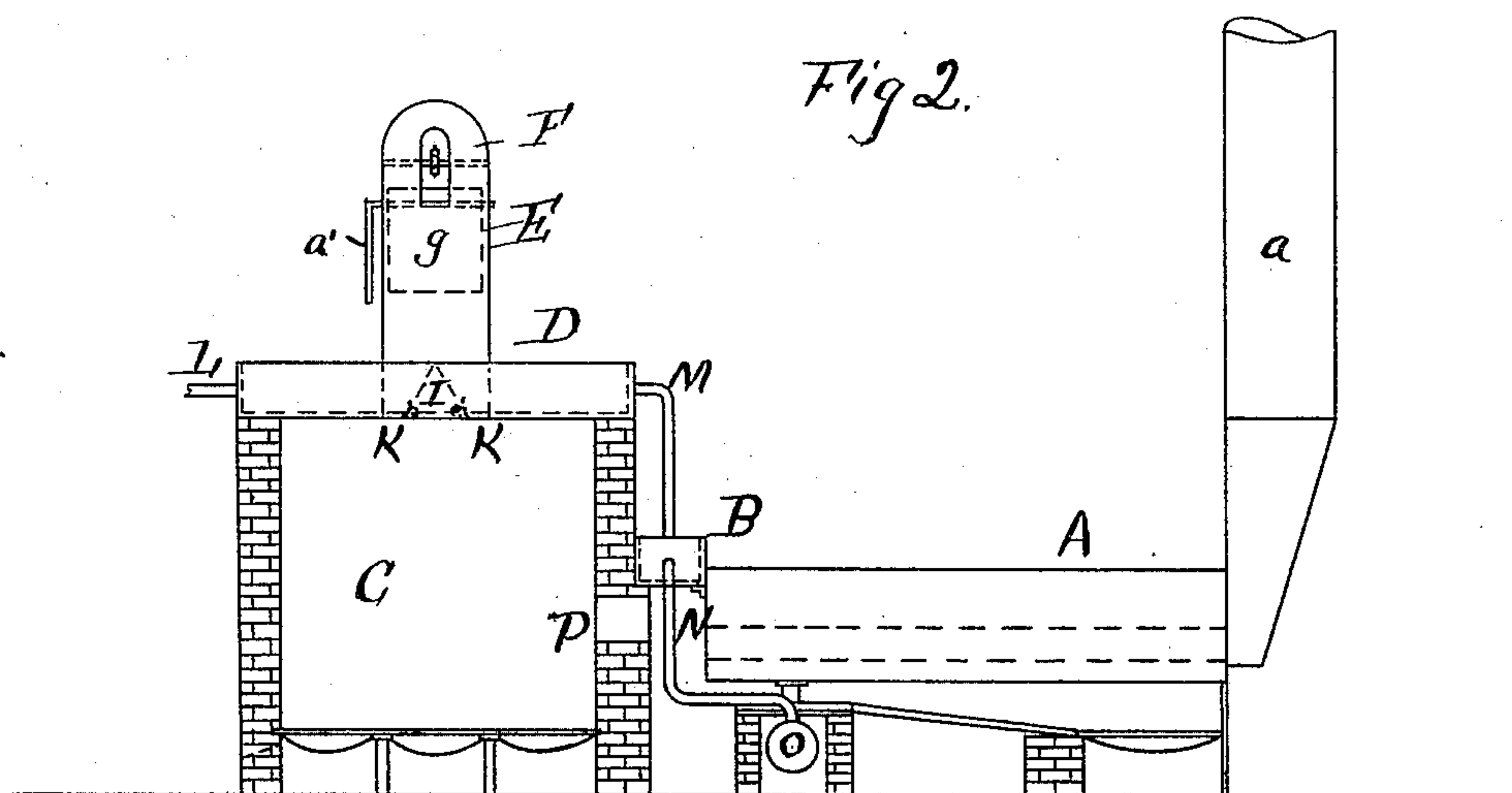
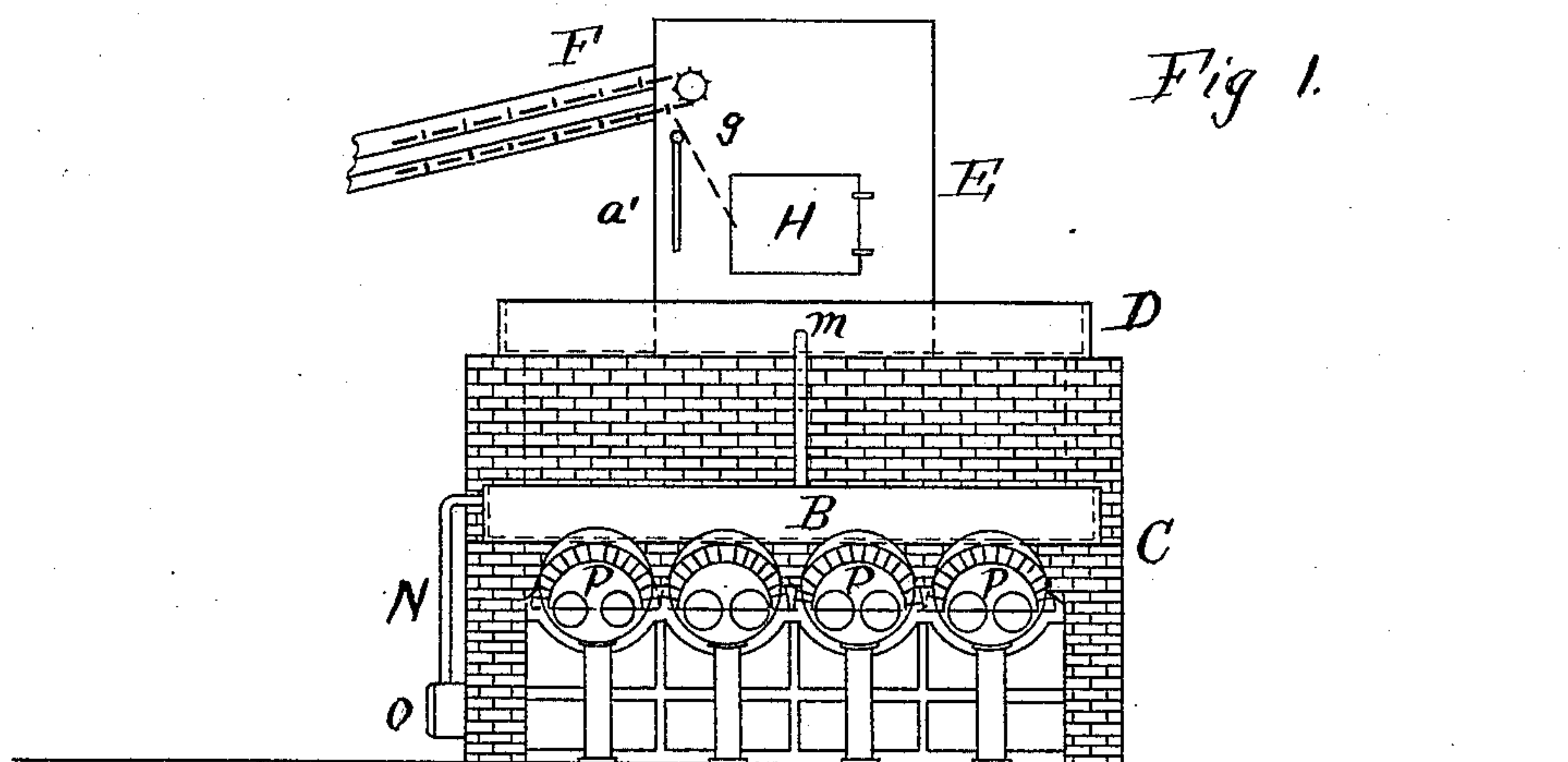


(No Model.)

J. LYNCH.
REFUSE BURNER.

No. 429,693.

Patented June 10, 1890.



Witnesses.

Chas. W. Parker.
Wm. S. Joyden.

Inventor.
John Lynch.
John C. Sabin,
att'y.

UNITED STATES PATENT OFFICE.

JOHN LYNCH, OF NORTH MUSKEGON, MICHIGAN.

REFUSE-BURNER.

SPECIFICATION forming part of Letters Patent No. 429,693, dated June 10, 1890.

Application filed December 14, 1889. Serial No. 333,711. (No model.)

To all whom it may concern:

Be it known that I, JOHN LYNCH, a citizen of the United States, residing at North Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Refuse-Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in refuse-burners particularly adapted for use with saw-mills, the object of the invention being to provide a simple, cheap, and efficiently-constructed burning device so arranged in connection with the boilers and other parts of a saw-mill that the heat generated by the burning of the refuse may assist in raising the temperature of the feed-water, thus permitting said feed-water to have its temperature raised to the highest practicable point, and also increasing the pressure of the steam as a result of the additional heat afforded by the refuse-burner; and the invention consists in the construction, arrangement, and combination of parts, substantially as will be hereinafter more fully described, and then particularly pointed out in the appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a front elevation of my improved refuse-burner, shown as practically applied to a saw-mill. Fig. 2 represents a side elevation of the same.

Like letters of reference designate like parts in both the figures.

A denotes a series of horizontal boilers, α being the breeching or smoke-stack.

B denotes a horizontal reservoir located in the rear of the boilers. Said reservoir, boilers, and smoke-stack are the same as are now in general use, and are here given to enable me to more fully describe the practical application and operation of my invention.

C indicates the main chamber of my improved refuse-burner. This chamber is built contiguous to the back or rear end arches which support the boilers. Said main chamber C is provided with the usual and necessary grate-bars and other parts. It is of

suitable dimensions. The wall thereof nearest the boilers is provided with openings P, through which pass the smoke and gases resulting from the combustion within said chamber, said smoke and gases passing on through the boiler-flues and finding exit through the smoke-stack. Said openings P are preferably arched openings, the lower portions thereof being formed on a straight line and at a height substantially on a level with the center of the boiler-flue. This will be apparent from an inspection of Fig. 2 of the drawings.

Mounted upon the main chamber C is a flat horizontal tank D, which is supplied with water through the pipe L, leading from a convenient source. Supported by this tank is the upper iron chamber E, of suitable form, shape, and size. Said chamber E is provided with a side door H.

F designates a chain or conveyer which carries the refuse from the saw-mill to the burner. This is arranged substantially in the manner shown in Fig. 1, where it is seen connected to the upper iron chamber E at a point near the top thereof in such a manner that the refuse which is being transported by said conveying device may be delivered into the upper end of the chamber E and caused to fall downward through the same. Said chamber E, at a point directly beneath the spot where the refuse is delivered by the conveyer, is provided with an adjustable apron or plate adapted to be adjusted to different angles and used for the purpose of directing the delivery of the refuse toward the bottom of the chamber E after it begins to fall from the conveyer. In Fig. 1 this adjustable apron or plate g is clearly seen, it being indicated as fixed in a certain angular position. (Shown in dotted lines.) Outside of the chamber E is a handle α' , affixed to the spindle on which the adjustable apron turns, and whereby said apron is adjusted at different angles.

Within the lower portion of the upper iron chamber E is an inverted-V-shaped piece I, extending from one end to the other of said chamber and forming a portion of the bottom thereof. It will therefore be observed that this V-shaped piece provides a channel

or passage through which the water may circulate from one side to the other of the tank D, above mentioned. Another purpose subserved by the use and provision of this inverted-V-shaped piece I is to divide the falling refuse and deflect its movement into different directions, so that it may be more equally distributed within the main chamber C. The flat bottom portions of the chamber E are provided with openings K, which extend across the full width of the chamber E, through which the refuse passes from the chamber E, into the combustion-chamber C. Thus the refuse carried by the conveyer F and thrown into the chamber E will fall through the same and be discharged through the openings K K into the main chamber, where it will be properly distributed to permit easy and complete combustion, whereby the water within the horizontal tank D will be heated.

M denotes a pipe running from the tank D to the reservoir B, which, as we have seen, is located in the rear of the boilers. This reservoir B will during the operation of the device evidently contain water having a high temperature. From the reservoir B a pipe N extends to the mud-drum O, from which the boiler is fed.

The operation of my improved refuse-burner will be evident from the foregoing. The boilers proper are fed in the ordinary way at the front thereof, the smoke and gases generated therefrom being carried off in the ordinary way through the flues to the smoke-stack. Further, the smoke and gases from the burner are carried through the openings B in the main combustion-chamber, and after passing through the flues of the boilers are disposed of by passing through the smoke-stack. Therefore by this combination a large saving in fuel will be effected, as the refuse is utilized for the purpose of heating the feed-water and causing a high pressure of steam.

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

1. In a refuse-burner, the combination of the main combustion-chamber, the water-tank supported thereon, the upper chamber supported in said tank and having a longitudinal channel on its bottom, which bottom has its flat portions provided with openings, the conveyer for delivering the refuse into said upper chamber, and the several pipes and connections, arranged substantially as described.

2. In a refuse-burner, the combination of the main combustion-chamber, the water-tank thereon, the upper chamber supported in said tank and having an inverted-V-shaped channel on its bottom, which is also provided with openings, the refuse-conveyer entering said upper chamber, and the adjustable apron likewise in said chamber for regulating the downfall of the refuse, all substantially as described.

3. In a refuse-burner, the combination of the main chamber C, the water-tank D thereon, the upper chamber E, supported on the water-tank and having the inverted-V-shaped channel I, the adjustable apron g, the refuse-conveyer F, the boilers, the rear reservoir, and connecting-pipes, all arranged substantially as described.

4. The combination of the flue-boilers A, the reservoir B, the main combustion-chamber C, having openings P, the water-tank D on said chamber, and the pipe M, running from said tank to the reservoir B, substantially as described.

5. In a refuse-burner, the combination of the boilers A, the reservoir B, the main chamber C, having openings P adjacent to the ends of the boiler-flues, the water-tank D on said main chamber, the upper chamber E, supported by the water-tank, having the inverted-V-shaped channel I, and the conveyer F, all arranged substantially as described.

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

JOHN LYNCH.

Witnesses:

ROBERT WEIR,
D. J. MORIARTY.