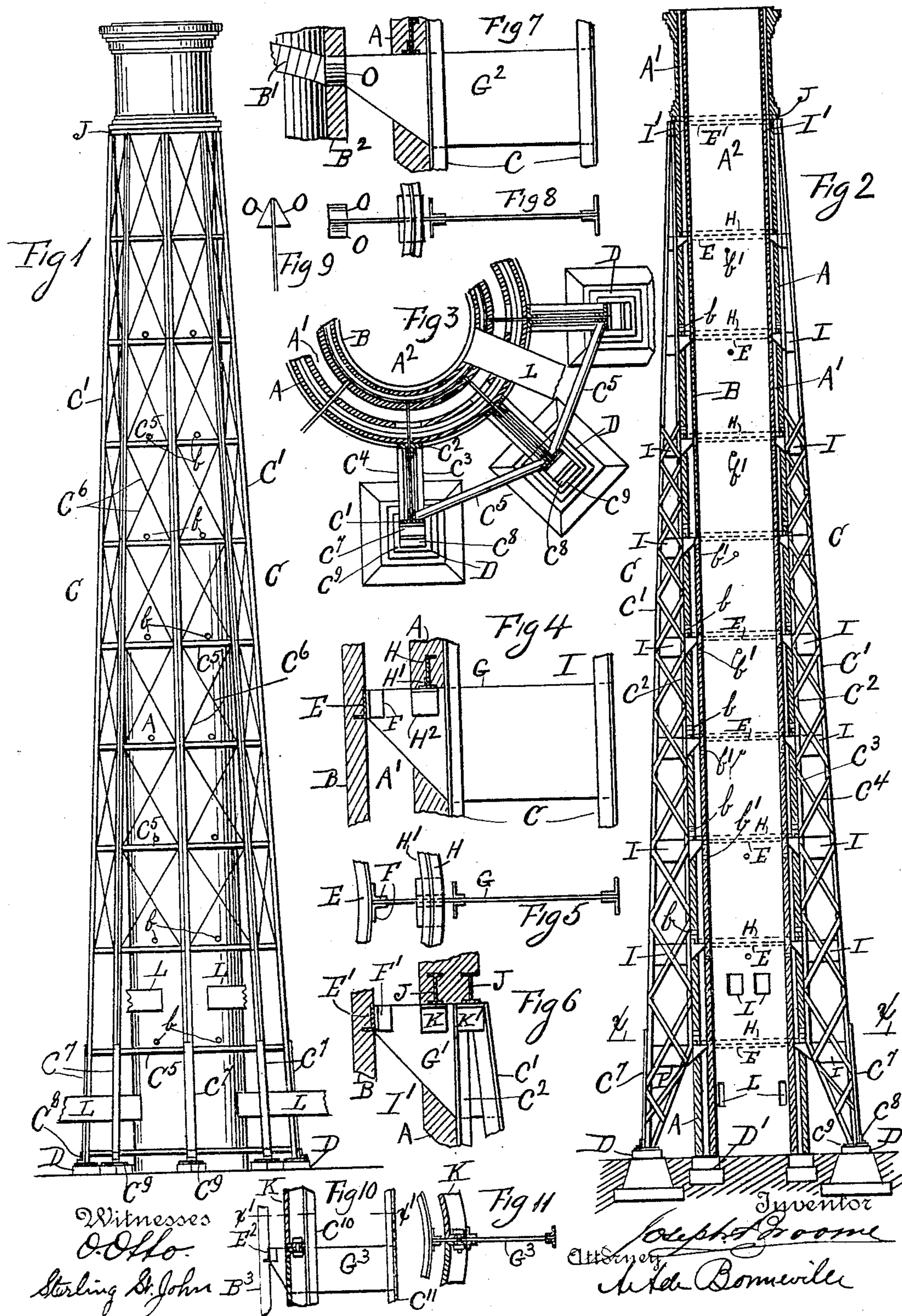


No. 795,332.

PATENTED JULY 25, 1905.

J. BROOME.  
CHIMNEY.

APPLIOATION FILED SEPT. 26, 1904.



# UNITED STATES PATENT OFFICE.

JOSEPH BROOME, OF BAYONNE, NEW JERSEY.

## CHIMNEY.

No. 795,332.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed September 26, 1904. Serial No. 226,001.

*To all whom it may concern:*

Be it known that I, JOSEPH BROOME, a subject of the King of Great Britain, and a resident of Bayonne, in the county of Hudson and State of New Jersey, have invented a certain new and useful Chimney, of which the following is a specification.

This invention relates to chimneys composed of a core of masonry, brick, iron, steel, or other material reinforced by a steel or iron structure on the outside and inside.

The organization of the invention is characterized by a chimney with the usual inner lining of fire-brick and the like, all of which is supported by a combination of trusses that supports different sections of the chimney proper in both vertical and horizontal directions, thereby allowing the walls of the said chimney to be light and thin. Sections of the chimney can be removed without interference with other portions thereof, and flues can be inserted through its walls to connect with the main flue without endangering its strength or stability. Circulating air-ducts are formed between the outer wall and the lining, allowing the induction of air from the outside to the main flue.

Referring to the drawings, Figure 1 shows an elevation of a chimney embodying the invention. Fig. 2 represents a vertical axial section of Fig. 1. Fig. 3 is a partially-enlarged section of Fig. 2 on the line *xx*. Fig. 4 represents a fragmentary portion of Fig. 2. Fig. 5 is a partial top view of Fig. 4. Fig. 6 is an enlarged fragmentary view of the upper portion of Fig. 2. Fig. 7 is a view similar to Fig. 4 somewhat modified. Fig. 8 is a partial top view of Fig. 7. Fig. 9 shows a partial end view of Fig. 8. Fig. 10 is a view similar to Fig. 4 with a still further modification. Fig. 11 shows a partial section of Fig. 10 on the line *x' x'*.

An inclined core or outer wall of masonry or brick is shown at A, on the inside of which is located the lining or fire-brick wall B, forming an annular air-space A' between them. A foundation D' below the wall A and lining B supports the lower section of the chimney. Around the outer wall A there are located the vertical trusses C, consisting of the chords C' C<sup>2</sup>, connected by the inclined members C<sup>3</sup> C<sup>4</sup>. The trusses C are connected by the braces C<sup>5</sup> and the inclined members C<sup>6</sup>. At the lower portions of the outer chords C' of the said trusses are secured the cover-plates C<sup>7</sup>, which latter are connected to the angle-

irons C<sup>8</sup>, that form the feet for the trusses C and by means of which they are secured with the plates C<sup>9</sup> to the foundation-stones D.

Embedded in the lining B are the angular rings E, to which are secured the angle-irons F, that in turn have between them and secured thereto the gusset-plates G, which latter are fastened to and between the chords of the trusses C.

In the outer wall A is embedded the channel-iron ring H, which is reinforced by the angle-iron ring H', and the angle-clips H<sup>2</sup>, fastened to the said gusset-plates G, form a support for both the rings H and H'. The combination of the plate G with its appurtenances constitute a bracket which I will designate with the letter I. A number of such brackets, with their rings, &c., are fastened to the trusses C at different levels, supporting the chimney in sections.

At the upper end of each pair of chords C' C<sup>2</sup> there is formed a bracket I', consisting of the gusset-plate G', to which is fastened the angular ring E' by means of the angle-clips F'. The said gusset-plate G' also carries the I-beam rings J by means of the angle-clips K and K'.

Extending from the chimney are shown the flues L. In the outer wall of the chimney are formed the openings *b* and through the inner lining the openings *b'*, forming ducts through the annular space A' from the outside to the inside of the flue A<sup>2</sup>.

In Figs. 7 to 9 the invention is modified by eliminating the angular rings E and substituting arches B', built in the lining B<sup>2</sup>, as shown, and which are supported on inclined shoes or supports O, extending from the gussets G<sup>2</sup> of the brackets, that are carried by the trusses C.

A further modification is shown in Figs. 10 and 11, where the inner lining or fire-brick is represented at B<sup>3</sup>, having embedded therein the angle E<sup>2</sup>, supported by a gusset G<sup>3</sup>, fastened between the chords C<sup>10</sup> C<sup>11</sup> of the girders surrounding the chimney. Instead of an outer wall of masonry or brick flanged sections K, of iron or steel, are bolted together and to the gusset-plate G<sup>3</sup>.

Having described my invention, I claim—

1. The combination in a chimney of sections of trusses around the chimney, means between each section and the trusses to support each section independently of any other section of the chimney.

2. The combination in a chimney of sec-

tions, a ring connected up with each section, trusses surrounding the chimney, brackets extending from the trusses fastened to and carrying said rings with their sections.

3. The combination of a chimney of brick, rings embedded in the said brick, trusses surrounding the brick, brackets extending from the trusses fastened to and carrying the said rings and brick chimney.

4. In a chimney the combination of rings embedded therein forming sections in the chimney, trusses surrounding the chimney, brackets extending from the trusses carrying the said rings, a flue extending through the walls of the chimney connecting with the main flue thereof.

5. In a chimney the combination of sections in the walls and lining thereof, trusses on the outside of the chimney and surrounding the same, brackets extending from the trusses and supporting the said sections, flues in the walls of the chimney connecting with the main flue of the chimney.

6. In a chimney the combination of sections in the walls and lining thereof, arches in the

lining between the different sections, trusses on the outside of the chimney and surrounding the same, brackets extending from the trusses supporting the sections of the walls and the arches of the lining.

7. In a chimney the combination of sections in the walls and lining thereof, air-ducts from the outside to the inside of the chimney, trusses surrounding the walls of the chimney, braces connecting the trusses and brackets extending from the trusses supporting the said sections.

8. In a chimney the combination of an outer wall in sections, a lining within the outer wall in sections, trusses surrounding the outer walls, gusset-plates extending from the trusses and means between the gusset-plates and the sections to support the latter.

Signed at New York, in the county of New York and State of New York, this 24th day of September, A. D. 1904.

JOSEPH BROOME. [L. s.]

Witnesses:

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