March 29, 1927. 1,622,431

J. FEIGENBAUM

AIR COOLED INCINERATOR

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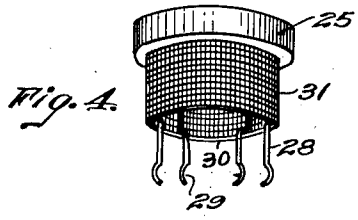


Fig. 4.

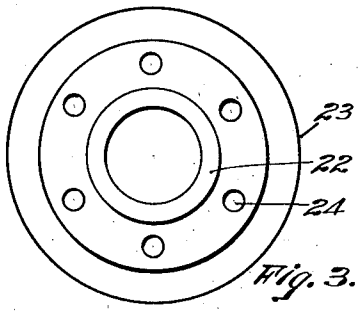


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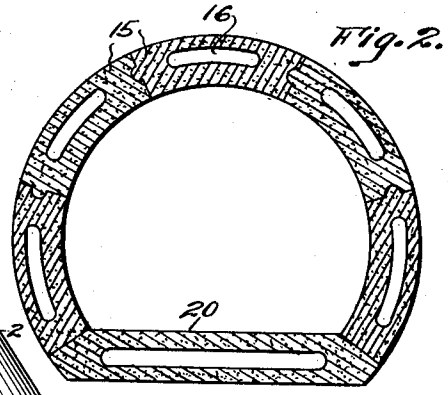


Fig. 2.

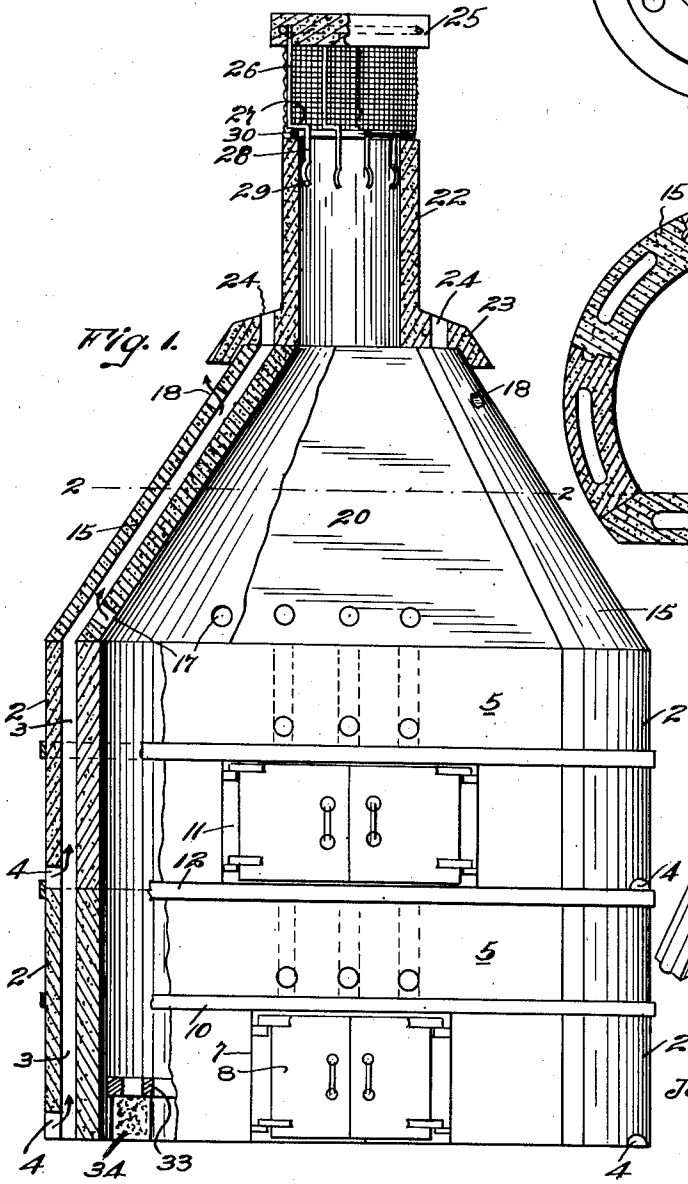


Fig. 1.

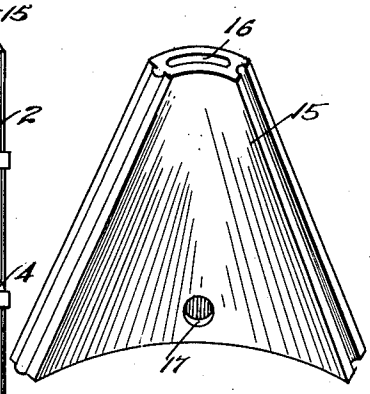


Fig. 5.

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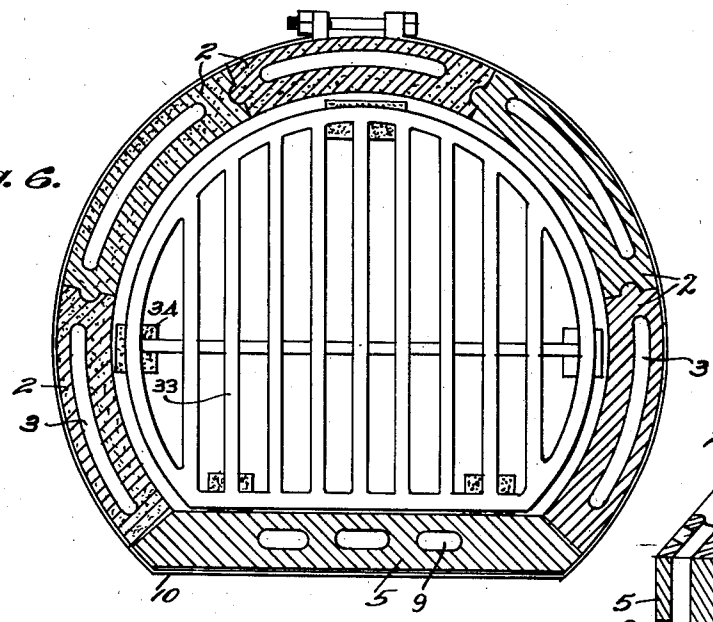
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Fig. 6.



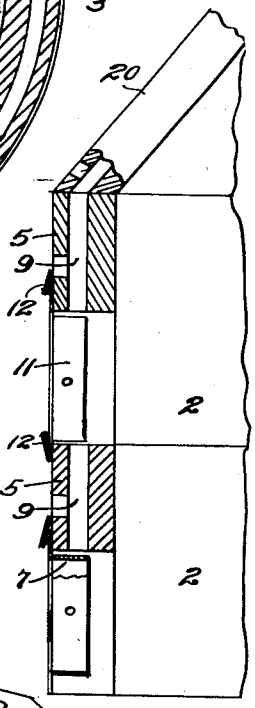
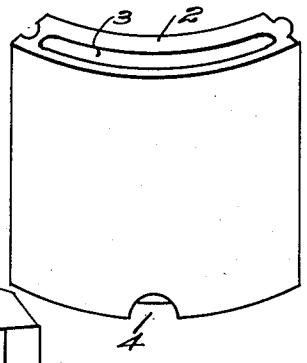


Fig. 7.

Fig. 8.



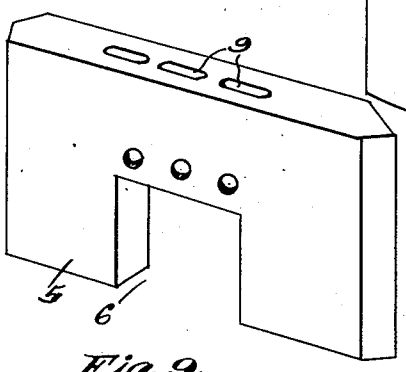


Fig. 9.

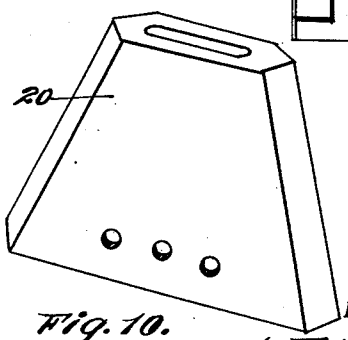


Fig. 10.

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UNITED STATES PATENT OFFICE.

JOSEPH FEIGENBAUM, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO SAFETY CONCRETE INCINERATOR CO., INC., A CORPORATION OF CALIFORNIA.

AIR-COOLED INCINERATOR.

Application filed October 19, 1925. Serial No. 63,342.

This invention relates to incinerators of a type for burning domestic and industrial rubbish and waste by-products.

An object of the invention is to provide an incinerator composed of a set of portable, monolithic concrete composition blocks including wall elements and dome elements which are provided with air spaces and gas passages.

An object of this structure is to accomplish the cooling of the elements which surround the fire zone, and to provide gas vents through the dome to take off gases flowing up to the inner face of the dome without interfering with the direct outflow of smoke to the top of the chimney.

An object is to provide for the inlet of cold air at different points around the wall and at different courses of the wall elements, and an object is to provide for induction of cold, outside air to the cooling spaces.

Other objects and advantages will be made manifest in the following specification of an embodiment of the invention herewith illustrated; it being understood that modifications, variations and adaptation may be resorted to within the spirit and scope of the invention.

Figure 1 is a part elevation and part sectional view of the complete incinerator. Figure 2 is a view showing a cross-section of the dome blocks; the section being on the plane of line 2—2, Fig. 1. Figure 3 is a top plan of the chimney. Figure 4 is a perspective of the top, safety guard. Figure 5 is a perspective of a dome segment. Figure 6 is a sectional plan of the combustion chamber. Figure 7 is a vertical section of the front elements. Figure 8 is a perspective of a wall element. Figure 9 is a perspective of a front, door receiving element. Figure 10 is a perspective of a front, flat dome block.

The incinerator has a lower wall forming the fire chamber comprising a suitable number of courses of segmental blocks 2, Fig. 8, which have air spaces 3 from top to bottom. At the front and bottom each segment 2 has provision for cold air inlet as by a hole 4 leading into the space 3 but not through the inner panel of the segment.

In the first course is placed a front, flat block 5 whose ends are angled off radially to match the near radial, flat ends of front segments 2, thus forming a flat-side ring course as shown in Fig. 6. The block 5 has in its lower portion an opening 6 for a door frame 7 having doors 8. The body of the block above the doorway is provided with air ducts 9 extending up and down, and being open at top and bottom.

When this course is finished and the door frame is installed, a fastening band 10 is tightened across the frame and around the course.

The next upper course is similar to the first but has a larger door and frame 11 to facilitate feeding in material to be burned. It is fastened by bands 12 which also encircle the elements of the course. Any number of such courses may be set up.

On the uppermost course is laid a dome of convergent or frusto-conical form which is built of tapering segments 15 matching on their base ends with the near segments 2. These conical segments 15 are hollow from top to bottom at 16 and in the lower portion of their inner panels have gas ports 17 leading out to voids 16, and the outer faces of the segments 15 have, near the top, outlet ports 18. A flat, inclined, chambered block 20 forms the front of the dome, its ends being bevelled radially to fit readily in against the near radial sides of front segments 15.

Resting on the rim of the dome is a chimney unit 22 having a flared skirt 23 lappping down around the rim. This skirt has ports 24 registering with the chambers of the dome elements.

In order to break the rapid ascent of flames and sparks from the top of the chimney I provide a removable safety cap, a suitable form of which is here shown as including a crown 25 having embedded, downwardly extending cage bars 26 angularly bent inward at 27 and then down at 28 to form toes 29 in a circle corresponding to the chimney flue. The bars are sufficiently flexible to spring as they are pushed down until a tie ring 30 seats upon the top of the chimney.

Material to be burned up is fed into the incinerator at the upper door 11 and accumulates on a grate 33 which rests on any suitable elevating means, as blocks 34. Unburned residue may be pulled out through the bottom door opening.

It will be seen that cold air passes freely into the air inlets 4 and cools the several elements and so prevents costly loss by rea-

son of cracking and crumbling from heat effect.

Any gases escaping out through the holes 17 to the air spaces 16 continue up in the dome units. The outlets 24—18 provide for the ready discharge of the warmed air and chamber gases.

It is understood that the wall, dome and chimney elements are made of a fire resistant composition and are suitably reenforced. The several segmental units have tongue and grooved, cemented joints.

Around the shanks of the bars 26 is a screen 31 for preventing the escape of dangerous sparks. The safety cap device is a rigid unit bodily removable from the chimney when necessary.

All of the air chambered elements are shown as having front, air inlet holes at the lower portions of the chambers.

What is claimed is:

1. An air cooled incinerator whose walls consist of vertically disposed, hollow blocks open from top to bottom to form vertical air passages to protect the blocks by flow of cooling air, the lower outside portions of the wall blocks having cold air inlets; and means to facilitate upflow of air through the blocks including a convergent dome consisting of a hollow body structure having air chambers which register with the tops of the wall passages, said dome having just above the wall top a series of inside face ports leading out to its chambers and the upper part of the dome having vents leading outward from the chambers.

2. An incinerator comprising a wall body formed of courses of blocks having air passages from top to bottom and having fresh air inlet holes in their outer faces, a dome consisting of a course of convergent hollow blocks on the top of the wall and having ports in its inside face to the block chambers and top outlet vents for the rising air; whereby when the wall is heated cooling air by thermic circulation flows into and out of the block chambers from bottom to top without passing into the fire space.

3. An incinerator consisting of concrete wall courses formed of slabs having air spaces registering from top to bottom, a corresponding dome course of converging slabs having air spaces registering with those of the lower courses, and a chimney on the rim of the dome; said wall slabs having in their outer faces cold air inlets to the spaces, the dome having outlets from the spaces, and openings from the fire chamber to the air spaces in the dome slabs; the slabs all standing on end and the superimposed courses consisting of but one thickness of slabs.

4. An incinerator consisting of a wall and a dome portion having cooling air passageways from top to bottom of the incinerator and between the inner and outer faces thereof, and a chimney on the dome having outlets registering with the air passageways.

5. An incinerator having a convergent dome with internal passageways in its wall body, and a chimney having a skirt resting on the dome rim and lapping around the rim; said skirt having outlets registering with the said passageways.

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