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Patented Apr. 22, 1902.

G. W. GRAVES & J. F. MILLS, JR.
GAS STOVE OR RANGE.

(Application filed Aug. 1, 1901.)

(No Model.)

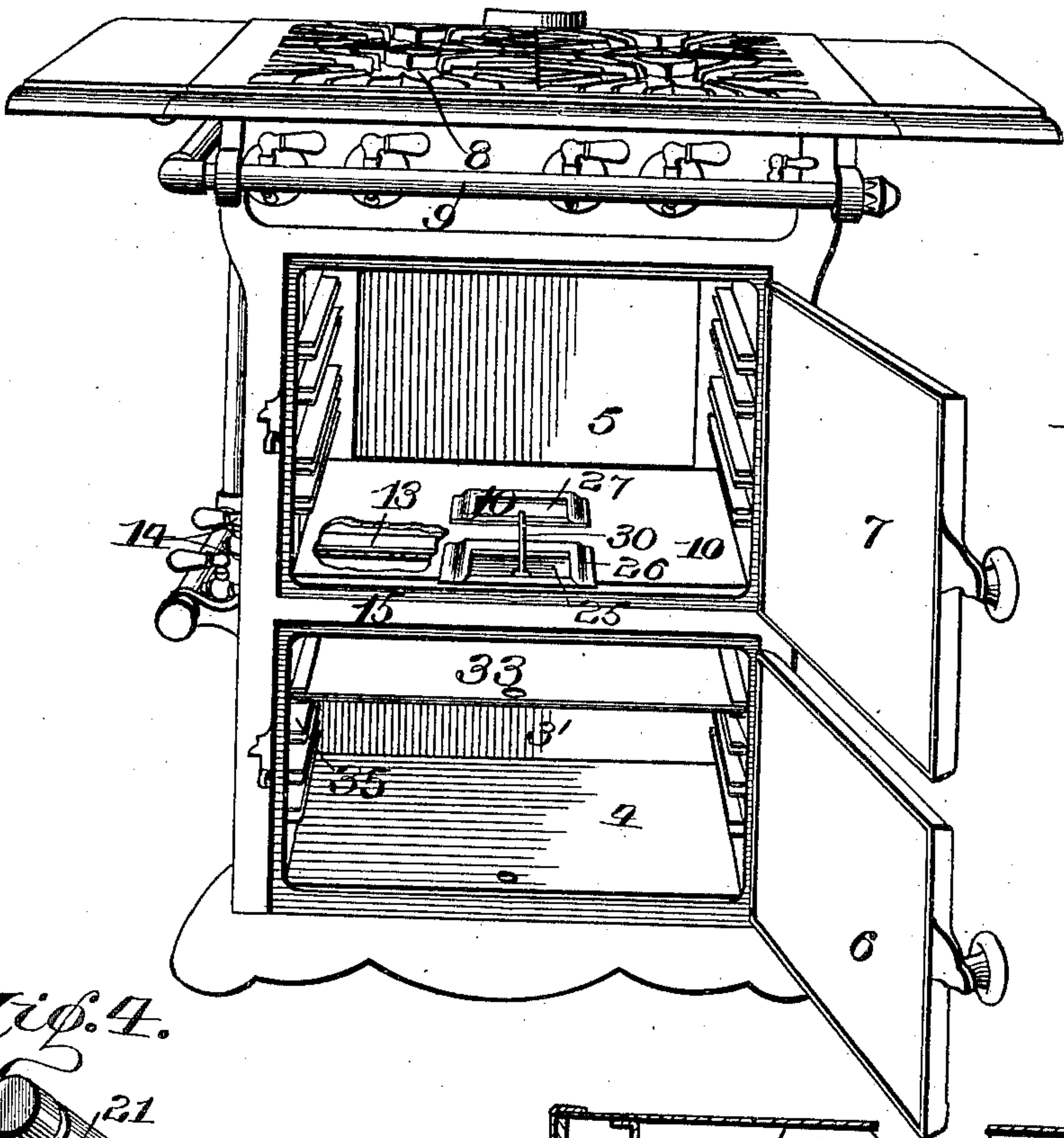


Fig. 1.

Fig. 4.

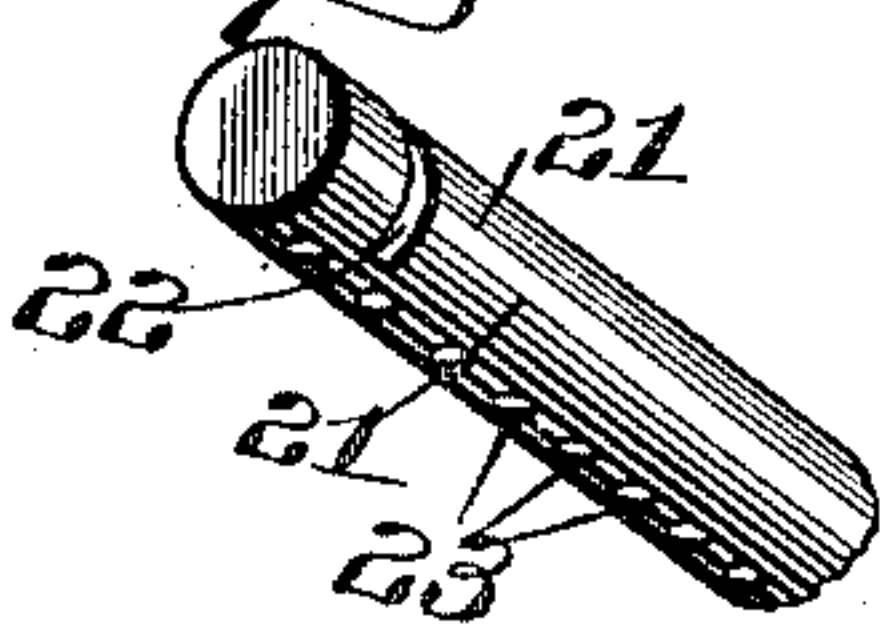


Fig. 3.

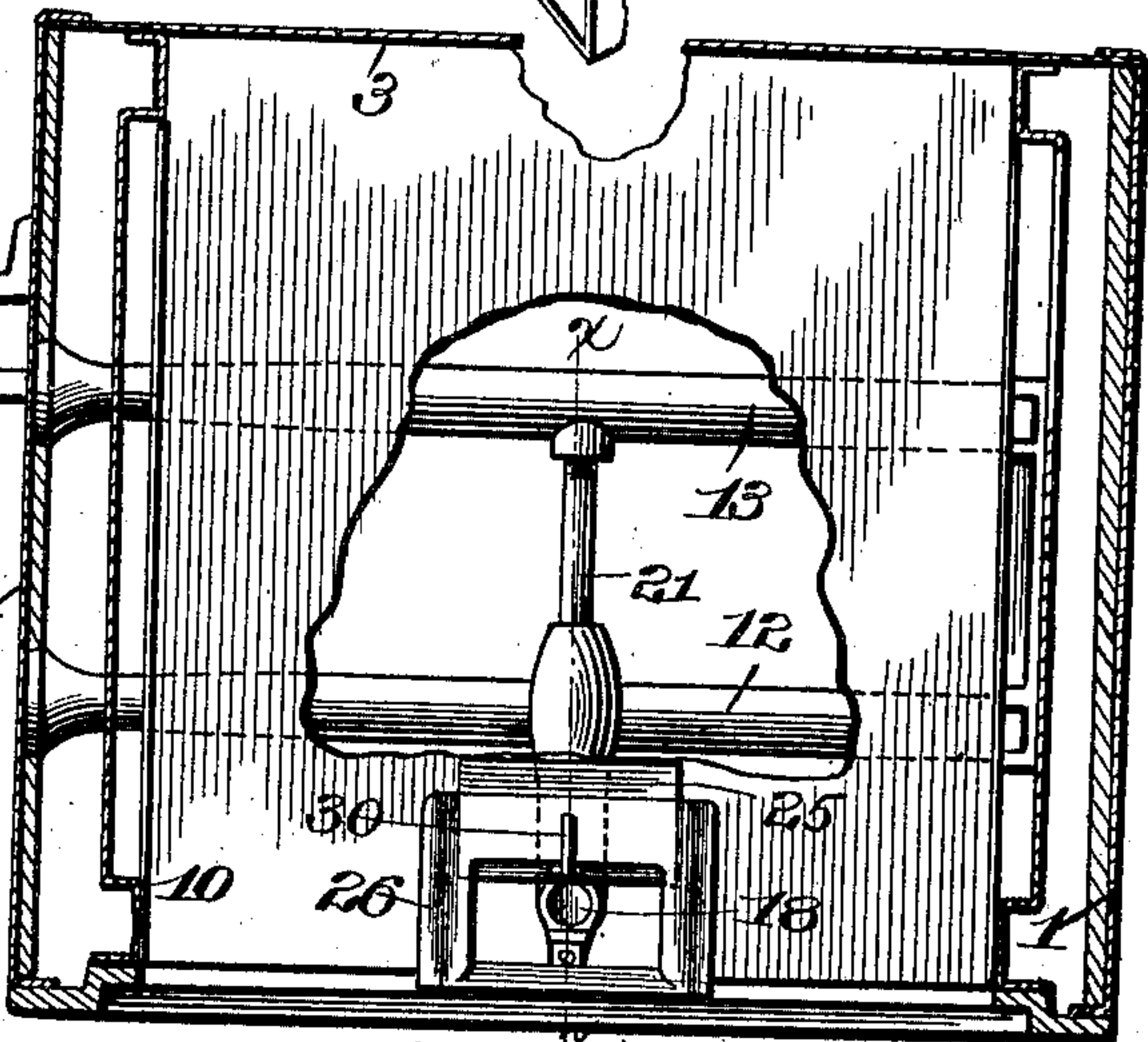
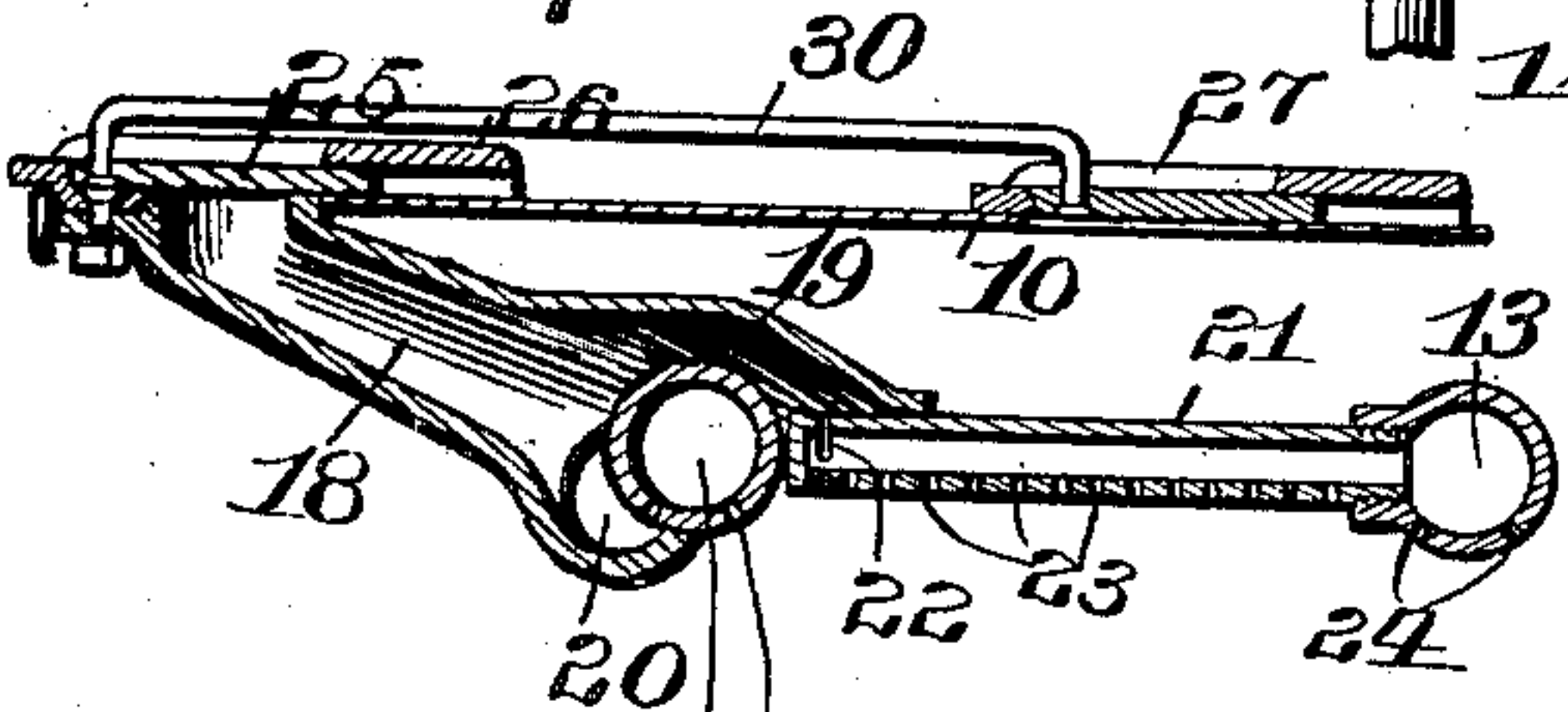


Fig. 2.

Inventors

Witnesses

Walter B. Payne.
G. Willard Rich.

George W. Graves
John F. Mills Jr.
by Frederick S. Gilman
this Attorney

UNITED STATES PATENT OFFICE.

GEORGE W. GRAVES, OF ROCHESTER, AND JOHN F. MILLS, JR., OF PORT CHESTER, NEW YORK.

GAS STOVE OR RANGE.

SPECIFICATION forming part of Letters Patent No. 698,009, dated April 22, 1902.

Application filed August 1, 1901. Serial No. 70,491. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. GRAVES, of Rochester, in the county of Monroe, and JOHN F. MILLS, Jr., of Port Chester, in the county of Westchester, State of New York, have invented certain new and useful Improvements in Gas Stoves or Ranges; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

Our present invention relates to an improvement in gas stoves or ranges, and has for its object to provide an improved form of burner for oven-heating and also means for igniting the burner without the employment of the usual pilot-light and which are accomplished in such a manner that the possibility of an explosion or other accident resulting from the accumulation of a quantity of gas in the oven is entirely eliminated.

Our invention has for its further object to provide means whereby the condition of the burner-flames may be inspected or seen from the oven; and to these and other ends our invention consists in certain improvements and combinations of parts, all as will be hereinafter fully described, and the novel features pointed out in the claims at the end of this specification.

In the drawings, Figure 1 illustrates a gas stove or range constructed in accordance with our invention. Fig. 2 is a sectional view through the stove, showing a bottom plan view of the oven with a portion thereof broken away. Fig. 3 is a sectional view on the line $x x$ of Fig. 2, and Fig. 4 is a perspective view of the end of the igniting-tube.

Similar reference-numerals in the several figures indicate similar parts.

Our invention may be applied to the usual form of gas stoves or ranges having the body constructed of the sides 1 and the back 3, composing a lower or broiling chamber 4 and an upper chamber or oven 5, said chambers being normally closed at their forward sides by doors 6 and 7, respectively. The top of the body is provided with the usual burners 8, to which the gas is supplied by a pipe 9.

The oven-chamber is closed at its lower side

by a bottom 10, beneath which are arranged the burners 12 and 13 of the usual or ordinary construction, supported at their ends in the sides 1 of the body and also connected to the pipe 9, from which they receive a supply of gas through the valves or regulating-cocks 14, located at one side of the stove-body. The burners 12 are arranged below the oven-bottom in proximity thereto and entirely within the upper portion of the broiling-chamber, where they are concealed from view by the front portion 15 of the stove, extending between the doors 6 and 7. The lighting of the oven-burners in stoves of this class must be accomplished by holding a lighted match or taper in the broiling-chamber or by the use of a supplementary burner or pilot-light extending inwardly at the side of the stove, and as either of these arrangements is liable to permit the escape of gas into the oven or broiling-chamber, which may result in an explosion of greater or less severity when any attempt to light the burners is made, we provide a means to overcome these obvious disadvantages, whereby the oven-door must be first opened, thereby permitting the escape of gas that may have accumulated from a failure to positively close the cocks or from any other cause and which will also permit either or both of the burners to be easily and conveniently lighted by the use of an ordinary match.

Extending forwardly and upwardly at a slight angle from the burner 12 is a tubular shell or casing 18, forming a conductor having its outer end opening in line with the oven-bottom 10 and at the forward edge thereof just within the door-line. Its inner end extends over the burner 12 and forms a hood and at the lower side is provided with lateral apertures 20. A short pipe 21, communicating with the burner 13, extends transversely between the latter and the burner 12, having its closed outer end lying beneath the hood. At this point the pipe 21 is provided with a slot 22 or a series of perforations extending from its upper side and around nearly to its lower side and between two of a series of apertures 23 provided therein, as shown in Fig. 4.

The gas-jet orifices 24 in the burners 12 and 13 are arranged at opposite sides of center, as

shown, and extend in parallel rows between the ends of the burners. From the above it will be seen that to ignite the burners the valves or cocks 14 are first opened, when the
 5 gas escaping from the slot 22 in the pipe 21 and from the aperture or orifice 24 in the burner 12 will fill the tubular casing 18, so that any flame applied at the outer end thereof will flash back to the source igniting the gas
 10 emitted from the orifices in the burner 12 and being transferred from aperture to aperture along the pipe 21 will finally ignite the gas from the second burner 13. By this arrangement either burner may be operated singly
 15 without the necessity of first lighting all the burners.

The end of the shell or tube 18 is normally closed by a sliding door 25, movable rearwardly in a frame 26, and it is of such a size
 20 that when opened the height or condition of the flame can be easily determined. A similar door 27 is arranged centrally in the oven in rear of the door 25, but slightly forward of the rear burner 13, for the purpose merely
 25 of permitting the flame therefrom to be inspected. In order, however, that the rear door may be conveniently operated, it is attached by a rod 30 to the forward door 25, so that the two may be operated simultaneously.
 30 In the drawings it will be noticed that the valves or cocks 14 are located at the left-hand side of the stove, where they may easily be adjusted, while the right hand of the operator is free to apply the match, and the latter
 35 may be conveniently ignited upon the roughened surface 32, provided for this purpose on the forward edge of the frame 26.

The heating of the oven is more readily accomplished by preventing a downward radiation
 40 of the heat into the broiling-chamber, which may be effected easily by means of a metallic plate 33, removably supported on guides or ways 35, located in the chamber and supported beneath the burners, acting to reflect
 45 the heat upward against the oven-bottom, the downward radiation being prevented by a covering of asbestos or similar material applied to the lower side of the plate 33, as will be understood. When, however, it is de-
 50 sired to use the broiling-chamber, the plate may be withdrawn and allowed to rest upon the bottom of the chamber, where it also serves to reflect or radiate the heat therein, as well as preventing excessively heating the
 55 bottom when the chamber is subjected to long or continued use.

Stoves embodying our invention are particularly desirable, owing to the arrangement of the parts, which necessitates opening the
 60 oven-door each time before the oven-burners can be lighted, insuring absolute safety from explosion, inasmuch as the opening of the door will create a suction which will clear any gas from the oven and in case of an ex-
 65 cess of gas will permit the latter to flow outwardly, the odor of which will necessarily cause a cautious action on the part of the

operator in applying the igniting-flame. Further, the arrangement of the igniting device, whereby either burner may be operated
 70 singly, permits a low temperature to be obtained in the oven, and the door through which the height or condition of the burner-flames may be readily seen permits the op-
 75 erator to regulate the flow of gas to the burners to maintain the oven at any desired temperature and is a particularly desirable feature, especially in stoves unprovided with a broiling-chamber, and in the present con-
 80 struction the plate 33 may then be arranged close to the burners, cutting off the view thereof through the broiling-chamber.

We claim as our invention—

1. The combination with a gas-stove having an oven or chamber, and a burner ar-
 85 ranged outside of the chamber and having orifices, of a tubular flame-conductor having its open inner end embracing one or more of said orifices in the burner and its outer end opening into the oven. 90

2. The combination with a gas-stove having an oven or chamber, a door therefor, and a burner arranged outside of said chamber and having orifices, of a flame-conductor hav-
 95 ing its inner end extending in proximity to the burner-orifices and its outer end opening into the oven.

3. In a gas-stove the combination with an oven or chamber open at one side and having a door, and a burner arranged beneath the
 100 oven, of a conductor having its inner end extending over a portion of the burner and having its outer end opening into the bottom of the oven within the door-line.

4. In a gas-stove the combination with an
 105 oven or chamber, a burner extending beneath the oven, and a conductor having its inner open end extending over the burner and forming a hood and having its outer end opening into the oven-chamber, of a second burner
 110 located in the rear of the first having an extension provided with perforations and opening beneath the hood on the conductor.

5. In a gas-stove the combination with an oven having a bottom provided with aper-
 115 tures, of forward and rear burners arranged beneath the bottom, doors normally closing the apertures, and connections between the doors whereby they may be operated simul-
 120 taneously.

6. In a gas-stove the combination with an oven or chamber, and a conductor leading therefrom having its outer end opening into the oven and its lower open end extending
 125 beneath the latter, of a burner having orifices, a tube extending from said burner having a series of orifices in its lower side and provided with an aperture in its upper side opening beneath the conductor and extend-
 130 ing around the tube whereby the flame from said aperture may be communicated to the gas emitted from the series of apertures in its lower side.

7. In a gas-stove the combination with an

oven or chamber, and a conductor leading therefrom having its outer end opening into the oven and its lower end extending beneath the oven-bottom, of a burner having orifices
5 arranged in its lower side and opening into the conductor, a second burner arranged in rear of the first, having gas-jet orifices, an extension on said burner having perforations in its lower side arranged in proximity and lead-
10 ing into juxtaposition with the gas-jet orifices and provided with the upwardly-opening aperture beneath the inner end of the conductor.

8. In a gas-stove the combination with a
15 body having a broiling-chamber, and an oven

or chamber located above the latter provided with an apertured bottom, and means for closing said aperture, of a burner located beneath the oven-bottom, and a removable heat-reflecting plate arranged in the broiling-
20 chamber below the burner.

GEORGE W. GRAVES.

JOHN F. MILLS, JR.

Witnesses to signature of George W. Graves:

G. WILLARD RICH,

WALTER B. PAYNE.

Witnesses to signature of John F. Mills, Jr.:

WM. O. REMSEN,

WM. B. SMITH.