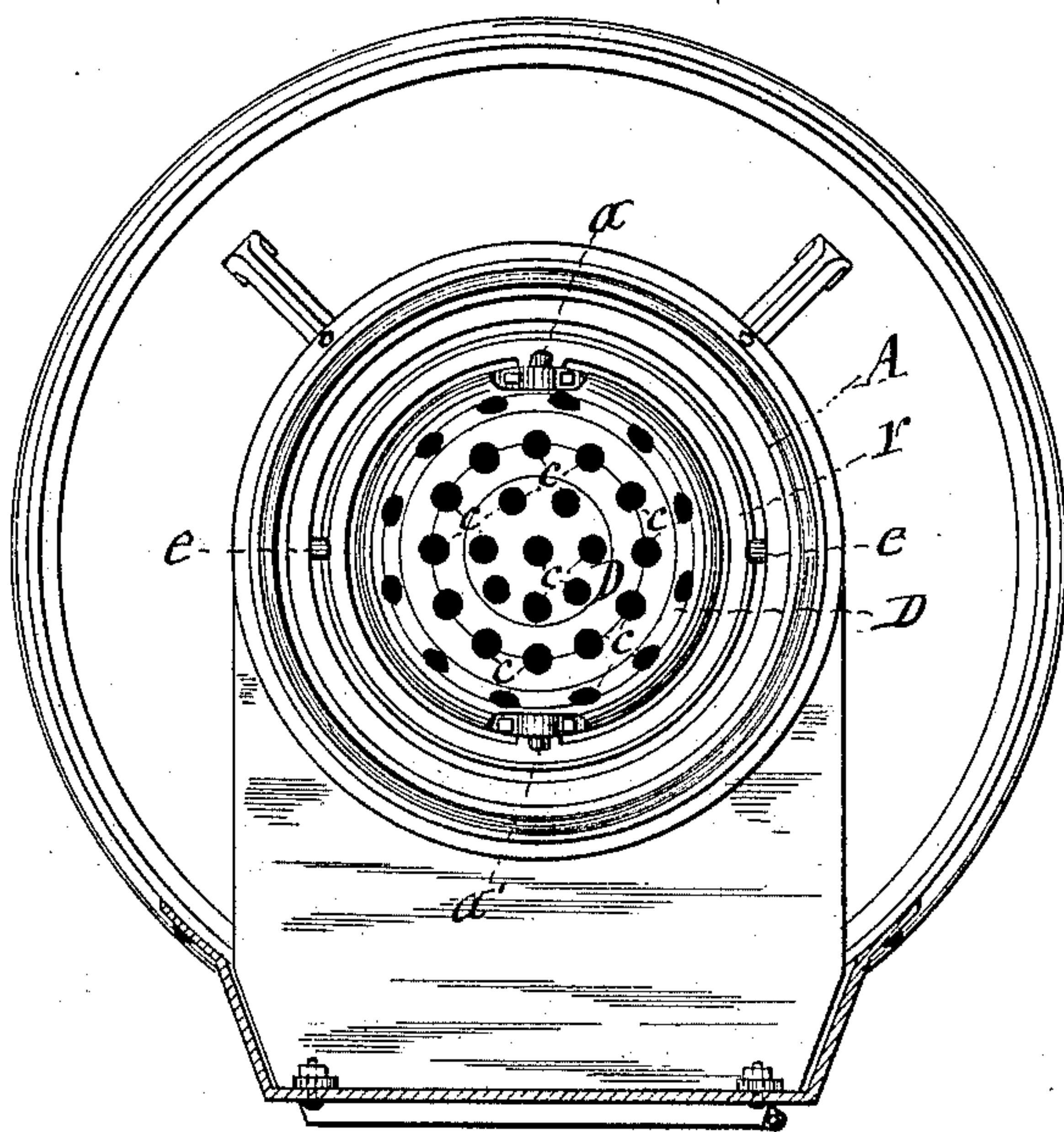
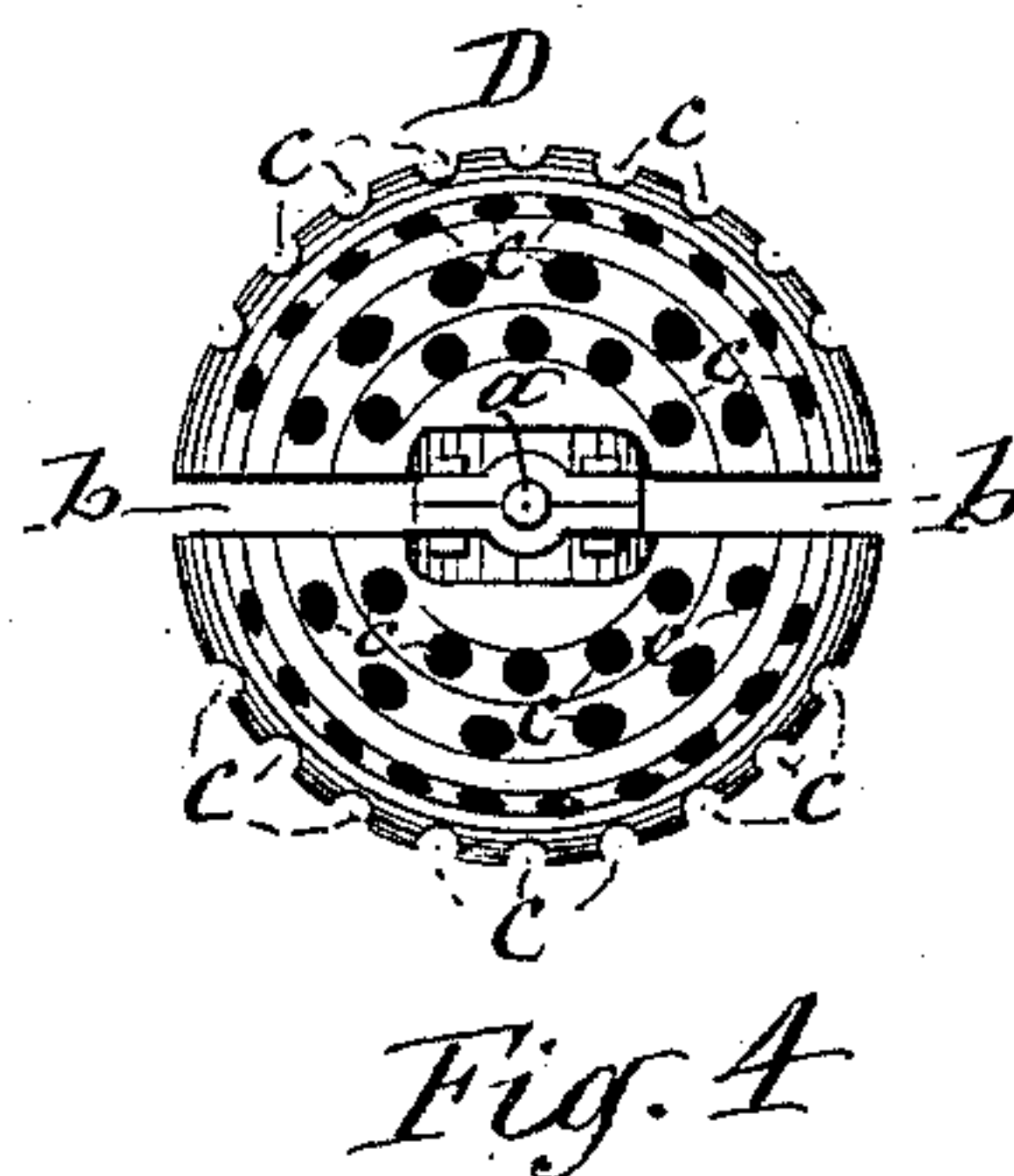
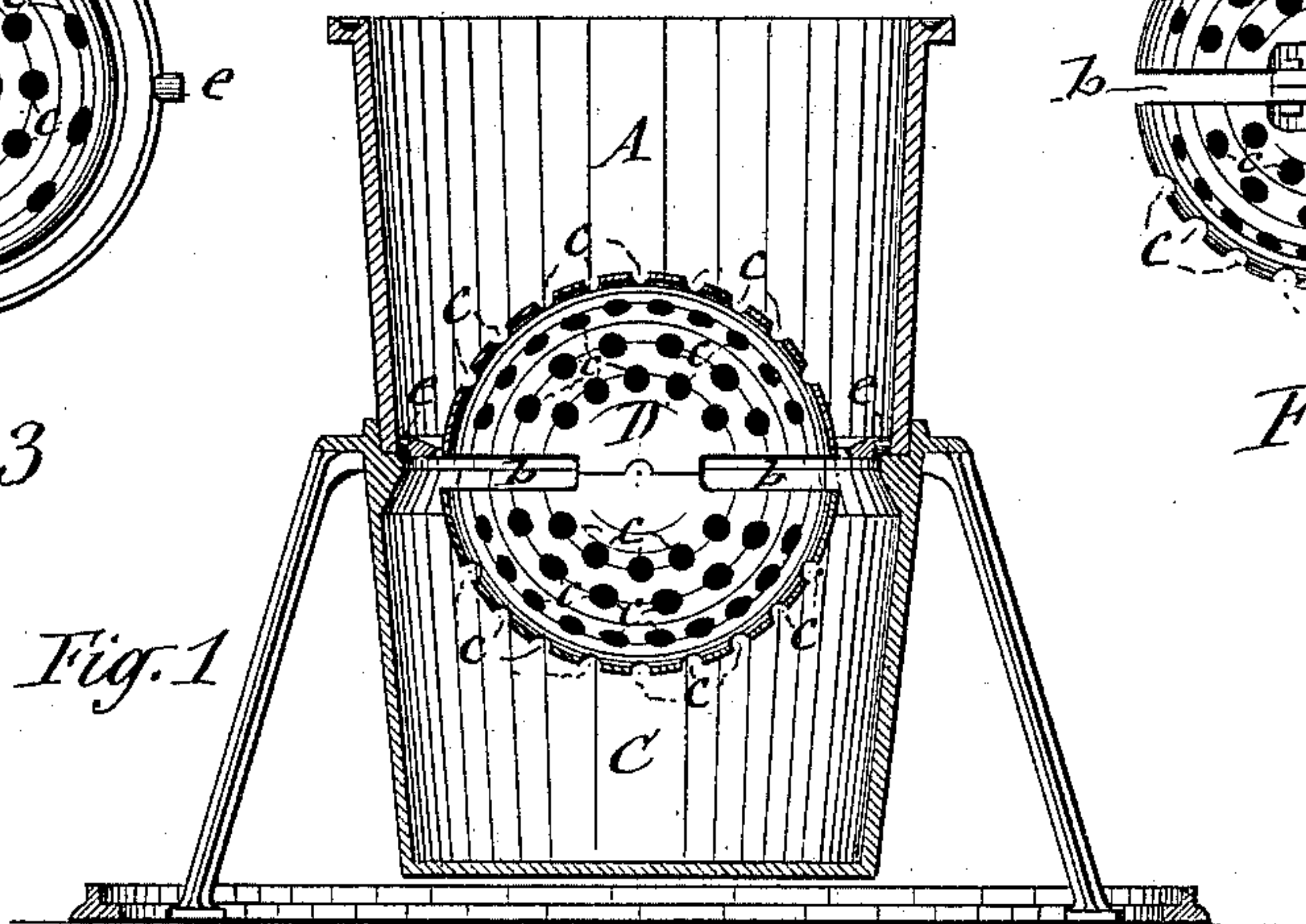
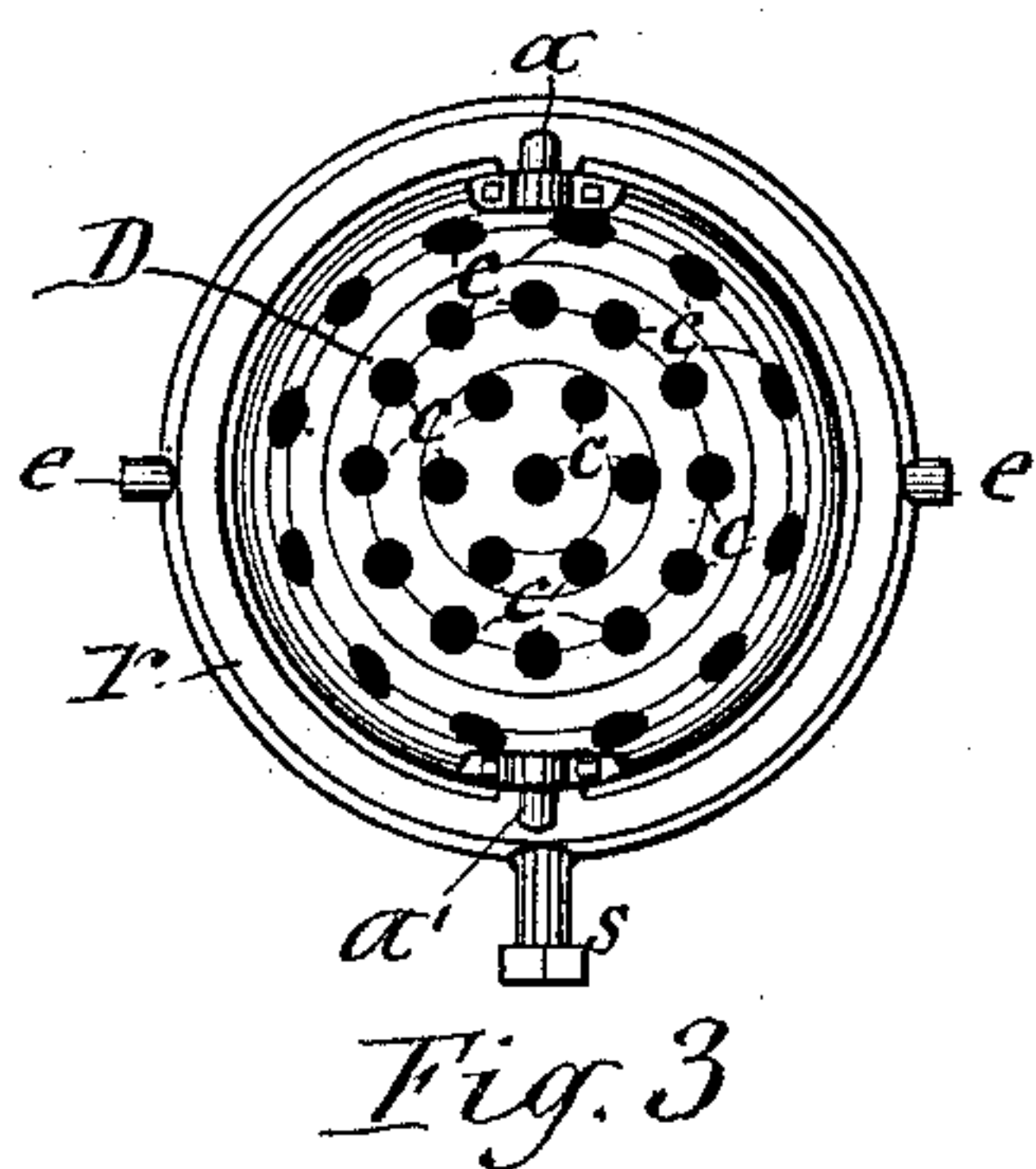


(No Model.)

C. D. HOWARD.
STOVE OR FURNACE GRATE.

No. 387,163.

Patented July 31, 1888.



WITNESSES:

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INVENTOR.

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BY

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ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES D. HOWARD, OF SYRACUSE, NEW YORK.

STOVE OR FURNACE GRATE.

SPECIFICATION forming part of Letters Patent No. 387,163, dated July 31, 1888.

Application filed January 19, 1888. Serial No. 261,213. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. HOWARD, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Stove or Furnace Grates, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

The object of this invention is to provide a grate which shall be reversible in its position in the stove or furnace and present, with either side up, a convex or crowning shape, and shall at the same time be light and easily cast; and to that end my invention consists, essentially, in the mechanism illustrated in the drawings, and which will be hereinafter fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a vertical transverse section of a fire-pot and ash-pit equipped with my improved grate. Fig. 2 is a top plan view of the same. Fig. 3 is a detached plan view of the grate and its supporting-ring, and Fig. 4 is a detached side view of the grate.

Similar letters of reference indicate corresponding parts.

A represents the fire-pot, C the ash-pit, and D denotes my improved grate. This grate I form of two concavo-convex shells, preferably of semi-spherical shape, and with trunnions or pivotal bearings *a a'* at diametrically-opposite points. Said shell is perforated, as shown, at *c c c* for the passage of ashes and cinders through it; and in order to insure the removal of ashes from the interior of the shell, when necessary, I form the same with slots *b b* at opposite sides of the trunnions or pivots and in one and the same plane, preferably between the adjacent edges of the two sections of the shell.

The ashes being dumped out of the shell by turning the latter on its pivot, so as to bring the slots *b b* in a vertical plane, to maintain a bank of ashes against the inner side of the base of the fire-pot, and thus protect the latter from excessive heat, I pivot the grate in a ring,

r, pivoted in suitable bearings, *e e*, formed on the upper part of the ash-pit shell, as shown in Fig. 1 of the drawings.

One of the trunnions of the grate may be extended through its bearing, or the ring *r* may be formed with a projection, *S*, for the application of a lever by which to turn or shake the grate when required. The pivots of the grate are at right angles to the pivots of the ring, and thus the grate can be shaken or rocked in two directions at right angles to each other.

If desired, the grate may be formed of a semi-spherical shell cast with the trunnions thereon and supported with its convex side upward when in its operative position. This form facilitates the dumping of the grate.

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

1. The combination, with the ash-pit of a stove or furnace, of a spherical grate consisting of two perforated concavo-convex shells connected together and provided with trunnions, and having a circumferential slot for the removal of cinders, substantially as specified.

2. The combination, with the ash-pit of a stove or furnace and the ring *r*, adapted to rest in bearings formed in the upper edge of the ash pit, of the spherical grate consisting of two perforated concavo-convex shells connected together and having a circumferential slot for the removal of cinders, one of said shells provided with trunnions adapted to rest in bearings made in the ring *r*, substantially as specified.

In testimony whereof I have hereunto signed my name, in the presence of two witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 17th day of January, 1888.

CHARLES D. HOWARD. [L. s.]

Witnesses:

C. L. BENDIXON,
GEO. G. COTTON.