

No. 870,558.

PATENTED NOV. 12, 1907.

J. B. HENRY.
ANNEALING BOX.

APPLICATION FILED MAY 26, 1906.

FIG. 1

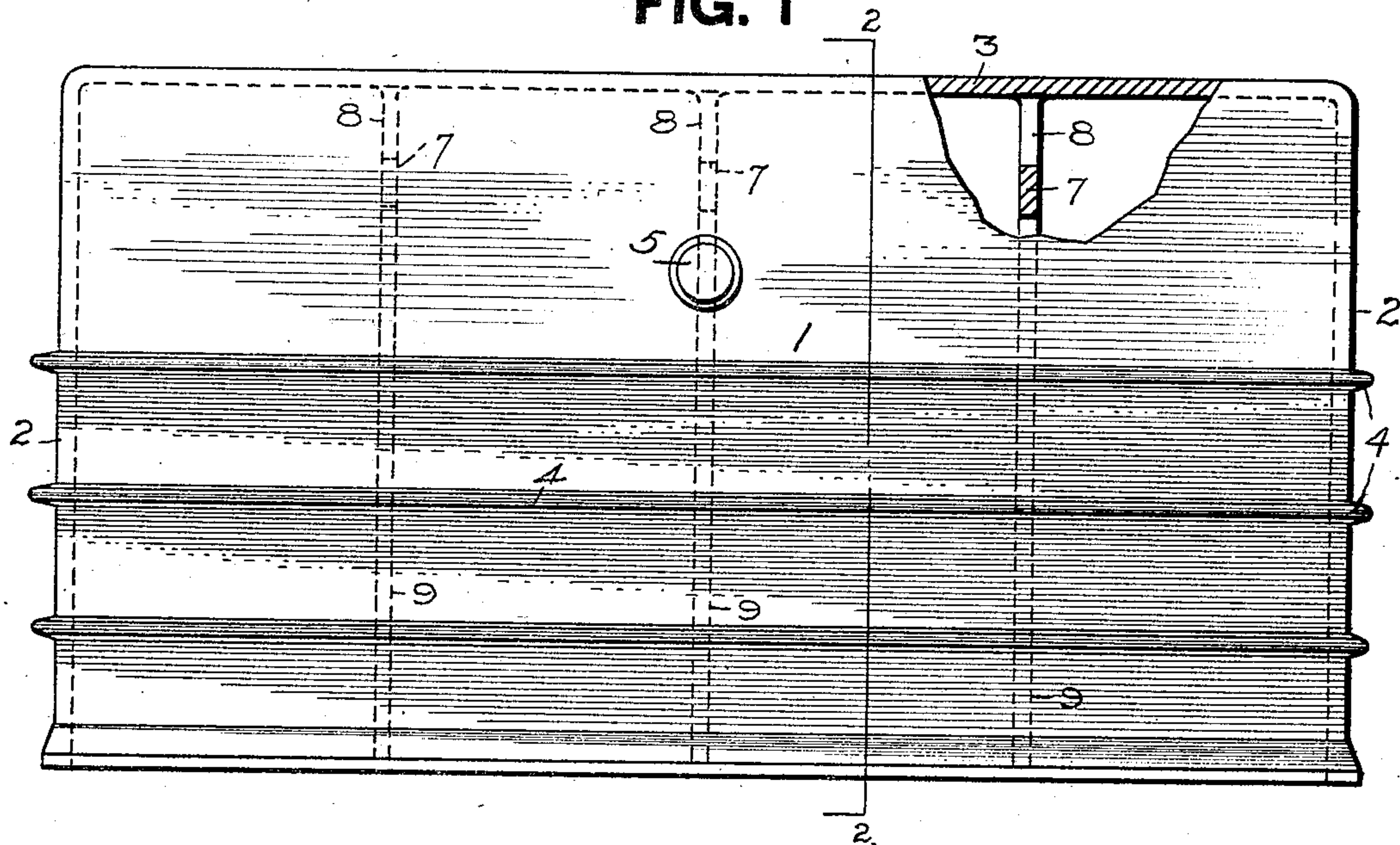
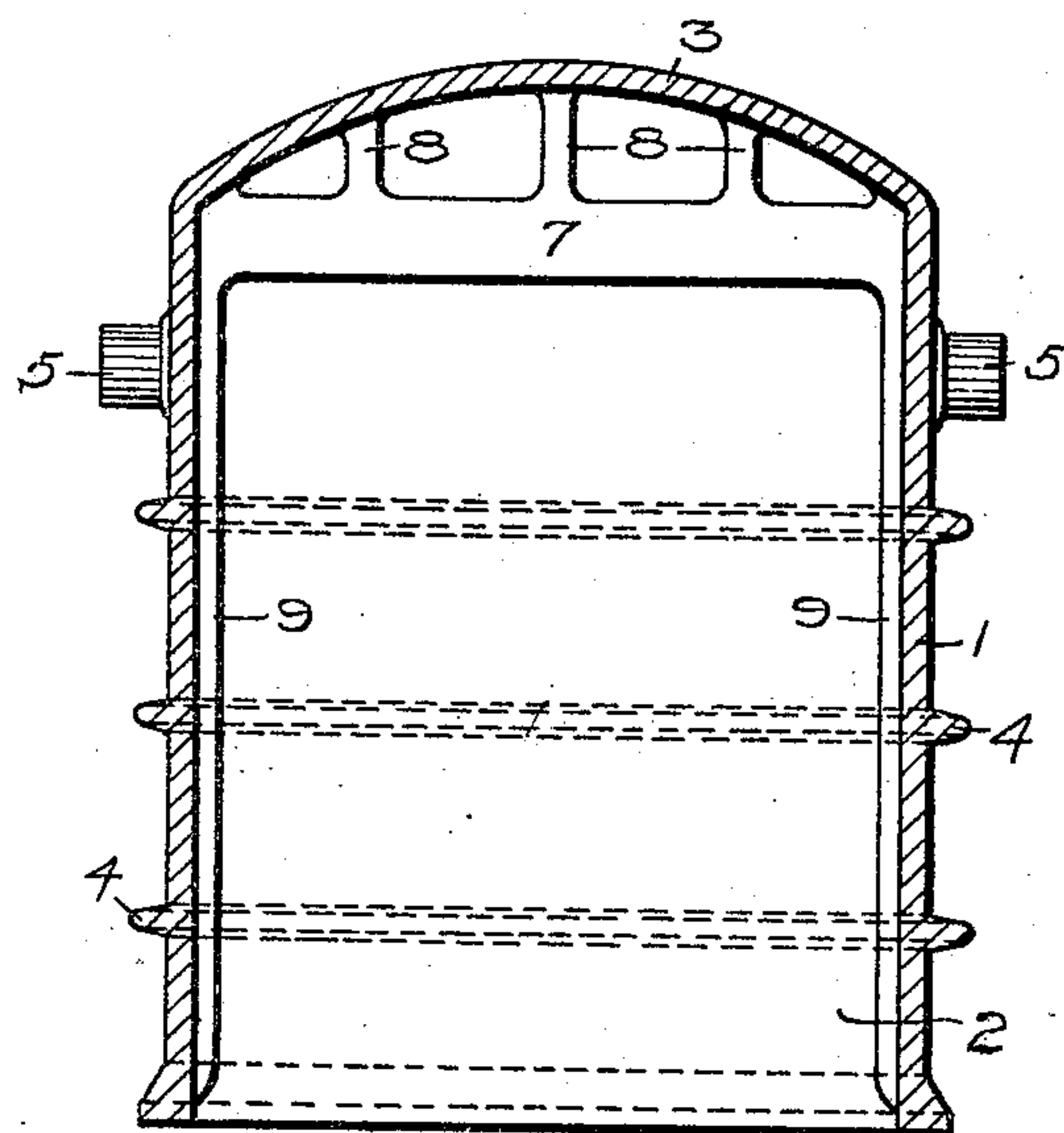


FIG. 2



WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN B. HENRY, OF ASPINWALL BOROUGH, PENNSYLVANIA, ASSIGNOR TO UNION STEEL CASTING COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

ANNEALING-BOX.

No. 870,558.

Specification of Letters Patent.

Patented Nov. 12, 1907.

Application filed May 26, 1906. Serial No. 318,914.

To all whom it may concern:

Be it known that I, JOHN B. HENRY, a resident of Aspinwall borough, in the county of Allegheny and State of Pennsylvania, have invented a new and useful
5 Improvement in Annealing-Boxes; and I do hereby declare the following to be a full, clear, and exact description thereof.

This invention relates to annealing boxes and especially to annealing boxes formed of cast steel or other
0 cast metal.

The object of the invention is to strengthen such boxes and especially the top portion thereof so as to greatly increase the life thereof.

Annealing boxes are provided with side and end
5 walls, and roof, and generally the roof is arched. These boxes are subjected to intense long continued heat which softens the metal thus causing the arched roof to sag by its weight and push the upper portions of the side walls outwardly. This not only greatly distorts
10 the box but eventually causes the entire box to collapse.

My invention is to overcome this defect in annealing boxes and to provide means for preventing the sagging of the roof and outward bulging of the side walls.

The invention consists, generally stated, in providing such boxes with one or more transverse tie members connecting the upper portions of the side walls so as to prevent said side walls from bulging outwardly and also connected to the roof by a support or strut.

In the accompanying drawing Figure 1 is a side view of an annealing box embodying my invention, a part being in central vertical longitudinal section; and Fig. 2 is a transverse section on the line 2—2, Fig. 1.

The annealing box described is provided with the usual side walls 1, end walls 2, and arched roof 3, these parts being formed as a single integral casting and the side and end walls being stiffened or strengthened by the horizontal ribs 4, all as is usual in this type of boxes. The usual trunnions 5 are also provided for lifting the box.

It is obvious that when the roof of such a box sags it will push the upper portions of the side walls outwardly. My invention is applied to prevent such outward bulging of the side walls and downward sagging of the arched roof. It consists in connecting the side walls near their top portions and substantially at the point where

the arched roof springs from the side walls with a transverse tie member or members 7, the drawings showing three such tie members in the box illustrated. These tie members preferably are cast integral with the box. 50 They are connected to the roof by one or more struts or supports 8, although if desired, a web may take the place of the struts shown. For the sake of lightness, however, the struts are preferred, and they are in effect an open web. The side walls of the box are also 55 strengthened by vertical ribs 5 preferably in the same plane as the tie members 7.

The tie members 7 are in effect chords of trusses and act as tension members to prevent the side walls of the box from bulging out due to the outward thrust of the 60 sagging roof. Consequently the distortion of the box is very greatly prevented and the strut members 8 further support the roof so that it is practically impossible for the roof to sag.

My box is very simple of construction as it can be 65 formed by casting in the mold with very little additional coring over the method of manufacturing prior boxes. The top portion of the box is so strengthened that the distortion thereof is practically overcome and consequently the life of the box is very greatly in- 70 creased.

While the box is shown as provided with a symmetrical arched roof, I wish it understood that it applies equally as well to a box having any roof higher at its center than at its sides, such as a hip roof, and may also 75 be applied to a flat roofed box with beneficial results.

What I claim is:

1. An annealing box having side and end walls, an arched roof, and a transverse tie member connecting the side walls near their tops, all said parts being a single in- 80 tegral casting.

2. An annealing box having side and end walls, a roof, and a truss member connecting the side walls near their tops and supporting the roof, all said parts being a single integral casting. 85

3. An annealing box comprising side and end walls, a roof, a chord extending between the side walls near their tops, and struts extending from said chord to the roof, all said parts being a single integral casting.

In testimony whereof, I the said JOHN B. HENRY have 90 hereunto set my hand.

JOHN B. HENRY.

Witnesses:

ROBERT C. TOTTEN,
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