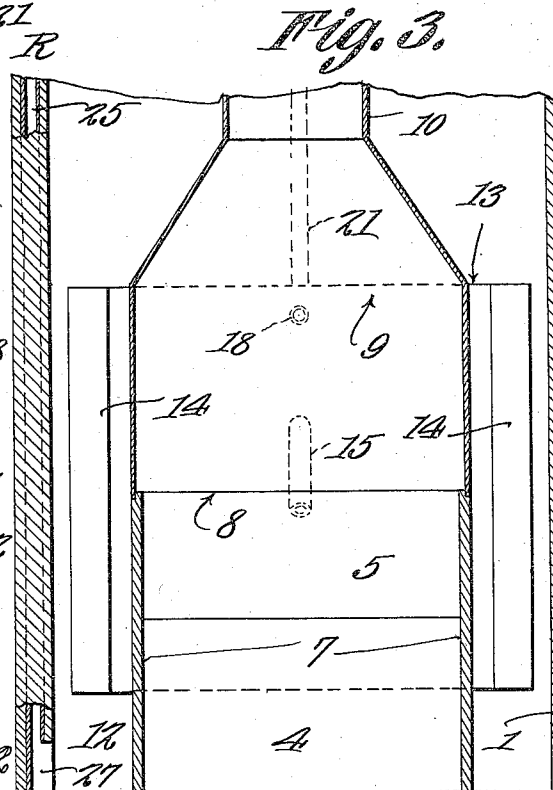
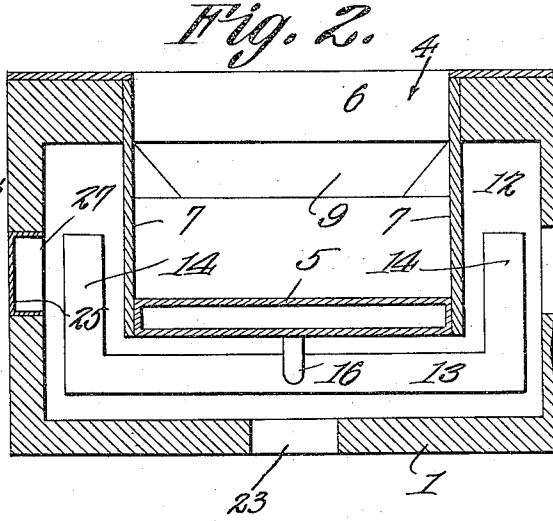
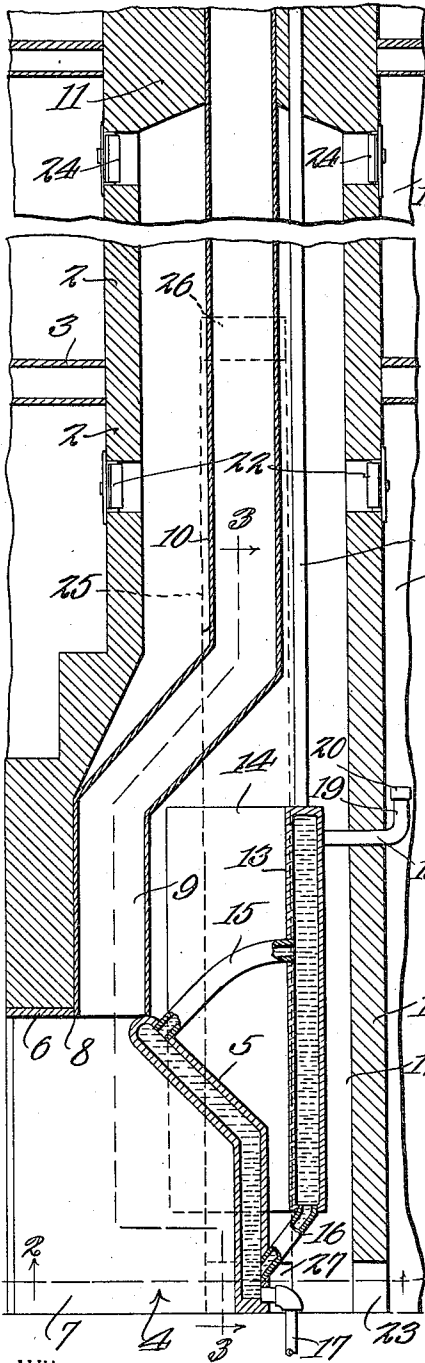


G. H. RUSSELL.
FIREPLACE HEATING APPLIANCE.
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1,152,912.

Patented Sept. 7, 1915.



Witnesses

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Fig. 1.

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UNITED STATES PATENT OFFICE.

GEORGE H. RUSSELL, OF FLORENCE, ALABAMA.

FIREPLACE HEATING APPLIANCE.

1,152,912.

Specification of Letters Patent.

Patented Sept. 7, 1915.

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To all whom it may concern:

Be it known that I, GEORGE H. RUSSELL, a citizen of the United States, residing at Florence, in the county of Lauderdale and State of Alabama, have invented a new and useful Fireplace Heating Appliance, of which the following is a specification.

The present invention appertains to a fire place heating apparatus, and aims to provide a fire place heating device for residences, whereby the upper as well as the lower room or rooms may be heated effectively.

Another object of the invention is the provision of a water heating device of novel construction assembled with the fire place to increase the heating efficiency of the fire place.

It is also within the scope of the invention to provide a fire place heating appliance having the features above noted and which is comparatively simple, and inexpensive in construction, as well as being practical and efficient in use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein—

Figure 1 is a vertical section of the heating structure, parts being broken away. Fig. 2 is a horizontal section of the fire place taken on the line 2—2 of Fig. 1 looking upwardly. Fig. 3 is a vertical section of the fire place taken on the line 3—3 of Fig. 1.

In the drawings, the numeral 1 designates the brick work or fire place structure from which the chimney 2 rises, the chimney 2 passing up through the second floor 3.

In carrying out the invention, a combustion chamber 4, constructed of suitable castings, is built in the front wall of the brick work or fire place structure 1, and comprises a hollow water back 5 and a top 6. A grate or andirons (not shown) may be disposed as usual within the chamber 4. Side members or plates 7 are attached to the side edges of the water back 5 and co-

operate with the water back to provide the combustion chamber in which the wood, coal or other fuel is burnt. The top 6 of the combustion chamber 4 is provided with a laterally elongated outlet opening 8, and an outlet funnel 9 is engaged to the top of the combustion chamber 7 over the opening 8, and extends to the lower end of the flue 10 which extends upwardly through the chimney 2. The space between the walls of the chimney 2 and flue 10 is preferably filled in, as at 11, above the upper room or rooms R'.

Disposed within the air circulating chamber 12 within the fire place structure 1, is a radiator which comprises a vertical rectangular reservoir 13 disposed between the water back 5 and the rear wall of the brick work 1. The reservoir 13 is provided with forwardly projecting side portions 14 located between the sides of the water back 5 and sides of the brick work 1, the reservoir 13 projecting above the water back 5, and being disposed transversely of the fire place.

The radiator is connected to the water back to provide a water circulating system, whereby the hot water will flow into the radiator to assist in heating the air within the chamber 12, and to this end a riser pipe 15 connects the upper portion of the water back 5, and the front wall of the radiator reservoir 13 near the upper edge of the radiator, and a return pipe 16 connects the lower edge of the radiator 13 and the lower portion of the front wall of the water back 5. Thus, the heated water will flow from the upper portion of the water back 5 through the riser pipe 15 into the radiator, and the cool water will return into the lower portion of the water back from the radiator through the pipe 16. In this manner, a continuous circulation of the water is established. If desired, a plurality of riser and return pipes may be provided, to facilitate the circulation of the water between the water back and radiator. A drain pipe 17 is connected to the lower portion of the water back 5 to enable the water to be drained from the water back and radiator, and the pipe 17 may be connected to a city water supply system, or to any other source of water, whereby the water back and radiator may be readily filled. A filling pipe 18 is attached to the rear wall of the radiator reservoir 13 adjacent the upper edge of the radiator and projects through the rear wall

of the brick work 1 and has an upturned portion 19, whereby the water circulating system may be filled through the pipe 18 if desired by pouring the water through the pipe 18 by means of a funnel, or other suitable device. The portion 19 of the pipe 18 is normally closed by means of a screw cap or other closure 20. A pipe 21 is also attached to the upper edge of the reservoir 13 and projects upwardly within the chimney 2 to serve as an overflow pipe, for preventing the water overflowing within the chimney, since the pipe 21 may extend to the roof to conduct any overflow water onto the roof. The pipe 21 also enables the water to expand upwardly therein and thus serves as an expansion chamber.

In order that the heated air may readily circulate from the heating chamber 12 into the lower room or rooms R, the chimney 2 is provided with registers 22 which allow the air to flow from within the chimney into the lower room or rooms R adjacent the ceiling thereof. The brick work or fire place structure 1 is provided with a lower opening 23 establishing communication between the lower end of the chamber 12 and the lower room or rooms R adjacent the floor of the room or rooms, and whereby the cold air may flow from the lower room or rooms into the chamber 12 to be heated therein by the water radiator, and flue 10. The upper room or rooms R' are also heated by the hot air, and to this end, the chimney 2 is provided with hot air registers 24 adjacent the ceiling of the upper room or rooms R' whereby the hot air may flow from within the chimney into the upper room or rooms R'. A cold air pipe 25 extends downwardly from a cold air register 26 located adjacent the floor of the upper room or rooms R', and opens into the lower portion of the chamber 12, as at 27, whereby the cold air from the upper room or rooms R' will flow downwardly through the pipe 25 into the lower portion of the chamber 12, while the heated air will rise within the chimney 2 and discharge through the registers 24 as well as the registers 22.

In use, the products of combustion passing upwardly through the flue 10 will serve to heat the air between the flue and chimney, and the heated air will rise and discharge through the registers 22 and 24 for heating the lower and upper rooms, and the cold air from the lower portions of the rooms will flow into the lower portion of the air heating chamber 12, as above indicated. In this manner, the rooms will be heated in a desirable and efficient manner. The water within the water back 5 will also be heated, and the heated water will rise upwardly through the riser pipe 15 into the radiator,

while the cold water will flow into the radiator through the return pipe 16 into the lower portion of the water back 5 and in this manner the radiator is continually supplied with hot water, to materially assist in heating the air within the heating chamber 12. The air inlets of the chamber 12 being located at the lower end thereof, causes the air to rise upwardly around the radiator, so that the air will be heated quickly. The body of the radiator being located between the water back 5 and the rear wall of the brick work 1, and the side portions 14 of the radiator projecting forwardly between the sides of the water back and the sides of the brick work, will enable the radiator to properly heat the air, and the radiator will also receive heat by radiation from the combustion chamber 4, and outlet funnel 9.

Having thus described the invention, what is claimed as new is:

1. A fire place having a heating chamber therein provided with the lower inlet and upper outlet, and having a combustion chamber provided with a water back, a radiator located within said heating chamber between the water back and rear of the fire place, and riser and return pipes connecting the water back and radiator.

2. A fire place having a heating chamber therein and a combustion chamber provided with a water back, a radiator comprising a water reservoir disposed in said heating chamber between the water back and rear of the fire place and having forwardly projecting portions between the sides of the water back and fire place, and riser and return pipes connecting the water back and said reservoir.

3. A fire place having an air heating chamber therein and a combustion chamber built in its front wall, said heating chamber having a lower inlet and upper outlet, the combustion chamber having a water back and an outlet portion extending upwardly, a radiator within said heating chamber and comprising a vertical laterally arranged reservoir between the water back and the rear of the fire place and having forwardly projecting side portions between the sides of the water back and the fire place, said reservoir projecting above the water back, and riser and return pipes connecting the upper and lower portions of the water back and reservoir.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE H. RUSSELL.

Witnesses:

H. F. KOONCE,
W. J. FUQUER.