

A. J. HAWS.

BESSEMER CONVERTER BOTTOMS.

No. 188,898.

Patented March 27, 1877.

Fig. 1

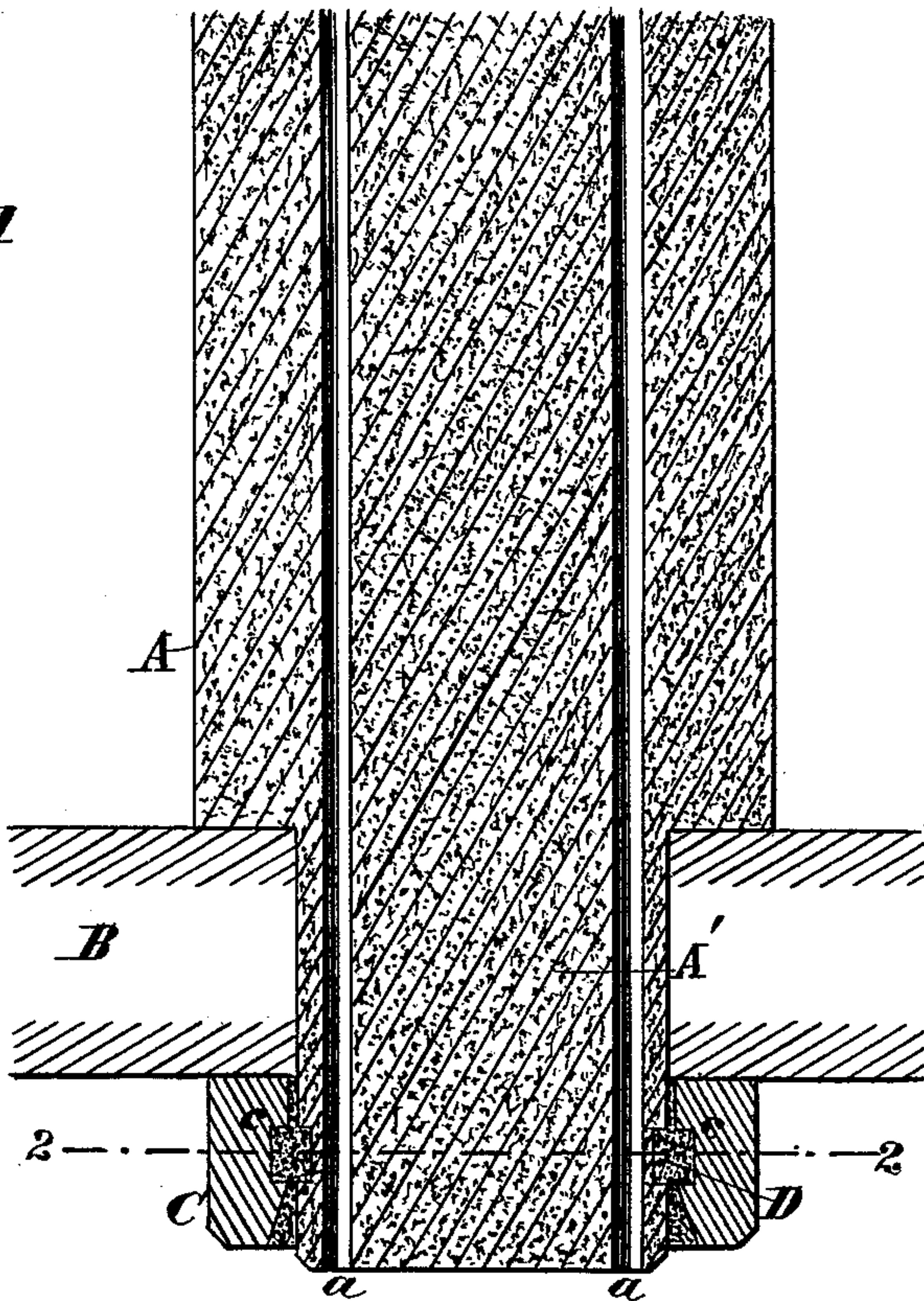


Fig. 3.

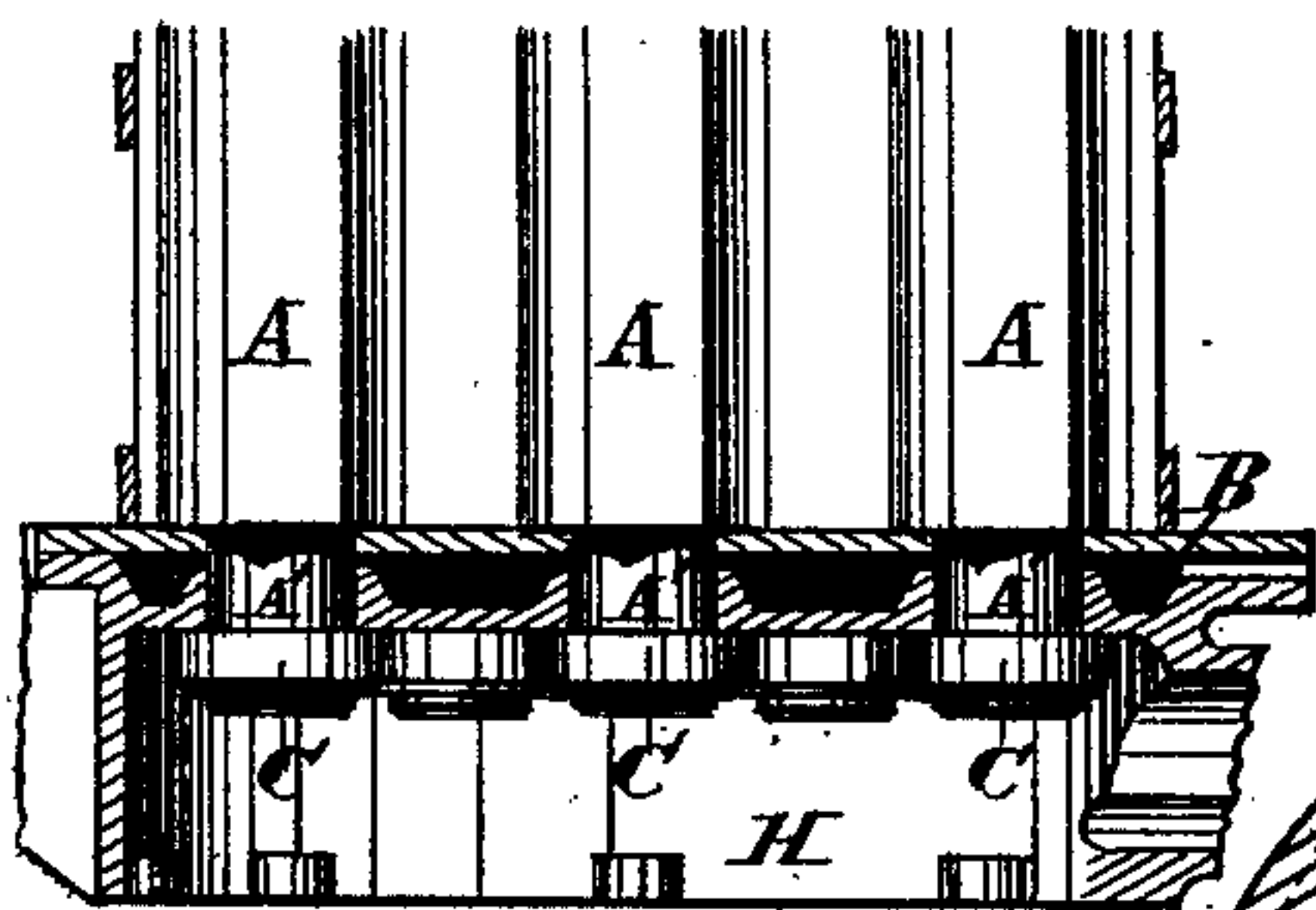


Fig. 2.

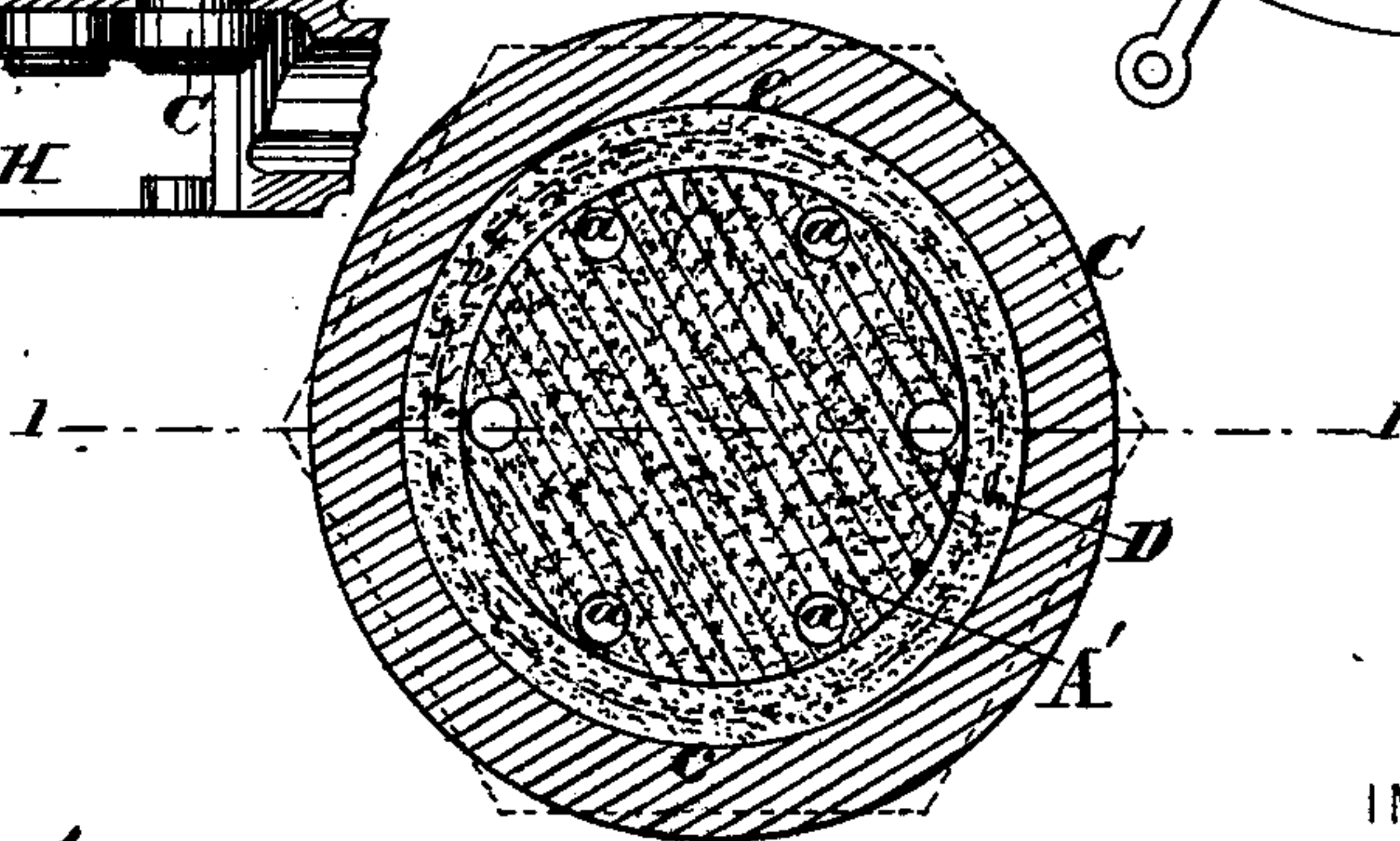
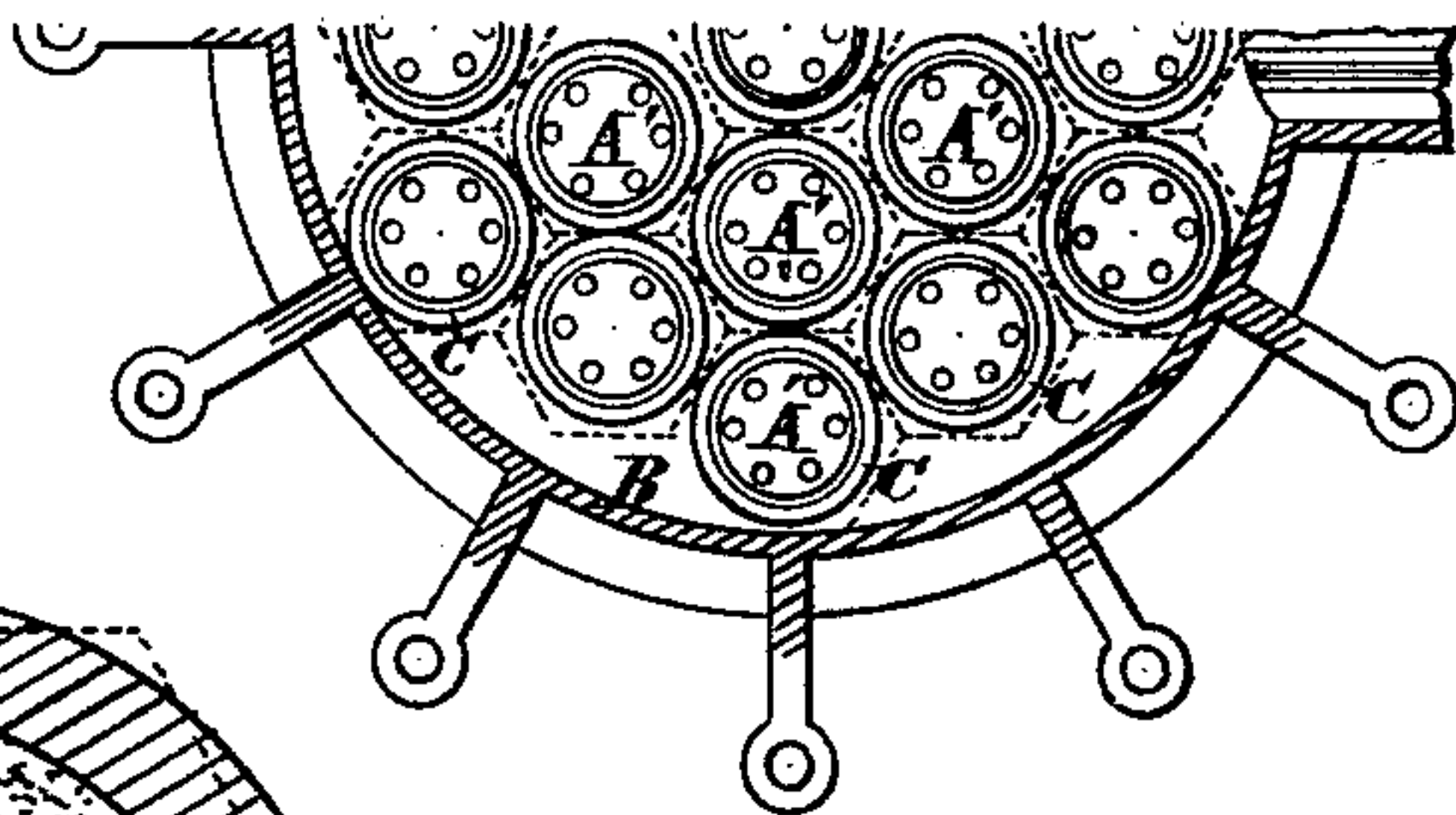


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

ANDREW J. HAWS, OF JOHNSTOWN, PENNSYLVANIA.

IMPROVEMENT IN BESSEMER-CONVERTER BOTTOMS.

Specification forming part of Letters Patent No. 188,898, dated March 27, 1877; application filed December 29, 1876.

To all whom it may concern:

Be it known that I, ANDREW JACKSON HAWS, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a certain new and useful Improvement in Bessemer-Steel-Converter Bottoms, of which the following is a specification:

My invention relates to a mode of attaching bricks which form the bottom of a Bessemer-steel converter, the said bricks being constructed with lugs projecting down into the tuyere-box, and being constructed with longitudinal tuyere or blast openings extending through the said lugs.

My invention consists in securing the brick within the top plate of the tuyere-box by means of a ring of metal or other material fitting loosely around the inwardly-projecting lug of the brick, annular grooves being provided on the exterior of the lug and the interior of the ring to receive a body of cement, which thus locks the two together.

In the accompanying drawing, Figure 1 is a vertical section of a tuyere-brick with a fastening applied. Fig. 2 is an under-side view of the same. Fig. 3 is a vertical section of the entire bottom, omitting the lower part of the tuyere-box, and showing some of the bricks in elevation. Fig. 4 is an under-side view of one half of the bottom, omitting the lower part of the box. Figs. 3 and 4 are on a smaller scale.

A A A represent bricks, preferably of hexagon form, to adapt them to fit compactly together to form the bottom. The said bricks

are formed with lugs A' projecting down through the top plate B of the tuyere-box H, and with longitudinal tuyere-openings *a* extending completely through the said bricks so as to communicate with the interior of the box. C C are fastening-rings applied around the lugs within the tuyere-box, and formed with annular grooves *c*, which are preferably located on a lever with corresponding annular grooves on the outer surface of the brick lugs. The space between the lug A' and ring C, and also the annular grooves within the ring with which said space communicates, receives a body of cement, D, so as to firmly lock the ring and lug together, and thereby secure the brick to the tuyere-box.

It will be observed that this mode of applying the rings C and filling the space within them with cement, forms at once a perfect lock to fix the bricks in position, and at the same time tightly closes the joint between the brick lugs and the top plate of the tuyere-box.

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

The bricks A, provided with lugs A', projecting within the tuyere-box, in combination with locking-rings D, fastened thereto by a body of cement or other material, substantially as set forth.

ANDREW JACKSON HAWS.

Witnesses:

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