

(No Model.)

2 Sheets—Sheet 1.

E. H. ASHCROFT.

HOLLOW SUPPORT FOR STEAM BOILERS.

No. 262,914.

Patented Aug. 22, 1882.

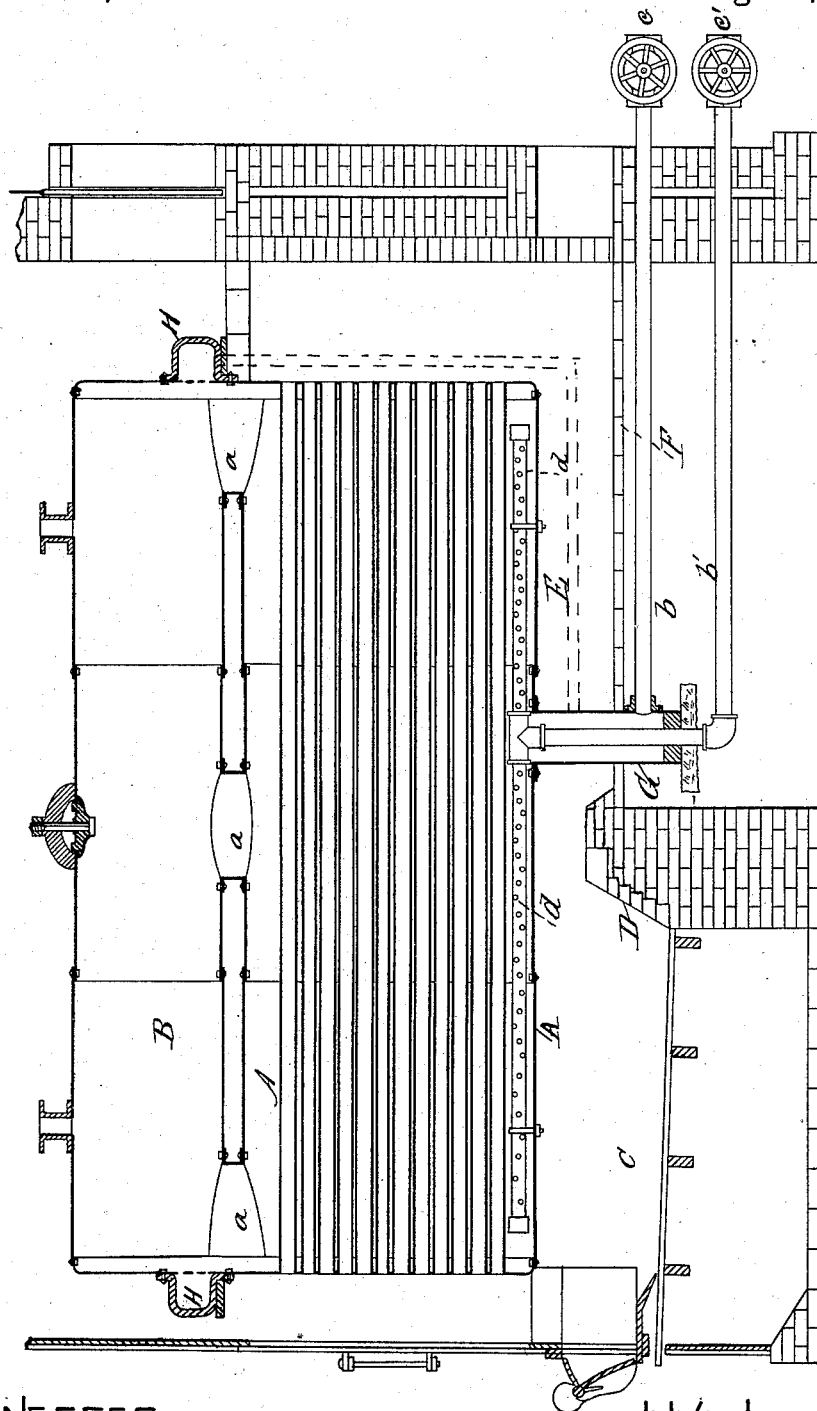


FIG. 1-

WITNESSES

James B. Silsbee
Fred E. Baker.

INVENTOR

Edward H. Ashcroft

J. E. Duff
Att'y.

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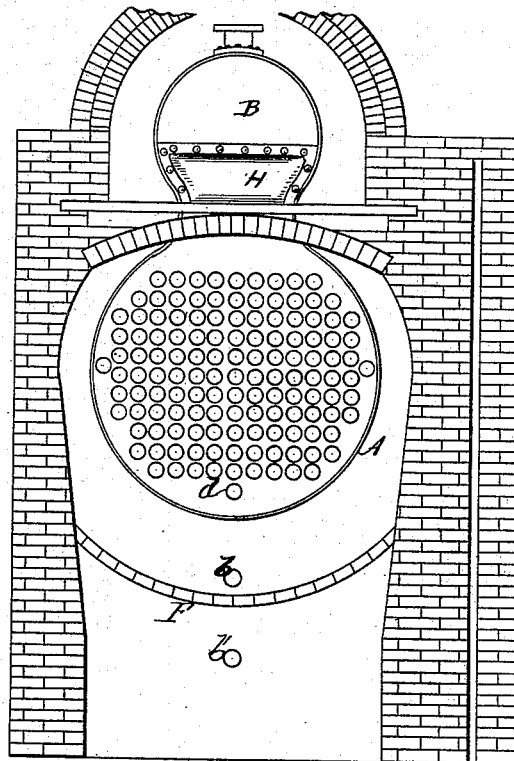


Fig. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

EDWARD H. ASHCROFT, OF LYNN, MASSACHUSETTS.

HOLLOW SUPPORT FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 262,914, dated August 22, 1882.

Application filed June 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. ASHCROFT, a citizen of the United States, residing in Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Hollow Supports for Steam-Boilers; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention has particular relation to my boiler patented to me April 19, 1881, No. 240,219, and has for its object an enlarged heating-surface, the avoidance of exposing any portion of the boiler to the direct heat of the fire unaccompanied by water contact, and also means for suspending the boiler in its setting by hollow lugs, through which water circulates, said lugs being located at and extending across the end of the boiler, thus increasing its heating area, forming a safe and effective support without danger of burning out or weakening from the heat. Should it happen that the circulation of the water in the hollow lugs or supports be sluggish, or that sediment should deposit in them, then circulation may be maintained between said lugs and the mud-drum or stand-pipe.

Referring to the accompanying drawings, and to the letters marked thereon, the same letters denoting like parts in all the figures, Figure 1 represents a vertical longitudinal section of my improved boiler-setting and the hollow supports or lugs, clearly showing the blow-off or cleaning device in position. Fig. 2 shows an end elevation, also illustrating the arch of the setting and the cross iron bar or plate upon which the hollow supports rest.

A is the lower cylindrical shell of the boiler; B, the upper portion or steam space. *aaa* are the connecting-necks. C is the furnace, D the bridge-wall, and E the main flue, having bottom F.

In rear of the bridge-wall, and passing down through the bottom F, I locate a stand-pipe, G, communicating with the bottom of the boiler a little in rear of its center and below

the earthy bottom. From this I extend two conduits, *b b'*, through the outside setting. These pipes are provided with the usual stop-valves *c c'*, and are for the purpose of controlling the flow through said pipes or conduits *b b'*. The lower pipe, *b*, after entering the stand-pipe, extends up through it and connects by means of a T with a perforated mud-pipe, *d d*, within the boiler, which extends to nearly each end of the said boiler. This perforated pipe rarely fails to keep the boiler clean when proper attention is given to it, although, broadly, I claim nothing new for it. The boiler is supplied with water through the pipe *b*, which may be connected to any of the approved feeding devices.

Rigidly fastened to the boiler-head of the upper cylinder are two transverse hollow lugs or supports, H H, communicating with the water-space of the boiler. Instead of cutting out an entire piece from the boiler-head, I simply drill holes in it. Thus the metal between the holes forms a support for the opening in the boiler-head, so that free water communication is established between the hollow supports without weakening in the least the boiler-head itself. Of course the hollow supports may be stay-bolted in the usual way.

If desired, circulation of water is maintained between the stand-pipe and the hollow support by means of a pipe (shown in dotted lines) extending from one to the other. The locality of this pipe is not important, so the circulation of water is maintained. These hollow supports are also useful in drawing off scum from the surface of the water in the boiler, they being placed nearly about the water-line. The particular advantage, however, of the hollow supports is that the entire boiler is suspended by them instead of the side solid lugs heretofore used. Of course any unusual weight or sagging of the boiler in the middle will be provided against by the central stand-pipe, which may rest upon a solid foundation, if found desirable.

Heretofore the solid side lugs occupied a very large amount of heating-surface, which was just so much lost, and consequently so much waste of fuel, so that in doing away with these side lugs I gain that much heating-surface, and in addition thereto the heating-

surface of the hollow supports, which occupy a space heretofore not utilized, as brick generally have been used for that purpose. In this instance I build an arch of brick. (See Fig. 2.)

5 Resting upon this arch centrally, and extending into the boiler setting each side of the boiler, I locate angle-iron plates, rigidly fastened to the boiler, or they may be fastened to the hollow supports, one being at each end, from which
10 the boiler is suspended, so that it may be very readily seen the flame impinges upon the entire outer surface of the lower boiler.

Any modification of the contour of the supports may be made to suit the fancy or the
15 kind of boiler to be constructed without departing from the spirit of my invention.

All the various appliances may be used—such as gages, Ashcroft doors, grates, &c.—as may be desired.

20 Having thus described my invention, its mode of construction and operation, what I claim as new, and desire to secure by Letters Patent, is—

25 1. The combination, with a steam-boiler such as described, of the end hollow supports rigidly fastened to the end heads of said boilers, and

adapted to communicate with the water of the boiler in such manner that a constant circulation of the water is maintained between the body of the boiler and the space formed by the
30 hollow supports, substantially as described.

2. The combination, with a steam-boiler provided with hollow end supports, of the stand-pipe central support, said central support being adapted to receive the feed-water, 35 and to discharge therefrom the sedimentary deposits accumulating in said boiler, as herein shown and described.

3. The combination, with a steam-boiler such as described, of the hollow end supports, the
40 angle-iron, the end arches, and the central stand-pipe, all arranged to form a support for the boiler, and also being adapted for the circulation of the water therein in the manner set forth and described.

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

EDWARD H. ASHCROFT.

Witnesses:

F. W. LOUNSBURY,
ELMER H. MCINTOSH.