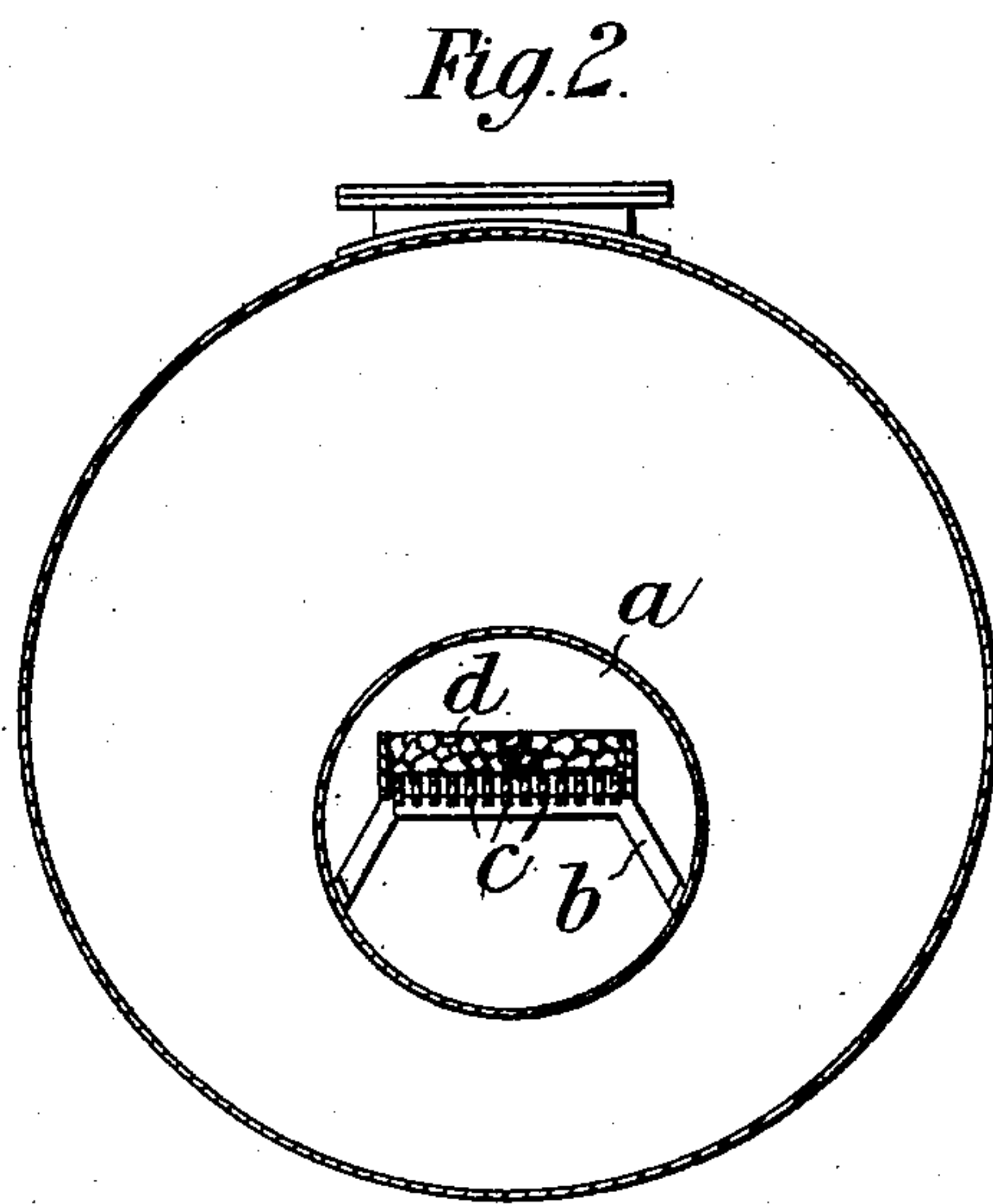
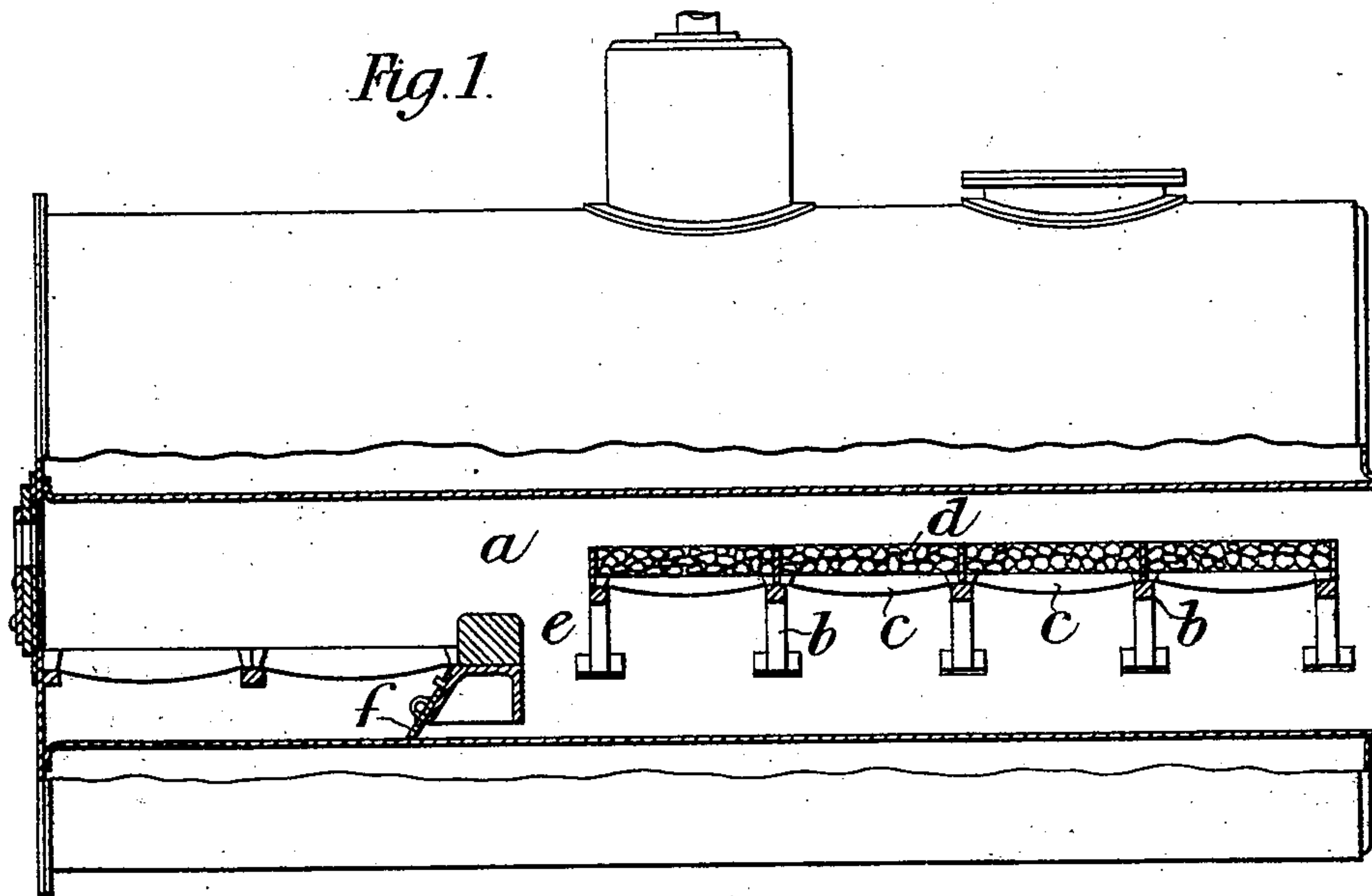


No. 714,234.

Patented Nov. 25, 1902.

J. T. PLENTY.
STEAM GENERATOR.
(Application filed May 13, 1902.)

(No Model.)



Witnesses.
J. K. Moore.
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UNITED STATES PATENT OFFICE.

JOHN TILEY PLENTY, OF GLOUCESTER, ENGLAND.

STEAM-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 714,234, dated November 25, 1902.

Application filed May 13, 1902. Serial No. 107,174. (No model.)

To all whom it may concern:

Be it known that I, JOHN TILEY PLENTY, a subject of the King of Great Britain, residing at 214 Pennywell road, Bristol, Gloucester, England, have invented new and useful Improvements in or Connected with Steam-Generators, of which the following is a specification.

My invention relates to steam-generators, and has for its object to provide means for utilizing the heat generated by the combustion of the fuel more efficiently than hitherto, and thereby to economize fuel and consume the smoke.

According to my invention I arrange in the tubes or flues of the generator in suitable positions pieces or masses of composition or material which will readily absorb the heat and which will again give up their heat to the tubes of the governor.

In applying my invention, for instance, to a Cornish or Lancashire boiler I place in the flue or in each flue behind the furnace cross-bearers adapted to carry bars or a frame upon which the heat-absorbing material is placed, which material as the heated gases pass over and around it becomes highly heated, the heat being then again radiated onto the walls of the flue. The heat-absorbing material may extend throughout the whole or any part of the length of the flue and has practically the same heating effect as would be obtained if the furnace were lengthened.

To enable my invention to be fully understood, I will describe the same by reference to the accompanying drawings, in which—

Figure 1 is a sectional elevation of a Cornish boiler provided with my improvements, and Fig. 2 is a transverse section of the same.

In the figures, *a* is the flue, and *b b* are cross-bearers arranged therein behind the furnace and supporting bars *c c*.

d is the heat-absorbing material, (such, for instance, as lumps of asbestos,) which is supported upon the said bars in such a position that it will be rapidly heated by the flame from the furnace which passes around it, a space *e* being advantageously left behind the back of the fire-bridge and the front of the

said material for the purpose of allowing the gases from the furnace to pass partly above and partly below the said material.

By the use of this invention I believe that considerable advantages are obtained as regards consumption of smoke and economy of fuel, as the combustion of the partly-unconsumed furnace-gases when passing over the heated material behind the furnace is promoted.

As it is advisable that those parts of the boiler against which the heat from the heat-absorbing material is radiated should be kept as clean as possible, I advantageously arrange in the bridge of the furnace, beneath the fire-bars, a door *f*, which affords ready access to the space beneath the said material.

It is to be understood that the arrangement of the heat-absorbing material as hereinbefore described is only given as an example, the arrangement being varied according to the class of steam-generator to which my invention is applied.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. The combination with a Cornish or Lancashire boiler, of a furnace for heating the same, and a stratum of heat-absorbing material supported in rear of said furnace, provision being made whereby the flame and gases from the furnace may pass over, under and around the said heat-absorbing material, substantially as described.

2. The combination with a Cornish or Lancashire boiler, of a furnace for heating the same, a stratum of heat-absorbing material supported in rear of said furnace with provision whereby the flame and gases may pass over, under and around said heat-absorbing material, the bridge-wall of said furnace being provided with a door to give access to the space beneath the heat-absorbing material, substantially as described.

JOHN TILEY PLENTY.

Witnesses:

JOHN H. CLARKE,
LIONEL A. WILSON.