

V. E. CARTER.
BOILER.

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934,426.

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Fig. 1.

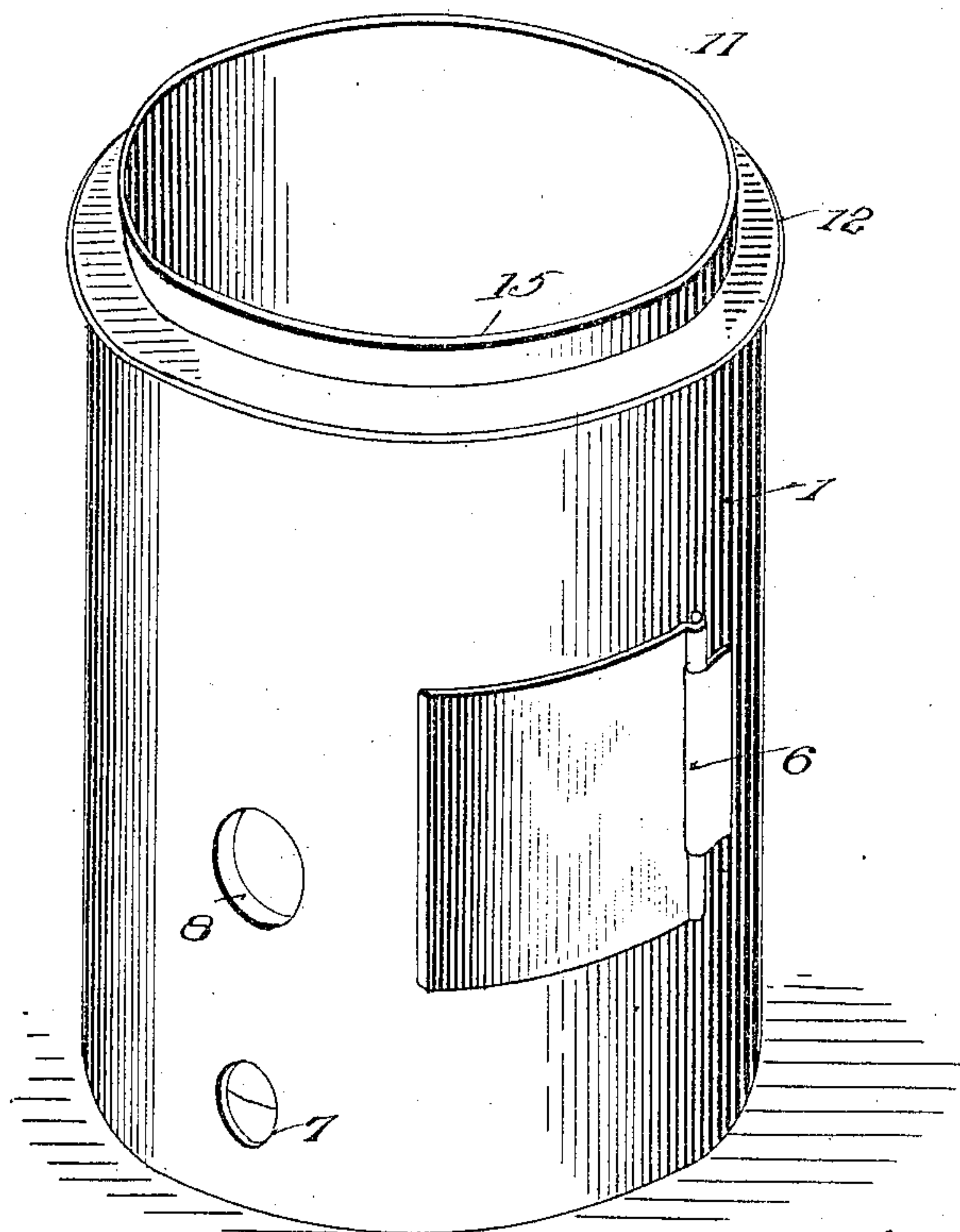


Fig. 2.

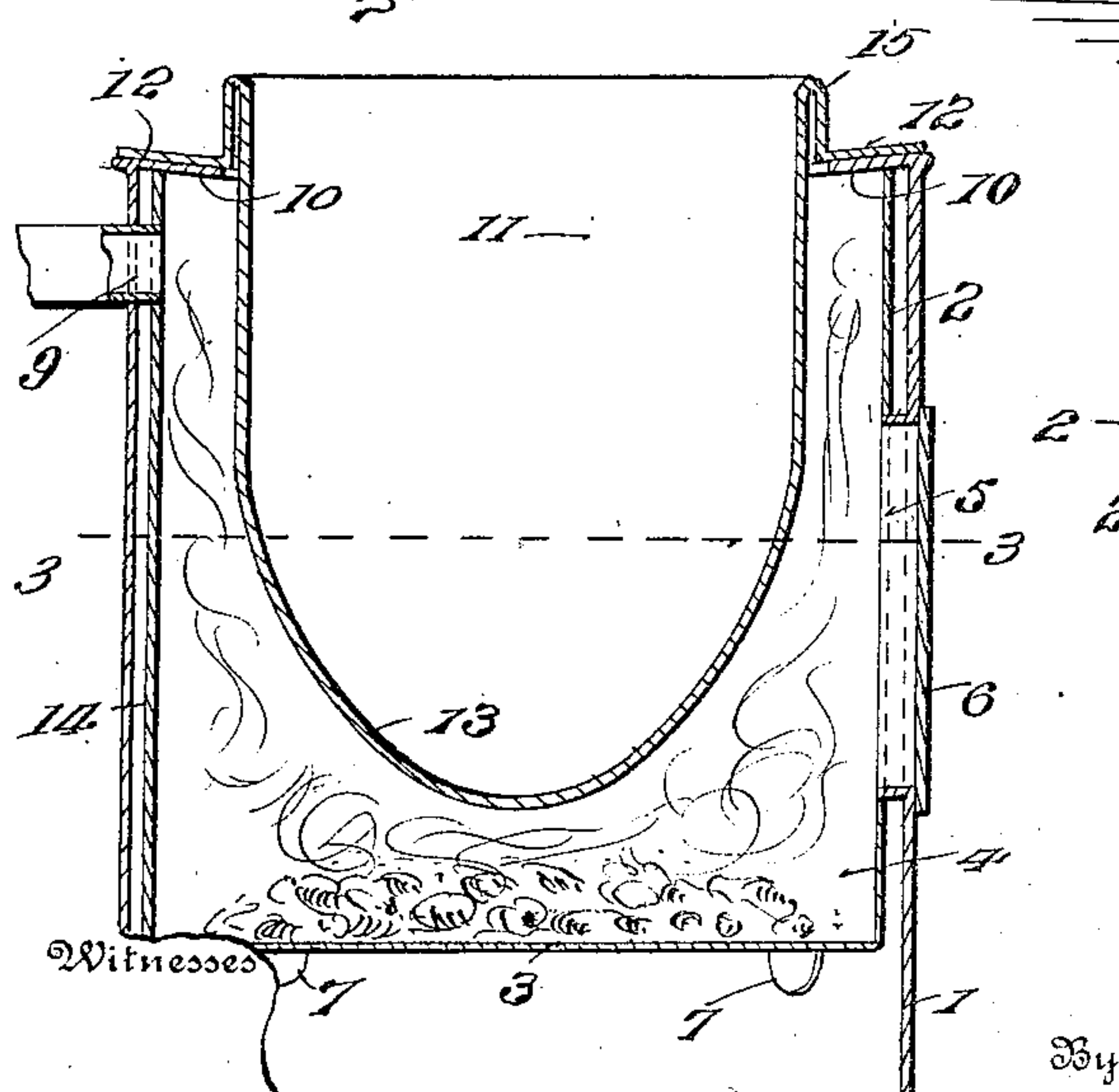
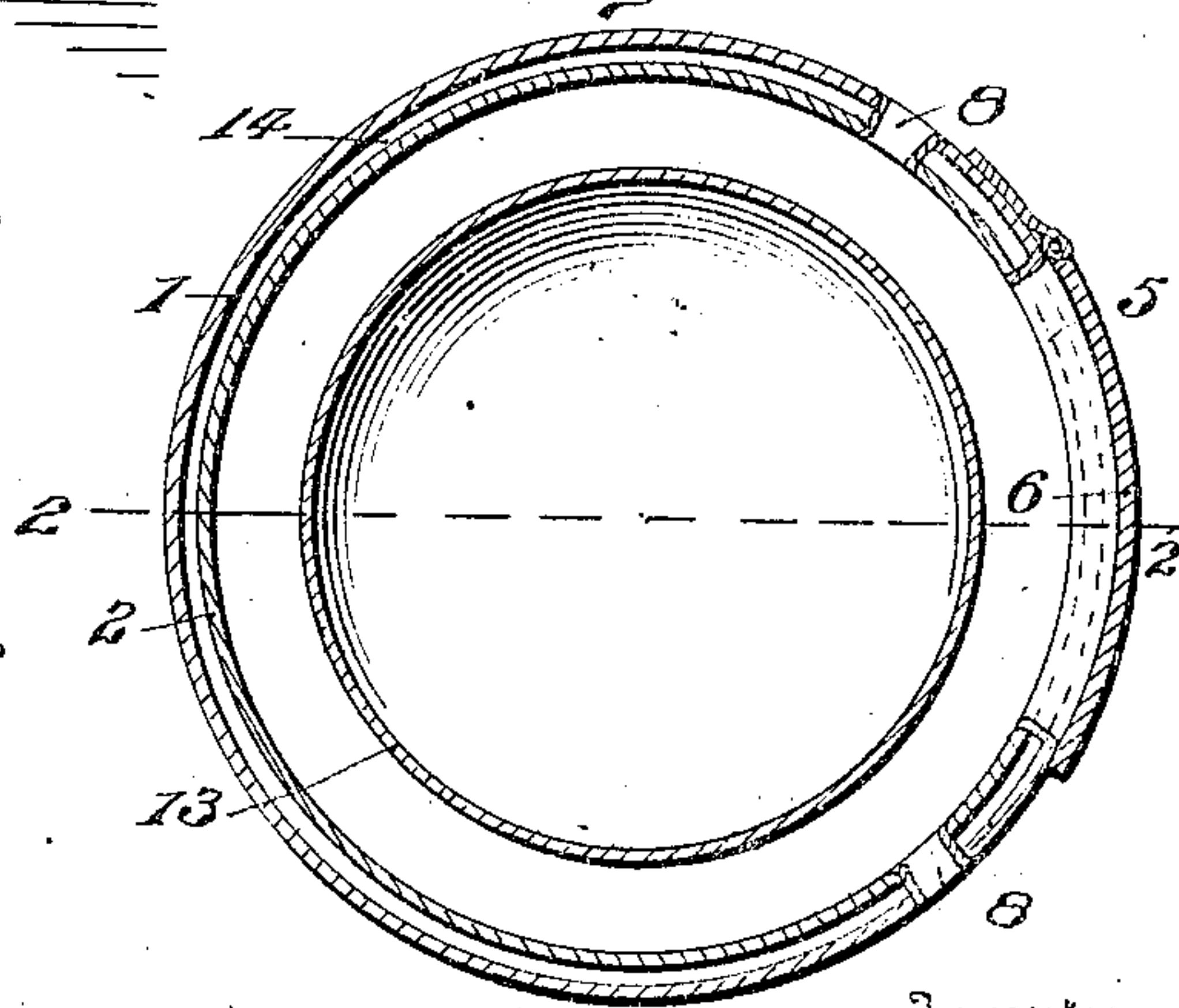


Fig. 3.



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BOILER.

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To all whom it may concern:

Be it known that I, VIOLA E. CARTER, a citizen of the United States, residing at Goshen, in the county of Pike and State of Alabama, have invented certain new and useful Improvements in Boilers, of which the following is a specification.

This invention contemplates certain new and useful improvements in domestic wash boilers. The boiler commonly used for this purpose is a wash pot set on three short legs and heated by a fire built beneath it. Such a type of boiler obviously has many disadvantages, chief among which are the large amount of heat wasted; the unpleasantness of the smoke from the fire, and the danger of the flames igniting the clothing of the person approaching or using the boiler.

The object of this invention is a wash boiler of this character which can be cheaply manufactured, which is designed to supersede the ordinary wash pot and effectually overcome its many disadvantages, and which embodies an improved hot air jacket which substantially incases the fire pot to effect a material economy in the consumption of fuel, and that is provided with peculiar safety means, whereby the expanded air or gases of the jacket may be exhausted to prevent the possibility of too great pressure being produced within the jacket and a consequent explosion.

With this and other objects in view that will more fully appear as the description proceeds, the invention consists in certain constructions and arrangements of the parts that I shall hereinafter fully describe and then point out the novel features thereof in the appended claim.

For a full understanding of the invention and the merits thereof, and to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a perspective view of a domestic wash boiler constructed in accordance with my invention; Fig. 2 is a vertical section thereof on the line 2—2 of Fig. 3; and, Fig. 3 is a horizontal section on the line 3—3 of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

In carrying out my invention, I provide a

casing 1 which may be of any desired or approved construction or design, and which substantially surrounds a fire pot 2 with a space interposed therebetween to constitute a hot air jacket during the operation of the boiler and effect a material reduction in the consumption of fuel. In the present instance, the fire pot 2 has a solid bottom 3, and is intended to contain a suitable wood fire, as indicated at 4, the fire being preferably rendered conveniently accessible by means of a tubular doorway 5 which leads from the fire pot near the lower end thereof, and which extends through the hot air jacket and opens outwardly through the casing 1, and is susceptible of being closed or opened at will by means of a suitable door 6. Also extending through the hot air jacket are one or more flues 8 which are preferably located in substantially the same horizontal plane with the doorway 5, and which are designed to establish communication between the exterior of the casing and the fire pot to effect the ventilation of the latter and conduct air to the fire, the air admitted to the fire pot and the smoke from the fire being permitted to escape through a smoke outlet pipe 9 that leads from the fire pot near the upper end thereof and extends outwardly through the hot air jacket, as shown.

The fire pot 2 is open at its upper end, and the casing 1 is formed with an inwardly disposed rim flange 10 that extends inwardly beyond the fire pot and upon which rests an outstanding flange 12 formed near the upper end of a water receptacle 11 to suspend the same within the fire pot. This water receptacle is designed to be employed for boiling clothes or for any other desired purposes, and may be of any desired or approved construction or design, although in the present instance it is formed with a downwardly tapering bottom, as indicated at 13, so as to present or expose an increased surface to the heat of the fire. The flange 10 extended inwardly from the casing 1 touches the upper end of the fire-pot 2 and closes the annular space 14 formed between the casing and fire-pot and projects inwardly some distance from the inner walls of the fire-pot to provide ample space between the receptacle 11 and the fire-pot to receive the hot air and products of combustion. The upper end of the water receptacle 11 is outwardly and downwardly curved, as indicated at 15, forming a substantially vertical shoulder to

sustain the weight of the water receptacle and its contents, the terminal portion being bent or deflected outwardly to form the flange 12 which over-laps and rests upon the flange 10 and extends outwardly to project over the fire-pot and casing both of which sustain the weight, thereby relieving the inner portion of the flange 10 of a great portion of the weight and enable the same to be made comparatively thin. The inner portion of the flange 10 forms a close joint with the outer flange 12 of the water receptacle 11, thereby preventing smoke and gases from escaping, which is of special advantage when the heater is used in a barn or other closed structure.

It is to be particularly observed that the bottom 3 of the fire pot is arranged above the lower end of the casing 1, and that the casing is formed below the plane of the bottom 3 with one or more outlet openings 7 extending therethrough for a purpose to be hereinafter disclosed.

In the practical use of my improved wash boiler, a suitable wood fire is built in the fire pot, and it will be manifest that the draft and heat will be produced in the same manner as that of a wood fire in a fireplace. The heat from the fire pot is designed to heat the air or gas contained in the jacket or space between the fire pot and the casing, and this obviously effects a material economy in the consumption of fuel required to boil clothes or effect the other desired results. The heating of the air or gas in the jacket obviously effects the expansion of the former and causes the air to be retained in the jacket at considerable more than normal pressure, which would be manifestly dangerous were it not for the fact that the casing 1 is formed

below the bottom of the fire pot with outlet openings 7, so that when the air has been expanded sufficiently to be forced downwardly below the fire pot, it will find means of ready escape, and any explosion will thus be effectually precluded. As the outlet openings 7 are located below the bottom 3 of the fire pot, the latter will always be surrounded by a jacket of hot air, since the expanded air is lighter than usual and will rise, and the escape of the air through the openings 7 will have no effect upon the fire pot to cool the same, but will merely reduce the pressure within the jacket.

Having thus described the invention, what I claim is:

A domestic wash boiler comprising a fire-pot, a casing inclosing the fire-pot and spaced therefrom, a flange extended inward from the upper end of the casing and resting upon the fire-pot, tubular connections between the fire-pot and casing, and a water-receptacle suspended within the fire-pot and having its upper end portion reflexed outwardly and downwardly to form a vertical shoulder, thence outwardly to provide an outstanding flange, which over-laps and rests upon the inwardly extended flange at the upper end of the casing and projecting outwardly to such an extent as to over-hang the firepot and casing and transmits the greater portion of the weight of the water receptacle thereon.

In testimony whereof I affix my signature in presence of two witnesses.

VIOLA E. CARTER. [L. S.]

Witnesses:

C. D. CARTER,
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