No. 791,239. PATENTED MAY 30, 1905.

E. BLASS.

LOCOMOTIVE BOILER.

APPLICATION FILED FEB. 5, 1902.

2 SHEETS—SHEET 1.

Fig. 1.

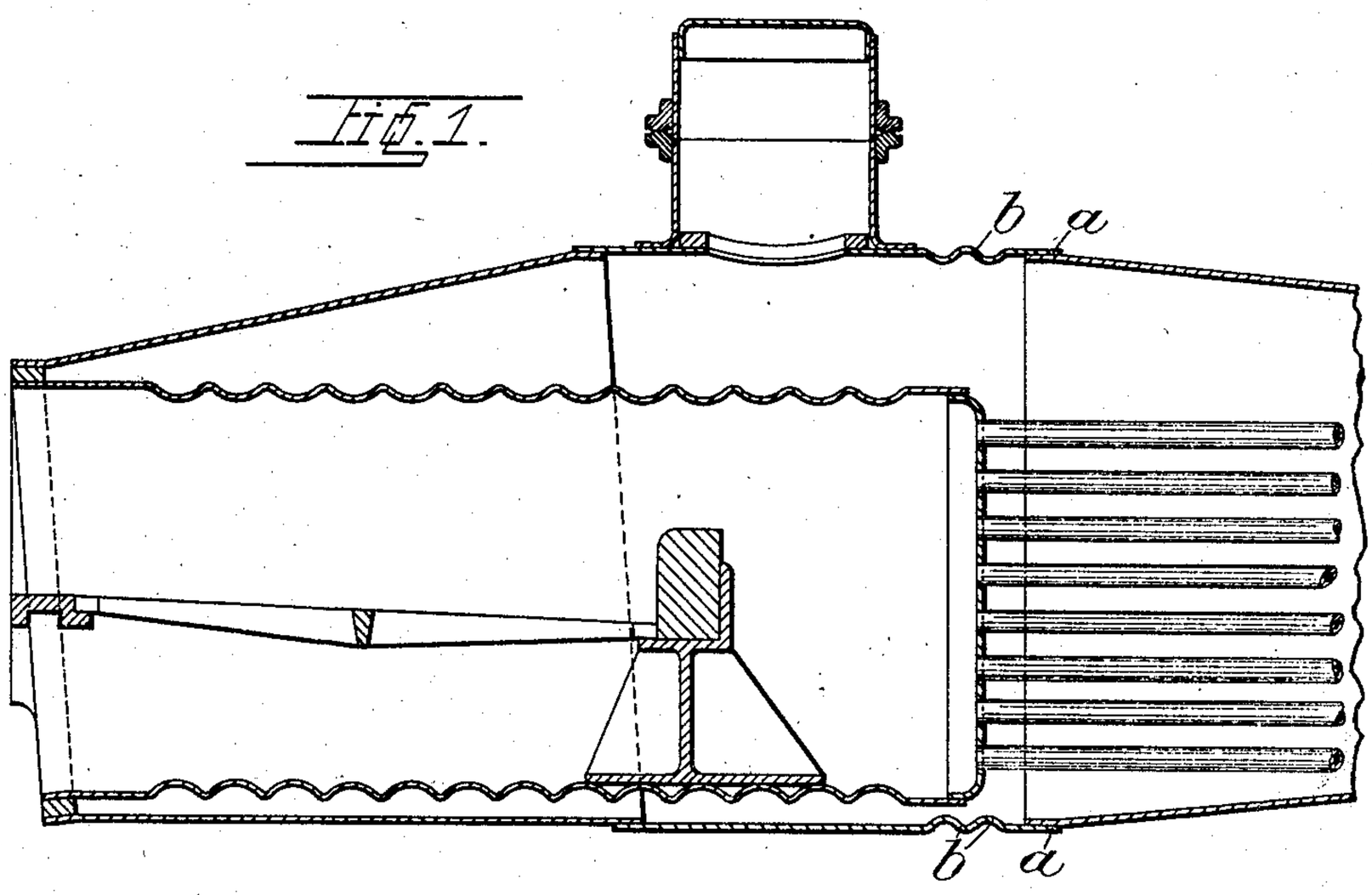
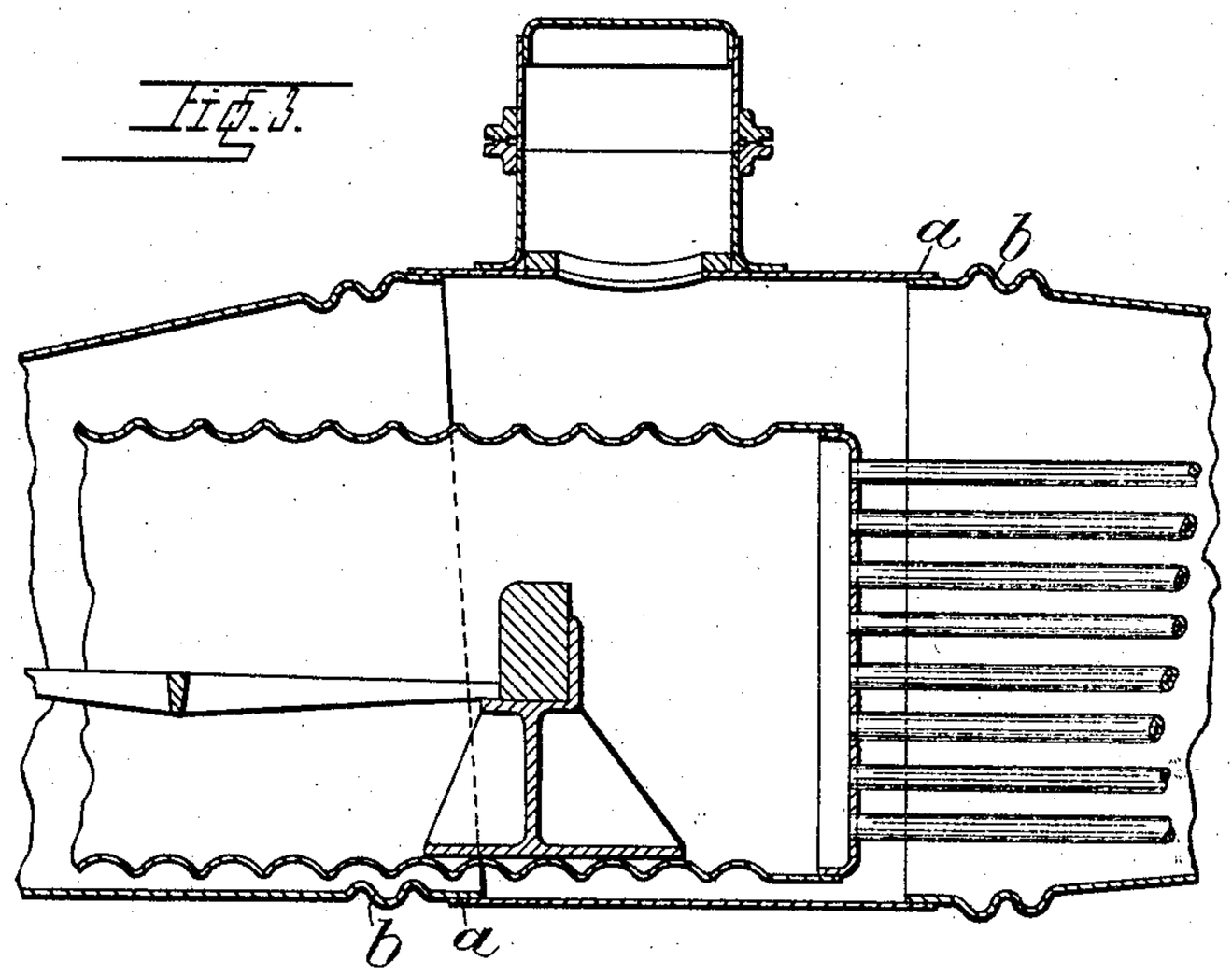


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 2.

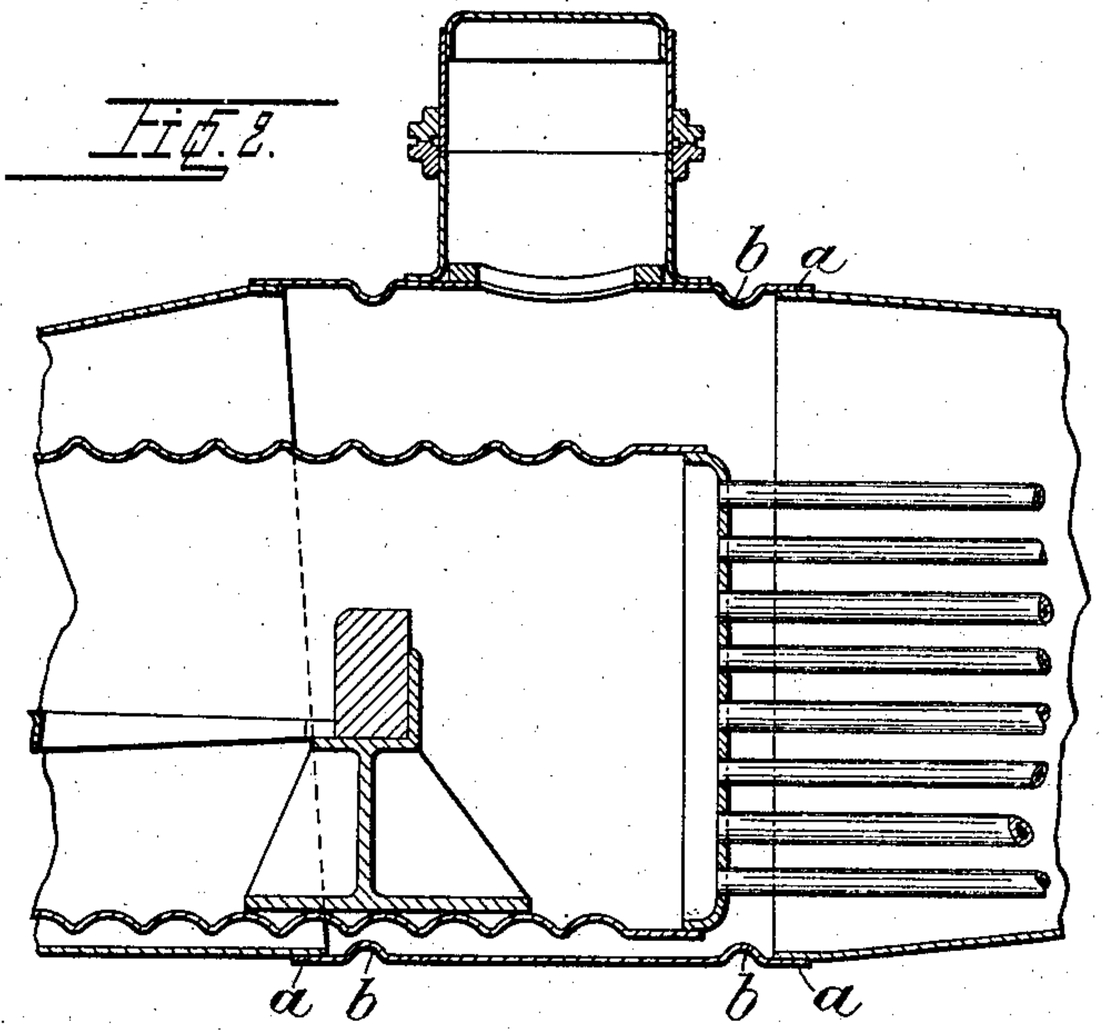
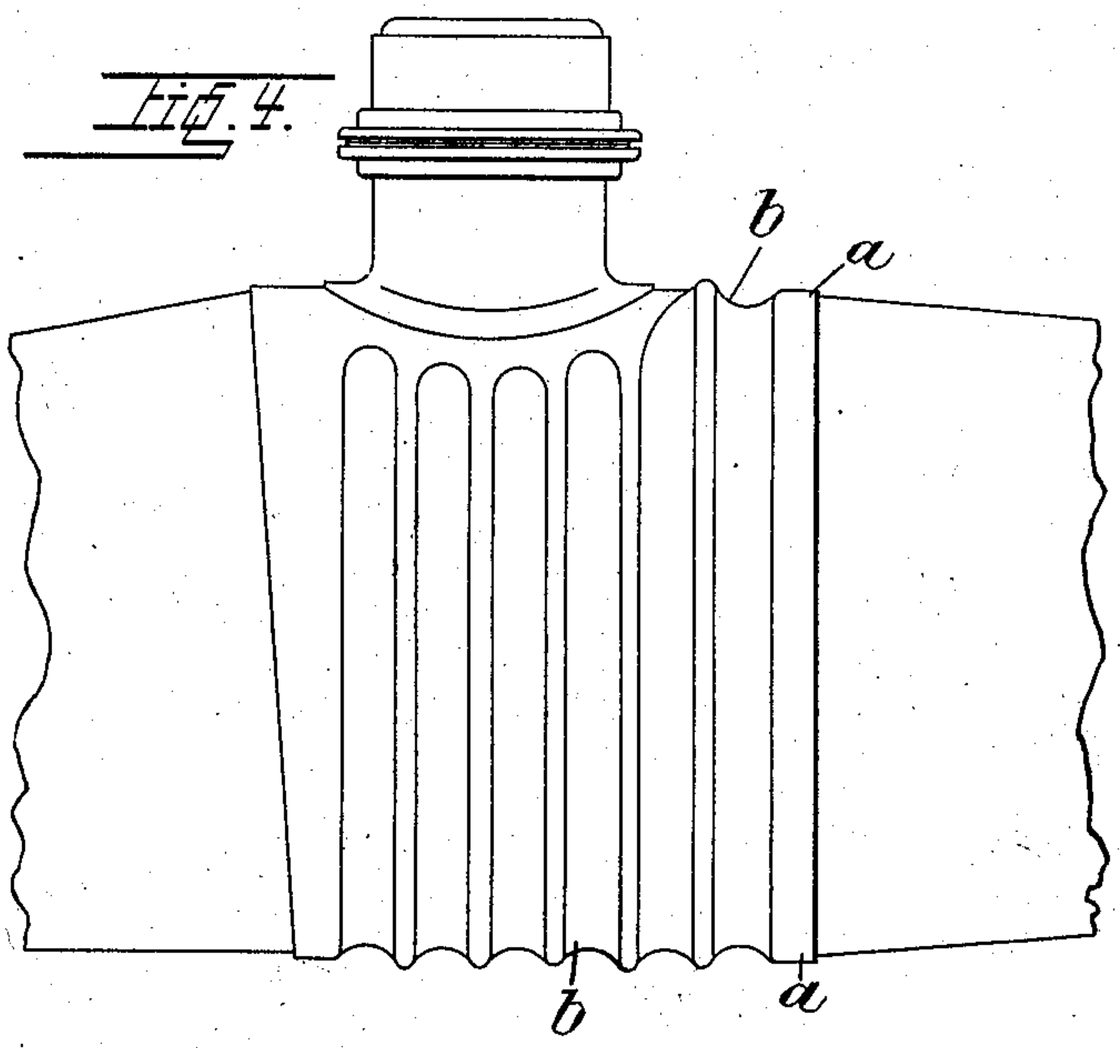


Fig. 4.



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No. 791,239. Patented May 30, 1905.

UNITED STATES PATENT OFFICE.

EDUARD BLASS, OF ESSEN-ON-THE-RUHR, GERMANY.

LOCOMOTIVE-BOILER.

SPECIFICATION forming part of Letters Patent No. 791,239, dated May 30, 1905.

Application filed February 5, 1902. Serial No. 92,604.

To all whom it may concern:

Be it known that I, EDUARD BLASS, a subject of the King of Prussia, German Emperor, residing at No. 80 Bahnhofstrasse, Essen-on-the-Ruhr, Kingdom of Prussia, German Empire, have invented new and useful Improvements in Locomotive-Boilers, of which the following is a specification.

This invention relates to improvements in locomotive-boilers with cylindrical fire-boxes, and has for its object to obviate a leakage of the boiler, or more especially of the seams of the same. In a boiler of this description with cylindrical fire-box and cylindrical jacket or shell the shell does not come in contact with the fire-gases when the boiler is heated. The lower part of the boiler remains, in consequence, thereof cooler than the upper portion of same, with the result that the upper part of the shell expands more than the lower part. The boiler by such unequal expansion assumes a bent shape or deformation, whereby the riveted joints in the boiler jacket or shell commence to leak. As soon as the engine is started and the water set in motion the differences in temperature are soon equalized, the boiler again becomes straight, and the rivet-seams cease to leak, providing a permanent deformation at the joint has not set in. Although, as hereinbefore indicated, the boiler recovers or becomes tight again the first few times after the described leakage, the deformation will, however, in the course of time become permanent and the rivets around the jacket will continually be found to leak. This objection or drawback is obviated by the present invention in such manner that close to the cylindrical rivet-seam a number of annular or spiral shaped corrugations are arranged either across the entire periphery of the boiler or only across a part of same, the said corrugations offering a resilient resistance to the bending strains, and thus prevent to a greater or less extent the formation of flexion stresses in the circumferential seams and the consequent risk, as hereinbefore described, of a leakage from the seams.

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

Figures 1 to 3 represent longitudinal sections of a boiler, showing different constructional methods of carrying my invention into effect, while Fig. 4 is a side elevation of a modified form of construction in which the corrugations extend only across a part of the circumference of the shell.

As shown in the drawings, *a* represents the seam of the shell of the boiler, and *b* the corrugations, which according to the present invention are arranged close to the seams of the cylindrical boiler-shell.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a locomotive-boiler with cylindrical fire-box and smooth cylindrical shell, the arrangement of corrugations between the smooth chutes of the shell or jacket close to the seams of the same, as and for the purpose set forth.

2. In a locomotive-boiler with riveted boiler-shell and internal fire-box mounted therein, the arrangement of circumferential corrugations in the plates of the shell intermediate the seams thereof, as and for the purpose set forth.

3. In a locomotive-boiler with cylindrical boiler-shell having non-displaced circumferential riveted seams, and an internal fire-box mounted in such shell, the arrangement of circumferential corrugations in the plates of such shell intermediate its seam edges, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EDUARD BLASS.

Witnesses:

PETER LIEBER,

WILLIAM ESSENWEIN.