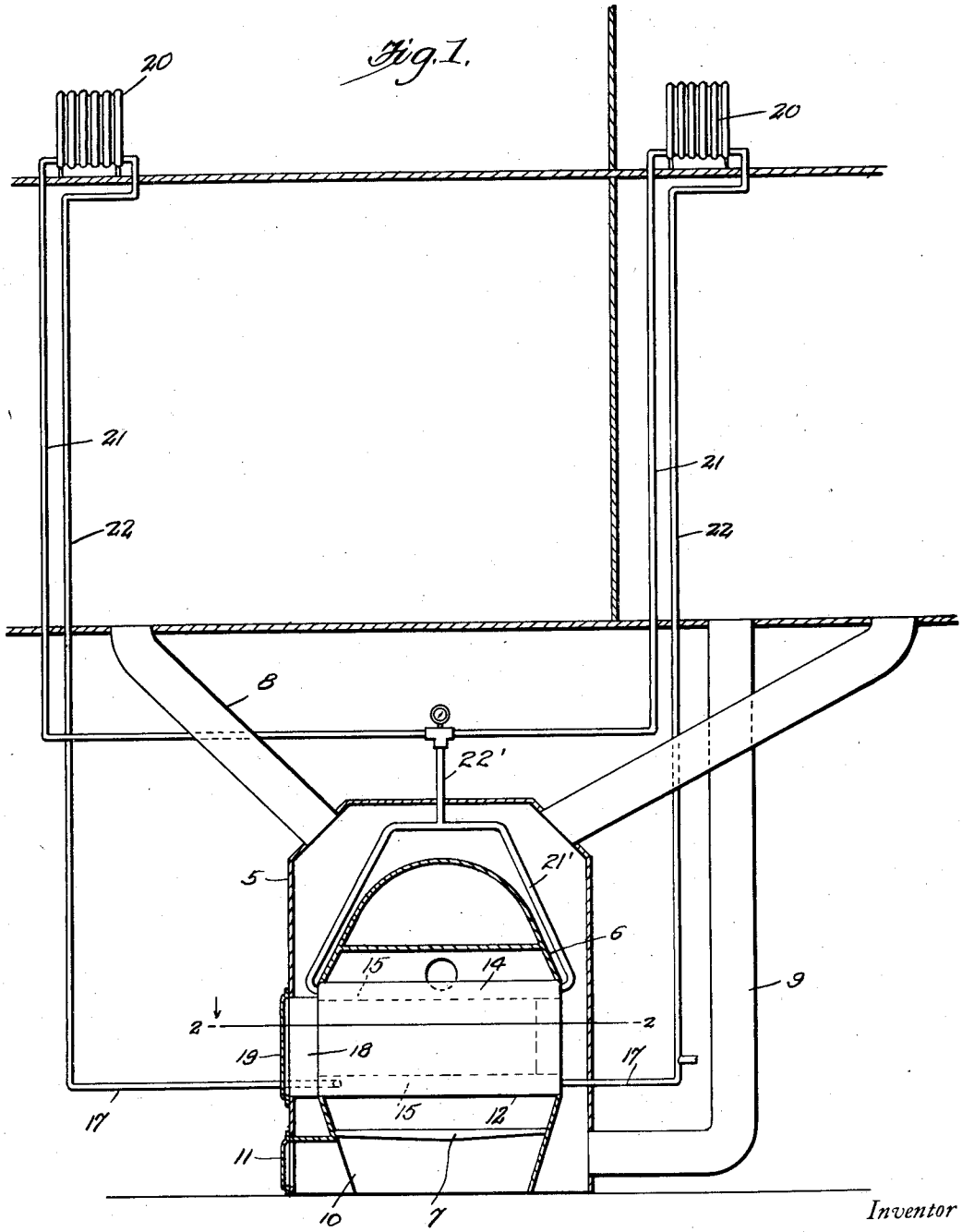
May 22, 1928. 1,670,913

C. J. STRICKER

HOT WATER FURNACE

Filed Aug. 31, 1927 2 Sheets-Sheet 1

Fig. 1.



Inventor

C. J. Stricker,

By Clarence A. O'Brien

Attorney

May 22, 1928. 1,670,913

C. J. STRICKER

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Fig. 2.

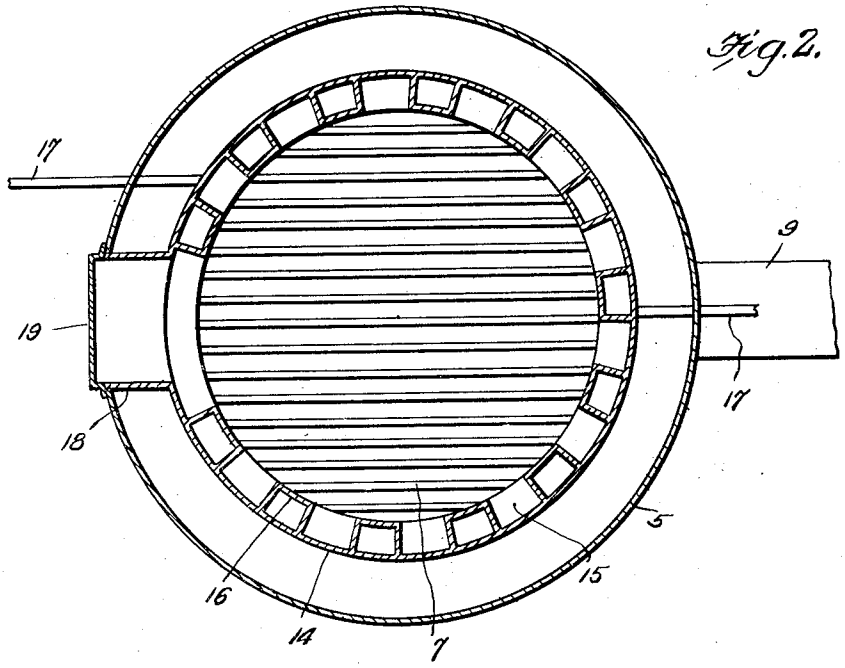
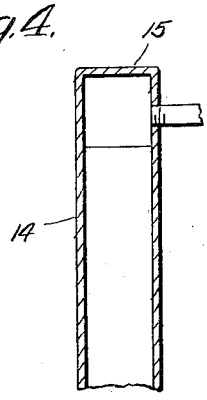


Fig. 4.



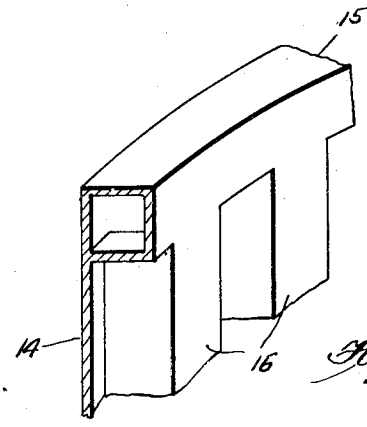


Fig. 3.

Inventor

C. J. Stricker,

By Clarence A. O'Brien

Attorney

Patented May 22, 1928. 1,670,913

UNITED STATES PATENT OFFICE.

CHARLES J. STRICKER, OF BRIDGEPORT, PENNSYLVANIA, ASSIGNOR OF ONE-TENTH TO MATTHEW A. MAYER, OF EAST NORRITON TOWNSHIP, PENNSYLVANIA; ONE-FIFTH TO DANIEL SINCLAIR, JR., OF NORRISTOWN, PENNSYLVANIA; AND ONE-TENTH TO WILLIAM LERCH, OF WEST NORRITON TOWNSHIP, PENNSYLVANIA.

HOT-WATER FURNACE.

Application filed August 31, 1927. Serial No. 216,665.

This invention relates to new and useful improvements in furnaces and aims to provide a furnace that is constructed for producing hot air and hot water.

In carrying out the present invention the device includes generally a furnace casing within which is a fire box for heating the air within the casing from whence the same is led to the floor of the building directly above the furnace floor, the structure further including a hot water heating chamber that surrounds the fire box and from which the water is led to conventional radiators within the upper floors. Obviously, a building may be uniformly heated at low cost. Furthermore, the present furnace may be manufactured and marketed at a cost no greater than the ordinary hot air or hot water furnaces now generally in use.

In the drawings wherein like reference characters indicate corresponding parts throughout the several views:

Figure 1 is a fragmentary vertical section through a building within which is arranged a heating plant that includes a furnace constructed in accordance with the present invention, the same being in detail vertical section.

Figure 2 is a detail enlarged horizontal section through the furnace taken substantially upon the line 2—2 of Figure 1.

Figure 3 is a fragmentary view partially in inner perspective and in vertical cross section of the water chamber of the furnace, and

Figure 4 is a detail fragmentary section therethrough.

Now having particular reference to the drawings my improved furnace consists of a conventional shell or casing 5 within which is arranged a fire chamber 6 having spaced relation with the shell or casing and equipped at its lower end with a conventional fire grate 7. The shell or casing 5 is equipped at its upper end with a plurality of hot air discharge pipes 8, while the upper end of the fire chamber 6 is constructed with an opening in registration with the opening in the shell or casing whereby smoke and gases may be discharged from the fire chamber through a suitable flue.

Furthermore, the cold air inlet pipe 9 communicates at one end with the bottom of the shell or casing 5 and at its upper end with the room of the building directly above the room within which is disposed the furnace so that the cold air passes through the casing adjacent the floor. The fire chamber is formed at its lower end with an ash pit having an air inlet opening, and clean out 10. In front of this opening the shell or casing is provided with a clean out opening that is normally closed by a suitable door 11.

Forming the annular wall of the fire chamber 6 directly above the grate 7 is a water receiving unit 12. This unit consists of a circular metallic shell 14 formed or constructed at its upper and lower ends with circular water manifolds 15—15. These manifolds are in communication with each other by reason of vertically extending tubes 16, while leading into the lower manifold is a cold water pipe 17 that has communication with a source of supply as suggested in Figure 1. The shell 14 of this water unit is formed with a forwardly projecting mouth 18 that affords an opening into the fire chamber 6 therethrough, this mouth being in registration with an opening in the shell or casing 5 over which is a normally closed door 19.

In actual practice conventional water radiators 20 are arranged in the upper floors of the building, and that have communication at certain ends with the upper manifold 15 of the water unit by reason of pipes 21—21. The pipe 21′ is bent over the top of the furnace with its respective ends connected in communication with the upper manifold. A connecting pipe 22′ is adapted to connect the pipes 21 with the bent pipe 21′. The opposite ends of these radiators are in communication with the lower manifold by reason of pipes 22—22, the obvious result that a continuous circulation of the water will be had from the top manifold of the unit through the radiators and thence returned into the lower manifold as clearly disclosed in the diagrammatic view in Figure 1.

In view of the foregoing description when considered in conjunction with the accompanying drawings it will at once be apparent that I have provided a highly novel, simple, and extremely useful hot air and hot water heating furnace that is well adapted for all the purposes heretofore designated, even

though I have herein shown and described the invention as consisting of certain detail structural elements, it is nevertheless to be understood that minor changes may be made therein without affecting the spirit and scope of the appended claim.

Having thus described the invention, what I claim as new is:—

In a furnace of the character described, a fire box formed with a circular wall, a water manifold at the upper and lower ends of the wall, tubes formed on the inner surface of the wall and connecting the manifolds, an outlet pipe for the upper manifold, and an inlet pipe for the lower manifold.

In testimony whereof I affix my signature.

CHARLES J. STRICKER.