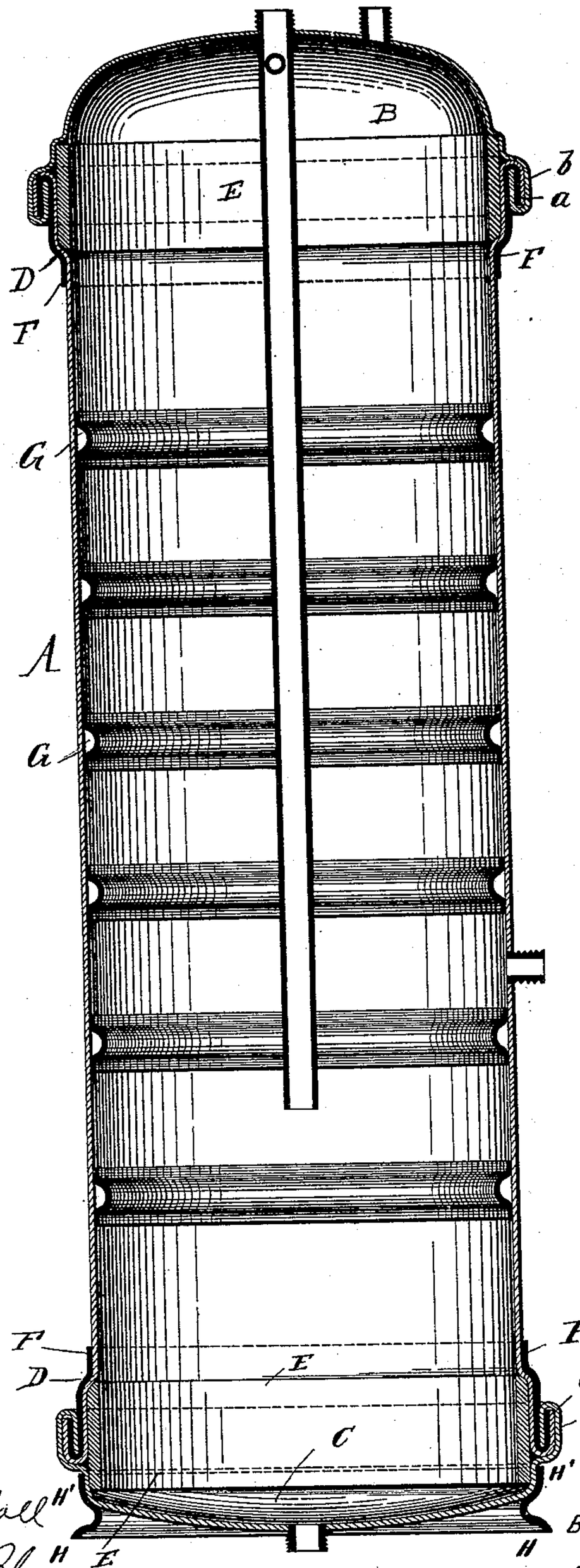
(No Model.)

V. WILHELMI.

RANGE BOILER.

No. 465,228. Patented Dec. 15, 1891.



WITNESSES:

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VALENTIN WILHELMI, OF PATERSON, NEW JERSEY.

RANGE-BOILER.

SPECIFICATION forming part of Letters Patent No. 465,228, dated December 15, 1891.

Application filed September 12, 1891. Serial No. 405,509. (No model.)

To all whom it may concern:

Be it known that I, VALENTIN WILHELMI, a citizen of the United States, and a resident of Paterson, in the county of Passaic, in the 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 that kind of boilers that are connected with the water-backs of ranges and cooking-stoves; and the object of my invention is to provide a boiler of this kind which is re-enforced and strengthened at the heads.

The invention consists in a range-boiler composed of a sheet-metal shell and sheet-metal heads, said shell being provided at the ends with exterior sheet-metal re-enforcing rings or bands that are doubled over with the edges of the shell to interlock with the flanges formed on the edges of the heads.

The invention also consists in a boiler composed of a shell and heads and of a base-ring connected with the edges of the bottom head.

In the accompanying drawing a vertical transverse sectional view of my improved boiler-range is shown.

The boiler consists of the cylindrical shell or body A, a cap-shaped top head B, and the cap-shaped bottom head C, the top head having a greater curvature than the bottom head. Said shell and heads may be made of copper, sheet-iron, or any other suitable sheet metal. At each end the shell is provided a short distance from the end with an annular shoulder D, against which a re-enforcing ring E is placed, which ring is suitably brazed to the shell, so as to be held firmly and securely in place. The end parts of the shell are turned outward to form the flanges *a*, and the edges of the heads are bent over to form the flanges *b*, that interlock with the flanges *a*.

The construction just described is fully set forth in my patent, No. 434,075, of August 12, 1890.

In order to re-enforce the end parts of the shell and to form a more rigid connection between the shell and the heads, a band of sheet metal F is placed around the exterior of the shell at each end and is brazed on said shell. Said circular band F of sheet metal is bent over with the sheet metal of the shell in forming the flange *a*, as shown in the drawing, and it also interlocks with the flanges *b* of the heads. After the parts have been interlocked, as described, they are pressed firmly together by a turning operation on a lathe, and then the interlocking flanges are brazed together, so as to form an absolutely close and tight joint. The circular bands or sheet-metal rings F increase the thickness of the shell at the ends where the connection with the heads is made and thus re-enforce and strengthen the boiler at those points where the greatest strength is required. To prevent the collapsing of the boiler, sheet-metal rings G, made approximately U-shaped in cross-section, are provided on the interior of the shell and brazed to the same.

Heretofore range-boilers have been placed upon supports in such a manner that the bottom of the boiler rested directly upon the support. The pressure of the weight of the boiler and the water therein on the ring-shaped support prevented the proper expansion and contraction of the bottom head of the boiler and frequently caused leaks. In order to obviate this I provide a base-ring H, provided with an upwardly and outwardly curved flange H′, that rests snugly against the edges of the bottom head, as shown, said base-ring H being suitably soldered to the bottom head. When thus provided with the base H, the bottom head can contract and expand without causing any undue strain or leaks.

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

In a range-boiler, the combination, with a cylindrical shell, of top and bottom heads and sheet-metal re-enforcing bands or rings placed around the shell at the ends and doubled over with the ends of the shell to form flanges that interlock with the flanges of the heads, substantially as set forth.

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

VALENTIN WILHELMI.

Witnesses:

OSCAR T. GUNZ,

MARION HALL.