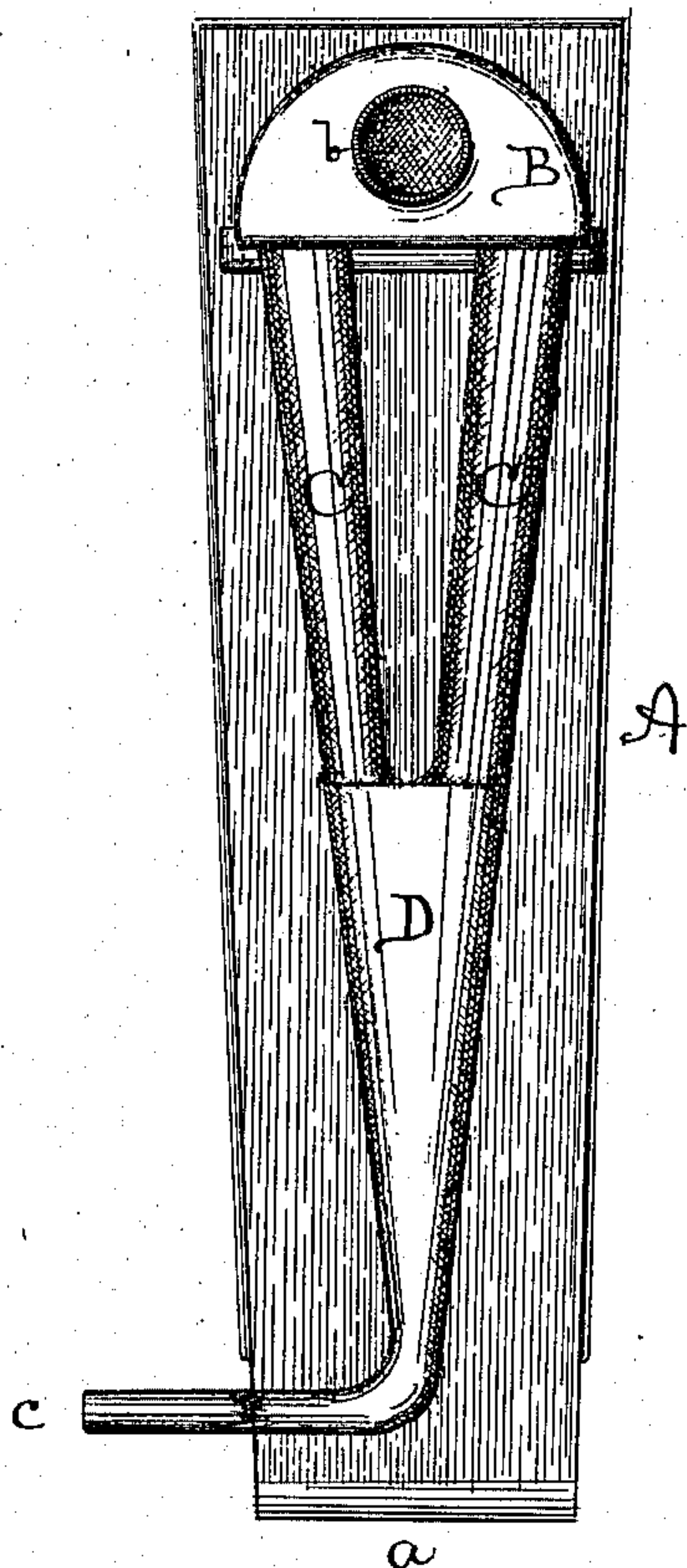


J. HARRISON & C. LOW.
CONDENSER FOR STILLS.

No. 103,326.

Patented May 24, 1870.



Witnesses:
Will. Winckel
Geo. C. Rothwell

Inventors:
John Harrison
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by *John D. Decker*
attorney.

United States Patent Office.

JOHN HARRISON AND CALEB LOW, OF FAWN GROVE, PENNSYLVANIA.

Letters Patent No. 103,326, dated May 24, 1870; antedated May 10, 1870.

IMPROVED CONDENSER FOR STILLs.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that we, JOHN HARRISON and CALEB Low, both of Fawn Grove, county of York and State of Pennsylvania, have invented a new and useful Improved Condenser for Stills; and we do hereby declare the following to be a full, clear, and exact description thereof, sufficient to enable others skilled in the art to which our invention appertains to make and use the same, reference being had to the accompanying drawing making part of this specification, and in which our invention is represented by a plan view.

This invention consists in the peculiar construction of condensers, as hereinafter described, whereby increased-cooling surface is obtained without the enlargement of the apparatus, and condensation is brought to a greater degree of perfection, and more expeditiously produced than heretofore.

Our invention will be fully understood from the following detailed description.

Referring to the drawing—

A represents a trough or box containing the condensing-tubes, which it is intended shall be completely submerged in water while the apparatus is in use, the trough being so arranged or situated that water may be allowed to flow through it in a constant stream, and escape at the end *a* which is lower than the side of the trough.

B is the head or receiver of the condenser, elevated slightly above the bottom of the trough, as shown, and having a large opening *b* in the top, into which enters a pipe from the still.

C C are two gradually-tapering pipes, extending from and communicating with the receiver B, and having a slight downward inclination, which facilitates the flow of the condensed vapors toward the point of discharge.

These pipes C C gradually approach each other and form the large pipe D, which becomes smaller, and inclines downward toward the lower end of the trough, where it is turned abruptly to one side and passes out at *c*, as the outlet of the condenser.

The condensation in this apparatus is as follows, viz:

Water is flowing through the trough A and entirely covering the pipes and part B. Vapors from the still enter and fill the receiver, then pass through the pipes C C and D, being, throughout the entire distance, cold, and gradually-diminishing surface of the submerged pipe which retard the flow, and thus, perfectly condense the vapor which is discharged in liquid form at the outlet *c*.

It is evident that condensing-surface is gained by the employment of the two pipes C C, instead of a single pipe moving twice the distance of each pipe C. Besides, the smaller the pipe the more thoroughly will its interior be cooled.

The object in making the pipes C C D tapering, is to constantly retard the passage of the vapors, and thereby afford ample time for their condensation. Again, if the pipe were of the same size throughout its length, the condensation would not probably be complete, because, after a portion of the vapors had been condensed, the remainder would pass out without contact with the pipe, and thus escape uncondensed.

The simplicity of our condenser will generally recommend it.

Having thus described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the receiver B, pipes C C and D, and outlet *c*, when constructed and arranged substantially as described.

2. In combination with the parts named in the last claim, the trough A, combined and arranged substantially as and for the purposes set forth.

The above signed by us this 13th day of September, 1869.

JOHN HARRISON.
CALEB LOW.

Witnesses:

DAVID E. WEBB,
RICHARD WEBB.