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1,458,876

J. CONFER

BOILER AND WATER HEATER

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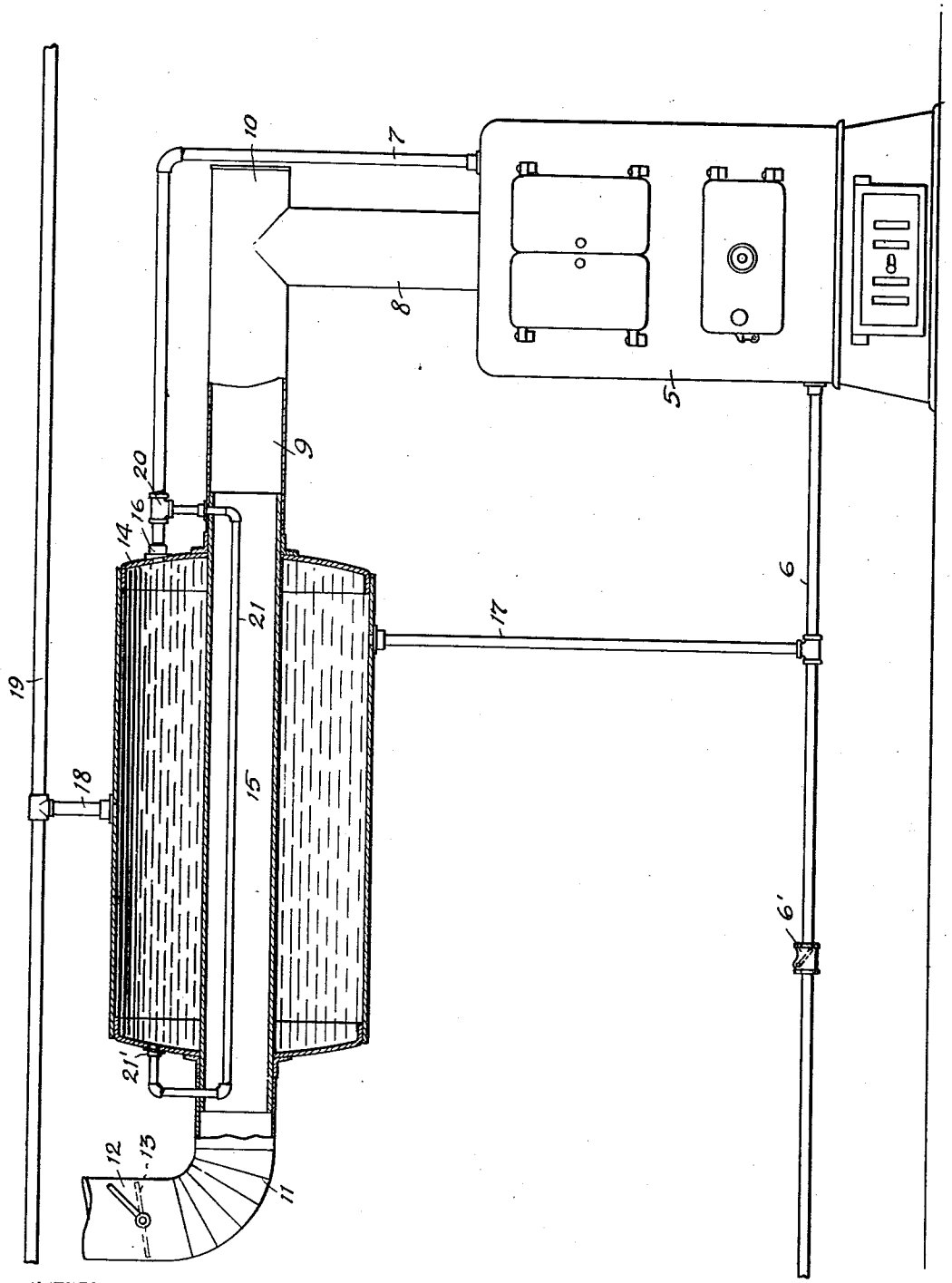

WITNESSES

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UNITED STATES PATENT OFFICE.

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BOILER AND WATER HEATER.

Application filed January 15, 1923. Serial No. 612,629.

To all whom it may concern:

Be it known that I, JOE CONFER, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Boiler and Water Heater, of which the following is a full, clear, and exact description.

The present invention relates to new and useful improvements in water heaters and it pertains more particularly to a device for utilizing waste heat in the chimney of a boiler.

It is one of the primary objects of the invention to so construct a device of this character that it may be attached to the chimney of a boiler in such a manner as to utilize the waste heat units for the purpose of heating water.

It is a further object of the invention to so construct the device that an unobstructed circulation of water is had at all times.

It is a further object of the invention to employ such a construction for the purpose of reducing the fuel consumption necessary for heating water in apartments and tenement houses.

With the above and other objects in view, reference is had to the accompanying drawings in which the figure is a view partly in elevation and partly in section of a device constructed in accordance with the present invention.

Referring to the drawings, the reference numeral 5 designates a boiler of any desired type, and leading to said boiler is a cold water pipe 6. Leading from the boiler is a water pipe 7, and said latter pipe is employed to conduct heated water or steam therefrom as the case may be. The cold water pipe 6 is provided with a check valve 6′ to prevent backing up of the water.

The chimney 8 of the boiler 5 has a horizontal section 9 attached to the chimney in such a manner as to provide a clean-out portion 10. The horizontal portion 9 is provided with an elbow 11 and a projecting portion 12 within which is mounted a damper 13. Surrounding the chimney, preferably the horizontal section thereof, is a water drum 14, the chimney extending through said drum as indicated by the reference character 15.

The pipe 7 heretofore mentioned communicates with the drum as at 16, and a pipe 17 is employed for connecting the cold water pipe 6 with the drum 14. Leading from the drum 14 is a pipe 18, and such pipe is connected to the hot water main 19 as shown.

Connected to the pipe 7, as at 20, is a pipe 21 which extends into the horizontal section 9 of the chimney throughout the length of the drum and has its other end connected as at 21′, to the drum. By this construction it is apparent that water in the drum will maintain the pipe 21 full at all times and that as the products of combustion pass through the chimney the heat units thereof will serve to heat the water in the pipe 21, thus utilizing what is ordinarily waste heat in devices of this type.

As the water in the pipe 21 is heated, a circulation through the pipe 21 and the drum 14 is maintained, thus insuring at all times hot water in the drum 14.

From the foregoing it is apparent that the products of combustion passing through the chimney serve to heat the water in the drum 14, through the medium of the pipe 21, and it has been proven by actual experiment that by such a construction the consumption of coal within the boiler 5 is materially reduced.

What is claimed is:

In combination with a boiler and its chimney, a water drum surrounding a portion of said chimney, said chimney passing through the water drum, a pipe leading from the boiler to the water drum, and a second pipe connected to said first-mentioned pipe at a point exterior of the water drum and chimney, said second-mentioned pipe passing into the chimney extending longitudinally thereof to a point beyond the end of the water drum and then passing through the chimney and connected to that end of the water drum opposite to the end to which the first-mentioned pipe is connected.

JOE CONFER.