D. SULLIVAN.

CONSTRUCTION OF STEAM BOILERS.

No. 189,585. Patented April 17, 1877.

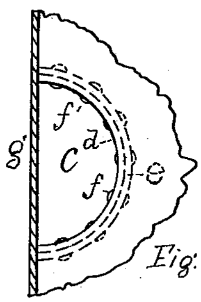

Fig. 2.

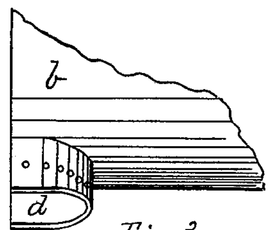

Fig. 3.

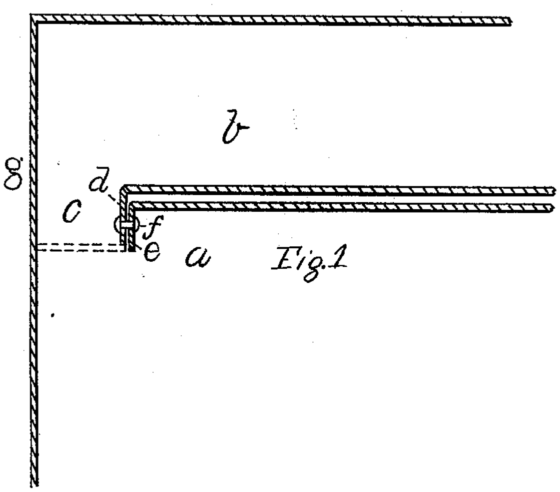

Fig. 1

Witness
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Per ... Franklin ... Atty

UNITED STATES PATENT OFFICE.

DANIEL SULLIVAN, OF BANGOR, MAINE.

IMPROVEMENT IN CONSTRUCTION OF STEAM-BOILERS.

Specification forming part of Letters Patent No. **189,585**, dated April 17, 1877; application filed June 12, 1876.

To all whom it may concern:

Be it known that I, DANIEL SULLIVAN, of Bangor, in the county of Penobscot and State of Maine, have invented certain new and useful Improvements in Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 shows a partial section of a boiler and cylinder with my improved nozzle; Fig. 2, plan of nozzle, as shown from inside cylinder, with section of boiler and cylinder-head. Fig. 3 shows side view of one part of nozzle.

Same letters show like parts.

My invention relates to steam-boilers and generators provided with cylinders for the reception of steam; and consists in an improved method of constructing the nozzles connecting said boilers and generators. My nozzle possesses the advantages of being at once strong, and economically and easily constructed.

In my boiler the head of both boiler and cylinder consists of a continuous plate or plates of metal covering the ends, and secured thereto in the usual manner. I construct my nozzle from the metal of the boiler and cylinder, turning flanges at their ends in the shape of a half-circle, said flanges corresponding to each other, and fitting together when the parts are in place. These flanges are then secured together by rivets or bolts. The head is then put in place, and secured in the usual manner, covering the opening in the circle, and forming a half-round nozzle, the turned boiler-iron forming the curved part thereof.

In the drawing, a partial section of a boiler and cylinder is shown at *a b*. At *c* is the nozzle uniting them, formed by the flange *d* turned from the metal of the cylinder, as described, and the flange *e* made from the boiler metal in like manner, fitting together, and joined by the rivets *f*, and the boiler and cylinder head *g* forming the front of the nozzle, which is of the shape shown in Fig. 2, or half-round, the turned metal forming the curved portion, and the boiler-head completing the nozzle.

Fig. 3 shows a side view of one portion or flange, *d*, showing its formation. I design having a nozzle at each end of the boiler, as usual.

I claim—

In a steam-boiler, the combination of the boiler *a* and dome or cylinder *b*, united by a nozzle, B, formed, in part, by the turned metal of said boiler and dome, and in part by the boiler-head, substantially as set forth and shown.

In testimony that I claim the foregoing I have hereunto set my hand this 7th day of June, 1876.

DANIEL SULLIVAN.

Witnesses:

JOHN R. MASON,

WM. FRANKLIN SEAVEY.