

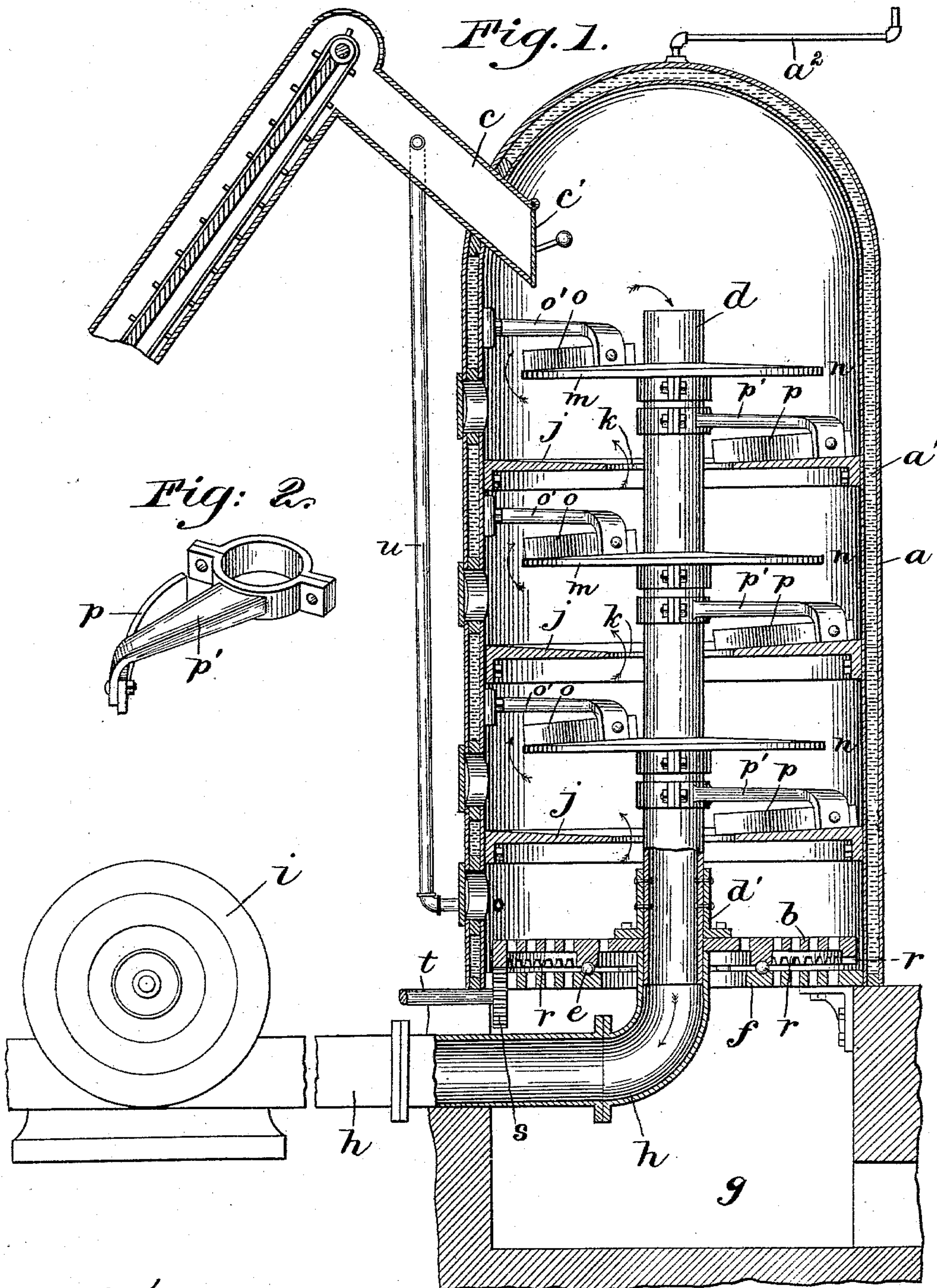
(No Model.)

2 Sheets—Sheet 1.

C. A. WENTWORTH.
APPARATUS FOR CREMATING GARBAGE.

No. 551,342.

Patented Dec. 10, 1895.



Witnesses:
A. C. Hammond
A. H. Abell.

Inventor:
C. A. Wentworth
by Knight, Brown & Quincy
Attorneys

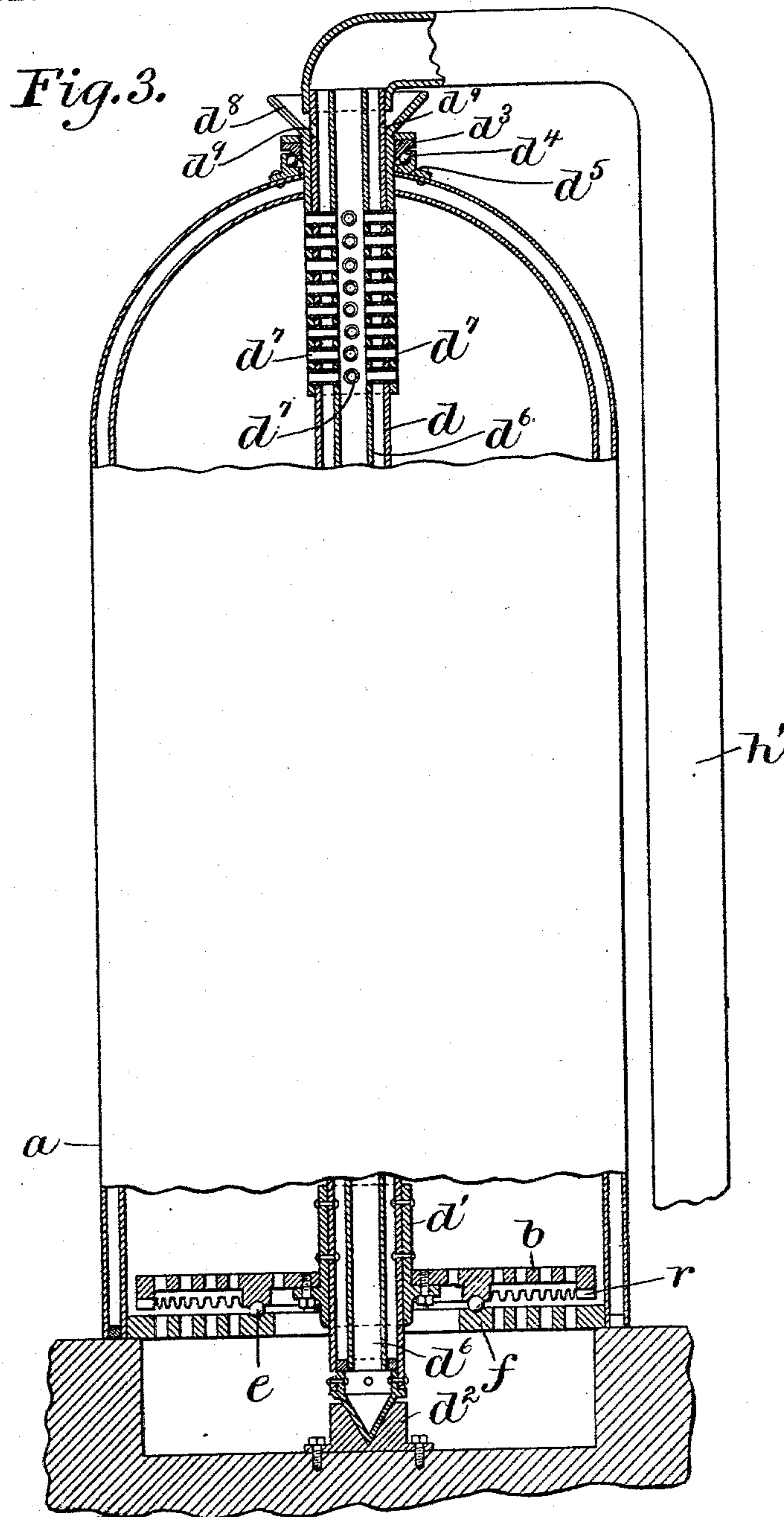
(No Model.)

2 Sheets—Sheet 2.

C. A. WENTWORTH.
APPARATUS FOR CREMATING GARBAGE.

No. 551,342.

Patented Dec. 10, 1895.



Witnesses:

A. D. Harrison
Rollin A. Bell

Inventor:

C. A. Wentworth
by Knight, Brown & Dumbley
attys

UNITED STATES PATENT OFFICE.

CHARLES A. WENTWORTH, OF HYDE PARK, MASSACHUSETTS.

APPARATUS FOR CREMATING GARBAGE.

SPECIFICATION forming part of Letters Patent No. 551,342, dated December 10, 1895.

Application filed November 15, 1894. Serial No. 528,868. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. WENTWORTH, of Hyde Park, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Cremating Garbage, of which the following is a specification.

This invention has for its object to provide a compact and efficient apparatus for cremating garbage, which shall dispose of the gases and odors and other products of combustion, so that the same will not be objectionable.

The invention consists in the improved apparatus which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a vertical section and partial side elevation of an apparatus embodying my invention. Fig. 2 represents a perspective view of one of the scrapers. Fig. 3 represents a sectional view of a somewhat different construction of apparatus embodying the invention.

In the drawings, *a* represents a casing, which may be considered a fire-box or furnace, the same being provided at its lower portion with a grate *b* or other means for maintaining combustion—such, for example, as a series of gas-burners—or both a grate and a series of gas-burners may be employed, my invention not being limited to any particular means for maintaining combustion in the casing *a*. The upper portion of the casing is provided with a garbage inlet and chute *c* having a suitable door or gate *c'*, which is automatically closed to prevent the escape of gases, and is arranged to open inwardly to permit the entrance of garbage into the upper portion of the casing.

d represents a rotary vertical shaft, which is located at the center of the casing, and is here shown as supported by the grate *b*, the latter being adapted to rotate upon antifriction rollers or balls *e* supported by a fixed partition *f*, which is preferably formed as a grate or made of open construction to permit the entrance of air into the fire-space and the escape of ashes therefrom into the ash-pit *g*. The shaft *d* is here shown as provided at its lower portion with a flanged collar *d'* rigidly secured to the shaft and to the grate *b*. Said

shaft is tubular, so that it constitutes a flue adapted to conduct the products of combustion from the upper portion of the casing *a* to a point outside of the casing. In Fig. 1 said shaft is shown as passing through the grate and entering a fixed conduit *h*, the upper portion of which is formed to receive the lower end of the shaft *d*, said conduit extending outwardly from the uprights and being provided with a suction-fan or other like apparatus, of which *i* is the casing, said fan being adapted to draw the products of combustion from the casing through the tubular shaft and discharge the same at any suitable point where its presence will not be objectionable. In Fig. 3 I show the upper end of the shaft *d* connected with a fixed conduit *h'* extending from the top of the casing instead of through the grate.

j j j represent a series of annular shelves affixed to the inner wall of the casing *a* and surrounding the shaft *d*, the inner edges of said shelves being separated from the shaft by annular spaces *k* of sufficient width to permit the downward passage of garbage between the shelves and shaft.

m m m represent annular shelves, alternating with the shelves *j j j*, affixed to the shaft *d* so that they will be rotated by said shaft.

The outer edges of the shelves *m* are separated from the inner wall of the casing by annular spaces *n* of sufficient width to permit the downward passage of garbage between the shelves *m* and the wall of the casing.

o o o represent scrapers, which are affixed by arms *o'* to the casing, and are arranged to co-operate with the rotating shelves *m* in causing an outward movement of the garbage that may be deposited upon said shelves, so that said garbage will gradually move outwardly and fall through the spaces *n* from each shelf *m*.

p p p represent scrapers attached by arms *p'* to the shaft *d*. The scrapers *p* are revolved by said shaft, and are arranged to co-operate with the fixed shelves *j* in moving inwardly upon said shelves the garbage that may be deposited thereon, said garbage being thus caused to fall through the spaces *k*.

It will be seen that garbage entering the casing through the chute *c* will fall upon the upper shelf *m* near the inner portion of the

latter, and will be caused to move outward by the co-operation of the rotating shelf and the accompanying fixed scraper *o*, falling over upon the outer portion of the first fixed shelf *j*.

5 The revolving scraper *p*, co-operating with said shelf *j*, moves the garbage inwardly, causing it to fall through the space *k* upon the next revolving shelf *m*, and so on, the garbage being alternately moved inwardly and outwardly as it descends from shelf to shelf. During the movement of the garbage, it is being constantly acted on by the heat in the casing *a*, so that it is first dried and then burned, the drying taking place in the upper
10 portion, and the combustion in the lower portion of the casing.

The products of combustion are removed from the casing through the tubular shaft *d*, and the flue or conduit *h* or *h'*, by the action
20 of the fan or other draft device which may be substituted for the fan.

The shaft *d* with its series of shelves and scrapers may be rotated by any suitable means. I have here shown the grate *b* provided at its margin with gear-teeth *r* which
25 mesh with a gear-wheel *s* affixed to a shaft *t*, which may be rotated by power applied in any suitable way.

u represents an air-conduit connecting the
30 garbage-chute *c* with the combustion space or chamber at the lower portion of the casing *a*, the object of said conduit being to draw air from the garbage-chute into the furnace and thus prevent the escape of accumulated gases
35 and odors from the garbage-chute into the surrounding air.

The casing *a* is here shown as double-walled and provided with a water-space *a'* between its walls, the object of said space being to protect said walls against the heat within the casing. Steam generated in the jacket of the casing may be conducted away through a pipe *a''*.
40

In the construction shown in Fig. 3, the tubular shaft *d* bears at its lower end on a
45 step *d''* and has its upper end extended through an orifice in the top of the casing and provided above the casing with a flange or bearing-ring *d'''* resting on a series of balls *d''''* which

are supported by a bearing-ring *d''''* affixed to the top of the casing. The shaft is provided
50 with a central tube *d''''* which constitutes the flue through which the products of combustion pass, and is connected with the interior of the casing by numerous lateral tubes *d''''*
55 through which the products of combustion enter the tube *d''''*. The annular space between the shaft *d* and inner tube *d''''* constitutes a water-receptacle which receives water from a flaring mouth *d''''* attached to the shaft *d* above the casing, and orifices *d''''* in the shaft communicating with said mouth, the shaft being
60 thus water-jacketed so that it is protected from injury by heat in the casing.

I claim—

1. In a garbage cremator, a casing having
65 a garbage inlet at its upper portion, a series of fixed annular shelves below said inlet, and a series of fixed scrapers, combined with a rotary shaft within said casing having a series of rotary annular shelves alternating
70 with the fixed shelves and arranged to co-operate with the fixed scrapers of the casing, and revolving scrapers alternating with the fixed scrapers arranged to co-operate with the fixed shelves of the casing, as set forth. 75

2. In a garbage cremator, the combination of a casing having a garbage inlet at its upper portion, a rotary tubular shaft within said casing, a series of fixed annular shelves below said inlet, a series of rotary shelves affixed to
80 the shaft and alternating with the fixed shelves, a series of fixed scrapers co-operating with the rotary shelves, a series of revolving scrapers co-operating with the fixed shelves, a flue or conduit connected with said
85 tubular shaft, and a draft apparatus co-operating with said flue, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 10th day of
90 November, A. D. 1894.

CHARLES A. WENTWORTH.

Witnesses:

A. D. HARRISON,
ROLLIN ABELL.