

(No Model.)

R. J. SCHWAB.
PACKING JOINT FOR HEATERS.

No. 585,706.

Patented July 6, 1897.

Fig. 1.

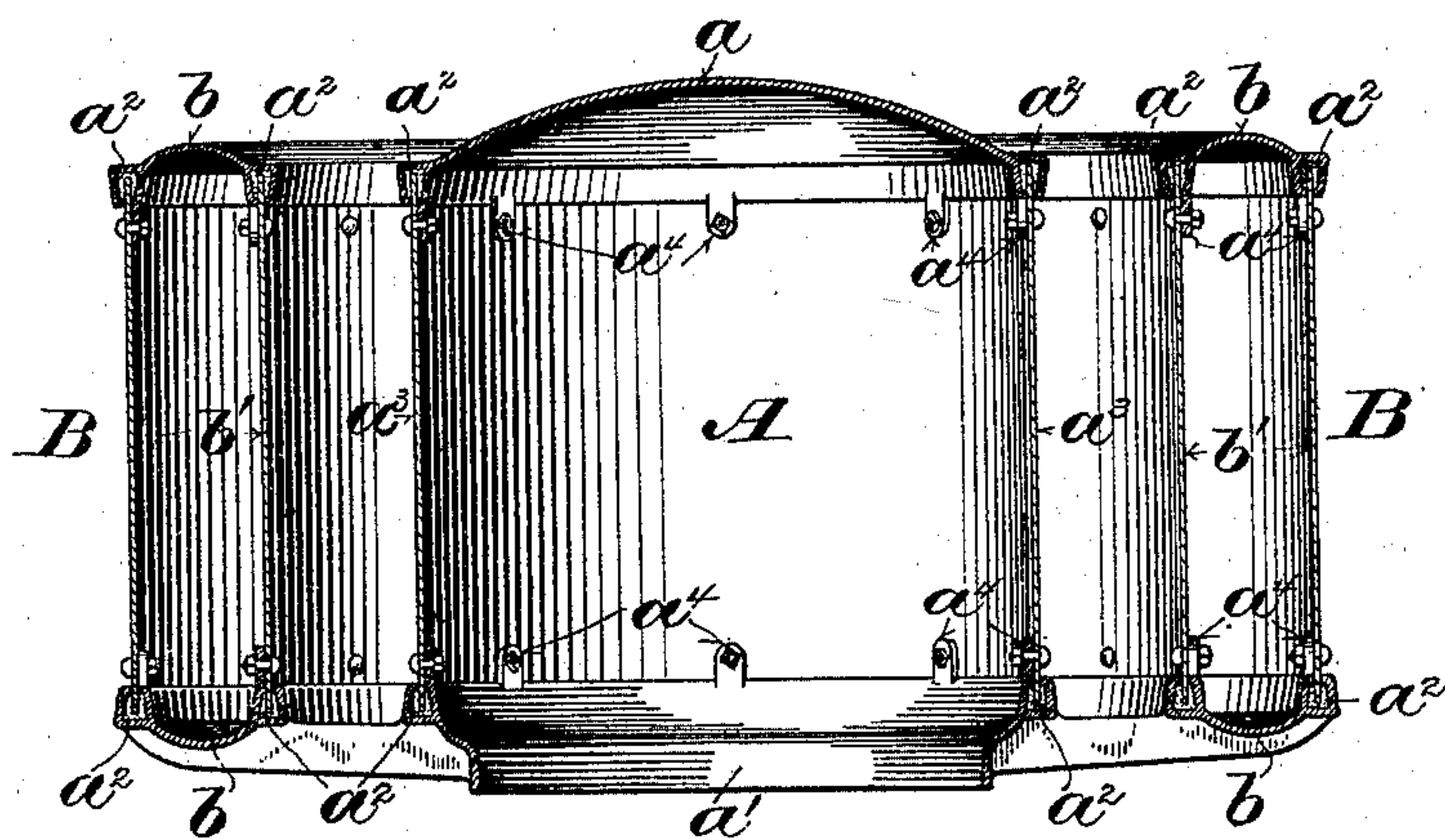
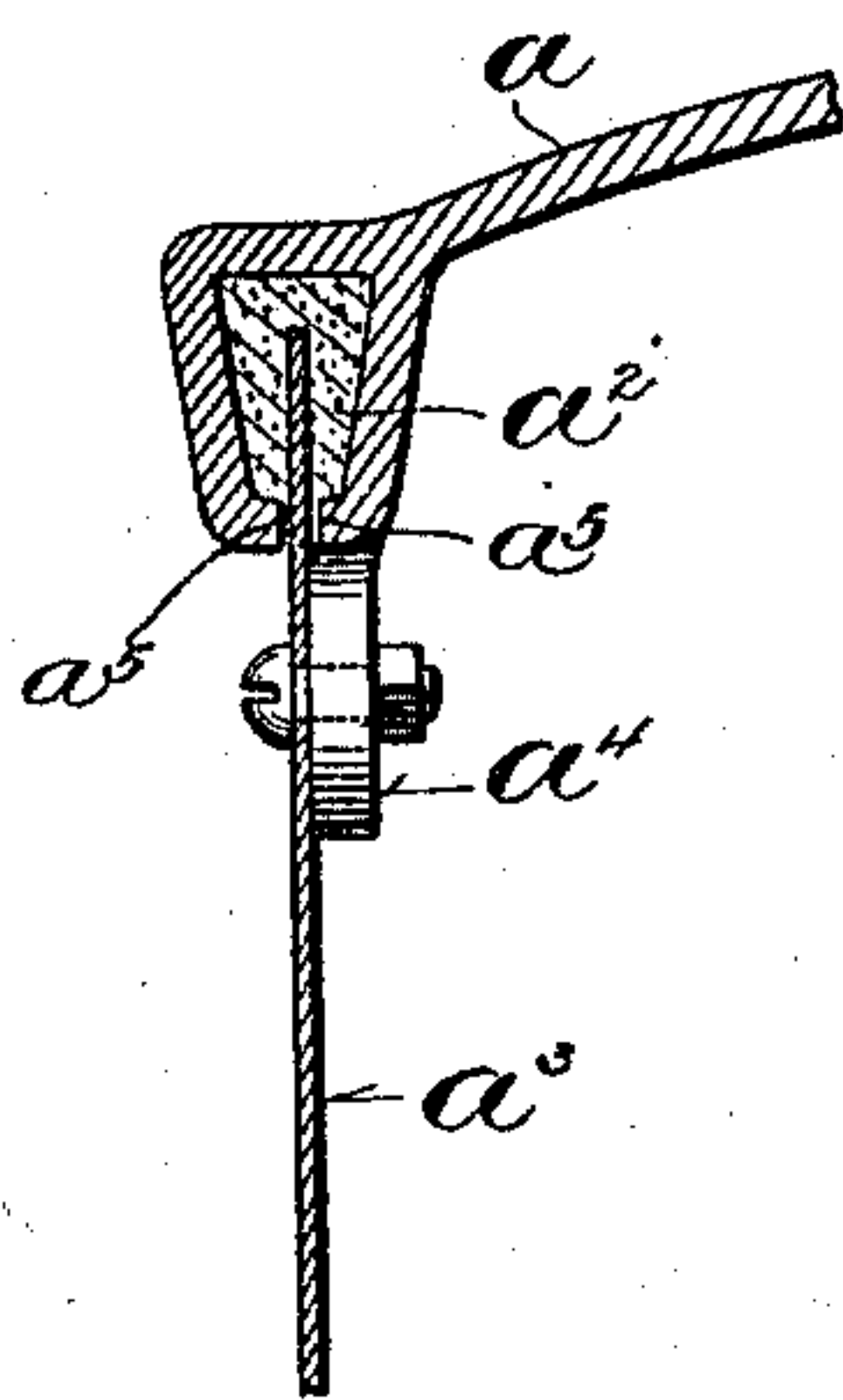
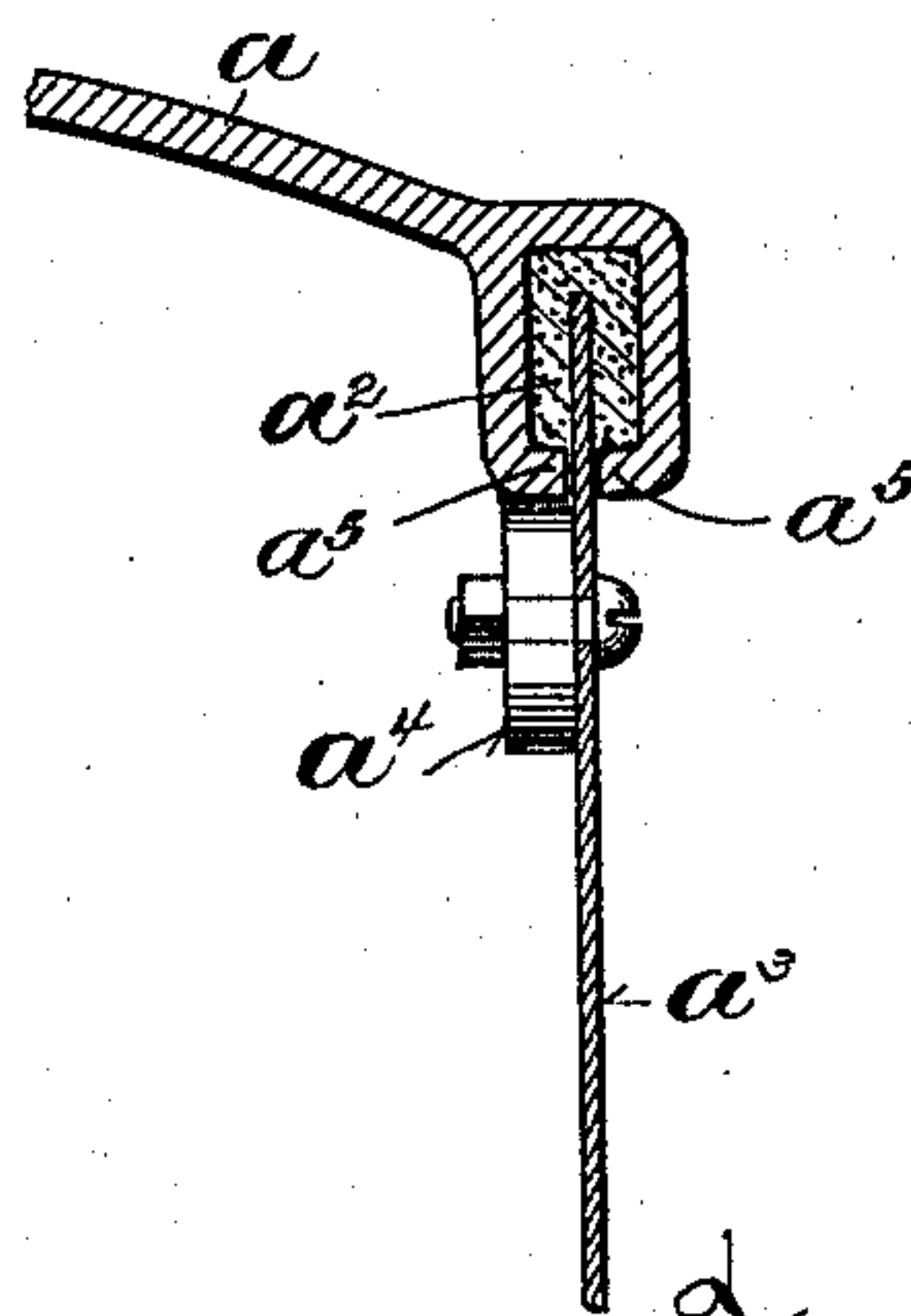


Fig. 2.



Witnesses:
Geo. W. Young,
Chas. L. Coas.

Fig. 3.



Inventor:
Rudolph J. Schwab,
By Wm. H. H. Smith & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

RUDOLPH J. SCHWAB, OF MILWAUKEE, WISCONSIN.

PACKING-JOINT FOR HEATERS.

SPECIFICATION forming part of Letters Patent No. 585,706, dated July 6, 1897.

Application filed September 3, 1895. Serial No. 561,201. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH J. SCHWAB, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Packing-Joints for Heaters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The main object of my invention is to insure gas-tight joints in the construction of stoves, furnaces, and other heating appliances.

It consists in a novel construction and arrangement of parts forming a packing-joint, as hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 is a vertical medial section of a furnace-dome and surrounding drum or radiator. Fig. 2 is a sectional detail, on an enlarged scale, of the packing-joint by which the sections of the dome and drum are united with each other; and Fig. 3 is a like view of a modification thereof.

For the purpose of illustration I have shown and will describe my improved packing-joint as applied to the construction of a furnace, although it is equally applicable to the construction of other kinds of heaters.

Referring to the drawings, A designates the dome of a furnace, and B an annular heating drum or radiator encircling it. The dome is composed of cast-iron top and bottom sections $a a'$, which are formed with annular packing grooves or recesses $a^2 a^2$, having contracted slots or openings formed by inwardly-projecting lips or ledges $a^5 a^5$, as shown most clearly in Fig. 2, for the reception of the rims or edges of the side section or cylindrical portion a^3 , which is preferably made of sheet iron or steel. The top and bottom sections are cast at intervals with perforated ears $a^4 a^4$, to which the sheet-metal section a^3 is bolted or riveted a short distance from the packing-recesses. These recesses are filled at the

ends and on both sides of the side section inserted therein with asbestos cement or other suitable packing material, which is securely held therein by the contracted walls of said recesses on opposite sides of the slots or openings through which the side section passes. The bolt or rivet connections with the ears $a^4 a^4$ prevent the side section from working endwise in the packing-recesses and its edges or rims from becoming loose in the packing. By abruptly contracting the walls of said recesses to form the lips or ledges $a^5 a^5$ with a narrow slot or opening between them of just about sufficient width to receive the edges of the adjoining section the packing material is prevented from working out of said recesses, especially when their openings or slots are presented downwardly.

The drum B is similarly constructed of cast top and bottom sections $b b$ and sheet-metal side sections $b' b'$, connected with each other by joints like those just described.

I do not wish to be understood as limiting myself to the exact form of recess shown for the packing-joint as hereinbefore described, as it may be varied in shape without materially affecting the results secured by its use. Any form of recess having a contracted aperture for the reception of the adjoining section is contemplated within the scope of my invention. In Fig. 3 I have shown one of many modifications which may be made in the form of the recess. When, however, the packing groove or recess is formed in a top plate with its opening presented downward, I prefer to construct it, as shown in Fig. 2, with its walls converging downwardly toward the inturned lips or ledges $a^5 a^5$. In this way if the cement or packing becomes contracted or loose it will tend to settle and wedge itself between the opposing faces of the packing-groove and sheet-metal section and thereby maintain close tight joints between the sections.

My improved joint is specially adapted to and designed for uniting cast and wrought metal, such as cast-iron and sheet iron or steel, of which the coefficients of expansion are different. This difference in expansion between cast and wrought iron or steel, which are extensively employed together in the construction of heaters of various kinds, is a

source of great perplexity to manufacturers and annoyance to users, as it causes carefully made and packed joints to become loose and to permit the escape of gas.

5 It will be observed that in the construction of my improved packing-joint the sides or walls of the grooves are cast integrally with each other and have no joints which can become loose and leaky; that the grooves are
10 made quite deep and larger and wider at the bottom than at the surface where they open for the reception of the tongues or edges of the sheet or wrought metal sections, which project quite a distance into said groove;
15 that packing is held in said grooves on both sides of the sheet-metal sections, completely enveloping their edges and closing the contracted openings or crevices between the side walls of the grooves and the faces of the intervening sheet-metal sections, and that the
20 sections are securely fastened together at intervals close to the packing-grooves.

I claim—

1. A packing-joint for heaters, consisting of
25 a packing-recess formed in one section with integral walls and opposing intumed lips or ledges forming a contracted slot or opening between them for the reception of the edge of an adjoining section, and suitable packing
30 held in said recess on both sides of the inserted section by the intumed lips or ledges of the other section, substantially as and for the purposes set forth.

2. A packing-joint for heaters consisting of
35 a packing groove or recess formed in one section with integral walls converging downwardly toward intumed lips or ledges forming a downwardly-opening contracted slot for the reception of the edge of an adjoining section, and suitable packing held in said recess
40 on both sides of the inserted section by the

intumed lips or ledges of the other section, substantially as and for the purposes set forth.

3. The combination of two heater-sections, one having cast therein a packing groove or
45 recess with integral walls and intumed lips or flanges forming a contracted slot or opening to receive a rim or edge of the adjoining section which is made of sheet metal, suitable packing held in said groove or recess on both
50 sides of the inserted section by the intumed lips or ledges of the other section, and fastenings for securing said sections together wholly outside of said packing-recess, substantially as and for the purposes set forth. 55

4. The combination of two heater-sections, one being cast with ears and a packing-recess, having a contracted opening to receive the rim or edge of the other section which is
60 embedded in packing held in said recess on both sides thereof and is bolted or riveted to said ears, the walls of said recess being cast or formed integrally with each other, substantially as and for the purposes set forth.

5. A packing-joint for heaters consisting of
65 a groove formed integrally in one section with a contracted slot or opening through which the rim or edge of the adjoining section projects into said groove, the walls of said groove diverging from both sides of said slot or opening and forming a recess on both sides of the
70 inserted section for receiving and holding suitable packing, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as
75 my own I affix my signature in presence of two witnesses.

RUDOLPH J. SCHWAB.

Witnesses:

CHAS. L. GOSS,
MARY SCHEFTNER.