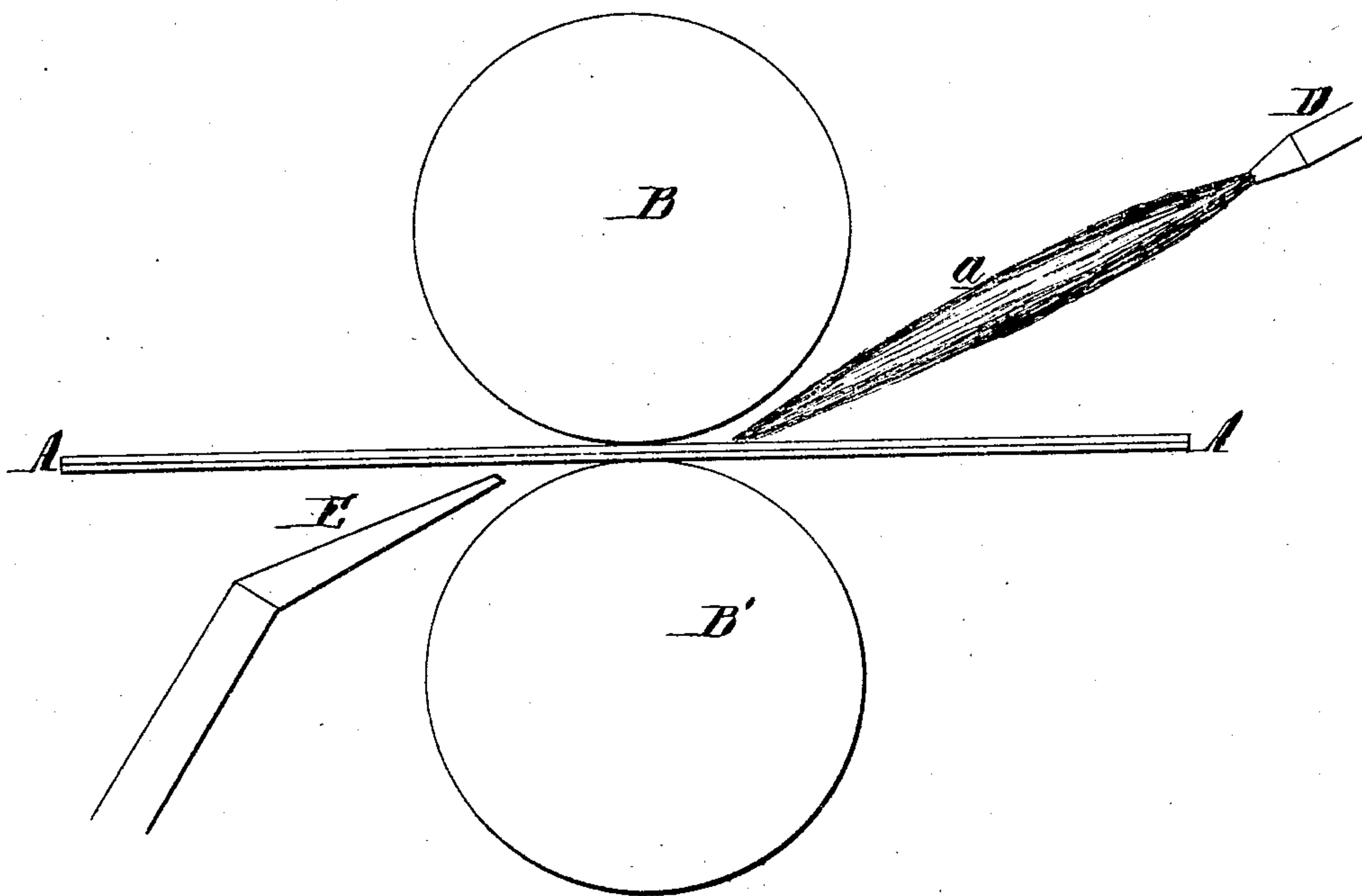


W. G. WARDEN.

Improvement in Soldering Tinned Plates.

No. 132,338.

Patented Oct. 15, 1872.



Witnesses.

W. F. Hutchinson

A. H. Norrie

William G. Warden

By his Atty.

Howson and Son

UNITED STATES PATENT OFFICE.

WILLIAM GRAY WARDEN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SOLDERING TINNED PLATES.

Specification forming part of Letters Patent No. **132,338**, dated October 15, 1872.

To all whom it may concern:

Be it known that I, WILLIAM GRAY WARDEN, of the city and county of Philadelphia, State of Pennsylvania, have invented an Improvement in Tinned Plates, of which the following is a specification:

The object of my invention is the ready and effectual soldering of tinned plates together, and this object I attain by passing the plates A to be soldered together between rollers B B', while a flame, *a*, from a nozzle, D, is caused to play on the plates and melt the coating of tin where the plates overlap each other or are interlocked, the joint being cooled at the opposite side of the rollers by a small jet of water from the nozzle E, as shown in the diagram.

More or less pressure should be imparted to the upper roller so that the joint may be compressed after its tinned surface has been melted by the flame, and the end of the nozzle E should be such that the water will flow into the joint of the plate as close as possible to the point where the upper roll is in contact with it. A proper flame for the purpose may be produced by burning a jet of common illumi-

nating-gas mixed with air, and it is advisable to make both nozzles D and E adjustable so that both the flame and water may be directed to the desired points.

If a simple joint has to be made, such as where one plate overlaps the other, the rollers may be plain; but they may be grooved to accord with interlocked and other joints.

It will be observed that the heating, pressure, and cooling occur in a very narrow compass, and hence that there can be no undue expansion and contraction to interfere with the correct and perfect formation of the joint.

I claim as my invention—

The within-described process of soldering tinned plates—that is, passing the plates between pressure-rolls while a flame plays on the joint on one side of the rolls and a jet of water on the opposite side, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM GRAY WARDEN.

Witnesses:

WM. A. STEEL,

JOHN K. RUPERTUS.