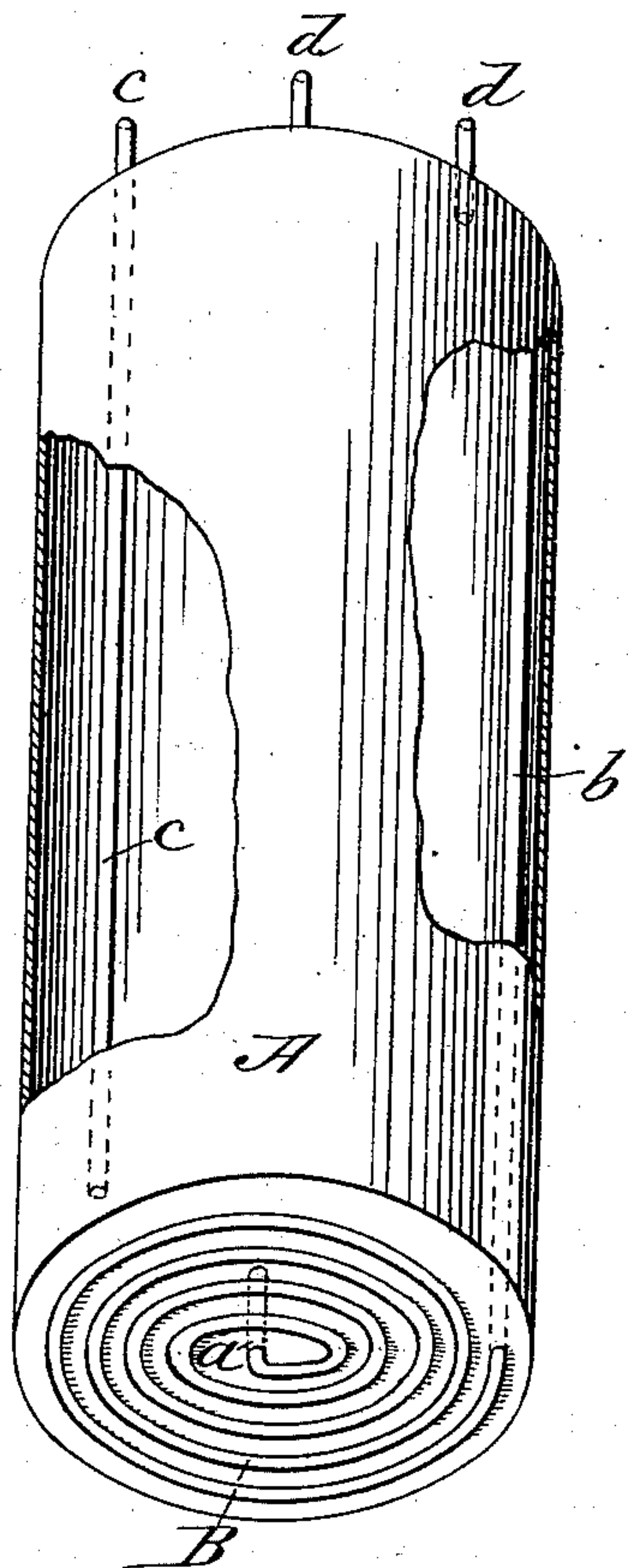


(No Model.)

Q. S. BACKUS.
BOILER.

No. 279,905.

Patented June 26, 1883.



Attest:

J. H. Schott
A. R. Brown.

Inventor:

Quincy S. Backus,
per J. H. Tasker atty.

UNITED STATES PATENT OFFICE.

QUIMBY S. BACKUS, OF WINCHENDON, MASSACHUSETTS.

BOILER.

SPECIFICATION forming part of Letters Patent No. 279,905, dated June 26, 1883.

Application filed March 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, QUIMBY S. BACKUS, a citizen of the United States, residing at Winchendon, in the county of Worcester and State of Massachusetts, 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to that class of boilers for domestic and other purposes in which the heat is applied directly to the bottom; and the invention consists in the combination, with a boiler, of a heating-coil attached to the bottom of said boiler and communicating therewith by a short arm and a long arm, said arms consisting of the opposite ends of the coiled pipe, and being passed directly through the bottom of the boiler, the short arm receiving water from the boiler to be heated, and the long arm passing up and delivering hot water at the top of the boiler, as hereinafter more fully described.

The annexed drawing represents a perspective view of my improved boiler, the shell being partly broken away to show the hot and cold water pipes.

A designates a boiler of the ordinary cylindrical form. It will be understood, however, that the shape of the boiler may be varied as desired. Beneath the boiler, and attached to its bottom in any convenient manner, is a coiled pipe, B, one end of which pierces the boiler at or near the center and forms a short arm, *a*, for the passage of water from the boiler and into the coil B to be heated. The outer end of the coiled pipe B pierces the bottom of the boiler at or near its side, or at any other

convenient point, and passes up within the boiler, forming a long arm or hot-water pipe, *b*, that delivers heated water at or near the top of the boiler. A cold-water pipe, *c*, enters the boiler at its top and is passed down through the boiler to near its bottom. The cold water thus delivered to the boiler passes through the short pipe or arm *a* into the coil B, to which heat is applied in any convenient manner, the heated water passing from the coil through the arm or pipe *b* and being discharged at or near the top of the boiler. A thorough circulation is thus established and the contents of the boiler rapidly heated. Hot water may thus be had for immediate use within a short time after heat is applied to the coil, and may be drawn off as required through the connections *d d* at the top of the boiler.

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

1. The combination, with a boiler having a cold-water pipe for delivering water near the bottom of said boiler, of a heating-coil arranged beneath the boiler, and having a short pipe entering the boiler, for the passage of water therefrom into said coil, and a long pipe passing through the boiler, for delivering hot water at its top, substantially as described.

2. The combination, with the boiler A, having cold-water pipe *c*, of the heating-coil B, arranged beneath the boiler and provided with pipes *a b*, entering said boiler, whereby water passing from the boiler into the coil is heated and discharged into the top of the boiler, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

QUIMBY S. BACKUS.

Witnesses:

FRANK B. SPALTER,
F. E. BACKUS.