

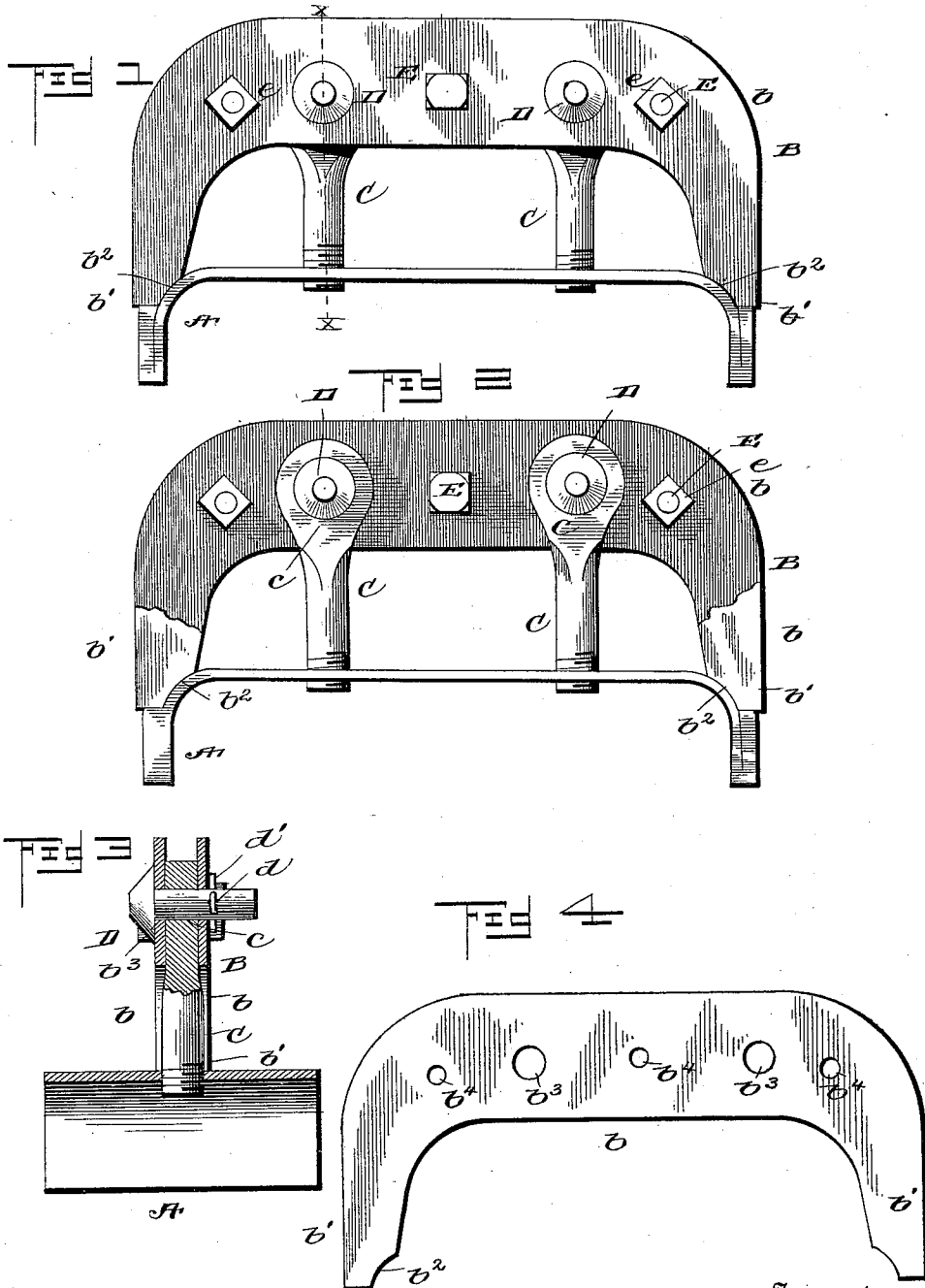
(No Model.)

E. HEUER.

CROWN SHEET OF STEAM BOILERS.

No. 461,180.

Patented Oct. 13, 1891.



Witnesses

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CROWN-SHEET OF STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 461,180, dated October 13, 1891.

Application filed June 8, 1891. Serial No. 395,559. (No model.)

To all whom it may concern:

Be it known that I, ERNST HEUER, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Crown-Sheets of Steam-Boilers; and I do hereby 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.

This invention relates to certain new and useful improvements in crown-sheets of steam-boilers, and especially to the manner of fastening the bolts connecting the stay-bars to the crown-sheet; and it consists in the novel construction and arrangement of parts hereinafter fully described, and afterward pointed out in the claims, due reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a side elevation showing the crown-sheet and the stay-bar in position thereon; Fig. 2, a similar view showing one of the plates composing the stay-bar removed, and Fig. 3 a vertical section taken on the line $x x$, Fig. 1, and Fig. 4 a plan view of one of the plates composing the stay-bar.

Referring to the drawings, the letter A indicates the crown-sheet of a steam-boiler.

B indicates one of the stay-bars, consisting of two parallel plates $b b$, having downwardly-curved ends $b' b'$, the lower inner ends of which are curved, as at $b^2 b^2$, to rest upon the upper curved edges of the crown-sheet, as shown.

C indicates bolts screw-threaded at their lower ends and flattened at their upper ends and perforated, as at c . Said bolts are tapped into the crown-sheet and so arranged that their flattened upper portions shall lie in the same longitudinal plane. The plates $b b$, composing the stay-bar B, lie upon each side of the flattened ends of the bolts C and are perforated, as at $b^3 b^4$, the perforations b^3 registering with the perforations c in the flattened ends of the bolts C, and through said perforations are passed headed pins D, perforated near their ends, as at d , and secured in

place by keys $d' d'$. Through the perforations b^4 in the plates $c c$ are passed bolts E, by means of which, and nuts e , the said plates are firmly bound together.

By employing the flattened bolts held in the stay-bars, as shown, said bolts and stay-bars are bound very rigidly to the crown-sheet and the bolts prevented from turning, it being impossible for the warping of the crown-sheet to displace or disturb the stay-bar and its fastenings.

Having described my invention, what I claim is—

1. In a steam-boiler, the combination, with the crown-sheet, of stay-bars, each consisting of two arch-shaped plates resting upon the edges of the crown-sheet and united by bolts, and bolts tapped into said crown-sheet and flattened at their upper ends, said flattened ends being secured between the plates composing the stay-bar, substantially as described.

2. In a steam-boiler, the combination, with the crown-sheet, of stay-bars, each consisting of two arch-shaped plates resting upon the edges of the crown-sheet and united by bolts, bolts tapped into said crown-sheet and flattened at their upper ends, and pins passing through the said flattened ends of the bolts and through the stay-bar and fastened by means of keys, substantially as described.

3. The combination, with the crown-sheet A, of the stay-bars B, each consisting of the parallel arch-shaped plates $b b$, having their lower inner ends curved, as at $b^2 b^2$, to embrace the edges of the crown-sheet and united by bolts E, bolts C, tapped into the crown-sheet and flattened at their upper ends and embraced by the plates $c c$, and pins D, passing through said plates and through the flattened ends of said bolts and fastened by keys d , substantially as shown and described.

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

ERNST HEUER.

Witnesses:

P. W. BOGGS,
M. TANCEY.