

No. 712,854.

Patented Nov. 4, 1902.

J. F. RUTH & E. PREISLER.
RANGE.

(Application filed Dec. 23, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

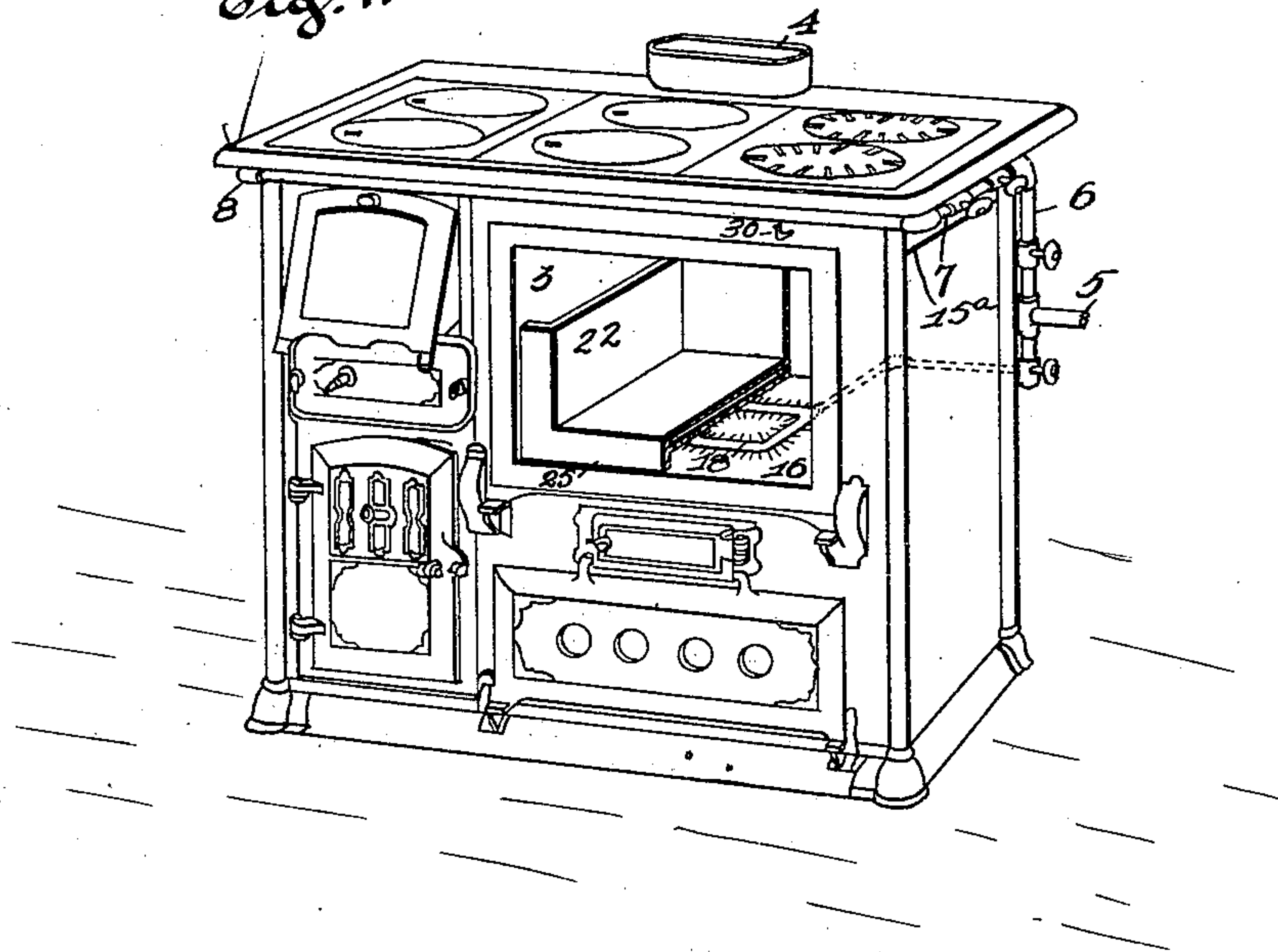
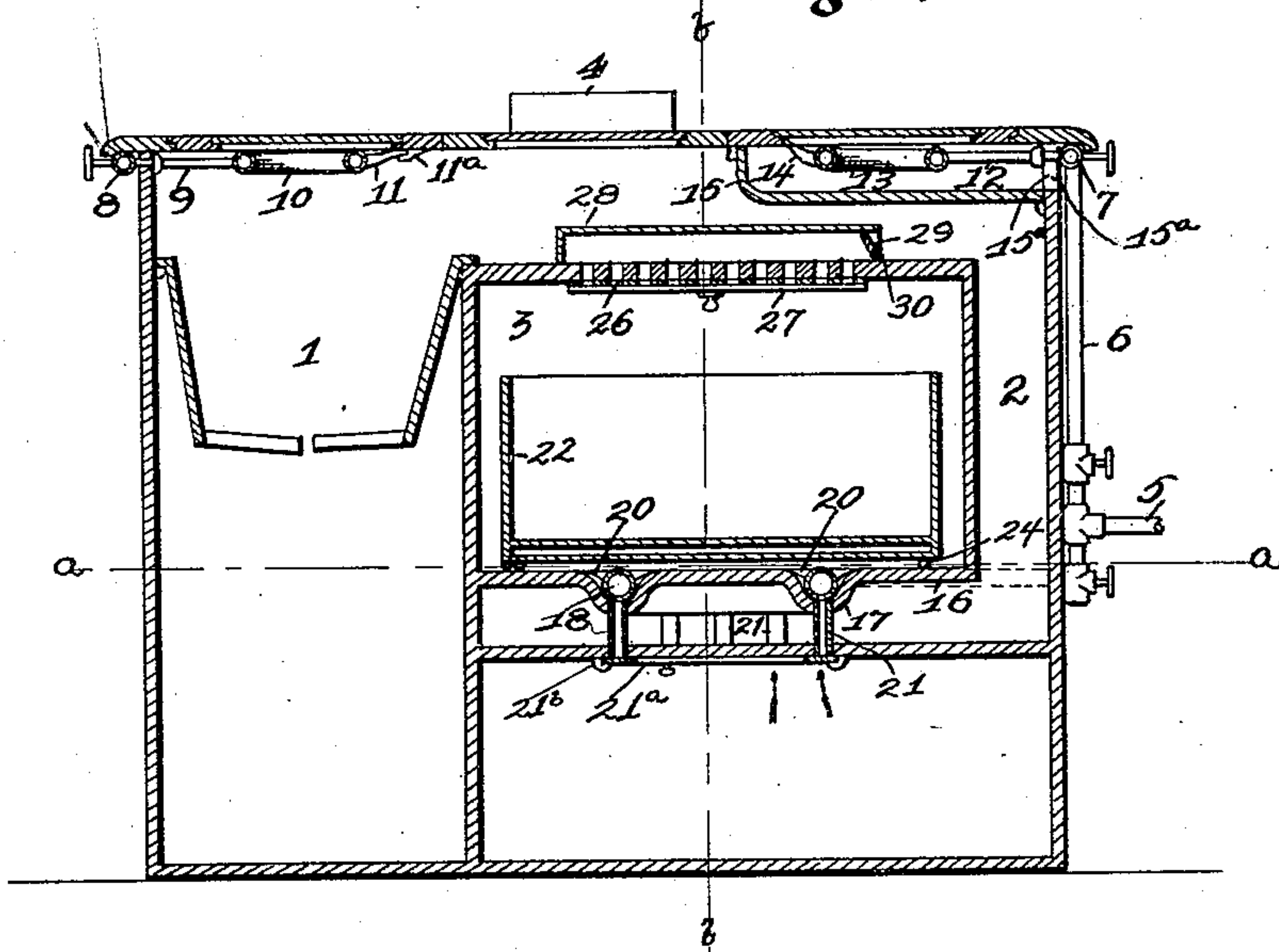


Fig. 2.



Witnesses:
Alfred A. Eicher
Frank Turner

Inventors
John F. Ruth
Ernst Preisler
by Higdon & Longan Attys

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Fig. 3.

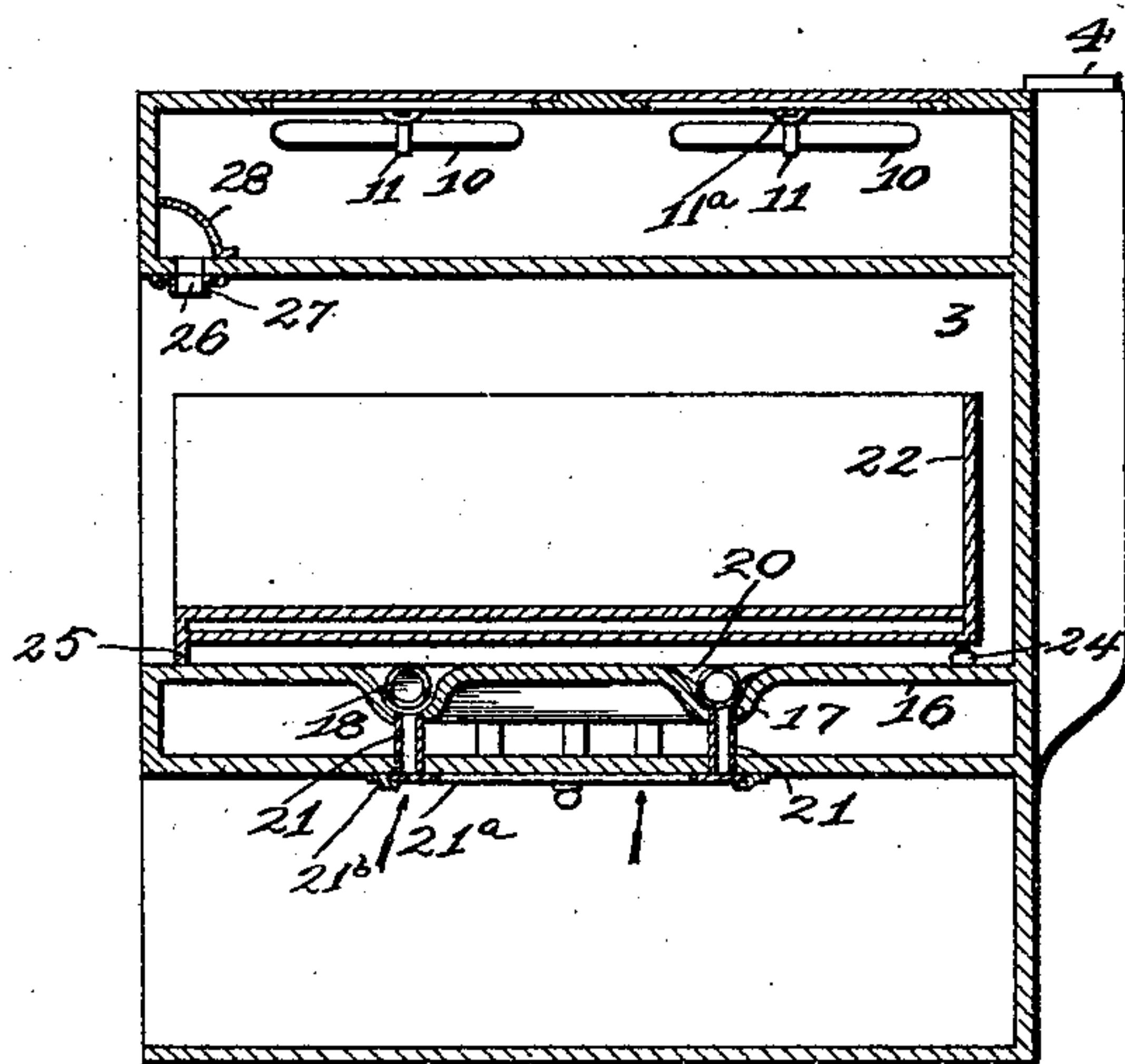
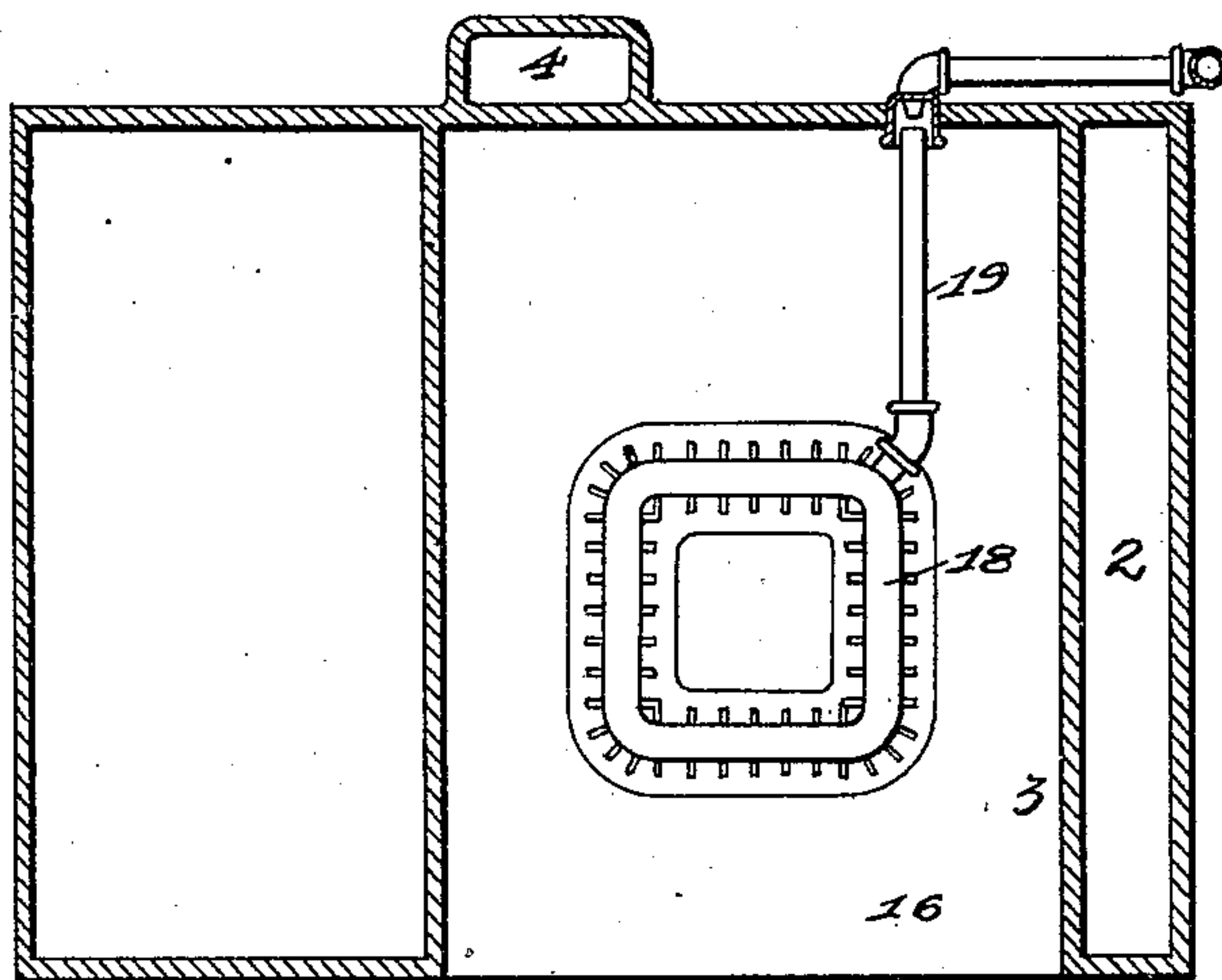


Fig. 4.

Witnesses

Alfred A. Eicks
Frank Turner

Inventors

John F. Ruth
Ernst Preisler
by Higdon & Longan Attys.

UNITED STATES PATENT OFFICE.

JOHN F. RUTH AND ERNST PREISLER, OF ST. LOUIS, MISSOURI.

RANGE.

SPECIFICATION forming part of Letters Patent No. 712,854, dated November 4, 1902.

Application filed December 23, 1901. Serial No. 86,973. (No model.)

To all whom it may concern:

Be it known that we, JOHN F. RUTH and ERNST PREISLER, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Ranges, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to ranges; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

The object of our invention is to provide an improved combined coal, wood, and gas range all parts of which may be heated by the specific fuel used and in which both gas and solid fuel may be burned at the same time, thereby making the device much more compact and fully as useful as those combined ranges of ordinary construction.

Figure 1 is a view in perspective of a range in which our invention is embodied. Fig. 2 is a longitudinal sectional view showing the arrangement of different parts in detail. Fig. 3 is a horizontal sectional view taken on the line *a a* of Fig. 2. Fig. 4 is a vertical sectional view taken on the line *b b* of Fig. 2.

In the drawings, 1 indicates the fire-box within which the wood or coal is to be placed when the range is to be heated by fuel of that kind. The ordinary passages 2 are provided for the products of combustion, which passages lead from the oven 3 downwardly along the rear end thereof beneath the under side of the said oven and outwardly through the flue 4. These parts of our invention embody the usual construction, the different parts of the range being heated in the ordinary manner.

5 indicates a gas-supply pipe, the inner end of which is adjacent to the rear side of the range. Connected to the inner end of the pipe 5 is a vertical pipe 6, connected to the upper end of which is a horizontal pipe 7, which, as shown, leads around the front side of the range and is extended around the opposite end thereof from the pipes 5, 6, and 7.

Leading from the horizontal portion 8 of the gas-supply pipe, which is on the front end of the range, are the inwardly-projecting pipes 9, which are provided on their inner ends with ordinary burners 10, one of which is provided for each of the heating-holes in the top of the

range. The burners 10 are supported in horizontal position by means of supporting-braces 11, attached to the burner and engaging with the pockets 11^a, secured to the under side of the top of the range. By this arrangement the front side of the range can be heated when desired by the use of gas as a fuel in the same manner that it is heated when coal or wood is used. The burners 10 and the braces 11 are removable and can be removed whenever wood or fuel is used, thereby making use of no parts which are unnecessary in either case.

Leading from the pipes 7 at the rear end of the range are inwardly-extending horizontal pipes 12, which carry on their inner ends the burners 13, similar in all respects to the burners 10. They are supported below the heating-holes at the rear of the range by means of the braces 14. The burners 13 are removable for cleaning purposes and are protected from the products of combustion by means of the partition-wall 15. By this arrangement the burners 13 may be retained in position at all times and may be used at the same time that wood or coal is used in the front part of the range in the fire-box, the partition-wall 15 protecting them from the products of combustion, as described. Thus it is seen that the partition-wall 15 serves to form an inclosure 15^a, shielding the burner 13 from the products of combustion passing through the passage 2. As stated above, the burners 13 are removable for cleaning purposes, and to afford access thereto one side of the inclosure is left open, which also allows air to reach the burners. This also permits access to the inclosure to remove foreign substances which will naturally accumulate therein. The burners 10 and 13 supply heat for the top of the range, and the oven is heated in the manner which we will now describe.

16 indicates the bottom of the oven, which is swaged downwardly to form a depression, as indicated by 17, and within the same is carried a burner 18, the said burner being connected to the gas-supply pipe by means of the connections 19. The ears 20, carried by the burner, rest upon the bottom of the oven and support the burner in the desired position. Leading into the depression 17 in the bottom of the oven are the vertical pipes 21,

which are for the purpose of admitting air, thereby allowing the burners to burn freely when the oven-door is closed. A sliding damper 21^a, operating in guide-strips 21^b, supported below the lower ends of the pipes 21, is made use of to simultaneously close or open all the said pipes.

22 denotes a secondary oven, which acts as a well-known flame-spreader and which is to be carried within the oven 3 above the burner 18. The said secondary oven is provided on its rear end with supports 24 and on its forward end with a downwardly-extending flange 25, which rests upon the bottom of the oven and, in connection with the vertical walls, causes the heat and products of combustion to move rearwardly and upwardly around the rear end of the secondary oven.

Through the top of the oven 3, near the front side thereof, are arranged vents 26, which allow the smoke and fumes to pass upwardly into the passages 2. Below the top of the oven is carried a damper 27, by means of which the vents may be regulated whenever desired. A shield 28 is carried within the passage 2 and serves to turn the smoke and fumes rearwardly and cause them to pass outwardly through the flue 4. A damper 29 is located in the rear end of the shield 28, whereby the passage may be closed. A rod 30 projects through the side of the range and is adapted to be used in operating the damper.

An important feature of our improved range is that only one oven is required, and this oven may be used with equal advantage by using either coal or gas for fuel. It is also clear that we may burn both coal and gas simultaneously to heat the oven, since the gas-burner is entirely within the oven and is therefore protected from the smoke in the smoke-passage and does not interfere with the passage of smoke to its outlet. By this construction greater heat may be obtained in a short time than is possible in an ordinary range capable of using only one fuel at any one time. The entire range is very compact, no unnecessary parts are made use of, and in construction it is comparatively simple. In these and other respects our improved range presents many advantages over those of ordinary construction.

It will be observed that by locating the burner 18 in the said depression 17 in the bottom of the main oven the central portion of the oven-bottom is not cut away or otherwise removed; but remains intact and in perfect alinement with the other portions of the oven-bottom exterior of the burner. By reason of the fact that the central floor of the said oven interior of the burner has not been interfered with by the placing of said burner small pie-pans or other utensils may be placed upon the said central portion directly in contact therewith, and the bottom of the oven remains practically smooth and uninterrupted.

We claim—

1. The improved range comprising an oven, having a depression in its bottom whereby the central portion of the oven interior of said depression remains in alinement with the portion of the bottom exterior of said depression, a fire-box; a smoke-passage leading from said fire-box and passing over and under the oven in order to supply heat to all sides thereof when solid fuel is used; and a gas-burner located within the said depression in the bottom of said oven and completely shielded from the smoke-passage so that both gas and solid fuel may be burned at the same time and at different times without changing any of the parts; substantially as specified.

2. The improved range comprising an oven, having a depression in its bottom whereby the central portion of the oven interior of said depression remains in alinement with the portion of the bottom exterior of said depression; a fire-box; a smoke-passage leading from said fire-box and passing over and under the oven in order to supply heat to all sides thereof when solid fuel is used; a gas-burner located within the said depression in the bottom of said oven and completely shielded from the smoke-passage so that both gas and solid fuel may be burned at the same time and at different times without changing any of the parts; and vertical pipes 21 connecting said depression and passing through the outer wall of the smoke-passage beneath the oven for the purpose of supplying air to the said burner; substantially as specified.

3. The improved range comprising an oven, having a depression in its bottom whereby the central portion of the oven interior of said depression remains in alinement with the portion of the bottom exterior of said depression; a fire-box; smoke-passage leading from said fire-box and passing over and under the oven in order to supply heat to all sides thereof when solid fuel is used; a gas-burner located within the said depression in the bottom of said oven and completely shielded from the smoke-passage so that both gas and solid fuel may be burned at the same time and at different times without changing any of the parts; vertical pipes 21 connecting said depression and passing through the outer wall of the smoke-passage beneath the oven for the purpose of supplying air to the said burner; a secondary oven having a vertical wall and an open top and provided with the downwardly-extending flange 25 which rests in contact with the bottom of the oven at the front thereof and compels the flame to pass rearwardly; and means for ventilating the oven; substantially as specified.

4. In a range, an oven having a portion 17 of its bottom depressed to form a burner-seat, a burner 18 carried within said depressed portion and having its upper side even with the bottom of the oven, arms 20 rigid with said burner for holding it out of contact with the

portion 17, a smoke-passage 2 passing under the oven, pipes 21 leading through the smoke-passage and through the depressed portion 17 of the oven-bottom and terminating underneath the burner, a damper for controlling said pipes, openings 26 in the top of the oven, a damper for controlling said openings, a shield 28 above the oven and covering the openings 26, and a damper 29 for closing said shield, substantially as specified.

5. In a range, an oven, a smoke-passage passing underneath said oven, a burner-seat 17 formed in the bottom of said oven, a burner 18 carried within said burner-seat and completely shielded from the smoke-passage and having arms 20 whereby it is held out of contact with the burner-seat, air-pipes 21 passing through the smoke-passage under the oven and leading into the burner-seat below the burner 18, a damper for controlling said pipes, and a valve-controlled passage at the top of the oven through which the fumes may

be permitted to pass, substantially as specified.

6. A range constructed with a fire-box and a smoke-passage and having heating-holes in its top above the fire-box and above the smoke-passage, an integral partition-wall located in the smoke-passage and shielding a number of the heating-holes from the smoke-passage, and forming a chamber open to the air at one side, a number of burners removably carried in said chamber above the partition-wall and under the heating-holes and disconnected from the partition-wall, and means for supplying gas and air to said burners, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN F. RUTH.
ERNST PREISLER.

Witnesses:

ALFRED A. EICKS,
JOHN C. HIGDON.