

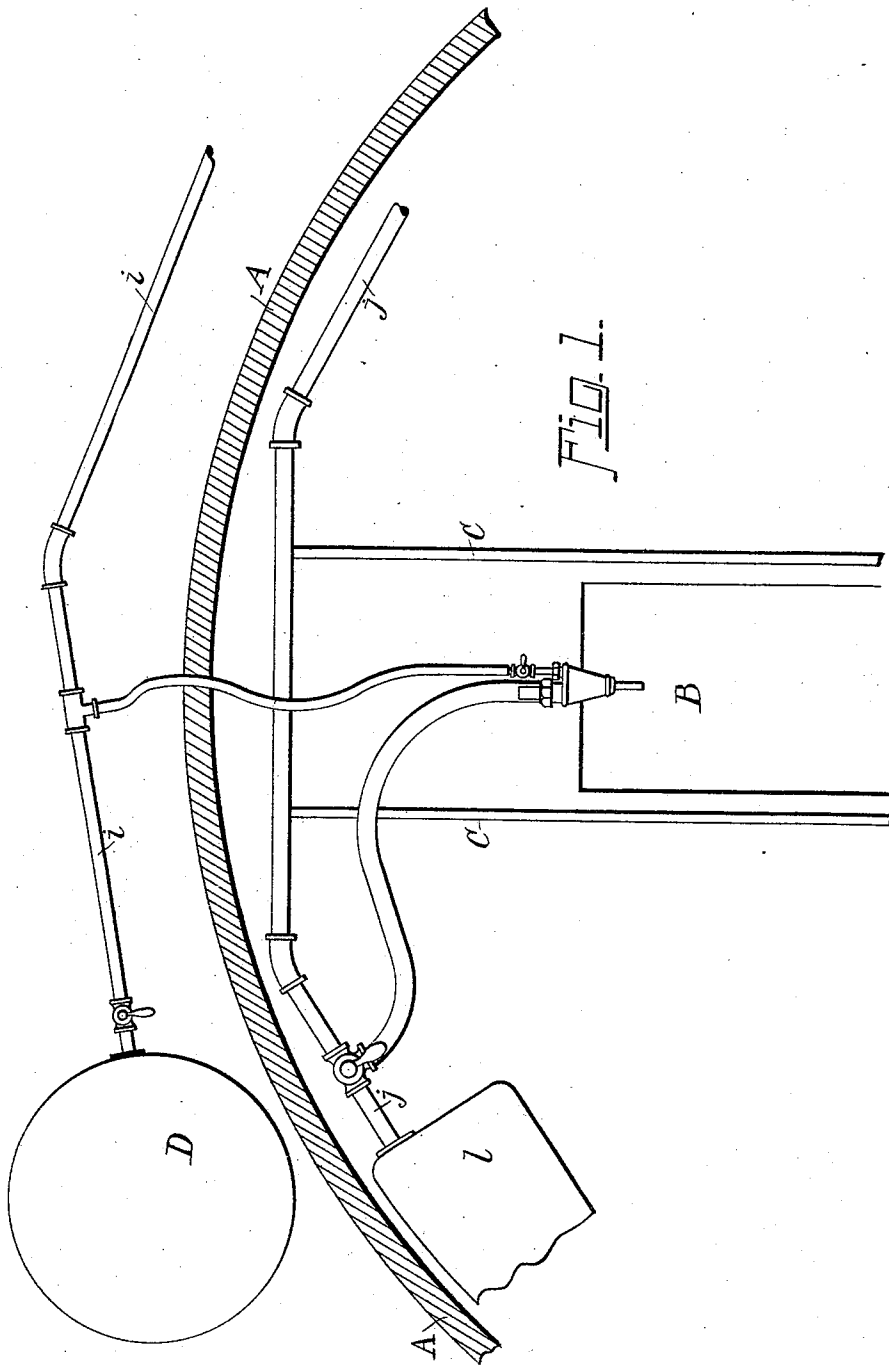
(No Model.)

2 Sheets—Sheet 1.

C. T. SMITH.
OIL BURNER.

No. 489,549.

Patented Jan. 10, 1893.



Witnesses
M. J. Wilson
J. Griswold

Inventor
C. T. Smith
By W. H. Burdick atty.

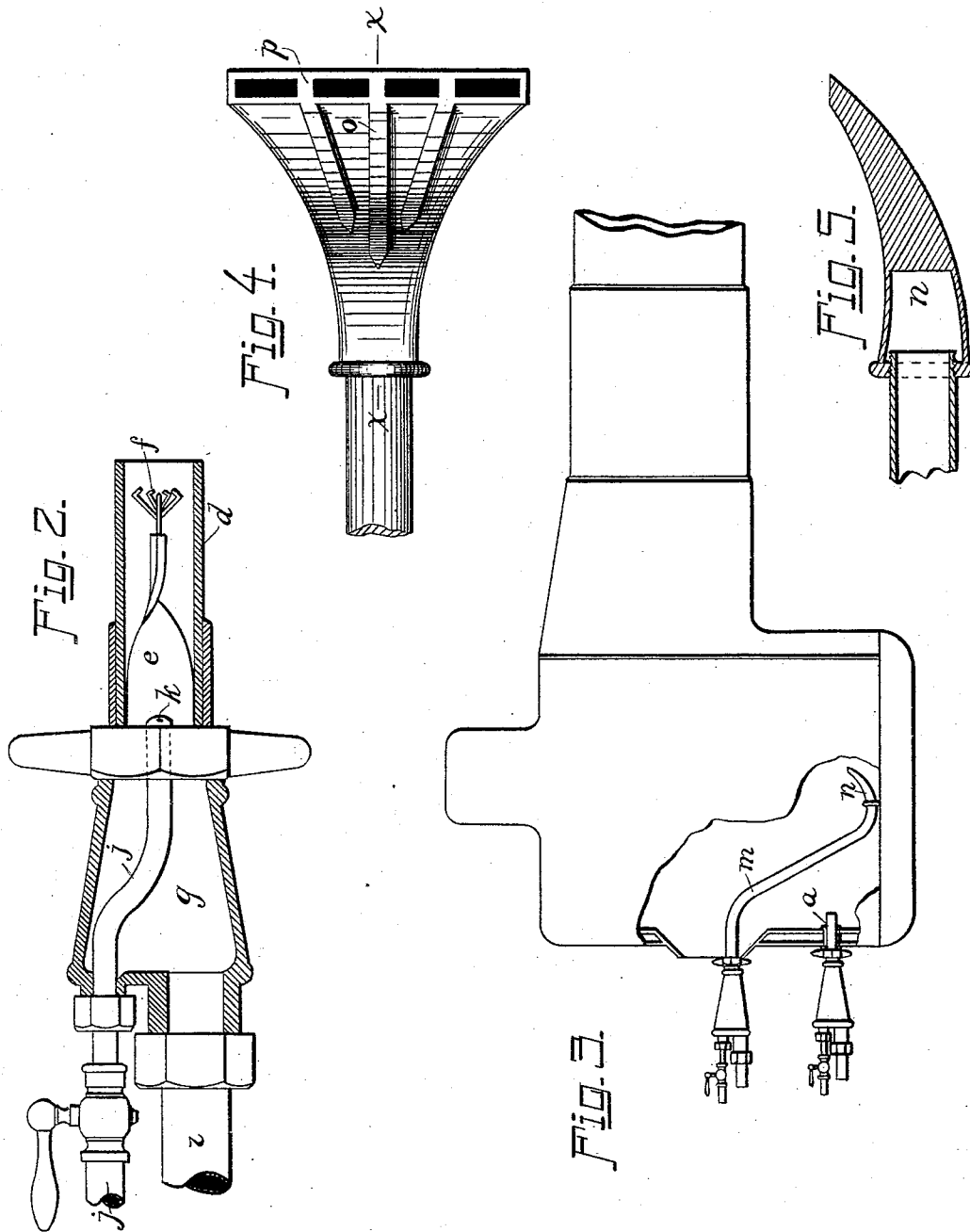
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UNITED STATES PATENT OFFICE.

CHARLES T. SMITH, OF CLEVELAND, OHIO, ASSIGNOR OF TWO-FIFTHS TO
CHARLES R. BOSWORTH, OF SAME PLACE.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 489,549, dated January 10, 1893.

Application filed February 4, 1892. Serial No. 420,316. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. SMITH, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Oil-Burner, of which the following is a full, clear, and complete description.

My invention relates to an oil burner used principally for kindling the fire in locomotives or boiler furnaces of any description.

That my invention may be seen and fully understood by others familiar with the art, reference will be had in the following specification to the annexed drawings, of the apparatus.

Figure 1 is a plan view of a section of the wall A, of a round house showing the location of the tracks C, ash pit, B, oil tank *l*, and air-compressor D, with their connections to the burners. Fig. 2 is an enlarged view of my improved oil burner detached. Fig. 3 is a view of a portion of a locomotive boiler with a portion of the fire box broken away showing the application of the oil burner as a kindler in two positions. Fig. 4 is an enlarged detached section of a portion of one of the burners, hereinafter described. Fig. 5 is a transverse section of Fig. 4 on line *x. x*.

Like letters of reference designate like parts in the drawings and specification.

The burner is substantially of the form shown in Fig. 2. The pipe *d* which enters the fire box is provided in its interior with a suitable deflector *e* and a spreader *f*, the purpose of which is hereinafter explained. The pipe *d* is in open connection with a fitting or chamber *g* provided with a pipe *i*, connected with any suitable form of an air compressor D (Fig. 1.), blower or air pump. Any known device for producing a strong blast of air may be used. This air blast may be obtained by connecting the pipe or hose *i* with the blower of the locomotive. A tube *j* supplies oil from

a tank *l* (Fig. 1.) located at any convenient point. The interior end of the pipe *j*, or that which terminates in the burner is closed with the exception of the small opening *k* (of which there are two or more, one only being shown in drawings) through which the oil passes, coming in contact with the deflector *e*, and spreader *f*. The air blast through the pipe *i* coming in contact or commingling with the oil at the openings *k*, in connection with the deflector and spreader, atomizes or diffuses the oil. Upon a flame being applied to the oil thus diffused, an intense heat is generated.

The pipe *d* of the burner is inserted in a hole at any convenient point in the fire box as shown at *a* Fig. 3. Should it be inconvenient to have the opening *a* in the fire box, the burner may be inserted in the door opening, in which case a pipe *m* Fig. 3. is connected with the burner and extends down into the lower part of the fire box, having a spreader *n* of the form shown detached, in Figs. 4 and 5, having the ridges *o* on its exterior, so that it may be coated on the exterior with fire clay. The interior of the spreader *n* has bars or cross pieces *p* to prevent its collapsing when it becomes highly heated:

Petroleum or any of its products may be used in my improved burner.

What I claim as my invention and desire to secure by Letters Patent is,

In combination with an oil burner for kindling the fire for a boiler, a nozzle of substantially the form described, attached to the terminal of an extending pipe, reaching from said burner into the base of the fire or fuel substantially as and for the purpose set forth.

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

CHARLES T. SMITH.

Witnesses:

WALTER A. BIDDLE,
L. T. GRISWOLD.