

No. 875,475.

PATENTED DEC. 31, 1907.

F. D. WARREN.
BOILER SETTING.

APPLICATION FILED DEC. 5, 1905.

3 SHEETS—SHEET 1.

Fig. 2.

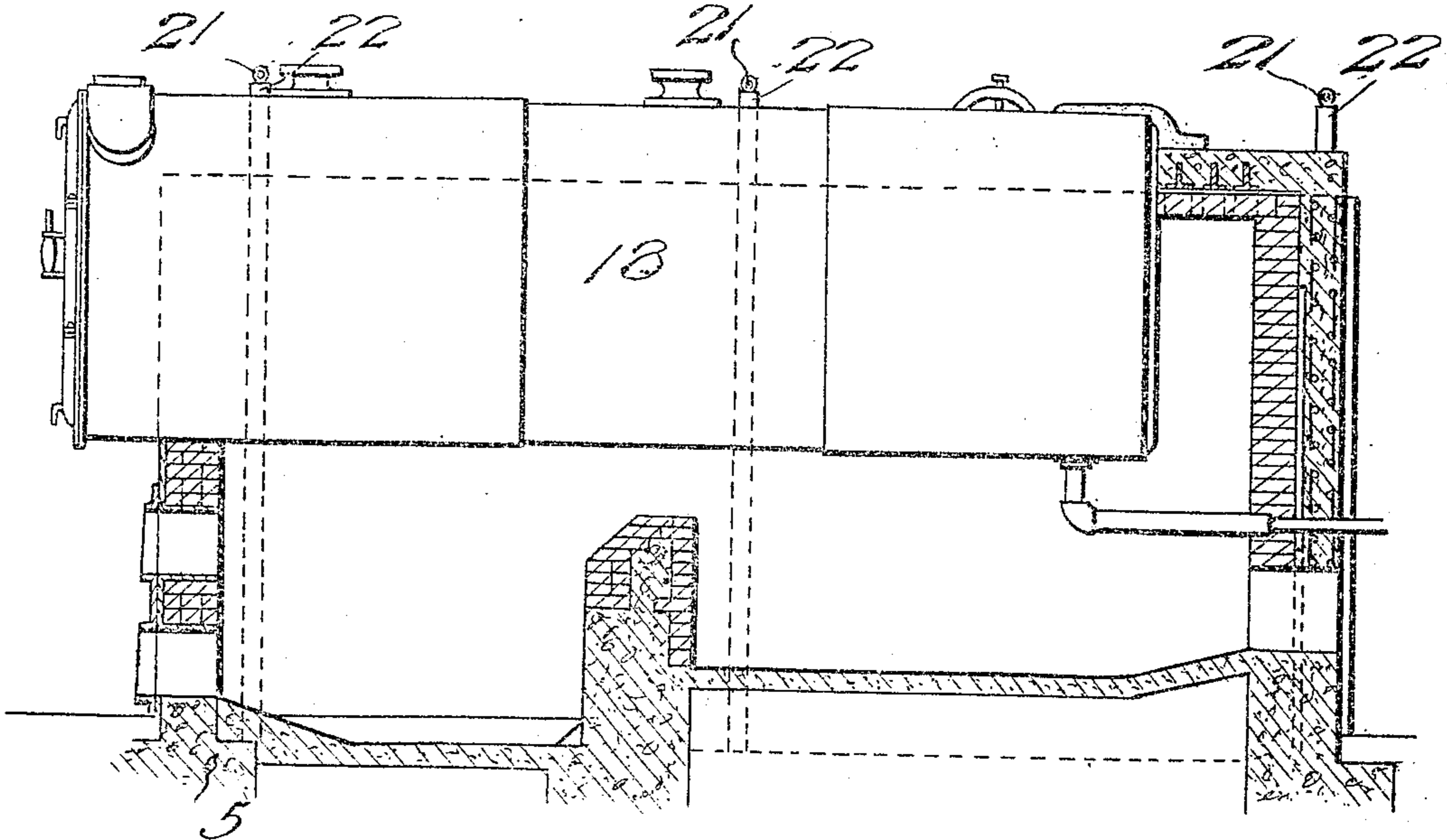
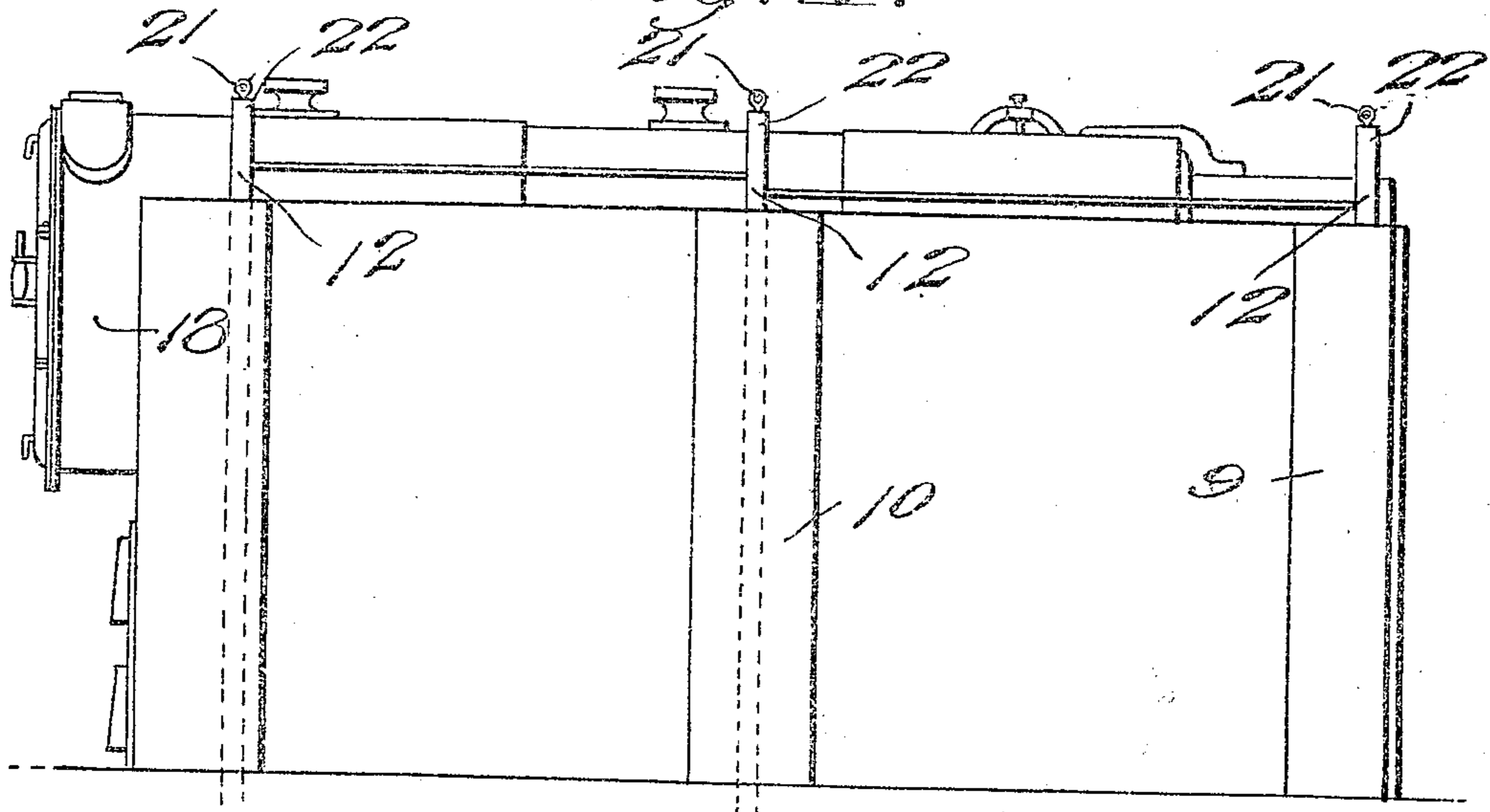


Fig. 1.



Witnesses

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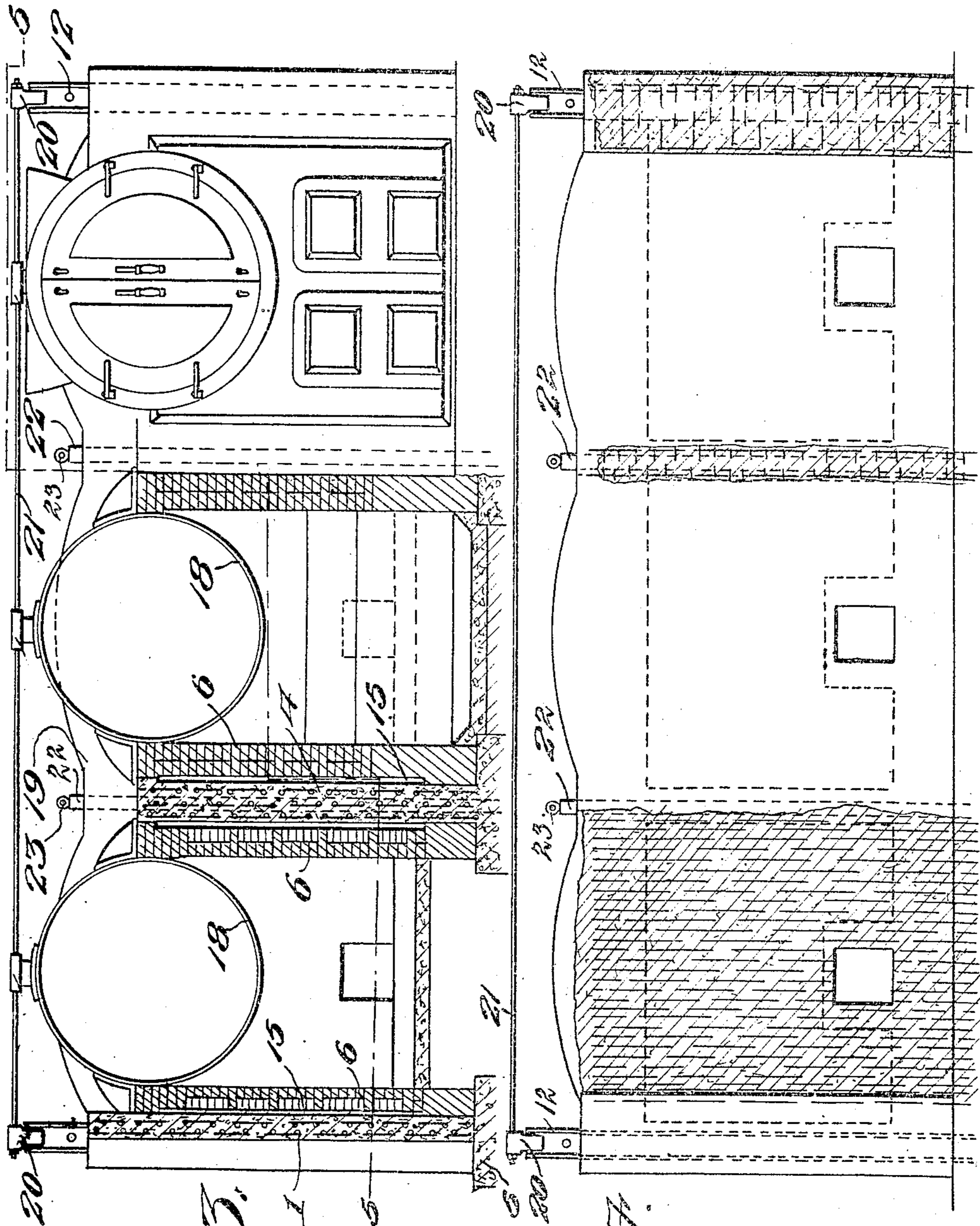
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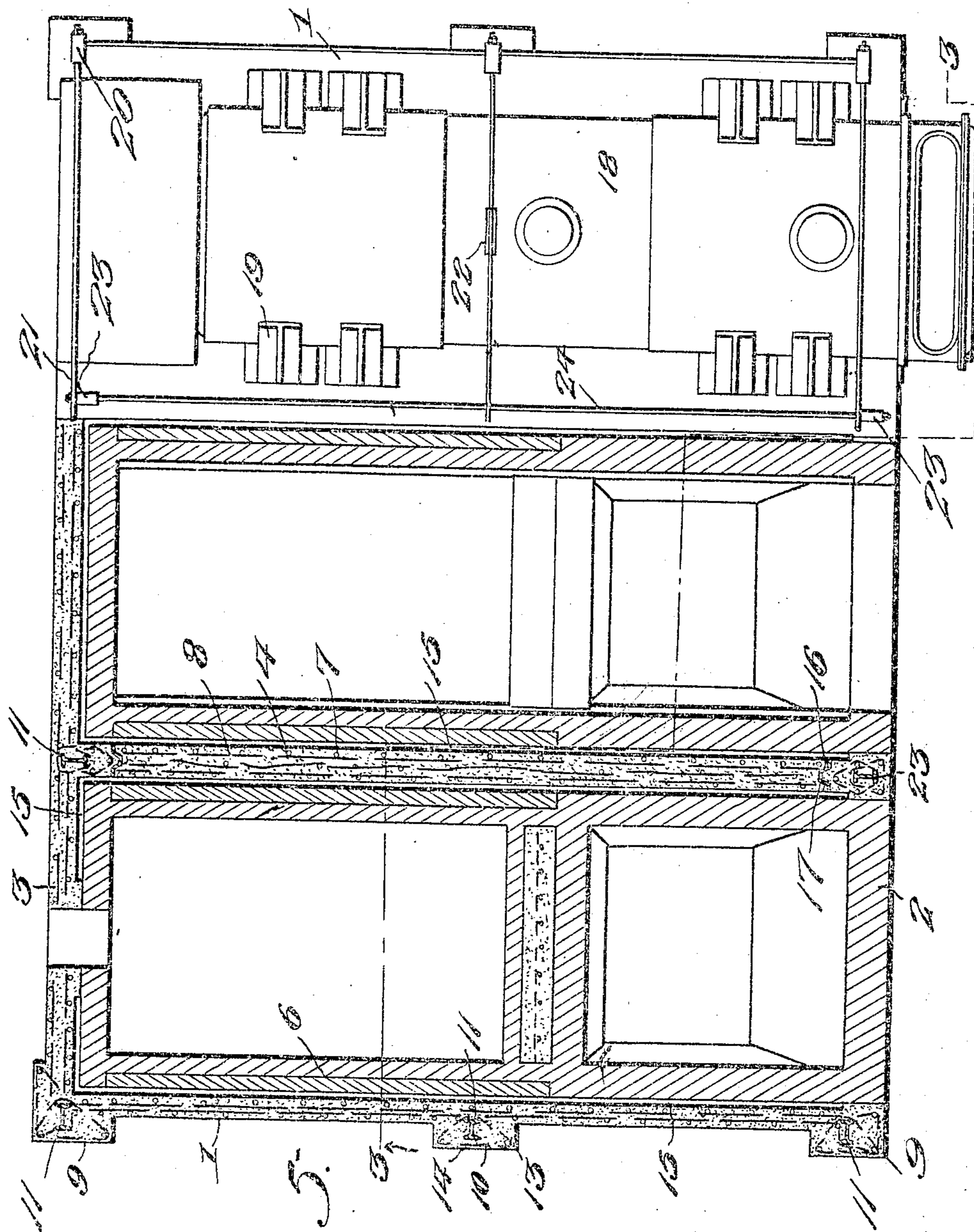
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

FRANK D. WARREN, OF BOSTON, MASSACHUSETTS.

BOILER-SETTING.

No. 875,475.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed December 5, 1905. Serial No. 290,453.

To all whom it may concern:

Be it known that I, FRANK D. WARREN, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Boiler-Settings, of which the following is a specification.

This invention relates to boiler settings, and has for its objects to produce a comparatively simple, inexpensive structure of this character which will be exceedingly strong and durable, one wherein liability of the walls settling or warping is obviated, and one wherein efficient provision is made for the expansion and contraction of the furnace walls under the action of heat.

A further object of the invention is to provide a device of this character with simple and efficient means for securing the boiler or boilers in position on the setting, one wherein the latter is provided with intermediate and corner columns for strengthening the side walls, and one in which the bracing elements embedded in said columns serve the further function of standards to which the tie elements for the boilers are connected.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings: Figure 1 is a side elevation of a boiler setting embodying the invention and showing a boiler in position thereon. Fig. 2 is a vertical longitudinal section taken on a line centrally of the boiler, the latter being shown in elevation. Fig. 3 is a front elevation, partly in section, the section being taken on the line 3—3 of Fig. 5. Fig. 4 is a rear elevation, partly in section. Fig. 5 is a plan view partly in horizontal section, the section being taken on the line 5—5 of Fig. 3.

Referring to the drawings, it will be seen that the setting or structure, which comprises side walls 1, a front wall 2, rear wall 3 and division walls 4, is erected and sustained upon the foundation 5 composed in accordance with the invention of Portland cement, sand and broken stone mixed in suitable proportions, while the walls of the setting which has an inner lining 6 of fire brick or fire clay are composed of Portland cement, crushed coke breeze, fire clay and furnace clinker or slag mixed in suitable proportions.

Embedded in and for strengthening the side, rear and division walls are vertical

strengthening members or rods 7 and horizontal strengthening members or rods 8 composed preferably of high carbon steel, while the structure as a whole is further braced by means of corner columns 9 and intermediate columns 10, in which are embedded vertical I beams 11 projected at their upper ends as at 12 above the columns and constituting standards, as more fully hereinafter explained, there being also embedded in the columns vertical strengthening rods 13 tied to the bars 11 by means of horizontal metal tie elements or loops 14 arranged at appropriate vertically spaced intervals.

Formed between the walls proper of the structure and the inner lining 6 are air spaces 15 which permit of expansion and contraction of the wall, while the division walls 4 are provided with terminal expansive joints 16 preferably calked with asbestos packing 17, it being apparent that longitudinal expansion of the division walls under the influences of heat and cold is thus permitted and this without the integrity of the walls being destroyed.

Mounted upon and sustained by the setting is a plurality of boilers 18 disposed to extend from front to rear of the structure and spaced relatively in a direction transversely of the latter, there being attached to the boilers sustaining members or brackets 19 adapted to rest upon the upper ends of the walls, while provided on the upper ends of the strengthening bars 11 are perforated heads 20 in which are terminally secured connecting rods or elements 21, while embedded in and at the terminals of the division walls 4 are vertical I bars 22 which project slightly above the tops of the walls and are provided with perforated heads 23 for terminal engagement by longitudinal tie rods or elements 24 extended longitudinally of the structure between the boilers, the elements 21 and 24 which are detachably secured in place serving to brace and strengthen the structure as a whole, and prevent bulging or spreading of the walls relatively.

It is apparent that under the foregoing construction I produce a structure which will be exceedingly strong and durable, one wherein provision is made for the expansion and contraction of the walls without injury thereto, and one in which settling of the walls of the structure and consequent injury

to the latter is obviated. Furthermore, it will be seen that the boilers are retained in proper positions upon the structure and their movement relative to the latter obviated, while at the same time disconnection of the parts to permit removal and re-mounting of the boilers may be readily accomplished.

Having thus fully described my invention, what I claim as new is:

1. A boiler setting comprising a foundation, structure walls erected on said foundation, strengthening columns formed integral with said walls and disposed at the ends and at intermediate points between the ends of the walls, vertical I-beams embedded in said columns and projected above the upper ends thereof, perforated bearing heads secured to the upper ends of said I-beams, strengthening rods connected to said heads, intermediate walls provided with tongue and groove joints, and said joints being calked with asbestos, boilers seated in said setting and provided with fire clay jackets, there being an intermediate air space between

said boilers and walls, substantially as described.

2. The herein described boiler setting comprising a foundation, walls erected on said foundation, and formed of a concrete material, strengthening columns formed integral with the walls, I-beams embedded within said columns, rods embedded within said columns, metal tie loops surrounding said rods and I-beams, intermediate walls provided with tongue and groove joints, said joints being packed with asbestos, said I-beams extending above said columns and provided with perforated bearing heads, rods extending through said heads, boilers secured in said setting and provided with fire clay jackets, there being an intermediate air space between said jackets and walls.

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

FRANK D. WARREN.

Witnesses:

C. H. SAMPSON,
H. G. VAUGHAN.