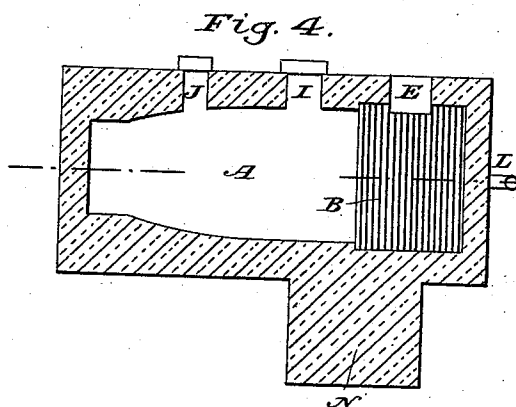
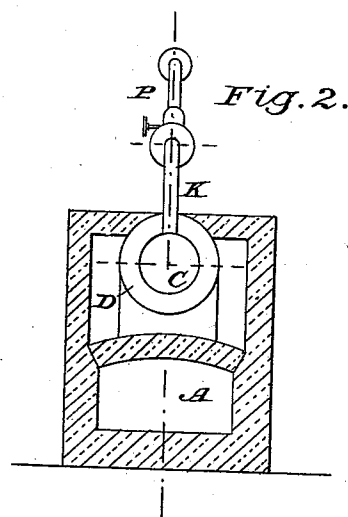
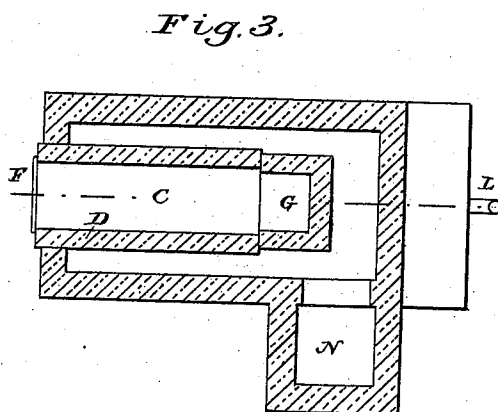
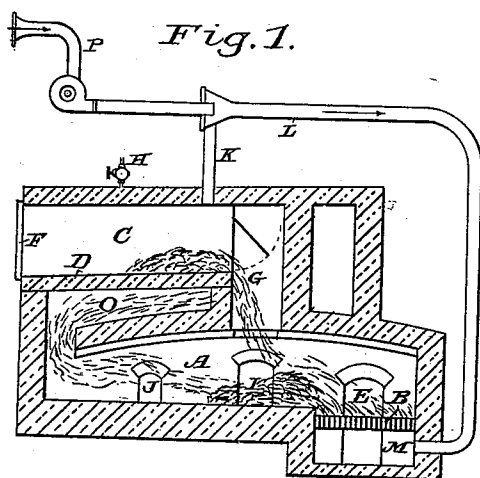


(No Model.)

E. W. CRACKNELL.
FURNACE FOR THE INCINERATION AND DESTRUCTION OF HOUSE
GARBAGE, TOWN REFUSE, &c.

No. 464,171.

Patented Dec. 1, 1891.



WITNESSES:

E. B. Bolton

M. A. Walsh

INVENTOR

Edward William Cracknell

BY

Richards & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

EDWARD WILLIAM CRACKNELL, OF SYDNEY, NEW SOUTH WALES.

FURNACE FOR THE INCINERATION AND DESTRUCTION OF HOUSE GARBAGE, TOWN REFUSE, &c.

SPECIFICATION forming part of Letters Patent No. 464,171, dated December 1, 1891.

Application filed December 13, 1890. Serial No. 374,656. (No model.) Patented in New South Wales July 2, 1889, No. 1,514.

To all whom it may concern:

Be it known that I, EDWARD WILLIAM CRACKNELL, consulting engineer and architect, a subject of the Queen of Great Britain, residing at Bond Street Chambers, George Street, in the city of Sydney, and British Colony of New South Wales, have invented a new and useful Furnace to be Used as an Improved Furnace for the Incineration and Destruction of House Garbage, Town Refuse, and such like Noxious Matters, of which the following is a specification.

This invention has reference to an improved furnace for the incineration and destruction of house garbage, town refuse, waste products of factories, and such like noxious matters, the operations of which furnace in the treatment of such matters may be carried on without causing a nuisance by the liberation of noxious gases or offensive odors. By this invention I am enabled to avoid or minimize the injury caused by wet or damp substances coming into contact with hot bricks or metal of the furnace, to prevent the issue of thick smoke and vapor usually caused in the burning of damp substances, and to prevent the escape of noxious vapors, gases, or odors.

This improved furnace for the incineration and destruction of house garbage, town refuse, &c., is constructed with a furnace with ordinary fire-bars, doors, &c., and above or in connection with which is a steam-jacketed drying-chamber. From the interior of this drying-chamber a pipe for the gases driven off the drying materials is led to a pipe in which a current of air (caused by a steam-injector or by the action of a fan or blower) is passing to and under the fire-bars of said furnace; but in order that I may be clearly understood reference will now be made to the drawings herewith, in which—

Figure 1 is a longitudinal section of a furnace constructed according to this invention. Fig. 2 is a cross-sectional elevation of the same, while Figs. 3 and 4 are sectional plans of the upper and lower parts of same, respectively.

A is the furnace; B, the fire-bars; C, the drying-chamber; D, the steam-jacket; E, furnace-door; F, chamber sliding door; G, hinged

door; H, steam-pipe; I and J, discharge-doors; K, escape-pipe; L, air-pipe to furnace; M, ash-pit; N, chimney-stack; O, brick arch, and P fan or air-blower. The steam-jacket D is supplied with a feed-pipe and all necessary mountings.

The material to be burned is fed into the chamber C through the door F and is dried in said chamber by the heat derived from the jacket in which steam is generated by the heat from furnace A, led over arch O, or it may be supplied with steam from a separate boiler. As the material dries, it is pushed through the door G into furnace A onto the hearth behind the fire-bars, and as it there is burned or parts burned and parts melted the residue may be withdrawn through door I and the slag and molten substances may be run off through door J, the floor being inclined slightly toward J, as shown in Fig. 1. The gases and vapors rising from the materials in chamber C pass upward in pipe K, through which they travel with the current to ash-pit M, and are burned in the fire on bars B, together with the air which is drawn by jet end of pipe from fan P. The products of combustion from the furnace pass up over arch O to the chimney N. The gases and vapors are prevented from entering downward into the furnace by the door G, which is, owing to its weight and hang, normally in a closed position.

I would have it understood that I do not confine myself to the precise details herein set forth and described, as these may be considerably varied without departing from the nature of this invention.

Having now particularly described and explained the nature of my said invention and the manner in which the same is to be performed, I declare that what I claim is—

1. In a furnace of the class described, the combination, with the furnace A, fire-bars B, and chamber C, located above the furnace, provided with jacket D, and self-closing door G, through which the material is pushed into the furnace, of an escape-pipe K, fan P, and air-pipe L, connected with pipe K and extending from fan P to chamber M.

2. In a furnace of the class described, the

combination, with furnace A, fire-bars B, and chamber C, located above the furnace, provided with jacket D, and self-closing door G, through which the material is pushed into the furnace, and an arch O, over which the products of combustion pass to heat jacket D, of an escape-pipe K, fan P, and air-pipe L, connected with pipe K and extending from fan P to chamber M, and door J, through which melted matter may be run off, substantially as described.

EDWARD WILLIAM CRACKNELL.

Witnesses:

FRED WALSH,

F. M. Inst., P. A.

THOMAS JAMES WARD.