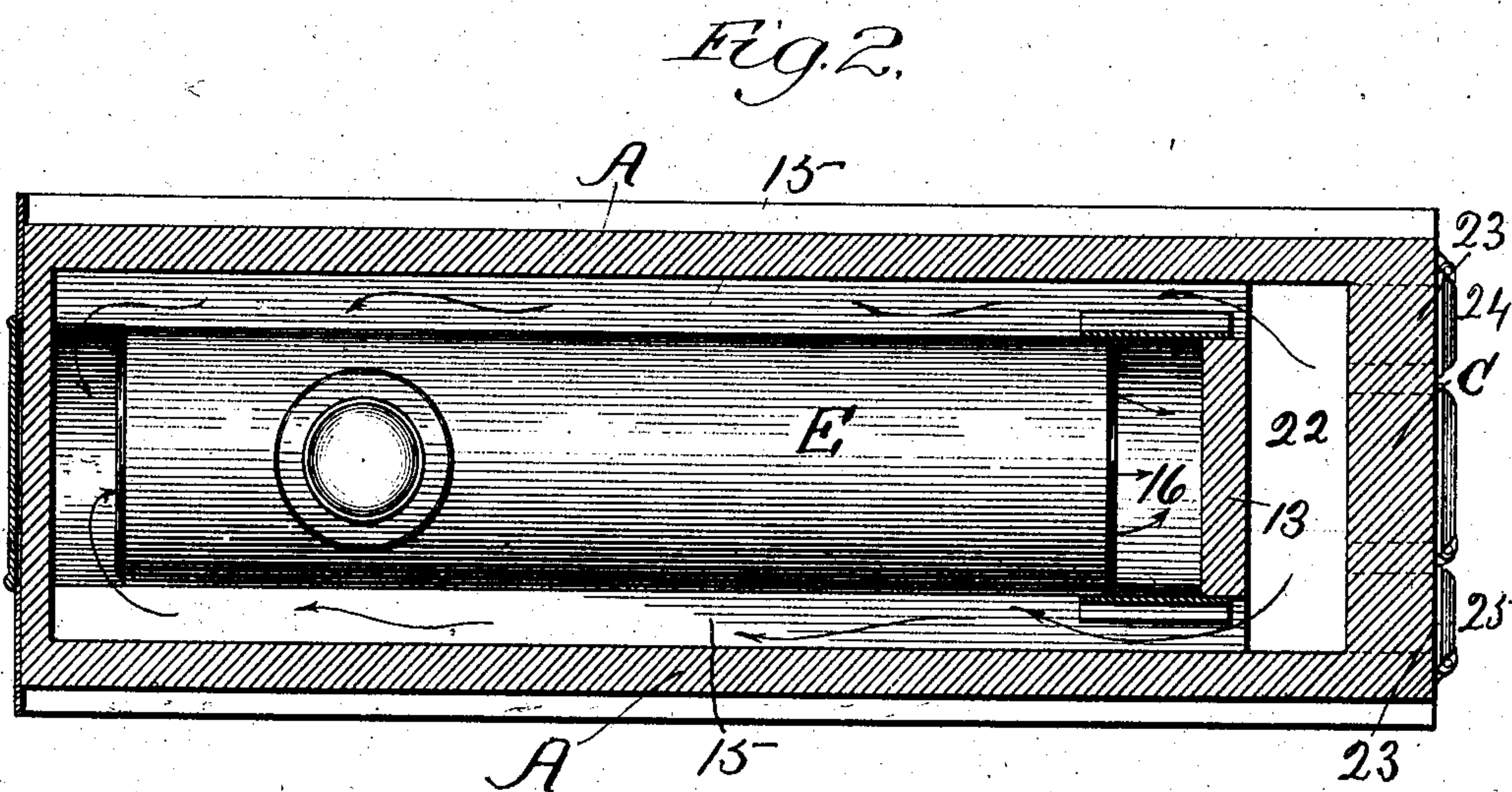
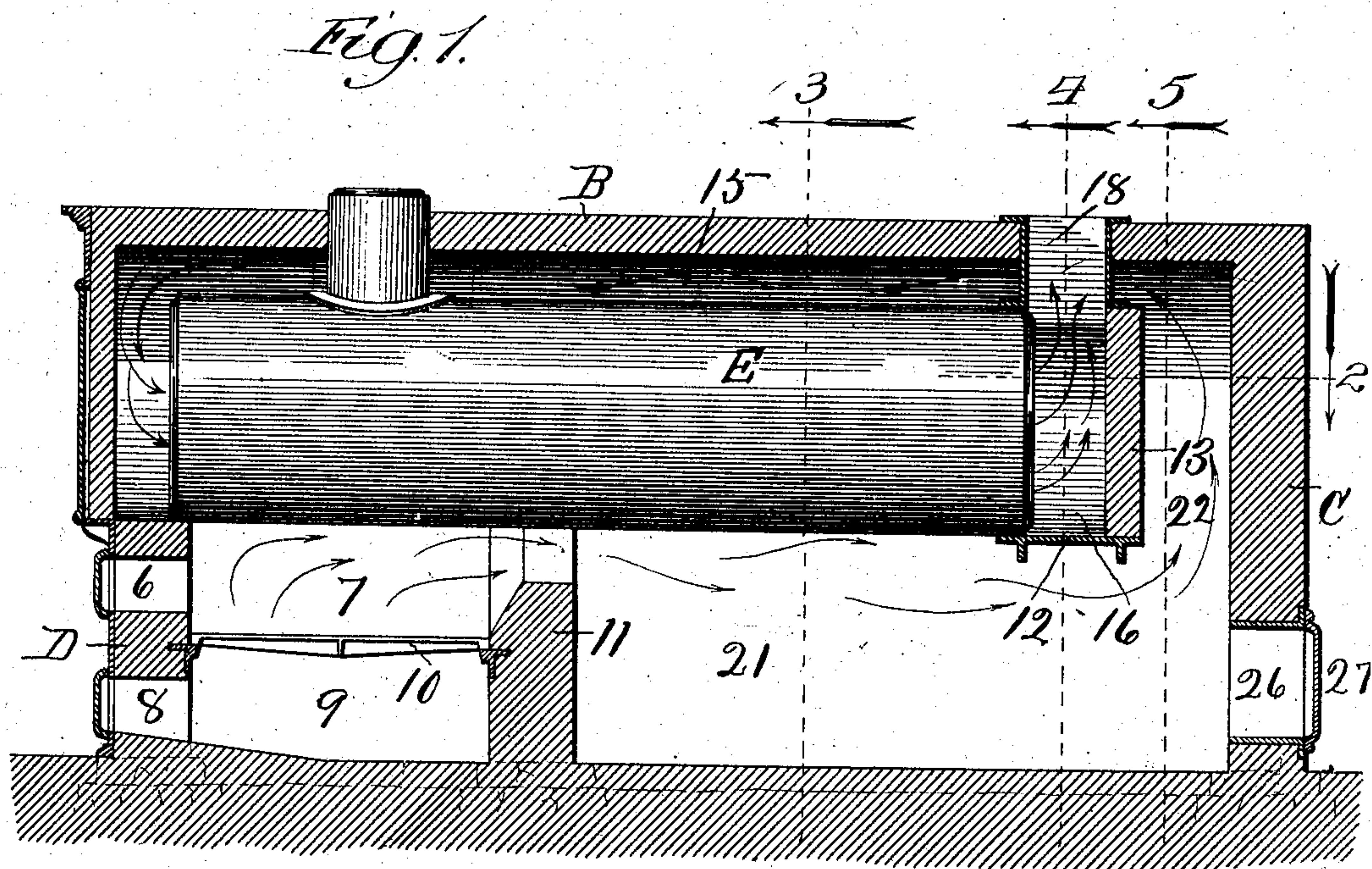


No. 791,281.

PATENTED MAY 30, 1905.

M. J. McCARTHY.
STEAM BOILER SETTING.
APPLICATION FILED JUNE 9, 1904.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

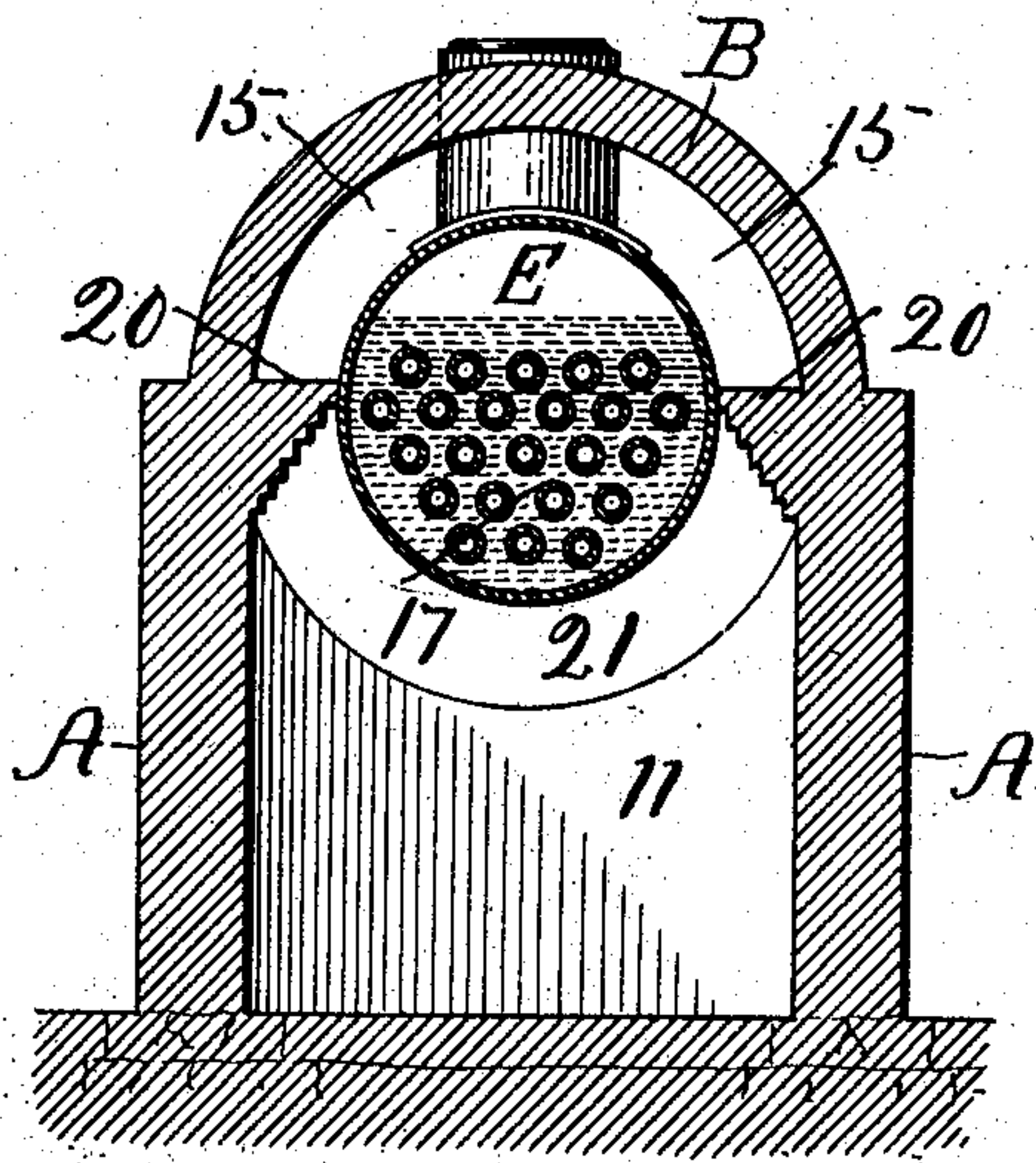


Fig. 4.

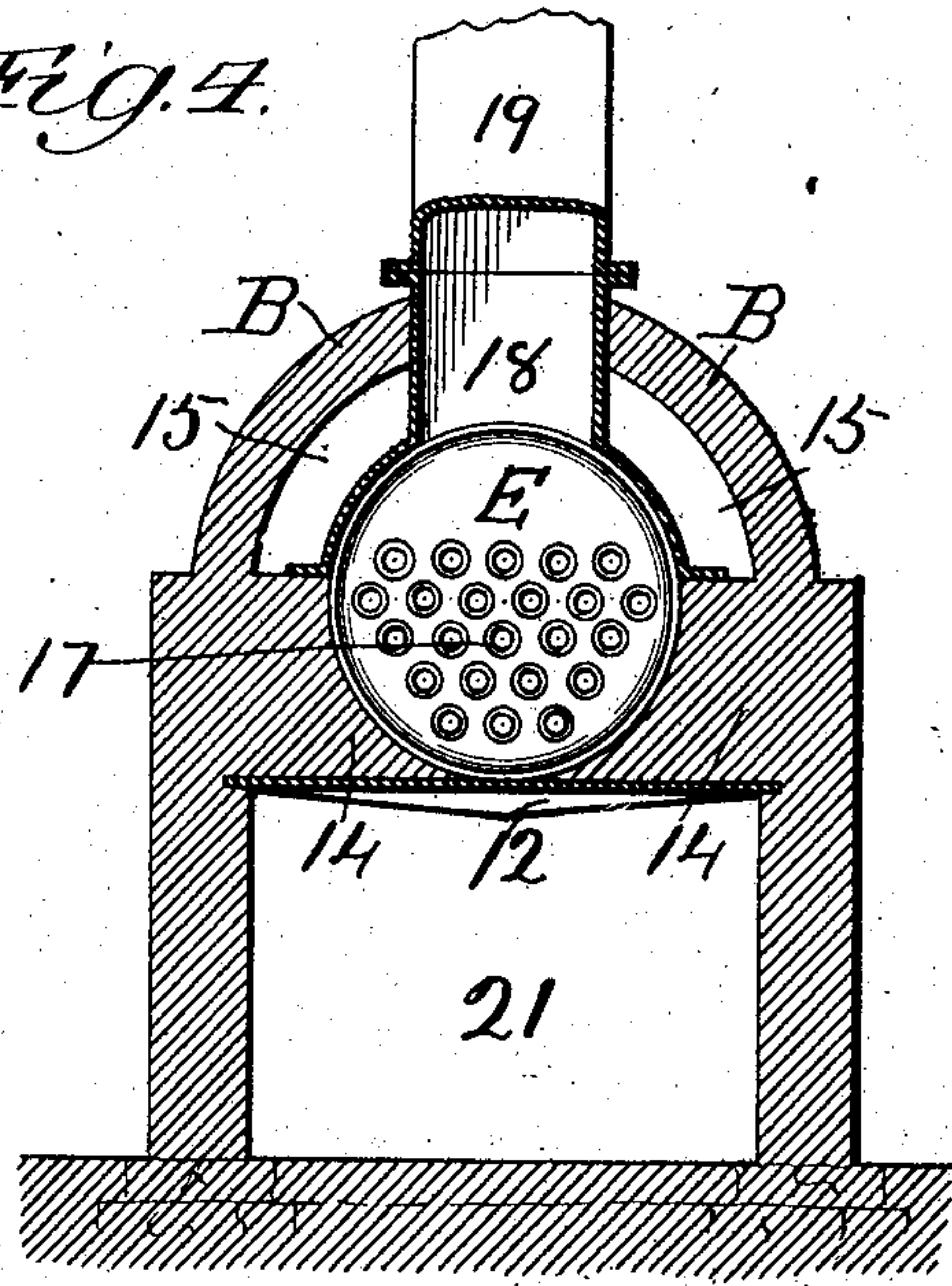
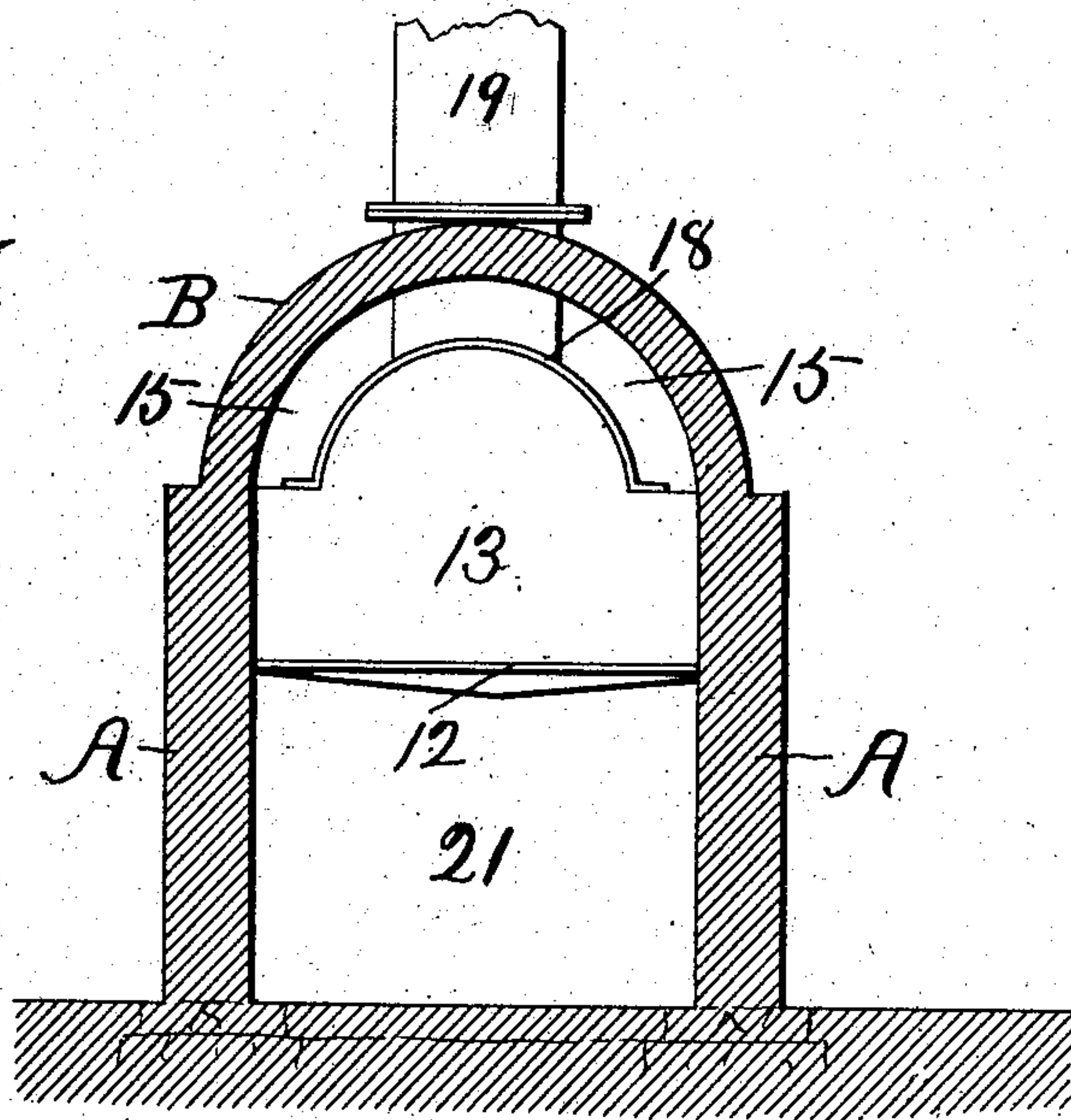


Fig. 5.



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UNITED STATES PATENT OFFICE.

MICHAEL J. McCARTHY, OF CHICAGO, ILLINOIS.

STEAM-BOILER SETTING.

SPECIFICATION forming part of Letters Patent No. 791,281, dated May 30, 1905.

Application filed June 9, 1904. Serial No. 211,831.

To all whom it may concern:

Be it known that I, MICHAEL J. McCARTHY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Steam-Boiler Settings, of which the following is a specification.

This invention relates to improvements in steam-boiler settings, and has for its object to provide an arrangement of this character that will lessen the volume of smoke by creating a more perfect and economical combustion and at the same time proportionately increase the heating and evaporating surface.

In the drawings, Figure 1 is a vertical longitudinal section of a boiler-setting embodying the improved features, the boiler being shown in elevation. Fig. 2 is a horizontal longitudinal section on line 2, Fig. 1, looking in the direction indicated by the arrow. Fig. 3 is a vertical transverse section on line 3, Fig. 1. Fig. 4 is a vertical transverse section on line 4, Fig. 1; and Fig. 5 is a similar view on line 5, Fig. 1.

A represents the respective side walls of masonry; B, the arched top wall, which is a continuation of the side walls; C, the rear end wall; D, the front end wall, and E the boiler.

The boiler or fire-front will ordinarily be of the usual form of construction, but may be varied from, if necessary. The fuel-passage 6 opens through the front wall into the combustion-chamber 7 and the passage 8 into the ash-pit 9, divided from the combustion-chamber by the grate-bars 10, the rear ends of which are properly supported in the bridge-wall 11, as shown in Fig. 1.

The boiler will be of the usual construction, the rear end thereof being supported on the inner edge of a transverse plate 12, the respective ends of which are anchored in the inclosing side walls, as shown in Fig. 4. This plate is of considerable width and supports a division-wall 13 on the outer edge thereof, as shown in Figs. 1 and 5. A division-wall 14 is supported on the inner edge of plate 12 and is built in solid between the respective sides of the boiler and the side walls of masonry, as shown in Fig. 4, but omitted in

Figs. 1 and 2. This wall stops short of the top of the boiler and provides for a flue-space 15 between the upper line thereof and the arched raised top wall B, which does not contact the boiler at any point. A smoke-box 16 is formed between the walls 13 and 14, into which the waste products of combustion are discharged from the rear ends of the boiler-flues 17, as shown in Figs. 1 and 2. A flanged breeching 18 is rigidly inserted in place between the division-walls and the arched wall B and opens outward into a smoke-stack 19, surmounted thereon. A longitudinal division-wall 20, Fig. 3, extends inward to the boiler from the respective side walls and runs from the front end of the boiler to the transverse wall 13 and separates the hot-air compartment 21 below the boiler from the flue-passage 15 above the same.

In practical working the heated air passes from the combustion-chamber over the bridge-wall into compartment 21 and from thence upward through the space 22 between the inclosing rear wall and the adjacent side of the transverse wall 14 into the flue-passage 15 to the front end of the boiler and returns through the boiler-flues into the smoke-box, and finally escapes therefrom through the smoke-stack, the course described being indicated by a series of arrows. It will be noted by this arrangement that the products of combustion will travel the length of the boiler three different times and has direct contact with both the upper and lower surfaces before entering the flues, so that the volume of heat escaping into the atmosphere is reduced to a minimum.

The longitudinal floor-wall 20 may be extended higher up on the sides of the boiler when necessary in diminishing or contracting the area of the passage 15.

The rear wall is provided with auxiliary draft-openings 23, which open into compartment 21 and provide for the admission of atmospheric air at this point when necessary in regulating the process of combustion, the volume of air admitted through the rear wall being controlled by draft-doors 24 and 25, as shown in Fig. 2. The rear wall is also provided with an opening 26, Fig. 1, located be-

tween the draft-openings, and is closed by a door 27 and provides access for the purpose of removing ashes and accumulations of soot.

Having thus described my invention, what I claim is—

A boiler-setting, comprising a boiler, the inclosing side walls, the arched top wall connecting the side walls and spaced above the boiler, the end walls spaced apart from the respective ends of the boiler, the longitudinal division-wall separating the passages under and over the boiler, a transverse plate located at the rear end of the boiler for sup-

porting the boiler on one edge thereof, the transverse walls supported by the plate, said walls forming between them a smoke-box, and the breeching located between said transverse walls, substantially as set forth.

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

MICHAEL J. McCARTHY.

Witnesses:

L. B. COUPLAND,
G. E. CHURCH.