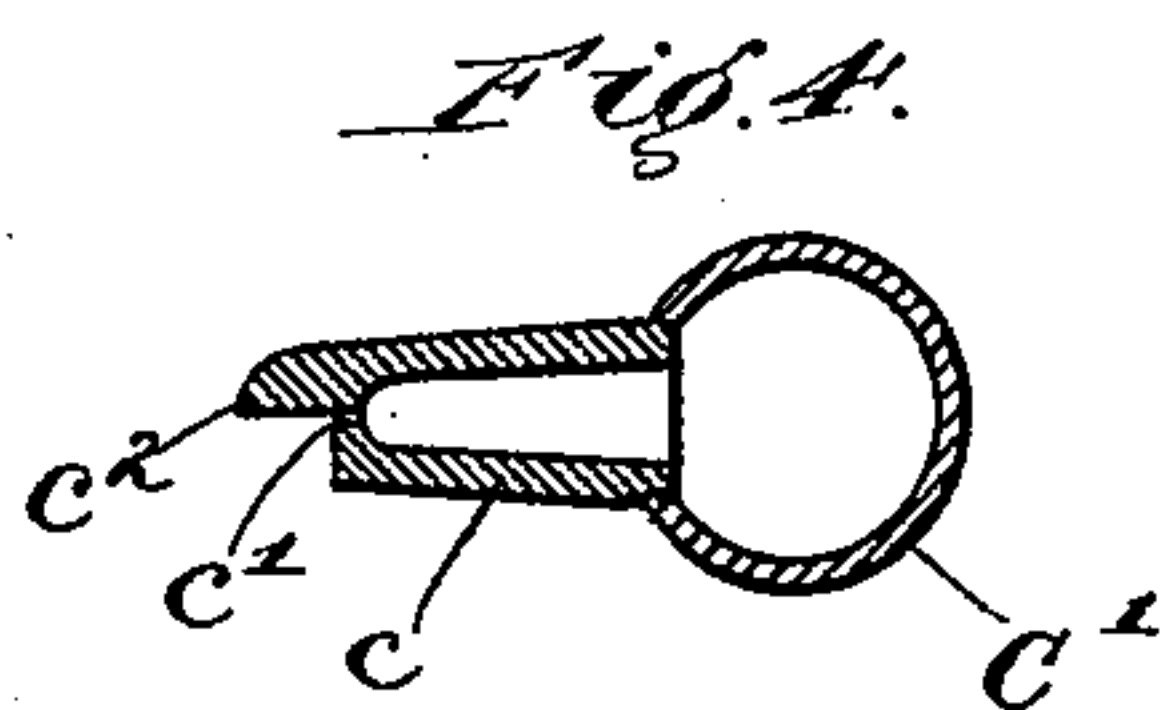
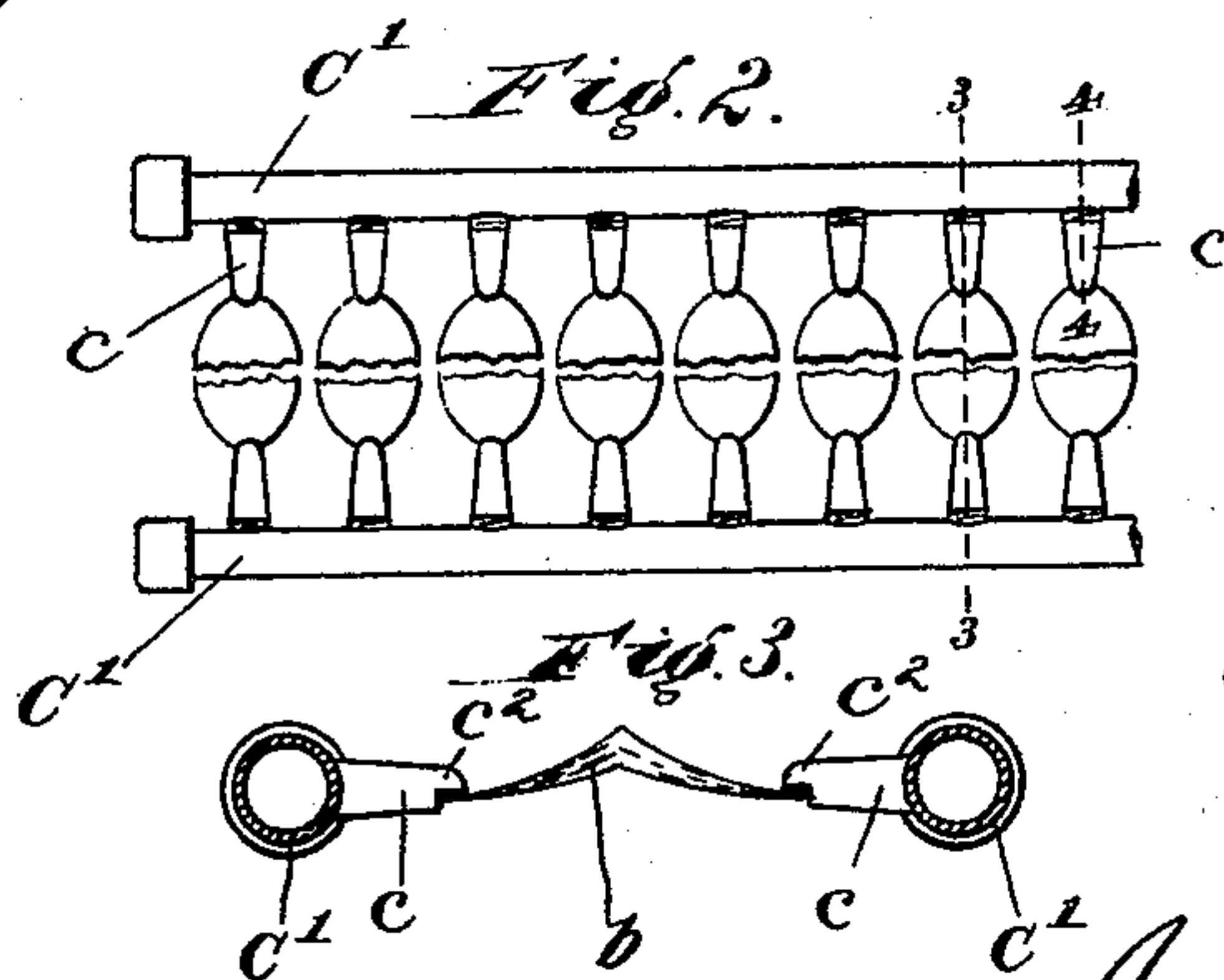
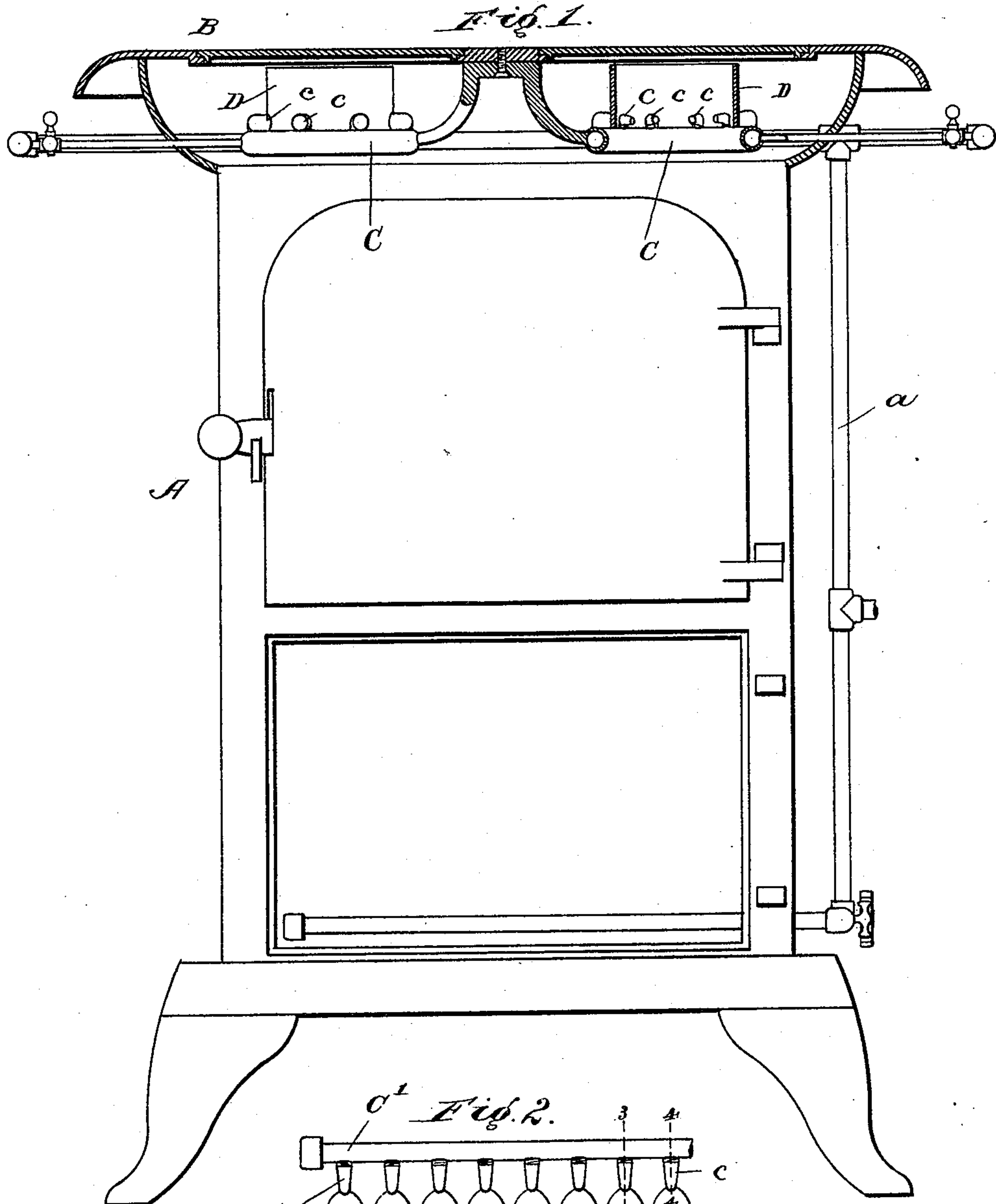


(No Model.)

J. JOHNSON.
GAS STOVE.

No. 587,313.

Patented Aug. 3, 1897.



WITNESSES.

Hickley Hyde.

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UNITED STATES PATENT OFFICE.

JONATHAN JOHNSON, OF LOWELL, MASSACHUSETTS.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 587,313, dated August 3, 1897.

Application filed January 31, 1895. Serial No. 536,799. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN JOHNSON, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts; have invented certain new and useful Improvements in Gas-Stoves; and I do hereby 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.

This invention relates to an improvement in gas-stoves, the object being to provide an improved arrangement of parts whereby the atmospheric air may be more effectually supplied to aid in the combustion of the gas; and the invention therefore consists, essentially, in the construction, arrangement, and combination of parts substantially as will be hereinafter described and claimed.

In the annexed drawings, illustrating my invention, Figure 1 is a sectional side elevation of a gas-stove embodying my present improvements. Fig. 2 is a plan view of two parallel rows of burners constructed and arranged in the manner peculiar to my present invention. Fig. 3 is a cross-sectional view on the line 3 3 of Fig. 2. Fig. 4 is an enlarged cross-section of one of my burners on the line 4 4 of Fig. 2.

Similar letters of reference designate corresponding parts throughout all the different figures of the drawings.

A designates a gas-stove, the same being represented here simply as one example of heating or cooking device to which my improvements may be applied, it being understood that the invention is adapted for use with many different forms of stoves. The stove A has the upper lid-provided surface B and suitable gas-supply pipes *a*, which are arranged in any desired manner. Directly beneath the top B are the burners *c*. These are arranged horizontally in circular rows by being attached to the circular supply-pipes C, as shown in Fig. 1, or they may be arranged in straight rows by being attached to a straight pipe C', as shown in Fig. 2, it being essential that there should be a free central space between the converging burners, which is occupied by the horizontal flames issuing from said burners and permits the passage of a vertical interior air-current, which

passes transversely through the flame and assists in promoting combustion, said current being produced by the coaction with the burners of an air-shaft, as will be hereinafter described.

I will now explain the construction of the improved burner that I employ as the best form known to me for carrying out my invention. It is shown in detail in Figs. 3 and 4 and may be termed a "bonneted" or "hooded" burner. *c* denotes the burner, which is screwed laterally into the gas-supply pipe C or C', for example. This burner *c* has at its outer end the gas-outlet orifice *c'*, at which ignition takes place, and on one side of this orifice the wall of the burner *c* is elongated with an integral projection to form the horizontal hood *c²*, which projects over the orifice *c'*, and consequently for a certain distance over the flame issuing at that point, so that the flame is caused thereby to spread out into a substantially horizontal sheet, as shown in Fig. 3. This kind of a burner is particularly useful in broiling meat, since the juices of the meat or fat which fall from the broiling meat will not come in contact with the orifice of the burner, filling the same and obstructing the free outflow of the gas. The orifice is, as it were, situated in a rabbet on the under side of the burner-wall and is thereby removed and protected from contact with the drippings from the article which is being cooked, as just stated. The bonnet *c²* therefore serves a very useful purpose.

In combination with the burners *c*, which are arranged in a horizontal position and in a circular series, as shown in Fig. 1, or in parallel rows, as shown in Fig. 2, I employ a cylinder or shield D, which surmounts the burner and is open at top and bottom, so as to permit a vertical current of air to pass through it and centrally between the burners from bottom to top at right angles to the spreading flames issuing from the horizontally-arranged burners. This cylinder or shield prevents disturbance of the flame by agitation outside of the shield, and it also constitutes an air-shaft, by which, in conjunction with the heat of the flames, a strong draft of air is drawn through the flames, which, owing to their flat horizontal arrangement, have the burning products thoroughly

exposed to the air, so that a perfect and safe combustion of the gas is insured as the result of the thorough commingling of the gas and air after ignition. All the carbon will be effectually consumed, so that the heat obtained will be without a product of smoke and without any odor. This will likewise provide a positive system of burning hydrocarbon or gas, in which system there will be no reaction, or, as it is commonly termed, "lighting back," such as sometimes results in burners of the Bunsen type, in which the gas and air are mingled before arriving at the point of ignition.

It will be particularly noted that the bonnets on the burners serve not only the above-specified function of preventing drippings from clogging the burner-orifices, but they also enhance the spreading of the flame into a wide, flat, horizontal sheet, so that a large area of flame is presented for contact with the vertical current of air passing through the air shaft or shield D, and by virtue of this widely-spread flame the air can become more thoroughly and intimately commingled therewith and combustion thereby promoted. This shield or cylinder D preferably has at its lower edge vertical slots, as shown in Fig.

1, which fit over the burners, the part of the shield between the slots extending downward to the bottom or slightly below the bottom of the burners for the purpose of protecting each burner and for strengthening and making more powerful the inside current of air. The shield or cylinder D may vary considerably in its precise construction, provided it retains conspicuously its primary character of a channel or shaft for the vertical current of air.

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

In a gas-stove, the combination with one or more horizontally-arranged burners having hoods or bonnets for causing a horizontally-spreading flame, of a vertical shield or cylinder surmounting the burner or burners, and permitting a current of air to pass through said cylinder at right angles to the flame, substantially as described.

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

JONATHAN JOHNSON.

Witnesses:

FREDERICK LAWTON,
GEO. F. LAWTON.