

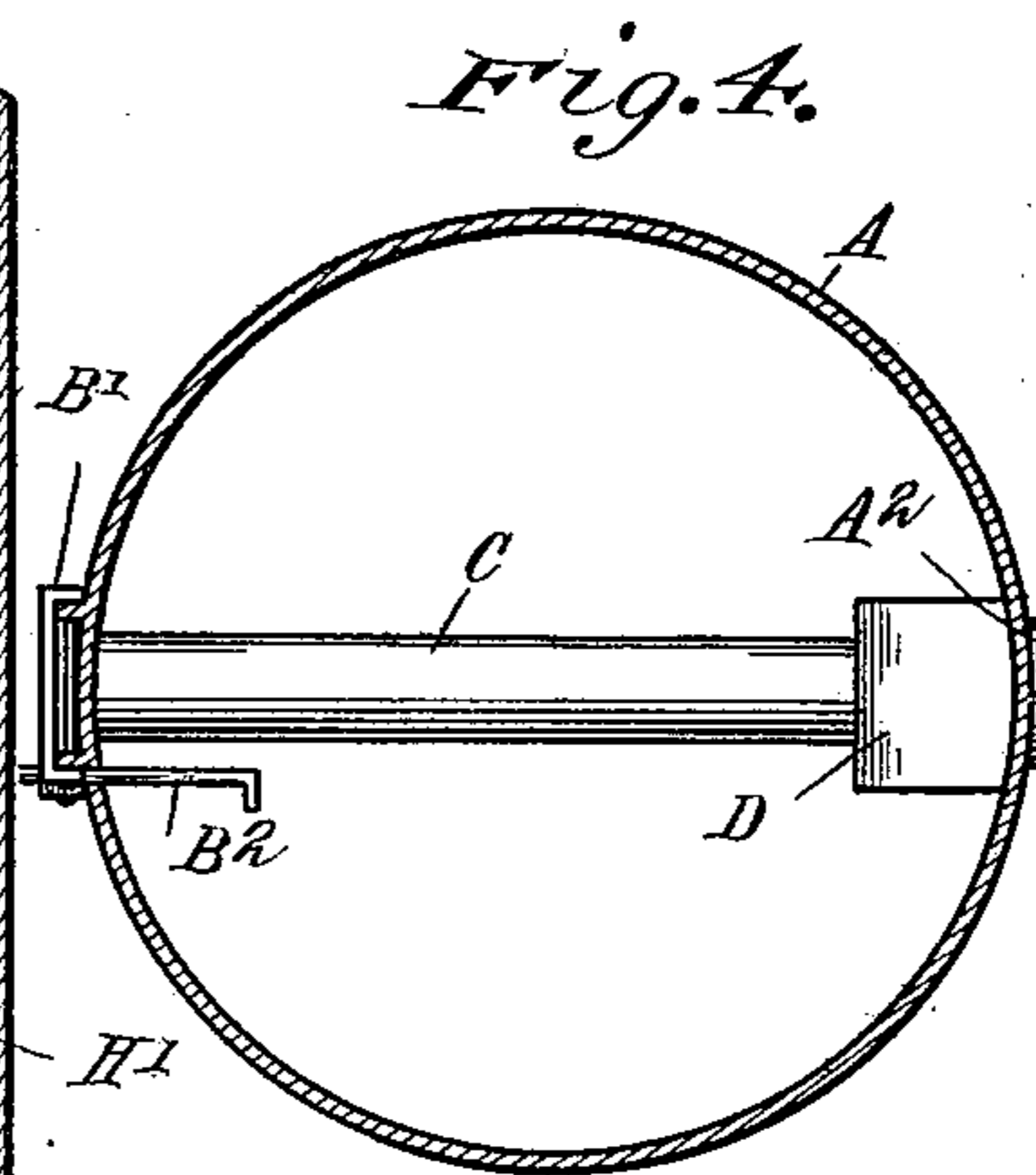
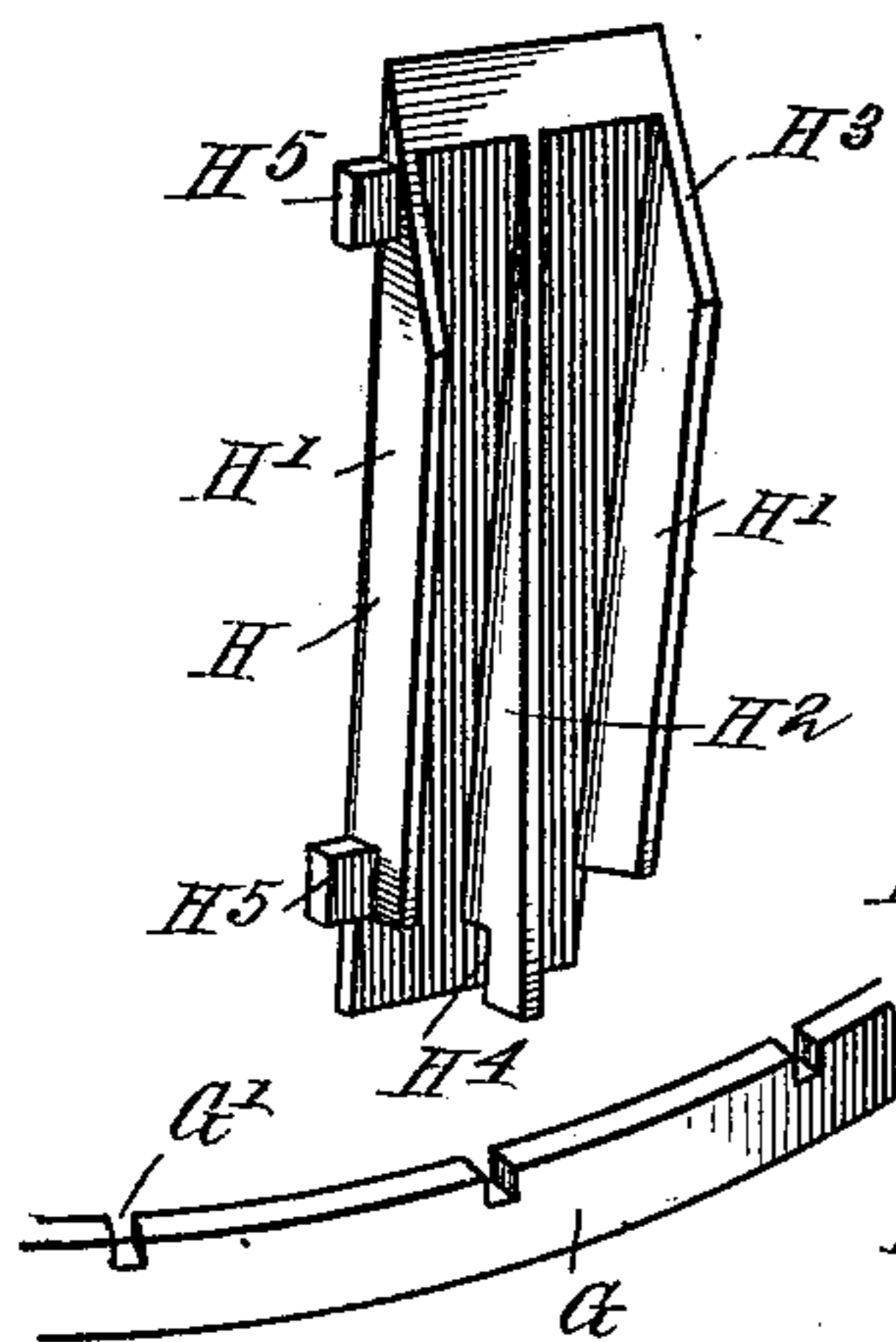
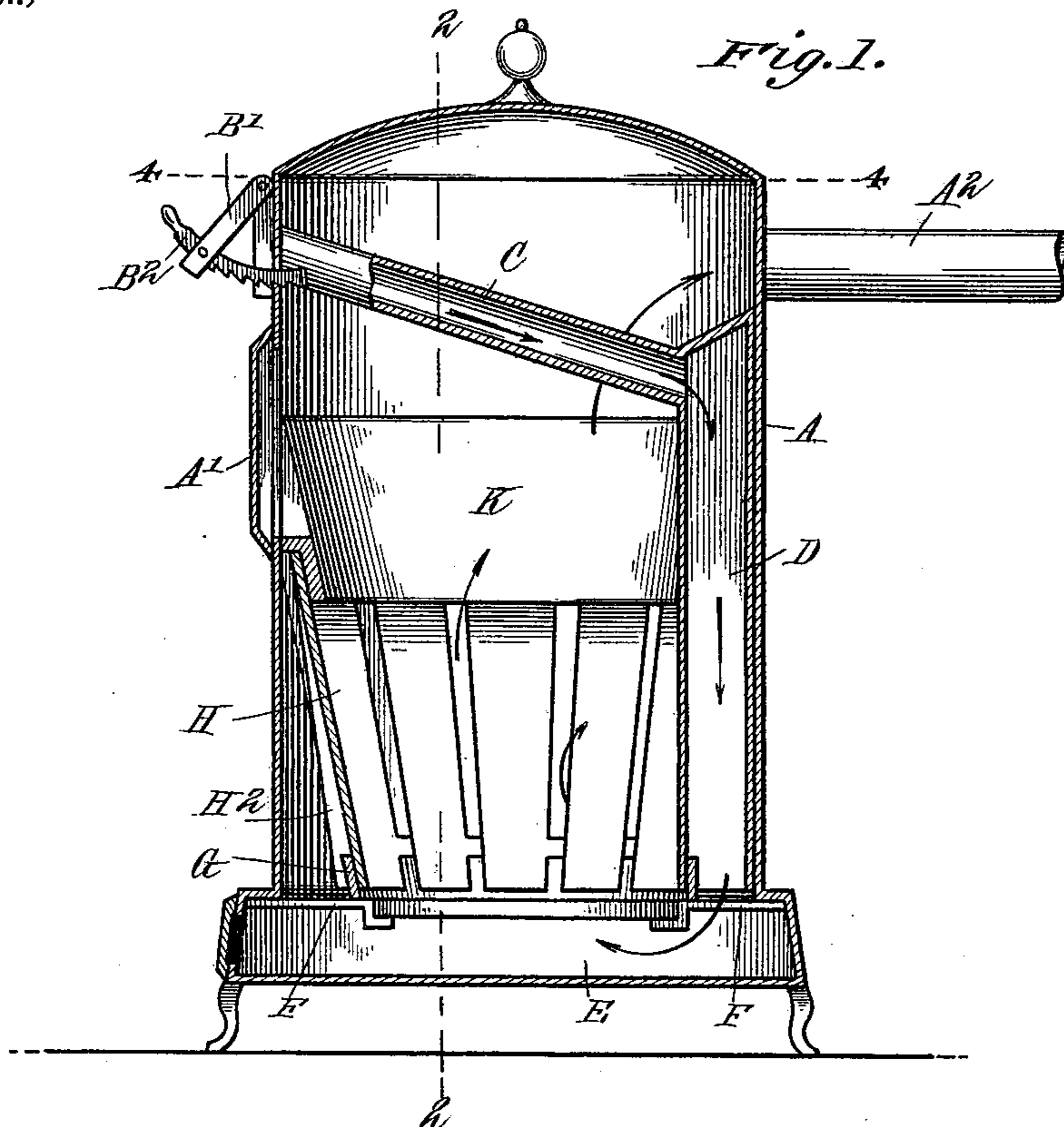
No. 641,673.

Patented Jan. 23, 1900.

A. R. BROOMHALL.  
HEATER.

(Application filed Mar. 7, 1899.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

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## HEATER.

SPECIFICATION forming part of Letters Patent No. 641,673, dated January 23, 1900.

Application filed March 7, 1899. Serial No. 708,139. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR R. BROOMHALL, a citizen of the United States, residing at Paris, in the county of Bourbon and State of Kentucky, have invented a new and useful Improvement in Heaters, of which the following is a specification.

This invention relates generally to heating-stoves, and more particularly to the means for supplying air to the fuel and also to the special construction of the fire-pot for receiving the said fuel and permitting the ready access of the air so fed to the fuel, one object of the invention being to provide an exceedingly cheap and simple construction of the fire-pot, by means of which a sufficient air-space is left for the circulation of air, and another object of the invention is to provide an air-feed pipe and duct for the purpose of introducing the air into the combustion-chamber, said feed devices being so arranged that the air will be heated as it passes the combustion-chamber.

With these various objects in view the invention consists in the peculiar construction of the various parts and in their novel combination and arrangement, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a vertical sectional view of a stove constructed in accordance with my invention. Fig. 2 is a section taken on the line 2-2 of Fig. 1. Fig. 3 is a detail view of one of the ribs of the fire-pot and also showing a portion of the ring upon which the ribs rest. Fig. 4 is a horizontal section on the line 4-4 of Fig. 1.

In the practical application of my invention I employ a vertical construction of a stove A, having a feed-door A' and a smoke-flue A<sup>2</sup>. An opening B is produced in the front of the stove above the feed-door, said opening having a door B' hinged to the cover of same, said door being regulated by means of a ratchet-segment B<sup>2</sup>, so that said door can be partially opened to any extent desired.

An air-pipe C extends from the opening B to an air-duct D, arranged vertically in the rear portion of the stove, said duct being closed at its upper end, which is arranged directly beneath the smoke flue or pipe A<sup>2</sup>, while

the lower end of said duct is opened and discharges into the ash-chamber E.

Any suitable construction of grate is arranged in connection with my stove, said grate resting upon the inwardly-extending radial arms F'. These arms also support a circular ring G, upon which rest the lower ends of the sections H, forming the fire-pot. Each section is preferably constructed with the side ribs or flanges H' and central rib H<sup>2</sup>, the upper ends of the side flanges being tapered or beveled, as shown at H<sup>3</sup>, in order that the sections may be arranged at an inclination and have the flanges rest against the sides of the stove-body. The side flanges H' do not extend entirely to the bottom of the ribs; but the central rib H<sup>2</sup> does extend entirely to the bottom and at its lower end is formed with a notch H<sup>4</sup>, adapted to receive the ring G, thereby forming a connection between the said ring and the rib, and it will also be noted that the ring has a series of notches G' in order to receive the central rib H<sup>2</sup>, thus preventing any possible motion of the said section H. The ribs are also provided with laterally-projecting lugs H<sup>5</sup> at the top and bottom of one side, the purpose of which is to properly space the ribs and hold them a sufficient distance apart to permit the free circulation of air around and through the fire-pot. As before stated, the upper ends of the ribs rest against the side of the stove-body, and a conical lining-ring K is inserted in the stove and rests upon the upper ends of said sections, thereby securely covering them and holding them in their proper positions. If desired, the lugs H<sup>5</sup> may be omitted and the sections arranged close together; but in practice I prefer to arrange them as shown. The conical ring K does not extend entirely around the stove, as shown, inasmuch as the vertical duct D at the rear of the stove prevents the same, and it will also be noted that this vertical duct virtually forms a portion of the fire-pot and is supported at its lower end upon the same ring G as the sections of the fire-pot. The fuel is fed through the door A' in the usual manner, and the door B' is regulated as desired to feed the air. The air passes down through the pipe C into the duct D, into the ash-pit, and from there through the fire-pot, and inasmuch as the pipe and air-duct

are arranged in line with the stove pipe or flue the air will of course be rapidly heated, and thereby increase the combustion of the fuel in the fire pot or chamber. By regulating the air-feed door the combustion of fuel can be increased or decreased, as desired.

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

10 1. In a heating-stove, the combination with a casing, of a series of radially-extending arms positioned in said casing and projecting inwardly, of a grate engaged by the outer ends thereof, a fire-pot comprising a series of sections properly spaced and provided with rearwardly-extending side flanges beveled at their upper end and resting against the inner side of the casing, a notched ring resting on the radial arms and means whereby the said sections and ring are engaged, substantially as described.

2. In a stove of the kind described, a vertical air-duct, arranged at the rear of the fire-pot and below the stovepipe-opening, said air-duct discharging into the ash pit or chamber, and an air-feed pipe extending from the front of the stove across the top of the fire-pot into the upper end of the air-duct, said air-feed pipe having a regulating-door at its outer end, substantially as shown and described.

3. In a stove of the kind described, a fire-pot consisting of a series of sections having a central rib and rearwardly-extending side flanges, laterally-projecting lugs secured on said side flanges and a supporting-ring upon which the sections rest, substantially as described.

4. In a stove of the kind described, a fire-pot, comprising a series of sections having rearwardly-extending side flanges, and a central longitudinal rib, the upper portion of each section being inclined and adapted to rest flush against the side of the stove, lugs on said side flanges for spacing them apart and an annular ring upon which the said sections rest, substantially as described.

5. In a stove of the kind described, the combination with the body, of the ring supported therein, the ribs arranged upon the said ring and forming the fire-pot and vertical air-duct forming the portion of said fire-pot, an air-pipe leading into the said air-duct, and the regulating-door and means for adjusting the same, substantially as and for the purpose described.

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