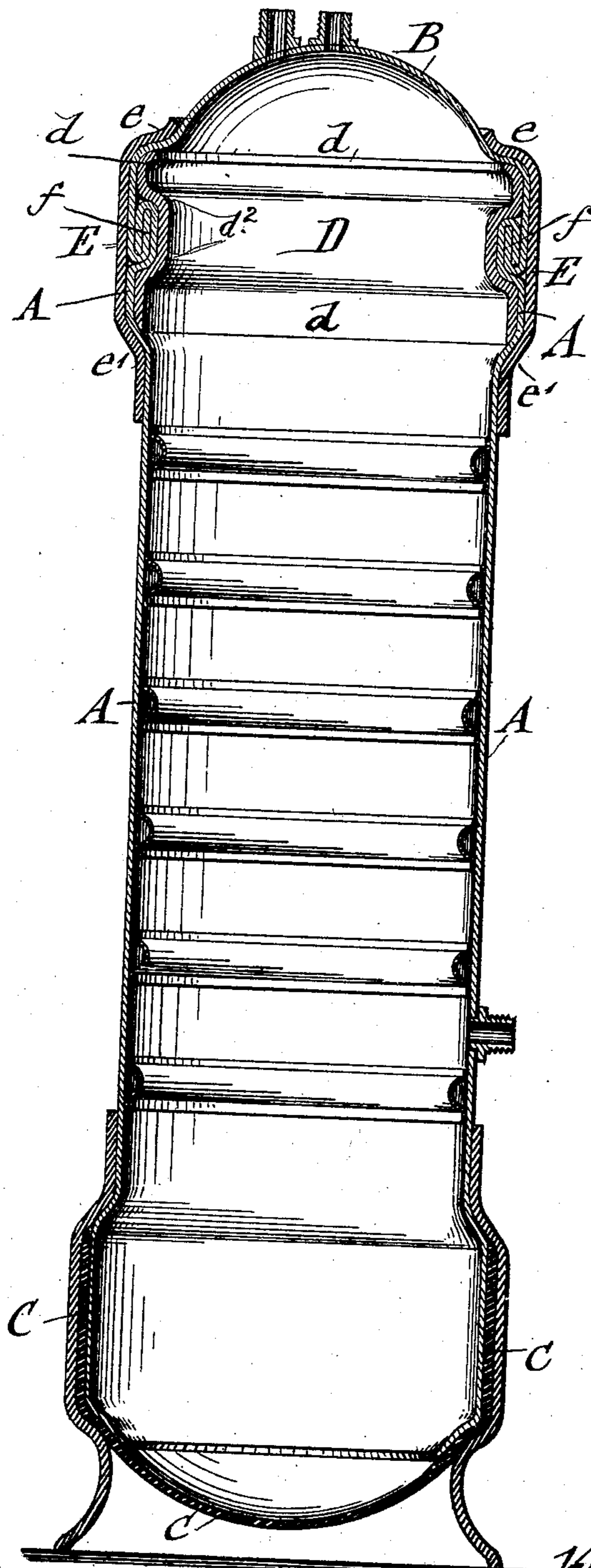


No. 865,841.

PATENTED SEPT. 10, 1907.

V. WILHELMI.
RANGE BOILER.

APPLICATION FILED APR. 26, 1907.



Witnesses:
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UNITED STATES PATENT OFFICE.

VALENTIN WILHELMI, OF PATERSON, NEW JERSEY.

RANGE-BOILER.

No. 865,841.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed April 26, 1907. Serial No. 370,371.

To all whom it may concern:

Be it known that I, VALENTIN WILHELMI, a citizen of the United States, residing in Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Range-Boilers, of which the following is a specification.

This invention relates to improvements in range-boilers.

In the range-boilers heretofore patented by me, of which that shown in Letters Patent No. 602,650, dated April 19, 1898, is a type, the boiler is formed of a cylindrical shell and top and bottom-heads, which latter are firmly connected by reinforced joints with the shell. It was found, however, that the connection of the top-head with the cylindrical shell was not always of sufficient strength to resist the internal pressure of the boiler, especially when steam was formed at the upper part above the level of the water, so that frequently the joints were stretched and became leaky to the great annoyance of the users of the boilers, who had to return the same to the factory for repairs.

The object of this invention is to improve the range-boiler in such a manner that looseness or leakage at the top of the same under extra-pressure is entirely prevented, and a greater tightness imparted to the joints; and for this purpose the invention consists of an improved range-boiler in which the top-head is connected with the cylindrical shell by a folding and interlocking joint in connection with an interior shouldered strengthening ring and a flat exterior ring that extends sufficiently over the inner ring, the top-head and the shell, to impart extra-strength and resistance against leakage at the joint of shell and top-head of the boiler.

The accompanying drawing represents a vertical central section of my improved range-boiler.

Referring to the drawings, A represents the cylindrical shell or body, B the cup-shaped top-head and C the cup-shaped bottom-head of my improved range-boiler. The shell and heads are preferably made of copper. The bottom-head C is connected with the lower end of the cylindrical shell in any approved manner. The shell A is reinforced at the inside by means of interior strengthening rings in the usual manner.

The parts so far described are well known, the improvements being in the connection of the top-head with the shell A. This connection is produced by means of an interior reinforcing ring D which is formed with an inwardly-projecting shoulder *d* at the upper end and an annular depressed center-portion into which

the folded-over and interlocking joint *f* between the ends of the shell and top-head are forced by pressure. An exterior reinforcing ring E is placed around the joint and extended sufficiently above and below the same over the shell and top-head respectively, to secure a strong connection of the parts. The exterior ring E forms with the top-head a shoulder *e* above the upper shouldered end of the interior ring and an inclined shoulder *e*¹ below the same, so that the joint action of the shoulders of the inner ring and the shoulders of the outer ring on the interlocking joint imparts the required resistance to the top-head of the boiler for overcoming the internal pressure caused by the formation of steam at the upper part of the boiler, preventing thereby the opening of the joints and the leakage of the same. At the same time the exterior appearance of the top of the boiler is greatly improved as its exterior cylindrical shape corresponds to the cylindrical shape of the lower or bottom-part of the range-boiler.

In the improved range-boiler, the joint is located in the centrally-depressed or inwardly-bulging portion of the interior reinforcing ring, so that no bulge is shown on the outside. This produces two intermediate shoulders *d*² in the interior ring, respectively above and below the interlocking-joint *f*, besides the end-shoulder *d* at the upper end of the interior ring, which shoulder holds, in connection with the shoulders formed by the shell and top-head and the shoulders *e* and *e*¹ of the exterior ring, the folded and interlocking-joint rigidly in position, so that the parts resist in a more effective manner the internal pressure at the upper part of the boiler and neither stretch nor spring a leak in consequence of the same.

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

In a range-boiler, the combination with the shell and top-head secured together by means of an interlocking joint and provided respectively with annular shoulders near said joint, of an interior reinforcing ring provided with a circumferential depression in its exterior surface, with an inwardly extending shoulder in contact with the top-head, and with a cylindrical portion in contact with the shell, said joint lying in said depression, and an exterior ring covering the joint and the shoulders of the top-head and shell and closely engaging the same.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

VALENTIN WILHELMI.

Witnesses:

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HENRY J. SUHRBIER.