

H. BOWER.
Apparatus for the Manufacture of Ferrocyanide of
Potassium.

No. 222,175.

Patented Dec. 2, 1879.

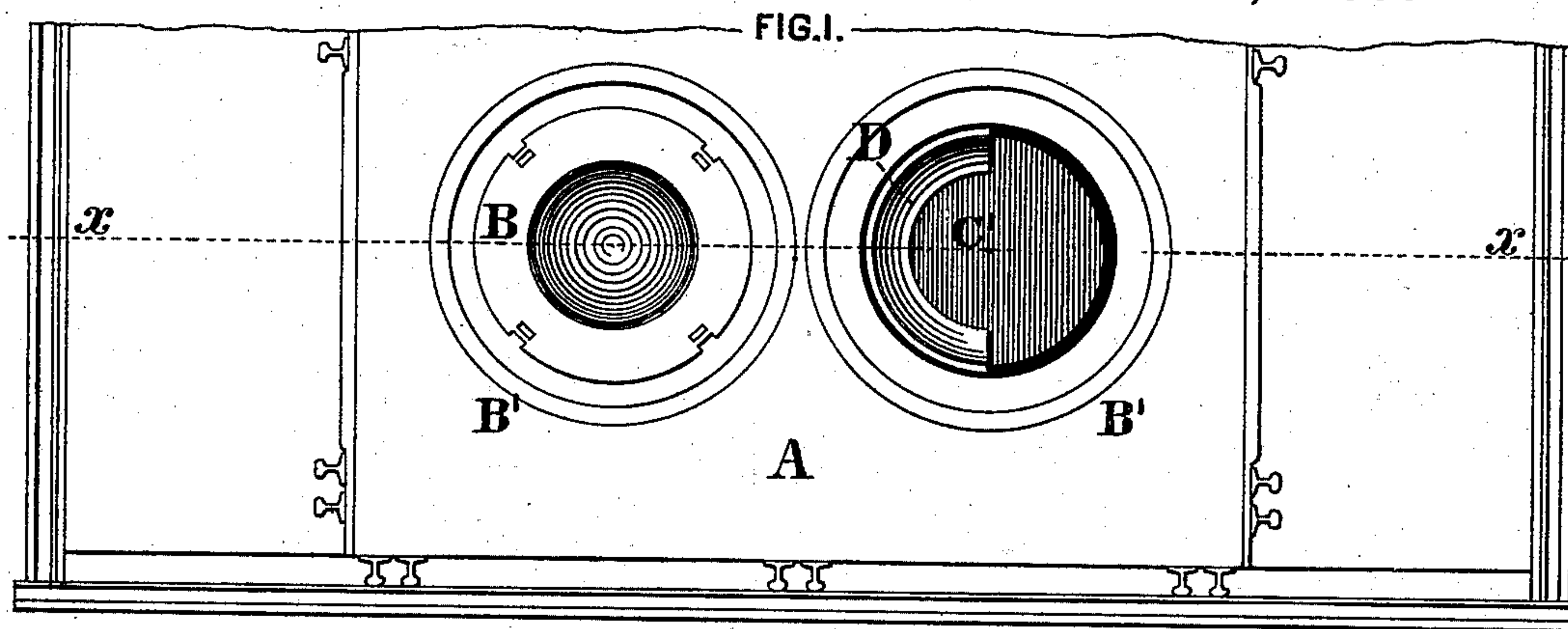


FIG. 3.

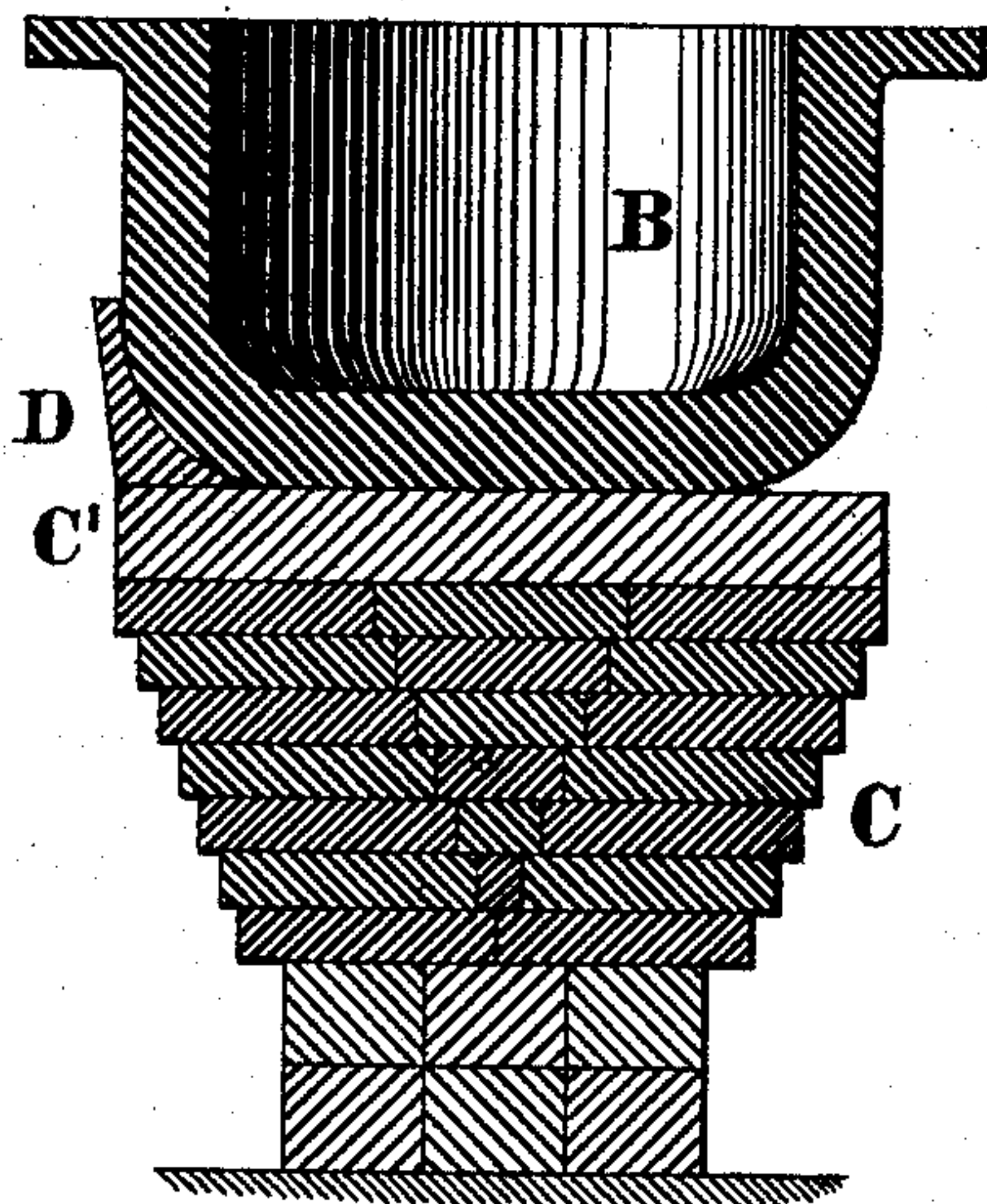


FIG. 4.

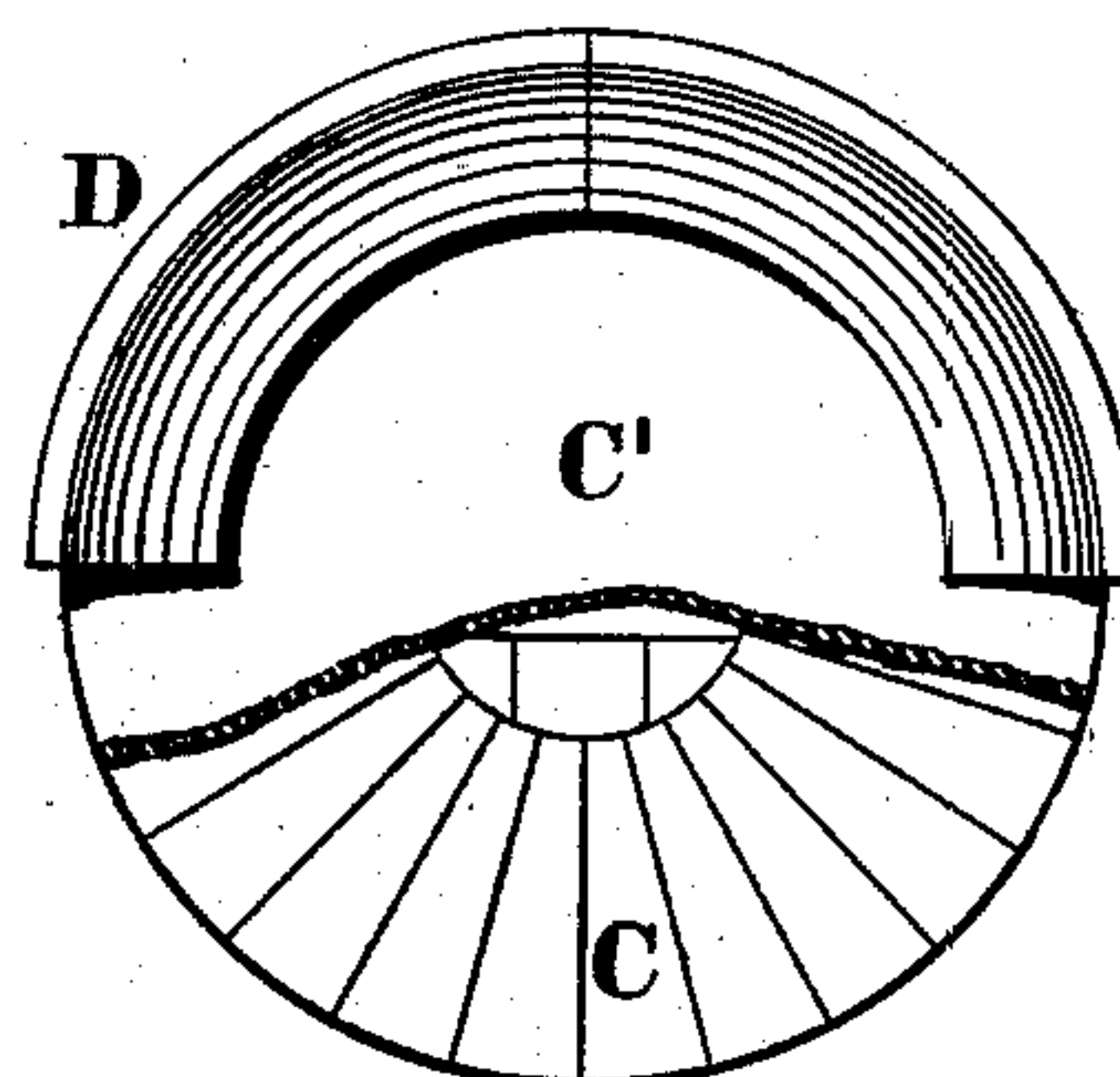
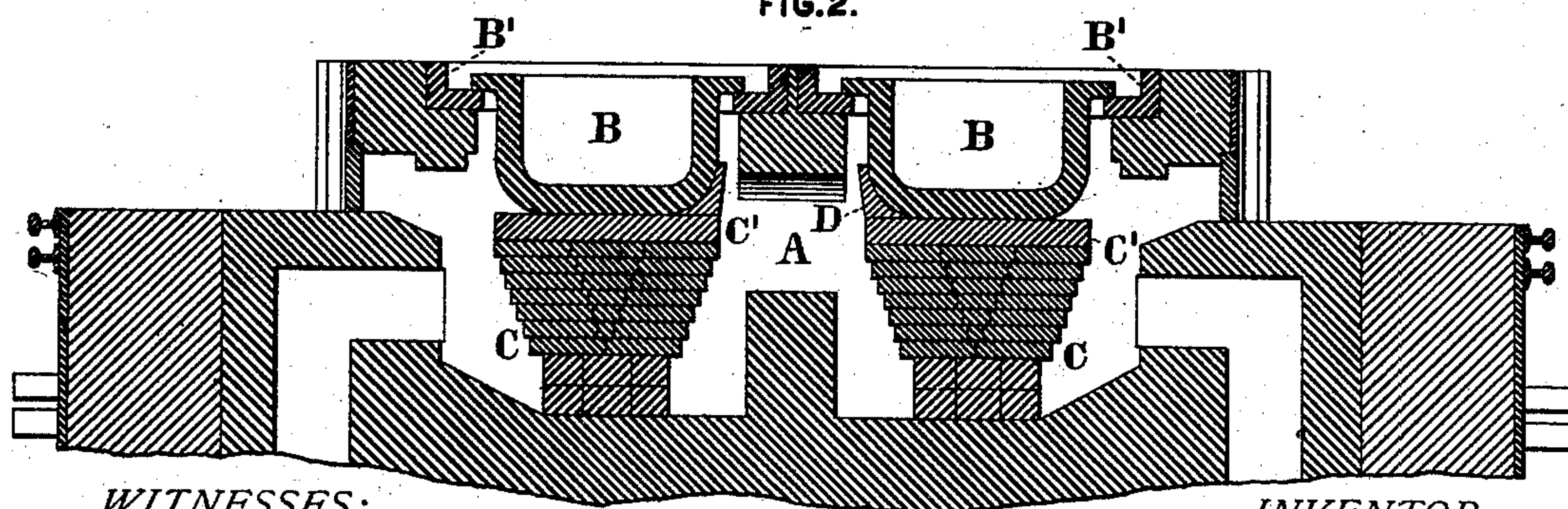


FIG. 5.



FIG. 2.



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IMPROVEMENT IN APPARATUS FOR THE MANUFACTURE OF FERROCYANIDE OF POTASSIUM.

Specification forming part of Letters Patent No. **222,175**, dated December 2, 1879; application filed November 3, 1879.

To all whom it may concern:

Be it known that I, HENRY BOWER, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for the Manufacture of Ferrocyanide of Potassium, of which improvements the following is a specification.

The object of my invention, which relates to improvements applicable to the apparatus for which Letters Patent of the United States No. 210,086 were granted and issued to me under date of November 19, 1878, is to support and protect the pots in which the calcination of the nitrogenous animal matters is effected in such manner as to admit of the application to the pots of the high degree of heat which is desirable, while preserving them as far as practicable from the rapid deterioration which, under ordinary circumstances, would be entailed in the employment of such temperature; and to this end my improvements consist in the combination, with a calcining-pot suspended from a supporting-ring built into the combustion-chamber of a gas-furnace, of a fire-brick pier built upon the floor of the chamber and stepped outwardly toward its top to a diameter approximating that of the calcining-pot, a flat tile or table resting upon the top of said pier, and serving as a bottom support and shield for the calcining-pot, and a protecting-flange of refractory material, which is formed with or rests upon the table and partly surrounds the bottom of the pot, the height or depth of said flange being substantially equal to the vertical distance from the bottom of the pot to the point where its sides assume a vertical direction, and the flange being located at the rear or inner side of the pot, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a plan or top view, showing a portion of the combustion-chamber of a gas-furnace with my improvements applied; Fig. 2, a vertical transverse section through the same at the line *x x* of Fig. 1; Fig. 3, a vertical central section through one of the calcining-pots with its supporting-pier, table, and protecting-flange; Fig. 4, a plan or top view of the table and protecting-flange, part of the table being broken away

to show the pier; and Fig. 5, a view in perspective of a segment of the protecting-flange.

As described in my Letters Patent No. 210,086 aforesaid, the cast-iron calcining-pots B are arranged in pairs in separate and non-communicating compartments of the combustion-chamber A of a gas-furnace, connected with a suitable gas-producer and regenerators, and are suspended from cast-iron rings B' built into the roof of the combustion-chamber. A supporting-pier, C, composed of fire-bricks, is built upon the floor of the combustion-chamber concentrically with each of the rings B', and a circular tile or table, C', of fire-clay, which I usually make in a single piece, and slightly greater in diameter than the pot B, rests upon the top of the pier, and serves to support the bottom of the pot as well as to protect the same from the direct action of the hot gases in the combustion-chamber. The upper portion of the pier is preferably formed of courses of sector-shaped bricks stepped outwardly toward the top of the pier to a diameter about equal to that of the table C', the table being thus supported throughout its entire surface, and liability to breakage and displacement of portions of its periphery avoided.

A protecting-flange, D, of fire-clay or other refractory material, the form of which flange in cross-section is shown in Fig. 3, is formed upon or placed on the table C', extending horizontally about half-way around the bottom of the pot at the rear or inner side—that is to say, adjacent to the center of the combustion-chamber A—and extending vertically to the point, or thereabout, at which the curvature of the bottom of the pot terminates and the vertical direction of its sides commences, the object of the flange being to prevent direct access of hot gas at the central portion of the combustion-chamber to the bottom of the pot or beneath the junction of its bottom and vertical body.

I have found in practice that destructive action is exerted most strongly near the center of the combustion-chamber, and that by the use of the protecting table and flange a material increase of durability in the pots is attained, the consumption of the metal during the operation of the apparatus being practically

uniform throughout, instead of being unduly rapid upon the bottoms and toward the rear portions of the pots, as is otherwise the case under the heat evolved in a gas-furnace.

While, as beforestated, the protecting-flange D may be formed upon the table C', I deem it preferable to employ a flange separate therefrom, and composed of two or more sections, both for convenience of manufacture and economy of replacement if broken. Two separate segments, as shown in the drawings, I find to be suitable for use with a pot of the diameter ordinarily employed, and these, resting around and against the curved surface of the pot, are readily adjustable thereto without liability to breakage or displacement.

I claim as my invention, and desire to secure by Letters Patent—

1. The combination, in an apparatus for the manufacture of ferrocyanide of potassium, of a calcining-pot suspended from a supporting-ring within the combustion-chamber of a gas-furnace, and a tile or table of refractory material, upon which the bottom of the calcining-

pot rests, said table being of substantially similar diameter to the pot, and being supported upon a fire-brick pier built upon the floor of the combustion-chamber, substantially as set forth.

2. The combination, in an apparatus for the manufacture of ferrocyanide of potassium, of a suspended calcining-pot, a tile or table on which the bottom of said pot rests, and a supporting-pier having its upper courses formed of sector-shaped fire-brick stepped outwardly toward its top to a diameter about equal to that of the tile or table, substantially as set forth.

3. The combination, in an apparatus for the manufacture of ferrocyanide of potassium, of a suspended calcining-pot, a supporting-pier and table, and a segmental-bottom protecting-flange, substantially as set forth.

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Witnesses:

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