

(No Model.)

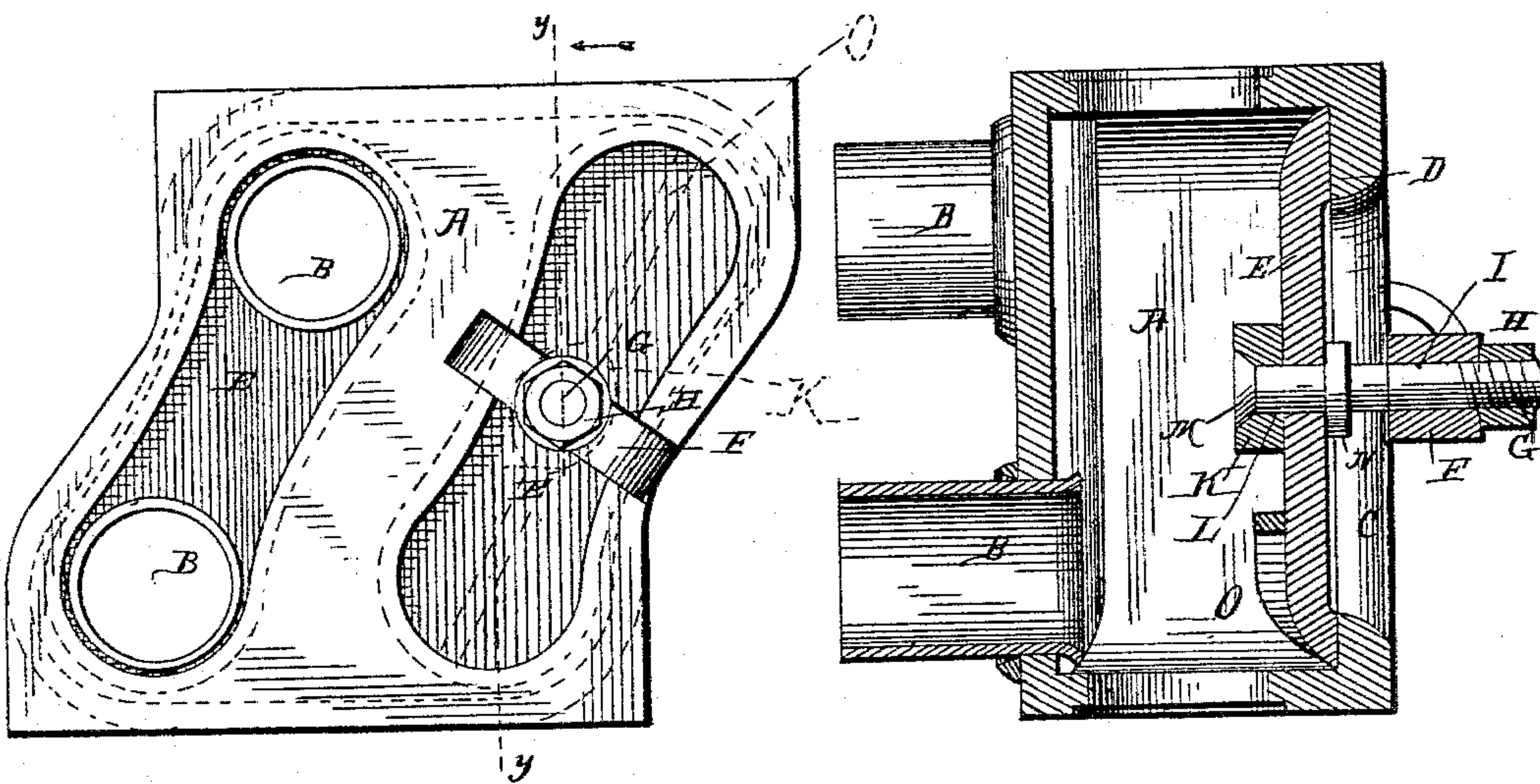
R. R. ZELL.
HEADER FOR STEAM BOILERS.

No. 321,330.

Patented June 30, 1885.

Fig. 1.

Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

ROBERT R. ZELL, OF NEW YORK, N. Y., ASSIGNOR TO THE SAFETY STEAM GENERATOR COMPANY, OF SAME PLACE.

HEADER FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 321,330, dated June 30, 1885.

Application filed April 14, 1885. (No model.)

To all whom it may concern:

Be it known that I, ROBERT R. ZELL, a citizen of the United States and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Headers for Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a front view of a header of a steam-boiler provided with my improvement; and Fig. 2 is a vertical sectional view of the same, taken on line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in both the figures.

My invention has relation to that class of steam-boilers in which four flues or tubes enter a rhomboid header having hand-holes covered with plates; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates the header, into which enter the four tubes or flues B, and which has two oblong apertures or hand-holes, C, parallel to two sides of the rhomboid header, each aperture embracing the ends of two tubes, and having inwardly-projecting flanges D around their edges.

Correspondingly-shaped plates E rest with their edges against the inner faces of these flanges, and are held in place by two yokes, F, spanning across the middles of the plates and holes.

Bolts G, having their outer ends screw-threaded, and provided with nuts H, pass through perforations I in the middles of the yokes, and the nuts bear against the outer sides of the yokes. The inner faces of the plates covering the hand-holes are formed with inwardly-projecting longitudinal ribs O, formed with enlargements K, having perforations L, countersunk at their inner ends, through which perforations the bolts pass.

The inner ends of the bolts have conical enlargements or heads M, which fit into the similarly-shaped countersinks, and at the outer sides of the plates, the bolts are formed with shoulders or collars N, bearing against the said sides, the plates being clamped between the shoulders and heads of the bolts. By having these countersinks and conical heads for the bolts, it will be seen that the heads of the bolts will be drawn to fit more firmly in their perforations as the nuts are tightened upon the bolts, and it will be seen that free access may be had to all four tubes, and that the header-front will not be weakened as much by the two large hand-holes as by four smaller holes, while at the same time the two hand-hole plates will be better able to resist pressure than one large plate covering an aperture embracing all four tubes.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

In a steam-boiler, the combination of a rhomboid header having two hand-holes opening for two tubes, each in the header, covering plates bearing with their edges against the inner sides of the edges of the holes and having each a longitudinal rib upon their inner faces formed with an enlargement at its middle, provided with a perforation conically countersunk at its inner end, yokes crossing the middles of the hand-holes, resting with their ends upon the edges of the hand-holes and having perforations at their middles, and bolts having conical heads at their inner ends fitting in the conical countersinks and having shoulder-bearings on the outer faces of the covering plates, and having nuts upon their outer ends bearing against the outer sides of the yokes, the bolts passing with their outer ends through the perforations in the yokes, as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

ROBERT R. ZELL.

Witnesses:

E. J. GREACEN,
JOHN I. RATHERS.