DANIEL SULLIVAN.

Improvement in Boilers.

No. 114,222. Patented April 25, 1871.

Fig. 1.

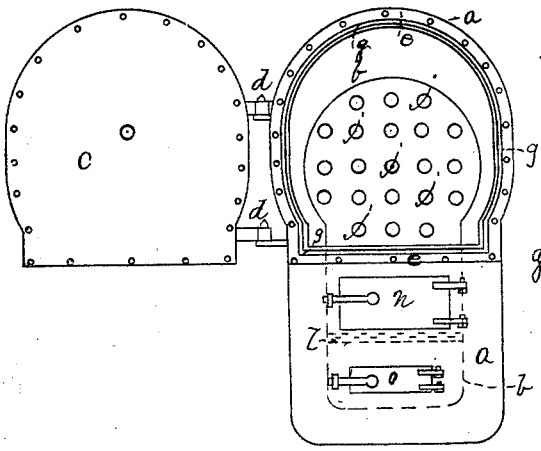
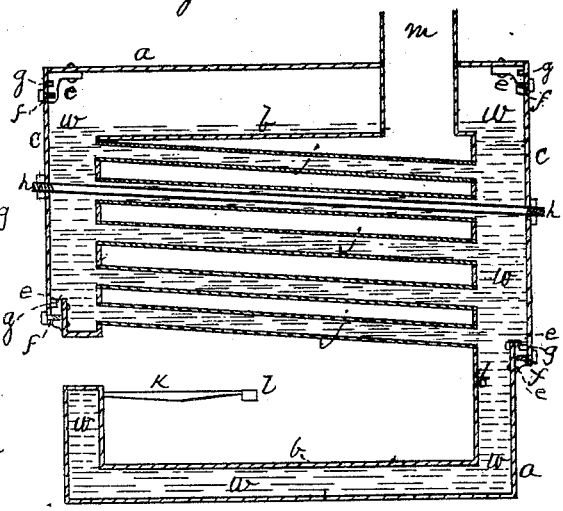


Fig. 2.



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DANIEL SULLIVAN, OF BANGOR, MAINE.

Letters Patent No. 114,222, dated April 25, 1871.

IMPROVEMENT IN BOILERS.

The Schedule referred to in these Letters Patent and making part of the same.

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 a new and useful improved Boiler; and I hereby declare the following to be a full, clear, and exact description of the same, which will enable others to make and use my invention, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 shows a front view, and

Figure 2 a section of my invention.

The object of my invention is to provide a simple, quick, and easy way of getting at the tubes of a tubular boiler for the purpose of cleaning, repairing, or renewing them.

I effect my purpose by hanging plates on the front and back of the boiler upon hinges, making the joint tight by proper packing, and securing the plates, when closed, by screw-bolts, and also by a rod running from front to back of the boiler, through the plates, and fastened in place by nuts or other convenient device.

Reference to the drawing will fully illustrate my invention.

At *a* is shown the outer shell of the boiler.

b, the inner shell, the ends of which constitute the tube-sheets.

c shows the hinged face-plate, hung upon the hinges *d d*.

Around the outer shell of the boiler I bolt the flange *e*, to which the face-plate is secured when closed, as shown in fig. 2 at *f*, by screw-bolts. This flange also extends across the face of the boiler for the same purpose, viz., to secure the plate to.

Around its edge is the groove *g*, for the reception of the packing, which is shown by the letter *g* in the section. This packing makes the joint of the face-plate and flange around the boiler steam and water-tight.

At *h* is shown the rod which runs through the boiler and plates for greater security of fastening.

j j show the water-tubes, extending through the inner boiler directly over the fire-box.

The grate is shown at *k*, the rear end resting on the support *l*, extending across the inner boiler and secured to its sides. (See dotted lines at *l*, fig. 1.)

At *m* is the flue or smoke-stack of the boiler, and *n o*, fig. 1, show respectively the feed and draught-doors.

The water-space is designated by the letter *w*.

The face-plates can be easily removed and the inside of the boiler opened by swinging said plates open on their hinges, first removing the rod and the confining-screws around the edge.

This facilitates cleaning, repairing, or removing the tubes from the boiler, which, if desired, can also be supplied with the usual man-hole.

The screws and rod can be quickly put in place again when the work is done, and the packing renders the joint tight.

This method of construction has many advantages. All the tubes can be readily and easily got at for the purpose of cleaning or scraping them, or performing any other work, since they are all exposed at both ends by opening the face and back plates.

I do not claim a hinged man-hole plate as shown in the patent of J. D. Samson, No. 110,872. My claim is for a different device, and is not intended to do away with or take the place of the man-hole common to steam-boilers. By my device a means is provided for getting at the inside of the tubes of tubular boilers, so that their open ends will be exposed so as to insert a scraper for cleaning and performing other work, which can best be done in this way.

What I claim as my invention, and desire to secure by Letters Patent, is—

The hinged face and back plates of a boiler as herein described, in combination with the grooved flange *e* and rod *h*, as herein set forth.

DANIEL SULLIVAN.

Witnesses:

WM. FRANKLIN SEAVEY,

H. S. FULLER.