

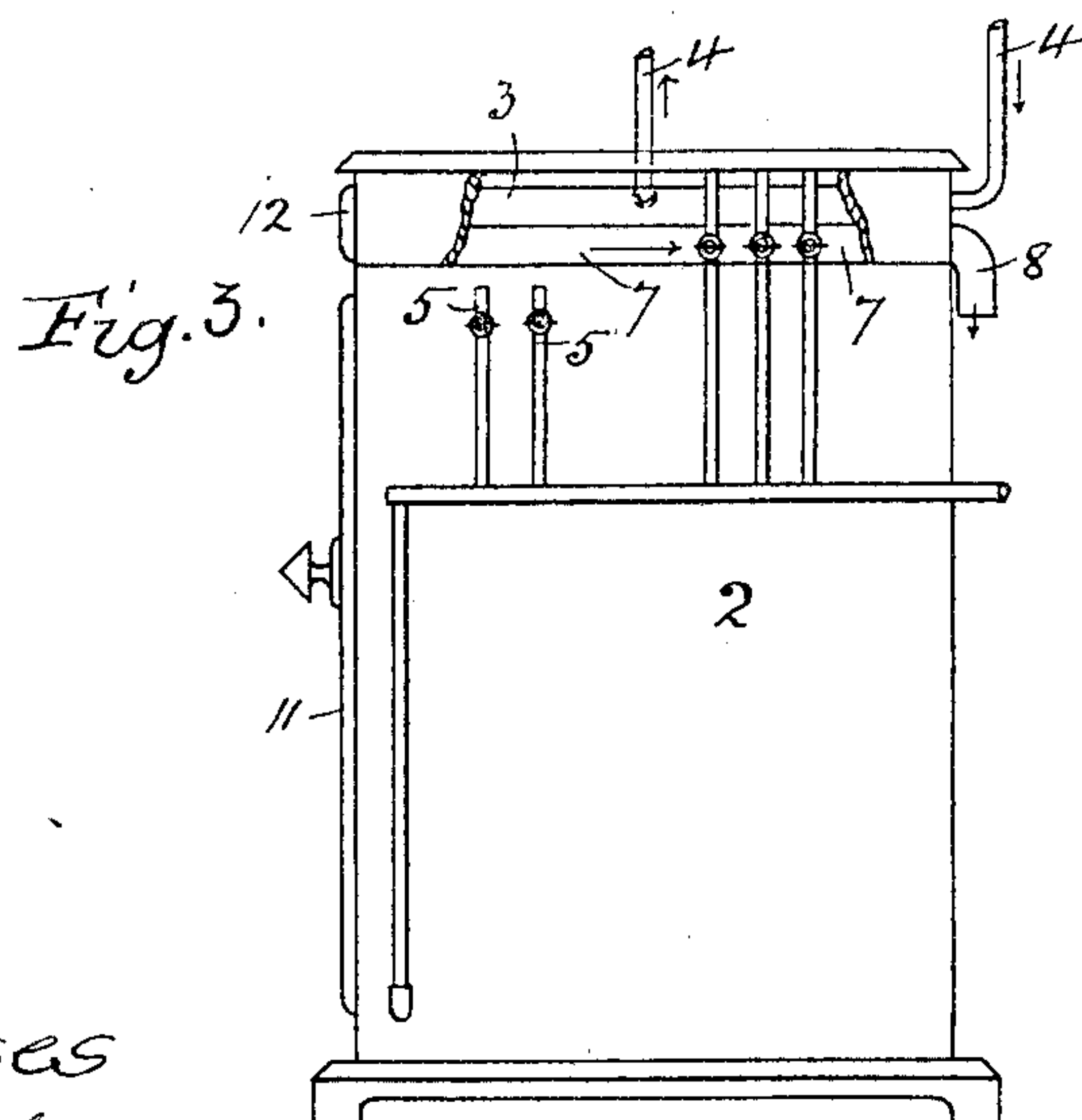
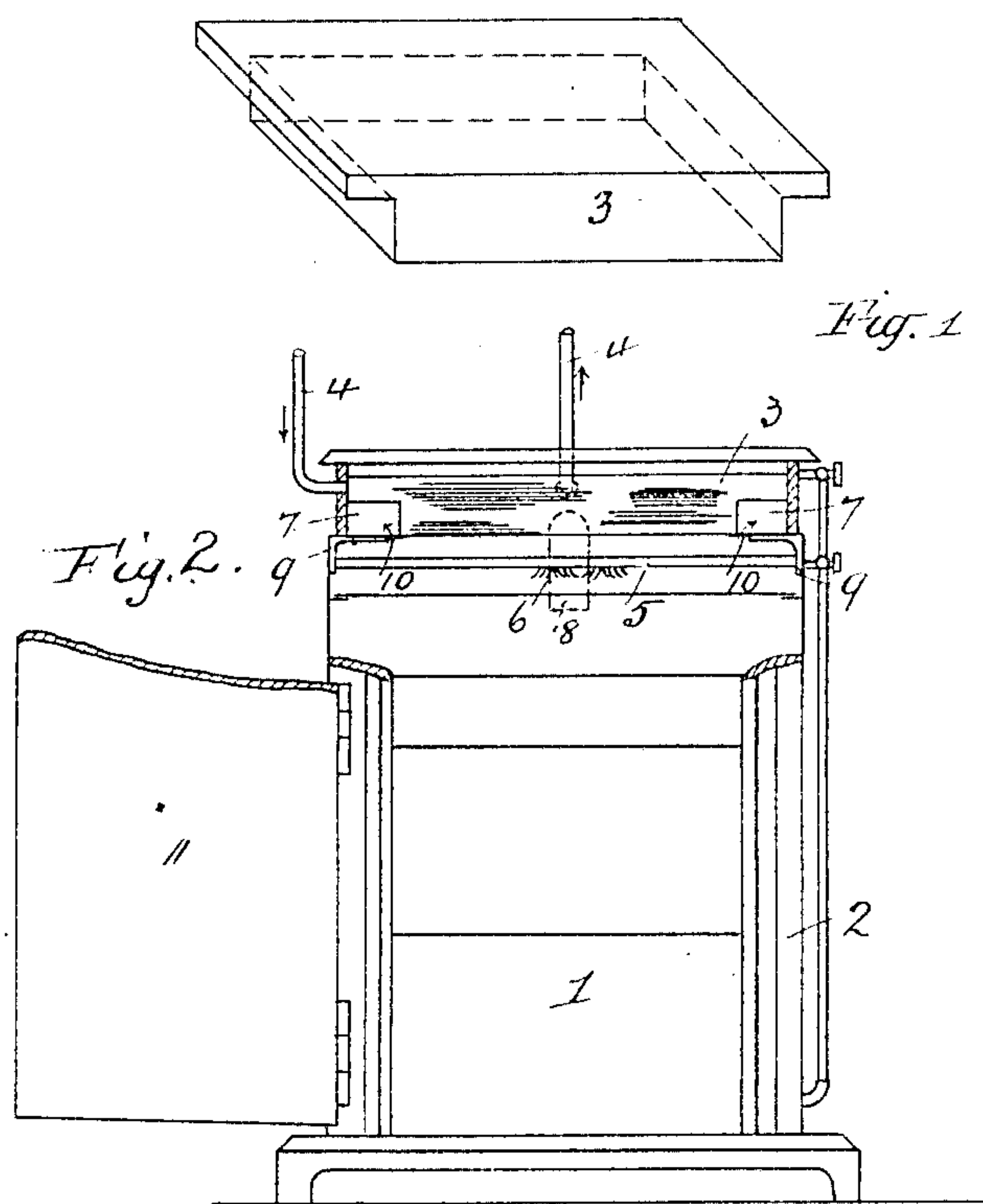
No. 804,683.

PATENTED NOV. 14, 1905.

J. J. STRAIN.  
GAS STOVE.

APPLICATION FILED SEPT. 27, 1904.

2 SHEETS—SHEET 1.



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Inventor  
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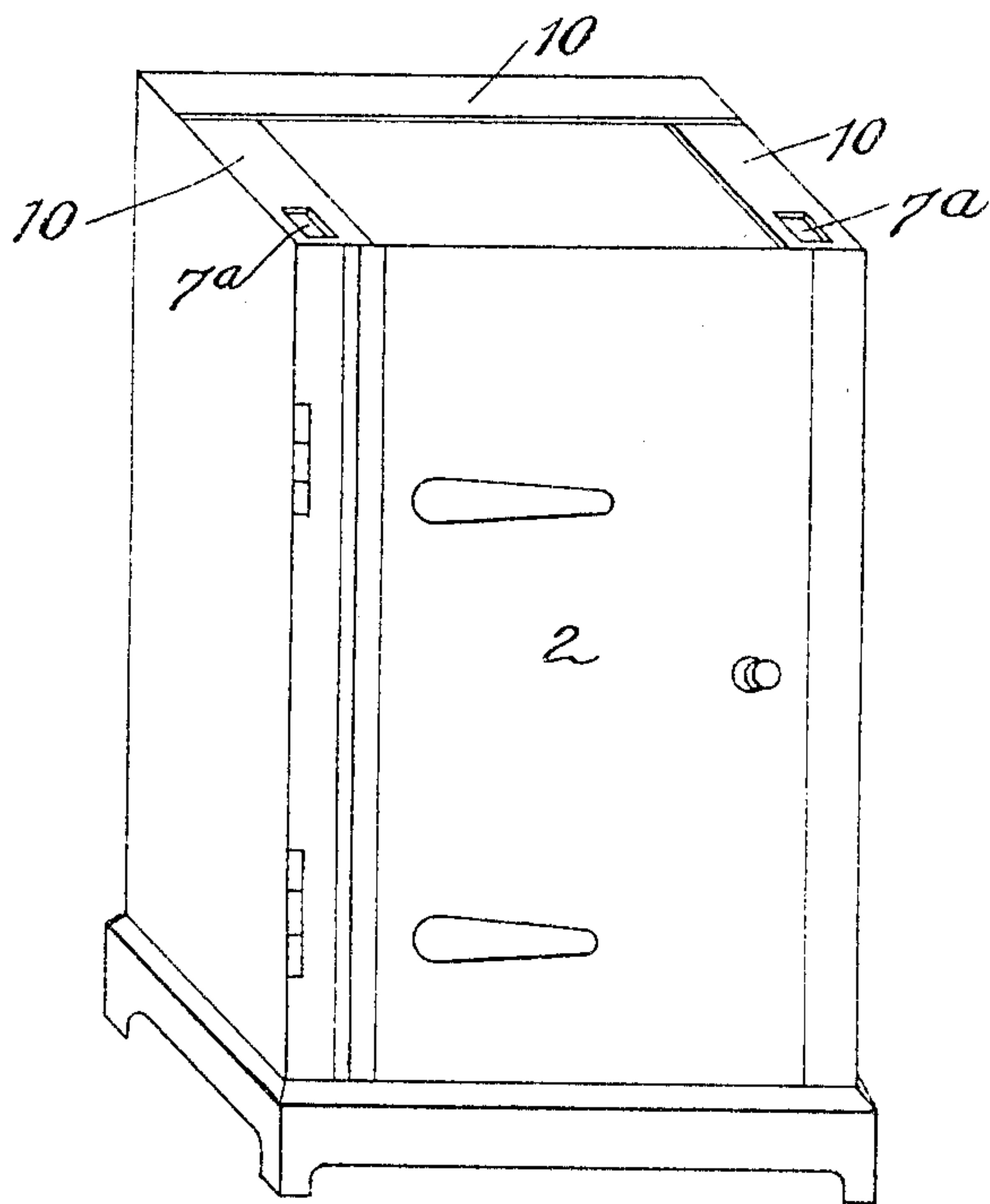
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2 SHEETS—SHEET 2.

*Fig. 4*



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# UNITED STATES PATENT OFFICE.

JOHANNA JAMES STRAIN, OF CHRISTCHURCH, NEW ZEALAND.

## GAS-STOVE.

No. 804,683.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed September 27, 1904. Serial No. 226,174.

*To all whom it may concern:*

Be it known that I, JOHANNA JAMES STRAIN, a subject of the King of Great Britain and Ireland, residing at Christchurch, in the Colony of New Zealand, have invented new and useful Improvements in or Relating to Gas-Stoves; and I do hereby declare the following to be a full, clear, and exact description of the same.

My improvements refer to means for heating water in ordinary gas cooking-stoves, and in carrying the same into effect I employ a circulating-boiler that I place in a gas-stove immediately over the oven, so as to form the roof thereof. The boiler is preferably constructed of copper, and pipes are attached thereto for the purpose of conveying water to the boiler and for conducting away the warm water to a storage-cylinder such as forms part of a household installation.

In order to fully understand the invention, reference is made to the accompanying drawings, in which—

Figure 1 is a perspective view of my boiler. Fig. 2 is a front view of a gas-stove, partly in section, fitted with my boiler, part of the front and door being broken away the better to show the internal arrangement. Fig. 3 is a side view of a stove, also partly in section, showing boiler in position and part of the ventilating-flue. Fig. 4 is a perspective view with the boiler omitted.

The oven 1 of a gas-stove 2 has a roof provided with a water-receptacle 3, that is in connection with a hot-water storage-tank by pipes 4. The shape of the boiler is approximately as shown in Fig. 1, three of its sides being undercut for the purpose hereinafter explained. The boiler is placed immediately beneath the system of burners that are upon the top of an ordinary gas cooking-stove, so that when any of these burners are in use part of their heat will be imparted to the water in the boiler. Pipes 5 5 are arranged across the oven just below the boiler 3 for grilling purposes, having burners 6, which when in use throw a considerable heat against the boiler. In order to ventilate the oven, the peculiar shape of the boiler permits of a flue 7 being formed around three of its sides which conveys the products of combustion through the vent 8 from the stove. Angle-

irons 9 are arranged at the top of the oven, whereon rest narrow plates 10, that run the entire length of the stove sides and project far enough into the oven to provide a support for the boiler 3. Thus by means of the plates and the boiler (which is adapted to a convenient fit in the stove) the flue 7 is formed around three sides of the boiler. Openings 7<sup>a</sup> are made in the plates near the front of the oven through which the hot gases may enter the flue, as indicated by the arrows, Fig. 2. The door 11 of the oven is intended to reach to the boiler 3, and a smaller door 12 (not shown in Fig. 2) should close the upper part of the stove containing the boiler and flues.

The burners of the stove and the boiler 3 are arranged with reference to each other in such a way that when any of the burners are in use a portion of their heat will be employed to heat the water. Thus should a light meal, such as breakfast, be cooking the grill or toaster will assist to warm the water from below, while the top burners will throw a portion of their heat upon the boiler. Later on, when a dinner is in preparation, the heat from the oven will be partly absorbed through the roof, which, as stated before, is the bottom of the boiler 3. The flue-gases will also contact with the boiler sides and under the overlapping or flange portion of the same as they move toward the vent 8.

The boiler may be formed concave in its underneath side for the purpose of strength and in order to offer as much heating-surface to the oven-gases as possible.

I do not confine myself to the particular way shown of supporting the boiler in the stove, as any convenient way for so doing may be employed so long as the boiler remains in substantially the position shown.

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

1. A gas cooking-stove, having a receptacle for containing and circulating water superimposed over the oven and forming the roof thereof, said receptacle having undercut portions to form flues and means in the receptacle for receiving cool water, and for delivering the warm water.

2. A gas cooking-stove, having a recep-



tacle for containing and circulating water having three of its sides undercut, superimposed over the oven and forming the roof thereof, angle-irons in and secured to the  
5 oven, narrow plates, resting on the angle-irons and projecting into the oven, forming a support for the boiler which, with the said plates and the sides of the stove, form a flue

for conducting away the hot oven-gases, substantially as specified. 10

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

JOHANNA JAMES STRAIN.

Witnesses:

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P. M. NEWTON.