

(No Model.)

C. T. SMITH.
LOCOMOTIVE FIRE KINDLER.

No. 510,447.

Patented Dec. 12, 1893.

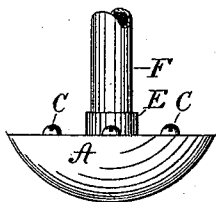


FIG. 1.

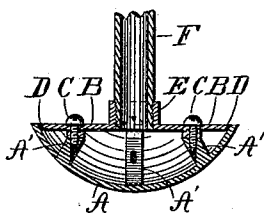


FIG. 2.

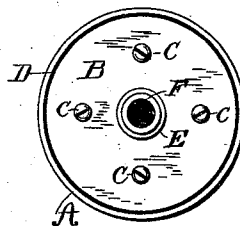


FIG. 3.

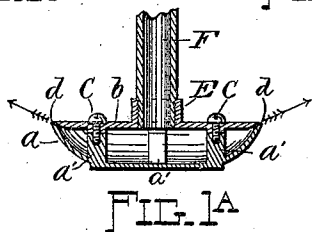


FIG. 1A.

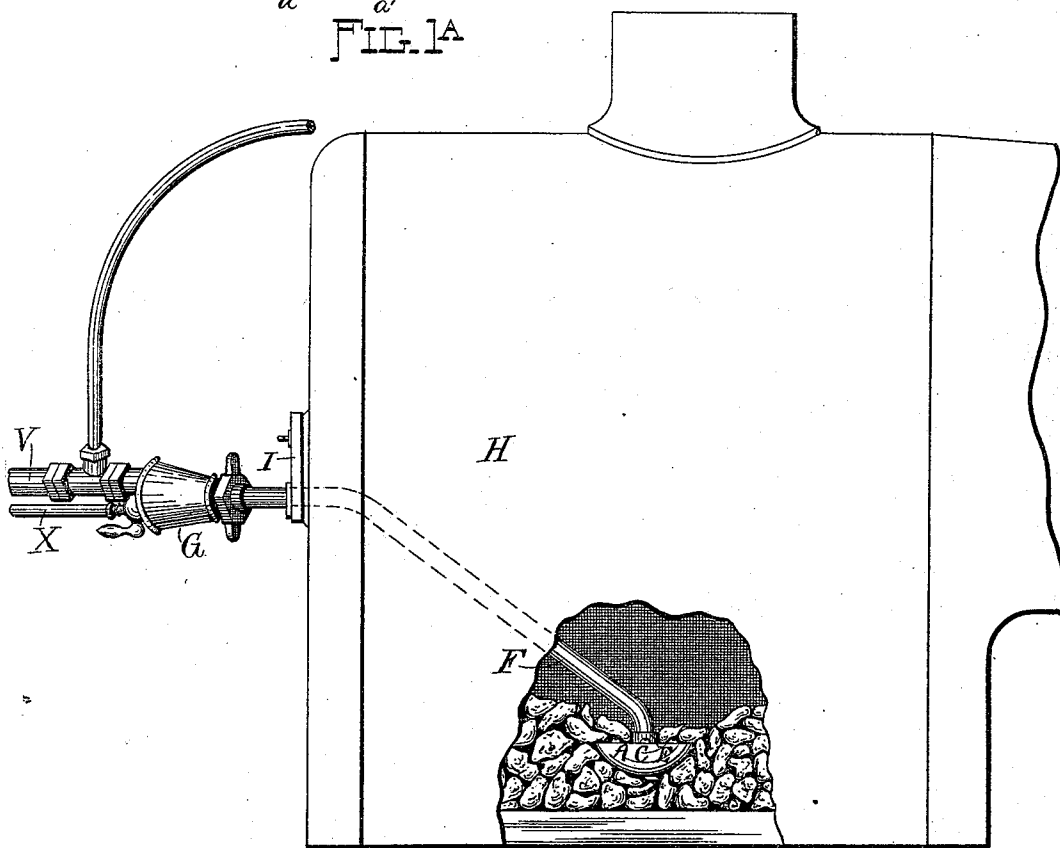


FIG. 4.

WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES T. SMITH, OF CLEVELAND, OHIO.

LOCOMOTIVE FIRE-KINDLER.

SPECIFICATION forming part of Letters Patent No. 510,447, dated December 12, 1893.

Application filed August 27, 1892. Serial No. 444,337. (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 new and Improved Burner for Locomotive Fire-Kindlers, of which the following is a full, clear, and exact description.

The nature of my invention relates to an improved burner for locomotive fire-kindlers used principally for igniting the coal in locomotives, said burner consisting of a pan having a cover secured thereto in such a manner as to leave a narrow annular slit between said pan and cover, the latter being provided with an opening surrounded by a collar.

The object of my improvement is to provide a burner which, by its peculiar construction, shall be capable of throwing out a powerful flame for the purpose of quickly setting fire to the surrounding fuel.

That my invention may be seen and fully understood by those familiar with this art, reference will be had to the following specification and annexed drawings, forming a part thereof, in which—

Figure 1 is a side view of the burner; Fig. 1^A, a modification of the same; Fig. 2, a section of Fig. 1; Fig. 3, a top view; Fig. 4, a side view of the fire box of a locomotive partially broken away to illustrate the burner in operation and also showing the atomizer connected to said burner.

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

The circular pan A Figs. 1, 2, 3 and 4 is provided with the lugs A' Fig. 2 on the inside, to which the cover B, Figs. 2 and 3 is secured by the screws C. The outer circumference of the cover B, is a little less than the inner circumference of the top of the pan A, which leaves the annular slit D, Figs. 2 and 3.

The burner in Fig. 1^A, is a modification of the burner described above and is preferably the one to be used, since by its peculiar construction the flame is projected sidewise in the direction indicated by the arrows, while in the burner first referred to the flame would be projected more directly upward. The pan a Fig. 1^A is designed to rest on top of the fire box grate and the sides of said pan project upward nearly to a level with the top of the

cover b and a little beyond the outer circumference or edge of the cover b, Fig. 1^A, is beveled from above downward and inward at a sufficient angle to give, in connection with the upper edge of the pan a, the desired angle of projection to the flame, through the annular slit d. The cover b, is circular like the cover B, Fig. 3 and supported on the lugs a', clears the upper edge of the pan a, sufficiently to leave the annular slit d before referred to. The annular slit between the pan and the cover is very narrow, much narrower than the drawings indicate.

Centrally located on top of the cover B. or b, and forming an integral part thereof is the collar E, Figs. 1, 1^A, 2, 3 and 4 screw threaded on the inside. The pipe F, Figs. 1, 1^A, 2, 3, and 4, is screwed into the collar E and is thereby brought into open connection with the interior of the pan A or a, since the opening in the collar continues through the cover. The opposite end of the pipe F, is attached to the atomizer G, Fig. 4, and is in open communication therewith.

In Fig. 4, a portion of the locomotive fire box H, is broken away to show the burner in place with the coal surrounding it and the pipe F, passing from said burner, out through the door I, of the fire box and attached to the atomizer G. A further modification of the burner may be made by reversing the pan a and having the lug on the cover b, in which case it would be necessary for the pipe F to penetrate the pan instead of the cover, and, the angle of the annular slit would have to be changed.

In operation the burner is inserted through the door into the locomotive fire-box as shown in Fig. 4. Air and oil are admitted into the atomizer G, where they are transformed into a highly inflammable gas or vapor which passes into said burner. Fire is applied to the annular slit D or d, in the burner, igniting the gas escaping therefrom, which burns with great intensity and fervor, quickly kindling the coal surrounding it. If there were no coal around the burner the air-blast would extinguish the flame.

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

The position or location of the slit d, in the burner, may be varied, but the construction of

the burner, as illustrated in Fig. 1^A, with said slit between the pan *a* and the cover *b*, is considered to be the most practical. It is not imperative that the pipe *F* penetrate the center of the cover *b*, or of the bottom of the pan *a*, (in case the burner were reversed as before described,) as equally good results will be obtained if said pipe communicates with the interior of the burner at any other convenient point.

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

1. In a burner for locomotive fire kindlers, the shallow pan *a* provided with the lugs *a'*, the cover *b* having its outer edge beveled from above downward and inward, said cover being secured to said lugs but, in order to leave the narrow annular slit *d*, not coming in contact with the upper edge of said pan and having an opening surrounded by a threaded col-

lar, in the manner substantially as and for the purpose set forth.

2. A burner for locomotive fire kindlers consisting of the shallow pan *a* provided with the lugs *a'*, the cover *b* secured to said lugs in such a manner as to leave the narrow annular slit *d* between the upper edge of said pan and the outer beveled edge of said cover and provided with an opening surrounded by a threaded collar, in combination with an atomizer and the pipe connecting said atomizer with said collar, in the manner substantially as and for the purpose set forth.

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

CHARLES T. SMITH.

Witnesses:

W. H. BURRIDGE,
F. A. CUTTER.