

C. H. HASWELL.
Steam-Boilers.

No. 151,777.

Patented June 9, 1874.

Fig. 1.

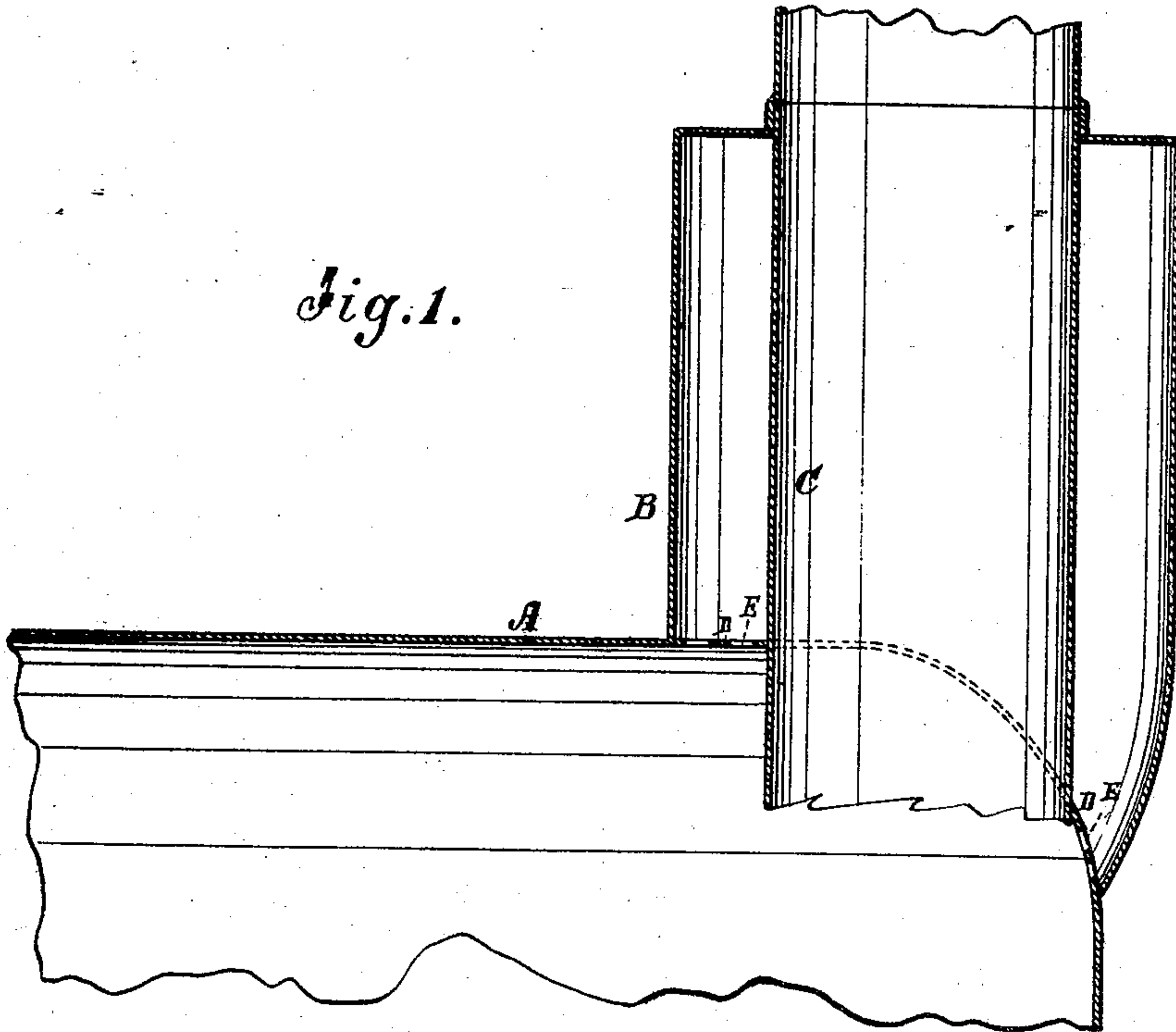
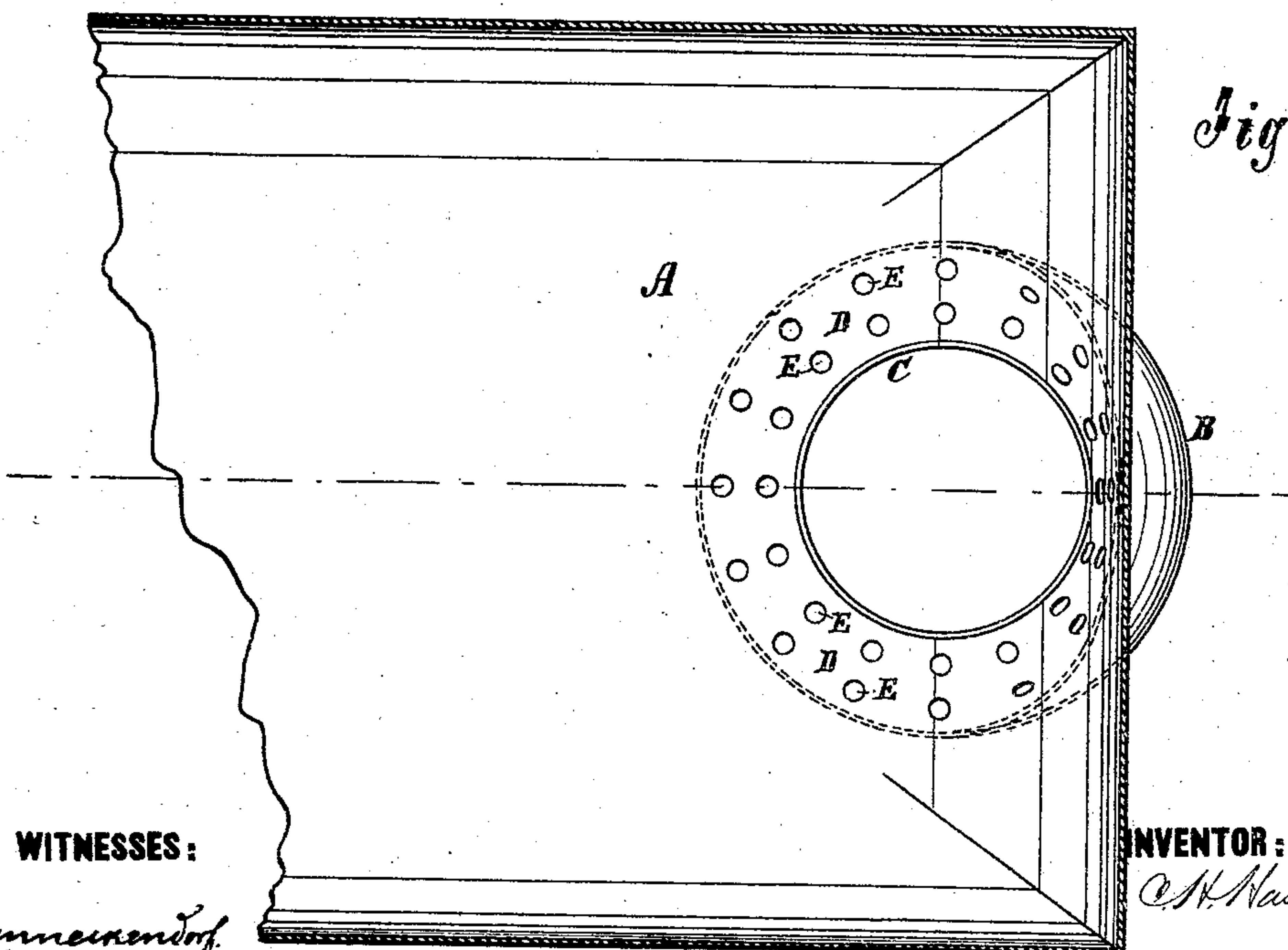


Fig. 2.



WITNESSES:

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BY

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UNITED STATES PATENT OFFICE.

CHARLES H. HASWELL, OF NEW YORK, N. Y.

IMPROVEMENT IN STEAM-BOILERS.

Specification forming part of Letters Patent No. **151,777**, dated June 9, 1874; application filed April 4, 1874.

CASE B.

To all whom it may concern :

Be it known that I, CHARLES H. HASWELL, of the city, county, and State of New York, have invented a new and useful Improvement in Steam-Boilers, of which the following is a specification :

My invention relates to steam-boilers having a steam-chimney, notably marine-boilers, but others also; and it consists in retaining the boiler-shell between the outer shell or cylinder and the inner shell of the steam-jacket, and jointing it to the latter instead of cutting it out, as heretofore done, the said retained portion being perforated to allow a free circulation of the steam between the boiler proper and the steam-chimney. The object of the invention is twofold, namely, to strengthen the boiler and brace the chimney.

Figure 1 is a sectional elevation of so much of a boiler as is required to illustrate my invention. Fig. 2 is a plan view of Fig. 1 inverted.

Similar letters of reference indicate corresponding parts.

A is the boiler-shell; B, the outer shell of the steam-chimney; C, the inner shell, which, at its lower end, connects with the ordinary smoke-flue; D, the portion of the boiler-shell extending from the outer shell of the steam-chimney B to the inner shell C; and E, the perforations, to allow the steam to circulate freely between the boiler and the steam-chimney.

Hitherto it has been customary to remove the entire portion D of the boiler-shell, and it

has been a great and entirely unnecessary cause of weakness to the boiler, for, by extending it to the inner shell C, its strength to resist rupture is preserved directly in proportion to the width of the metal retained, and the steam circulates just as well through the holes as if the whole space was open. Besides preserving much of the strength against the internal strain heretofore lost, the weight of the steam-chimney and smoke-pipe on the boiler is not so injurious, because the boiler-shell is supported vertically by the inner shell of the steam-chimney, with which it is connected, so that the injuries to the joint between the chimney and the boiler-shell, by the rising and falling of the shell due to the varying conditions of internal pressure and temperature when steam is on, and external pressure and temperature when it is off, are avoided. Moreover, the extension of the boiler-shell beneath the steam-chimney and up to and around the inner shell thereof serves as a brace to the latter.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A steam-chimney having a perforated bottom formed by an extension of the boiler-shell beneath it, whereby the boiler and chimney are both strengthened, substantially as set forth.

CHAS. H. HASWELL.

Witnesses:

T. B. MOSHER,
ALEX. F. ROBERTS.