F. CORDES.

ANNEALING BOX.

APPLICATION FILED NOV. 6, 1908.

910,909.

Patented Jan. 26, 1909.

Fig. 1.

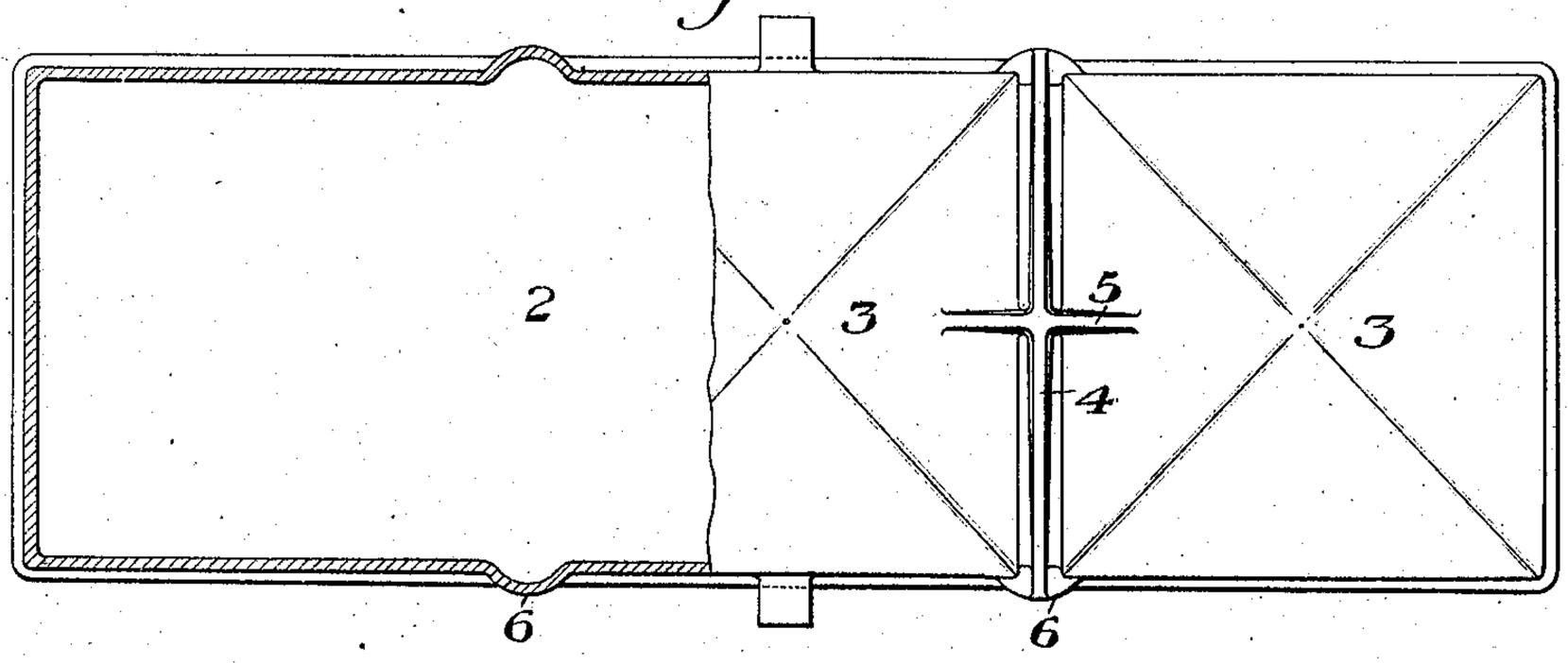


Fig. 2.

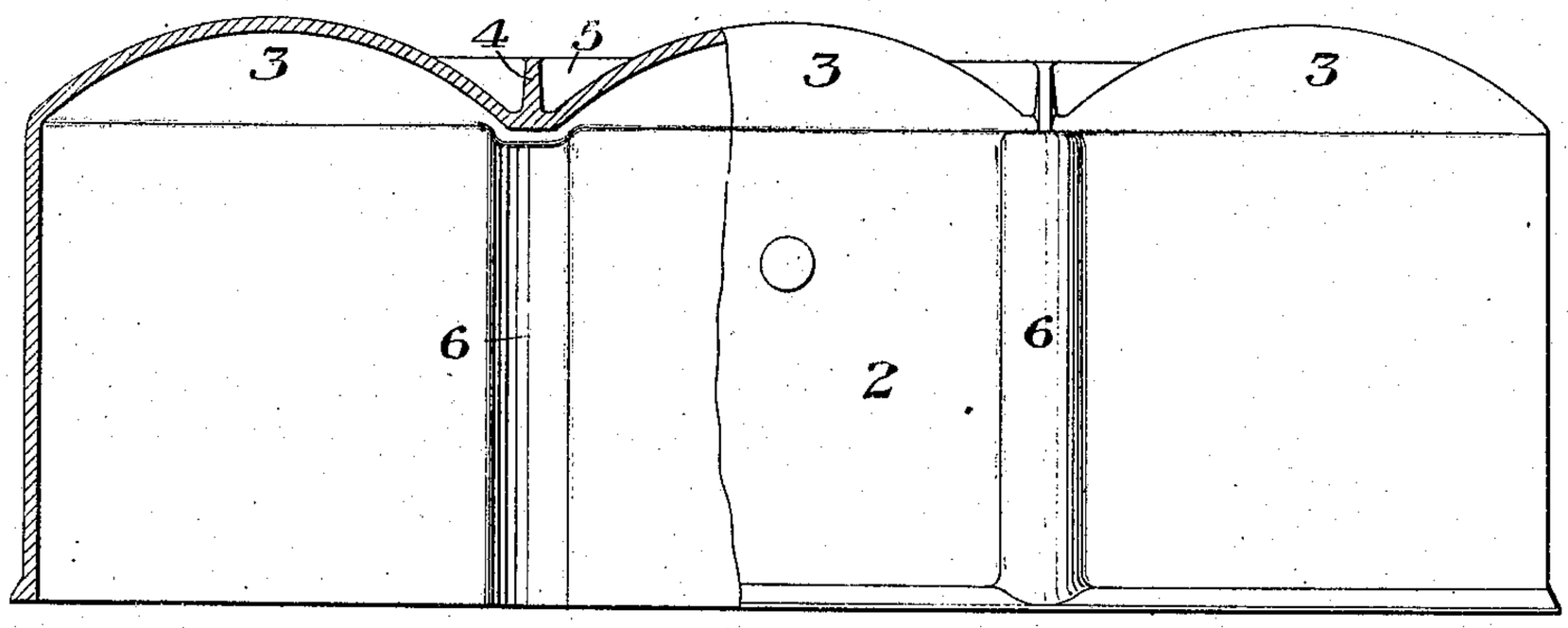


Fig. 3.

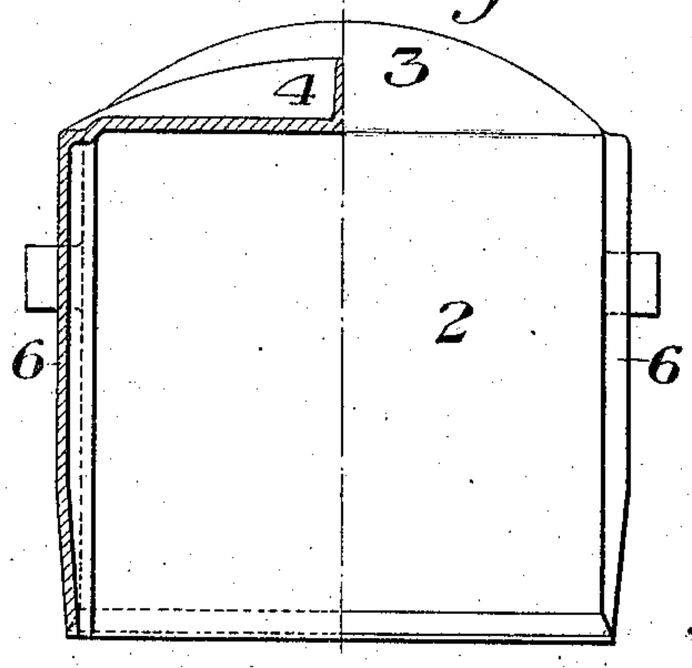


Fig. 4.

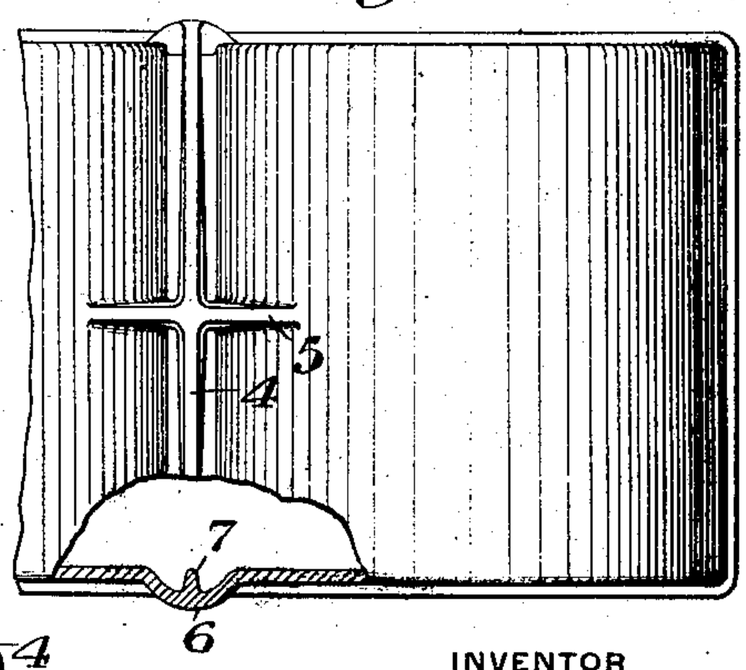
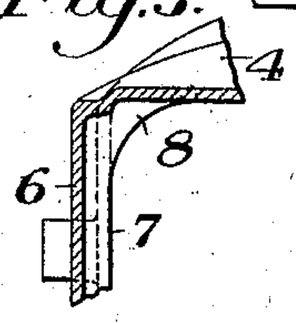


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

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ANNEALING-BOX.

No. 910,909. Specification of Letters Patent. Patented Jan. 26, 1909.

Application filed November 6, 1908. Serial No. 461,330.

To all whom it may concern:

Be it known that I, FRANK CORDES, of Pittsburg, Allegheny county, Pennsylvania, have invented a new and useful Improvement in Annealing-Boxes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view partly broken away of an annealing box embodying my invention; Fig. 2 is a side view of the same, also partly broken away; Fig. 3 is a view partly in end elevation and partly in vertical section; Fig. 4 is a plan view partly broken away showing a modification; and Fig. 5 is a detail view of a portion of Fig. 4.

My invention has relation to annealing boxes, and is designed to provide a novel construction of box adapted to withstand severe service and which, by reason of its peculiar construction, will be more durable in service than the boxes heretofore used.

The present invention is more specifically designed as an improvement upon annealing box described and claimed in my pending application, Serial No. 438,320, filed June 13, 1908; and like the box described and claimed in that application, it is cast in a single integral piece, preferably of steel, with its top arranged in the form of a series of arches of such shape as to be self-supporting.

The particular feature of the present invention consists in providing a box of this character with vertical stiffening ribs at its sides in line with the low portions of the arched top, thereby providing additional supporting means and greatly stiffening the construction of the box.

Referring first to the form of box shown in Figs. 1, 2 and 3, the numeral 2 designates the body of the box which is preferably cast in a single integral piece with closed side and end portions and having a closed integral top composed of a series of arched domes 3. In the form shown in these figures, these domes are in the form of groined arches, being arched both transversely and longitudinally as shown, thereby forming a dome which is self-supporting against a tendency to collapse. The top may be further strengthened by means of the exterior ribs 4 which act as inverted trusses. These ribs are placed between adjacent arches and extend transversely of the box with lateral branches 5 which join the adjacent exterior walls of the arches.

In accordance with my present invention, I provide the side walls of the box directly underneath the ends of the ribs 4 with stiffening ribs 6 which extend vertically preferably the entire height of the box. In order to avoid increase in the thickness of the side walls of the box by the provision of these ribs which increase would lead to difficulties in casting due to the variations in the section of metal at different points and the liability resulting therefrom of internal strains being set up in the casting, these ribs preferably consisting of simple outward swells in the side walls of the box as shown. In the modification shown in Figs. 4 and 5, these outward swells are reinforced by an inwardly projecting vertical rib 7 which is joined to the top of the box, as shown in Fig. 5 by a fillet 8. In the modification shown in Fig. 4, the domes 3, instead of being in the form of groined arches, consist of simple transversely extending arches, my invention being applicable to both forms of arched top. By the provision of these vertical stiffening ribs in the wide walls of the box adjacent to the low points of the arches, any tendency of the box to collapse is prevented, these ribs not only forming an additional support for the arches, but also materially strengthening the side walls.

It will be understood that the modified form of strengthening rib shown in Figs. 4 and 5 is equally applicable to both forms of arched tops.

What I claim is:—

1. An annealing box formed as an integral casting and having its top portion consisting of a plurality of arches or domes, the side walls of the box being provided with vertical stiffening ribs intermediate the arches or domes; substantially as described.

2. An annealing box formed as an integral casting with its top portion consisting of a plurality of groined arches or domes, the side walls of the box being provided with vertical stiffening ribs intermediate the arches or domes; substantially as described.

3. An annealing box formed as an integral casting with its top portion consisting of a plurality of arches or domes, and having exterior strengthening ribs or trusses extending transversely of the box intermediate the

arches or domes, and the side walls of the box having vertical stiffening ribs underneath the end portions of the ribs or trusses; substantially as described.

4. A cast steel annealing box, having an integral top formed by a plurality of transversely extending domes or arches, and having its side walls formed intermediate of the domes or arches with vertical exteriorly projecting stiffening ribs; substantially as described.

5. A cast steel annealing box having an integral top formed by a plurality of domes, exterior strengthening ribs or trusses extending transversely of the box intermediate the arches or domes, and outwardly projecting vertical stiffening ribs in the side walls of the box underneath the ends of the transverse ribs or trusses, said stiffening ribs having inwardly extending reinforcing projections; substantially as described.

In testimony whereof, I have hereunto set my hand.

FRANK CORDES.

Witnesses:
R. W. TENER,
CHARLES BARNETT.