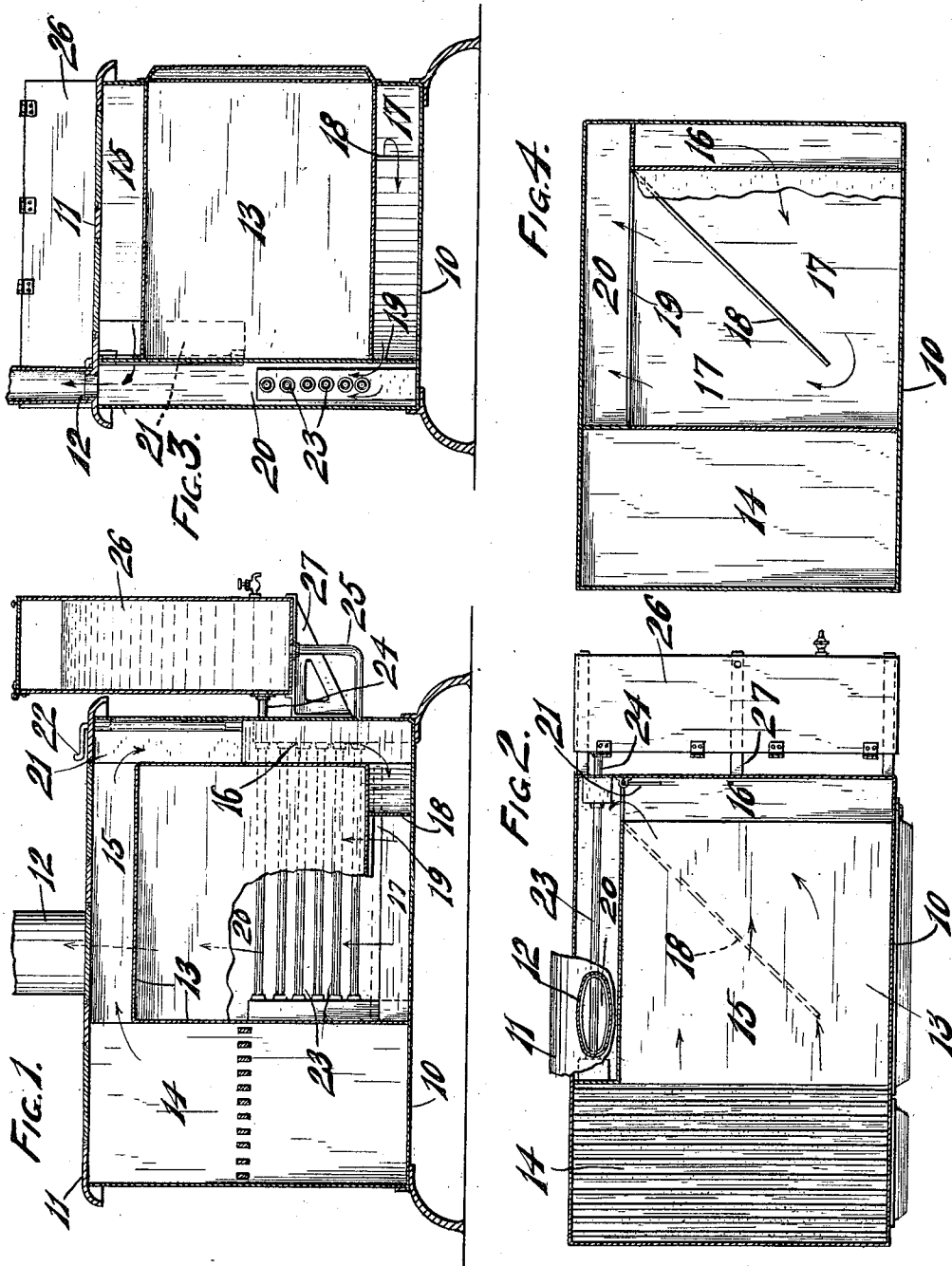


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HEATER.
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1,013,176.

Patented Jan. 2, 1912.



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JOHN JUNGERS, OF CEDAR GROVE, WISCONSIN.

HEATER.

1,013,176.

Specification of Letters Patent.

Patented Jan. 2, 1912.

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To all whom it may concern:

Be it known that I, JOHN JUNGERS, a citizen of the United States, residing in Cedar Grove, in the county of Sheboygan and State of Wisconsin, have invented new and useful Improvements in Heaters, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention has for its object to provide a water heater for ranges and other suitable burners which will utilize the waste heat on its way to the chimney without detracting from the heating effect on the oven or from such other work which the heater is primarily intended to perform.

Another object of this invention is to provide such a water heater for use with ranges where water works are not available.

With the above and other objects in view the invention consists in the water heater herein claimed, its parts and combinations of parts and all equivalents.

Referring to the accompanying drawings in which like characters of reference indicate the same parts in the different views: Figure 1 is a front sectional view of a range equipped with a water heater and constructed in accordance with this invention, one corner of the oven being broken away to show the heating coils in the rear thereof; Fig. 2 is a sectional plan view thereof through the flue space above the oven, a fragment of the stove top being shown to locate the stove pipe flange; Fig. 3 is a transverse sectional view thereof looking toward the damper; and, Fig. 4 is a sectional plan view through the flue space beneath the oven.

In these drawings 10 indicates a range casing of ordinary construction, except as hereinafter mentioned, with the top 11 and its smoke pipe 12 as usual and the ordinary oven 13. The fire box 14 communicates with the flue space 15 above the oven and then by means of the flue space 16 at the end of the oven with the flue space 17 beneath the oven where a diagonal partition 18 causes the smoke and gases to pass beneath the left front corner of the oven before passing out through a narrow horizontal slot 19 at the rear extending the full width of the oven into a back flue space 20 behind the oven with which the smoke pipe 12 communicates. The back flue space 20 in this construction extends the full width of the

oven and from the bottom to the top of the range. Instead of the damper being located in the partition between the top flue space 15 and the back flue space 20, as usual, a vertical damper 21 is hinged at its side edge and controls an opening through the partition between the end flue space 16 and the back flue space 20 and is operated by a small crank handle 22 above the top 11. When this damper is open, the smoke and gases are given a direct path to the chimney without passing around the oven, though they are required to pass over the top of the oven so that the full surface of the top 11 of the range is heated thereby.

In the back flue space 20 and preferably, though not necessarily, located beneath the level of the damper opening is a water heating coil 23 which may be made by lengths of pipe connecting headers, as shown, or in any desirable manner, said coil having pipe connections 24 and 25 with a water reservoir 26 mounted on brackets 27 at the end of the range.

In operation the fire is started in the range with the damper open and the draft is then direct, without passing around the oven, though the smoke and gases are made to heat the entire top of the range instead of heating only above the fire box and between the fire box and the smoke pipe as heretofore. When the fire is fairly started, the damper is closed and the draft then takes the more circuitous path around the end of the oven and through the flue space beneath the oven, being deflected by the partition 18 so as to fully traverse the space beneath the oven, and then through the slot 19 which extends the full width of the oven so that the oven is heated behind the partition 18 at the right corner as well as at the left corner and the smoke and gases passing up the back flue space 20, which also covers the full width of the oven, heat the rear of the oven uniformly and at the same time in passing around the water coil 23 serve to heat the water therein setting up a circulation through the water reservoir 26 and raising the temperature thereof.

By means of this invention the water in the reservoir is more quickly heated than with ranges having the ordinary attached reservoirs relying on contact with the flue casing for their heating, and this without requiring the consumption of a greater amount of fuel than is necessary to heat the oven, which is usually true with water coils

located in the fire box, for in the present invention such heat as is used in heating the water is taken from the smoke and gases after they have performed their work in heating the oven and which heat would ordinarily be wasted.

What I claim as new and desire to secure by Letters Patent is:

1. In a range or the like; a casing; a fire box therein; an oven spaced from the casing at the top, end, bottom and back, forming a top flue space leading from the fire box over the top of the oven, an end flue space leading from the top flue space around the end of the oven, a bottom flue space leading from the end flue space beneath the oven with an opening leading therefrom, and a back flue space leading from said opening to the top of the range for substantially the full width of the oven; a deflecting partition extending across the bottom flue space; a smoke pipe connected with the back flue space; a water coil contained within the back flue space; and a water reservoir connected with the water coil.

2. In a range or the like; a casing; a fire box therein; an oven spaced from the casing

at the top, end, bottom and back and forming a top flue space leading from the fire box over the top of the oven, an end flue space leading from the top flue space around the end of the oven, a bottom flue space leading from the end flue space beneath the oven with an opening leading therefrom substantially the width of the oven, and a back flue space leading from said opening to the top of the range of substantially the width of the oven; a diagonal deflecting partition extending part-way across the bottom flue space; a smoke pipe connected with the back flue space, there being an opening directly connecting the end flue space with the back flue space; means for closing the opening which directly connects the end flue space with the back flue space; a water coil contained within the back flue space; and a water reservoir connected with the water coil.

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

JOHN JUNGERS.

Witnesses:

J. W. HUENINK,
IRA LUBBERS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."