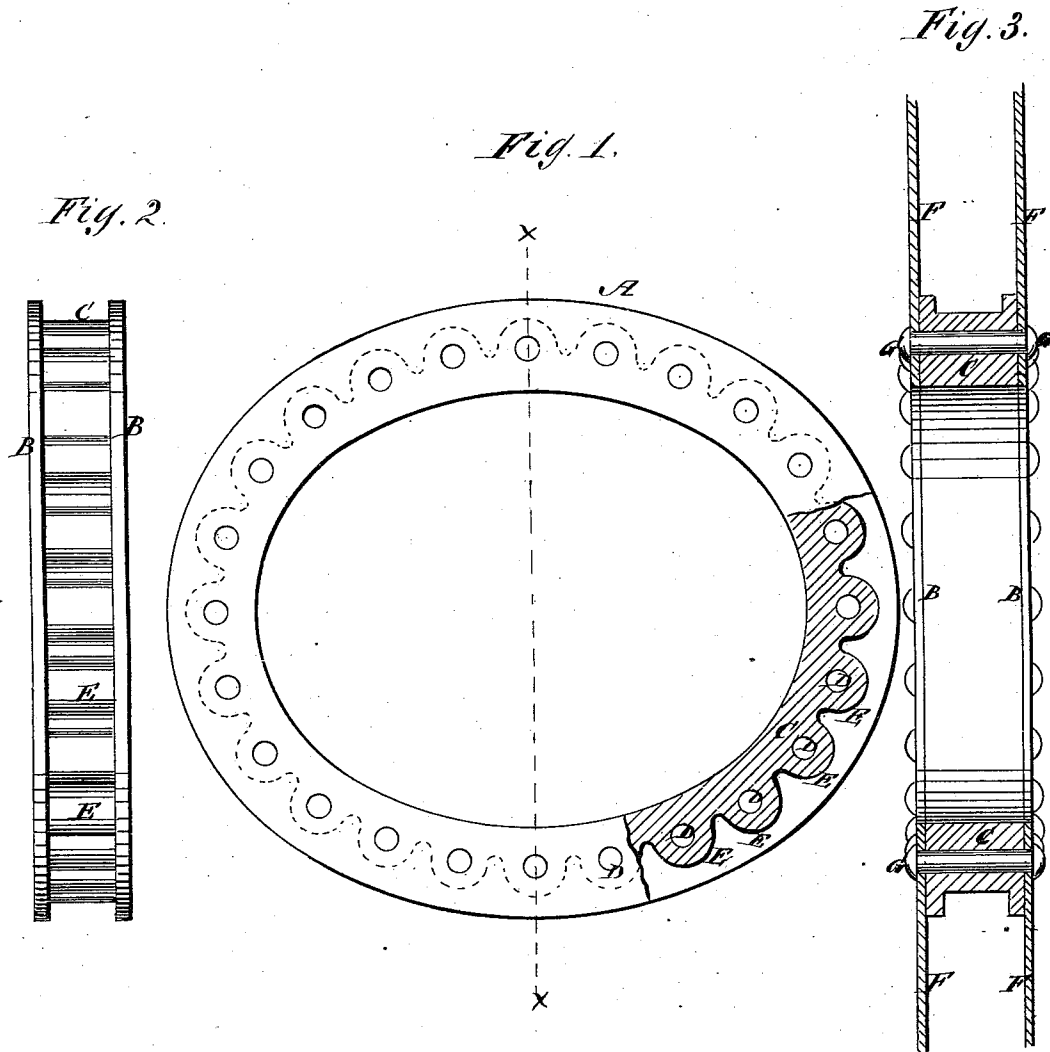


G. F. CHALENDER.
Fire-Box Door-Ring.

No. 161,481.

Patented March 30, 1875.



WITNESSES:

E. Wolff
Chelquien

INVENTOR:

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UNITED STATES PATENT OFFICE.

GEORGE F. CHALENDER, OF AURORA, ILLINOIS.

IMPROVEMENT IN FIRE-BOX-DOOR RINGS.

Specification forming part of Letters Patent No. **161,481**, dated March 30, 1875; application filed April 4, 1874.

To all whom it may concern:

Be it known that I, GEORGE F. CHALENDER, of Aurora, in the county of Kane and State of Illinois, have invented a new and useful Improvement in Fire-Box-Door Rings, of which the following is a specification:

This invention relates to the construction of steam-boilers; and consists in the construction of the door frame or ring of the fire-box.

In the accompanying drawing, Figure 1 is a face view of the door-ring. Fig. 2 is an edge view. Fig. 3 is a cross-section on line *x x* of Fig. 1, showing the fire-box sheets riveted to the ring.

Similar letters of reference indicate corresponding parts.

A represents the ring, consisting of two annular rings or plates, B B, and an intermediate corrugated ring, C. These parts (B B and C) may be cast in a single piece, if preferred. This ring is made of brass, copper, or bell-metal, as such metals resist the destructive effects of expansion and contraction to which the door-ring is exposed much better than iron. D represents rivet-holes through

the corrugations E of the part C. F are the sheets of the fire-box, confined to the ring by the rivets G. The part C is corrugated to diminish the weight of the ring, and also to prevent it from being overheated, as would be the case if made without such corrugations.

By using copper, brass, or composition metal for these door-rings they may be made much lighter than when made of iron, while danger of fracture from strain, caused by expansion and contraction, is decidedly less.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A fire-box-door ring, consisting of curved plates B B and intermediate ring C, the plates and ring being held together by rivets D, and the metal being cut away about the rivets, as shown and described, thus enabling the water to prevent too great a temperature in the ring.

GEORGE F. CHALENDER.

Witnesses:

W. WHITE,
T. H. HOLDEN.