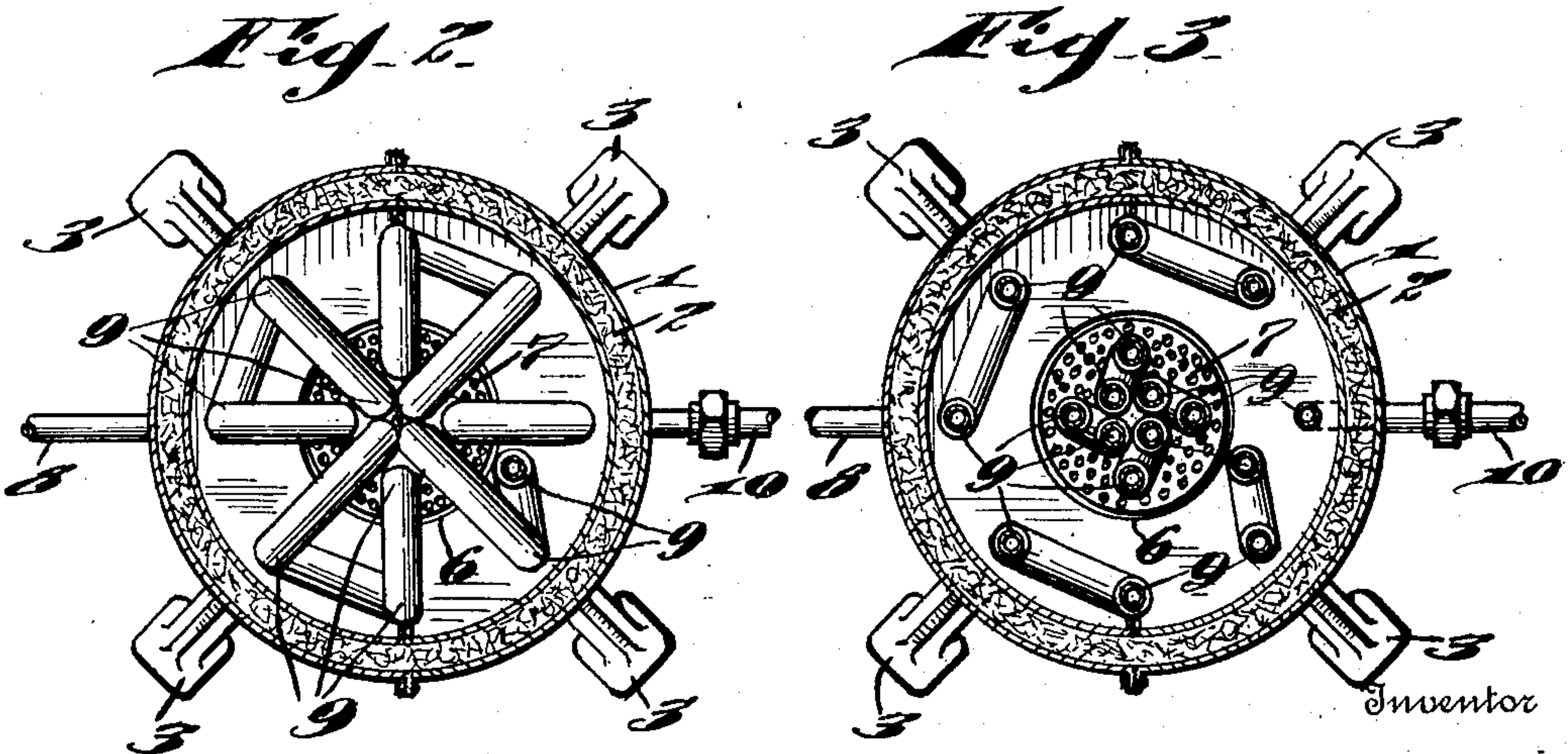
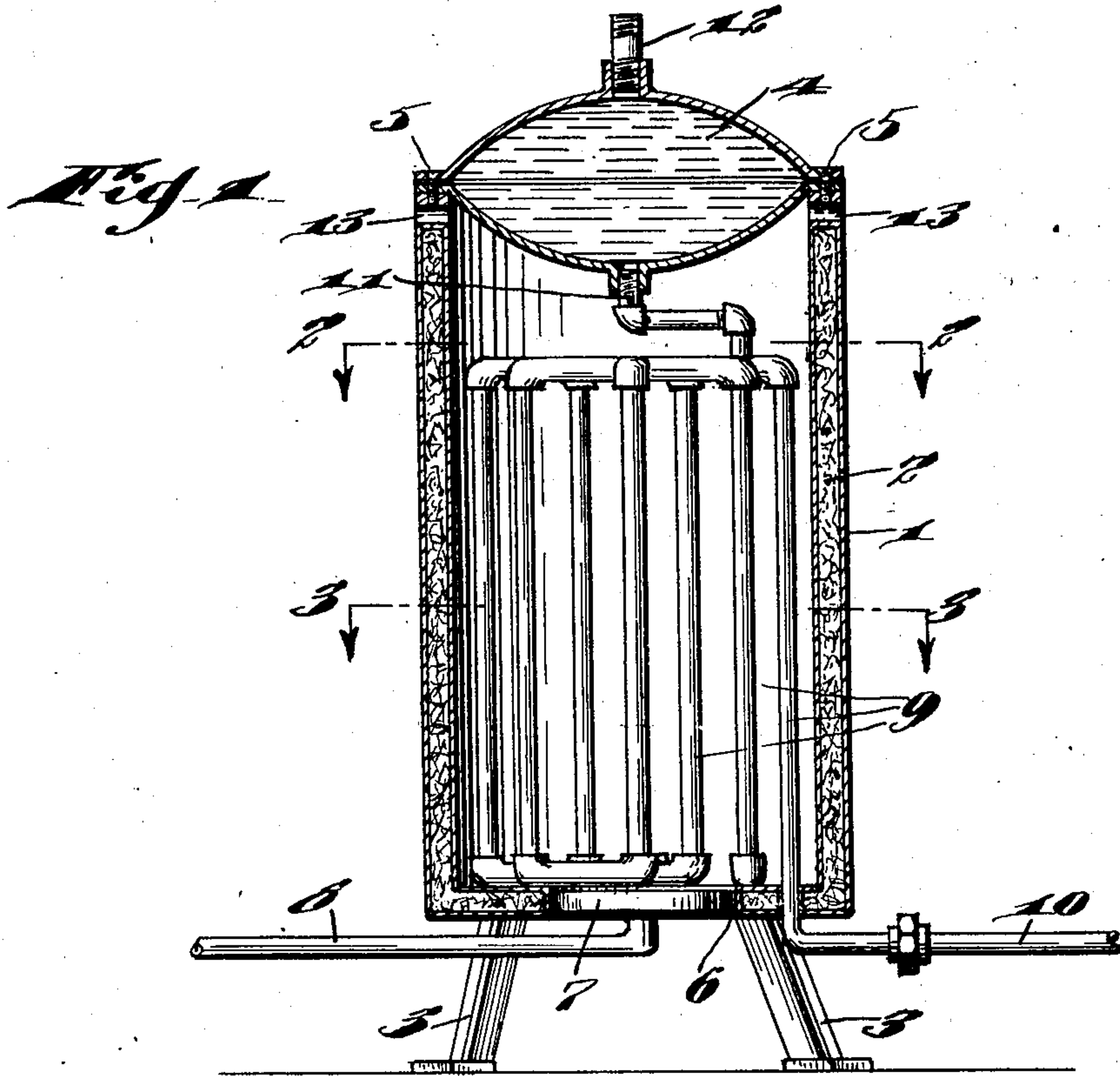


J. B. JONES.  
WATER HEATER.  
APPLICATION FILED JULY 18, 1910.

998,181.

Patented July 18, 1911.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

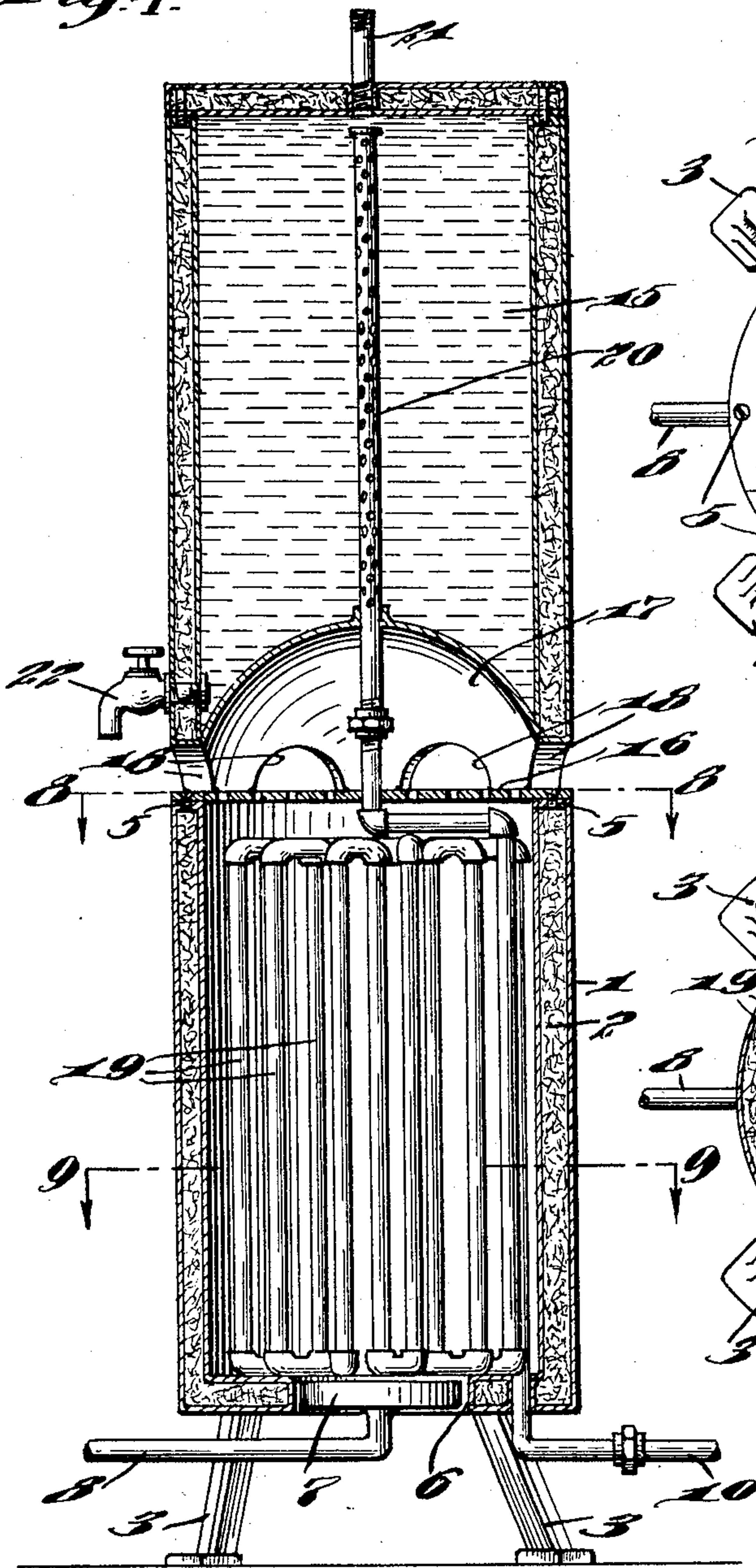


Fig. 5.

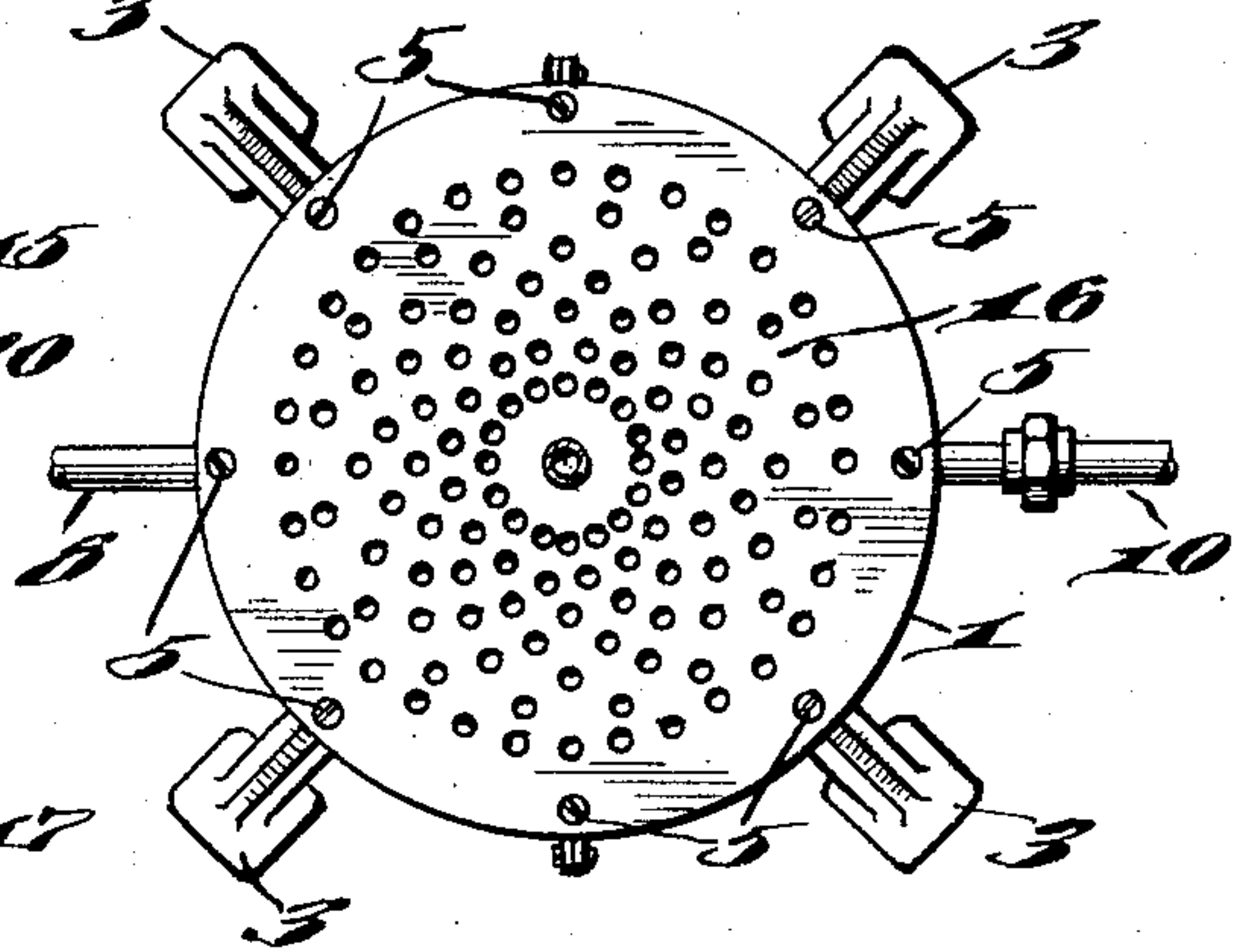
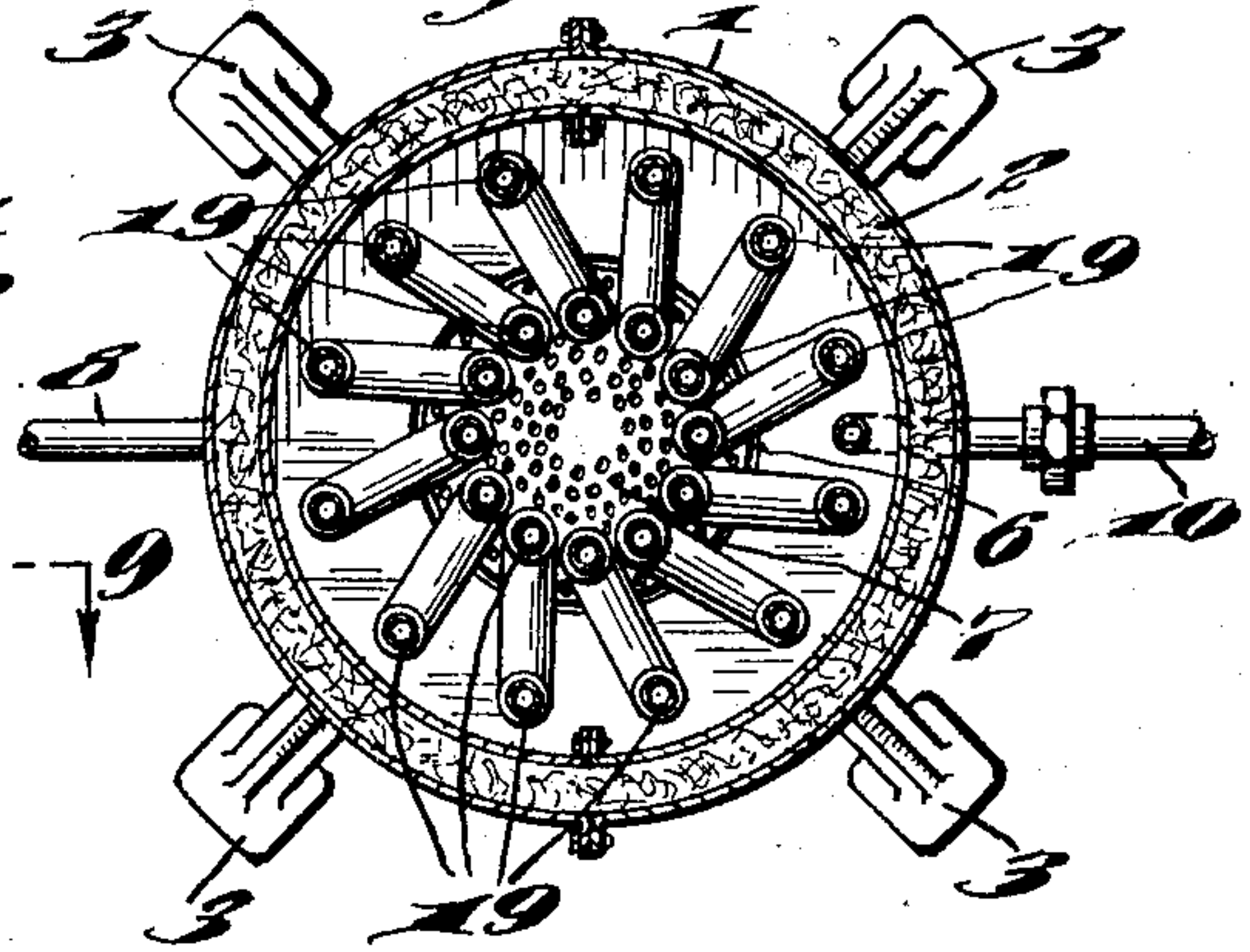


Fig. 6.



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# UNITED STATES PATENT OFFICE.

JOHN B. JONES, OF PHILADELPHIA, PENNSYLVANIA.

WATER-HEATER.

998,181.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed July 18, 1910. Serial No. 572,497.

*To all whom it may concern:*

Be it known that I, JOHN B. JONES, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Water-Heaters, of which the following is a specification.

My invention relates to improvements in water heaters, the object of the invention being to provide a water heater designed for domestic or other uses, which will quickly heat the water, which will utilize to the maximum degree the heat units of the fuel employed.

A further object is to provide a heater having an improved arrangement of vertical longitudinally disposed coil in which a number of runs of the coil are disposed in the center of the cylinder in the direct line of the heat currents from the burner below.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings: Figure 1, is a view in vertical longitudinal section illustrating one form of my improvement. Fig. 2, is a view in section on the line 2—2 of Fig. 1. Fig. 3, is a view in section on the line 3—3 of Fig. 1. Fig. 4, is a view in vertical section illustrating a modification. Fig. 5, is a view in section on the line 8—8 of Fig. 4, and Fig. 6, is a view in section on the line 9—9 of Fig. 4.

1, represents a cylindrical shell or casing which is preferably formed of two thicknesses of metal with a lining 2 of asbestos or other suitable non-conducting material between them. The shell may be provided with suitable feet 3 to support the same, and the upper end is closed by a water tank 4 preferably of the shape shown, secured by screws 5 to the upper end of the shell or casing. The bottom of the casing or shell is provided with a central opening 6 in which a burner 7 is located and supplied with gas or liquid fuel by means of the pipe 8. Within the shell or casing, my improved pipe coil 9 is located, and with one end of which an inlet pipe 10 communicates, the other end of said coil being connected to the bottom

of tank 4 as illustrated at 11, and an outlet pipe 12 is connected to the top of tank 4 for conveying the hot water to the point of use.

By referring particularly to Figs. 2 and 3, it will be noted that a large number of longitudinal runs of the coil are positioned in the central portion of the shell or casing, directly over the burner 7, so that the water in its passage up and down through the coil receives the maximum of the heat units as it flows through the runs of a coil which are heated to the highest degree so that the water is rapidly heated before it enters the tank 4. This tank 4 also receives the direct heat from the burner 7, small openings 13 being provided in the shell or casing 1 near its upper end to induce the current of hot air therethrough.

In the construction illustrated in Figs. 4, 5, and 6, I dispense with the tank 4 and employ a removable cylinder tank 15, and provide a perforated plate 16 on top of shell or casing 1. The bottom 17 of tank 15 is concaved so that the heat passing through the perforated plate 16 will be transmitted through plate 17 to the water in tank 15, suitable openings 18 being provided in the lower portion of tank 15 to induce a current of hot air therethrough. The coil 19 in shell or casing 1 is somewhat different from that shown in Figs. 1, 2, and 3, in that its longitudinal runs are in circular series but the central runs are located directly above the burner. The upper end of the coil connects to a pipe 20, which projects up into tank 15, and is perforated so that the water from the coil passes through the perforations in pipe 20 into tank 15, and water is taken from the tank through a pipe 21. This tank 15 is preferably provided with a drain cock 22 through which the water may be drawn off as desired.

Corresponding parts in the structure illustrated in Figs. 4, 5, and 6 which agree with parts illustrated in the other figures, are given the same reference characters.

Various other slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.



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

1. In a water heater, the combination with  
5 a shell or casing, having openings therein to induce a current of hot air through said shell or casing, a burner located in the central portion of the bottom of the casing, and a pipe coil located within the shell or  
10 casing having vertical runs of pipe, certain of said vertical runs congregated together at the center of the casing and located directly above the burner, a water tank supported and secured on the upper edge of the  
15 shell or casing and covering the entire upper end of the shell or casing, the outlet end of said coil communicating with the bottom of said tank, and an outlet pipe connected to the top of said tank for conveying the hot water to its place of use, substantially as described.

2. In a water heater, the combination with  
a shell or casing made in two cylindrical  
25 sections of the same diameters, a burner located in the center of the bottom of the lower section of the shell or casing, a pipe coil located in the lower shell or casing, a perforated plate secured on the upper end of the lower section of the casing, and separating the two sections, the upper section  
30 constituting a water tank supported on said perforated plate and having a concaved

bottom receiving the heat through said perforations, said upper section having openings below its concaved bottom to induce a  
35 current of hot air through said shell or casing, an outlet pipe from said tank, a pipe, a union connecting the pipe to said coil, said pipe projecting into the tank, and perforated in the tank, and a pipe connected to  
40 the top of said upper section or tank for conveying the hot water to its place of use, substantially as described.

3. In a water heater, the combination with  
a shell or casing, a burner located in the  
45 central portion of the bottom of the casing, a pipe coil located within the shell or casing, a perforated plate on the upper end of the casing, a water tank supported on said  
50 perforated plate and having a concaved bottom spaced from said plate and receiving the heat through said perforations in the plate, an outlet pipe from said tank and a pipe connecting said coil with the interior of said  
55 tank, and perforated within the tank, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN B. JONES.

Witnesses:

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CHAS. E. POTTS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."