

No. 750,860.

PATENTED FEB. 2, 1904.

H. KAPING.
SMOKE CONSUMER.

APPLICATION FILED JUNE 18, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

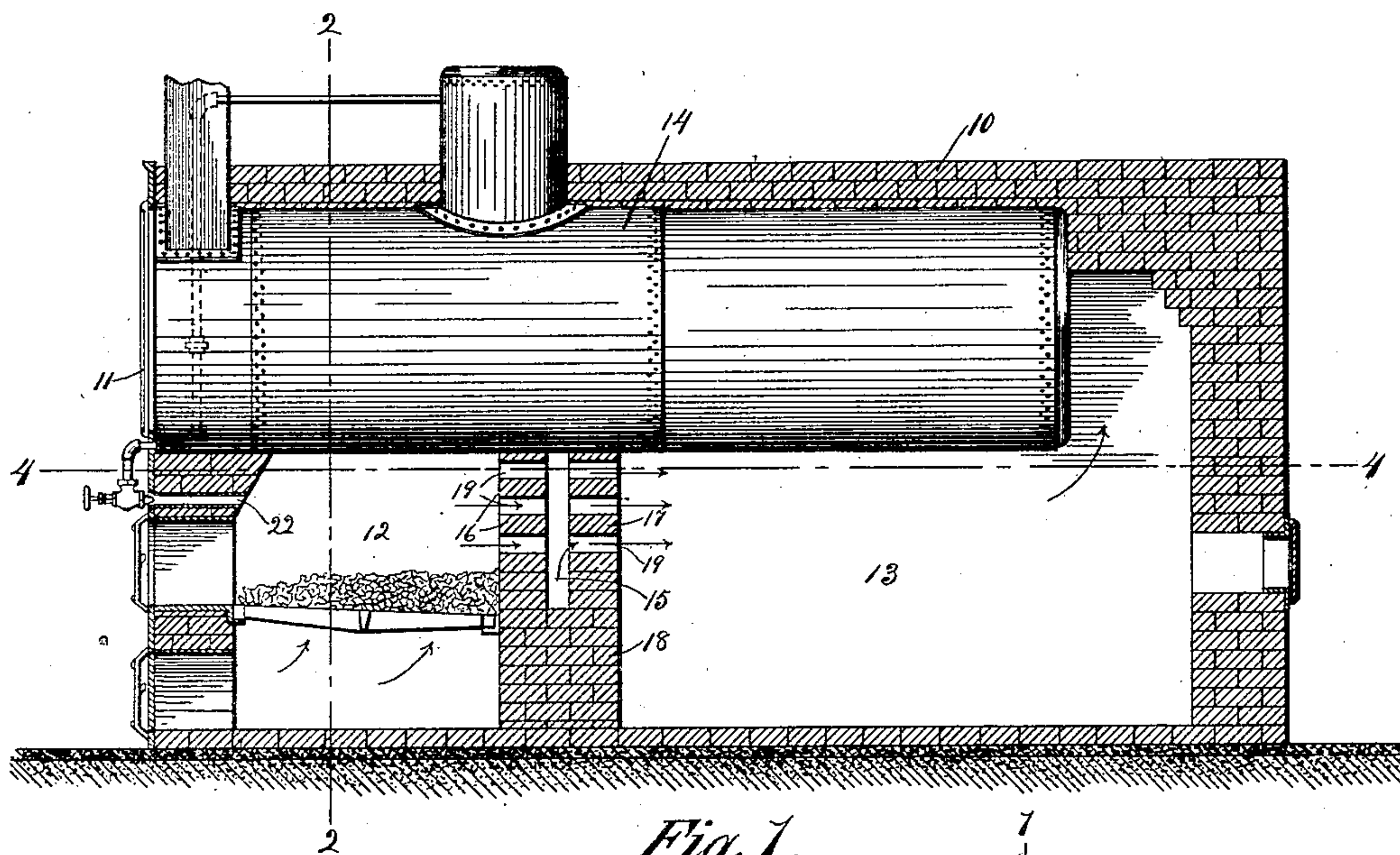


Fig. 1.

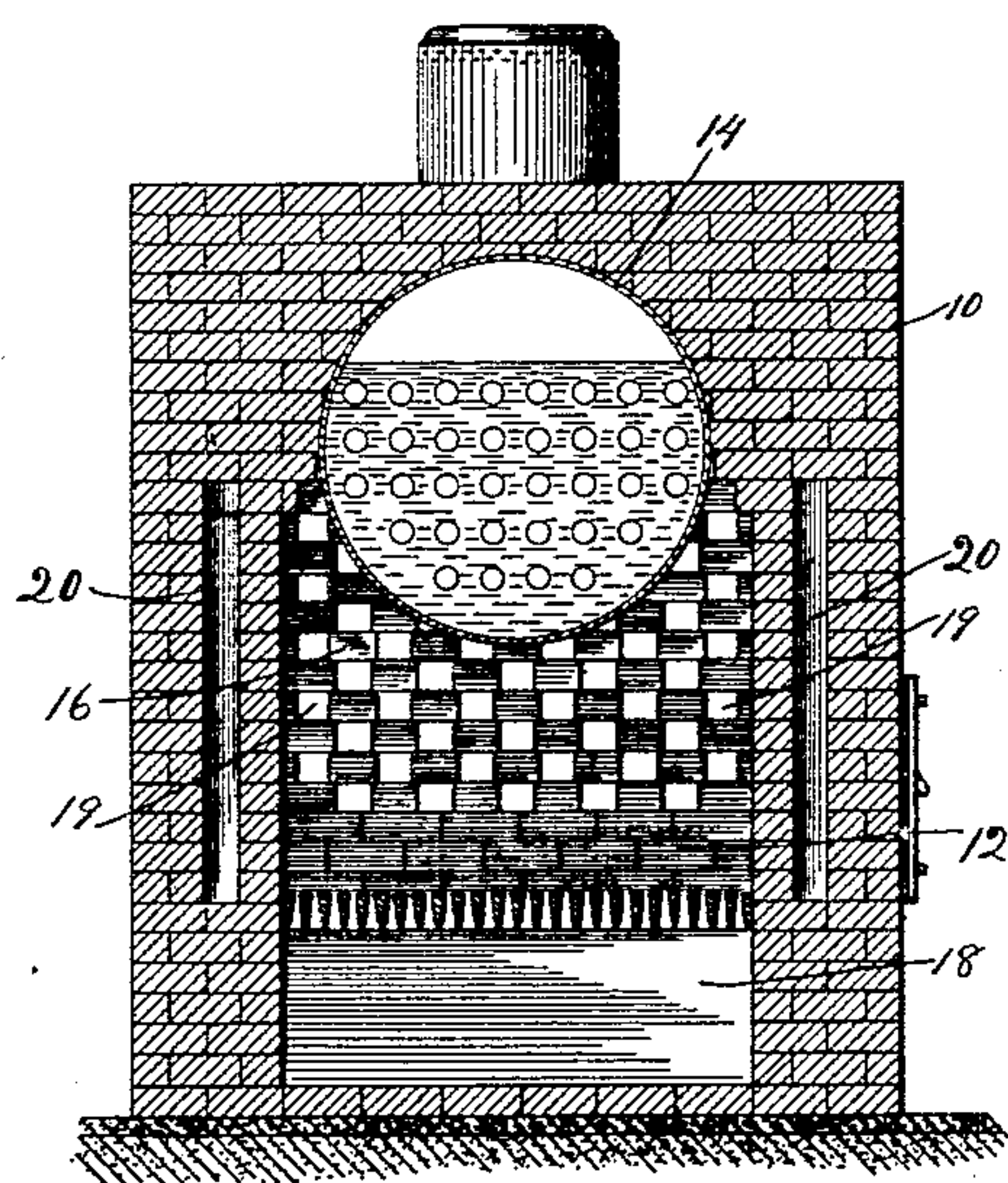


Fig. 2.

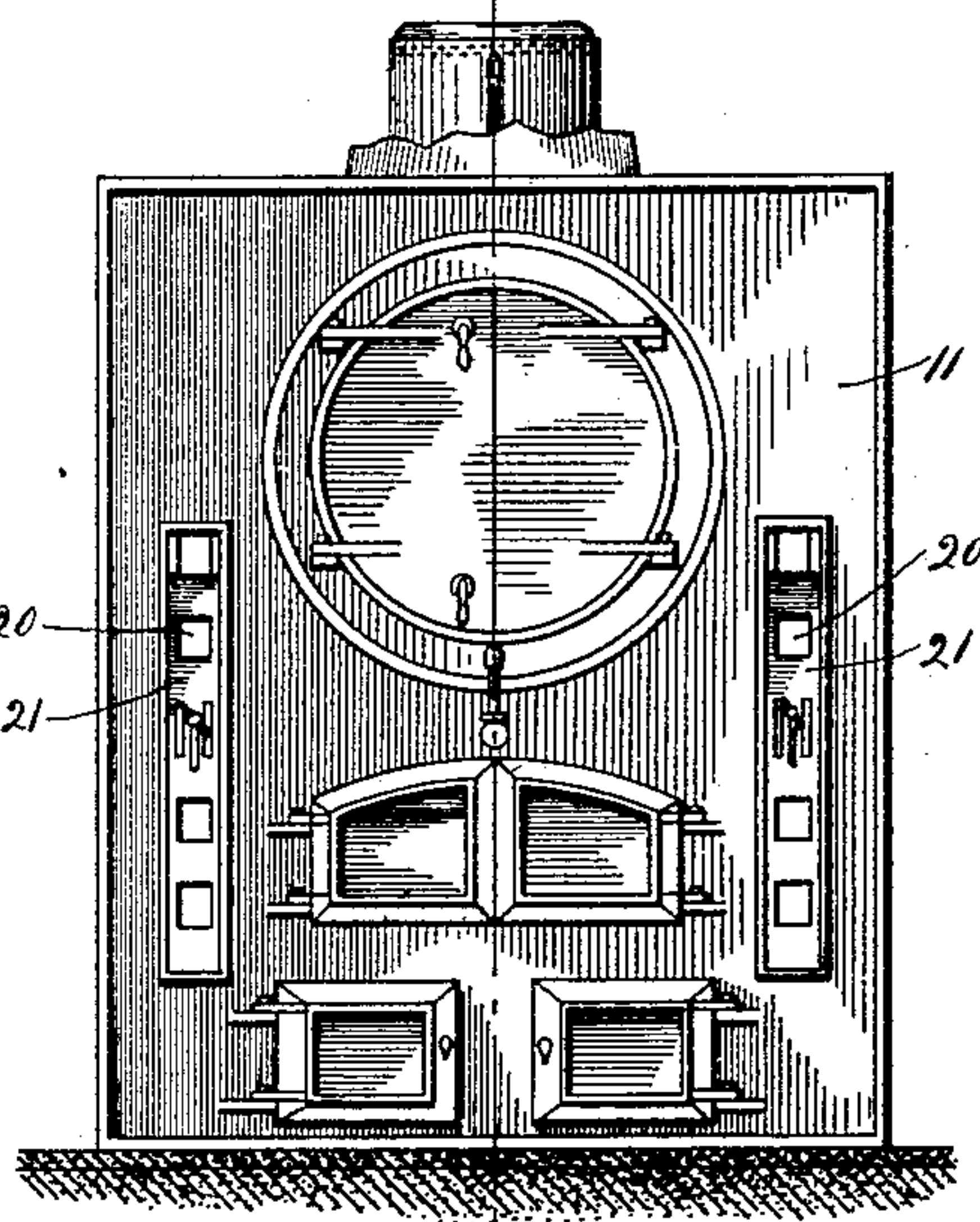


Fig. 3.

WITNESSES:
W. H. Cotton.
Helen L. Peck

INVENTOR.
Herman Kaping
BY *J. M. Felt*
ATTORNEY.

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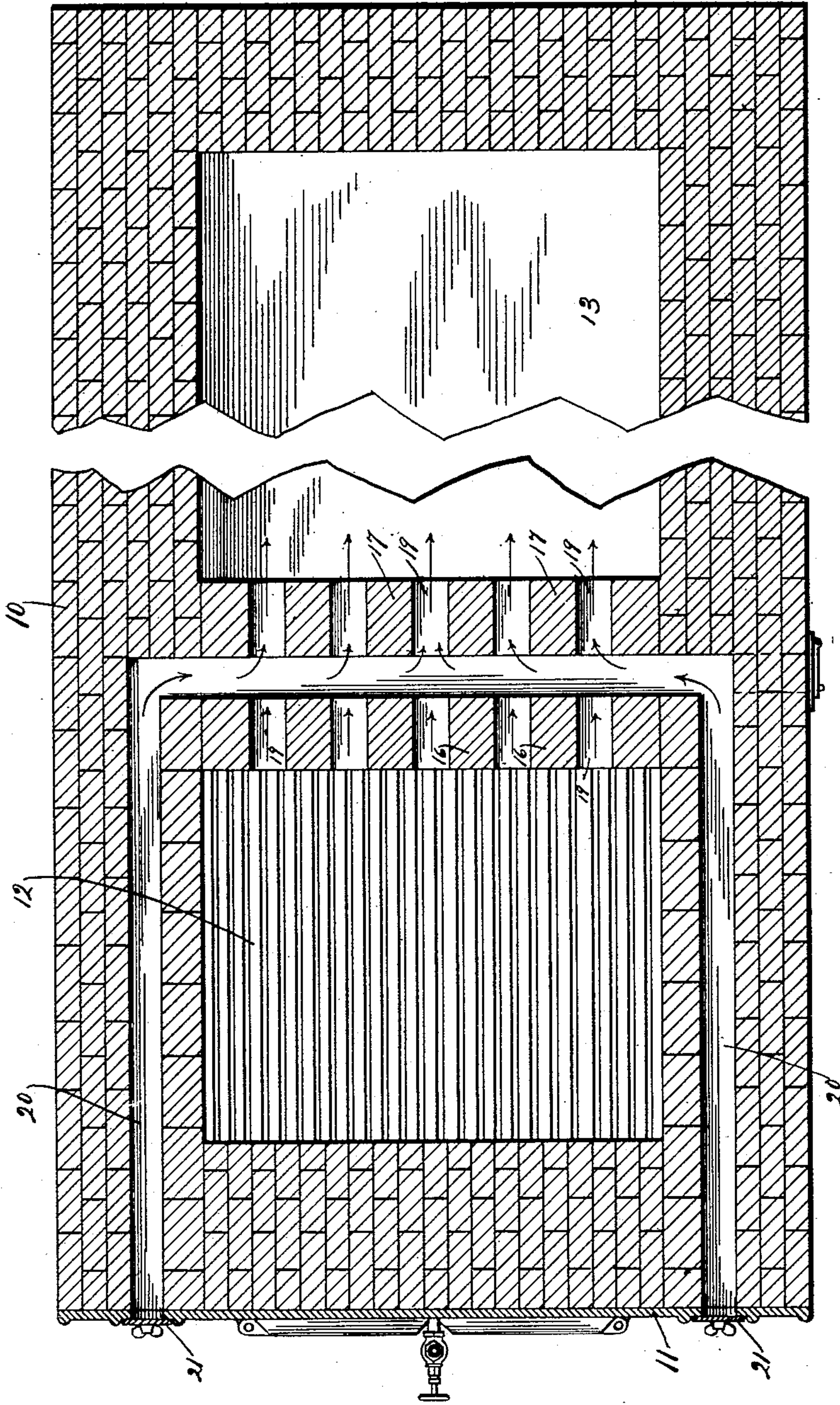


Fig. 4.

WITNESSES:

W. H. Cotton.
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INVENTOR

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UNITED STATES PATENT OFFICE.

HERMAN KAPING, OF CHICAGO, ILLINOIS.

SMOKE-CONSUMER.

SPECIFICATION forming part of Letters Patent No. 750,860, dated February 2, 1904.

Application filed June 18, 1903. Serial No. 162,008. (No model.)

To all whom it may concern:

Be it known that I, HERMAN KAPING, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Smoke-Consumers, of which the following is a specification.

This invention relates to improvements in furnaces; and its object is to promote combustion and prevent the escape of smoke.

In the accompanying drawings I have illustrated one manner of embodying my invention, and referring thereto—

Figure 1 is a longitudinal sectional view of a furnace containing the invention. Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is a front elevation of the furnace. Fig. 4 is a horizontal sectional view on the line 4 4 of Fig. 1.

Like numerals of reference indicate corresponding parts in the several figures of the drawings.

10 designates the setting of the furnace, which is provided with a metal front 11 and has the usual fire-box 12 and heat-chamber 13. The bridge extends up to the boiler 14 and is divided by a longitudinal chamber 15 into a front wall 16 and a back wall 17, both of which are mounted on a solid foundation 18. The two walls of the bridge are provided with transverse openings 19, which aline with each other, and the chamber 15 is connected at its ends to air-flues 20 in the side walls of the furnace. Dampers 21 are provided on the furnace-front for the purpose of controlling the quantity of air drawn into the flues 20 by the natural draft of the furnace, and these dampers may be of any suitable variety and located in any convenient place.

In practice the dampers will be adjusted to admit a sufficient quantity of air to the flues 20, the inner walls of which become hot and heat the air which passes therethrough into the chamber 15 and there mingles with the gases coming from the fire-box through the front wall of the bridge. The bridge of course gets very hot, and all the unconsumed prod-

ucts issuing from the fire-box are reoxygenized in the chamber 15 and wholly consumed in the passages of the back wall of the bridge. The use of my invention produces complete combustion of the fuel and prevents the escape of smoke from the stack.

While I have not found it necessary in practice to employ a steam-jet in connection with my invention, a jet 22 may be provided, if desired, for use when the furnace is being first fired up and to avoid changing the adjustment of the dampers.

My invention can be easily embodied in old as well as new furnaces, as the side walls of the fire-box composed of fire-brick, which has to be renewed at intervals, form the inner walls of the air-flues 20 and can be easily set in the manner illustrated and described herein to form the flues. The bridge can also be easily constructed in accordance with my invention, and dampers of any kind may be provided. The invention is of a very simple character and requires no special attention on the part of the fireman except to adjust the dampers, which need only be done at infrequent intervals and requires no particular skill.

Without limiting myself to the exact construction and arrangement of parts herein shown and described, what I claim, and desire to secure by Letters Patent, is—

In a furnace, a bridge located back of the fire-box and adjacent thereto and comprising a front wall and a back wall provided with alining transverse openings and separated by a chamber extending from end to end of the bridge and into the side walls of the furnace, and air-flues in said side walls adjacent to the fire-brick lining of the fire-box and extending from the top to the bottom of said lining and from the front of the furnace to and connected with the transverse chamber in the bridge.

HERMAN KAPING.

Witnesses:

WM. O. BELT,
HELEN L. PECK.