

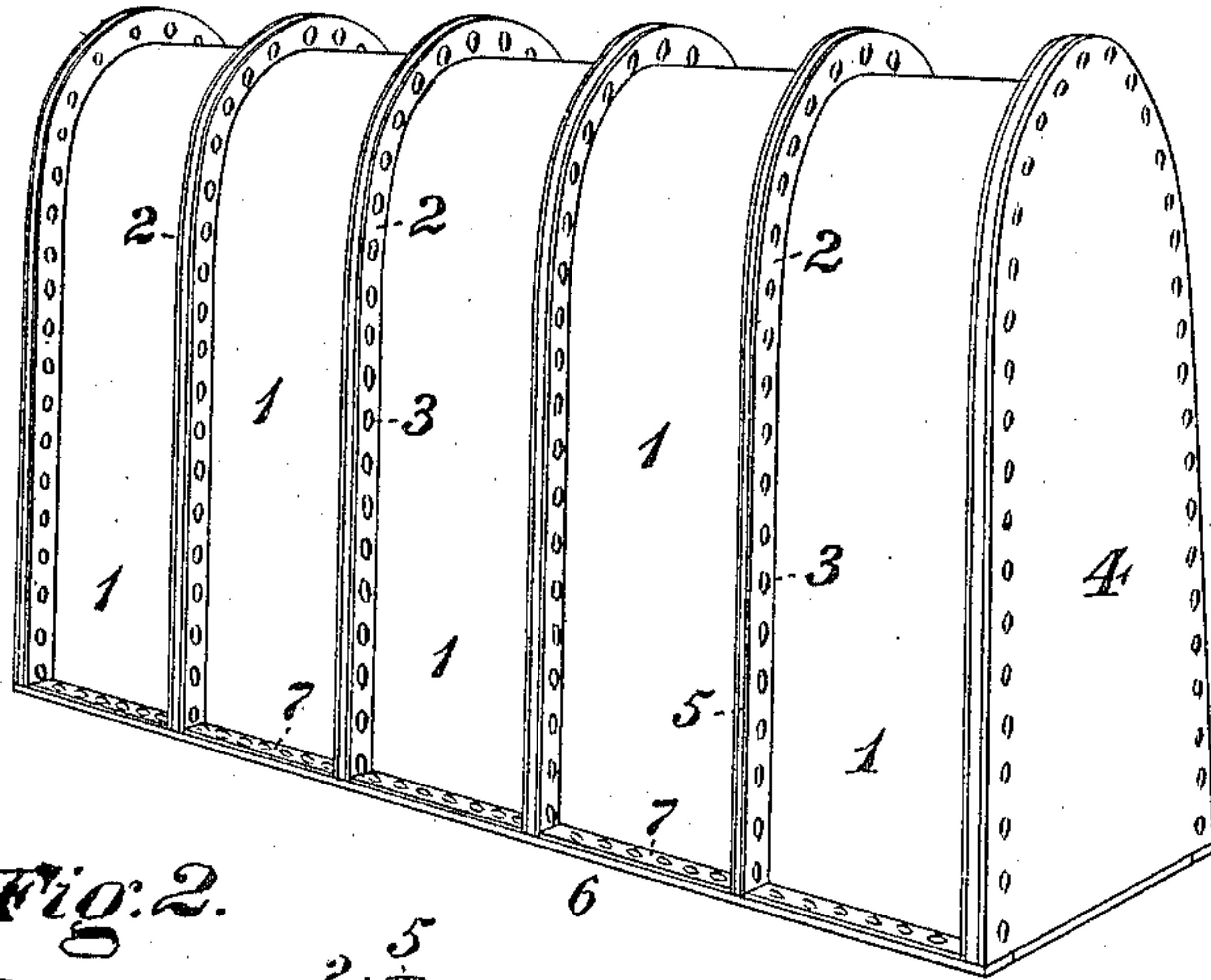
(No Model.)

J. & T. McNEIL.  
ANNEALING BOX.

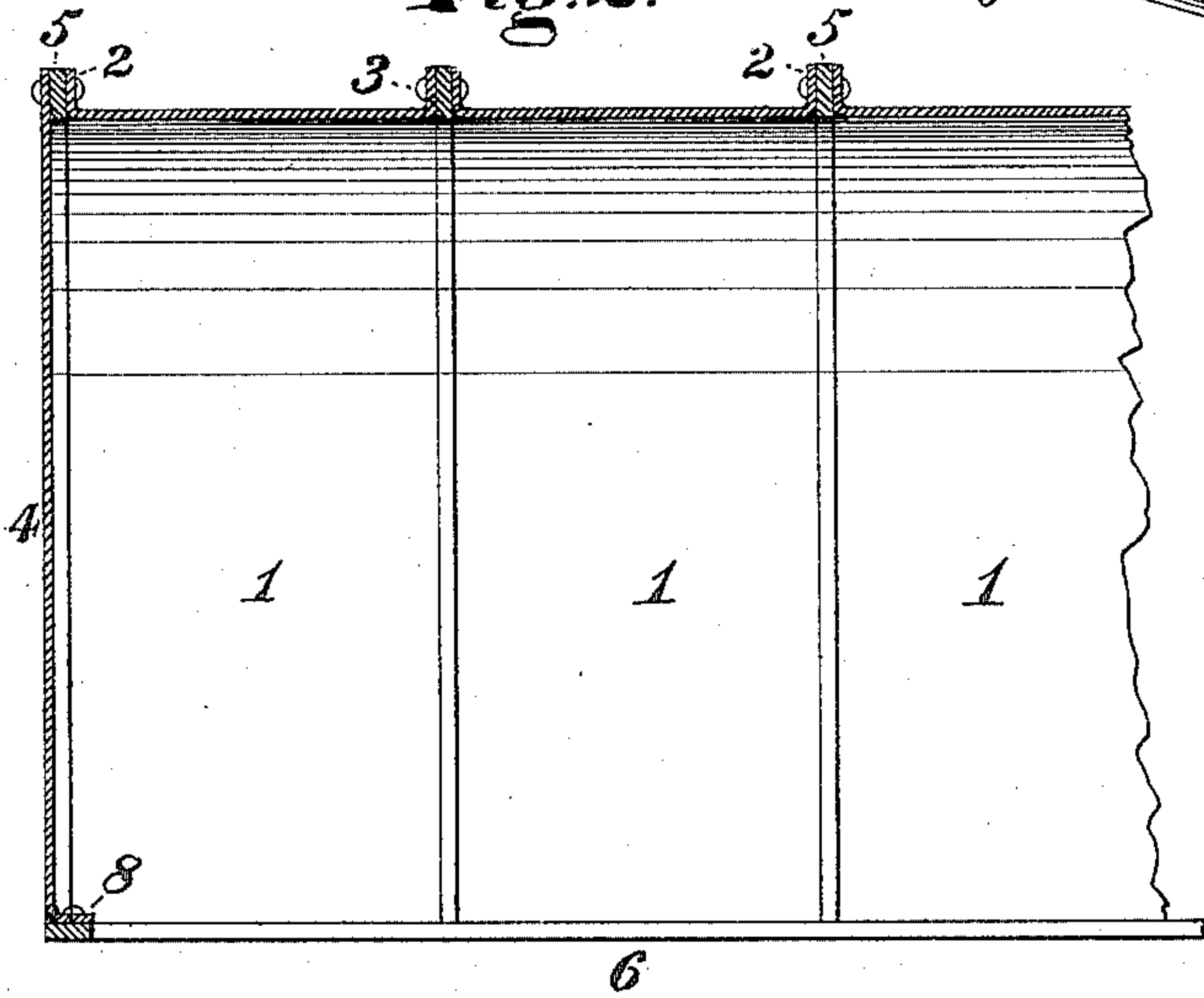
No. 302,688.

Patented July 29, 1884.

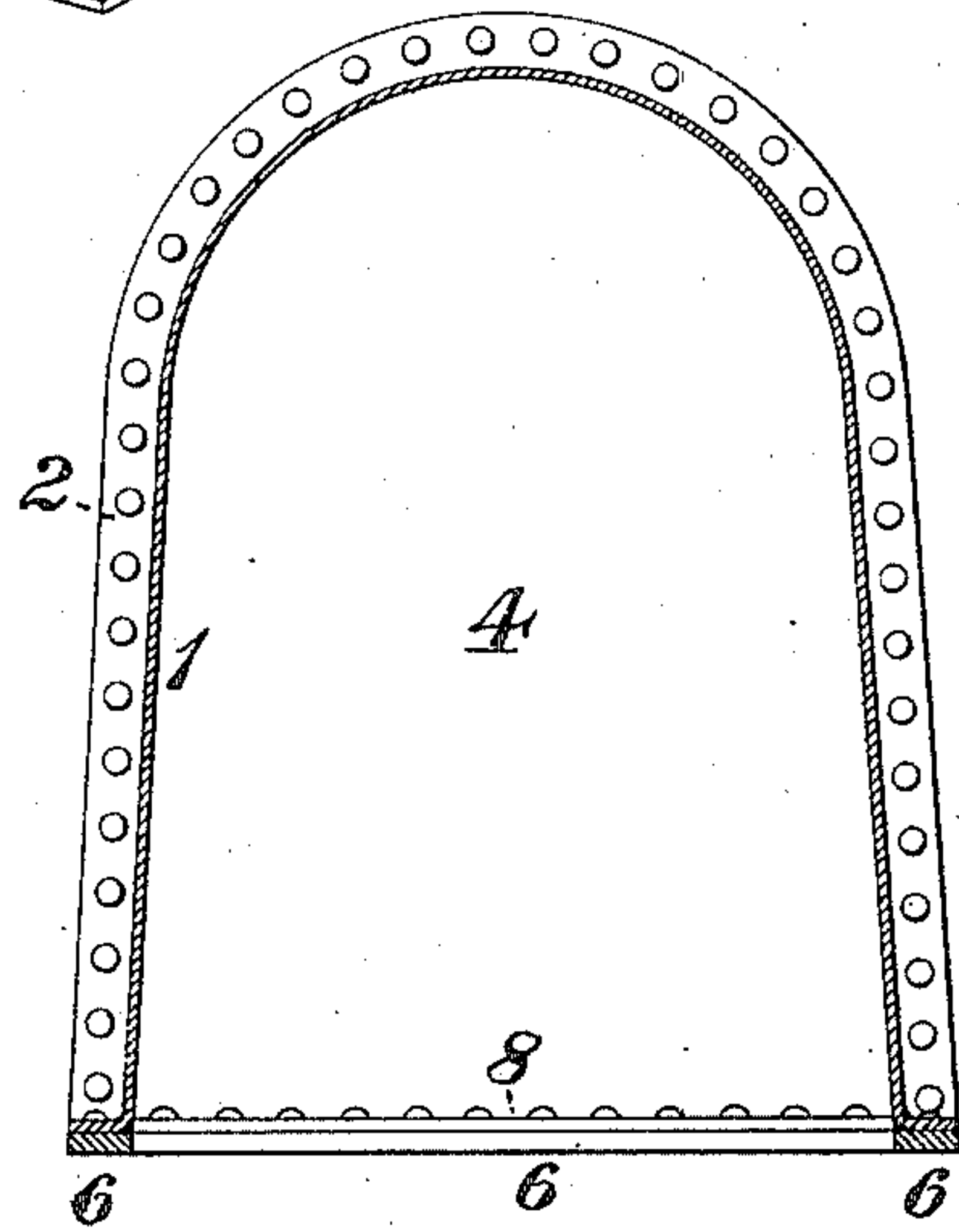
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES McNEIL AND THOMAS McNEIL, OF PITTSBURG, PENNSYLVANIA.

## ANNEALING-BOX.

SPECIFICATION forming part of Letters Patent No. 302,688, dated July 29, 1884.

Application filed April 21, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES McNEIL and THOMAS McNEIL, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have jointly invented or discovered a certain new and useful Improvement in Annealing-Boxes, of which improvement the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a view in perspective of an annealing-box embodying our invention; Fig. 2, a vertical longitudinal central section through a portion of the same, and Fig. 3 a vertical transverse section through the same.

Annealing-boxes employed for covering sheet-iron or other articles in annealing-furnaces, as heretofore constructed, have been subject to the objections of being liable to be warped or distorted by their own weight under the intense heat to which they are exposed when in use; and, further, that worn or burned-out portions could not be properly renewed or repaired, and consequently wear or injury of a portion of the box involved a waste of comparatively serviceable metal in the remainder.

It is the object of our invention to provide an annealing-box which shall possess the capacity of effectually resisting warping or deformation by heat, and in which the renewal of any particular portion may be readily effected as required, so as to retain the use of the remainder as long as in a serviceable condition.

The improvements claimed are hereinafter fully set forth.

In the practice of our invention we provide a series of sections, 1 1, each formed by bending a sheet of wrought metal into trough or U form, said sections having a flange, 2, turned upon each end. We then take a sufficient number of sections to form an annealing-box of the length desired and unite them by rivets 3, passing through their flanges. The ends of the box are closed by flat plates or heads 4, which are riveted to the outer flanges of the two end sections. The box is thus stiffened transversely at intervals throughout its length by the flanges of the several sections, which serve both as braces and connecting-pieces, and is

thereby prevented from bending or warping under the action of heat, and the removal of any of the sections, if worn or injured, can be readily effected, whenever desired, by cutting out the rivets to admit of replacement by a new section, which is similarly secured in place.

The flanges 2 may either be butted directly together, or, for the purpose of affording additional strength and stiffness to the box, brace-bars 5, bent into form corresponding with the flanges, may, as shown in the drawings, be interposed between the sections, and united thereto by rivets passing through said brace-bars and through the flanges which abut against each side thereof, and the edges of the box may be strengthened by bottom bars, 6, riveted to flanges 7 turned on the sides of the sections 1, and flanges 8 on the heads 4.

We are aware that stiffening plates or ribs interposed between and connected to the outwardly-turned flanges of metal plates, as in the construction of furnace-flues for steam-boilers, have been heretofore known, and such, therefore, we do not broadly claim.

We claim herein as our invention—

1. In an annealing-box, the combination of a series of open-bottomed U-shaped sections having flanges turned on each of their ends, a series of transverse brace-bars bent into similar form with and interposed between the flanges of the adjacent sections, a pair of end plates, and rivets passing through the flanges of the sections and through the brace-bars and connecting the sections one to another and to the end plates, substantially as set forth.

2. In an annealing-box, the combination of a series of flanged sections, transverse brace-bars interposed between the flanges of the adjacent sections, a pair of end plates or heads, bottom bars abutting against the sections and heads, and connecting-rivets, substantially as set forth.

In testimony whereof we have hereunto set our hands.

JAMES McNEIL.  
THOMAS McNEIL.

Witnesses:

J. SNOWDEN BELL,  
R. H. WHITTLESEY.