(No Model.)

J. A. FIELD.

OIL OR GAS STOVE.

No. 428,334. Patented May 20, 1890.

Fig 1

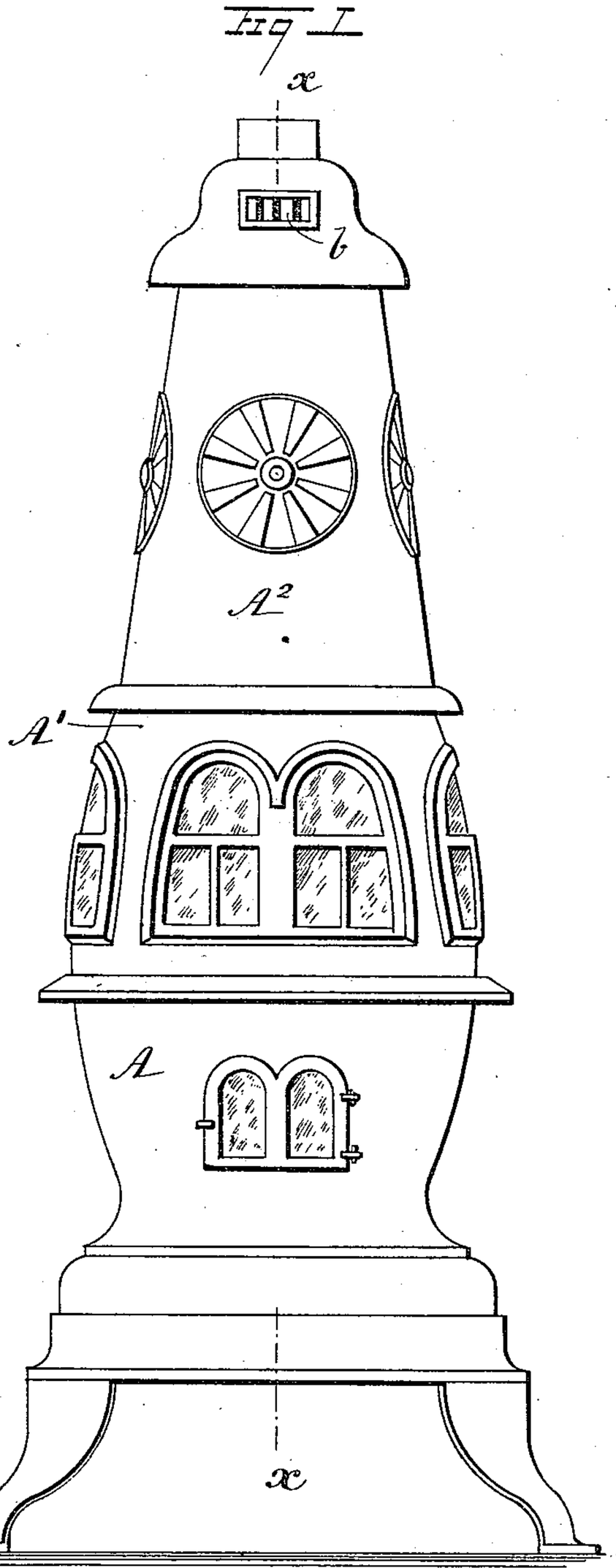
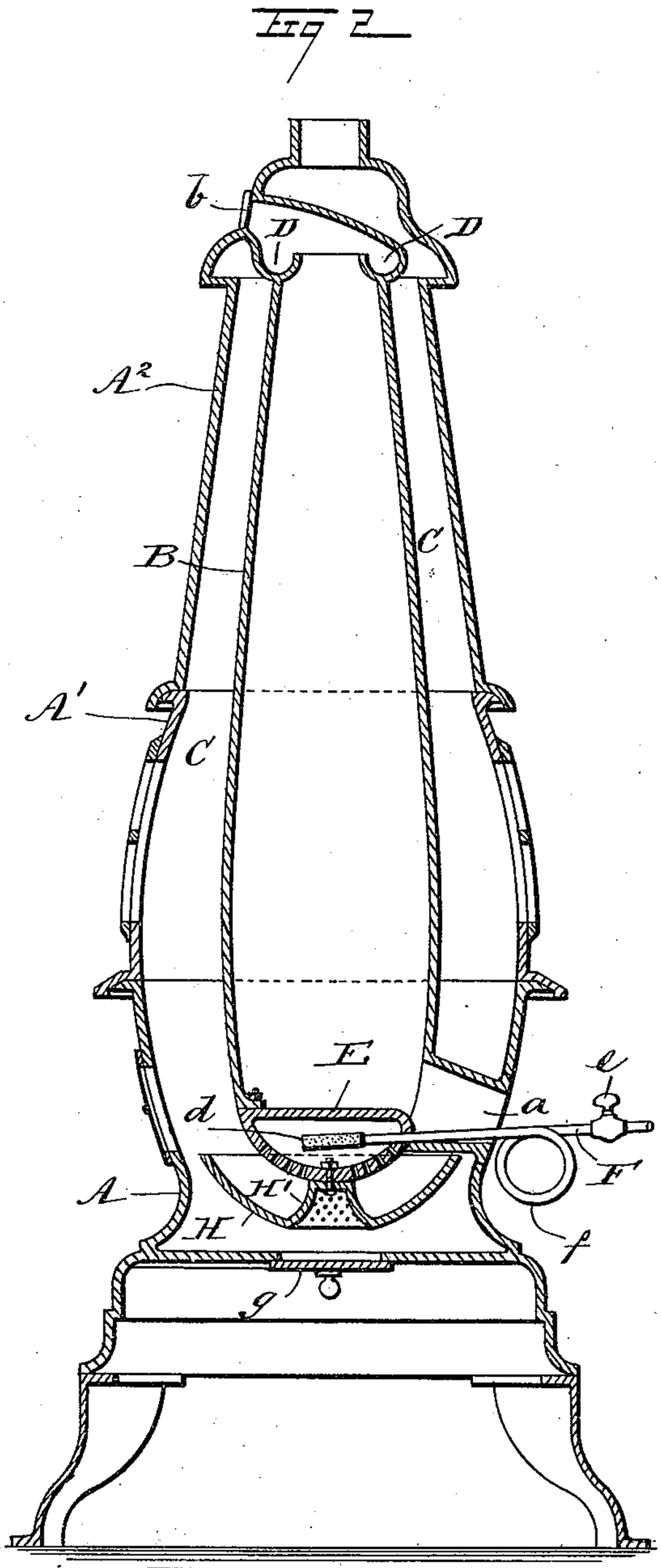


Fig 2



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JOHN A. FIELD, OF RACINE, WISCONSIN.

OIL OR GAS STOVE.

SPECIFICATION forming part of Letters Patent No. 428,334, dated May 20, 1890.

Application filed January 28, 1890. Serial No. 338,333. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. FIELD, of Racine, in the county of Racine and State of Wisconsin, have invented a new and Improved Oil or Gas Stove, of which the following is a full, clear, and exact description.

My invention relates to improvements in stoves for burning oil or gas; and the object of my invention is to provide a simple stove that will give out a large amount of heat in proportion to the amount of fuel consumed, that will give an agreeable and healthful heat, that may be very easily supplied with fuel, and that will be very economical in use.

To this end my invention consists in a stove constructed substantially as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a front elevation of the stove, and Fig. 2 a vertical section of the same on the line *x x* of Fig. 1.

The stove is made in any desired shape, but is preferably cylindrical. It is provided with numerous glazed doors, that it may give out light as well as heat, and is made preferably in sections A, A′, and A^2, that it may be easily taken apart.

Within the body of the stove and cast with or attached to the upper section A^2 is a hollow air-cylinder B, which extends nearly the entire length of the stove and nearly fills the same, leaving an annular flue C between the walls of the stove and the air-cylinder, through which the smoke and noxious gases pass up the chimney.

At the lower end of the air-cylinder D is an opening *a* through the wall of the stove into the outer air, and at the top is another opening, which also communicates with the outer air, and in which is a damper *b*, by which the passage of air through the opening is regulated. The air will thus enter the lower opening *a* and pass out through the upper opening into the room in a heated condition, as hereinafter described.

At the upper portion of the air-cylinder B is an evaporating-pan D, which is shown as cast upon the air-cylinder; but may be attached thereto in any suitable manner. The pan D is filled with water through the opening in the top of the cylinder, and as the stove becomes hot the water will evaporate and the vapor will pass out into the room with the heated air, thus giving to the air a very agreeable and healthful amount of moisture.

Attached to the under side of the air-cylinder B is a D-shaped generator E, having the oval sides thereof perforated, as shown, and which is attached to the air-cylinder in such a manner that the oval sides will be underneath. An oil-pipe F, which is connected with a suitable tank of oil, projects through the opening *a* and through the wall of the generator E, and is provided at the end with a roll of asbestus *d*, or other suitable indestructible material, upon which the oil flows and is burned. The oil-pipe is provided with a suitable cock *e*, outside the stove, by which the flow of oil may be regulated, and with a coil *f*, which acts as a trap, as the lower part of the coil will always contain oil, which will prevent the gas from the stove from passing back into the pipe.

Attached to the bottom of the generator E is a dish-shaped receptacle H, having its central portion formed into a hollow cone H′, with perforated sides, through which the air passes to feed the flames in the dish H and in the generator. The air may also pass over the top of the dish H to the generator.

Below the dish H, and fixed in the bottom of the stove, is a damper *g*, through which air is admitted to supply the necessary oxygen for the fire.

The stove is operated as follows: A piece of lighted inflammable substance is placed in the dish H, and the oil turned on by means of the cock *e*. As the oil flows into the generator E it will drop down through the perforations thereof into the dish H, and will be ignited. As the generator E becomes hot the oil entering it will vaporize, thus forming a gas, which as it burns will pass through the perforations of the generator and be deflected by the dish H and cone H′ into the flue C of the stove. If the weather is very cold, the oil may be allowed to flow faster than gas can be generated, and it will drop through the perforations of the generator and be burned as

oil in the dish H. As soon as the stove becomes warm the damper *b* is opened, and the air entering the air-cylinder B through the opening *a* will become heated, and, rising to the top of the cylinder, will pass out through the upper opening into the room. The stove will thus give a double radiation of heat, for while the heated air is passing out of the cylinder the heat from the flue C will also be passing through the walls of the stove, so that the entire heat from the fuel will be utilized.

I have shown a cylindrical stove provided with an interior air-cylinder; but it is obvious that the stove may be made in any desired shape, and the interior chamber made to correspond with it.

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

1. An oil or gas stove consisting, essentially, of an outer wall, an inner hollow cylinder having an opening at top and bottom into the outer air, a flue between said chamber and the wall of the stove, a generator with perforated sides attached to the bottom of said inner cylinder, an oil-pipe communicating with said generator, a dish-shaped receptacle attached to the under side of the generator, and a damper in the bottom of the stove through which air may be admitted to the fire, all substantially as described.

2. The combination, with the generator E, suitably attached to the cylinder B, and having perforated sides, as shown, of the oil-pipe F, having a suitable burner *d* attached to the end thereof, and having a coil *f* to prevent the gas from the stove from backing into the pipe, and a cock *e*, to regulate the flow of oil, substantially as described.

3. The combination, with the generator E, suitably attached to the cylinder B, having perforations, as shown, in the sides thereof, and having means, as described, for burning oil or gas therein, of the dish H, suitably attached thereto and adapted to catch the oil therefrom, said dish having a perforated cone H′, through which air may be fed to the fire, and having tapering sides to deflect the flames from the generator, substantially as described.

4. The combination, with a stove having a damper *g* in the bottom thereof, and with the cylinder B, suspended therein, said cylinder having openings in the top and bottom thereof, as shown, of the generator E, attached to the bottom of said cylinder, having perforations in the sides thereof, and having means, as shown, for burning oil and gas therein, and the dish H, attached to the bottom of said generator, having tapering sides, as shown, and having a central perforated cone to deflect the flames from the generator and feed air to the same, substantially as shown and described.

JOHN A. FIELD.

Witnesses:
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