J. E. TAYLOR.

Steam-Engine Cylinder.

No. 162,120. Patented April 13, 1875.

Fig. 1.

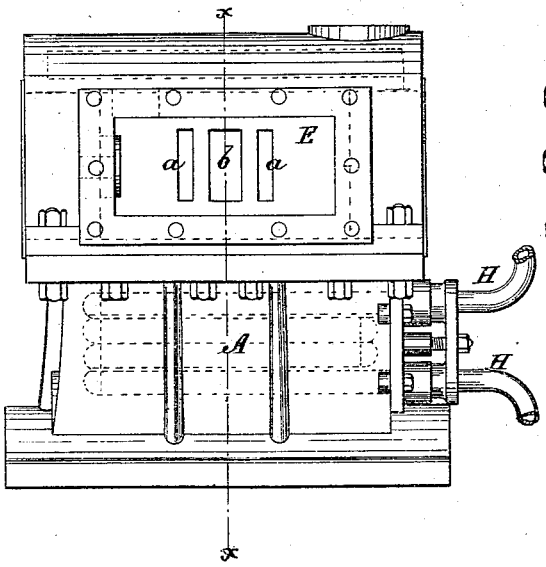


Fig 2

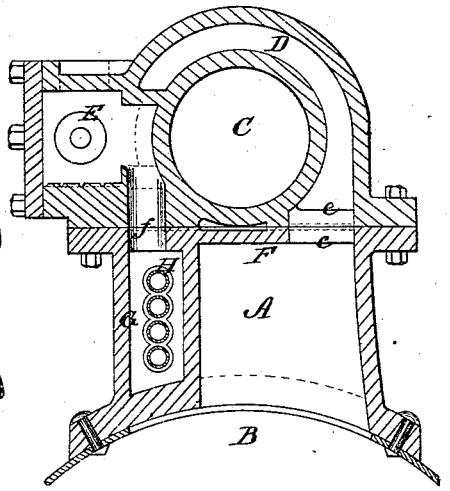


Fig. 3.

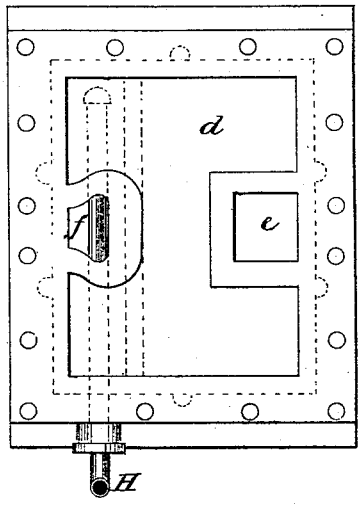
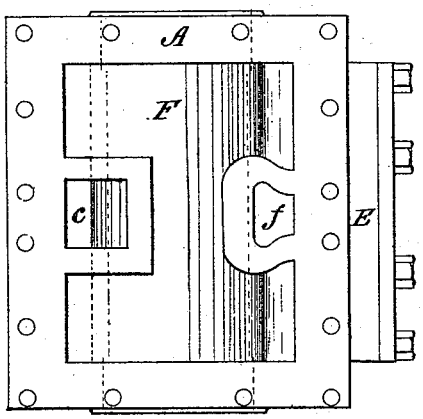


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES E. TAYLOR, OF WESTMINSTER, MARYLAND, ASSIGNOR TO THE TAYLOR MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN STEAM-ENGINE CYLINDERS.

Specification forming part of Letters Patent No. **162,120**, dated April 13, 1875; application filed March 12, 1875.

To all whom it may concern:

Be it known that I, JAMES E. TAYLOR, of Westminster, in the county of Carroll and State of Maryland, have invented a new and Improved Steam-Incased Engine-Cylinder; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a side elevation; Fig. 2, a transverse section through line *x x* of Fig. 1; Fig. 3, an inverted plan of the cylinder; Fig. 4, plan of the steam-dome with cylinder removed.

This invention relates to certain improvements upon the patent granted to Gilbert Bradford, No. 115,928, June 13, 1871; and it consists in the peculiar construction of the steam-dome, in combination with the steam-incased cylinder, whereby the latter is relieved from the direct pressure of the entire subjacent body of steam, and its tendency to become strained and loosened from the dome obviated, and the consequent leakage of steam prevented.

In the drawing, A represents the steam-dome, which opens into and is attached to the top of the boiler B. C is the cylinder, having an annular chamber, D, around the same, which is filled with steam to prevent condensation in the cylinder. E is the slide-valve box, having induction-ports *a a* and exhaust *b*. The steam-dome A, instead of being made open at the top, and communicating with the chamber D throughout its entire length, so as to form a part of the dome, is made with a top, F, having a comparatively small communication, *c*, with the chamber D. The cylinder is also made with a bottom, *d*, that fits the top of the dome, so as to cause the openings *c e* to register, the table being raised at the edges, so as to insure a tight joint. The object of this small communication between the dome and the cylinder-encompassing chamber is to prevent the uprising of the cylinder from the vast pressure of the subjacent steam, which, if the partition F is not interposed, soon loosens the cylinder connection, and causes a leakage of steam. The small communication *c* allows the steam admitted therethrough to react upon the bottom-plate of the cylinder, and thereby obviate the great upward strain which is the principal objection to this class of steam-engines. G is a side chamber, which is arranged in the steam-dome, and communicates through an opening, *f*, with the exhaust of the slide-valve box. The object of this chamber is is to utilize, in a convenient manner, the exhaust steam by heating the feed-water, and for this purpose I place therein the feed-water pipes H.

I am aware of the fact that it is not new to construct steam-incased cylinders above the boiler, which communicate throughout their entire length with the steam-dome, and I, therefore, limit my invention to the peculiar construction which obviates the objection to which the above-described cylinders are open.

Having thus described my invention, what I claim as new is—

The steam-dome A, having a top, F, provided with an opening, *c*, in combination with a steam-incased cylinder, having a bottom plate, *d*, and a corresponding opening, *e*, substantially as and for the purpose described.

JAMES E. TAYLOR.

Witnesses:
G. E. SANGSTON,
WM. D. ELDRIDGE.