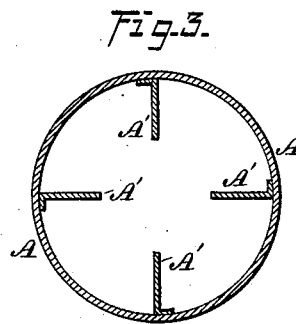
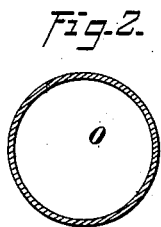
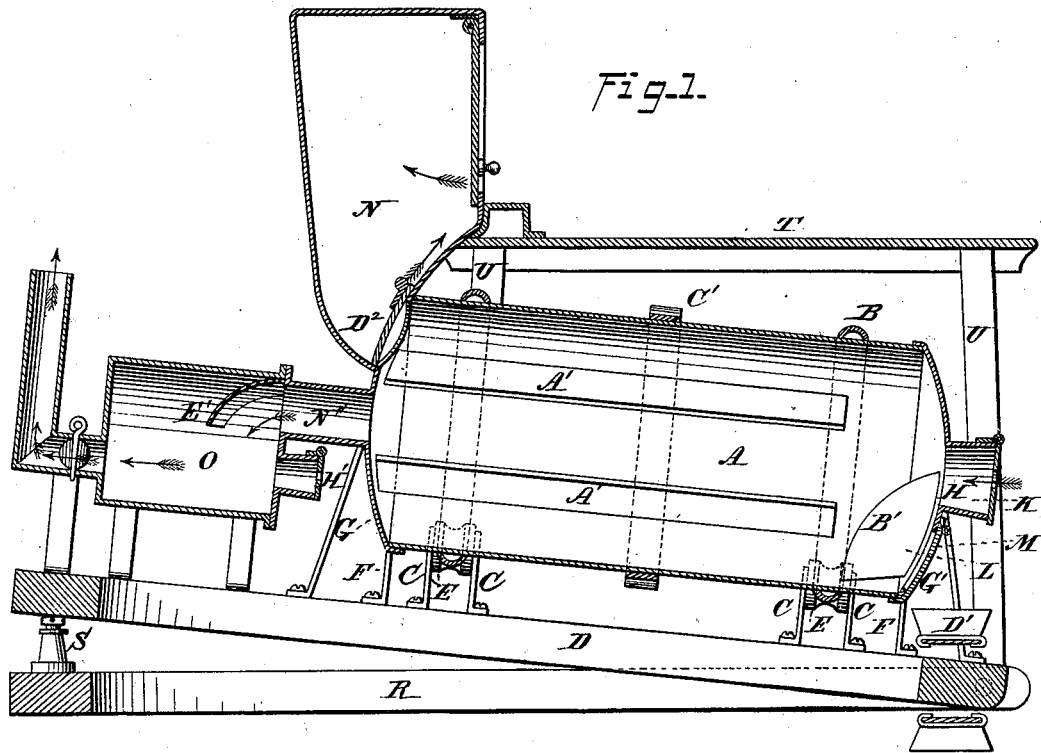


W. J. MORRIS.
Furnace for Cremating Garbage, &c.
No. 215,957. Patented May 27, 1879.



WITNESSES=

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J. A. Rutherford.

INVENTOR.

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by James L. Norris.
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Fig. 4.

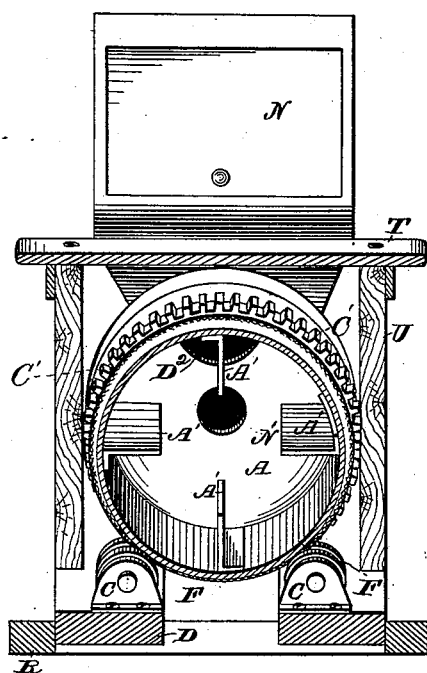
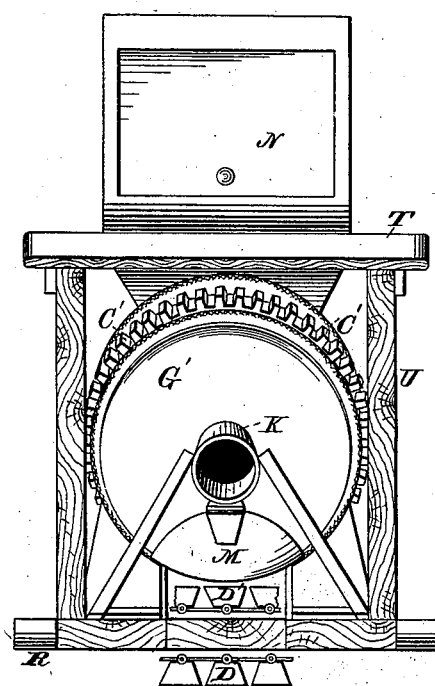


Fig. 5.



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UNITED STATES PATENT OFFICE.

WALTER J. MORRIS, OF NEW YORK, N. Y.

IMPROVEMENT IN FURNACES FOR CREMATING GARBAGE, &c.

Specification forming part of Letters Patent No. **215,957**, dated May 27, 1879; application filed March 31, 1879.

To all whom it may concern:

Be it known that I, WALTER J. MORRIS, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Furnaces for Cremating Garbage, &c., of which the following is a specification.

This invention relates to certain improvements in apparatus for burning and destroying garbage, street-sweepings, and other noxious matters; and it has for its object to provide a furnace arranged and provided with a suitable hopper, by means of which the garbage or other matter may be dumped and fed directly into said furnace and consumed, and the deleterious vapors or gases carried off in the products of combustion from the garbage rendered innocuous, as more fully hereinafter specified.

The invention consists in the combination, with an inclined rotating cylinder having a series of longitudinal internal flanges for carrying up and dropping the garbage being burned, of a scraper extending inwardly from the lower end of the cylinder for delivering the incinerated contents through the discharge end of the cylinder.

The invention further consists in the combination, with the revolving cylinder and its furnaces and hopper, of an inclined adjustable frame pivoted to a suitable base and a screw for adjusting the angle of said cylinder.

In the drawings, Figure 1 represents a longitudinal vertical section of my improved apparatus; and Fig. 2, a cross-section of the combustion-chamber. Fig. 3 represents a cross-section of the rotating cylinder; Fig. 4, a front view of the apparatus with the front head removed, and Fig. 5 a front view of the apparatus.

The letter A indicates a drum or cylinder of sheet metal, which may be lined with fire-brick or other refractory material. The said drum or cylinder is provided on its exterior, near each end, with circumferential rails B.

The letter C indicates a series of standards attached to a frame, D, supporting a series of grooved friction-rollers, E, upon which the rails on the drum or cylinder rest in such manner that said drum or cylinder may rotate freely. Mounted upon the same frame, by means of

suitable standards F, are two stationary heads G and G', one at each end of the rotating drum or cylinder, which serve to close the ends of the same. The lower head, G', has a central opening, H, provided with a tube or flue, K, by means of which communication may be established with a furnace, so that the heated products of combustion from the same may be passed into the rotating drum. Said lower head is also provided with an aperture, L, through which the contents of the rotating cylinder or drum may be discharged, and with a hinged cover, M, for closing said aperture.

The letter N indicates a hopper, secured to the upper head of the apparatus and leading into the rotating cylinder or drum through a suitable opening in the head, said hopper serving to receive and deliver the garbage or other matter to the drum or cylinder. The hopper is open in front, and is provided with a removable door, by means of which it may be closed when the apparatus is in operation. From the upper head extends a flue, N', leading to a furnace or combustion-chamber, O, which is provided with an exit-flue for the products of combustion, and opening H', to admit additional fuel or heating agent.

The rotating cylinder, stationary heads, and furnace or combustion-chamber O are mounted upon the adjustable inclined frame D, which is pivoted at one end to a base, R, and supported at the other end in an inclined position by means of an adjusting-screw, S, by means of which the inclination may be varied as desired.

Above the rotating cylinder, in front of the hopper leading to the same, is located a platform, T, mounted upon upright standards U, secured to the inclined frame P, upon which the carts containing the garbage or other matter may be backed in order to dump the contents directly into the hopper. The rotating drum or cylinder, on its interior, is provided with a series of longitudinal ribs, A', extending from the upper end to near the lower end of said cylinder or drum, and the lower head of the drum is provided with an inwardly-extending scraper, B', which serves to deliver the contents of the rotating cylinder through the discharge-opening.

The rotating cylinder or drum is provided

on its exterior with a circumferential series of cogs, C', which are adapted to intermesh with suitable gearing for rotating the said drum or cylinder.

The letter D¹ represents a series of buckets mounted upon an endless belt traveling upon suitable drums in front of the discharge-aperture of the cylinder, and adapted to receive the material discharged from the cylinder and convey it to any proper place or receptacle.

The opening leading from the receiving-hopper to the rotating drum or cylinder is provided with a door, D², by means of which the feed is regulated, or it may be closed while the garbage is being treated. The furnace O is provided with a deflector, E', just over and in front of the flue leading from the rotating drum, by means of which the escaping products are carried into close contact with the fuel to insure their consumption.

The operation of my invention is as follows: The garbage or other matter is delivered directly into the hopper, from whence it is fed, by opening the door, into the rotating drum. The drum is rotated by means of suitable mechanism, and the products of combustion from a suitable furnace are passed into it through the central opening in the lower head. The garbage admitted at the upper end of the cylinder is carried up by the longitudinal ribs and dropped, descending in a vertical line at an angle to the axis of the cylinder, by means of which it is gradually carried to the lower end of the cylinder or drum, and on its way is subjected to the hot products of combustion passing through the drum or cylinder, by means

of which it is consumed. The products of combustion of the garbage pass into the combustion-chamber or furnace at the upper end of the cylinder, in which all noxious vapors generated are consumed by the additional heat. When debris of the garbage reaches the lower end of the cylinder the scraper on the lower head guides it through the opening in said head.

I am aware that an apparatus for treating offal in the manufacture of fertilizers has been constructed of an inclined revolving cylinder communicating at one end with a main furnace and hopper, and at the other end with a combustion-chamber, and such features of themselves I hereby disclaim.

What I claim is—

1. In combination with the revolving cylinder and its furnaces and hopper, an inclined adjustable frame pivoted to a suitable base, and the adjustable screw for adjusting the angle of said cylinder, substantially as specified.

2. The combination, with the inclined rotating cylinder having a series of longitudinal internal flanges, of the scraper extending inwardly from the lower end of said cylinder for delivering the contents of the cylinder through the discharge-opening, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

WALTER J. MORRIS.

Witnesses:

S. T. APOLLONIO,
L. H. RULLMAN.