

(No Model.)

J. HADLEY.

TUYERE IRON.

No. 312,628.

Patented Feb. 24, 1885.

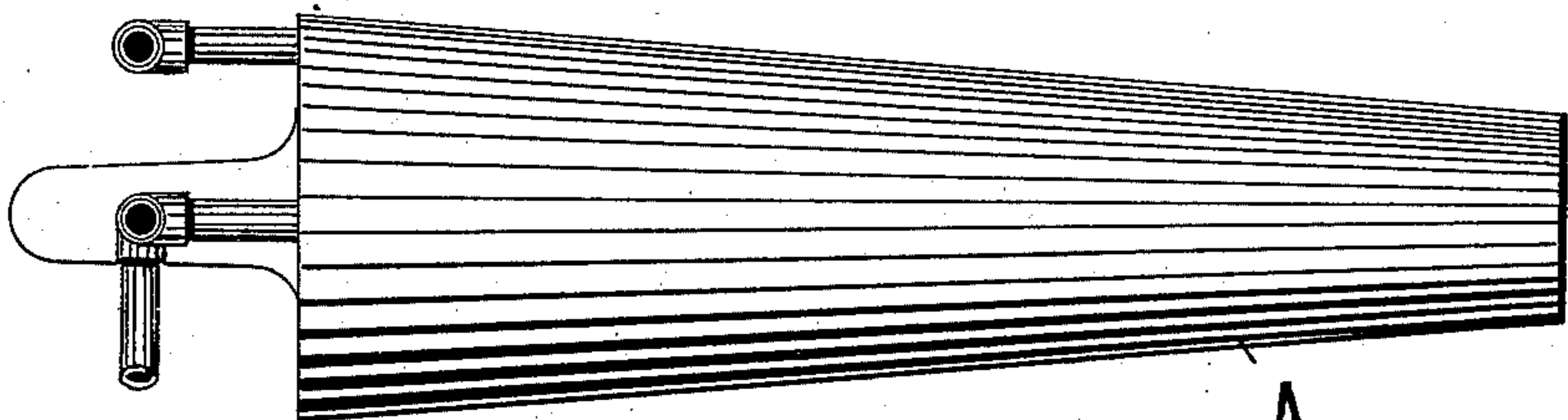


Fig. 1

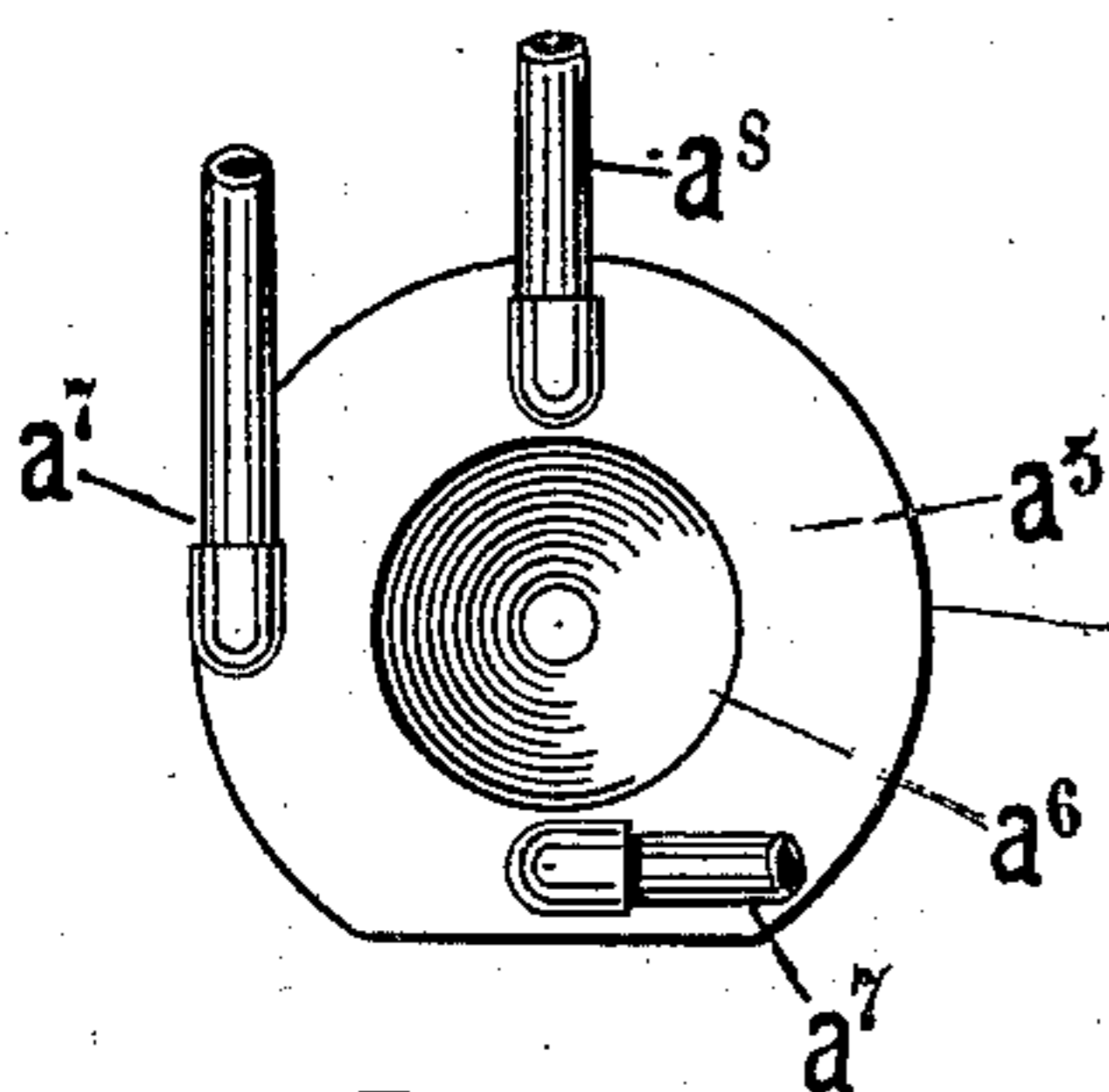


Fig. 2

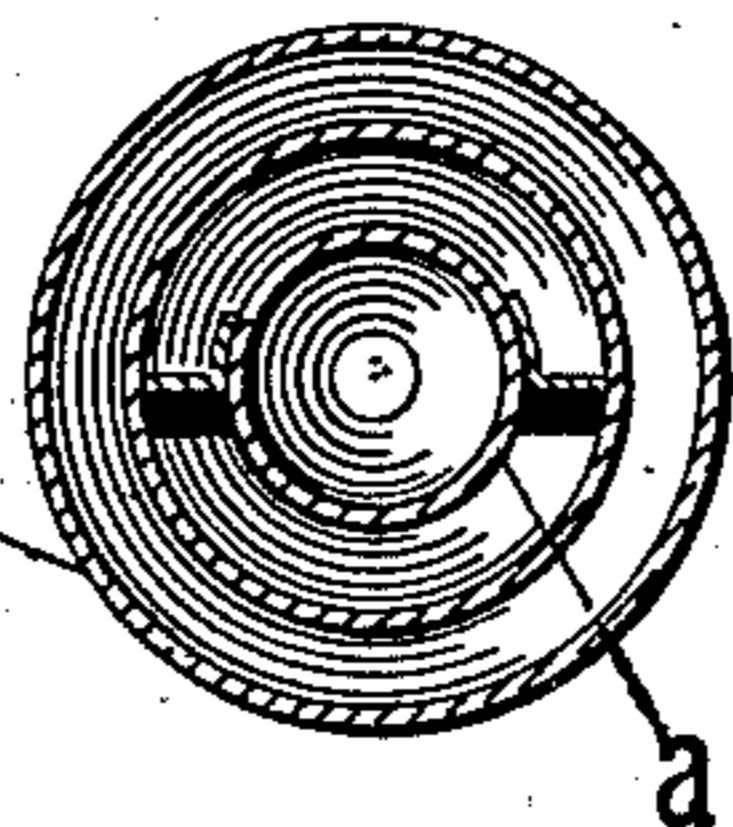


Fig. 3

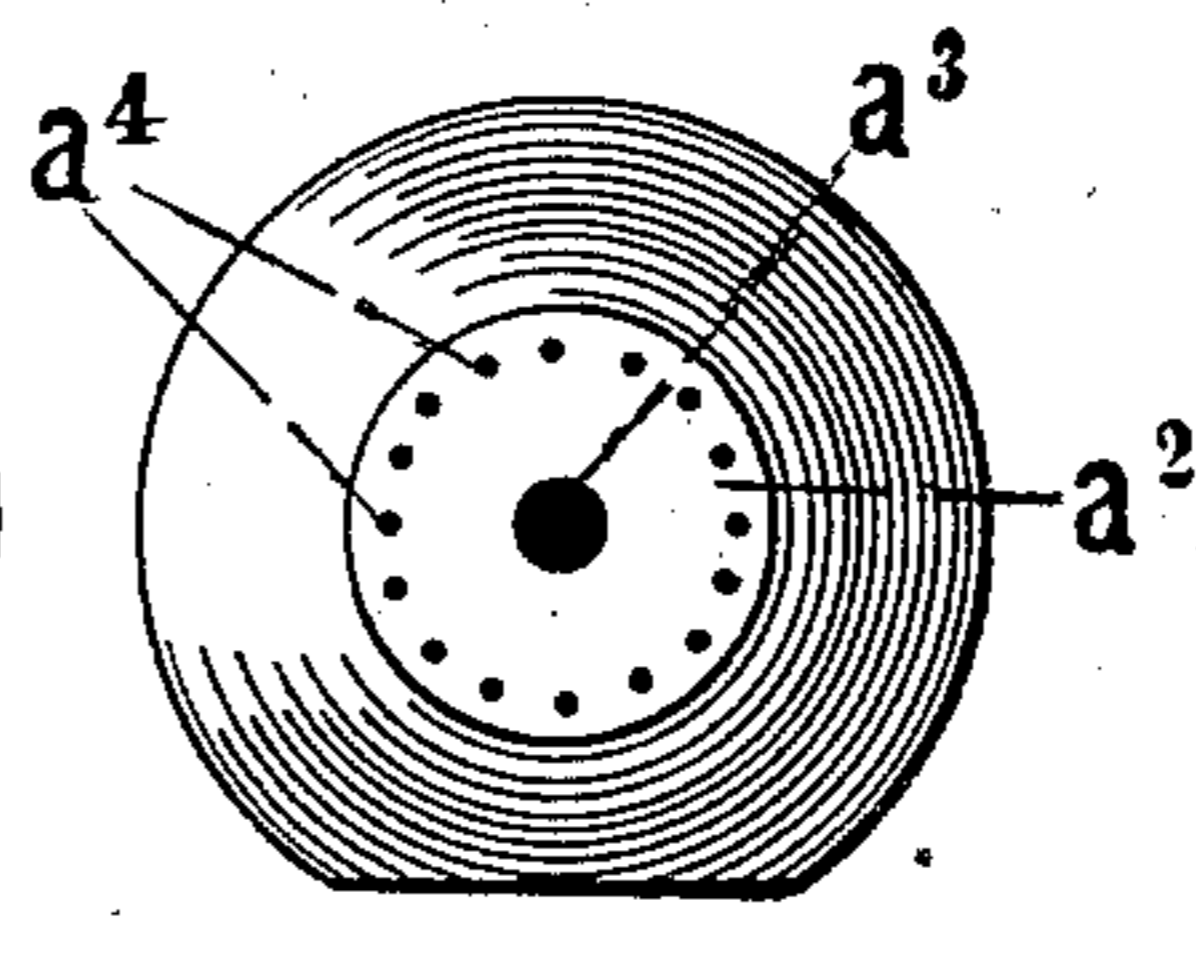


Fig. 4

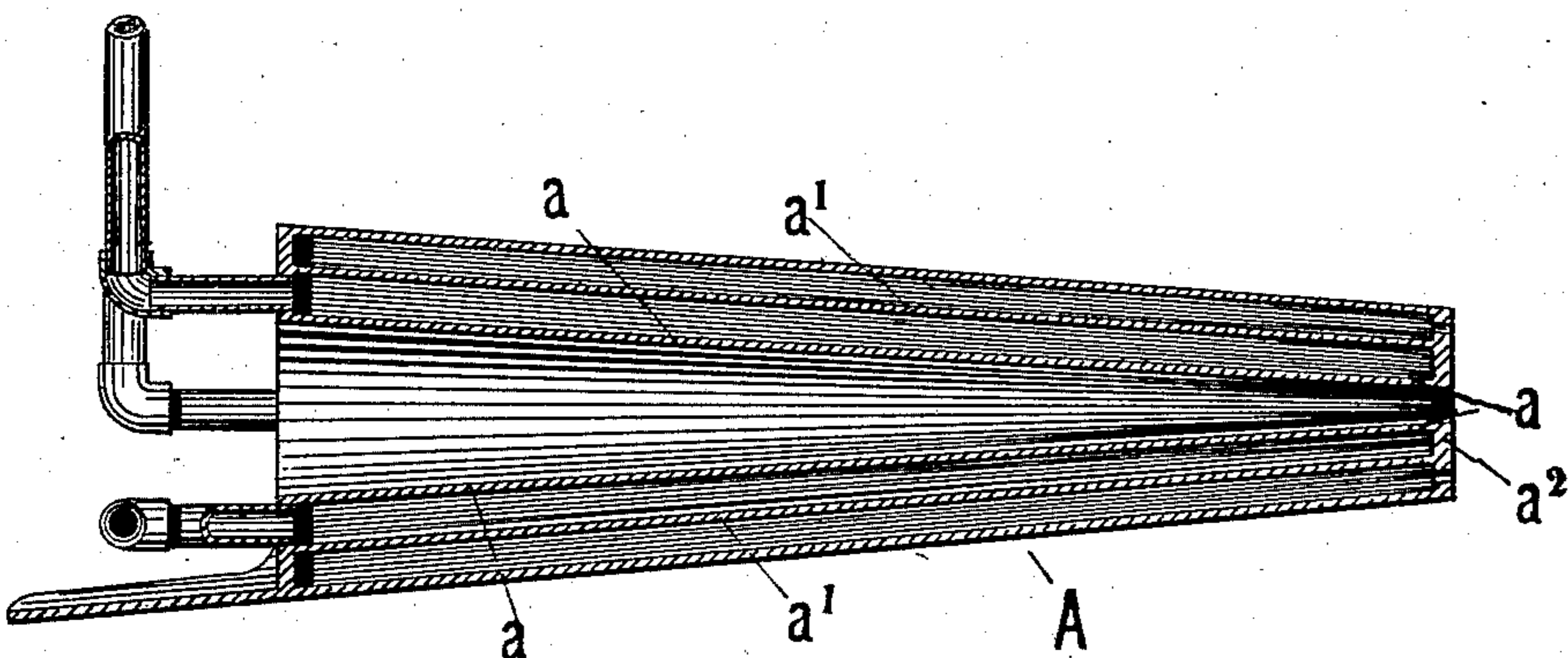


Fig. 5

WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN HADLEY, OF ALEXANDRIA, VIRGINIA.

TUYERE-IRON.

SPECIFICATION forming part of Letters Patent No. 312,628, dated February 24, 1885.

Application filed August 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN HADLEY, of Alexandria, county of Alexandria, and State of Virginia, have invented new and useful Improvements in Tuyere Irons; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 This invention has for its object the production of a tuyere-iron which shall permit the introduction into the furnace of an auxiliary stream of gas in connection with the ordinary air-stream of the blast; and it consists in the
15 special construction of the iron, as will be fully described hereinafter.

In the drawings, Figure 1 represents a top view of the iron and the pipes connected thereto; Fig. 2, a rear end view of the same; Fig. 3,
20 a transverse sectional view of the iron; Fig. 4, a partial front end view of the same, and Fig. 5 a longitudinal sectional view of the iron and pipes shown in Fig. 1.

To enable others skilled in the art to make
25 my improved iron, I will proceed to describe fully the construction of the same.

A represents an outer shell or plate, which is made of the usual material in the ordinary conical form, as shown.

30 a , Figs. 3 and 5, represents an inner shell or plate lying parallel with the outer shell at a proper distance therefrom, as shown.

a' represents an intermediate shell or plate lying parallel with the outer and inner shells,
35 as shown.

a^2 represents a round plate forming the front end of the iron, which is provided with a central opening, a^3 , and any proper number of openings, $a^4 a^4$, as shown.

40 a^5 , Fig. 2, represents a round plate forming

the rear end of the iron, which is provided with the large central opening, a^6 , for receiving the discharge end of the main pipe of the blast in the manner well understood, and the three smaller side openings for receiving the ends of
45 the water-circulating pipes $a^7 a^7$ and the gas-pipe a^8 , as shown.

When the parts of the iron are united together, the inner shell forms an open chamber for the passage of the air-stream of the blast.
50 The inner shell, in connection with the intermediate shell and the end plates, forms a closed chamber connecting with the inlet and outlet water-pipes, and the intermediate shell, in connection with the outer shell, forms a chamber
55 having openings at its front end, which chamber connects with the gas-supply pipe, as shown.

The structure as a whole constitutes an improved article of manufacture. 60

If desired, the circulation of water through the inner chamber, $a^7 a^7$, and the flow of gas through the outer chamber, a^8 , may be reversed by changing the location of the pipes leading thereto and the openings in the ends
65 accordingly.

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

The tuyere-iron described, consisting of the
70 outer shell, A, the inner shell, a , and intermediate shell, a' , united by the end plates, $a^2 a^5$, as described.

This specification signed and witnessed this 27th day of June, 1884.

JOHN HADLEY.

Witnesses:

H. W. BEADLE,
BETSEY HADLEY.