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Patented Feb. 19, 1901.

F. J. SMITH.
COOKING OR HEATING OIL STOVE.

(Application filed May 26, 1900.)

(No Model.)

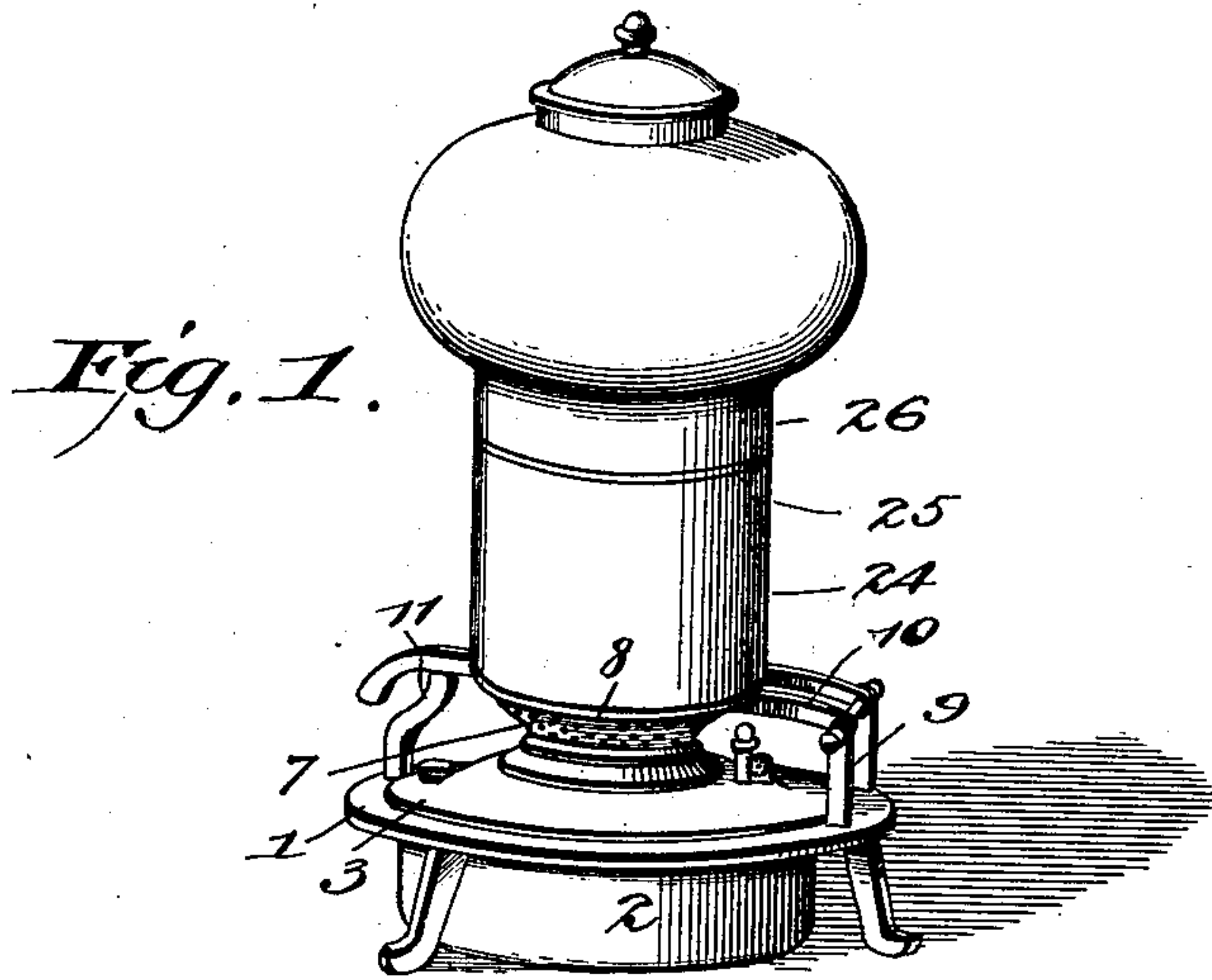


Fig. 2.

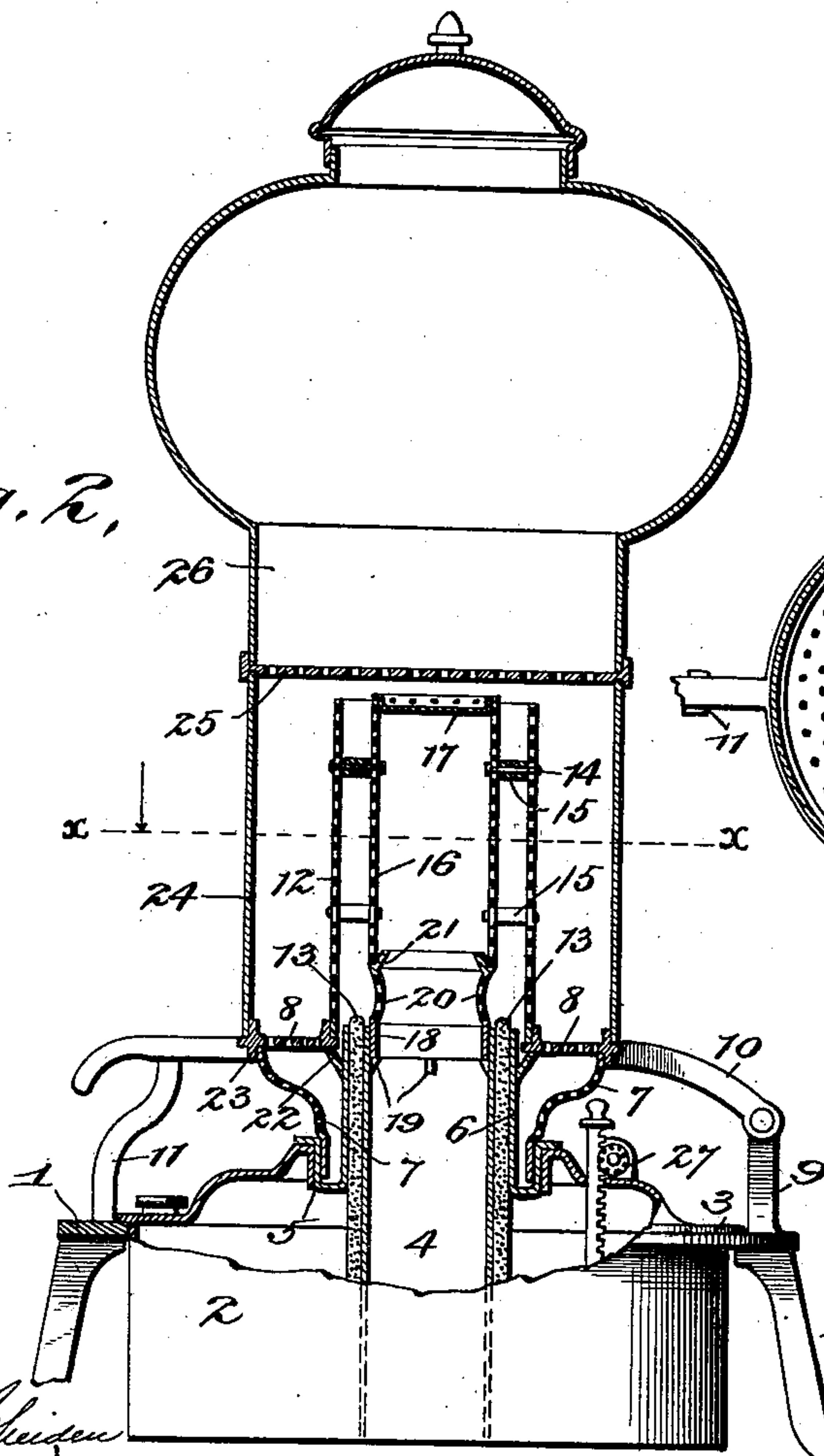
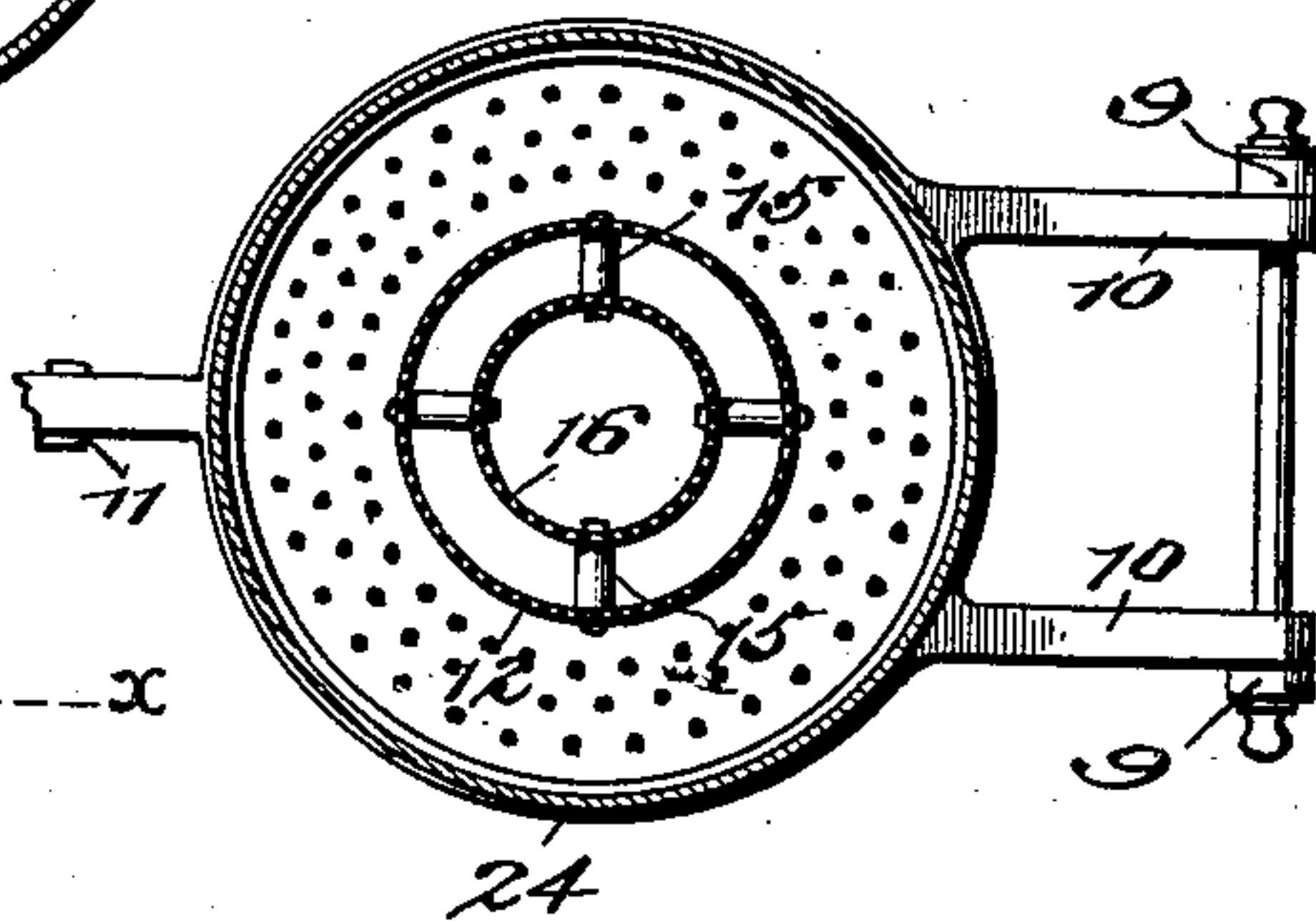


Fig. 3.



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331

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COOKING OR HEATING OIL-STOVE.

SPECIFICATION forming part of Letters Patent No. 668,587, dated February 19, 1901.

Application filed May 26, 1900. Serial No. 18,114. (No model.)

To all whom it may concern:

Be it known that I, FRANK JOS. SMITH, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented a new and useful Cooking and Heating Oil-Stove, of which the following is a specification.

My invention relates to stoves, and more particularly to oil-stoves; and it has for its object to produce a device of this kind which will be simple, compact, and efficient and can be used for heating purposes or for cooking or heating articles.

With this object in view my invention consists in the improved construction and novel arrangement of parts of a stove, as will be hereinafter more fully set forth.

In the accompanying drawings, in which the same reference-numerals indicate corresponding parts in each of the views in which they occur, Figure 1 is a perspective view of my improved combined heating and cooking stove. Fig. 2 is a vertical sectional view of the same on an enlarged scale, and Fig. 3 is a horizontal sectional view taken on the line $x-x$ of Fig. 2 looking in the direction of the arrow.

Referring more particularly to the drawings, 1 indicates the base, which may be of any suitable size and dimensions, and preferably consists of an annular frame and suitable legs. Suspended within the frame is an oil-reservoir 2, which is preferably provided with a flange 3 around its top, which engages with the base 1 for the purpose of suspending the reservoir. Secured at its lower end in an opening in the bottom of the reservoir is a central wick-tube 4, which projects above the top of the reservoir through the usual opening 5. Secured within the opening 5 in the usual manner is the burner, which comprises an outer wick-tube 6, a perforated shield 7, and the chimney portion. The chimney portion comprises a perforated base 8, which is hinged at one side to two standards or supports 9 by means of two arms 10 and is supported at the opposite side upon another standard 11, the three standards projecting upwardly from and preferably forming a part of the base 1. Securely bolted or otherwise secured to the inner edge of the base is a perforated tube 12, which surrounds the top of

the wick 13 at its lower end and extends upwardly far enough to insure perfect combustion of the flame. Secured to the tube 12 by means of bolts 14 and sleeves or collars 15 is an inner perforated tube 16, which lies within the circle formed by the wick 13. A diaphragm 17 closes the top of the inner tube to prevent the passage of any air which passes up through the wick 4, but forces it out through the tube 16 into the flame of the lamp.

A short cylindrical sleeve 18 is detachably secured within the upper end of the wick-tube 4 and rests upon shoulders 19 with its lower end, while its upper portion is preferably perforated and curved inward, as shown at 20, and flanged inward at its upper end, as shown at 21. By flanging the upper end of the sleeve inward the top or chimney of the lamp can be swung back and forth upon its hinges for the purpose of lighting it, &c., without displacing the sleeve, as the lower end of the tube 16 will readily pass over and register with the flanged portion thereof. The inner edge of the base 8 rests upon a shoulder or flange 22 and the outer edge is preferably provided with a depending flange 23, which engages with the edge of the shield 7, which assists in holding the chimney in position.

A shield or drum 24, of metal or any suitable material, is rigidly secured at its lower end to the base 8 and extends a suitable distance above the perforated tubes that surround the top of the wick. At the upper end of the shield 24 is a grate or slotted piece of material 25, above which is a suitable dome or radiator 26. Said drum is intended to protect the perforated combustion-tubes from the wind and also to cause a draft of air through the perforated shield and the perforated base out through the perforated grate into the radiator. It will also act as a radiator for throwing the heat from the flame out into the room.

In using my improved stove the chimney is turned back upon its hinges, and the wick, which is adjusted vertically by means of an ordinary adjusting mechanism 27, is lighted in the ordinary manner and the chimney returned to its vertical position. Air is admitted to the interior of the flame through

the inner wick-tube and through the perforated tube, which virtually forms a continuation thereof, and also the short sleeve between said two tubes. The curvature of the sleeve being located directly opposite the top of the wick will admit air to the flame at that point without coming in contact therewith. Air is admitted to the outside of the flame by passing through the perforations in the shield, up through the perforations in the base of the chimney, and through the outer perforated tube. By arranging the parts in this manner the color of the ordinary flame is quickly changed from a dark red to a pure and smokeless blue, thereby increasing the heating capacity of the same and avoiding the accumulation of soot or other objectionable matter upon the parts of the chimney. As the heat arises it is partially intercepted by the grate above the top of the combustion-tubes, and part of it passes into the radiator, from whence it is radiated or transfused to the surrounding atmosphere.

When it is desired to use the stove for cooking purposes, the radiator is removed, which will expose the flat-topped grate, upon which any article may be placed for the purpose of cooking food or of heating water. By locating the grate so near the top of the combustion-tubes it will be subjected to a great heat and at the same time will not interfere with the process of combustion, which will have taken place before the combustible particles will have reached that height. If desired, the top of the dome may be removable, so that if it is desired to place a pan of water on the dome for supplying the room with moisture it can be done by simply removing the top of the radiator and placing the open pan in its place.

The stove can be made of any desirable size, according to the use for which it is intended, and can be placed upon the floor or other support while being used. By placing it upon the floor the draft through the central wick-tube will assist in drawing off all foul air, and thereby act as a ventilator for the room. The air passing through the perforated shield on its way to the outer perforated tube of the chimney will engage with and prevent the upper portion of the wick-tube from becoming heated, while the passage of the cold air through the inner wick-tube will accomplish the same purpose, thereby avoiding any possibility of an explosion from the excessive heating of the flame.

Although I have shown what I consider the most desirable form of constructing my improved heating and cooking oil-stove, I reserve the right to make such changes and al-

terations therein as will come within the scope of my invention.

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

1. In a stove, the combination with a base, of an oil-reservoir therein, a wick-tube projecting above the reservoir, an annular frame hinged at one side of the tube so as to encircle the same, a perforated shield extending from the top of the reservoir to the frame, a perforated tube secured to the inner edge of the frame above the wick-tube, a perforated shield extending to the outer edge thereof, and a perforated tube within the first-mentioned perforated tube, above the wick-tube, substantially as described.

2. In a stove, the combination with a base, of an oil-reservoir therein, a wick-tube projecting above the reservoir provided with a flange at its upper end, an annular frame hinged at one side of the tube so as to encircle the same, the inner edge of which is adapted to rest upon said flange and is provided with a flange on its upper surface and the outer edge is provided with a flange on its top and bottom, a perforated shield extending from the reservoir to the bottom flange, a shield secured to the top flange at the outer edge and a perforated tube secured to the flange at the inner edge, and an inner perforated tube disposed at the upper end of the wick-tube and within the first-mentioned perforated tube, said inner tube being of such size as to leave a space between its walls and the walls of said outer tube, substantially as described.

3. In a stove, the combination with a base, of a reservoir therein, an annular wick-tube projecting above the reservoir, the inner portion of which is provided with shoulders near its upper end, an annular frame hinged to one side of the tube so as to encircle the same, a perforated shield and a perforated tube secured to said frame, an inner perforated tube within said perforated tube, the lower end of which terminates at a distance above the top of the wick-tube, and a short perforated tube within the top of the wick-tube and resting on the shoulders, the top of said short perforated tube being flanged inward to fit in the inner perforated tube and the intermediate portion being curved inward above the top of the wick-tube to permit of more perfect combustion of the flame, substantially as described.

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