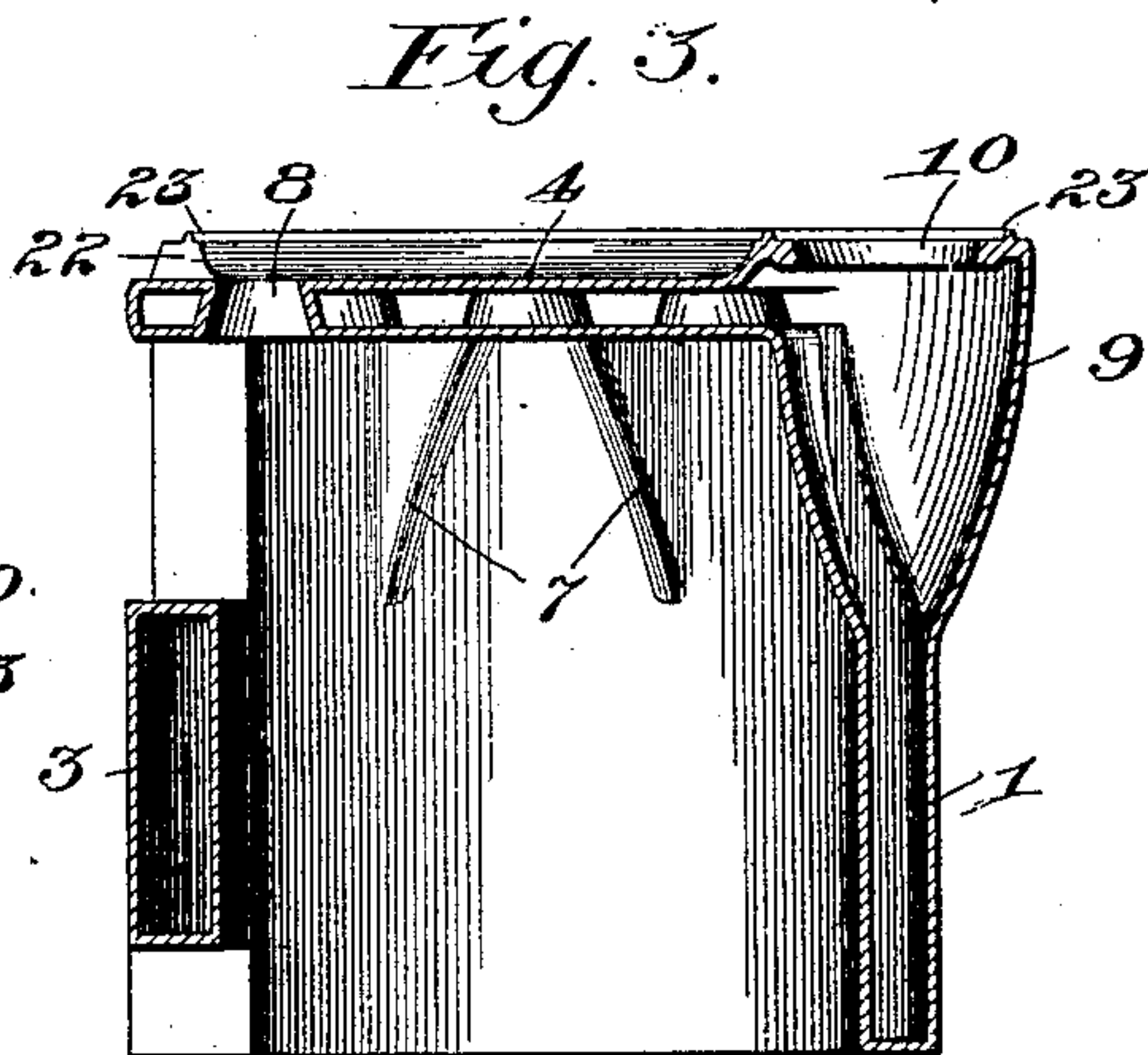
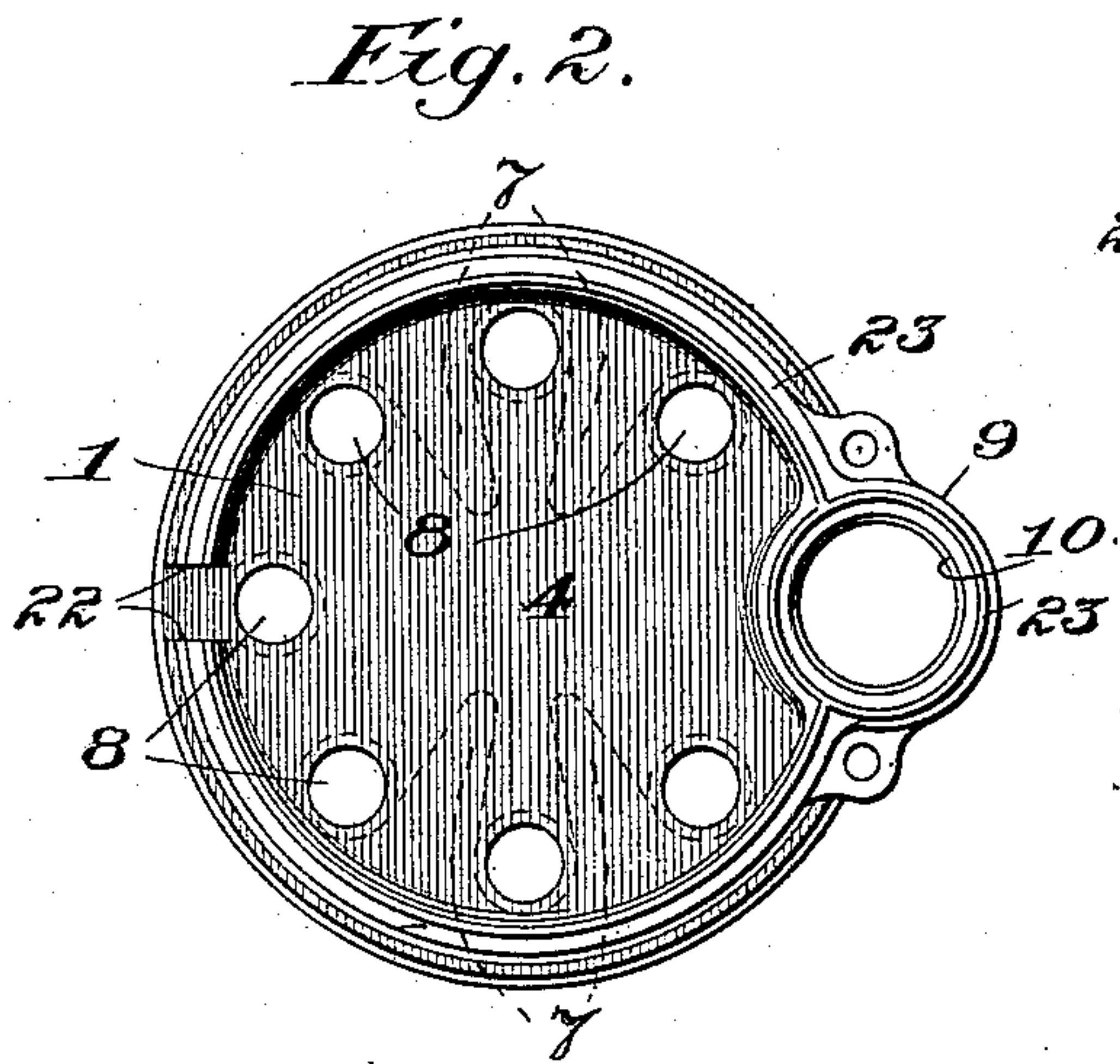
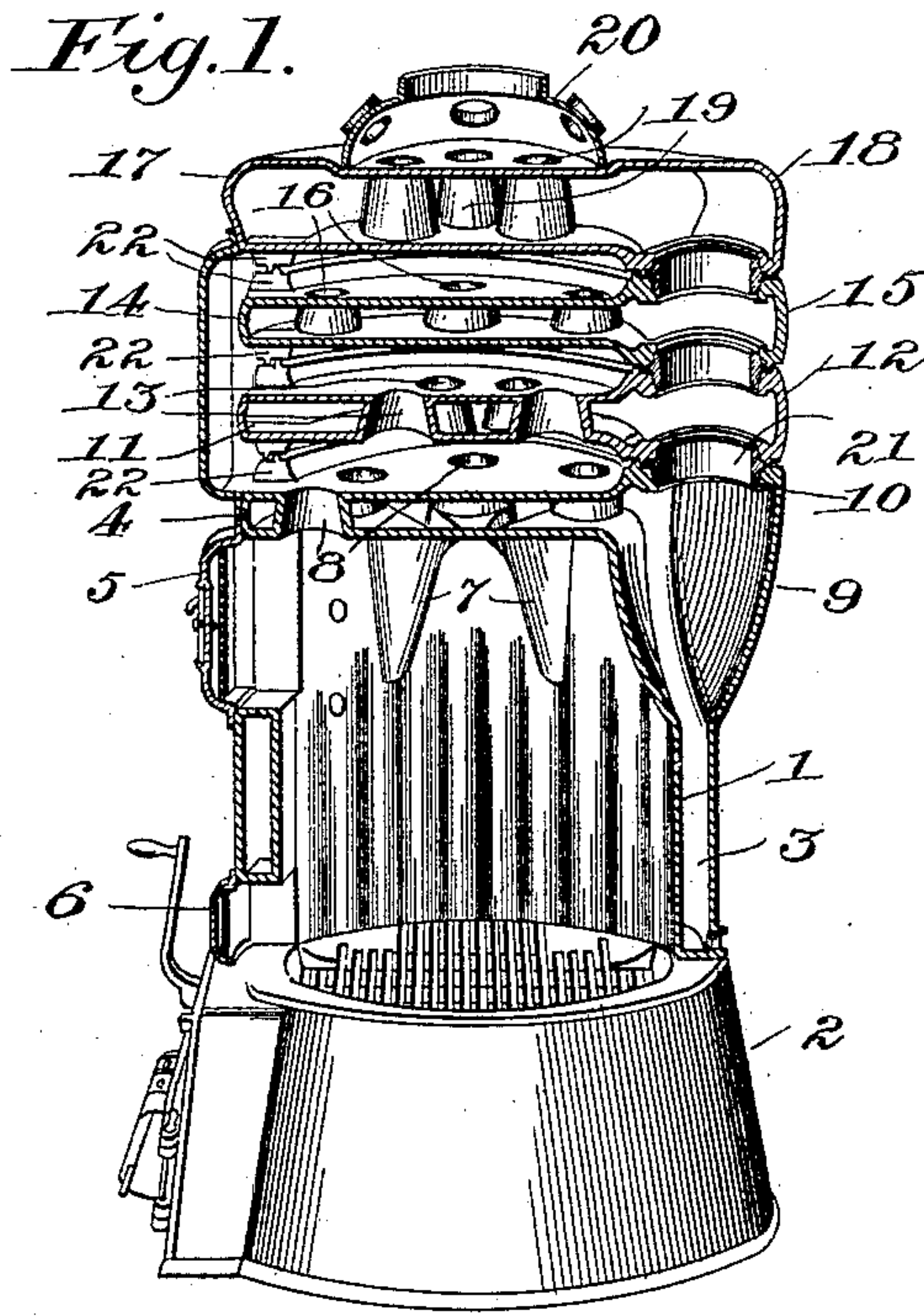


E. R. BURROUGHS.
GENERATOR.
APPLICATION FILED JAN. 4, 1905.

903,665.

Patented Nov. 10, 1908.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

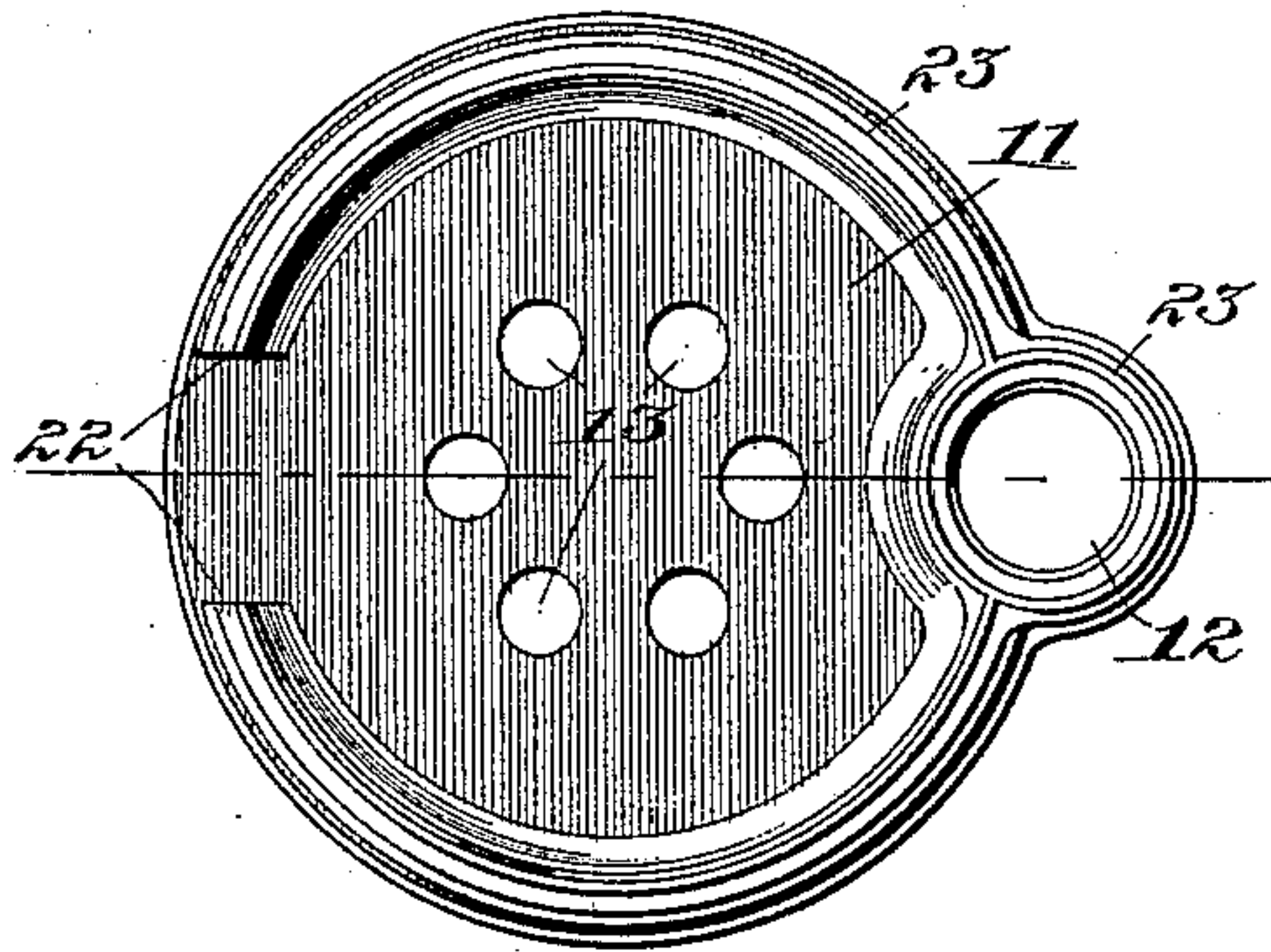


Fig. 6.

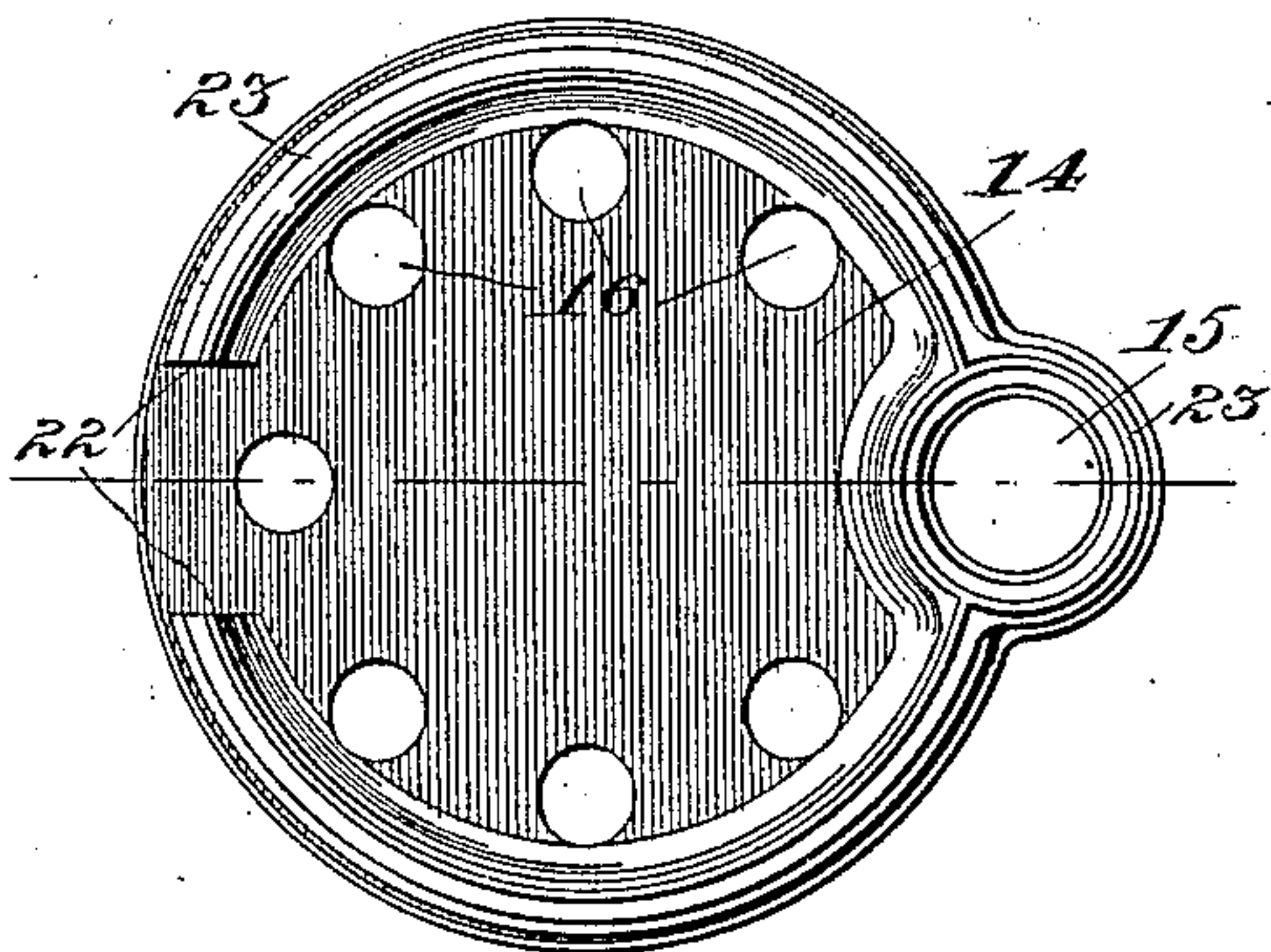


Fig. 5.

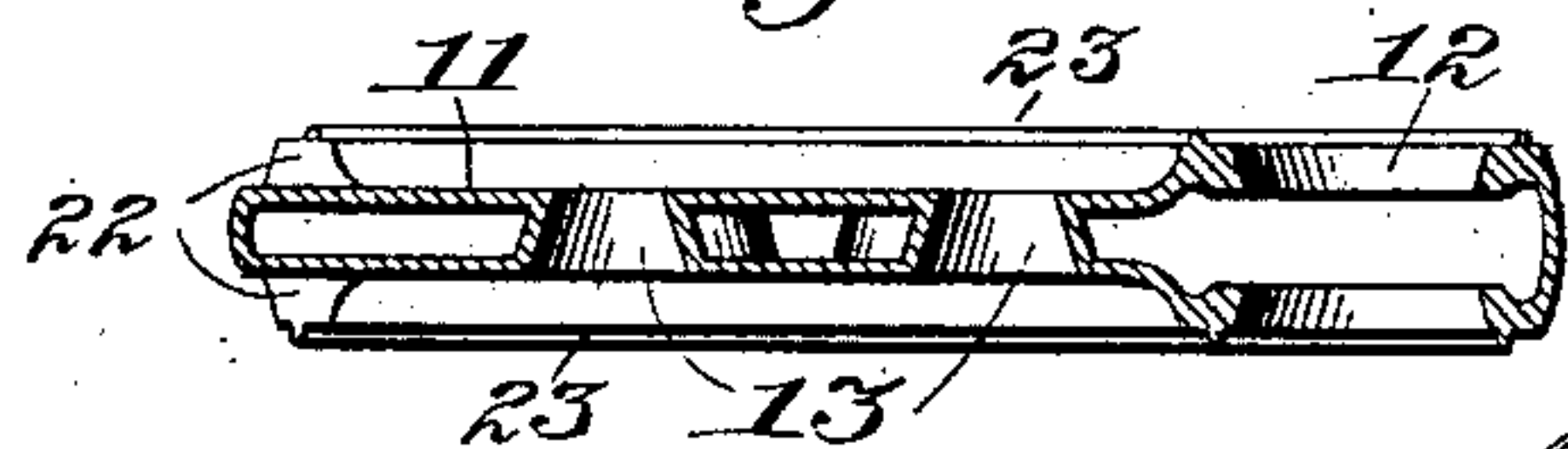


Fig. 7.

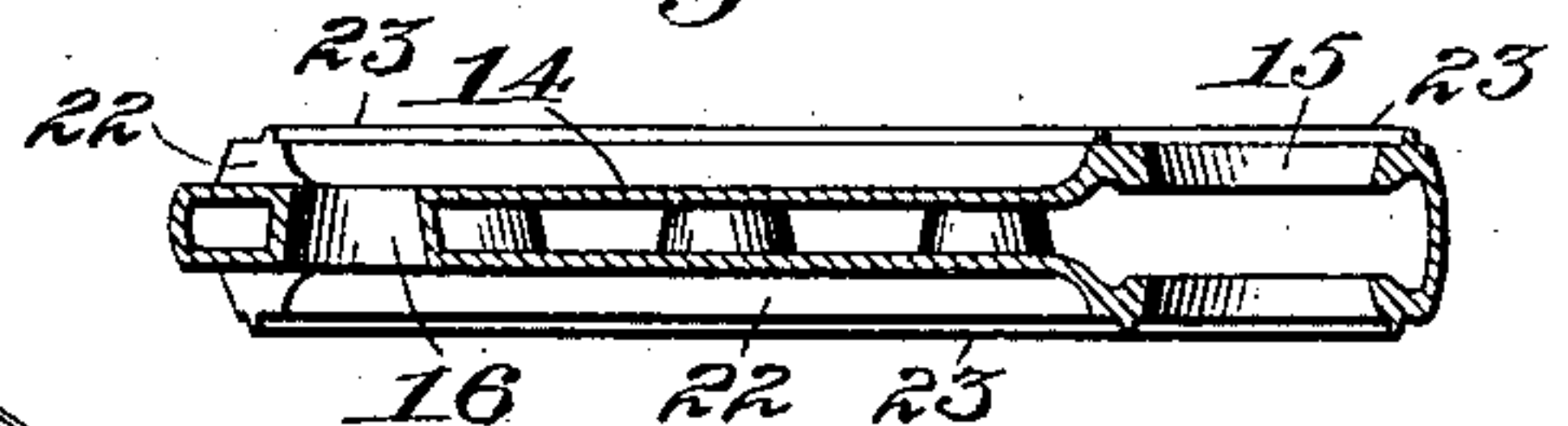


Fig. 8.

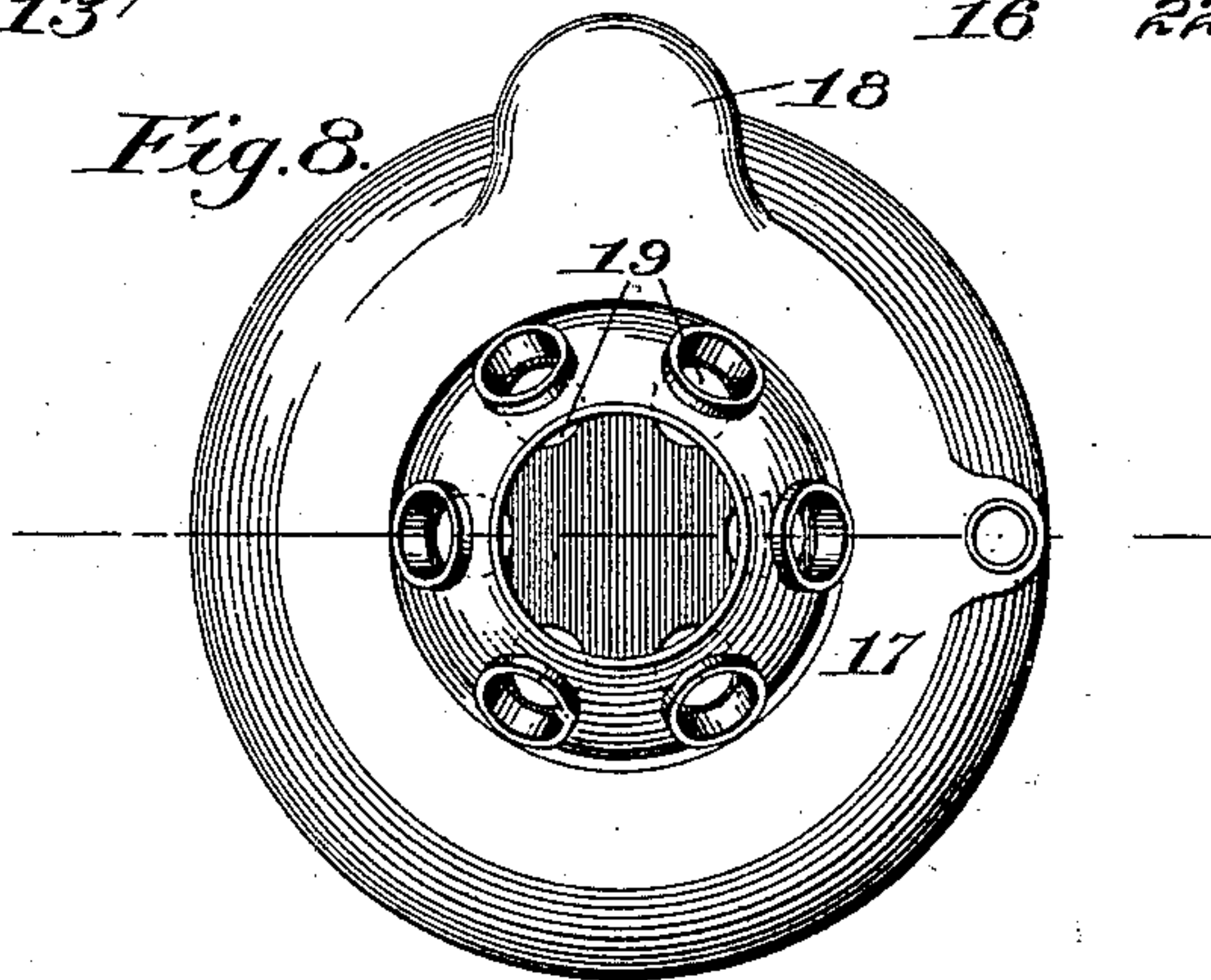
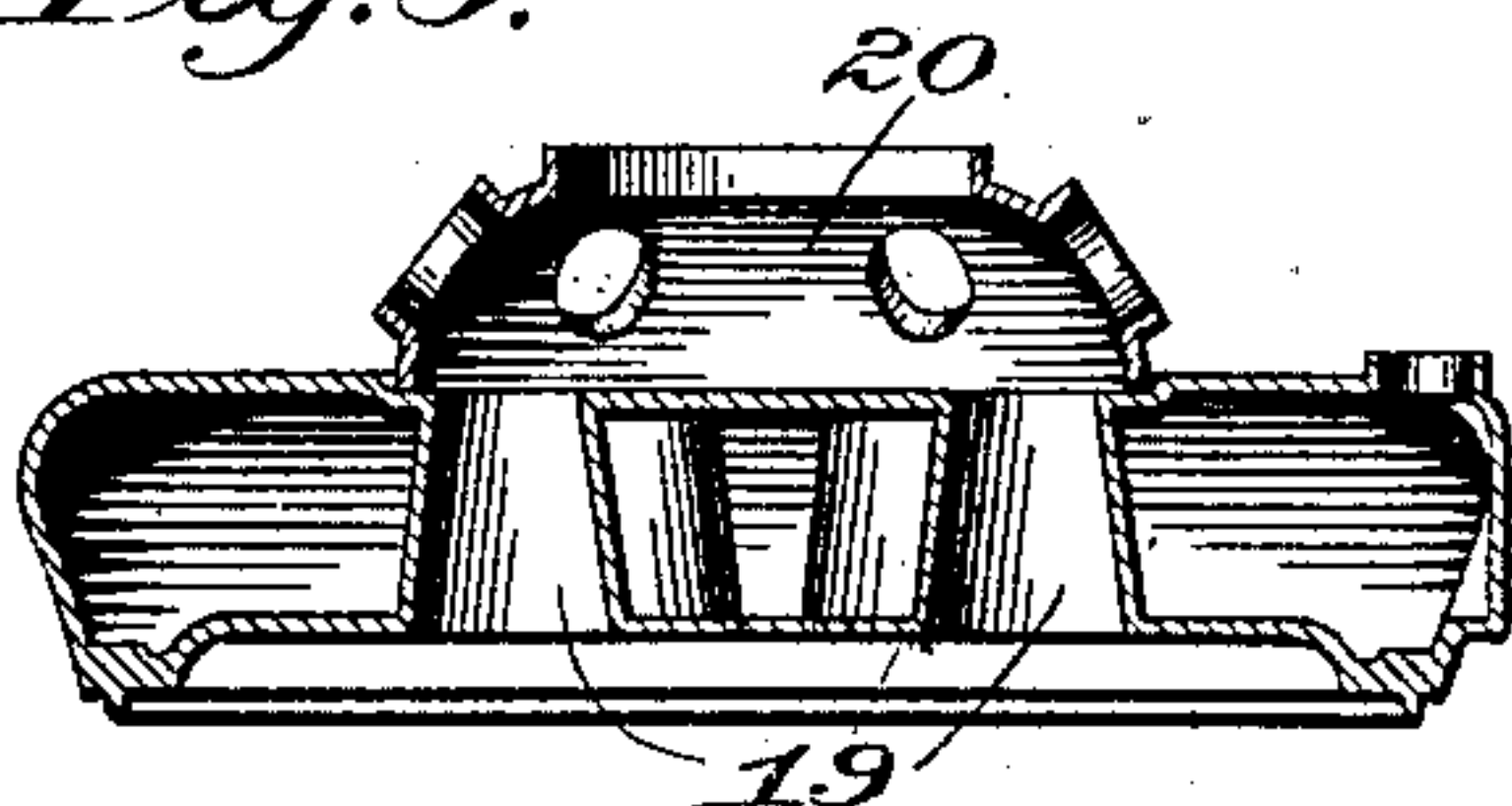


Fig. 9.



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UNITED STATES PATENT OFFICE.

EMOR RIDLEY BURROUGHS, OF GENEVA, NEW YORK, ASSIGNOR TO HERENDEEN MANUFACTURING COMPANY, OF GENEVA, NEW YORK, A CORPORATION OF NEW YORK.

GENERATOR.

No. 903,665.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed January 4, 1905. Serial No. 239,569.

To all whom it may concern:

Be it known that I, EMOR RIDLEY BURROUGHS, of Geneva, in the county of Ontario and State of New York, have invented a certain new and useful Generator, of which the following is a specification.

My invention has for its object the production of a generator for steam and hot water heating, which is particularly simple in construction, economical in manufacture and highly durable and efficient in use. And to this end, it consists in the constructions and combinations hereinafter fully set forth and pointed out in the claims.

In describing this invention, reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1, is a perspective view, partly in section, of a preferable embodiment of my invention. Figs. 2 and 3, are respectively, top plan and vertical sectional view of the fire pot. Figs. 4 and 5 are, respectively, top plan and vertical sectional views of one of the intermediate sections. Figs. 6 and 7, are respectively, top plan and vertical sectional view of another of the intermediate sections. Fig. 8, is a top plan of the dome section. Fig. 9, is a vertical sectional view of the dome section and the smoke box.

1 is the fire box, which rests upon the base 2, and is provided with a hollow encircling wall or chamber 3, and a hollow top 4. The fire box 1 is formed with the usual feed and clinker openings, provided with closures 5, 6, and is also formed at its upper portion with internal, substantially radial, hollow water-containing arms 7. Extending through the hollow top 4 near its outer edge, are a number of substantially upright fire-passages or flues 8, arranged usually in a circular series, and decreasing upwardly in diameter. Said fire box is also provided, at its upper portion, with a rearward water-containing extension 9 having an opening 10 in its top surface.

11 is the lower intermediate section, which is formed hollow is arranged substantially horizontal and parallel to the top 4 of the fire box 1, and is provided at its rear with an extension 12 having openings in its top and bottom alined with the opening 10. The central portion of the section 11 is provided with a circular series of substantially upright fire-passages 13 similar in shape to the

passages 8 and out of vertical alinement therewith.

14 is an intermediate section similar in form and arrangement to the underlying section 11 and having its rear extension 15 provided with openings in its top and bottom alined with the opening 10. Said section 14 is provided near its outer portion with a circular series of substantially upright fire-passages 16 similar in form to the passages 8 and 13 and out of vertical alinement with the fire-passages 13.

17 is a dome section mounted upon the intermediate section 14 and provided with a rear extension 18 having an opening in its lower surface alined with the opening 10. This section 17 is provided with a circular series of substantially central fire-passages 19 of similar form to the corresponding passages in the sections 11 and 14 and out of vertical alinement with the fire-passages 16.

20 is a smoke box which is mounted upon a depressed portion of the top of the dome 17, encircles the upper ends of the fire-passages 19 and is provided with openings and suitable closures therefor, permitting cleaning of the underlying fire-passages. Said smoke box is also provided with the usual exit-opening, damper, and check door.

Push nipples 21 are arranged in the openings of the rear extensions of the parts 1, 11, 14 and 17 and form a simple means of connecting together the water-chambers of said parts. If desired, a diaphragm may extend longitudinally through these push nipples.

The opposing surfaces of the major portion of the parts 4, 11, 14 and 17 are separated by ribs 22, thus forming intervening chambers for receiving the products of combustion and the opposing surfaces of the rear extensions are also formed with beads 23 surrounding the openings in said extensions. These ribs are preferably hollow for additionally adding to the heating surface of the generator and are each formed with beads 23, said beads 23 of each of said parts lapping the corresponding beads 23 of the adjacent part and thus forming a tight joint.

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

1. A generator comprising a fire-box provided with a hollow encircling wall and with a hollow top, the interior of the hollow top communicating with the interior of the

hollow encircling wall, a dome section, a hollow intermediate section communicating with the interiors of the hollow top and of the dome section, the opposing sides of said top of the fire-box, dome and intermediate sections being formed with ribs, each of said ribs being provided with a bead for lapping the bead of the opposing rib, and the top of the fire-box, the dome and intermediate sections being formed with smoke-passages, substantially as and for the purpose described.

2. A generator comprising a fire-box provided with a hollow encircling wall and a hollow top, the interior of the top communicating with the interior of the encircling wall, the upper wall of said top being also formed with a rear extension having an opening therethrough, a dome section also formed with a rear extension having an opening in the lower side alined with the opening in the rear extension of said top of the fire-box, a hollow intermediate section formed with a rear extension having an opening alined with the openings of the rear ex-

tensions of said top and dome section, the opposing sides of the major portions of said top of the fire-box and dome and intermediate sections being provided with annular ribs forming intervening chambers, each of said ribs being formed with a bead, and also the opposing sides of said rear extensions being formed with beads surrounding the openings through said extensions, said beads of the major portions and of the rear extensions of said parts lapping upon the corresponding beads of the adjacent part or section, and said top of the fire-box and dome and intermediate sections being formed with smoke passages therethrough, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name in the presence of two attesting witnesses at Geneva, in the county of Ontario and State of New York, this 21st day of November, 1904.

EMOR RIDLEY BURROUGHS.

Witnesses:

M. B. MEEHAN,

ARTHUR E. PARSONS.