

R. HUFF.  
Steam-Boiler Furnaces.

No. 155,518.

Patented Sept. 29, 1874.

Fig. 1.

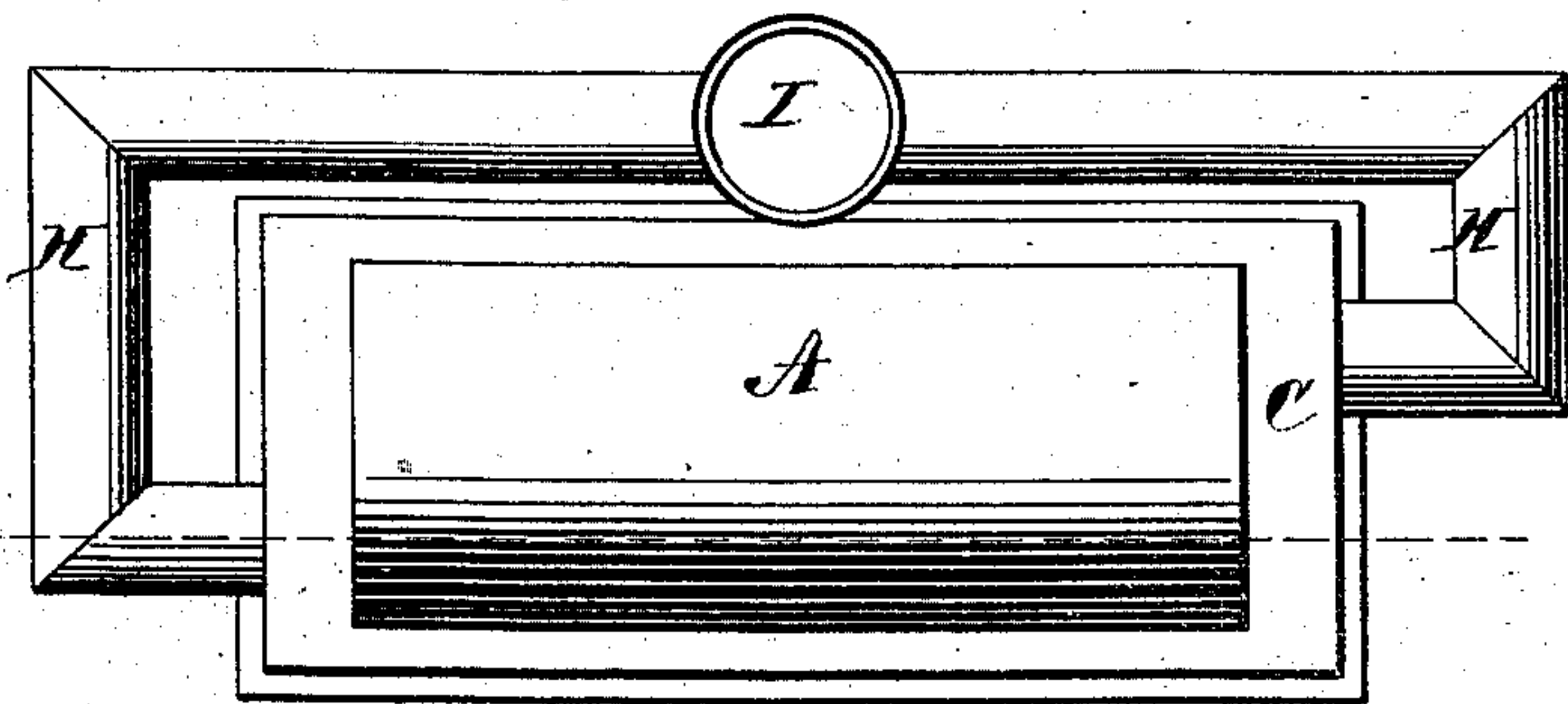


Fig. 2.

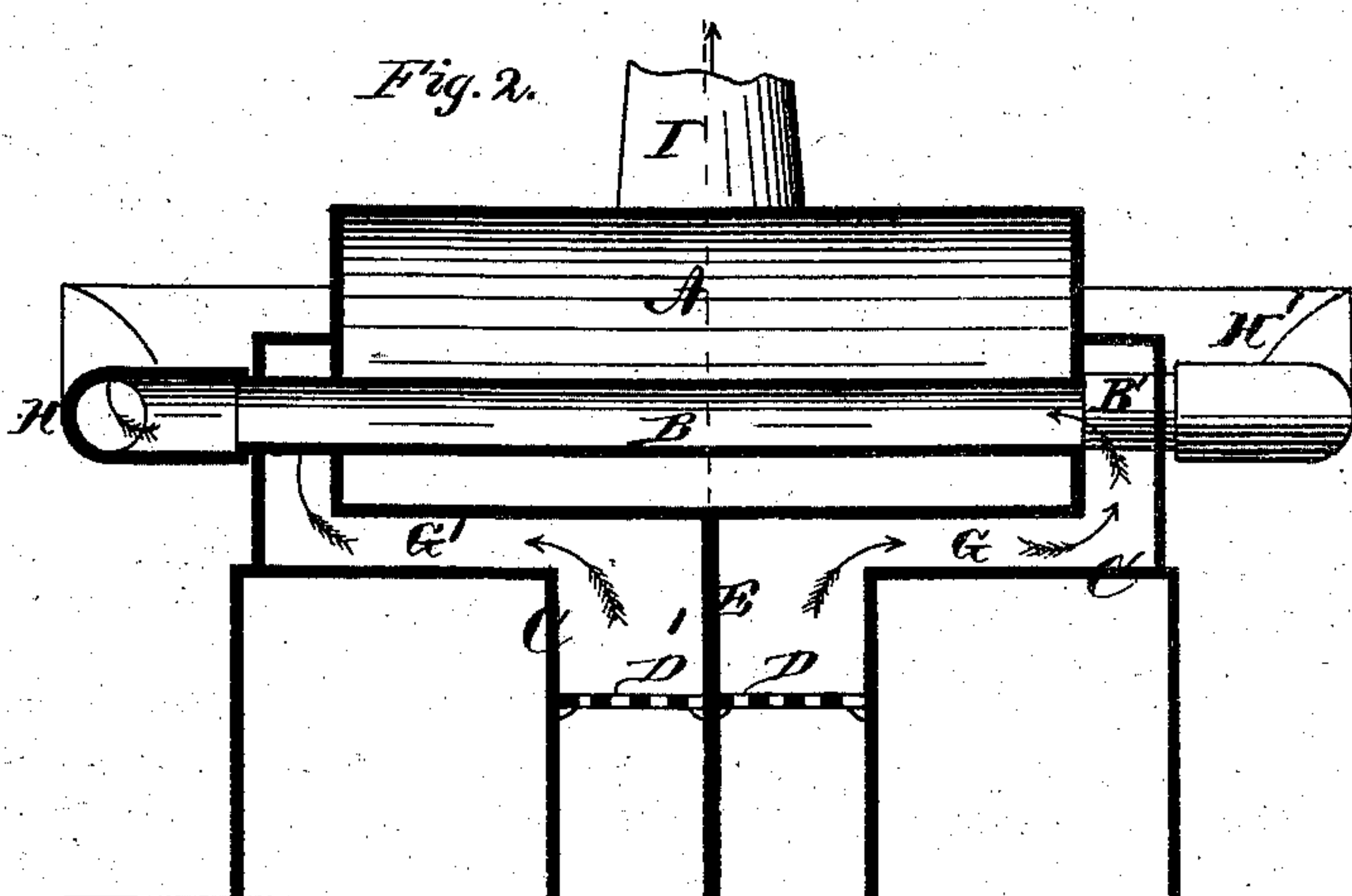
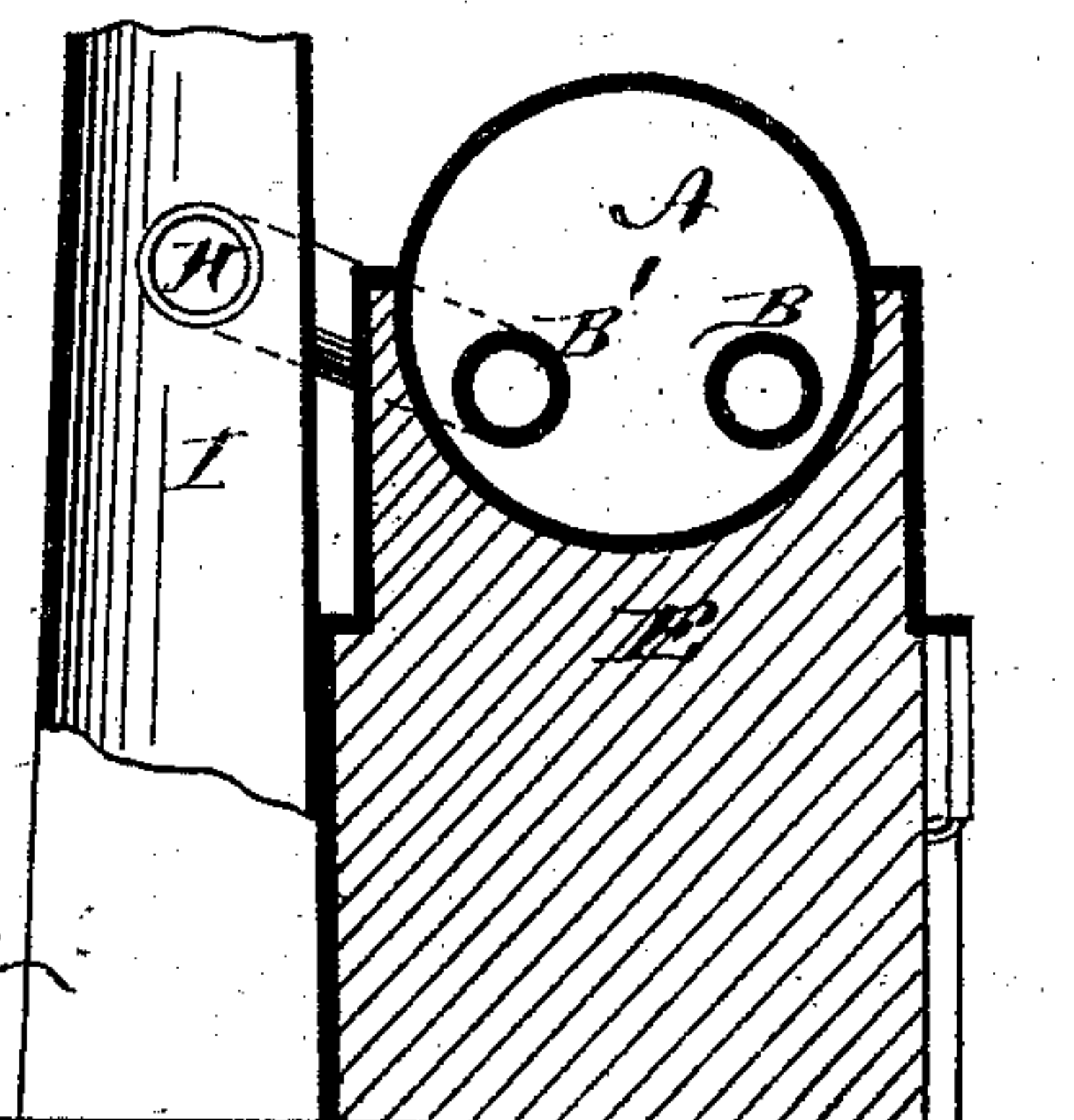


Fig. 3.



Witnesses:

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# UNITED STATES PATENT OFFICE.

RICHARD HUFF, OF ZANESVILLE, OHIO.

## IMPROVEMENT IN STEAM-BOILER FURNACES.

Specification forming part of Letters Patent No. **155,518**, dated September 29, 1874; application filed March 25, 1873.

*To all whom it may concern:*

Be it known that I, RICHARD HUFF, of Zanesville, in the county of Muskingum and in the State of Ohio, have invented certain new and useful Improvements in Furnace Steam-Boiler; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a furnace for a two-flue steam-boiler, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a plan view, Fig. 2 a longitudinal vertical section, and Fig. 3 a transverse vertical section, of my furnace.

A represents a horizontal cylindrical steam-boiler, provided with two flues, B B. C represents the furnace, built of stone, brick, or metal, and with the fire-place D D under the center of the boiler, as shown in Fig. 2. In the center of the furnace is a vertical division-wall, E, built of fire-brick or other suitable material. G G are flues in the furnace, conducting the heat in opposite directions from the center of the furnace to the flues of the boiler. The smoke then passes through the boiler-flues B B in opposite directions, and out through pipes or flues H H to the smoke-stack I, which may be located in rear or on top of the boiler.

With this furnace steam can be gotten up in much less time than with the ordinary old-

style furnace. There is much less danger of burning out the boiler, for the reason that the fire, being in the center and thrown each way, equalizes the heat over the whole surface of the boiler.

The partition-wall E in the center of the furnace divides the fire and produces a draft either or both ways. This is effected by making the division-wall E to extend from the boiler down through the grate to the bottom of the fire-box and ash-pit, as shown in Fig. 2, thus entirely shutting off the draft from one division, D, of the furnace into the other, which cannot be certainly effected without extending the partition-wall from the boiler to the bottom of the ash-pit.

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

In combination with the single boiler A, provided with the flues B B', passing in alternate directions longitudinally through it, furnace D D', situated midway of its length, and combustion-chambers G G', the partition-wall E, extending transversely of the length of the boiler from front to rear of the furnace, and to the bottom of the ash-pit, whereby the entire heat from the furnace is made to pass through the combustion-chambers G G' and through the boiler-flues in opposite directions, substantially as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 4th day of March, 1873.

RICHARD HUFF.

Witnesses:

WM. GRAY,  
JOS. S. PARKE.