A. C. MOTT, Jr. & J. S. VAN BUREN.

RANGE.

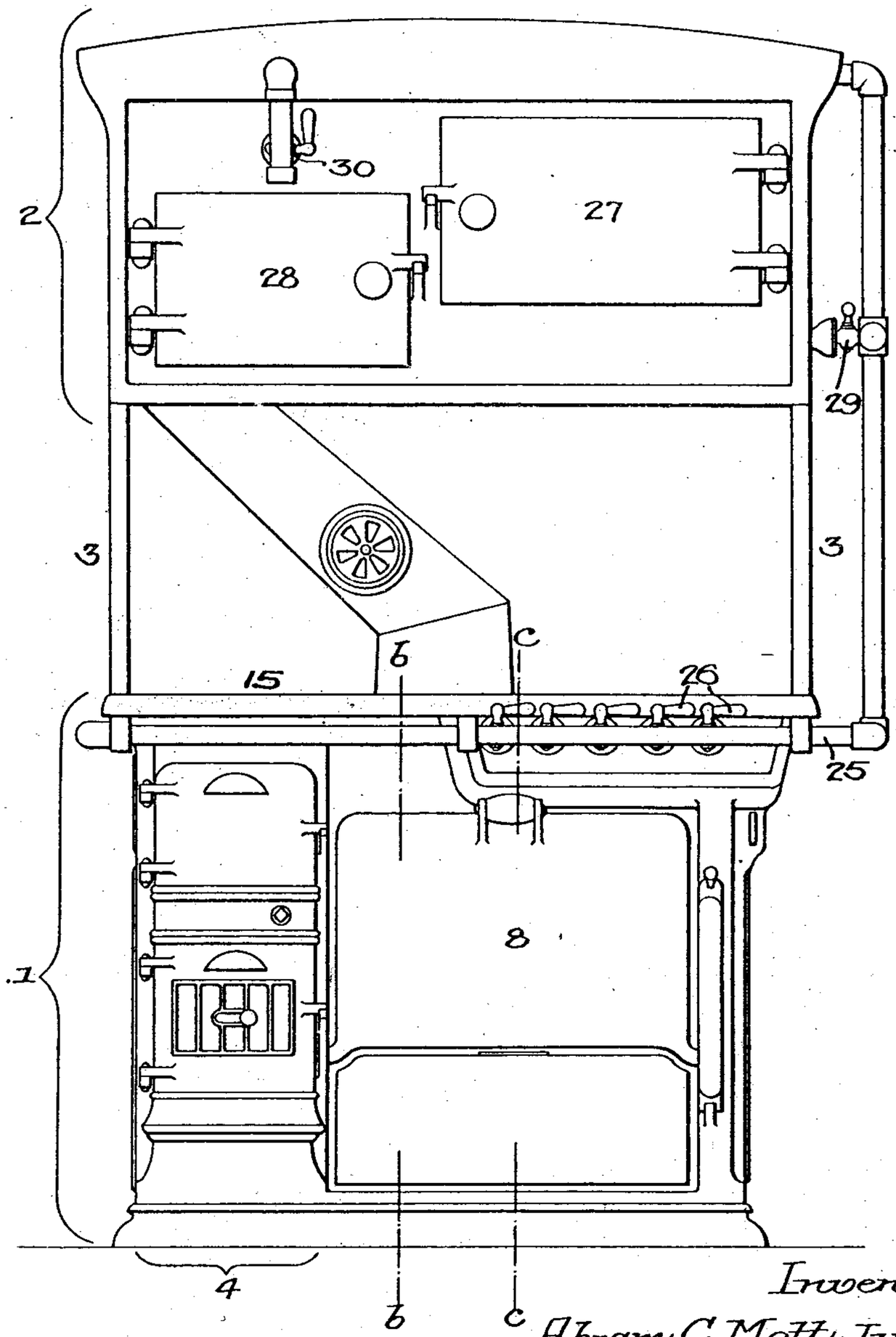
APPLICATION FILED MAY 1, 1913.

1,167,202.

Patented Jan. 4, 1916.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 3.

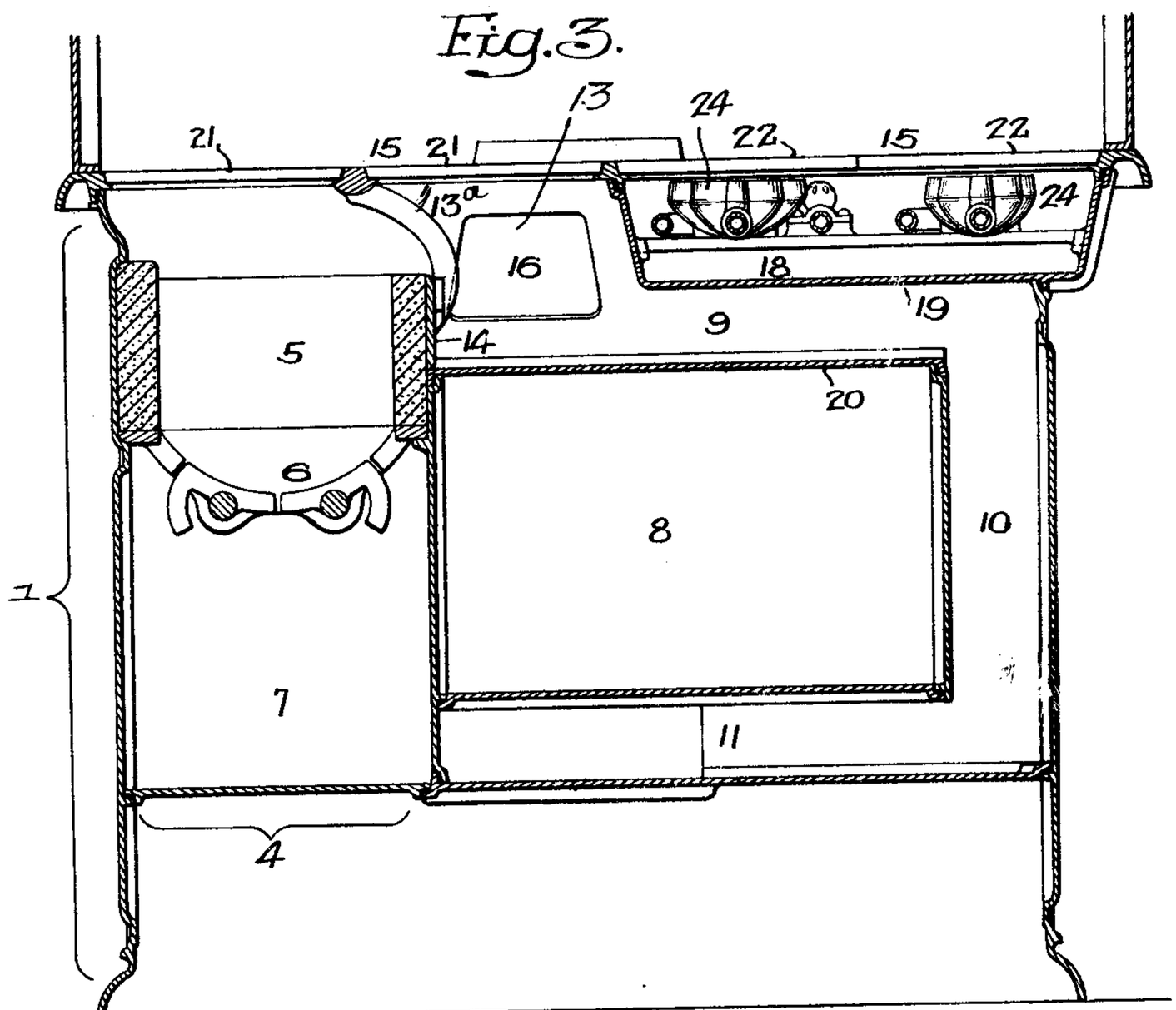
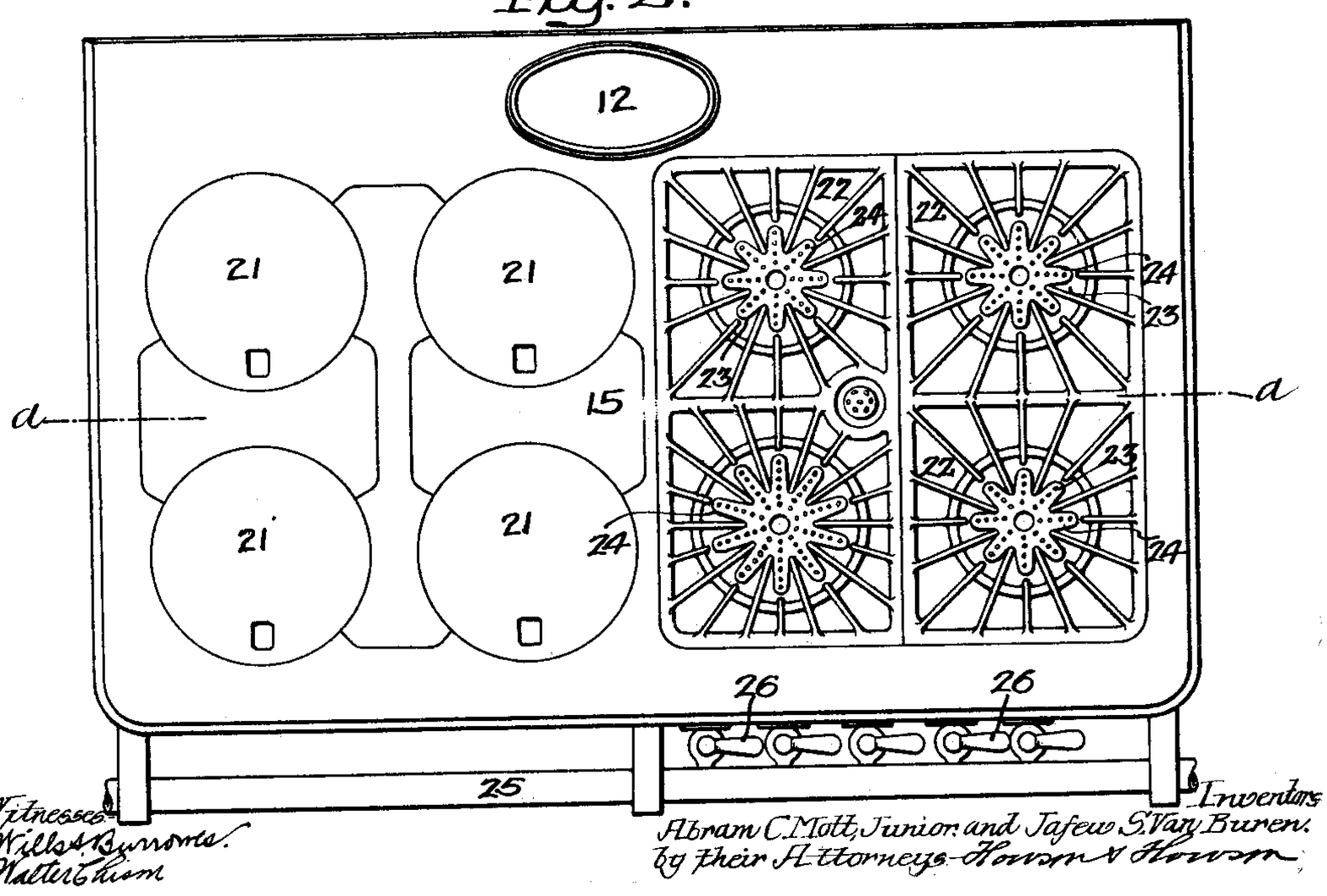


Fig. 2.



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3 SHEETS—SHEET 3.

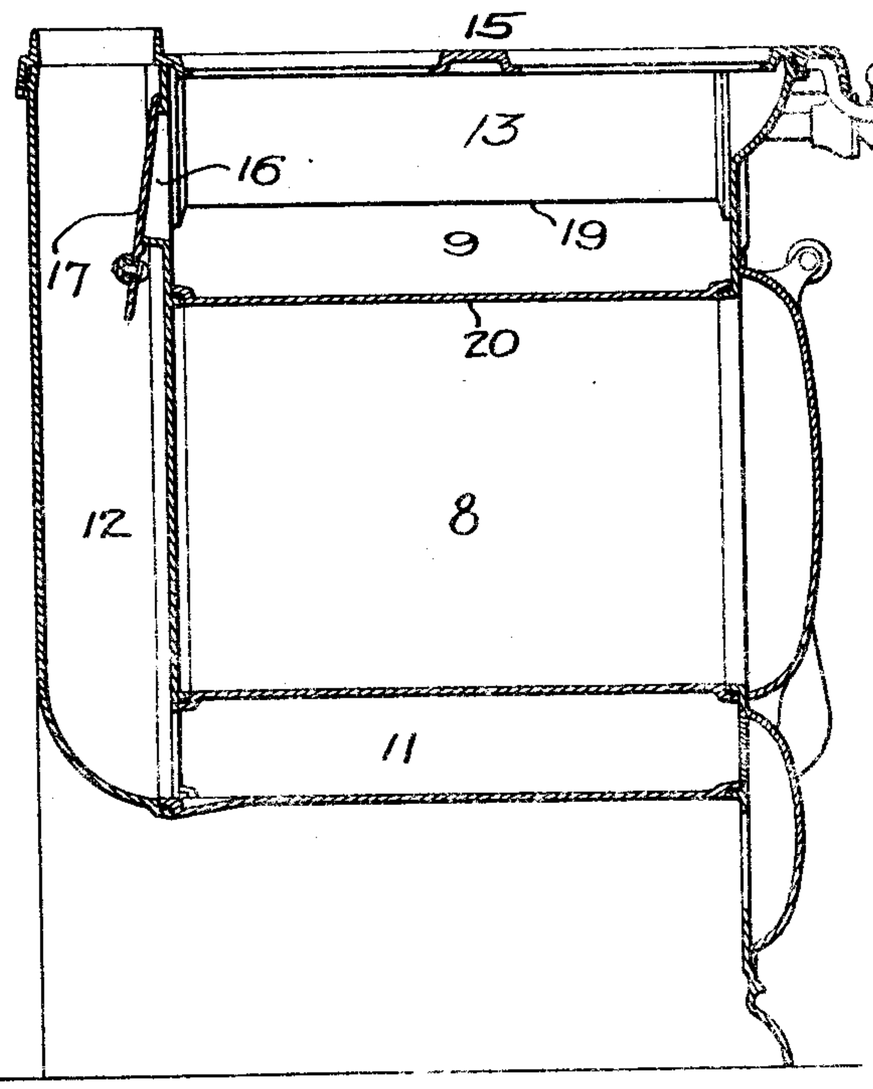

Fig. 4.

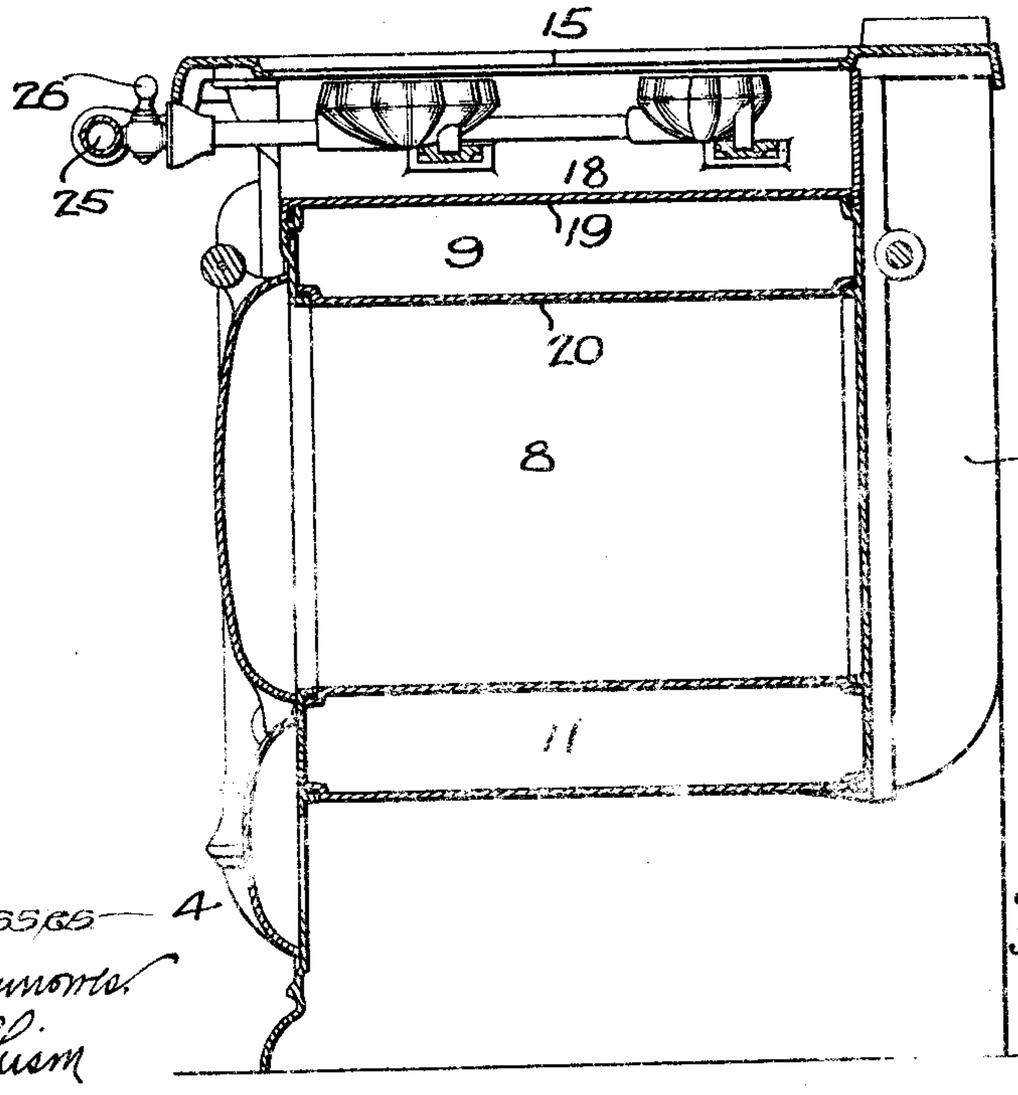

Fig. 5.

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UNITED STATES PATENT OFFICE.

ABRAM C. MOTT, JR., OF PHILADELPHIA, PENNSYLVANIA, AND JAFEW S. VAN BUREN, OF ALBANY, NEW YORK, ASSIGNORS TO ABRAM COX STOVE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

RANGE.

1,167,202. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed May 1, 1913. Serial No. 764,949.

To all whom it may concern:

Be it known that we, ABRAM C. MOTT, Jr., and JAFEW S. VAN BUREN, citizens of the United States, residing in Philadelphia, county of Philadelphia, State of Pennsylvania, and Albany, county of Albany, State of New York, respectively, have invented certain Improvements in Ranges, of which the following is a specification.

One object of our invention is to construct a combined coal and gas range in such a manner that the products of combustion from the fire pot of the coal section will pass through a combustion chamber in which the gas will circulate before passing to the flues between the top of the oven and the gas section.

A further object of the invention is to construct the range so that the gas section will extend above the top plate of the range and to confine it within the ordinary narrow limits of a coal range of the same capacity.

A still further object of the invention is to design the range so that the two flues leading around the oven of the coal section will have sufficient capacity to properly carry off the products of combustion.

In the accompanying drawings, Figure 1 is a front view of our improved range; Fig. 2 is a plan view; Fig. 3 is a longitudinal sectional view on the line *a*—*a*, Fig. 2; Fig. 4 is a transverse sectional view on the line *b*—*b*, Fig. 1; and Fig. 5 is a transverse sectional view on the line *c*—*c*, Fig. 1.

We have illustrated our invention as applied to a range having a base 1 and an overhead oven 2, supported by brackets 3. It will be understood that the invention can be used with or without the overhead oven without departing from the spirit of the invention.

4 is the coal section of the range having a fire pot 5 of the normal height and arranged a given distance from the top plate.

6 is a grate of the ordinary type and 7 is the ash pit.

8 is the oven located at one side of the fire pot but arranged lower than usual. Above the oven is a combustion chamber and the upper flue 9 and at one end is the vertical flue 10 which communicates with the upper flue and the lower flue 11 under the oven. The lower flue 11 communicates with the flue 12 at the back of the range, as indicated in Fig. 4. The combustion chamber 13 communicates with the fire pot 5 through the passage 13ª. The partition 14, which separates the fire pot from the combustion chamber 13 is discontinued at the upper edge of the fire pot and the top plate 15 extends over the entire width of the range.

16 is an opening communicating with the flue 12 and a damper 17 is so pivoted as to close either the opening 16 or the flue 12, so that the product of combustion can pass directly to the chimney or indirectly around the oven 8.

The oven 8 is located lower than the ordinary oven in this type of range, so as to bring the top of the oven a substantial distance below the top of the fire pot, and a chamber 18 is formed between the plate 19 having side walls and the top plate 15 for the reception of the gas burners. The side walls of the plate 19 preferably extend to the under side of the top plate, as shown in Fig. 3, and one of these walls forms one wall of the combustion chamber 13 and acts as a deflector for the products of combustion. The top plate 20 of the oven is spaced from the plate 19 to form the upper flue 9 and this plate 20 also forms the bottom of the combustion chamber 13. Thus, the products of combustion pass from the fire pot, circulate in the combustion chamber, and then pass through the flue 9 in direct contact with both plates 19 and 20.

It will be noticed that the partition wall 14 at the side of the fire pot extends considerably above the top plate 20 of the oven and preferably extends above the line of the bottom plate 19 of the chamber 18 for the gas burners so as to form an outside wall for one side of the combustion chamber 13, the other wall being formed by the side walls of the chamber. This construction insures the proper circulation of the products of combustion in the combustion chamber before passing through the flue 9.

21—21 are the ordinary stove lids located on one-half of the top plate and mounted in the other half of the top plate, in the present instance, is a grid 22, having open-

ings 23 directly below which are the gas burners 24 of any desired type. These burners are supplied with gas from a pipe 25 at the front of the range and valves 26 are located in each connecting pipe for regulating the flow of gas to the several burners.

It will be noticed that the plate 19, which separates the chamber 18 from the flue 9, will be heated by the products of combustion passing through the flue 9 and this heat is sufficient to keep hot any pots or pans which are placed on the gas portion of the range, after their contents have been brought to the boiling point, without lighting the gas. The heat from the products of combustion is sufficient, in many instances, to keep water boiling which has previously been brought to the boiling point on the coal section when placed over the gas section when the burners are not lighted. This is an important feature of the invention. Furthermore, by depressing the chamber, as shown, we are enabled to make a range with a flat top and also by locating the chamber in the position shown, it is not necessary to extend the gas section beyond the limits of the ordinary coal range. This is particularly desirable at the present time, as a range must be of a certain width to be located in the correct position in the average kitchen.

In the present instance, the overhead oven section 2 consists of a gas oven 27 and a broiling compartment 28. A gas pipe 29 leads to the burners which heat the oven and a pipe 30 leads to the burners which are used in the broiling chamber.

It will be noticed that the fire pot is at the normal height and has a fixed relation to the top plate of the range. This is essential in all ranges to obtain the best results. The oven, however, is dropped below the top of the fire pot so as to allow the chamber 18, combustion chamber 13, and the flue 9 to be located between the top plate and the top of the oven.

In the drawings, we have shown grids over the burners, but when the stove is used with natural gas then we prefer to use lids and the ordinary cover plate and to drop the burners a sufficient distance below the top plate so as to properly heat the top plate and the pots or pans thereon.

As before remarked, it will be understood that the overhead oven section may be omitted without departing from the essential features of the invention.

We claim:

1. The combination in a combined gas and coal range, of a flat top plate; a fire pot located under one end of the top plate; a chamber located under the opposite end thereof and having gas burners therein, the fire pot and the gas chamber being separated by a combustion chamber; an oven under the combustion chamber and separated from the gas chamber to form a flue, the top of the fire pot extending a considerable distance above the oven so as to form one side wall of the combustion chamber, the casing of the gas chamber forming the other wall so that as the products of combustion from the fire pot pass into the combustion chamber they will circulate in the combustion chamber and will be deflected by both walls before passing to the flue located between the gas chamber and the top of the oven.

2. The combination in a gas and coal range, of a top plate; a gas burner casing below the top plate and having a wall forming part of the wall of the combustion chamber; a fire pot spaced from the gas burner casing and having a wall forming the opposite side of the combustion chamber; an oven having a top plate disposed a substantial distance below the top of the firepot and the burner casing and forming the bottom of the combustion chamber and the bottom of the flue leading therefrom, the top of the fire pot being above the bottom of the burner casing so that the products of combustion passing from the fire pot will circulate in the combustion chamber before passing to the flue.

3. The combination in a combined gas and coal range having a flat top plate, of a gas burner casing located directly below the top plate at one side of the range and having a wall forming part of the combustion chamber; a fire pot at the other side of the range; an oven having a top plate disposed a substantial distance below the top plate of the range and forming the bottom of the combustion chamber and the bottom of the flue leading therefrom, the fire pot extending to such a distance above the top plate of the oven as to form one wall of the combustion chamber, the fire pot being located a given distance below the top plate of the range to form a passage; a gas burner casing extending from the front to the rear of the range so that the products of combustion in passing from the fire pot to the flue will be momentarily detained and deflected by the walls of the combustion chamber before passing to the flue between the top of the oven and the gas burner casing.

4. The combination in a combined coal and gas range, of a top plate; a gas burner casing located directly below the top plate at one side of the range; a fire pot at the other side of the range separated from the gas burner casing by a combustion chamber; an oven having a top plate forming the bottom of the combustion chamber and the bottom of the flue leading therefrom, one side wall of the combustion chamber being formed by the wall of the gas chamber which projects downward from the top

plate, the other wall of the combustion chamber being formed by the wall projecting vertically from the top plate of the oven at the side of the fire pot so that there will be a positive circulation of the products of combustion in said chamber.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

ABRAM C. MOTT, JR.
JAFEW S. VAN BUREN.

Witnesses:
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WM. A. BARR.