

No. 677,664.

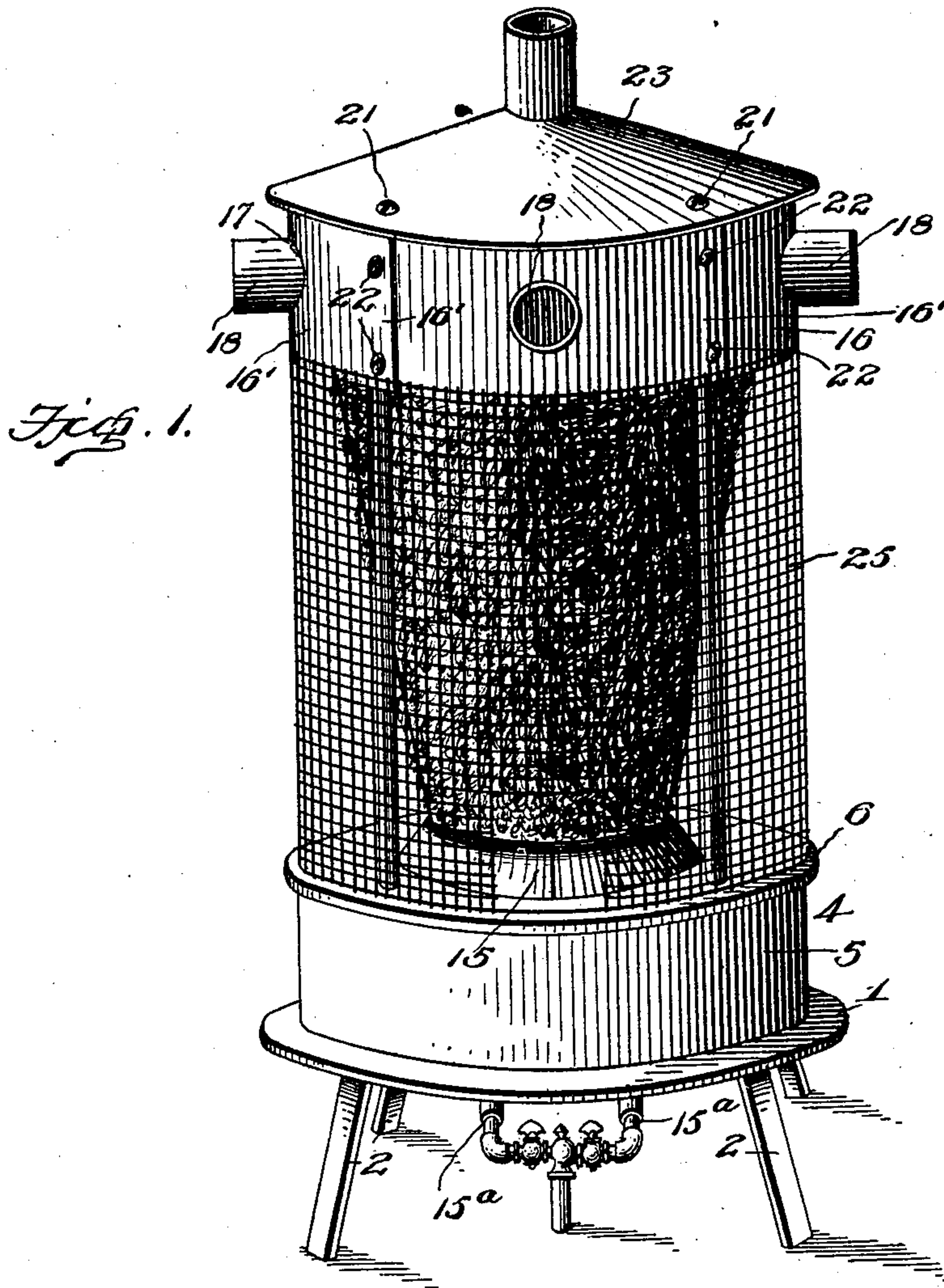
Patented July 2, 1901.

J. E. JAMES.  
HEATING STOVE.

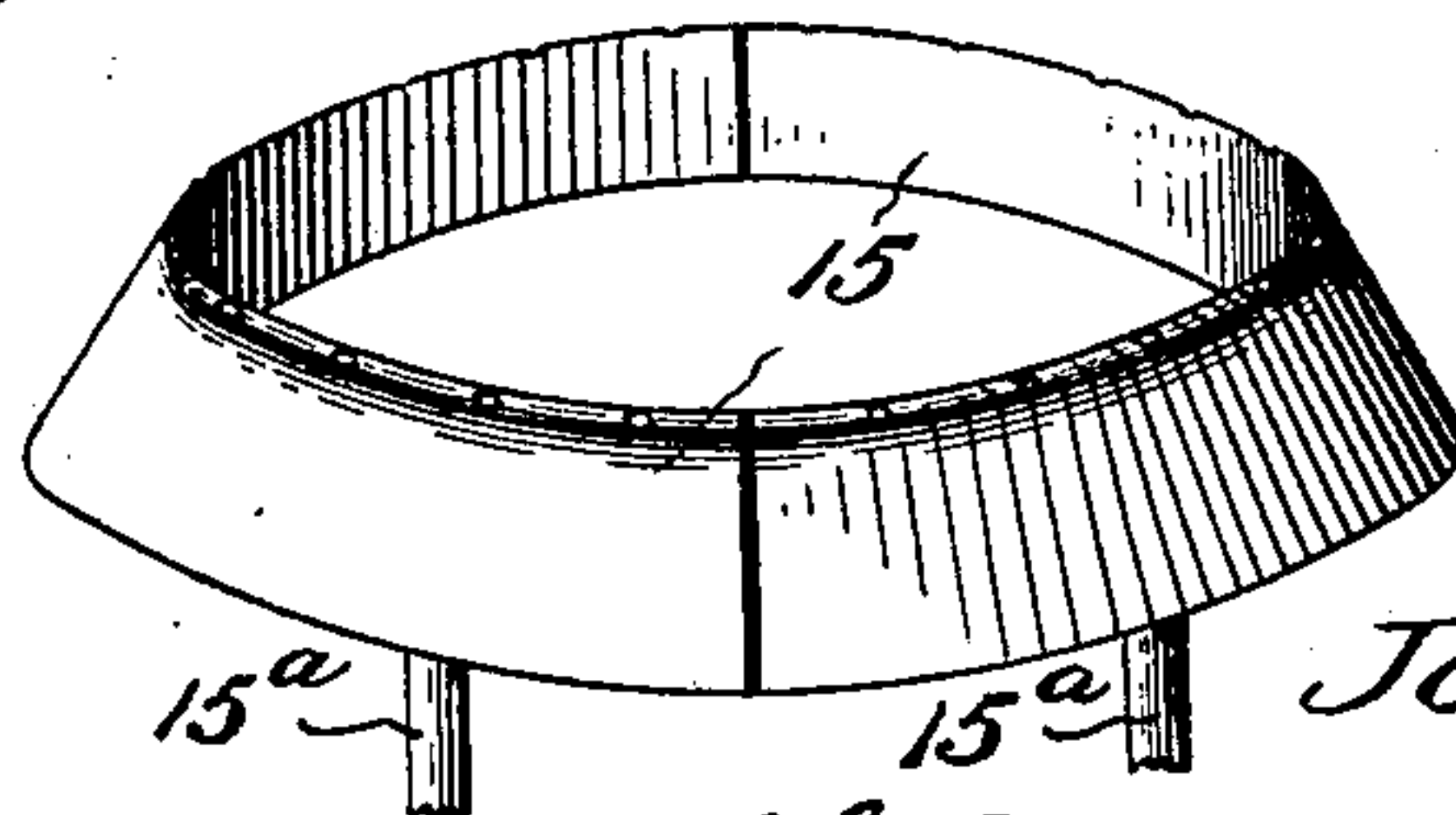
(Application filed Feb. 28, 1901.)

(No Model.)

3 Sheets—Sheet 1.



*Fig. 3*



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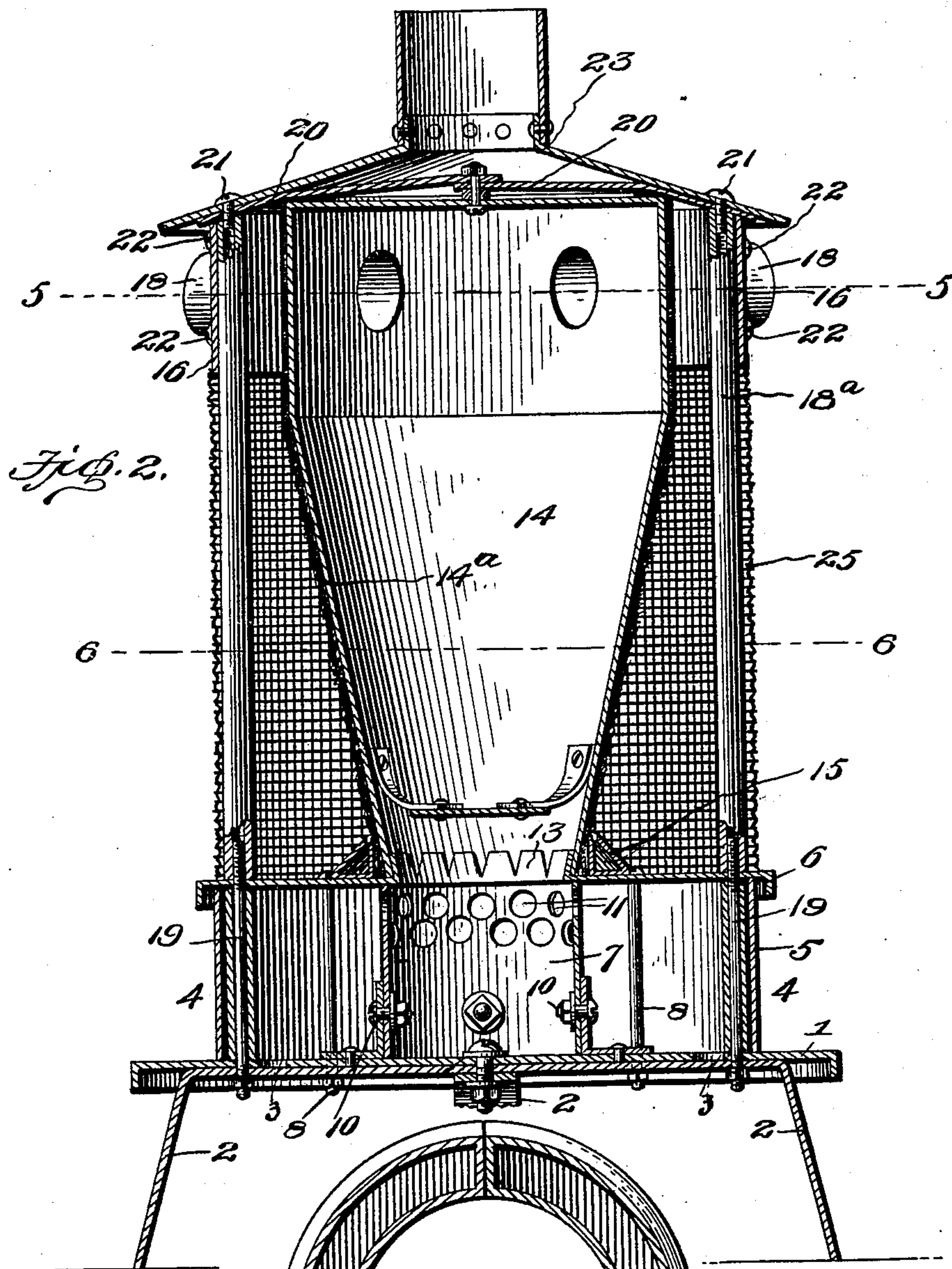
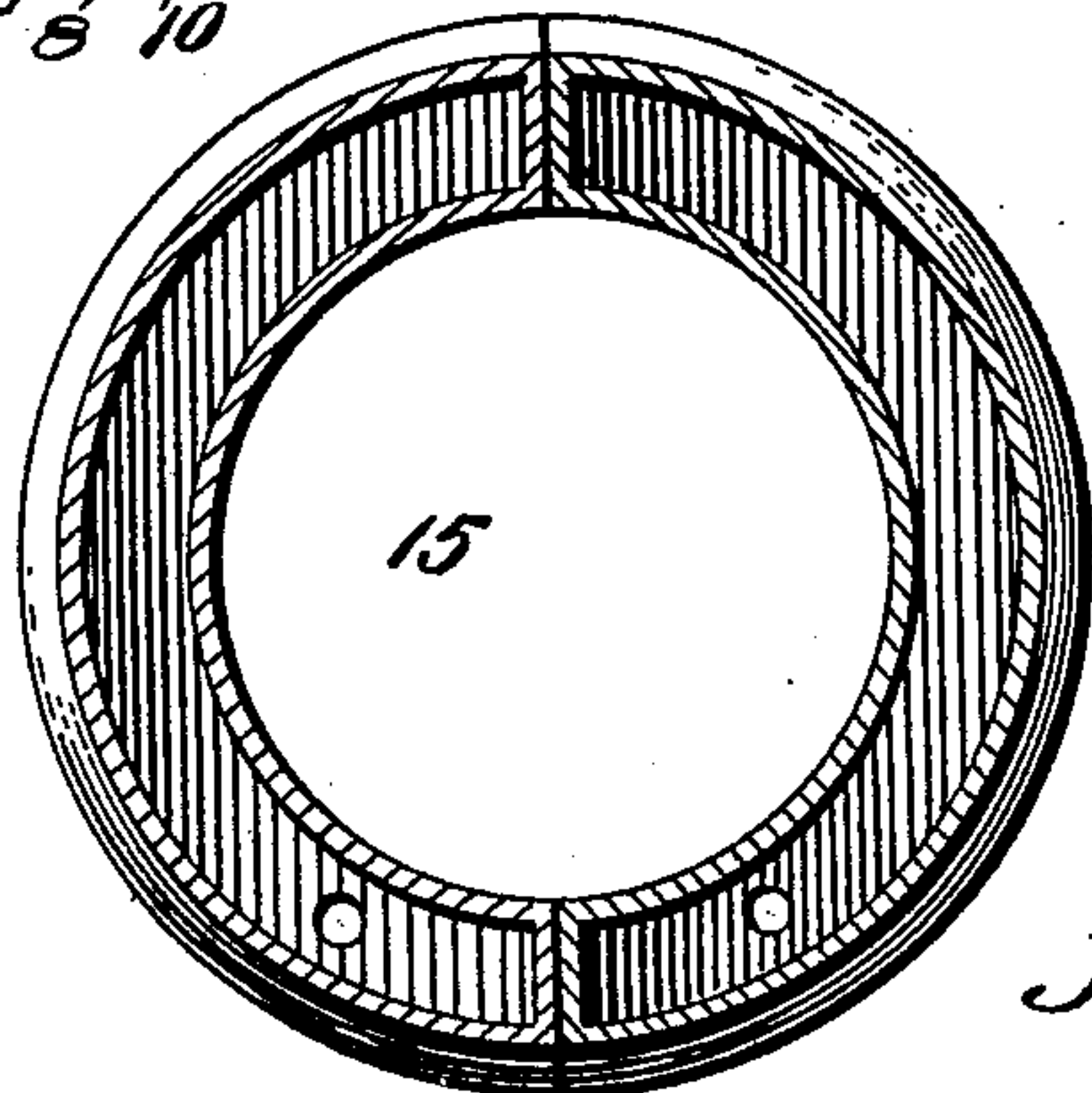


Fig. 2.

Fig. 4.



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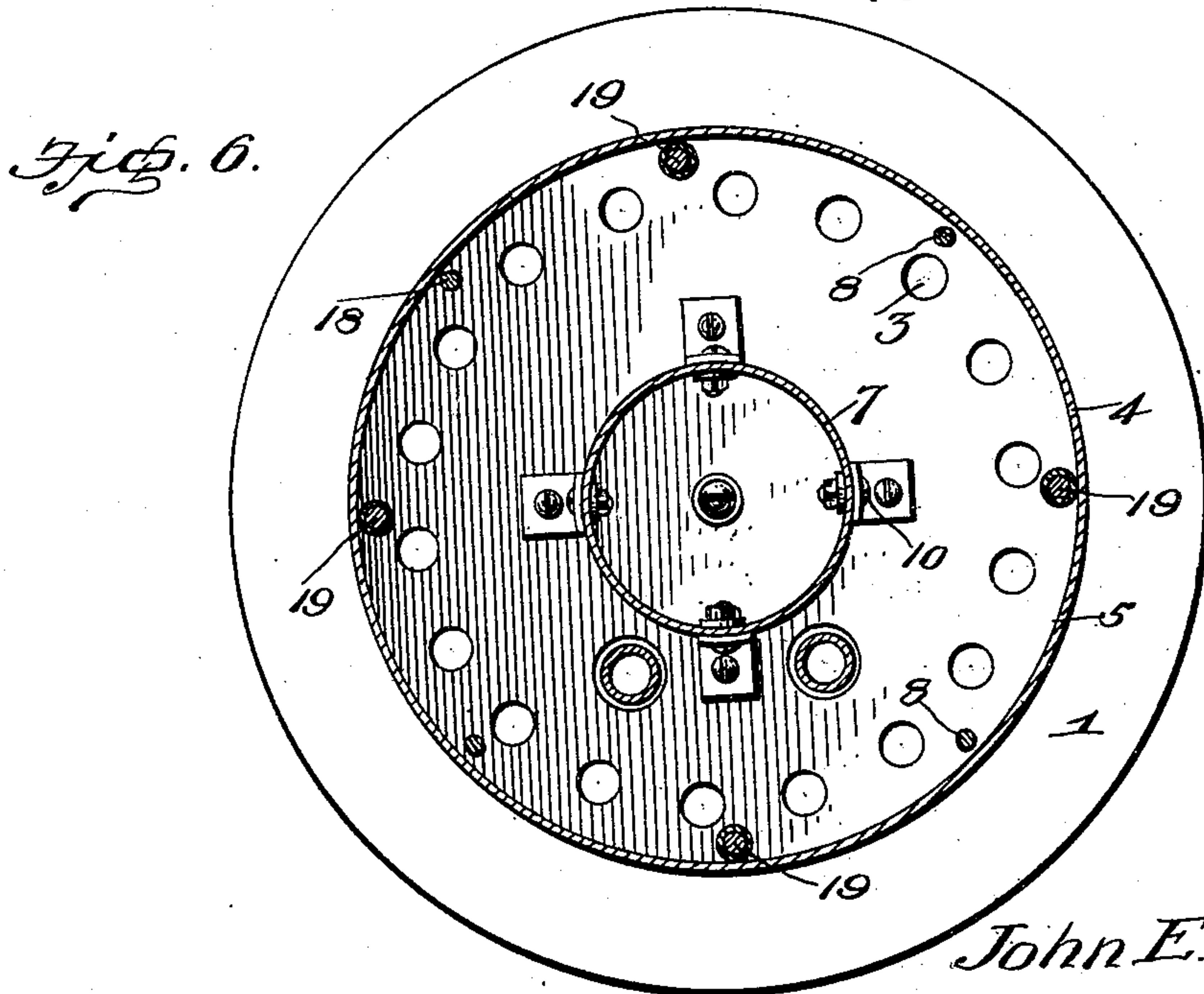
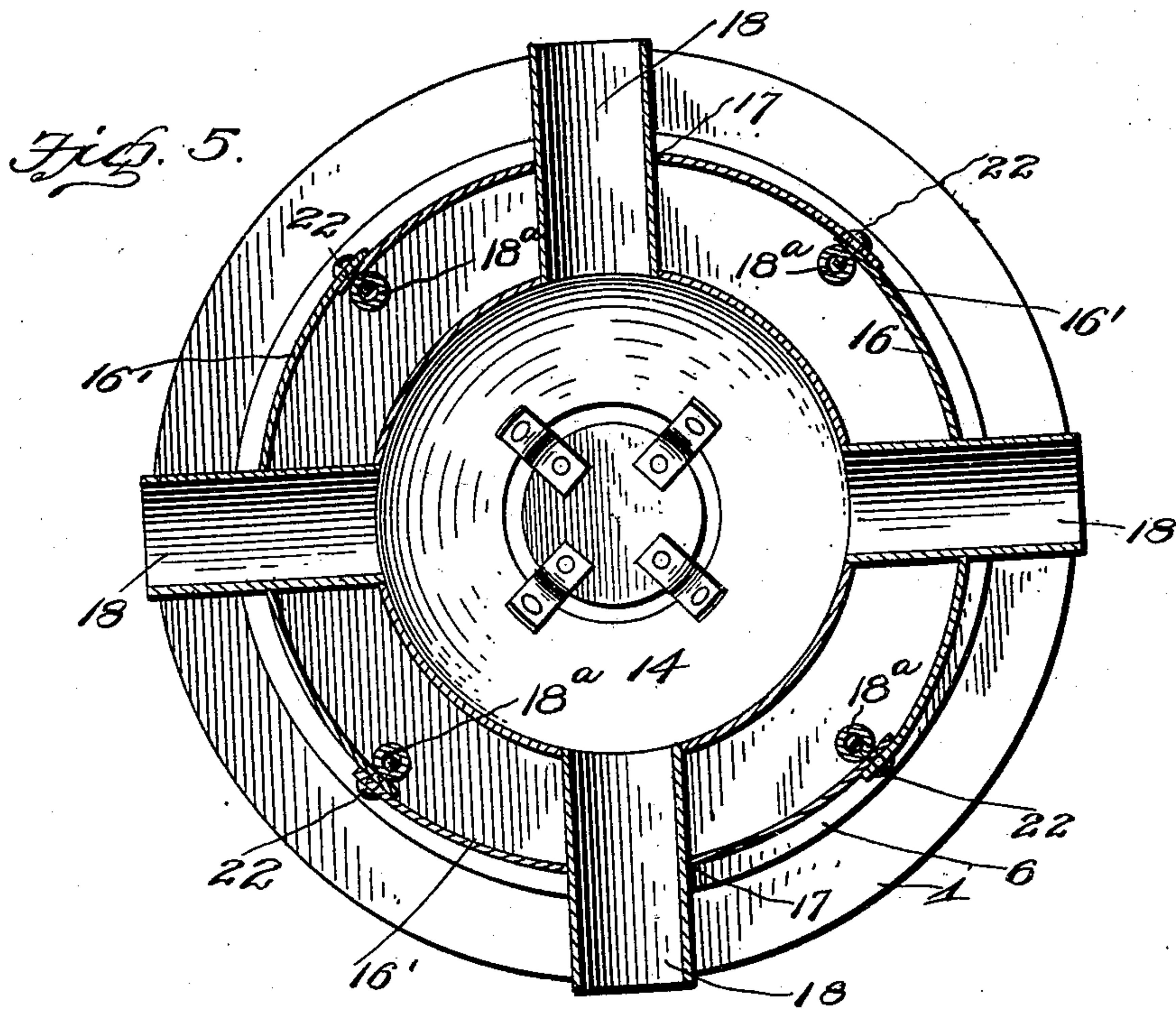
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3 Sheets—Sheet 3.

(No Model.)



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# UNITED STATES PATENT OFFICE.

JOHN E. JAMES, OF WORTHINGTON, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JESSE H. KING AND HUGH M. WILLSON, OF SAME PLACE.

## HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 677,664, dated July 2, 1901.

Application filed February 28, 1901. Serial No. 49,306. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN E. JAMES, a citizen of the United States, residing at Worthington, in the county of Armstrong and State of Pennsylvania, have invented certain new and useful Improvements in Heating-Stoves; and I do 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.

The invention relates to heating-stoves.

The object of the invention is to provide a stove of this character which shall be simple of construction, durable in use, and comparatively inexpensive of production and by means of which a maximum amount of heat will be generated from a minimum amount of fuel.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, which will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of my improved heating-stove. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a perspective view of the burner. Fig. 4 is a transverse sectional view through the burner. Fig. 5 is a horizontal transverse sectional view through the upper end of the heating-drum and its radiating hot-air-discharge pipes on line 5 5 of Fig. 2. Fig. 6 is a horizontal sectional view through the shell of the stove on line 6 6 of Fig. 2.

In the drawings, 1 denotes the base of the stove, supported by legs 2 and provided with an annular row of air-inlet apertures 3. 4 denotes the shell placed upon the base and surrounding said apertures and consisting of a band 5, a cap 6, and an annular partition 7. The cap 6 is clamped to the band 5 and the band 5 to the base by long bolts 8 and sleeved bolts 19, and the annular partition is secured to the base by four angle-shaped lugs, riveted to the base, and by horizontally-extending bolts 10. This partition has formed in its walls, near its upper end, a row of apertures 11, which communicate with the interior of the shell. Either the cap 6 or the

annular partition 7—in the present instance the cap 6—is provided with an upwardly-projecting annular flange 13 to receive the lower open end of the heating-drum 14, conical in form, the upper end of which is closed and the exterior surface of which is provided with a fireproof covering 14<sup>a</sup>, such as mineral wool or asbestos. A burner 15, which will be hereinafter specifically described, surrounds the lower end of the heating-drum, the mixer or supply pipes 15<sup>a</sup> extending down through the base and discharging the gas, thoroughly mixed with air, onto the asbestos covering of the heating-drum around the entire surface, so that when lighted the entire surface of the drum, or, broadly speaking, the covering, will radiate heat. This drum is held in position by a wide band 16, consisting of sections 16', each of which is provided with an aperture 17, through which projects the ends of the hot-air pipes 18. Hollow posts or standards 18<sup>a</sup> are connected to the cap by bolts 19, which extend up through the base and are threaded into the lower ends of said standards. Secured to the top of the conical heating-drum are metallic cross-strips 20, the ends of which are perforated and adapted to register with the screw-threaded apertures in the upper ends of the standards. Screws 21 are used for fastening the ends of these cross-strips to the upper ends of the hollow standards, while screws 22 are used for fastening the sections of the band to the sides of the standards. This produces a strong durable framework and is a very important feature of the invention. 23 denotes a hood or cover which is secured in place by the screws 21.

I provide the heating-drum with a spreader or deflector 24, designed to deflect the air outwardly against the interior wall thereof to more thoroughly heat the same.

The burner hereinbefore referred to is of the duplex type and is provided with two controlling-cocks, whereby gas may be supplied to one side of the heating-drum or to both, if desired, or one side of the heating-drum may be supplied with a greater amount of gas than the other side when it is desired. This burner is clearly shown in Figs. 3 and 4, and it is not believed that a detailed description of the same will be required.

When the gas is turned on and ignited,



the heating-drum will radiate the heat from the burning gas and will become intensely heated itself, so that the air passing up through the shell, its partition, and into said drum will also become intensely heated. It will thus be seen that I obtain a double advantage by this arrangement.

The hot-air pipes shown may be suitably ornamented and provided with dampers or regulators, and they may extend to various parts of the room or to other rooms at a distance from the stove.

If desired, a suitably-ornamented open-work fender or guard 25 may be secured around the heating-drum on the exterior of the hollow standards.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof. For instance, the hood 23 may be trimmed close to the band and a fancy top fitted on, and the tubes 18 may be provided with fancy perforated caps, care being taken not to interfere with the flow of hot air through said tubes.

The hot air from the drum may be allowed to distribute itself throughout the room in which the stove stands or it may be conveyed through tubes to other rooms. In case the hot air is conveyed to other rooms a cold-air tube should be laid from outside of the building and along under the floor and the open end brought up directly under the stove. Dampers of course could be used in all of the tubes leading to and from the stove, and as these in themselves form no part of the present invention it is not thought necessary to show or specifically describe them.

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

1. In a heating-stove, the combination of a base having apertures therein, a shell mounted upon said base and surrounding said apertures and provided with a central opening in its top, an annular partition secured within the shell and provided with openings in its upper end, a conical heating-drum having an asbestos covering and seated over the opening in the shell and open at its lower end to communicate therewith, said drum being closed at its upper end and provided adjacent thereto with lateral outlets, a hood over the drum, standards surrounding the drum and extending between the base and hood, a burner surrounding the base of the drum and an open-work fender surrounding said standards and drum, substantially as described.

2. The combination with a suitably-sup-

ported base having apertures therein, of a shell mounted upon said base and surrounding said apertures and provided with a central opening in its top, an annular partition secured within the shell and provided with openings in its upper end, a conical heating-drum seated over the open end of the shell and partition and communicating therewith, said drum being closed at the top and having an outer asbestos covering, hot-air pipes extending radially from the upper end of said drum, and a burner for supplying gas to the exterior of said drum, substantially as set forth.

3. The combination with a suitably-supported base having perforations, of a shell mounted upon said base and inclosing said apertures and consisting of an annular band and a cap, tubular posts, bolts extending through the base, shell and cap and screwed into the lower ends of said posts, a heating-drum mounted upon said shell and having an open end communicating with said shell, said drum being provided with an asbestos covering, a band surrounding the upper end of said drum, hot-air pipes extending radially from the upper end of said drum and projecting through said band, cross-strips secured to the upper end of said drum and having their ends projecting over the ends of said standards, screws for fastening said cross-strips to said standards, screws for fastening said band to said standards, and a burner located around the lower end on the exterior side of the heating-drum, substantially as set forth.

4. The combination with a suitably-supported base having perforations, of a shell mounted upon said base and inclosing said apertures and consisting of an annular band and a cap, tubular posts, bolts extending through the base, shell and cap and screwed into the lower ends of said posts, a heating-drum mounted upon said shell and having an open end communicating with said shell, said drum being provided with an asbestos covering, a band surrounding the upper end of said drum, hot-air pipes extending radially from the upper end of said drum and projecting through said band, cross-strips secured to the upper end of said drum and having their ends projecting over the ends of said standards, screws for fastening said cross-strips to said standards, screws for fastening said band to said standards, and a burner located around the lower end on the exterior side of the heating-drum, and a fender secured around said heating-drum, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN E. JAMES.

Witnesses:

CHAS. M. MORRISON,  
C. H. STOVER.