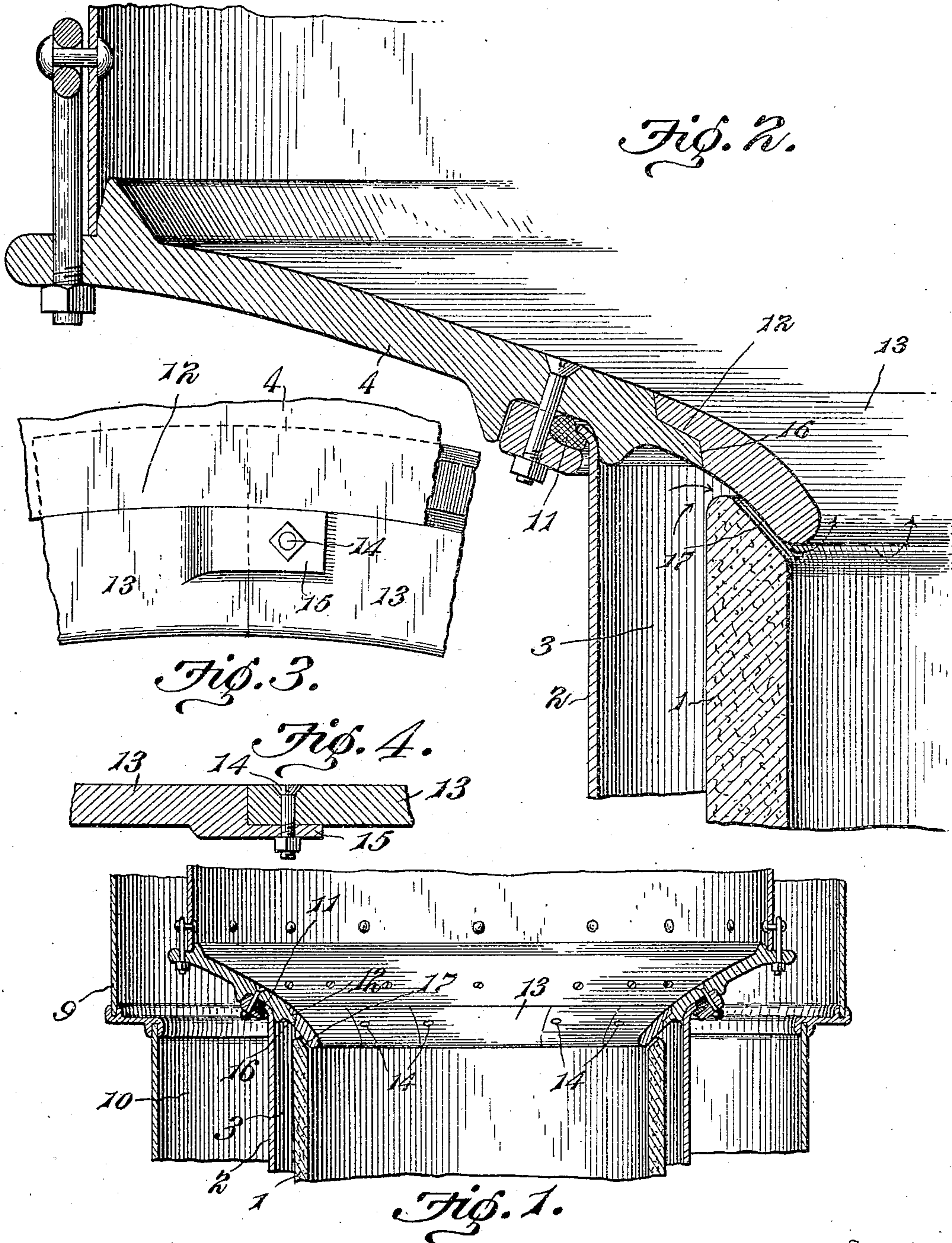


C. A. SIMONTON.  
HOT AIR FURNACE.  
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943,711.

Patented Dec. 21, 1909.



Witnesses

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# UNITED STATES PATENT OFFICE.

CHARLES A. SIMONTON, OF CRESTLINE, OHIO.

HOT-AIR FURNACE.

943,711.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed February 15, 1909. Serial No. 478,099.

*To all whom it may concern:*

Be it known that I, CHARLES A. SIMONTON, a citizen of the United States, residing at Crestline, county of Crawford, and State of Ohio, have invented certain new and useful Improvements in Hot-Air Furnaces, of which the following is a specification.

My invention relates to hot air furnaces and the object of my invention is to provide an improved construction in hot air furnaces whereby the gases which accumulate between the fire pot wall and the fire pot jacket shall be drawn out from between them into the radiator drum.

A further object of my invention is to provide an improved hot air furnace having a fire pot and a jacket surrounding the same, a radiator head resting upon the upper edge of said jacket and a detachable and removable extension for the inner edge of the drum head which shall overhang the upper edge of the fire pot.

A further object of my invention is to provide a furnace as above mentioned, the extension being formed in sections detachably connected in order that the same may be readily removed and replaced either in part or in whole when injured or destroyed by the fire.

Other objects will appear hereinafter.

In carrying out my invention I provide the fire pot of the furnace with an outer steel jacket which is arranged so as to form a jacket space between them and connect the upper edge of said jacket with the annular lower radiator head by means of a gas tight joint. The inner edge of the lower radiator drum does not quite reach the fire pot and is shouldered or rabbeted. Upon the rabbeted inner edge rests an annular extension which overhangs the wall of the fire pot and the intermediate space, preventing coal or other material from being deposited between the fire pot and the jacket. The annular extension is formed in sections and rests in position so that when burned out it may be readily replaced either in part or in whole with but little expense.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification and in which:

Figure 1 is a detail vertical sectional view through a portion of a hot air furnace illustrating my invention in its preferred form,

Fig. 2 is a detail vertical section upon a much enlarged scale illustrating the connection between the fire pot jacket and the lower radiator head and showing the annular extension of the drum head overhanging the edge of the fire pot, Figs. 3 and 4 are details illustrating the manner of connecting the sections of the annular extension.

Referring now to the drawings, 1 indicates the fire pot which may be cast or of fire brick, and 2 a steel jacket surrounding the same. The jacket is of greater diameter than the fire pot in order to provide the jacket space 3 between them, which prevents the jacket from being burned out by the fire. The jacket 2 extends somewhat above the upper edge of the fire pot wall and supports the radiator drum, 4 indicating the lower head of the drum.

9 indicates the outer radiator shell between which and the radiator drum and jacket 2 is the hot air space 10 communicating with the hot air flues, not shown.

The lower radiator head 4 comprises an annular member or casting which is connected by a gas tight joint 11 with the upper edge of the jacket 2. The inner edge of the member 4 extends a short distance inside of the jacket 2 and is rabbeted or shouldered as at 12. Resting upon the inner edge of the drum head 4 is an annular extension 13 which overhangs the wall of the fire pot and the portion of the intermediate space 3 which is not covered by the inner edge of said head. This is formed in sections and the sections are secured together by bolts, 14, each section being provided with a lug 15 which extends under the adjacent end of the next section and through which the bolt passes. The adjacent edges of the head and the member 13 are rabbeted as at 12 and 16 respectively forming a seat upon which the extension rests and forms a close joint. The extension 13 does not rest upon the upper edge of the fire pot wall 1, but leaves a space or passage way 17 between them to permit the egress of gases which might penetrate the wall 1 into the space 3, the draft of the furnace being sufficient to keep the space clear of gas. The extension 13 is exposed directly to the flame and is liable to be quickly burned out. By forming the extension in detachable sections it may be readily replaced either in part or in whole when burned out and that at little cost.



Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a hot air furnace, a fire pot, in combination with a steel jacket surrounding the same and forming a jacket space between them, said jacket extending above the level of the top of said fire pot, a radiator head comprising an annular casting resting upon the upper edge of said jacket, a gas tight joint between said head and said upper edge, the inner edge of said head over-hanging the walls of said fire pot, and spaced a slight distance above the upper edge thereof forming a communication between said jacket space and the interior of the drum, substantially as described.

2. In a hot air furnace, a fire-pot, in combination with a steel jacket surrounding the same, and extending above the level of the top of said fire pot, and forming a jacket space between them, a radiator head comprising an annular casting resting upon the upper edge of said jacket, a gas tight joint between said head and the upper edge of said jacket and a detachable annular extension on the inner edge of said head, over-hanging the walls of said fire-pot and spaced a slight distance above the same, said ex-

tension being formed of a plurality of segmental sections detachably connected, substantially as described.

3. In a hot air furnace, a fire-pot, in combination with a steel jacket surrounding the same and forming a jacket space between them, a radiator head comprising an annular casting resting upon the upper edge of said jacket said jacket extending above the level of the top of said fire pot, a gas tight joint between said head and the upper edge of said jacket, and a detachable annular extension on the inner edge of said head over-hanging the walls of said fire-pot and spaced a slight distance above the same, said extension comprising a plurality of similar segmental sections each having a lug at one end extending beneath the adjacent end of the next section and bolts extending through said lugs and said adjacent ends for detachably securing said sections together, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES A. SIMONTON.

Witnesses:

CHANCE E. DEWALD,  
EMMA STEIERT.