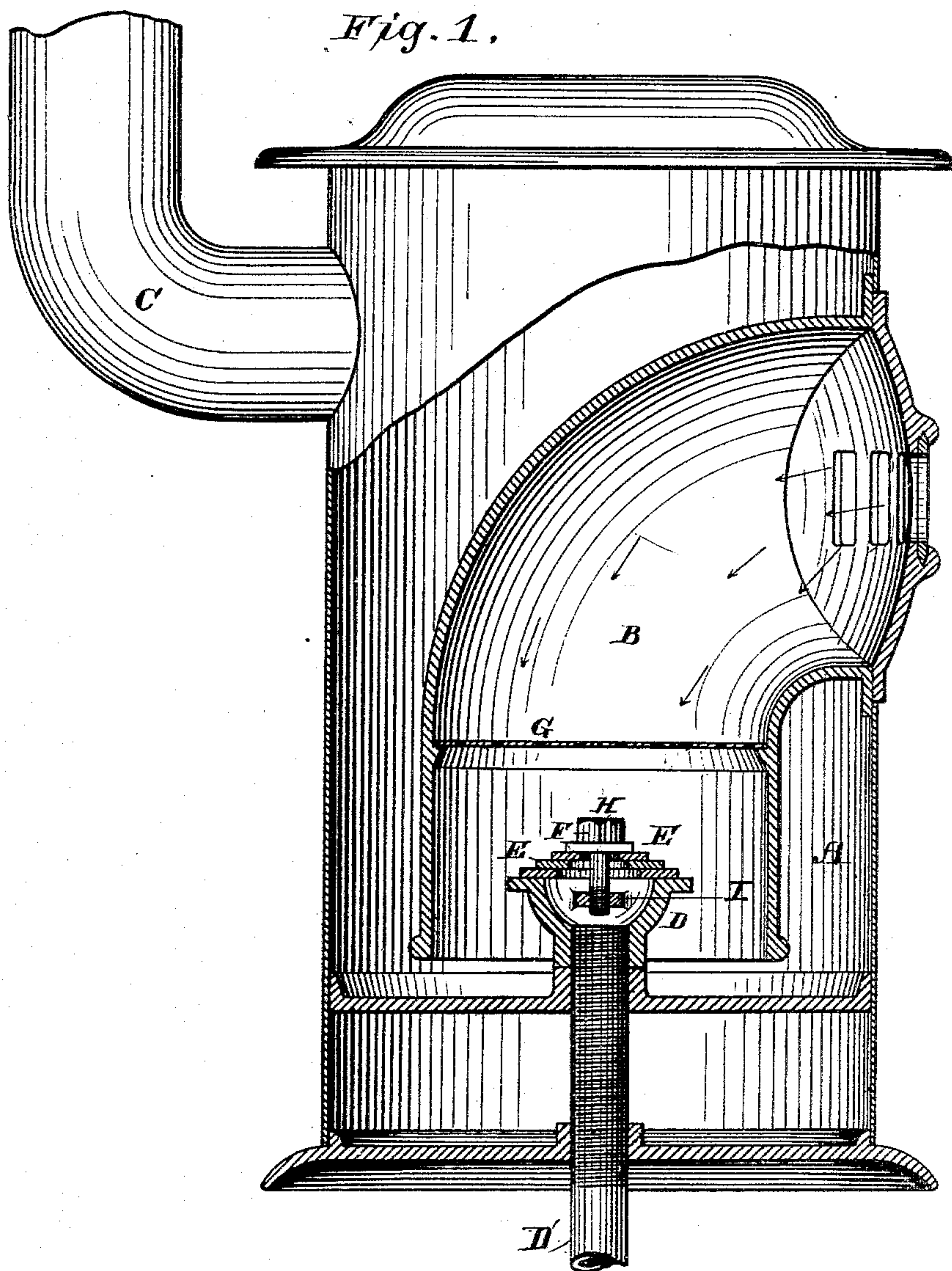
2 Sheets—Sheet 1.

R. W. SMITH.

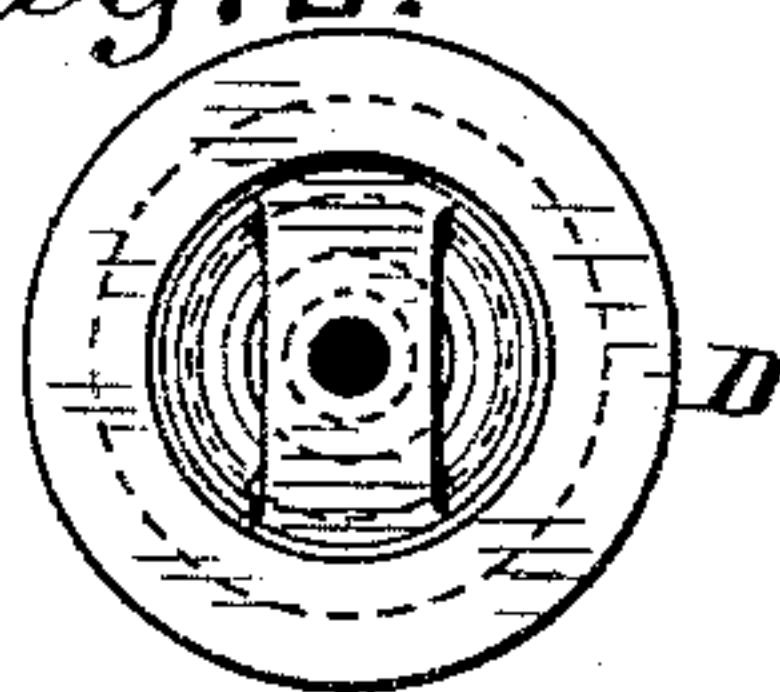
OIL CUP FOR BURNING CRUDE PETROLEUM OIL.

No. 387,927.

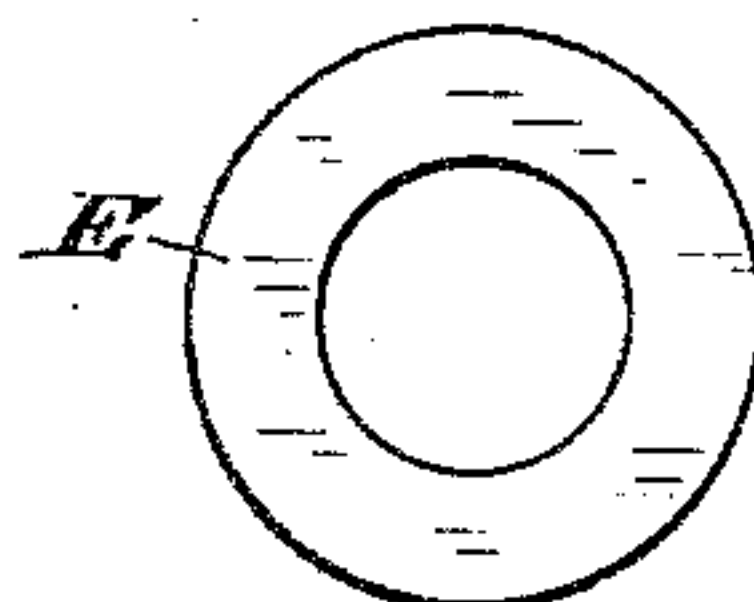
Patented Aug. 14, 1888.



*Fig. 2.*



*Fig. 3.*



WITNESSES,

*E. A. Newman,*  
*C. M. Newman,*

INVENTOR,

*Robert W. Smith,*

*By his Attorneys*

*Baldwin Hopkins & Peyton.*



(No Model.)

2 Sheets—Sheet 2.

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OIL CUP FOR BURNING CRUDE PETROLEUM OIL.

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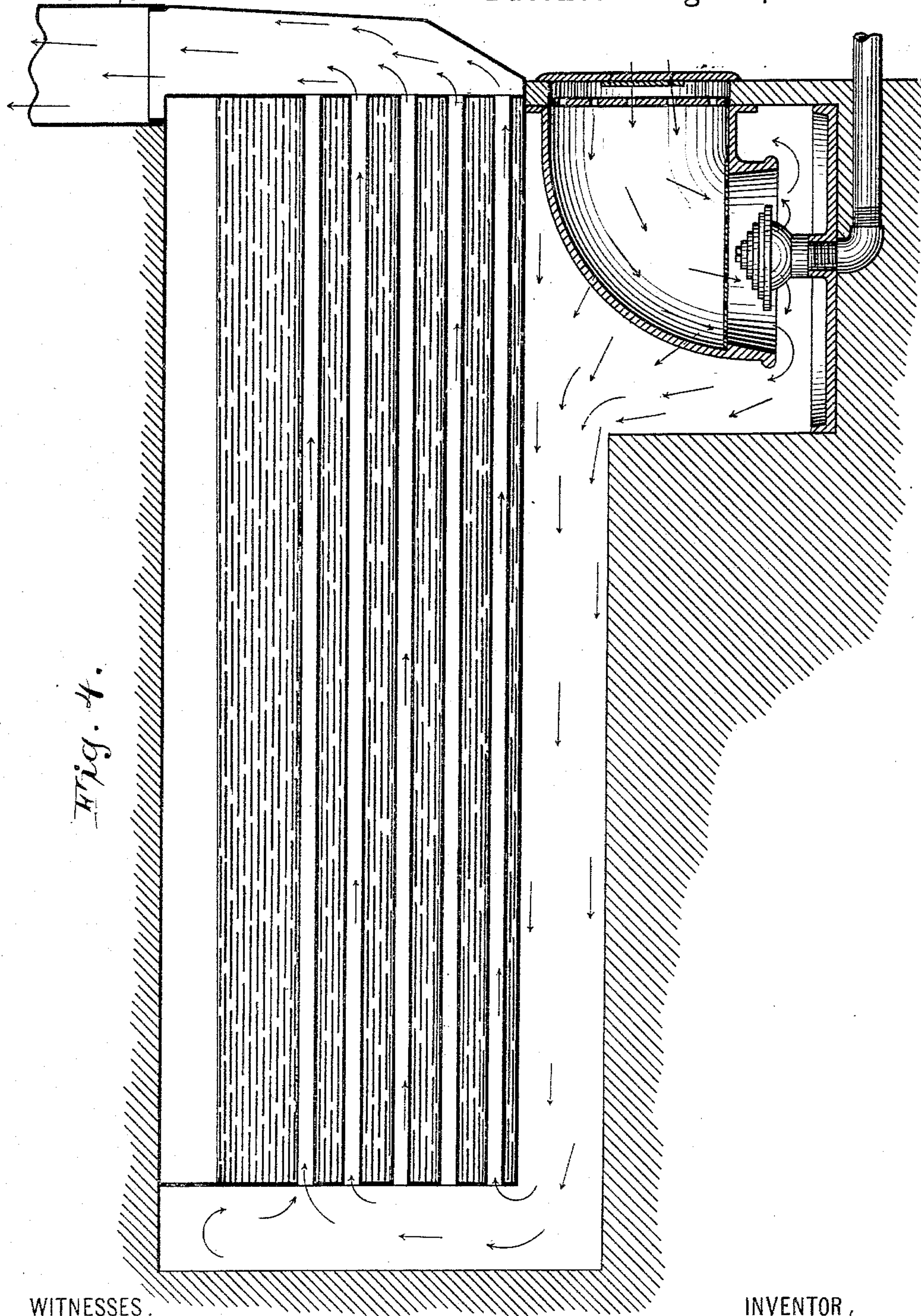


Fig. 4.

WITNESSES.

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INVENTOR,

*Robert Smith.*



# UNITED STATES PATENT OFFICE.

ROBERT W. SMITH, OF TOLEDO, OHIO.

## OIL-CUP FOR BURNING CRUDE PETROLEUM-OIL.

SPECIFICATION forming part of Letters Patent No. 387,927, dated August 14, 1888.

Application filed September 19, 1887. Serial No. 250,105. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT W. SMITH, of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful  
5 Improvement in Oil-Cups for Burning Crude Petroleum - Oil, of which the following is a specification, reference being had to the accompanying drawings.

My improved oil-cup is designed to be used  
10 in that class of apparatus in which crude petroleum-oil is forced up into the bottom of an oil-cup, to be overflowed around its edges and to meet a downwardly-directed draft for combustion. Such an apparatus I have shown in  
15 my pending application, Serial No. 238,764, filed May 19, 1887.

The object of my invention is to improve the combustion, which takes place by the overflow of oil around the margin of the cup. I have  
20 found by experiment that ordinarily with an oil-cup constructed as heretofore there is great difficulty in getting the overflow and combustion to extend entirely around the edge of the cup, so as to form a complete circle. Generally this circle will be broken and the combustion will take place upon one side of the  
25 cup, especially when a large cup is used. I have found that this difficulty can be overcome and the combustion caused to take place  
30 in an uninterrupted circle entirely around the edge of the cup in the manner I will now proceed to describe in detail; and my invention consists in the peculiar devices defined in my claims.

35 In the accompanying drawings, Figure 1 is an elevation, partly in section, of a stove containing my invention. Fig. 2 is a plan view of the oil-cup detached. Fig. 3 is a plan view of one of the rings or disks detached. Fig. 4  
40 shows my invention applied to heat a locomotive-boiler.

Referring to the letters upon the drawings, A indicates a stove with an air-flue, B, for  
45 downdraft, as shown by the arrows, the lower end of which is a combustion-chamber, and a pipe or chimney, C.

D indicates an oil-cup with an opening in its bottom suitable for the admission of oil under pressure through an inlet-pipe, D', in  
50 an upward direction, to be overflowed around the outside of the cup.

E indicates a series of annular disks placed one upon another on the top of the cup, and F indicates a cap closing the opening in the top or smallest disk. These disks are turned  
55 smooth and fit snugly, the first one upon the top of the cup and the others one upon another, and the cap also fits snugly upon the topmost disk; but the heated fluid finds its way out between the disks in thin streams all  
60 around, and by this device I am able to get a continuous circle of flame all around the oil-cup. I can increase or diminish the capacity of the burner by increasing or diminishing the number of these disk-rings, and the oil-pressure may be varied at will, and may be applied  
65 in any usual way.

G indicates a screen or perforated diaphragm over the cup, which serves to break up and distribute the incoming air to support combustion all about the cup, and which gives a  
70 much better result in practice than can be attained without it.

H indicates a headed screw-bolt, which engages by its thread with a female screw-thread  
75 in a cross-piece, I, which may be cast with the oil-cup. This screw-bolt serves to clamp down the cap and disks as tightly as may be desired.

Having described my invention, what I claim to be new, and desire to secure by Letters  
80 Patent of the United States, is—

1. The combination, with an oil-cup open at its bottom and provided there with an oil-inlet pipe, of a series of disks, one resting on another above the top of the cup and clamped  
85 down to place, substantially as set forth.

2. In a stove, the combination, with a downdraft-flue, the lower end of which is a combustion-chamber, of a screen or perforated diaphragm, G, between the flue and combustion-chamber, and an overflow oil-cup below the  
90 screen open at its bottom and provided there with an oil-inlet pipe, and a series of disks at the top of the cup clamped down to place, substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

ROBERT W. SMITH.

Witnesses:

E. W. TOLERTON,  
HUGH F. SHUNCK.