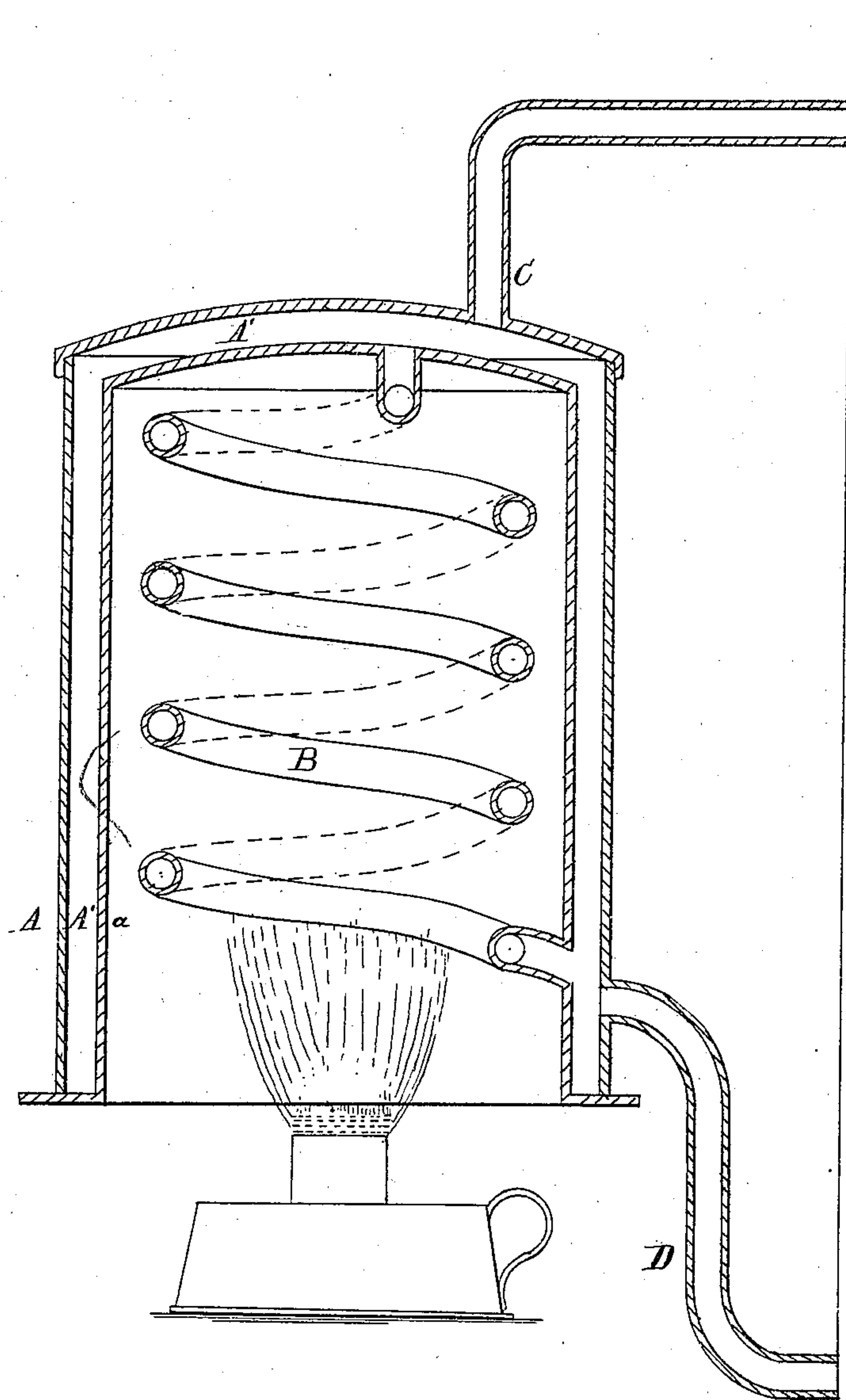


A. H. PERRY.

Improvement in Water-Heaters for Fire-Engines.

No. 132,488.

Patented Oct. 22, 1872.



WITNESSES.

Geo. Elpham.
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UNITED STATES PATENT OFFICE.

ALFRED H. PERRY, OF BOSTON, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO
DAVID SHARP, OF SOUTH BOSTON, MASSACHUSETTS.

IMPROVEMENT IN WATER-HEATERS FOR FIRE-ENGINES.

Specification forming part of Letters Patent No. **132,488**, dated October 22, 1872.

To all whom it may concern:

Be it known that I, ALFRED H. PERRY, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and valuable Improvement in Fire-Engine Heaters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

The figure of the drawing is a representation of a sectional view of my invention.

This invention has relation to steam fire-engines; and consists in the construction and novel arrangement of a heater designed to be used in connection with a gas-jet or other slight flame for the purpose of heating the water in the boiler while the engine is in its house. The object of this invention is to facilitate the getting up of steam by keeping the water in the boiler always at a temperature which may be easily raised to the boiling-point when the fire is kindled.

Referring to the accompanying drawing, A designates a double-walled cylinder, having an open bottom and provided with a spiral coil of pipe, B, located within the compass of the inner wall *a*, and communicating at the top and bottom with the space A' between the two walls, and the double top of the cylinder. A pipe, C, extends from the top of the cylinder or heater upward, and is connected to the steam-boiler, producing communication between the latter and the space A'. Another pipe, D, forms a means of communication between the lower part of the space A' and the

steam-boiler, at a point below the heater. When the boiler is filled with water the heater and its connecting-tubes are also filled. A jet of gas or a flame from a lamp is now brought to bear on the coil B. The water therein and in the space A' very soon becomes heated and begins to circulate, rising through the pipe C into the boiler, while its place is occupied by water rising through the pipe D. This circulation continues so long as the flame gives heat to the coil and interior of the heater, and thus keeps the water in the boiler at a degree of temperature from which it will rise to the boiling-point in two or three minutes after the torch is applied to the fire.

The heater need not be a permanent attachment to the boiler, but may be connected to and disconnected from it at will.

What I claim as new is--

The improved water-heater for steam fire-engines herein described, consisting of the double cylinders or casings A *a*, the inner cylinder *a* provided with a coil of pipe and surrounded by the outer cylinder, and thereby producing an annular water-space, A', and the outer cylinder connected above and below to the steam-boiler by means of the pipes C D, all constructed and arranged as shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ALFRED H. PERRY.

Witnesses:

WALLIS D. PACKARD,
FRANCIS S. DYER.