

D. LISTER.  
STEAM BOILER.

No. 49,125.

Patented Aug. 1, 1865.

Fig 1.

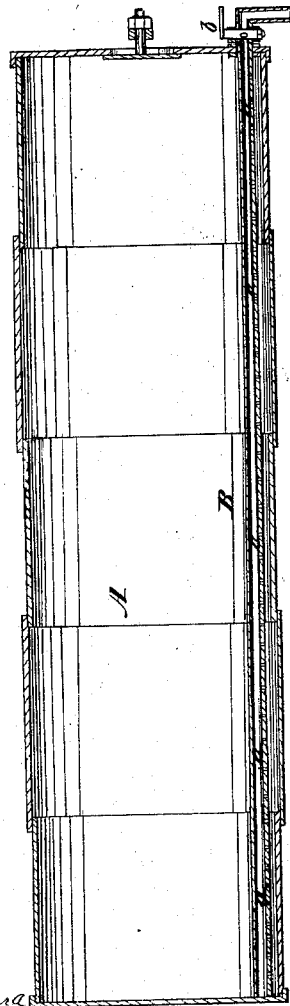
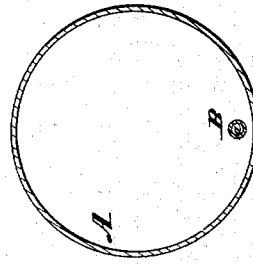


Fig 2.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

DAVID LISTER, OF CARBONDALE, PENNSYLVANIA.

## IMPROVEMENT IN STEAM-BOILERS.

Specification forming part of Letters Patent No. 49,125, dated August 1, 1865.

*To all whom it may concern:*

Be it known that I, DAVID LISTER, of Carbondale, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Improvement in Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a longitudinal central section of this invention. Fig. 2 is a transverse vertical section of the same.

Similar letters of reference indicate like parts.

The object of this invention is to remove the sediment of steam-boilers in an easy and simple manner.

The invention consists in the employment or use of a perforated pipe arranged in the interior of a steam-boiler, close down to its bottom, and extending to all those parts from which the sediment is to be removed in such a manner that when a stop-cock at the end of the pipe is opened the suction created at each of the holes in the perforated pipe will carry off the sediment, and no scale will be allowed to form on any part of the inner surface of the boiler.

A represents a steam-boiler of any of the well-known forms and constructions. The boiler represented in the drawings shows a plain cylinder-boiler, but my invention is equally applicable to locomotive-boilers, or to tubular or flue boilers, or to boilers of any other description.

At the bottom or lower part of this boiler I have arranged a pipe, B, provided with a large number of small holes, *a*, on its under side close to the bottom of the boiler. Said pipe extends throughout the entire boiler, and over all those parts from which the sediment is to be removed. It is closed at one end, and provided at its opposite end with a stop-cock, *b*, so that by opening this cock *b* the water from the interior of the boiler can be blown out whenever it may be desirable. By having the holes *a* close down to those surfaces from which the sediment is to be removed all impurities can be blown out of the steam-boiler before they are allowed to form the scale, and with very little precaution the boiler can be kept clean.

It is obvious that one or more pipes may be employed for this purpose in the same steam-boiler, and the diameter and shape of the pipe or pipes may be increased or decreased, according to circumstances; but in practice it may be found desirable to use iron pipes of cylindrical form and of such diameters as are generally used in the pipes in and around the boiler.

I claim as new and desire to secure by Letters Patent—

A pipe, B, arranged near to the bottom or to that surface of a steam-boiler from which the sediment is to be removed, and perforated with a number of holes, *a*, in the manner and for the purpose substantially as herein shown and described.

DAVID LISTER.

Witnesses:

HORATIO S. PIERCE,  
JAMES STOTT.