G. STEELE.

Steam-Jets for Furnaces.

No. 160,480. Patented March 2, 1875.

Fig. 1.

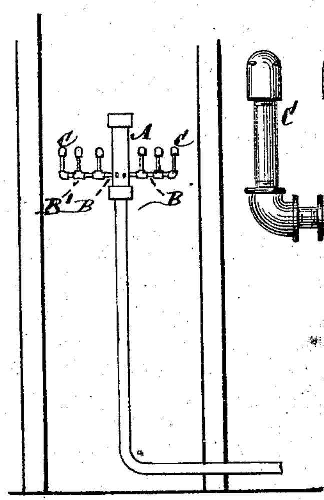


Fig. 2.

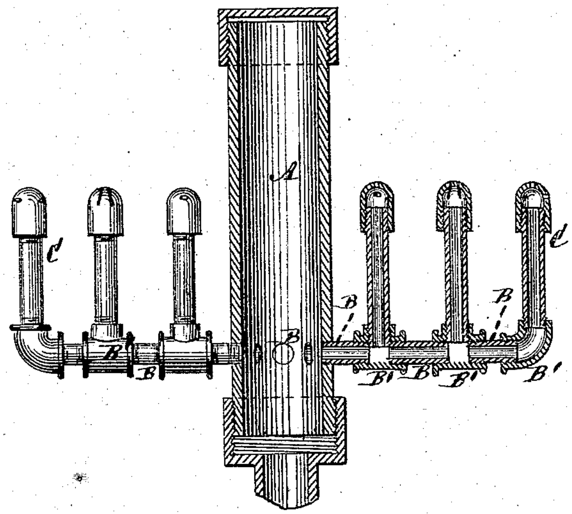
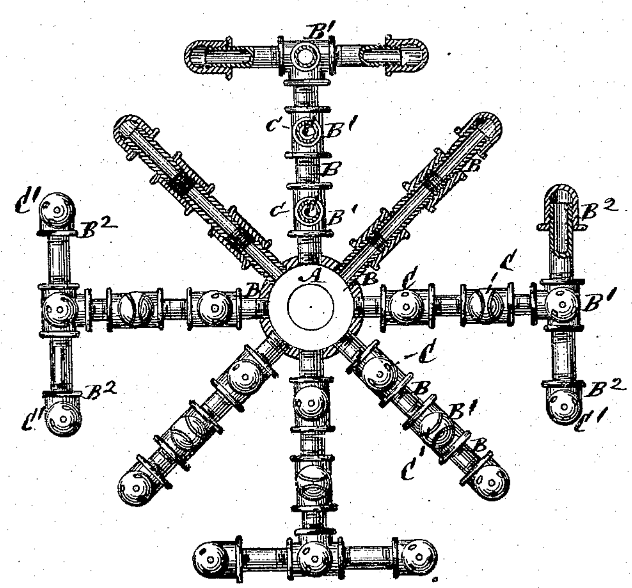


Fig. 3.



Witnesses.

John Becker.

Fred Haynes

George Steele
by his Attorneys
Brown & Allen

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

GEORGE STEELE, OF MOTT HAVEN, NEW YORK, N. Y.

IMPROVEMENT IN STEAM-JETS FOR FURNACES.

Specification forming part of Letters Patent No. **160,480**, dated March 2, 1875; application filed September 3, 1874.

To all whom it may concern:

Be it known that I, GEORGE STEELE, of Mott Haven, New York city, in the county and State of New York, have invented an Improvement in Steam-Jets for Steam-Generator Furnaces, and for other purposes, of which the following is a specification:

This invention relates especially to steam-jets in the flue or chimney of furnaces for marine engines and other boilers, whereby an artificial or forced draft is produced. It essentially differs from other arrangements, in which there is combined with a steam-jet a divided flue and a valve for one division of the flue, and in which jets of steam are directed up the central divided portion of the flue by a series of nozzles beneath, the annular space around the same being closed by segmental dampers, which are opened when a natural draft is used. My invention consists in a central steam-supply chamber or reservoir within the chimney, provided with radial gas-pipes or hollow arms, having detachable nipple or nozzle connections, arranged to give a most effective distribution of the jets within the chimney without interference with the natural draft, and dispensing with dampers; also using less steam than heretofore, and providing for contraction or expansion of the apparatus to suit different-sized chimneys.

Figure 1 is a vertical elevation or diagram of my improved apparatus applied to the chimney of a marine-engine boiler-furnace; Fig. 2, a mainly sectional vertical view of said apparatus on a larger scale; and Fig. 3 a partly sectional plan of the same.

A is a central steam chamber or reservoir, in which a head of steam is kept or furnished to supply the several nipples or nozzles. B B are the radial pipes from said reservoir, made up in part of detachable nipple-connections B^1 B^1, carrying upwardly-projecting nipples or nozzles C C, at different distances apart in the length of the horizontal or radial pipes B B, and the outer connection B^1 of said pipes, or certain of them, having cross-pipes and nipple-connections B^2 B^2, with attached upwardly-projecting nipples or nozzles C′ C′. By this construction of jet apparatus there is always—that is, when the steam is turned on—a full supply of steam to the jets, and a most efficient distribution of the steam over the whole or greater part of the area of the chimney, and but little steam used, while the apparatus in no way interferes with the natural draft; and, by the detachable screw-connections carrying the nipples, not only may any of said connections and their nipples be readily removed for repair, but nipples of different sizes and connections of different lengths may be substituted to adapt the apparatus to different-sized chimneys. This jet is applicable to the ventilation of the holds or stoke-holes of vessels, where its advantages are the same as in furnaces.

I claim—

The combination of the steam-reservoir A, the radial pipes B, the detachable nipple-connections B^1 B^2, and the nipples C C′, substantially as and for the purpose herein set forth.

GEO. STEELE.

Witnesses:

BENJAMIN W. HOFFMAN,

FRED. HAYNES.