

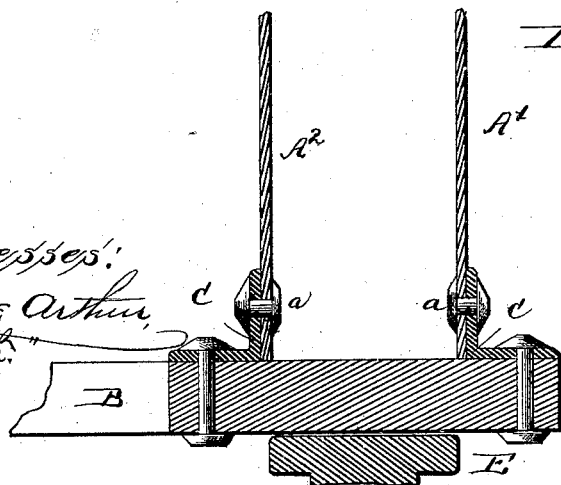
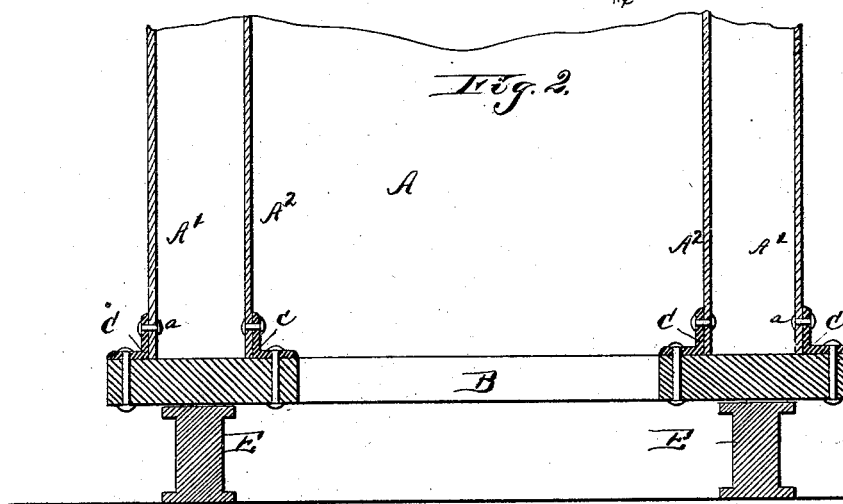
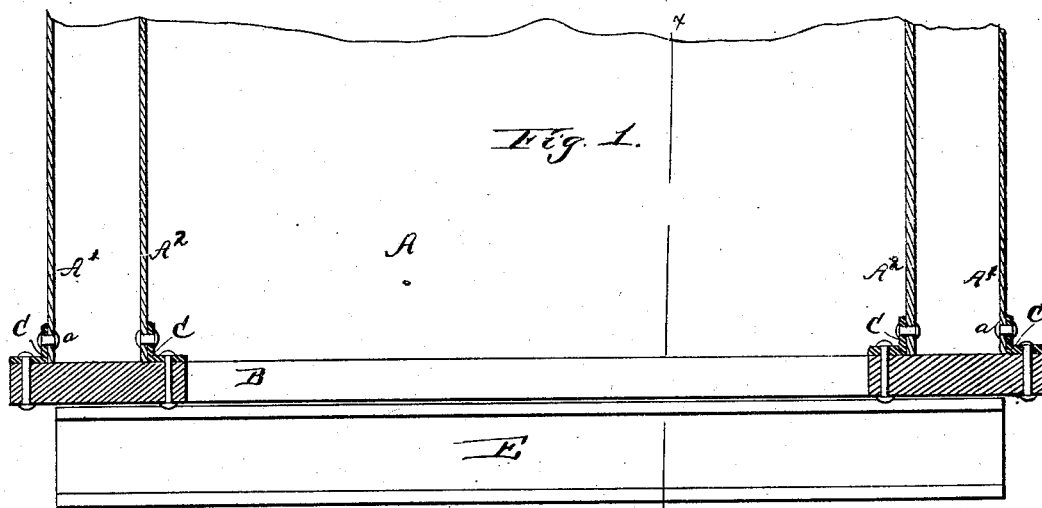
(No Model.)

J. T. SMITH.

BOILER.

No. 264,357.

Patented Sept. 12, 1882.



Witnesses:

H. C. McArthur,
W. R. Ferguson.

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per

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UNITED STATES PATENT OFFICE.

JAMES T. SMITH, OF BALTIMORE, MARYLAND.

BOILER.

SPECIFICATION forming part of Letters Patent No. 264,357, dated September 12, 1882.

Application filed March 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. SMITH, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, and in which—

Figure 1 is a longitudinal section taken vertically through the fire-box of a marine boiler. Fig. 2 is a section taken transversely through the fire-box in the plane indicated by the dotted line indicated on Fig. 1 by *xx*. Fig. 3 is an enlarged cross-section, more clearly exemplifying my new method of uniting the plates forming the water-legs of the furnace to the base-frame.

The object of my invention is to unite the plates which compose the double-wall furnace-section of a steam-boiler to the base or frame in such manner that when repairs are necessary the same can be made without the necessity of raising the boiler or removing the angle-irons, as will be understood from the following description.

The letter A designates the furnace of a steam-boiler, which is surrounded vertically by double walls composed of boiler-plates A' A², with a water-space or legs between the plates. The body of this furnace is made up in the usual well-known manner and provided with a fire-door, which I have not shown in the drawings.

B designates a rectangular frame, which is made of thick boiler metal. To this frame the rectangular sheets constituting the vertical walls of the furnace are secured in the following manner: I take sheet metal of angular shape in cross-section, well known as "angular iron," and by the well-known process of boiler-riveting I secure the lower edge of each wall A' A² to the base-frame B.

The angle-iron joint-closers are secured to their respective plates as follows: The angle-iron C is riveted to the outer sheets or walls, A', on the outer sides thereof, and these angle-irons are again riveted to the base-frame, as shown in Figs. 2 and 3. The heads of the rivets *a* in this case are on the inside of the walls or sheets. The inside walls, A², are in a similar manner secured to the base-frame B, which is of sufficient width, when taken trans-

versely at any point, to afford projecting flanges on the inside of the furnace, as well as on the outside thereof. The base-frame B is supported upon, but not secured to, two bearers, E E, which are of a length less than the distance between the outer row of transverse rivets and of a width less than the distance between the two longitudinal rows of rivets. The height of these bearers is such that they will allow a man to work at the vertical rivets beneath the base-frame.

This boiler is constructed with a very thick base-frame, and the double walls of the water-legs are secured thereto by angle-irons arranged both inside and outside of the base-frame, as described.

It will be seen that my marine boiler is supported upon bearers which are parallel to each other, and which are arranged respectively between the pairs of longitudinal and transverse rivets, so that free access is allowed to the several lines of base-rivets and angle-irons beneath the boiler. The boiler is independent of and detachable from the bearers, and should be so in every instance where a marine boiler is mounted upon the ribs of the hull of a vessel.

Ordinarily the boilers of a vessel are mounted on blocks supported upon the ribs, and when repairs are necessary the boilers have to be lifted from their bases, and this necessitates the reconstruction of the decks of the vessel and the means by which the spaces are closed between decks. By my invention I mount the boiler upon the bottom of a vessel, so that the above objections are obviated.

Having described my invention, I claim—

In a marine boiler, the combination of the base-frame, the longitudinal supporting-bearers, the vertical water-legs, and the applied flanges thereof, the rivets of the latter being arranged outside of the sides and ends of said supporting-bearers, so as to be accessible for removal and repairs without the necessity of cutting away the deck or moving the boiler, all arranged to operate substantially in the manner and for the purposes described.

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

JAMES T. SMITH.

Witnesses:

WM. R. KEYWORTH,
HARRY E. WATERS.