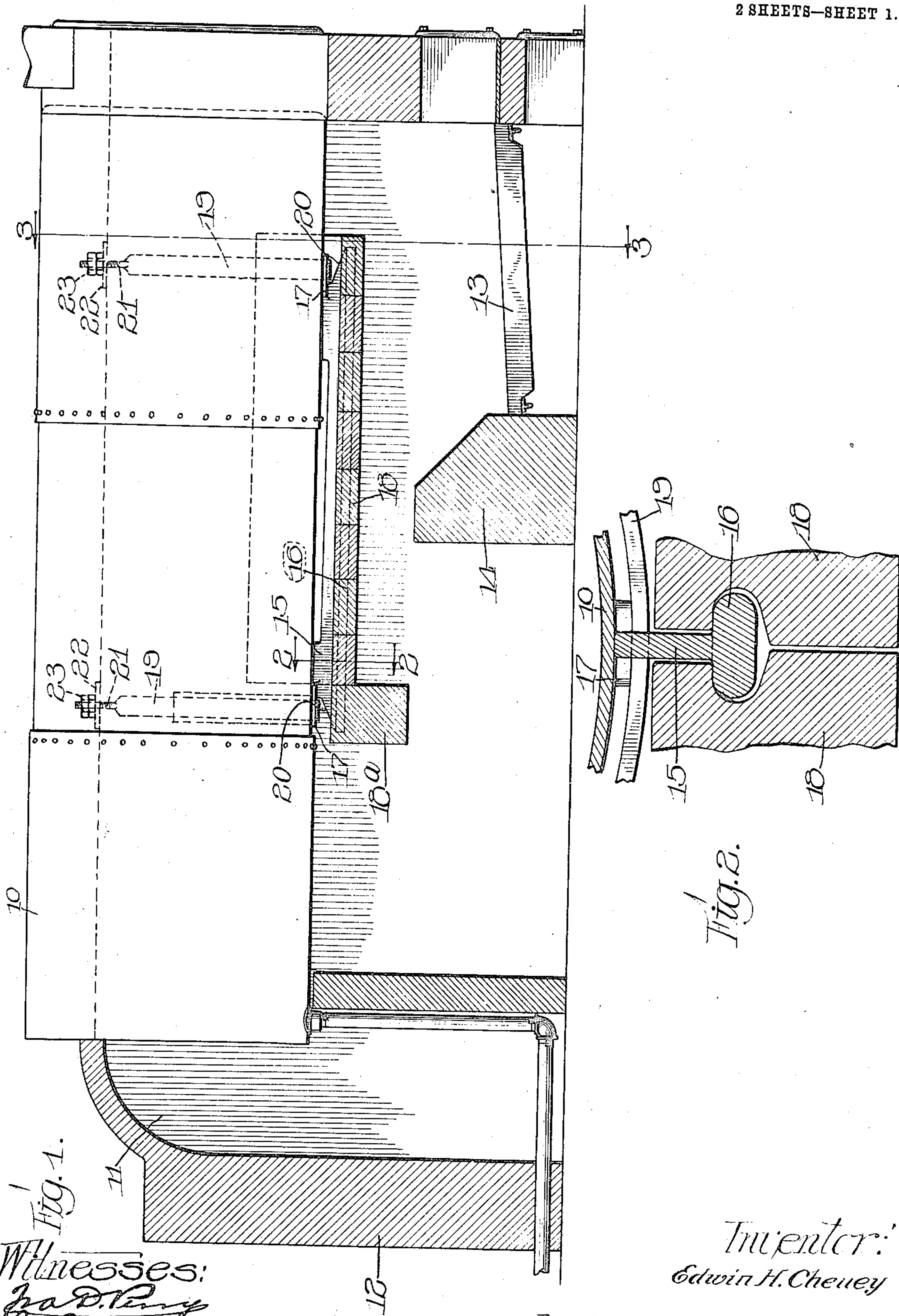


E. H. CHENEY.
BOILER SETTING.
APPLICATION FILED MAR. 30, 1909.

952,232.

Patented Mar. 15, 1910.

2 SHEETS—SHEET 1.



Witnesses:
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Inventor:
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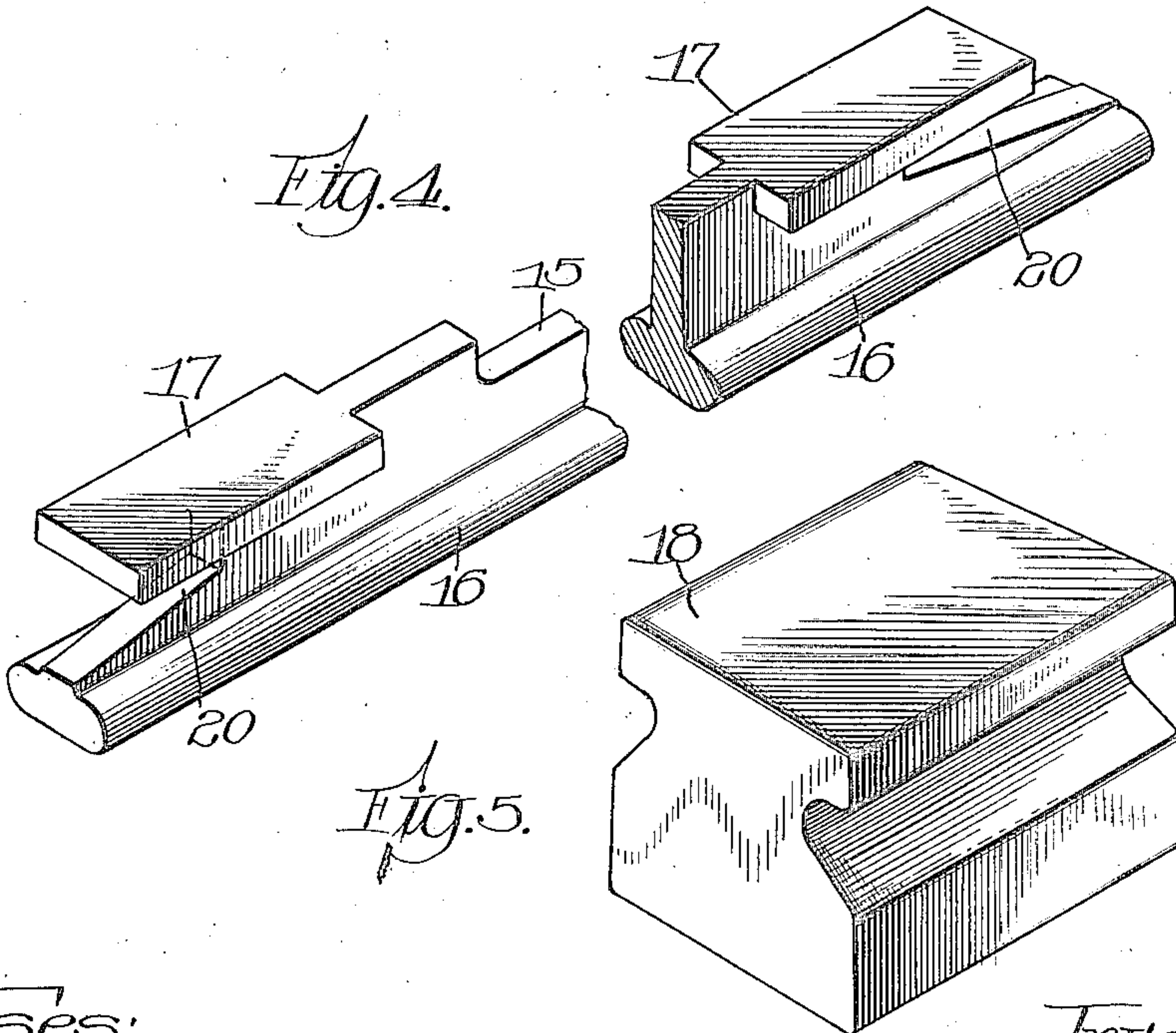
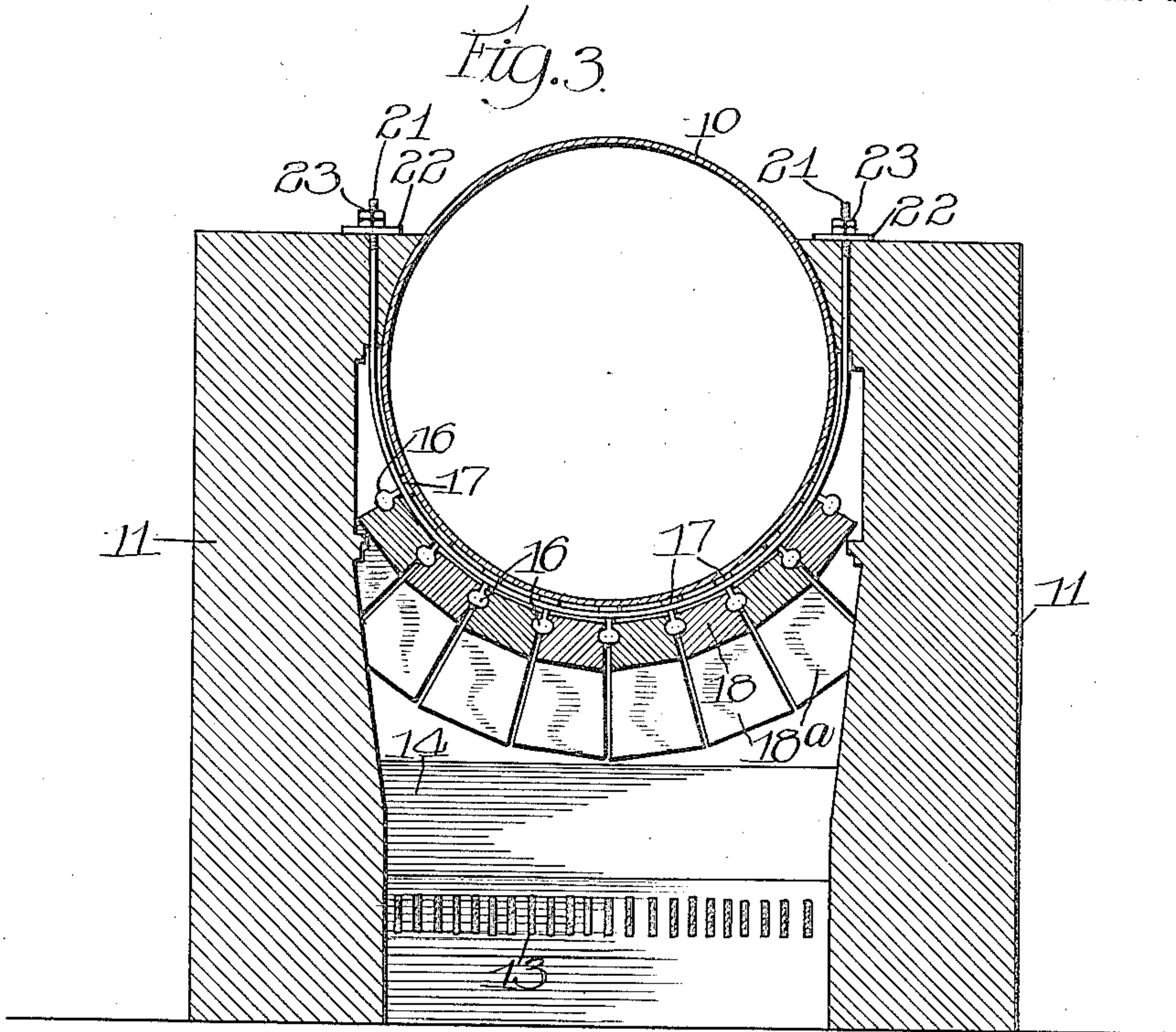
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952,232.

Patented Mar. 15, 1910.

2 SHEETS—SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWIN H. CHENEY, OF OAK PARK, ILLINOIS.

BOILER-SETTING.

952,232.

Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed March 30, 1909. Serial No. 486,752.

To all whom it may concern:

Be it known that I, EDWIN H. CHENEY, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Boiler-Settings, of which the following is a specification.

My invention relates to boiler settings and is more particularly concerned with means for preventing the gases from becoming chilled by coming directly into contact with the bottom of the boiler at the portion thereof above the bridge wall and for a limited area in front and to the rear thereof. In the usual setting for horizontal fire tube boilers the gases in rising from the fire box and passing over the bridge wall come into contact with the boiler before they have time to become thoroughly mixed; and as the boiler is comparatively cool, being usually at a temperature of about 300 degrees, Fahrenheit, said gases become chilled by contact with the boiler and the result is imperfect combustion. I overcome this by suspending a combustion arch at this point, and the object of the invention is to provide means, at and near the bridge wall adapted to become heated and to retain the major portion of its heat and thus prevent the chilling of the gases of combustion at this critical point.

More specifically the invention consists in the construction and method of supporting said arch as will hereinafter be more particularly described and claimed.

I obtain my objects by the mechanism illustrated in the accompanying drawings, in which:

Figure 1 is a longitudinal section of a boiler setting embodying my invention. Fig. 2 is a detail section taken on the line 2—2 Fig. 1. Fig. 3 is a transverse sectional elevation of the boiler and setting taken on the line 3—3 Fig. 1. Fig. 4 is a perspective view showing the preferred construction of the supporting bars and Fig. 5 is a perspective of a tile in the form adapted to cooperate with the type of bar shown in Fig. 4.

Similar numerals refer to similar parts throughout the several views.

The horizontal return tube boiler 10, selected to illustrate the invention, is supported in a setting embodying the ordinary side walls, 11, rear wall 12, grate 13 and bridge wall 14. At a point above and preferably extending to the rear and forward of said

bridge walls are bars 15 arranged beneath substantially the boiler. Said bars have heads 16 and feet 17, said heads being adapted to interlock with and support the tiles 18 and 18^a and said feet being adapted to contact the boiler to prevent the bars from overturning and becoming otherwise disarranged when the parts are being assembled. In the present design said feet occur only at the ends of the bars the intermediate portion being cut away to avoid the rivets and lap joints in the boiler shell. The feet being broad and having a large surface in close contact with the relatively cool boiler, the bars are kept sufficiently cool at the exposed ends to prevent melting. These bars are strapped to the boiler preferably by means of straps 19 which enter the notches 20 at the ends of the bars. In the preferred construction said straps have screws 21 formed at their ends which pass upward through suitably apertured plates 22 resting on the walls of the boiler setting. Nuts 23 are placed on said screws above said plate and thus suspend the straps.

In order to obtain proper mixture of the gases it is desirable that the tiles 18^a at the rear end of the bars 15 be of greater height than the tiles 18 in front. This however is not an essential characteristic of the invention and the height or thickness of the tiles may be varied without departing from the spirit of the invention.

In the preferred construction the tiles when suspended from the bars 15 do not reach as high as the straps 19, the upper edge of the tile clearing said straps as clearly shown in Fig. 2. As a result of this construction the tiles may be slipped into position from the front or rear end of the bars and will remain in place without any other retaining means. It will be noticed also that no fastening means other than the straps 19 are required to support the bars for when said bars are empty the pressure of the straps upon them will be sufficient, and as soon as any of the tile have been put in place they will act as spacers or spreaders and thus prevent lateral movement of the bars. As fastening devices other than the straps 19 are thus avoided it becomes unnecessary to perforate the boiler shell for rivets or other fastening means.

As a result of my method of suspending the straps they may be readily adjusted by merely adjusting the nuts 23, and such ad-

justment is facilitated on account of the location of the nuts outside of the setting. Furthermore, in my construction, the weight of the combustion arch is carried by the side
5 walls instead of by the boiler.

What I claim as new and desire to secure by Letters Patent is:

1. In combination, a horizontal cylindrical boiler, means for supporting the
10 same, bars arranged longitudinally of the boiler at the bottom thereof, said bars having retaining heads thereon, and notches at their ends at points above said heads, tile adapted to interlock with the heads on said
15 bars to be removably supported thereby, and straps passing around the bottom of the boiler transversely to said bars and through the notches therein, said straps being supported from a point above the center of the
20 boiler and adapted to clear the tile when the latter are removed or adjusted to position.

2. In combination, a horizontal cylindrical boiler, means for supporting the
25 same, units of refractory material for preventing the gases of combustion from contacting the bottom of the boiler, bars ar-

ranged longitudinally of said boiler and having feet adapted to contact it to prevent the bars from overturning, said bars
30 being adapted to interlock with said refractory units for holding them in place, and means for strapping said bars to said boiler.

3. In combination, a horizontal cylindrical boiler, means for supporting the
35 same, units of refractory material for preventing the gases of combustion from contacting the bottom of the boiler, bars arranged longitudinally of said boiler and having feet with broad flat surfaces at the
40 end adapted to make close contact with the boiler shell to prevent the bars from melting at the ends where exposed, said bars being adapted to interlock with said refrac-
45 tory units for holding them in place, and means for strapping said bars to said boiler.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

EDWIN H. CHENEY.

Witnesses:

HOWARD M. COX,
C. J. CHRISTOFFEL.