

C. L. EPPS.
FURNACE CASING.

APPLICATION FILED FEB. 8, 1916.

Patented Aug. 31, 1920.

2 SHEETS—SHEET 1.

1,351,633.

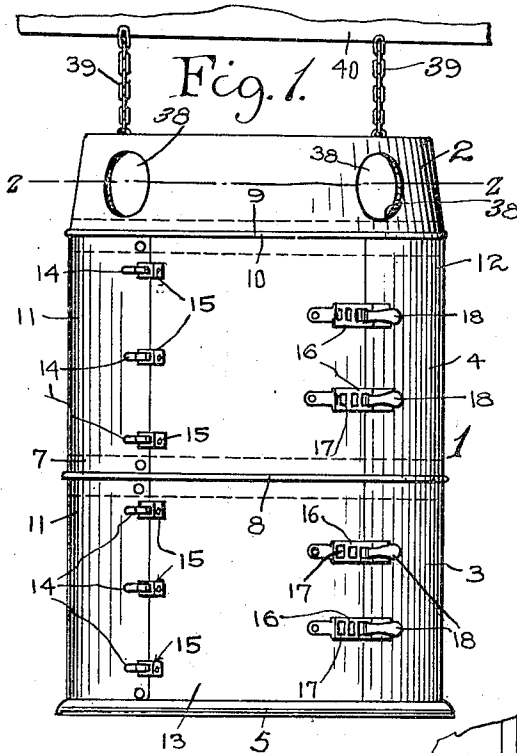


Fig. 3.

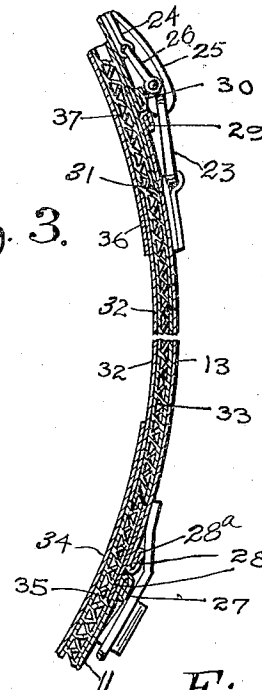
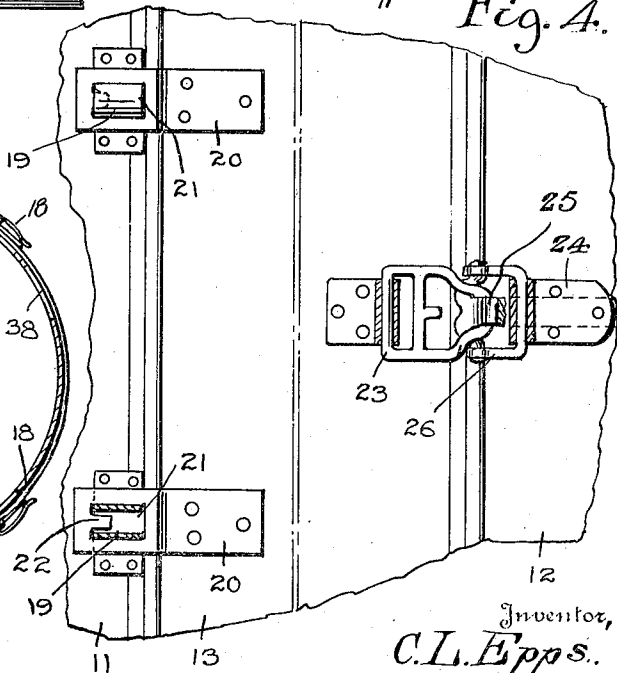
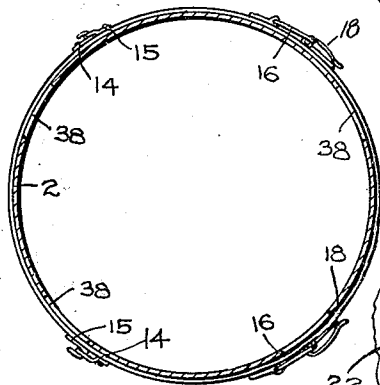


Fig. 4.

Fig. 2.



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Fig. 5.

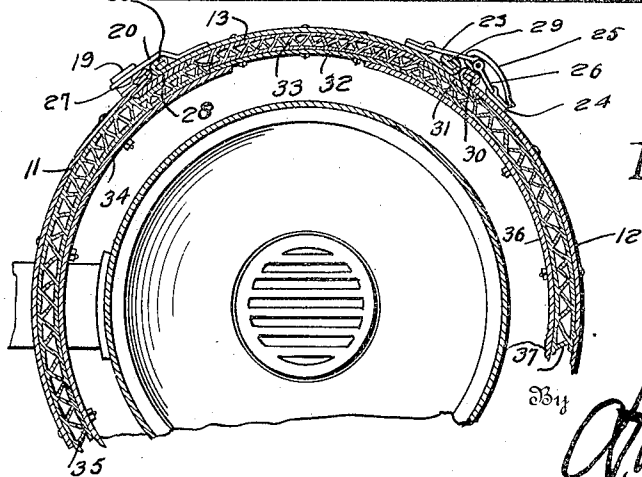
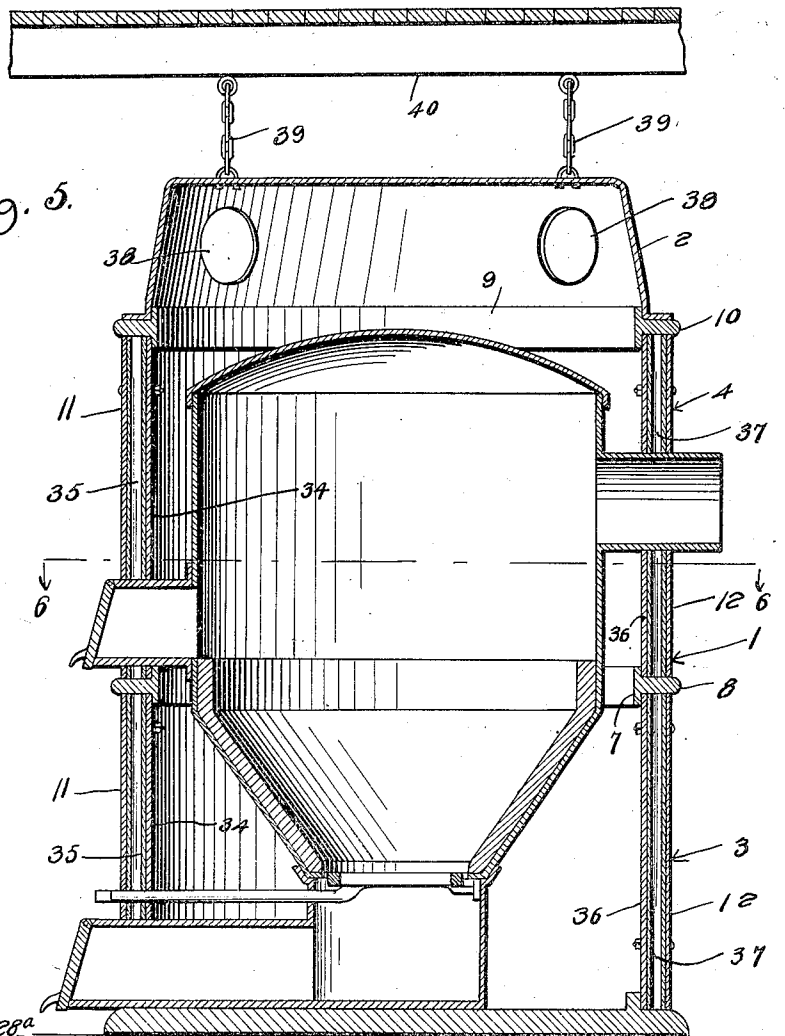


Fig. 6.

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UNITED STATES PATENT OFFICE.

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FURNACE-CASING.

1,351,633.

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To all whom it may concern:

Be it known that I, CECIL L. EPPS, a citizen of the United States, residing at Van Wert, in the county of Van Wert and State of Ohio, have invented certain new and useful Improvements in Furnace-Casings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a casing for furnaces, and the primary object of the invention is to provide a casing which is adapted for encompassing furnaces of various types particularly hot air furnaces, which casing is constructed of a plurality of built up sections, so that it may be conveniently and quickly taken apart to permit access to the furnace which it incloses and which casing also has doors hingedly connected thereto, and a novel clasp for holding the door in closed position.

Another object of this invention is to provide a furnace casing as specified which is lined with asbestos or analogous non-conducting material and which has a plurality of flexible members such as chains or the like connected to its upper end for suspending the casing over and about a furnace.

A still further object of the invention is to provide a novel form of connection for the adjacent edges of the front and rear casing sections which connections are so arranged that when the front sections are locked together the said connections will be held against relative movement but as soon as the front sections are freed the same may be swung outwardly away from the furnace and readily disconnected from the rear sections.

With the foregoing and other objects in view this invention consists in such novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In describing the invention in detail reference will be had to the accompanying drawings wherein like characters designate like and corresponding parts throughout the several views, and in which:—

Figure 1 is a side elevation of the improved furnace casing.

Fig. 2 is a cross section on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged cross section through a fragment of the furnace casing and illustrating a modified form of hinge and buckle, and

Fig. 4 is a fragmentary side elevation showing the modified form of holding the pivoted sections closed.

Fig. 5 is a vertical section illustrating the application of my improved casing to a furnace, and

Fig. 6 is a horizontal section on the line 6—6 of Fig. 5, looking in the direction indicated by the arrows.

Referring to the drawings by reference numerals, 1 designates the body and 2 the dome of my improved furnace casing. The body consists of a lower portion 3 and an upper portion 4. The lower portion 3 rests upon a base 5 and supports at its upper edge a ring 7 provided with a horizontal flange 8. This portion embraces the ring and the flange 8 rests upon the upper edge thereof. The upper portion 4 also embraces the ring 7 and it rests at its lower edge upon the flange 8, and it supports at its upper edge a ring 9 which is provided with a horizontal flange 10. The upper portion embraces the ring 9, and the flange 10 rests upon the upper edge thereof. The dome 2 embraces the ring 9 and rests upon the flange 10.

Each of the body portions 3 and 4 comprises a front section 11, a rear section 12 and side doors 13. Hooks 14 are secured to the sections 11 adjacent their side edges. Eyes 15, which are secured to the doors 13 near the front side edges thereof, engage the hooks 14 to detachably and hingedly connect the doors 13 to the front sections 11. Straps 16 are pivotally connected to the doors 13 adjacent the rear side edges thereof, and they are provided with a plurality of slots 17 to receive levers 18. The levers 18 are pivotally connected to the rear sections 12 near the front edges thereof. The straps 16 and the levers 18 provide means by which the rear side edges of the doors 13 are detachably connected to the side edges of the rear sections 12 and which are adapted, when operated to connect the rear edges of the doors 13 to the rear sections 12, to pull the doors and sections into and hold them in close embracing engagement with the rings 7 and 9.

In Figs. 4 and 6 of the drawings there is illustrated a modified form of the means for hingedly and detachably connecting the

front edges of the doors 13 to the side edges of the front sections 11, and a modified form of the means for detachably connecting the rear edges of the doors 13 to the side edges of the sections 12 and pulling the doors and sections into and holding them in close embracing engagement with the rings 7 and 9. The modified form of the means for hingedly and detachably connecting the doors 13, comprises loops 19 which are secured to the front sections 11, near the edges thereof, and straps 20 secured to the doors 13 near the front edges thereof. The straps 20 are provided with openings 21 to receive the loops 19 and with tongues 22 which enter the front ends of the loops 19. The modified form of the means for detachably connecting the doors 13 to the rear sections 12 and for pulling the doors and sections into and holding them in close embracing engagement with the rings 7 and 9, comprises loops 23 secured to the doors 13 near the rear edges thereof, straps 24 secured to the rear sections 12 near the front edges thereof, levers 25 which are adapted to detachably engage in the loops 23, and yokes 26 which are pivotally connected to the straps 24 and to which the levers 25 are pivotally connected.

By reference to Figs. 3, 5 and 6 of the drawings, it will be seen that the rear edges of the front sections 11 are rolled to provide beads 27. The beads 27 are located on the outer side of the sections 11, and secured to the inner sides of these sections are strips 28 which are equal in height to the height of the sections and which extend rearwardly beyond the rear edges of the sections, and are overlapped by the front edges of the doors 13. The front edges of the doors 13 are beaded as at 28^a, and their rear edges are beaded as at 29. The front edges of the rear sections 12 are beaded as at 30 and have secured to their inner sides strips 31 which extend forwardly beyond the front edges thereof and which are overlapped by the rear edges of the doors 13. The strips 31 are equal in height to the height of the sections 12 and doors 13. A metallic plate 32 is secured to the inner side of each door 13 in spaced relation thereto. These plates are equal in height to but are considerably narrower than the doors. A packing 33 is secured to and between each of the doors 13 and its plate 32. The front sections 11 have secured thereto in spaced relation to their inner sides metallic plates 34, which are equal in height to the height of the sections but are of greater width, those portions of the plates, which project beyond the side edges of the sections 11, engaging the inner sides of the plates 32. Packings 35 of asbestos are secured to and located between the front sections 11 and the plates 34. The rear sections 12 have

secured thereto in spaced relation to their inner sides metallic plates 36. These plates are equal in height to the height of the sections 12 but are of greater width than such sections. Those portions of the plates 36 which extend beyond the side edges of the rear sections 12 engage the inner sides of the plates 32. Packings 37 of asbestos are located between and secured to the rear sections 12 and the plates 36.

The overlapping of the doors 13 and the strips 28 and 31, and the overlapping of the plates 32, 34 and 36 establish air and dust tight connections between the meeting edges of the front sections 11, rear sections 12 and doors 13. The asbestos packings prevent the loss of heat through radiation from the body of the casing.

The dome 2 is provided with openings 38 which establish communication between the hot air flues, not shown, and the interior of the casing. Chains 39 are secured at their lower ends to the upper side of the dome 2 and at their upper ends to the beam 40 of a ceiling. The chains are adapted to support the dome 2 after the removal of the sections 11, 12, and doors 13.

From the foregoing description, taken in connection with the accompanying drawing, it should be understood that I provide a furnace casing which may be readily taken down when it is desired to repair or clean the furnace and as readily and quickly set up. Any one of the sections may be readily and quickly removed without disturbing the other sections. The casting is air and dust-proof and it embodies a construction which is simple, durable and effective.

In reducing the invention to practice, certain minor features of construction, combination and arrangement of parts may necessitate alterations to which the patentee is entitled provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:—

1. A furnace casing including relatively spaced horizontally disposed rings, upper and lower body portions embracing said rings, each body portion consisting of relatively spaced removable sections, and doors intermediate the said sections, means detachably connecting certain side edges of said doors to the side edges of one of said sections, and means adapted to be operated to detachably connect the other side edges of said doors to the side edges of the other of said sections into and hold them in close embracing engagement with said rings.

2. A furnace casing including relatively spaced and horizontally disposed rings, upper and lower body portions embracing said rings, each body portion consisting of relatively spaced removable sections, and doors

intermediate the said sections, means hing-
edly and detachably connecting certain side
edges of said doors to the side edges of one
of said sections, and means adapted to be
5 operated to detachably connect the other
side edges of said doors to the side edges
of the other of said sections and to draw
the doors and the sections into and hold
them in close embracing engagement with
10 said rings.

3. A furnace casing including relatively
spaced horizontally disposed rings, upper
and lower body portions embracing said
rings, each body portion consisting of rela-
15 tively spaced removable front and rear sec-
tions, and doors intermediate said sections,
strips carried by the sections and having an
overlapping engaging relation with the side
edges of the doors, means hingedly and de-
20 tachably connecting the front side edges of
said doors to the side edges of said front
section, and means adapted to be operated
to detachably connect the rear side edges of
said doors to the side edges of said rear sec-
25 tions and to draw the doors and the sections
into and hold them in close embracing en-
gagement with the rings and to draw the
doors into and hold them in engagement
with said strips.

30 4. A furnace casing including relatively
spaced horizontally disposed rings, upper
and lower body portions embracing said

rings, each body portion consisting of rela-
tively spaced removable front and rear sec-
tions and doors intermediate said sections, 35
means detachably connecting the front
edges of said doors to the side edges of said
front sections, strips carried by the sections
and having an overlapping engaging rela-
40 tion with the side edges of the doors, means
adapted to be operated to detachably connect
the rear edges of said doors to the side edges
of said rear sections and to draw the doors
and the sections into and hold them in close
45 embracing engagement with said rings and
to draw the doors into and hold them in en-
gagement with said strips, plates carried by
the doors in relatively spaced relation to
their inner sides, plates carried by the front
50 and rear sections and having overlapping
engagement with the plates carried by the
doors, the section plates being spaced from
the inner sides of the sections, a packing
secured to and between each door and the
55 plate carried thereby, and a packing secured
to and between each section and the plate
carried thereby.

In testimony whereof I affix my signature
in presence of two witnesses.

CECIL L. EPPS.

Witnesses:

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W. G. SHEET.