

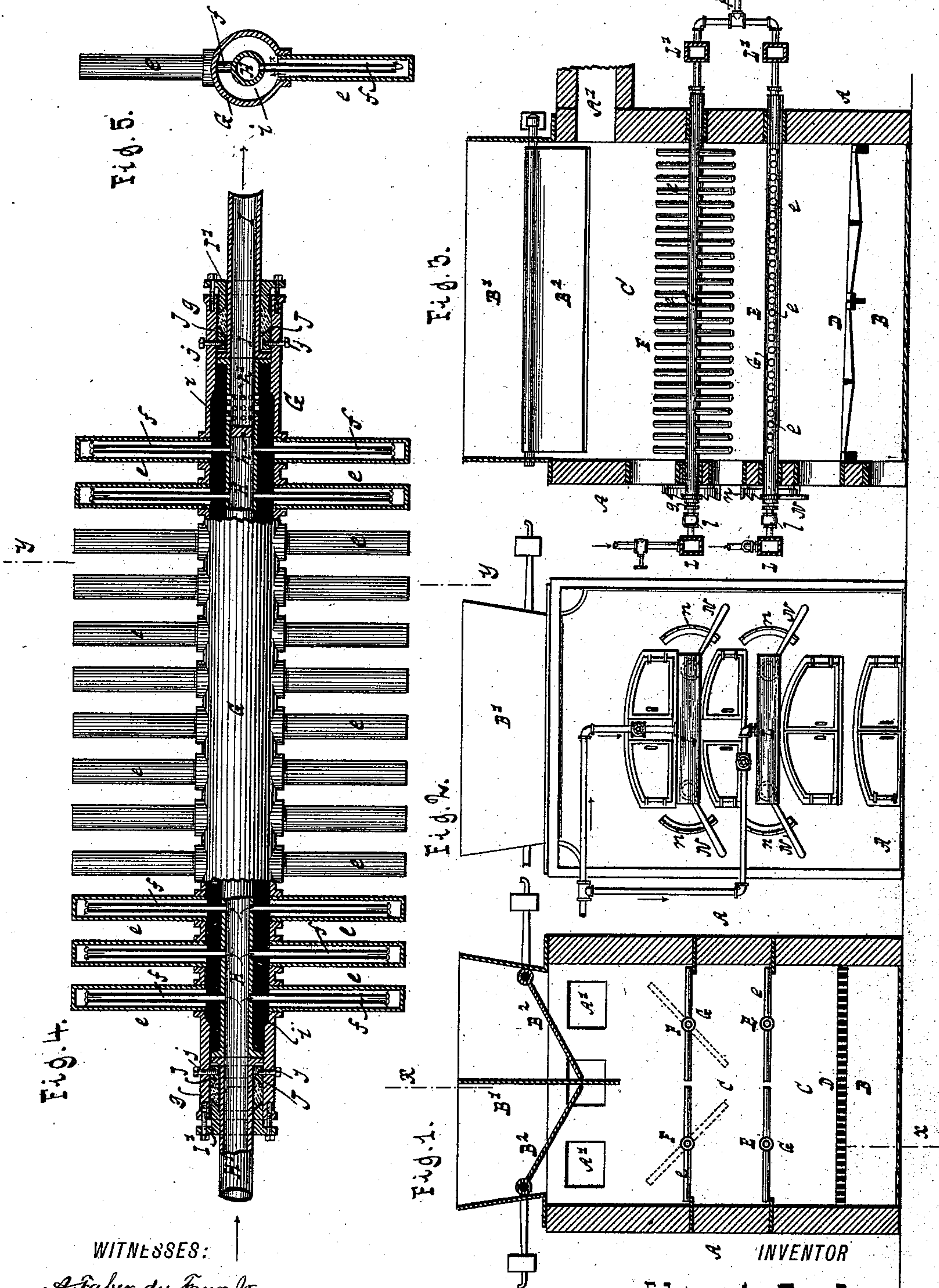
(No Model.)

E. G. TEED.

GRATE FOR REFUSE BURNERS.

No. 377,651.

Patented Feb. 7, 1888.



WITNESSES:
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UNITED STATES PATENT OFFICE.

EDGAR G. TEED, OF BROOKLYN, NEW YORK.

GRATE FOR REFUSE-BURNERS.

SPECIFICATION forming part of Letters Patent No. 377,651, dated February 7, 1888.

Application filed April 28, 1887. Serial No. 236,484. (No model.)

To all whom it may concern:

Be it known that I, EDGAR G. TEED, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Grates for Refuse-Burners, of which the following is a specification.

This invention has for its object to provide novel means for rapidly and efficiently consuming garbage and other refuse matter; and to such end the invention consists in the features of construction and combination of devices, hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 represents a vertical section of a refuse-burner constructed according to my invention. Fig. 2 is a front elevation of the same. Fig. 3 is a longitudinal section in the plane xx , Fig. 1. Fig. 4 is a sectional plan view of a grate, drawn to a larger scale than the preceding figures. Fig. 5 is a section thereof in the plane yy , Fig. 4.

Similar letters indicate corresponding parts.

In the drawings, the letters A A designate the walls of a furnace constructed in the usual manner.

B is the ash-pit, and C is the fire-box.

The fire-grate D is of the usual construction, and above said grate is arranged a supplementary or garbage-supporting grate, E, consisting of two or more sections, E E, which can be turned about central axes, in a manner to be hereinafter described. Above the grates E E is situated a similar grate, F F, and, if desired, a third grate or several more may be arranged in tiers.

At the top of the furnace, and directly over the supplementary grates, is located a hopper, B', containing suitable pivoted and weighted gates, B² B², which open to dump the garbage upon the grate F, but close immediately afterward to prevent the escape of gases. A flue or flues, A', lead off the products of combustion and other gases.

The flames from a coal or wood fire on the grate D come into contact with and ignite the refuse matter held loosely in suspension upon the garbage-supporting grates E and F, and the free circulation of air and flame through the suspended matter causes it to be more

readily and rapidly consumed than when it is thrown directly on a fire-grate.

By turning the grate F, as indicated by dotted lines in Fig. 1 and full lines in Fig. 3 the matter thereon can be conveyed to the lower grate, E.

The intense heat caused by the combustion of the matter suspended on the grates E and F would soon cause their destruction. To prevent this I provide for a circulation of water through said grates, and to keep all portions of the grate in a nearly uniform temperature I construct the grate as follows:

Referring to Figs. 4 and 5, the grate-bars e each consist of a tube closed at one end and provided at its other end with a screw-thread or other means to attach it to a tubular body, G, in the center of the grate. Through the center of the body G extends longitudinally a supply-pipe, H, which is provided with lateral tubes f , extending into the grate-bars e and nearly to the ends of the same. At the rear end of the grate this supply-pipe is closed by a suitable plug, h , so that the water forced into said pipe can leave it through the tubes f only, and, passing through the grate-bars e , enter an annular discharge-chamber, i , formed between the body G and the supply-pipe H. The hot water or steam, as the case may be, enter the outlet-pipe I, which may be a continuation of the supply-pipe H, through openings or perforations h' , located back of the plug h .

In order that the grate may be rocked or rotated freely, I extend the tubular body G outward beyond the grate-bars to form trunnions g for the grate, and the supply-pipe H is made sectional, the sections H, H', and I having abutting flanges. Stuffing-glands I' I', Fig. 1, are provided at the ends of the trunnions g , and to prevent the screwing up of the glands from pressing the flanges of the pipe-sections H, H', and I together, so as to effect the turning of the body G about the pipe-sections H' and I, I secure abutment-rings J J inward to the trunnion g by screws $j j$, which rings take up the strain exerted by screwing up the glands.

In practice, when several grate-sections are arranged in a horizontal plane, as in Figs. 2 and 3, I provide water-chambers L and L' at

the front and rear of the furnace, with which the pipes H' and I of the respective grate-sections are connected. Check-valves l, Fig. 3, are inserted in the pipes H' behind the water-chambers L. The water entering the grates is converted into steam during its passage through the same, and such steam is led from the same by a common steam-pipe, S, Fig. 3, and conducted to a steam-dome, (not shown in the drawings,) when it is used for actuating a motor. If, however, there is no use for motive power, it is led to a condenser and then used repeatedly for cooling the grates.

The water may be forced through the grates either by a pump or drawn from an elevated reservoir. To turn the grates, levers N, engaging suitable ratchet-plates, n, or other well-known means, can be employed.

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

1. The combination, with a furnace for burning refuse matter, of a dumping-grate comprising a tubular body having tubular grate-bars and end trunnions journaled in the walls of the furnace, a water-supply pipe extending lengthwise through the tubular body for discharging water into said tubular grate-bars, a plug in one end of the water-pipe, and means for the escape of the water behind the plug, substantially as described.

2. In a grate, the combination of the tubular body G, the tubular grate-bars secured thereto, and the supply-pipe H, closed at one end and provided with lateral tubes f, entering the grate-bars, said supply-pipe forming with

the tubular body G an annular discharge-chamber, substantially as shown and described.

3. In a rocking grate, the combination of the tubular body G, the tubular grate-bars secured thereto, the supply-pipe H, closed at one end and provided with lateral tubes f, entering the grate-bars, said supply-pipe forming with the tubular body G an annular discharge-chamber, the sections H' and I, and the glands I' I', substantially as and for the purpose specified.

4. In a grate, the combination of the tubular body G, the tubular grate-bars secured thereto, and the supply-pipe H, closed near one end, the lateral tubes f, entering the grate-bars, said supply-pipe forming a discharge-chamber with the tubular body, and the openings in the supply-pipe beyond the plug, whereby the discharge-chamber is connected with said supply-pipe beyond the plug, substantially as shown and described.

5. The combination, with a grate constructed with a tubular body, G, of the sectional supply-pipe H, the glands I, and the abutment-rings J, secured within and to said tubular body, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

EDGAR G. TEED. [L. S.]

Witnesses:

W. C. HAUFF,
A. FABER DU FAUR, Jr.