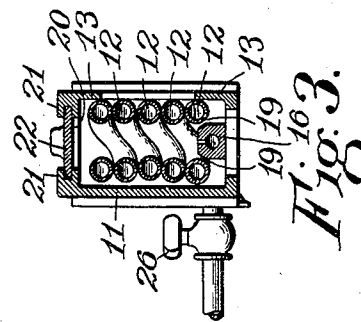
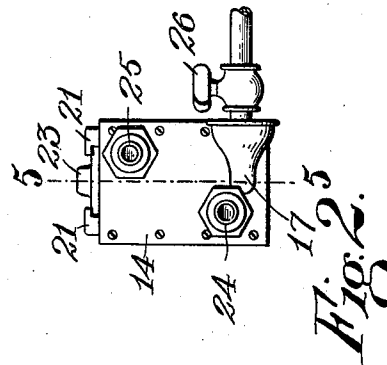
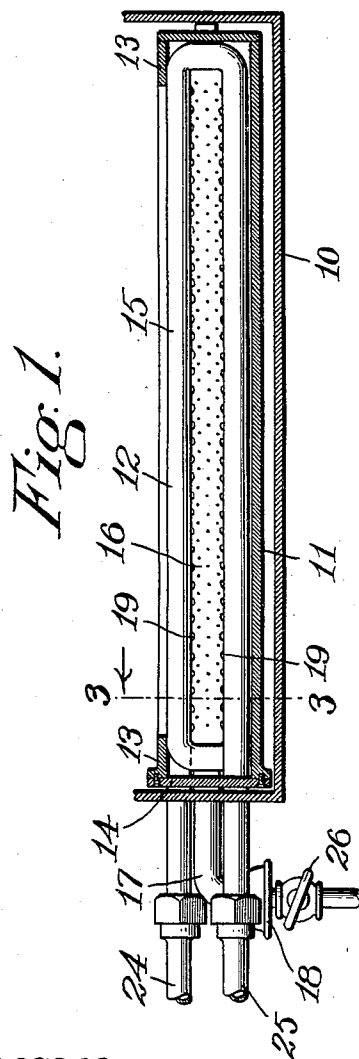


R. W. ROGERS.
WATER HEATER.
APPLICATION FILED NOV. 16, 1910.

1,017,321.

Patented Feb. 13, 1912.

3 SHEETS—SHEET 1.



Witnesses.

R. D. Holman.

A. J. Macdonald.

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Robert W. Rogers.

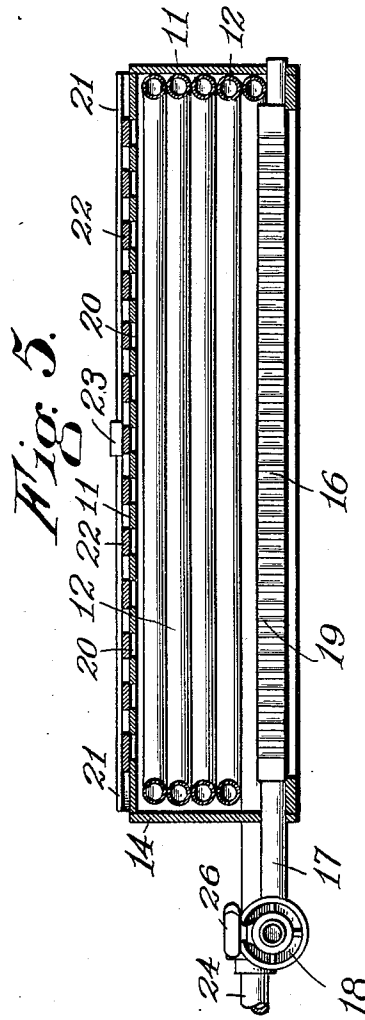
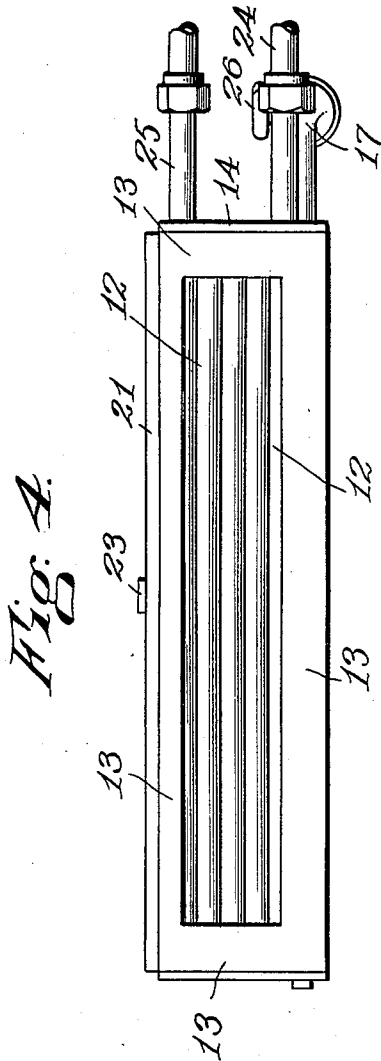
By *Anthony W. Carter*
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3 SHEETS—SHEET 2.



Witnesses

R. D. Holman.

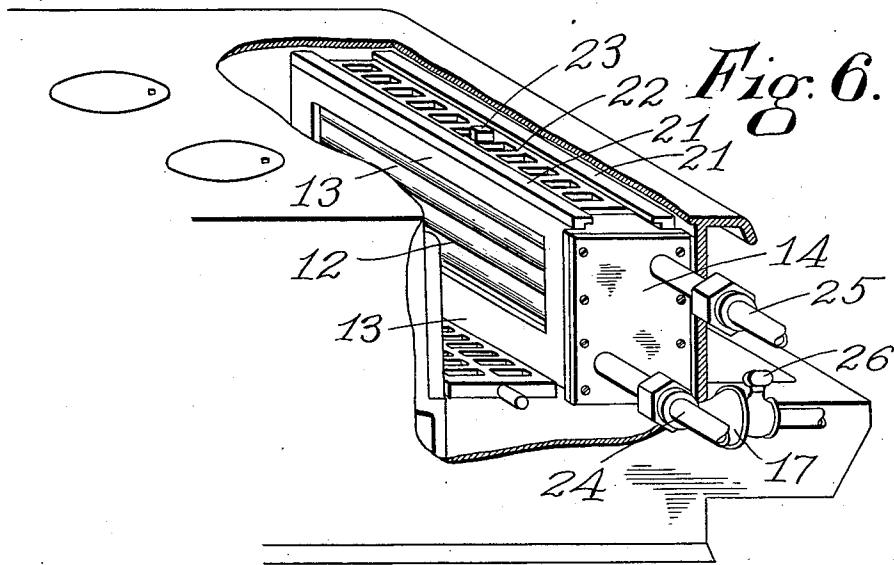
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1,017,321.

3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ROBERT W. ROGERS, OF WORCESTER, MASSACHUSETTS.

WATER-HEATER.

1,017,321.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed November 16, 1910. Serial No. 592,721.

To all whom it may concern:

Be it known that I, ROBERT W. ROGERS, a citizen of the United States, residing at Worcester, in the county of Worcester, State of Massachusetts, have invented a certain new and useful Improvement in Water-Heaters, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to heaters but more particularly to water heaters and has for its object the providing of a device which is so constructed that the water may be heated by gas or coal at the option of the operator. Heretofore numerous devices have been constructed to use one of these systems of heating but it is particularly advantageous that both may be used in a single stove.

In the present invention a simple and efficient heater has been devised which is adapted for use in any of the common forms of stoves or may be used as an independent hot water heater.

In the present application the device is shown in a water front commonly found in modern stoves but it should be clearly understood that the invention is not limited to the particular embodiment herein shown and described.

In the following description the term coal will include wood, charcoal or other solid fuel, and gas, liquid fuel and the like.

The numerous features of the invention are shown in the drawings and fully described in the specifications.

In the particular embodiment shown in the drawings:—Figure 1 is a top view of the invention complete with certain portions of the casing removed to show the interior construction. Fig. 2, end view. Fig. 3, section on line 3—3 of Fig. 1, looking in the direction of the arrow. Fig. 4, front view of the invention complete. Fig. 5, section on line 5—5 of Fig. 2. Fig. 6, a perspective view of a portion of an ordinary stove with the invention in place, a portion of the walls of the stove being removed.

In the drawings, the invention is illustrated as placed within the water front of a stove and the walls 10 of the stove are shown in Fig. 1 of the drawings. The device preferably rests in this water front in the same manner as do the hot water pipes in the ordinary stove.

It should be understood that the method

of casing the device shown in the drawings is merely adapted for one type of stove and other forms of casing would necessarily have to be used in different stoves.

The present casing consists of a box 11 having its front face open to expose the pipes 12 to the heat in the fire box of the stove. This casing is provided with front walls 13 to prevent dirt from entering the casing above, below or about the ends of the pipes but this might be dispensed with if the pipes were of such form as to close the face of the casing.

It has been found advantageous to directly expose the pipes to the action of the heat for the water prevents these from becoming over heated and a metal wall is liable to be burned out. To permit the pipes to be withdrawn from the casing, the end 14 of the same is preferably removable as is shown best in Fig. 1.

Within the casing is placed a coil 15 of pipes in such form as is desired but in the present embodiment the coils are long and narrow to conform to the shape of the burner which will be hereinafter described. Beneath this coil 15 runs a long narrow burner which is provided with a plurality of small orifices in its upper surface similar to those found in ordinary gas stoves. Attached to this and running through the end wall 14 of the casing is the gas pipe 17 provided with the usual gas and air mixer 18 found on all gas stoves. As this burner practically covers the bottom of the coil of the pipes, its edges 19 are here shown fluted to permit the air to enter from beneath to cause proper combustion.

The top wall of the casing is provided with a plurality of small openings 20 to permit the products of combustion and heated air arising from the gas flame to pass out through the top. Extending upwardly and inwardly from the top plate and running longitudinally thereon are guide flanges 21 and beneath these slide a cover 22. This cover is also provided with a plurality of openings similar to those in the top plate but with the spaces between the openings of such size that when the slide is moved to a certain position, the solid portions close the openings in the top cover and when it is slid into another position the openings are uncovered. Upon the top of this slide 22 is placed a handle 23 to permit the same to be operated.

The water enters through the supply pipe 24, passes through the coil and leaves by the pipe 25 which is connected to the boiler or other place of hot water storage.

5 When the device is to be used in an ordinary coal stove, it is placed therein as above described with the open front facing the fire box. The heat from the burning coal acts against the pipes 12 in the front of the coil and heats the water therein. When the device is being used with a coal fire, the openings in the top of the casing should be kept closed by means of the slide 22 in the manner described. Fig. 6 of the drawings shows 10 this construction in which the walls of the stove, adjacent to the fire-box, have been removed to expose the water heater. The handle 23 preferably extends upwardly through a slot in the top of the stove in the manner 15 common to sliding dampers.

When it is desirous to operate the heating device by gas, the cock 26 should be opened, the burner 16 lighted, and the openings in the top of the casing uncovered for the reason 20 stated above.

It will readily be seen that the device combines the functions of a gas and a coal hot water heater in a single stove and with only a single heating coil which is of great advantage as it permits water to be heated by gas when the regular fire is out and saves the necessity of having an extra gas hot water heater at considerable extra expense and requiring extra floor space.

35 The device is adaptable to heating as well as cooking stoves.

What I claim as my invention and desire to secure by Letters Patent is:—

40 1. In a device of the class described, the combination of a chamber for the combustion of solid fuel, a casing located adjacent to said combustion chamber and having an opening in the wall facing said chamber, a coil of piping having the turns thereof superimposed to form a wall to close the opening in the face of said casing, inlet and outlet pipes connected to said coil, a fluid burner 45 beneath said coil, means for conveying combustible fluid to said burner, and means for

50 permitting the escape of the products of combustion from said casing.

2. In a device of the class described, the combination of a chamber for the combustion of solid fuel, a casing located adjacent to said combustion chamber and having the side toward said chamber open to admit the heat of combustion from said chamber, a coil of piping having the turns thereof superimposed to form a wall to close said opening, inlet and outlet pipes connected to said coil, a fluid burner located beneath said coil, means for conveying combustible fluid to said burner, an air inlet in said casing beneath said burner, and a damper controlled outlet adjacent to the top of said casing for the escape of the products of combustion from said burner. 65

3. In a device of the class described, a chamber for the combustion of solid fuel, a water heater adapted to be placed in said chamber comprising, a casing open on one side and closed on the opposite side, a water heating coil situated within said casing, and a fluid fuel burner for heating said coil, said casing being open at the bottom and being provided adjacent to its top with a damper controlled outlet for the escape of the products of combustion from said burner. 75

4. In a device of the class described, a chamber for the combustion of solid fuel, and a water heater adapted to be placed adjacent to said chamber, said heater comprising, a casing open on one side and closed on the opposite side, a water heating coil situated within said casing and having the turns of said coil superimposed to form a wall to close the open face of said casing, and a fluid fuel burner for heating said coil, said casing having an opening in the bottom thereof and being provided near its top with a damper controlled outlet for the escape of the products of combustion from said burner. 85 90

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

ROBERT W. ROGERS.

Witnesses:

HARTLEY W. BARTLETT,
AMY G. MACDONALD.