

No. 731,657.

PATENTED JUNE 23, 1903.

R. W. BARTON.
STEAM BOILER.

APPLICATION FILED MAR. 2, 1903.

NO MODEL.

Fig-1-

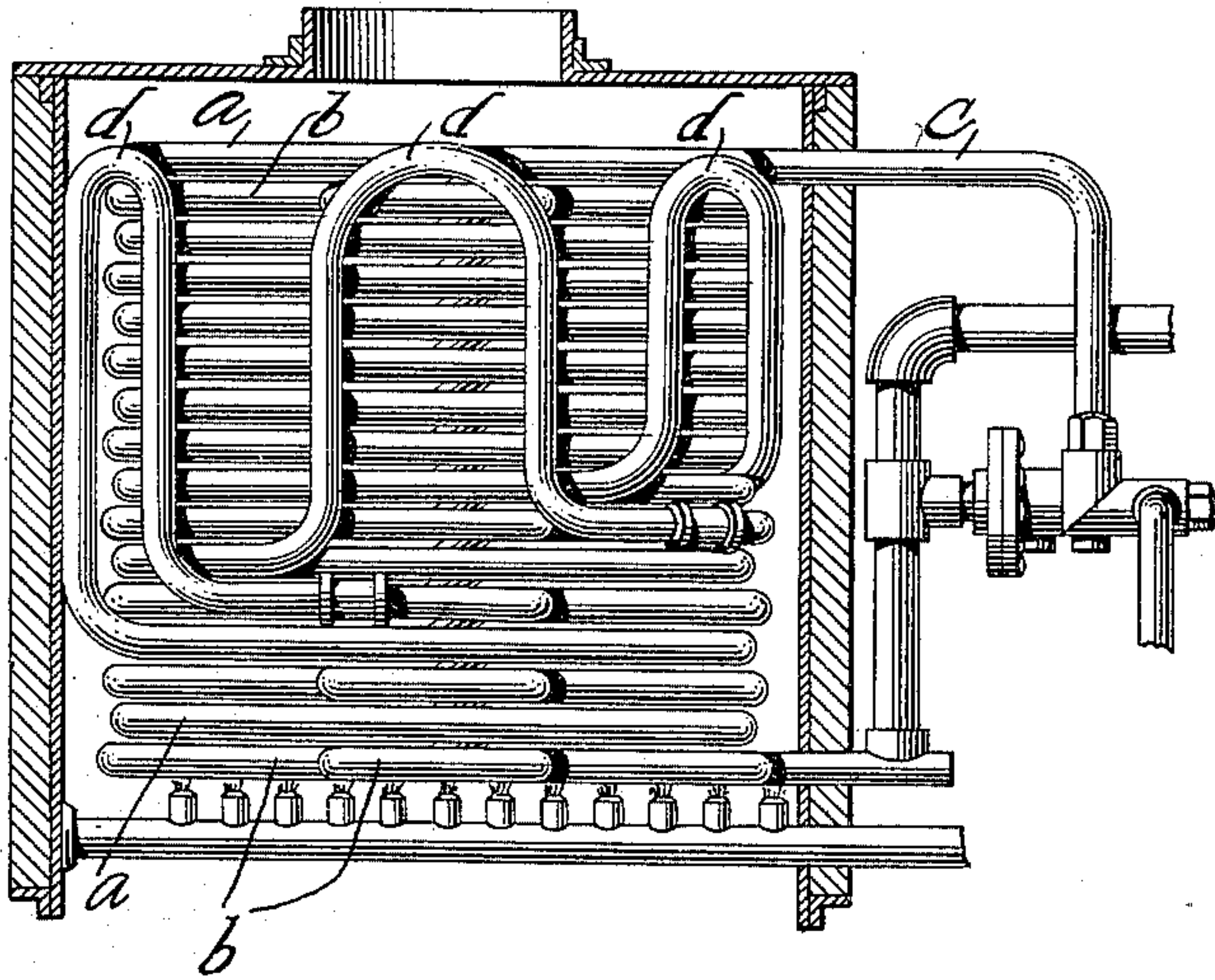
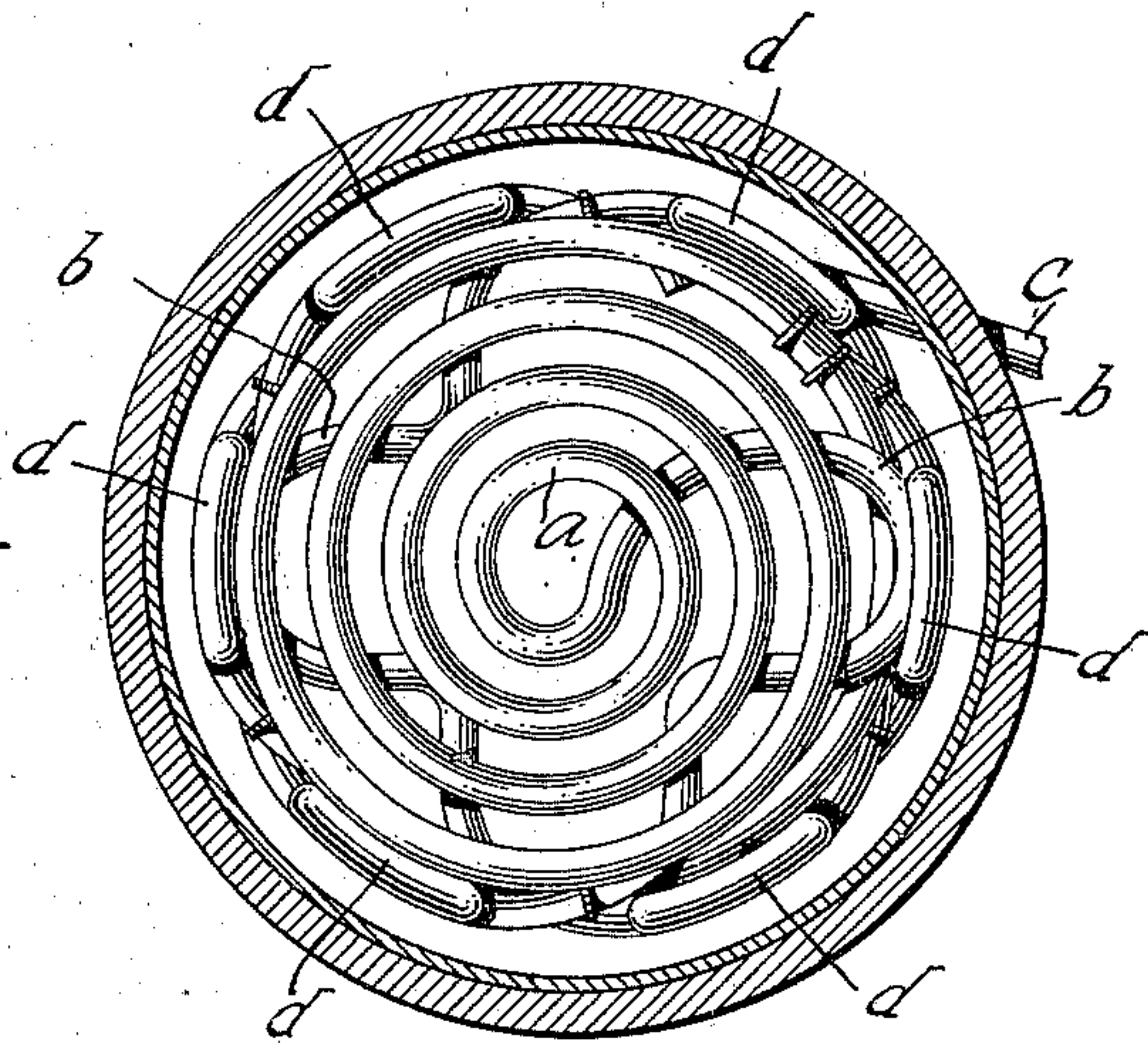


Fig-2-



Witnesses

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UNITED STATES PATENT OFFICE.

ROBERT W. BARTON, OF CHICAGO, ILLINOIS.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 731,657, dated June 23, 1903.

Application filed March 2, 1903. Serial No. 145,750. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. BARTON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Steam-Boilers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in steam-boilers of the type known as "flash-boilers;" and it consists in the construction and arrangement of devices hereinafter described and claimed.

This invention is an improvement on the steam-boiler described and claimed in Letters Patent of the United States No. 719,420, granted to me February 3, 1903.

In the device of my invention a quantity of water within the boiler commensurate with the amount of steam that is being involved is always assured.

The boiler is formed of water-tubes which are disposed in superposed coils, each layer being preferably flat. The water is supplied by a suitable feeder to the tubular coils and travels toward the bottom of the boiler, being forced to thus circulate by the feeder; and the object of my present invention is to provide improved means to retard the downward circulation of the water through the tubes of the boiler and to prevent its gravitation from a higher to a lower coil.

In the accompanying drawings, Figure 1 is a side elevation of a steam-boiler embodying my improvements. Fig. 2 is a top plan view of the same.

In the embodiment of my invention here

shown the superposed coils of the tube or tubes are disposed in alternate layers *a b*, each upper layer *a* being spiral in form and each lower layer *b* being of angular form. This construction and disposition of the coils may be varied or departed from within the scope of my invention, and I do not desire to limit myself in this particular. To prevent the water supplied at *c* from gravitating through the tubes, I provide certain of the layers or coils with vertical riser offsets *d*, disposed exteriorly of the general mass of coils and forming water-traps, the upper portions of which are all at the same level. These traps are formed at the points where the spiral layers *a* join the angular interposed spacer layers *b*, as shown.

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

1. A boiler of the class described, having alternately-disposed spiral coils and angularly-formed spacer-coils, and water-traps at the points where said coils communicate with each other.

2. A boiler of the class described, having alternately-disposed spiral coils, and angularly-formed spacer-coils, and water-traps, exterior of the mass of coils and at the points where the spiral and spacer coils communicate with each other.

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

ROBERT W. BARTON.

Witnesses:

MILLARD E. MOZY,
WM. A. THIRLWALL.