

No. 669,287.

Patented Mar. 5, 1901.

W. W. SHILLING.
BOILER FURNACE.

(Application filed June 25, 1900.)

(No Model.)

Fig. 2.

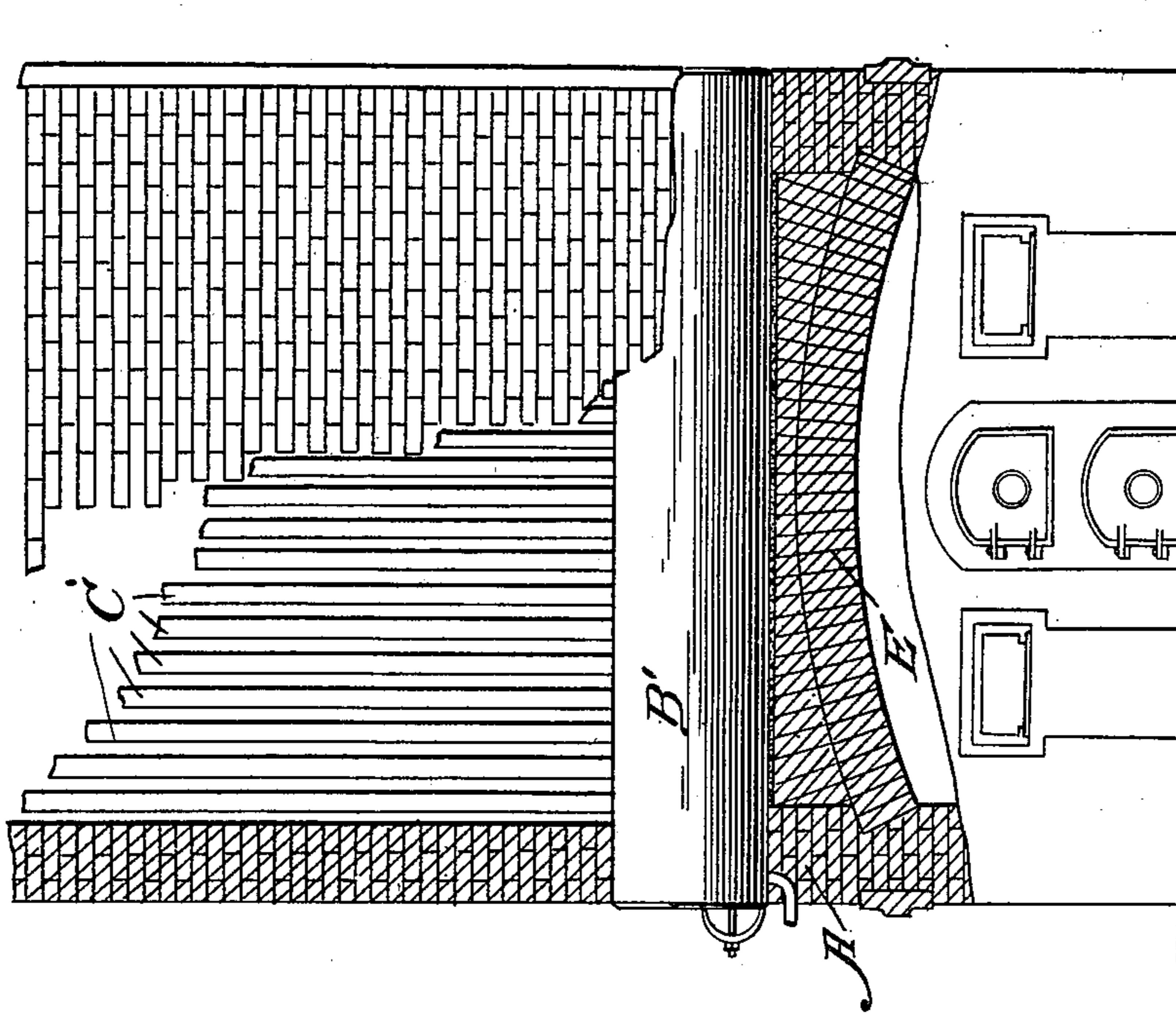
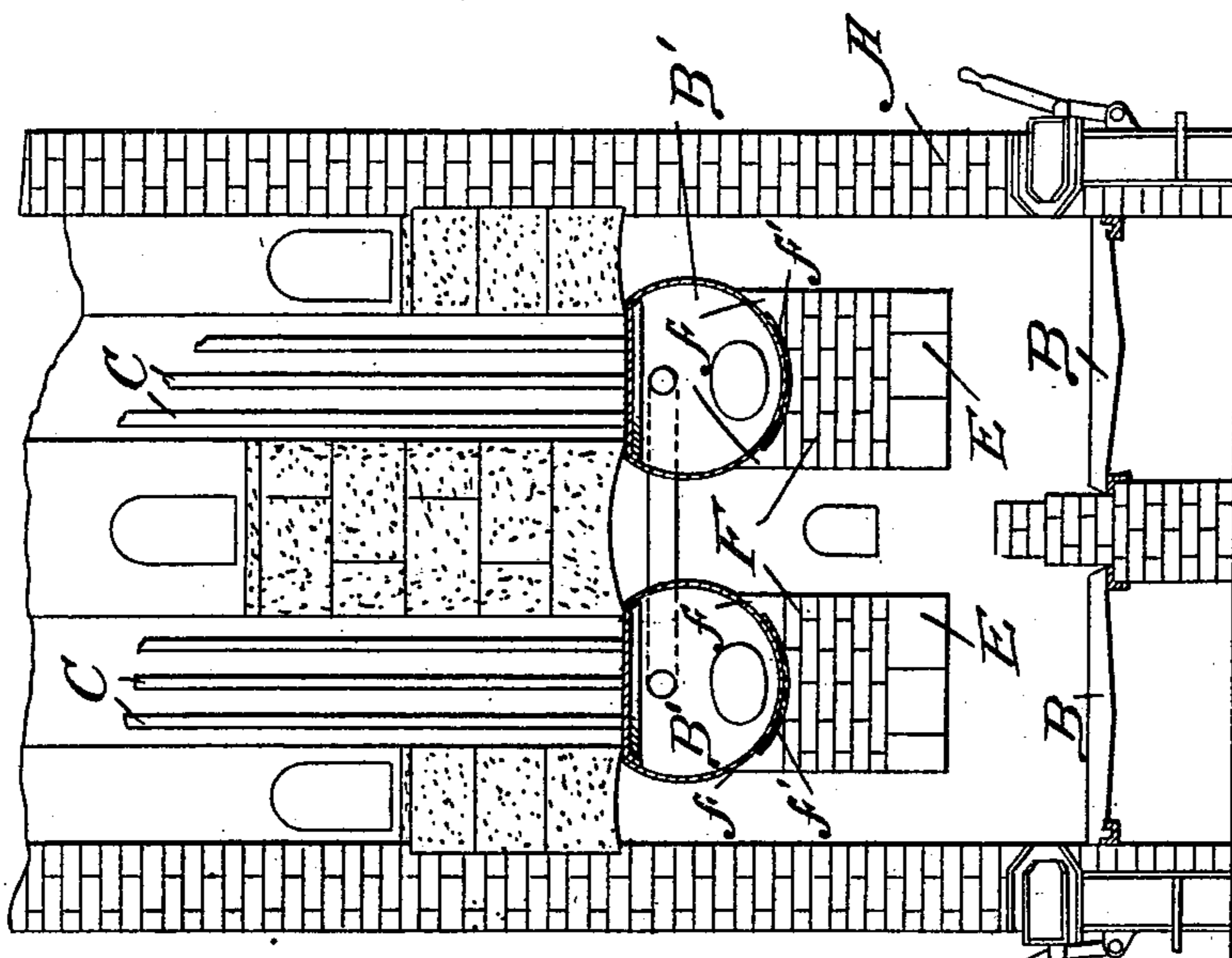


Fig. 1.



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BOILER-FURNACE.

SPECIFICATION forming part of Letters Patent No. 669,287, dated March 5, 1901.

Application filed June 25, 1900. Serial No. 21,557. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WARREN SHILLING, a citizen of the United States, residing at Sharon, county of Mercer, State of Pennsylvania, have invented certain new and useful Improvements in Boiler-Furnaces, of which the following is a specification.

My invention relates to improvements in boiler-furnaces of that class in which a drum is located in and in contact with the flames from the heating-chamber and in which a brickwork arch is used to protect the under side of the drum from the direct action of the flames.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section through a sufficient part of a furnace to illustrate the invention, and Fig. 2 is a transverse section.

In the drawings, A indicates the brick walls of the heating-chamber, provided with the ordinary grates B. The lower drums are indicated at B', from which the vertical tubes C lead upward to the upper drum in the well-known manner.

E E indicate the brick arches, which extend longitudinally under the drums the entire distance between the end walls and protect the bottom of the drums from the direct action of the flames from the combustion-chamber. Upon the top of these arches brickwork F is placed, extending up in contact with each side, as indicated at *f*, but having each a rabbet or space *f'* of about two inches in depth and concentric with the bottom of the drum and extending the entire length of the heating-chamber. This space is packed with asbestos or mineral wool, which forms

a cushion and serves a twofold purpose. The first of these is to counteract the expansion of the boiler and arch, as it has been found in practice that the expansion is sufficient to disturb the boiler and tubes were it built up solidly against the boiler, and, secondly, in using these boilers about a blast-furnace a large quantity of flue-dust is carried with the gases from the downcomer of the furnace-stack into the heating-chamber. With the outer course of bricks, as at *f*, built up solidly against the boilers or drums these will slide upon the surface of the boiler sufficiently to accommodate any expansion or contraction, while the filling of asbestos or mineral wool in the space *f'* will expand into any space formed by such movements and prevent the flue-dust from accumulating between the boiler and brickwork.

Having thus described my invention, what I claim is—

1. In combination with a boiler extending horizontally a supporting-brickwork extending longitudinally beneath the boiler and having its side portions in contact with the boiler leaving a space between said points of contact and an asbestos filling in the said space, substantially as described.

2. In combination with the boiler, a supporting-arch having portions thereof in contact with the boiler, leaving a space between said points of contact and an asbestos filling in the said space, substantially as described.

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

WILLIAM WARREN SHILLING.

Witnesses:

A. W. WILLIAMS,
KATHERINE H. BUNDEL.