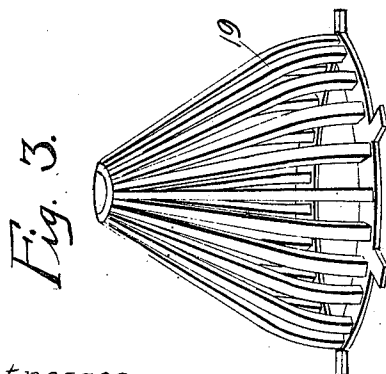
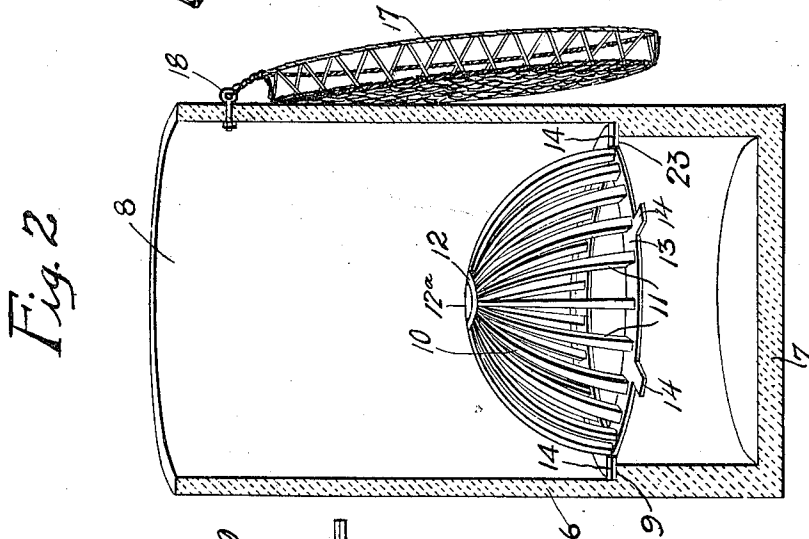
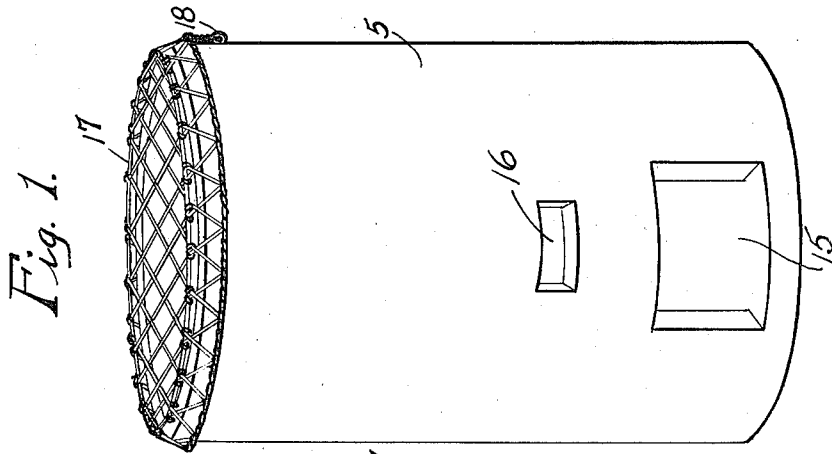


C. A. RAGGIO.
WASTE BURNER.
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989,417.

Patented Apr. 11, 1911.



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UNITED STATES PATENT OFFICE.

CHARLES A. RAGGIO, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO LOUIS G. RAGGIO, OF CHICAGO, ILLINOIS.

WASTE-BURNER.

989,417.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES A. RAGGIO, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Waste-Burners, of which the following is a specification.

This invention relates to a burner intended particularly for burning waste papers, cloths, and similar materials, which, when burned in the ordinary manner on a flat grate, tend to become bunched up in such a way that it is difficult to quickly burn them entirely. When a pile of papers is thrown onto an ordinary flat grate for burning, they tend to form into a solid mass, which can only be burned slowly, owing to the closeness with which the papers or cloths become packed, and owing to the fact that it is difficult for the air to reach into the interior portions of the pile to burn them.

In my improved burner, I make use of a grate so constructed that when the materials are thrown onto it, they will naturally spread out so as to cover a larger area, thereby tending to prevent them from becoming bunched up; and so constructed that the air will easily penetrate to the interior portions of the pile, and thus facilitate the burning.

Other objects of my invention are, to provide a combustion chamber which is absolutely fire-proof; one which will prevent the burning papers from becoming scattered and thus endangering surrounding objects by fire; one which may be easily cleaned out; one in which it will not be difficult to light the materials; and one in which the grate may be replaced when desired without inconvenience and at comparatively small expense.

Further objects will appear from a detailed description of the invention, which consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 shows a perspective of my improved burner, looking directly toward the ash and lighting openings, the protective cover or screen being shown in closed position; Fig. 2 shows a cross section, taken through the central portion of the body of the device, the grate being shown in perspective in its entirety and the screen cover being shown in perspective

in its entirety and thrown into the open position; Fig. 3 shows, in perspective, a modified type of grate, the modification consisting in the use of a more peaked grate than shown in Fig. 2.

My improved burner comprises a body portion 5, preferably formed of concrete or other desirable non-combustible material, provided with cylindrical walls 6 and a floor 7, the top being open at 8 so as to allow the materials to be easily thrown in and so as not to obstruct the draft during combustion. In the preferred form, the wall 6 is formed with an annular ledge 9, upon which a grate 10 may be supported. The grate 10 comprises a series of upwardly converging arms 11, preferably united together in their topmost portion 12, their lower portions being carried by or forming part of an annular ring 13 adapted to be supported on the ledge 9. The upper portion 12 may be provided with a hole 12^a to facilitate and increase the draft. In the preferred form, the ring 13 is provided with a series of lugs 14, which rest upon the ledge 9 and serve to space the lower portions of the arms 11 away from the wall 6.

The wall 6 is provided beneath the ledge 9 with an ash opening 15 of such size that the residue may be easily removed. An opening 16 may be provided a short distance above the ledge 9 and is preferably directly over the ash opening 15. The opening 16 is intended to facilitate combustion, but it is intended more particularly to facilitate the igniting process, it being intended that a match or lighted taper may be thrust inwardly through it for igniting the materials within.

A cover 17 may be provided, suitably hinged at 18 to the wall 6, so that it can be easily thrown on or off of the opening 8. This cover should preferably be of non-combustible material, a wire netting or similar material being found very satisfactory, inasmuch as it may be of sufficiently close weave to prevent burning papers or other materials from being carried out by the draft, and, at the same time, may be of a cheap and light construction and afford ample open space for draft.

In the modification, Fig. 3, the arms 19 are shown as formed in such a way as to make the grate of pyramidal shape. This shape will be found desirable for some pur-

poses, inasmuch as it will tend to keep the materials spread out more in their upper portion than will the shape shown in Fig. 1.

It is desirable that the lower ends of the arms of the grate should be spaced somewhat away from the wall 6, inasmuch as this will permit the air to circulate freely about the lower portion of the material to be burned, and it will prevent the materials from becoming clogged or choked up at this point.

Where in the claims and specification I use the term "ash opening", it will be understood that such an opening may serve also for purposes of draft, or that separate openings may be provided for these two functions.

The arms of the grate are joined to the ring 13 in a manner such that they approach comparatively close to the interior of the inclosing casing, providing a comparatively narrow space between the lower ends of the arms and said interior. In order to facilitate draft, the ring 13 should be supported in such a manner as to provide spaces between the exterior periphery of the ring and the interior of the wall. Draft may then pass up through the spaces 23 into the comparatively narrow space between the lower ends of the arms and the wall, thus facilitating the combustion of rubbish at these points.

I claim:

1. In a waste burner, a fire-proof inclosing vessel including walls and a floor and provided with an interiorly projecting ledge, said wall being provided with an ash and draft opening below the ledge and an ignition opening above the ledge, and a grate comprising upper and lower horizontally placed rings, the upper ring being of substantially smaller diameter than the lower ring, and a plurality of upwardly rounded converging arms extending from the lower to the upper ring, the lower ring adapted to rest on the aforesaid ledge and the arms being connected to said ring in a manner to provide a narrow space between

the lower ends of the arms and the inclosing wall, the lower ring being supported on the ledge in a manner to provide air draft spaces between said ring and the wall, said spaces freely communicating with the narrow space between the lower ends of the arms and the wall, and the upper ring being provided with an air draft opening and the arms being of upwardly rounded converging formation whereby refuse thrown on the grate will be naturally distributed over the same in a manner to provide air draft for the interior portion of the refuse, substantially as described.

2. In a waste burner, a fire-proof inclosing vessel including walls and a floor and provided with interiorly projecting supporting means, said wall being provided with an ash and draft opening below the supporting means and an ignition opening above the supporting means, and a grate comprising upper and lower horizontally placed rings, the upper ring being of substantially smaller diameter than the lower ring, and a plurality of upwardly rounded converging arms extending from the lower to the upper ring, the lower ring adapted to rest on the aforesaid supporting means and the arms being connected to said ring in a manner to provide a narrow space between the lower ends of the arms and the inclosing wall, the lower ring being supported on the supporting means in a manner to provide air draft spaces between said ring and the wall and the arms being of upwardly rounded converging formation whereby refuse thrown on the grate will be naturally distributed over the same in a manner to provide air draft for the interior portion of the refuse, and a fire-proof cover hinged to the inclosing vessel in the form of a wire netting adapted to catch flying portions of burning material, substantially as described.

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