

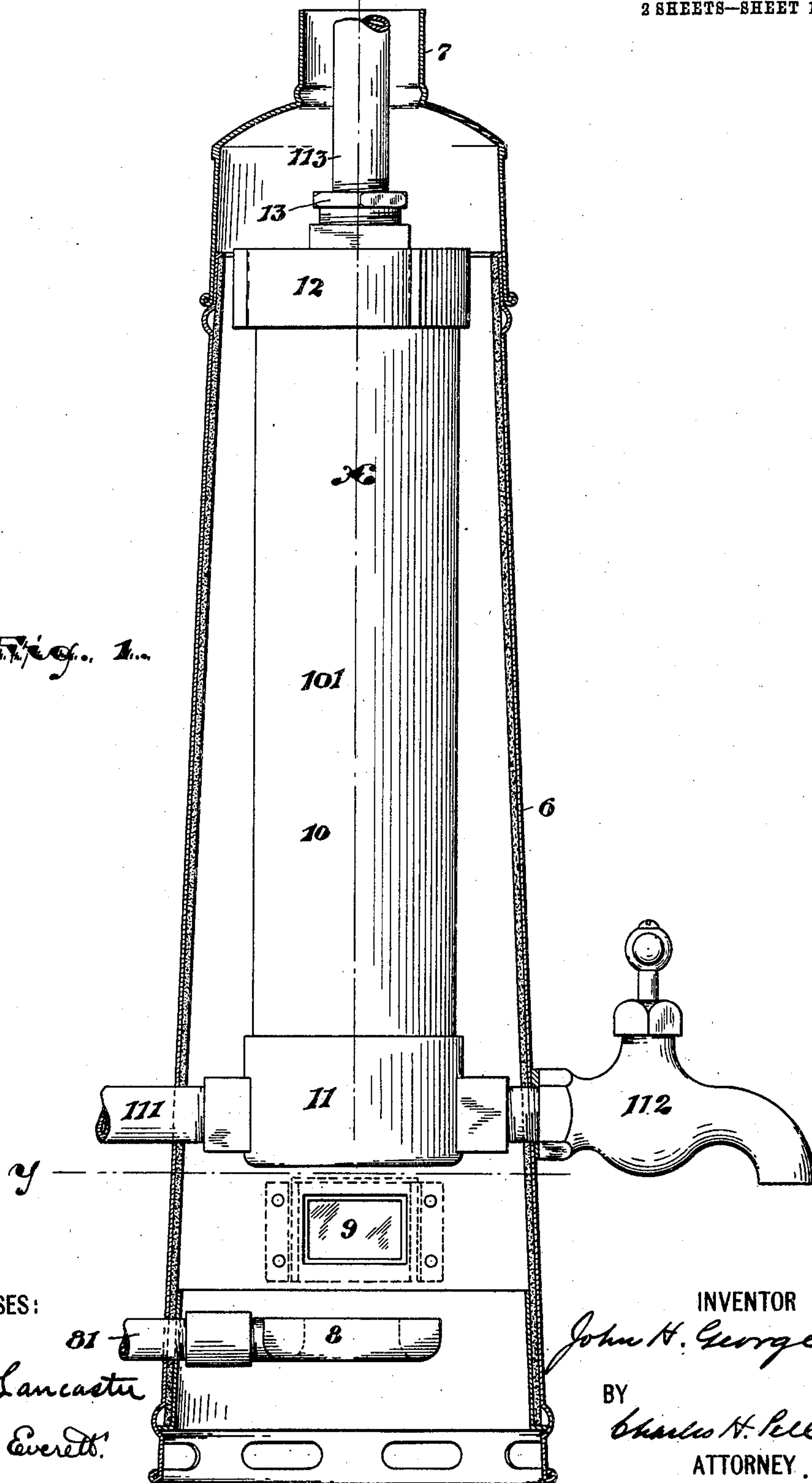
No. 789,149.

PATENTED MAY 9, 1905.

J. H. GEORGE.
WATER HEATER.
APPLICATION FILED NOV. 22, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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2 SHEETS—SHEET 2.

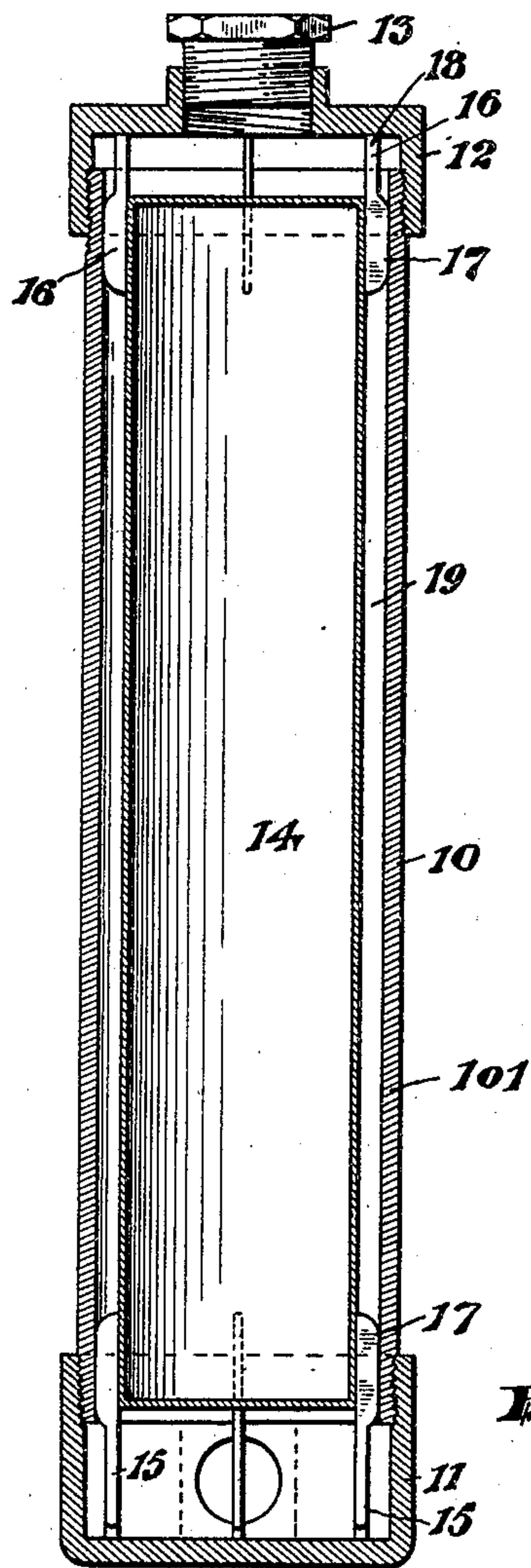


Fig. 2.

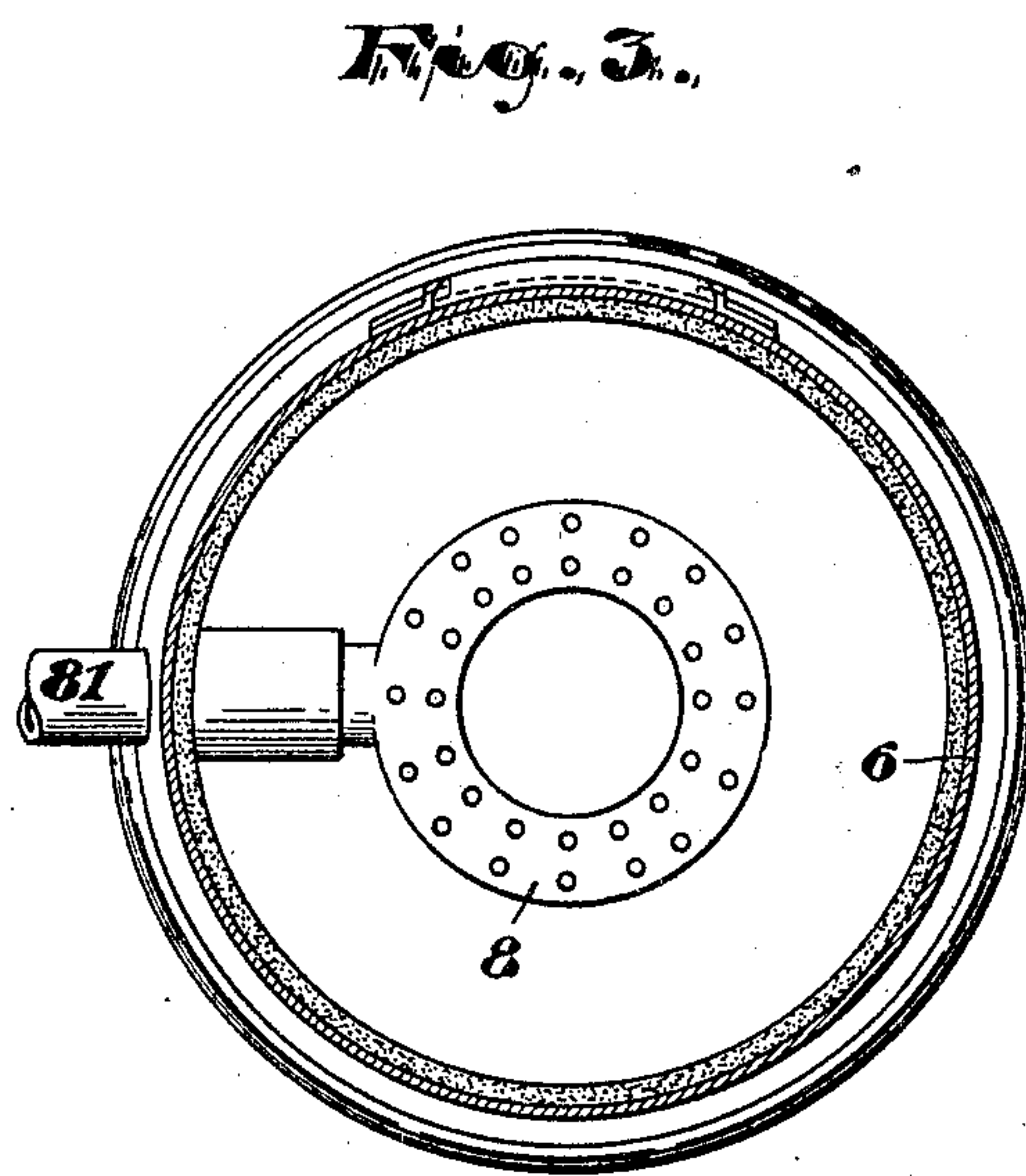


Fig. 3.

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UNITED STATES PATENT OFFICE.

JOHN H. GEORGE, OF NEWARK, NEW JERSEY.

WATER-HEATER.

SPECIFICATION forming part of Letters Patent No. 789,149, dated May 9, 1905.

Application filed November 22, 1904. Serial No. 233,817.

To all whom it may concern:

Be it known that I, JOHN H. GEORGE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Water-Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

The objects of this invention are to reduce the cost of construction, to secure a greater durability and avoid the joints incident to the use of a large number of parallel tubes, to enable the parts to be quickly dismembered for purposes of cleansing or the removal of sediment, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved water-heater and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like numerals of reference indicate corresponding parts in each of the several figures, Figure 1 is a sectional view of a water-heater of my improved construction, the interior devices being shown in elevation. Fig. 2 is a central vertical section of a water-heating cylinder, taken at line x , and Fig. 3 is a horizontal section taken at line y , of Fig. 1.

In said drawings, 6 indicates the outer casing or shell of the heater, having at the top an exit-pipe 7 for the products of combustion and at or near the bottom a burner 8 for gas or other combustible fluid fed to said burner through a pipe 81.

9 indicates a spy-hole or door through which the operation of the burner may be observed or controlled, and 10 is the heating-cylinder or water-receptacle, through which the water passes and is heated as it flows. The said cylinder 10 comprises a tubular body 101, which is threaded at opposite ends and at its lower

end is provided with a bottom cap 11, having an inlet-pipe 111, through which the water is fed to the heater, and at its opposite side having a faucet connection 112, through which the water may be drawn off and carry with it sediment in cleansing the heater. At the top of the cylinder-body 101 the same is threaded to receive an upper cap 12, having in turn a threaded connection 13 to receive an outlet or hot-water pipe 113, through which the heated water passes out for service.

Within the cylindrical body 101 is arranged a hollow and closed drum 14, which is loosely held in place within the cylinder by means of stays 15 16, the said stays at the bottom extending downward toward the bottom cap, so as to rest thereon, serving as legs to hold the said drum up from the bottom of the cap 11, and the stays at the top being provided with extensions 18 to enable the upper cap 12 to hold the said drum down in place and prevent the said drum from floating in the water, so that the outflow-passage for the hot water is not closed thereby or partly closed. The said parts 15 and 16 are each provided with lateral extensions 17, adapted to engage the inner walls of the cylindrical body 101, and thus hold the drum concentric with the said walls to secure an annular flow-space around the drum and within said walls of substantially uniform capacity at all sides. The water rising from the supply-pipe 111 flows through the narrow annular flow-space 19, and because of the heat from the cylinder the upflowing water is rapidly heated to the desired extent, so that when it reaches the outflow-pipe 113 it is sufficiently warm for service. Should the cylindrical body clog with sediment or otherwise, and should there be any reason for a disassociation of parts, by simply unscrewing the cap 16 the drum 14 may be lifted out, so that access to the whole interior of the cylinder may be gained, and because there are no tubes joined to the head-pieces or the like there is very little or no danger of leakage and the incident cost of maintenance or repair.

The drum 14 is usually made of copper or brass and is thus very durable even when subjected to water and the cylindrical body is

also of copper or brass and of great durability.

I am aware that various detail changes may be made without departing from the spirit or scope of the invention as above specifically described.

Having thus described the invention, what I claim as new is—

1. The combination with the outer case or shell having heating means, of a water-receptacle having a cap at one end which is separable therefrom and a loose drum in said receptacle adapted to be withdrawn upon the removal of said cap, said loose drum having legs to hold the same up from the bottom of said receptacle, substantially as set forth.

2. The combination with the outer case, a burner and means permitting escape of the products of combustion, a water-receptacle in said case, the body of which has threaded opposite ends, caps removably secured upon said ends, a pipe for feeding water to said body and a pipe for the hot water, and a loose drum within said receptacle having stays for holding said drum away from the inside wall of said receptacle, the stays at the top of said loose drum having upward extensions to hold

the drum down from the top of said receptacle and the stays at the bottom of said drum having downwardly-extending legs to hold the said drum up from the bottom of said receptacle, substantially as set forth.

3. The water-heater herein described, comprising an outer casing having an exit for the products of combustion and at the bottom a gas-burner having a fuel-supply pipe in connection therewith, a heating-cylinder having an inlet-pipe for water at the bottom and an exit-pipe for the hot water at the top, said exit-pipe being connected with a removable cap closing the upper end of said heating-cylinder, a hollow drum loosely arranged within said heating-cylinder and free to be withdrawn from said cylinder on the removal of said cap, and stays holding said drum away from the top, bottom and sides of said cylinder, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of November, 1904.

JOHN H. GEORGE.

Witnesses:

CHARLES H. PELL,
RUSSELL M. EVERETT.