No. 672,053. Patented Apr. 16, 1901.

J. P. BAUER.

BOILER BRACE.

(Application filed Oct. 25, 1900.)

(No Model.)

Fig 1.

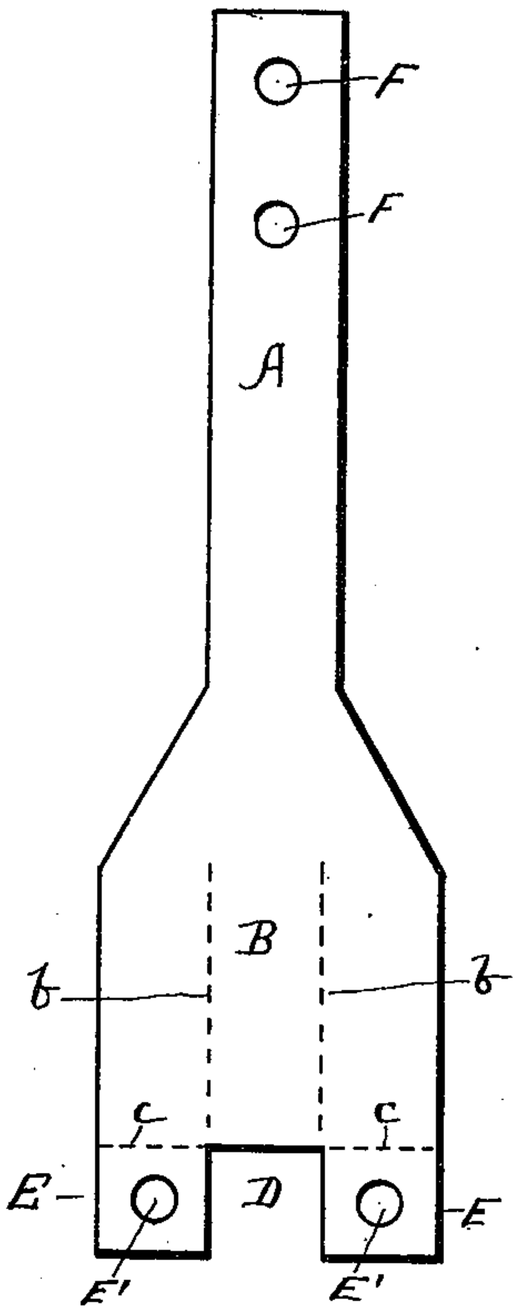


Fig 2.

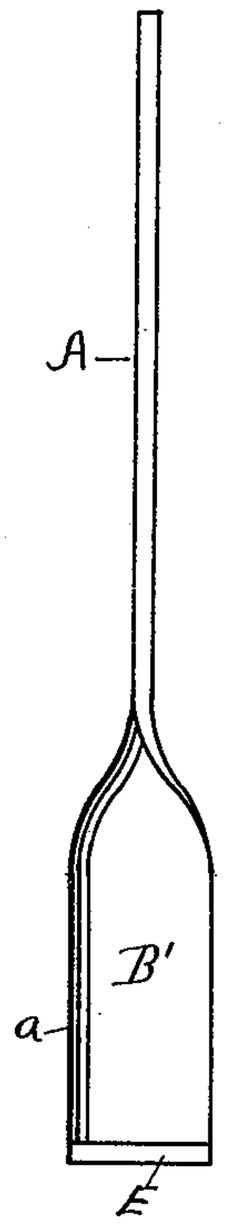
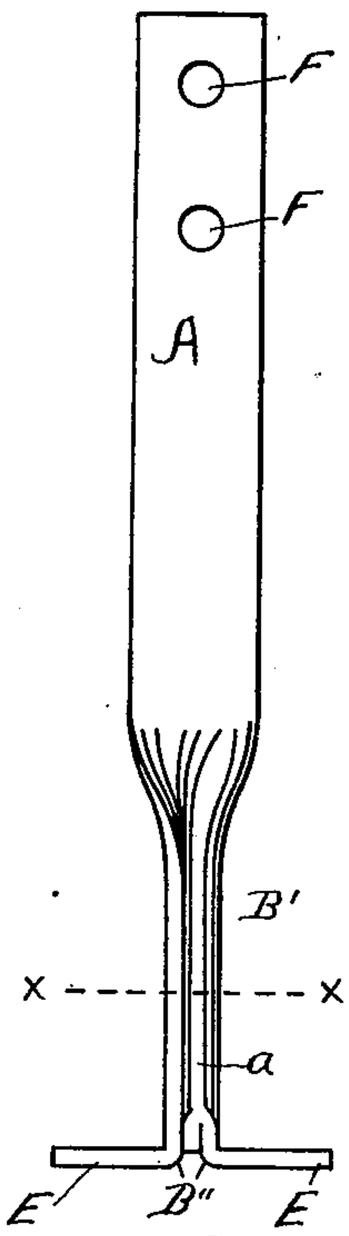


Fig 3.



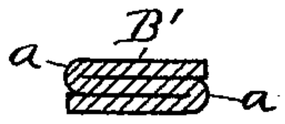


Fig 4.

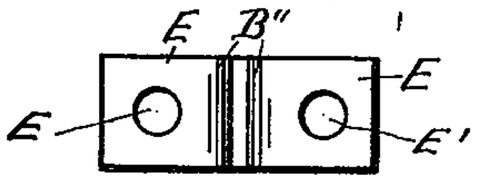


Fig 5.

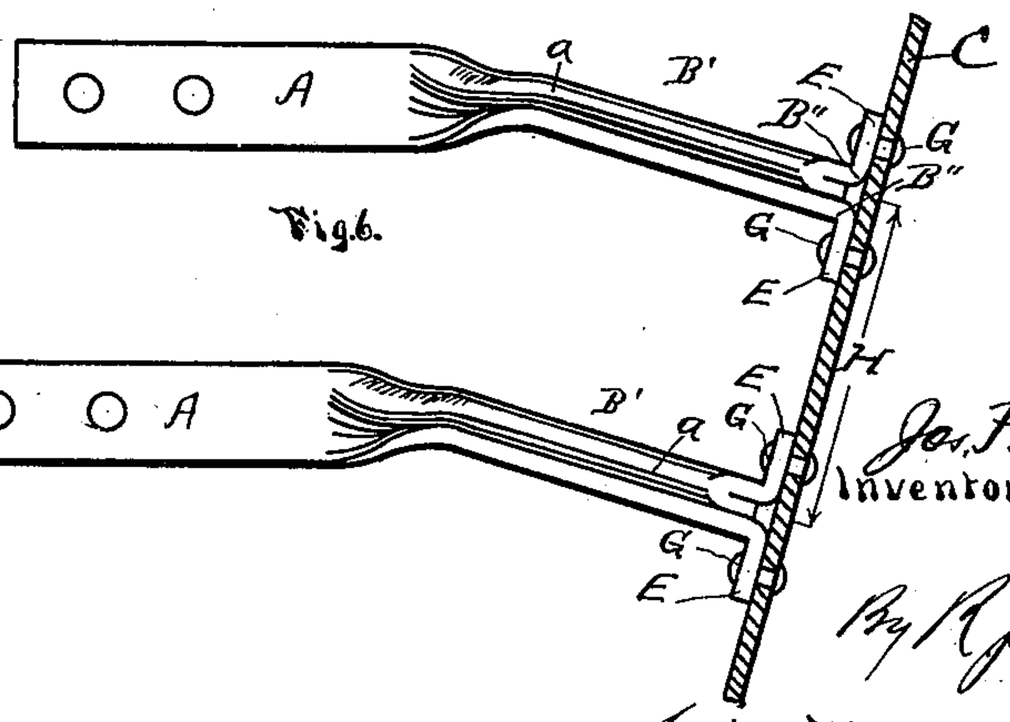


Fig 6.

Witnesses.
Matthew Siebler.
C. Theobald

Jos. P. Bauer,
Inventor.
By R. J. McCarty.
His Attorney.

UNITED STATES PATENT OFFICE.

JOSEPH P. BAUER, OF DAYTON, OHIO.

BOILER-BRACE.

SPECIFICATION forming part of Letters Patent No. 672,053, dated April 16, 1901.

Application filed October 25, 1900. Serial No. 34,249. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH P. BAUER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Boiler-Braces; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains 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.

This invention relates to new and useful improvements in stays or braces for boiler-heads.

The object of the invention is to provide an inexpensive and efficient boiler-brace which possesses the advantages hereinafter specified.

Preceding a detail description of my invention reference is made to the accompanying drawings, of which—

Figure 1 is a plan view of a blank from which my improved stay or brace is formed. Fig. 2 is an edge view of the brace or stay after it is formed. Fig. 3 is a side view of the brace or stay after it is formed. Fig. 4 is a sectional view through the shank on the line *x x* of Fig. 3. Fig. 5 is a view of the end which is attached to the boiler-head. Fig. 6 is a view of two braces attached to a boiler-head.

The blank, as shown in Fig. 1, from which the stay is formed is cut to provide a flat body or narrow extended portion A and a wider portion B, which forms the shank B′ of the brace when formed, the said shank being bent upon the dotted lines *b* (shown in Fig. 1) to provide three thicknesses of metal. From the enlarged end B of said blank there is a square piece cut, leaving a rectangular opening D, which provides for the formation of two feet E when bent along the dotted lines *c*. These feet E have holes E′, by means of which they are riveted to the boiler-head C, and the other extreme end of the blank or the body portion has openings F, by means of which that end of the brace is riveted to the shell or sides of the boiler.

In forming the brace or stay from the blank shown in Fig. 1 the shank portion B is pressed together in two folds, as shown in Figs. 3 and 4. This provides two rounded edges *a a* on opposite sides, which substantially strengthen that portion of the brace or stay adjacent to the feet, where the greatest strain is felt. When the blank is thus formed, the feet E assume positions at right angles to their positions as shown in Fig. 1. A boiler-brace constructed in accordance with this invention possesses the following advantages: By providing the shank portion B′ with the double folds or three thicknesses of metal, as shown in Fig. 4, the feet E are given equally substantial supports on opposite sides of the shank, the said opposite sides being those shown at *a a* in Fig. 4. The consequence is the holes E′ therein may be placed nearer the center edges of the feet without weakening the strength of the brace.

It is the usual custom with braces now commonly in use to provide the rivet-holes in the feet as near the bends or knuckles B″ of the feet as possible in order that the knuckles may not give way. This is objectionable, owing to the fact that it is desirable in attaching braces to boiler-heads to provide a space of eight inches between the centers of said stays or braces, as shown at H in Fig. 6, in order to take up as little space as possible. This may be done with the present brace by providing the rivet-holes E′ adjacent to the outer edges of the feet, owing to the strength of the brace adjacent to the feet or at the knuckles B.″ More clearly describing this important feature of the brace, reference is made to Fig. 6. Owing to the thickness of the shank B′, it being formed of three thicknesses of metal, as before stated, the rivets G can be placed farther apart than is commonly the practice without weakening the brace at the bends or knuckles B″. This allows a greater distance or space between the centers of the braces, thus requiring a fewer number of braces, and in consequence thereof less space is taken up by the braces and ample room is given for cleaning and repairing the boiler. The longitudinal bends *a* provide on each side of the shank equal strength on both sides for the feet, and, further, the brace, having three thicknesses of metal through the shank, allows a heavier brace to be used,

and consequently a fewer number of braces are required to stay a flat surface in a boiler even when placed eight inches apart.

Owing to the simplicity of the brace, it may be placed to the shell with either side occupying an outer or inner position. The brace being uniform, it has the same strength on both sides, also at the top and bottom, and may be attached with either side in or out.

I claim—

1. A stay or brace for boilers, one portion of which is flat, and the other portion of which consists of double folds which provide three thicknesses of metal, the said double folds being bent longitudinally in opposite directions to give that portion of the stay or brace equal strength on both sides, and feet projecting from said folded portion and by means of which the stay or brace is attached to a boiler-head, substantially as described.

2. A boiler-stay consisting of a flat portion, and a shank portion, the shank portion being folded in opposite directions to provide three thicknesses of metal, the bends of said folds being on opposite sides of the brace, and feet projecting from the folded portion of said brace and adapted to be secured to a boiler-head, the said feet being strengthened by the opposite folds of the shank, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH P. BAUER.

Witnesses:

R. J. McCARTY,

A. J. FIORINI.