

(No Model.)

H. E. GRANT.
DOMESTIC BOILER.

No. 557,504.

Patented Mar. 31, 1896.

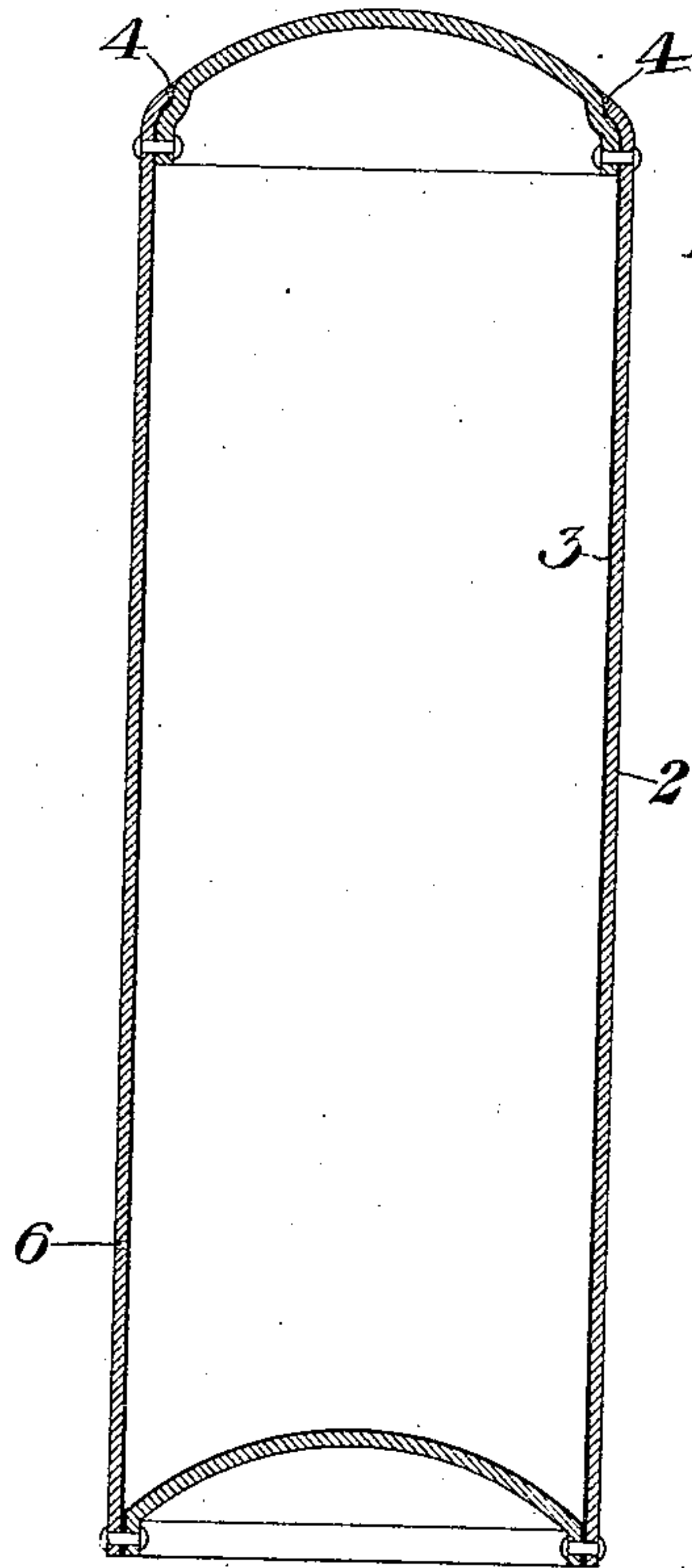


Fig. 1.

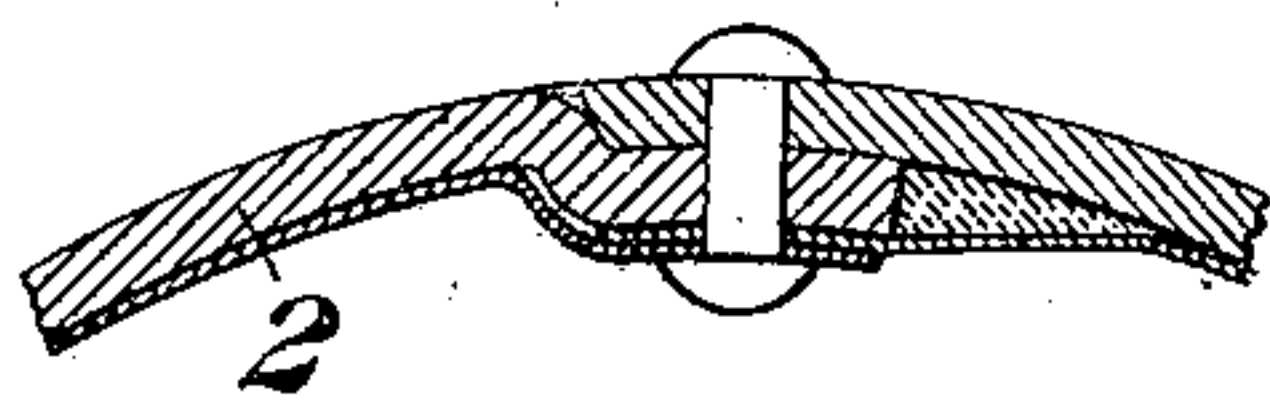


Fig. 4.

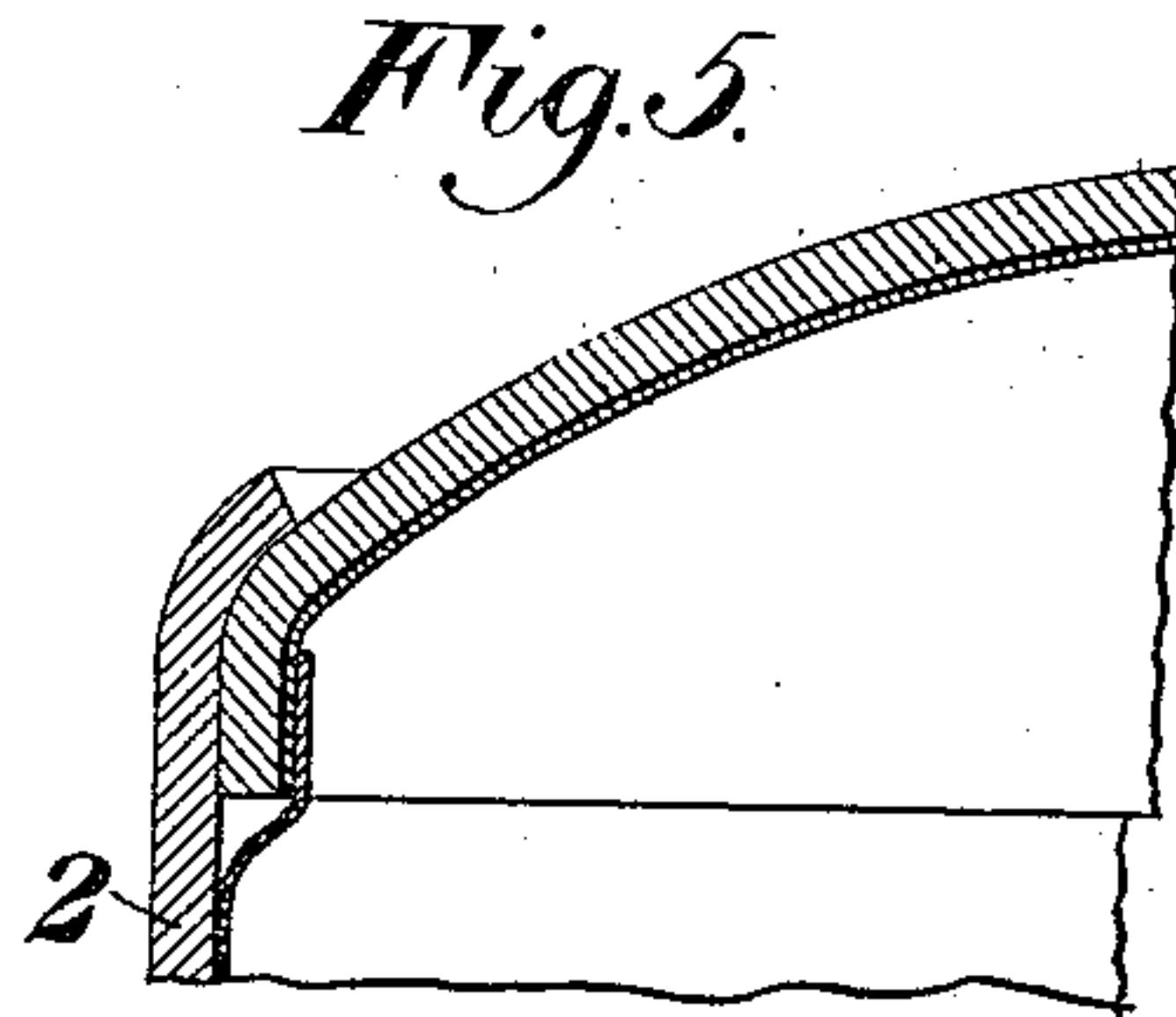


Fig. 5.

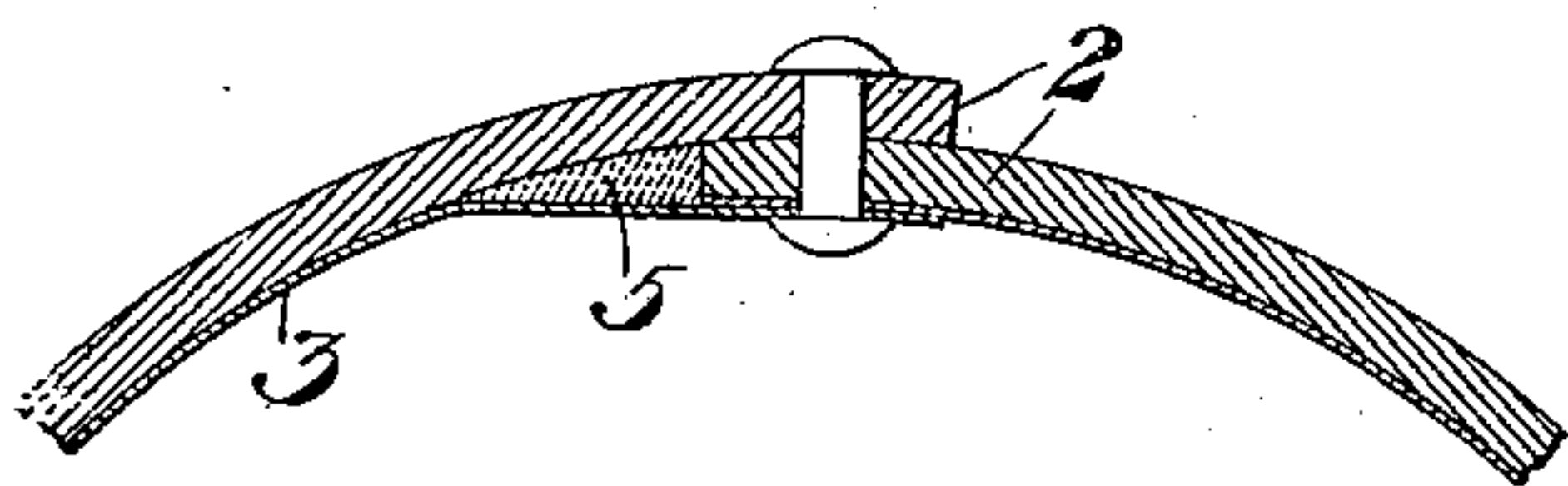


Fig. 2.

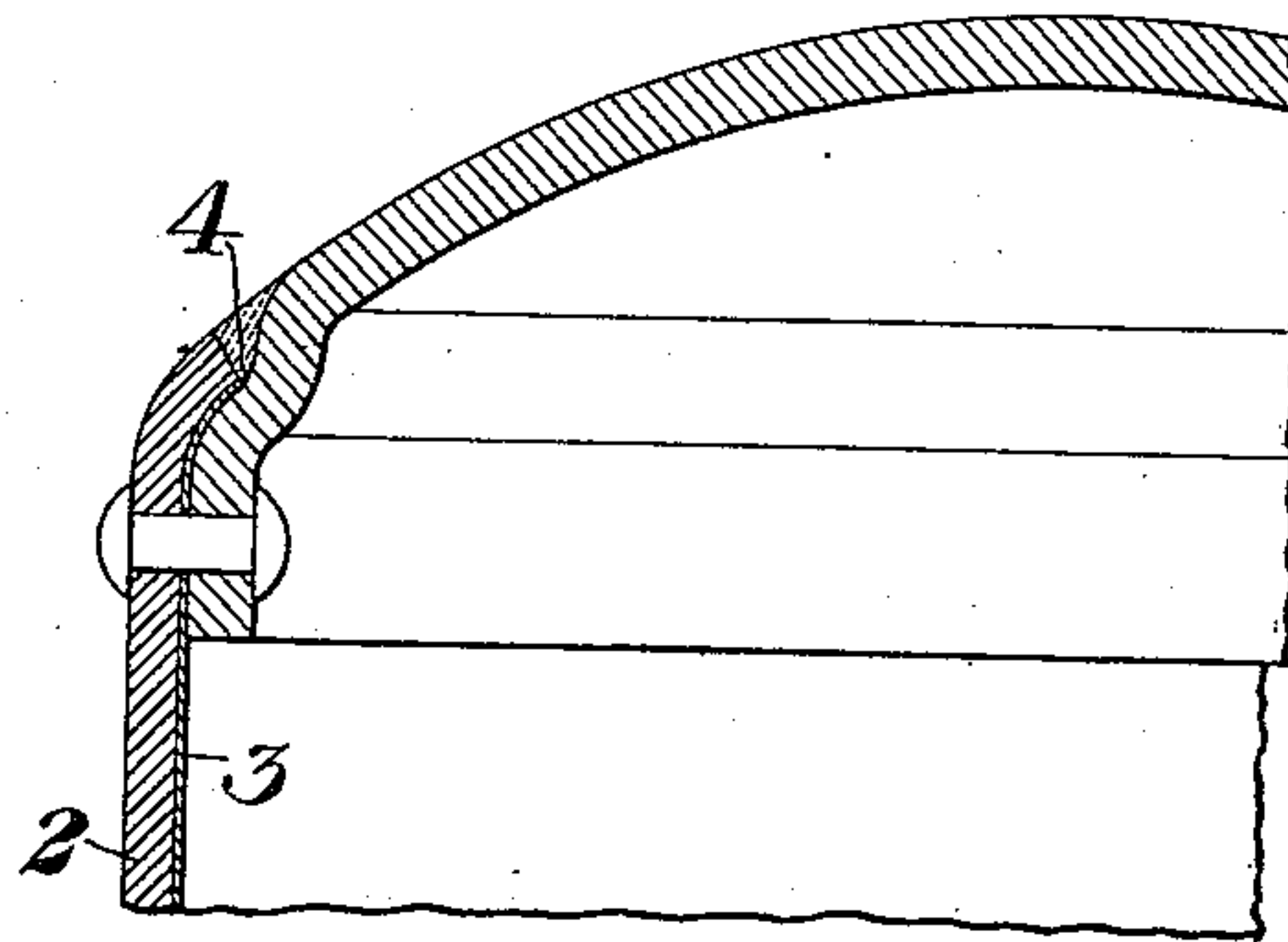


Fig. 3.

WITNESSES

Warren H. Bwartz
H. M. Corwin

INVENTOR

Herace E. Grant
by his attorneys
W. D. Bakewell & Sons

UNITED STATES PATENT OFFICE.

HORACE E. GRANT, OF PITTSBURG, PENNSYLVANIA.

DOMESTIC BOILER.

SPECIFICATION forming part of Letters Patent No. 557,504, dated March 31, 1896.

Application filed October 26, 1894. Serial No. 526,999. (No model.)

To all whom it may concern:

Be it known that I, HORACE E. GRANT, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Domestic Boilers, 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 central vertical section of my improved domestic boiler. Fig. 2 is an enlarged detail view of the side lap-joint of the cylinder. Fig. 3 is an enlarged view of the joint for the upper head. Fig. 4 shows another form of side joint, and Fig. 5 shows a modified form of the end joint for the head.

My invention relates to the copper-lined boilers used in domestic ranges, and is designed to provide such boilers with an improved joint for either the side or head seams.

In the drawings, 2 represents a cylindrical steel or galvanized-iron shell having a cylindrical lining-sheet 3 of copper within it. To prevent the water from coming in contact with the iron at the joint, I bend in the copper lining of the cover-strip past the edge of the inner strip and rivet through both thicknesses of copper at this point, as in Fig. 2. For the upper head I preferably use a solid copper sheet, and to strengthen the joint I provide an annular groove 4 in the head, into which the end portion of the cylindrical sheet is bent, thus greatly strengthening the joint. The lap portions of the sheet at the joints are preferably tinned, and then solder is sweated into the joints, as at 5, making them perfectly water-tight. The copper may be tinned throughout, if desired, on one or both sides, and the iron may be galvanized or merely tinned at the joints. If the joints are brazed with hard solder, the lap portions need not be tinned. If either head is made of copper-lined iron or steel with the edge inward, the joint may be made in the same way as the side joint, the lining of the cylinder being bent inward and extending over the exposed end of the head.

The lower head is shown as made of copper-lined iron, with the edge turned outward; but this may be changed, if desired, to bring the edge inward, or a solid copper head may be used. Copper rivets are used throughout.

Instead of the simple lap-joint at the side the inner portion of the iron or steel may be provided with an offset, as shown in Fig. 4, to provide a smooth exterior surface.

If desired, rivets need not be used for the head, the cylinder being bent over, as in Fig. 5, and brazed in place.

The advantages of my invention will be apparent to those skilled in the art, since, on account of the form of the joint, a perfect soldered joint may be obtained, the solder readily sweating into place. The iron is nowhere exposed to the action of the water, and hence no galvanic action can be set up, and the whole construction is cheap and of great strength.

Many changes in the form, construction, and arrangement of the device will suggest themselves to those skilled in the art without departing from my invention, since

What I claim is—

1. A boiler comprising a shell of iron or steel, and a lining of another sheet of metal, the metal of the cover portion of the lap-joint extending inside past the end of the inner portion of the joint, substantially as described.

2. A boiler comprising a shell of iron or steel, and a lining of another sheet of metal, the lining of the cover portion of the lap-joint extending inside past the end of the inner portion of the joint, and rivets passing through both portions of the joint, and the two overlapping ends of the lining; substantially as described.

In testimony whereof I have hereunto set my hand.

HORACE E. GRANT.

Witnesses:

W. B. CORWIN,
C. BYRNES.