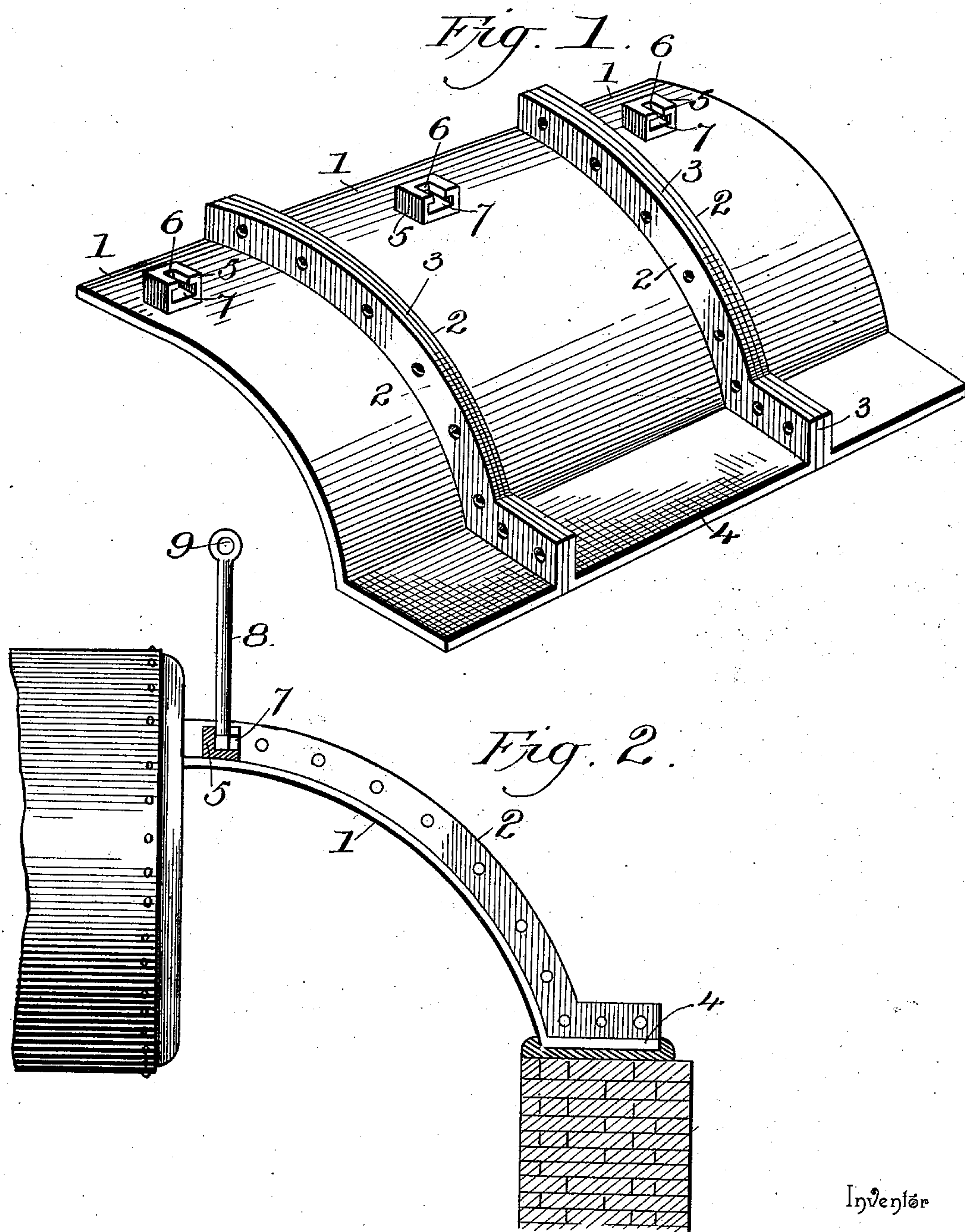


(No Model.)

J. MORAN.
FURNACE.

No. 551,133.

Patented Dec. 10, 1895.



Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

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FURNACE.

SPECIFICATION forming part of Letters Patent No. 551,133, dated December 10, 1895.

Application filed May 23, 1895. Serial No. 550,385. (No model.)

To all whom it may concern:

Be it known that I, JAMES MORAN, a citizen of the United States, residing at Orange, in the county of Orange and State of Texas, have
5 invented a new and useful Furnace, of which the following is a specification.

This invention relates to an improvement in back plates for flue and tubular boilers of any description.

10 The object of the present invention is to provide a novel construction of back plate to be used in connection with boilers and the furnaces thereof, in lieu of the usual brick arch arranged at the rear of the boiler for directing the flame and products of combustion
15 through the tubes or flues of said boiler.

To this end the invention consists in a metallic back plate for boiler-furnaces comprising several flanged sections, bolted or otherwise
20 secured together and having strips of asbestos inserted between the joints of said sections; in providing each section with a slotted boss, adapting the same to receive a headed supporting bolt; also in certain novel features
25 and details of construction and arrangement, as hereinafter fully described, illustrated in the drawings, and finally embodied in the claims.

In the accompanying drawings, Figure 1 is
30 a perspective view of an improved back plate for boiler-furnaces constructed in accordance with this invention. Fig. 2 is a side or edge elevation of the same shown applied to the rear end of a boiler, showing also one of the
35 bolts by means of which the plate is supported from above.

Similar numerals of reference designate corresponding parts in both figures of the drawings.

40 Referring to the accompanying drawings, the improved back plate, which is best illustrated in Fig. 1, is composed of three similar sections 1. It will be apparent that these sections may be fewer or greater in number, as
45 desired or as required by the size of the boiler and furnace or other conditions. Said sections in cross-sectional shape resemble the usual brick arch used in connection with boilers for directing the flame and products
50 of combustion through the tubes or flues of said boiler from the rear.

The sections 1 are provided at their adja-

cent meeting edges with flanges 2, extending outwardly or from the upper faces thereof, as shown, and the sections are firmly united
55 by passing suitable rivets or bolts through said flanges. At the joints between the flanges 2, at the meeting edges of the sections 1, are located packing-strips 3 of asbestos, the object of which is to afford a flexible joint, al-
60 lowing for expansion and contraction, which will effectually prevent warping and the consequent breaking of the plate as a whole. The lower portions of the sections 1 and also
65 the flanges 2 are extended rearwardly in a horizontal direction to form a base 4, which is adapted to rest upon and be secured to the top of the rear wall of the furnace, as shown in Fig. 2.

At or near the upper inner end of each sec-
70 tion the latter is provided with an integrally-formed boss or lug 5, which is formed with an open slot 6 at its top and recessed beneath said slot, as indicated at 7, to provide for the in-
75 sersion and removal of a T-headed supporting-bolt 8. The bolt 8 may be of any usual or preferred form, being shown provided with an eye 9, facilitating the engagement thereof with a rod or support located above the back
80 plate. By means of the construction above described an effective construction of back plate is obtained, which is adapted to deflect the flame and products of combustion and
85 direct the same into and through the tubes or flues of a steam-boiler. By reason of the absence of the usual bricks, which are usually employed either alone or in connection with
90 metallic supports, the outer surface of said plate is exposed to the air, the effect of which will be to greatly increase the life of said back plate. By reason of the asbestos packing be-
95 tween the joints of the several sections of the back plate an elastic or flexible joint is formed, which will allow the back plate to expand or contract, thus obviating the warping and breaking thereof. The particular form of
100 flanges at the meeting edges of the back-plate sections also has a decided advantage over the ordinary lap-joint, which by expansion and contraction is liable to open and separate or get out of shape, so that the plate is rendered unfit for further use, allowing the heat, flame, &c., to pass through the openings therein. By means of the recessed and slotted bosses

on each section it will be seen that each section is independently supported and that the heads of the supporting-bolts may be readily disengaged from said bosses when it is desired to remove or adjust the back plate.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A back-plate for steam boiler furnaces, the same comprising several sections separately formed and provided at their meeting edges with angular flanges, a suitable packing of asbestos interposed between said flanges, and suitable fastening devices for

firmly uniting said flanges, substantially as described.

2. In a back-plate for steam boiler furnaces, a series of arched metal plates similarly shaped in cross section and formed at their meeting edges with integral angular flanges, whereby said sections are connected, and an integrally formed recessed and slotted boss or lug for each section, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES MORAN.

Witnesses:

J. T. ADAMS,
A. MORAN.