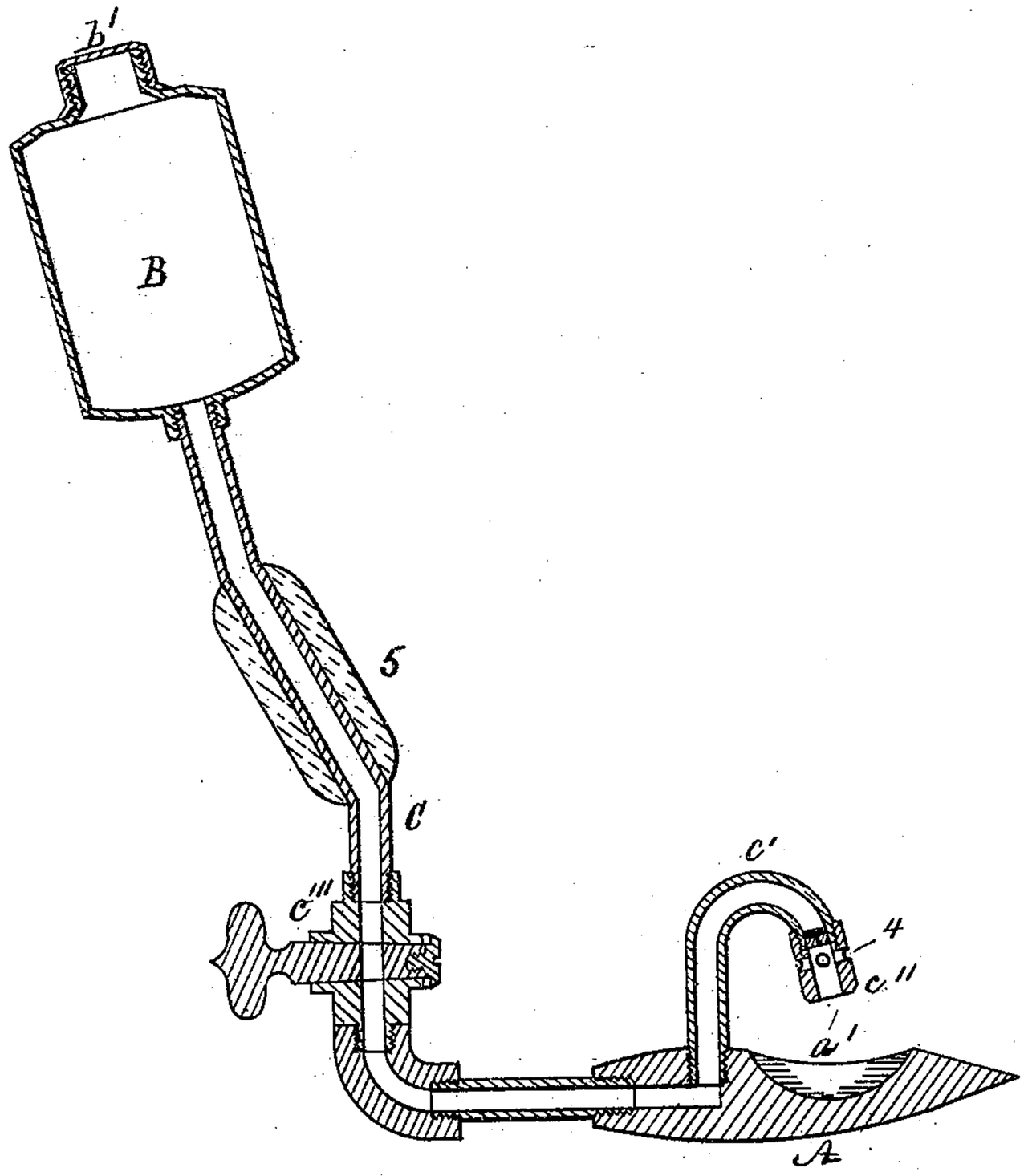
I. HAYES.

SOLDERING-MACHINE.

No. 178,634. Patented June 13, 1876.



Witnesses:

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ISAAC HAYES, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SOLDERING-MACHINES.

Specification forming part of Letters Patent No. **178,634**, dated June 13, 1876; application filed February 23, 1876.

To all whom it may concern:

Be it known that I, ISAAC HAYES, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Soldering Implements, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which a vertical central section of my improved implement is represented.

The object of my invention is to provide a soldering implement, for the use of tin-roofers, plumbers, and others requiring the use of a soldering implement, whereby the usual charcoal-furnace, heretofore used for heating the melting-point of the implement, as well as the flexible tube for conveying thereto combustible gas from a fixed gas-pipe or reservoir, are entirely dispensed with for the purpose, and a simple portable implement produced, which can be readily carried by hand to any part of a building, and used with perfect facility and safety.

Referring to the drawing, A is the solid metallic melting end of the implement; B, a small sheet metal reservoir for holding naphtha or benzine, and C a rigid metallic tube, which connects A and B firmly together.

The solid melting end A is made substantially in the form of that of the ordinary soldering-iron, viz: with a four-sided forward point, but is different, in that it has a concavity, a', in its upper side, and into this cavity the fluid is projected through a goose-neck bend, c', so that the fluid in the reservoir B will be projected by gravitation into said cavity a' when the said tube C is opened by the stop-cock c''', which is located between the parts A and B, as shown in the drawing.

A thimble, c'', having a series of small holes, 4, through its side is adjustably screwed to the open end of c', so that by adjusting the said thimble in directions upward and downward, alternately, the series of small holes 4 will be closed and opened accordingly.

At a short distance above the stop-cock c''' a wooden handle, 5, is fixed to the tube C, whereby a free and accurate manipulation of the implement is afforded.

The operation of my said soldering implement, in use, is as follows, viz: The reservoir having been supplied with naphtha, benzine, or other like hydrocarbon fluid, (the cock c''' being, of course, previously closed,) and the screw-cap b' then closed securely down over the mouth of B, (but not in an air-tight manner,) the operator takes the implement in hand by grasping the handle 5, and, holding the implement firmly, opens the stop-cock c''' and ignites the combustible fluid, which will immediately begin and continue to be projected through the thimble c'' from the goose-neck c' down into the concavity a', and consequently the impinging and deflecting flame will rapidly heat the melting end of A, and keep it in the heated condition during the flow of the combustible from the reservoir B.

The object of the thimble c'' is to prevent a blast of wind from blowing out the flame as it is ejected from the mouth of the goose-neck c', and at the same time to allow air to enter freely through the small holes 4 to support the combustion of the flame in the thimble, the quantity of the latter being controlled by means of the stop-cock c'''. The operator now uses the implement for soldering as long as he may desire, as it will be kept properly heated as long as the supply of the liquid hydrocarbon lasts in the reservoir; and, therefore, it will be readily understood, without further explanation, that the use of a charcoal-furnace for heating this soldering implement is entirely dispensed with, and consequently in the use of the latter, which may be termed a "self-heating" implement, can be readily carried about any building or on roofs without any liability therefrom, or from its use in soldering, to setting fire to the said premises—an accident of very frequent occurrence where the portable charcoal-furnaces are used to heat soldering-irons, to say nothing of the trouble and inconvenience of carrying about such furnaces, and keeping up the fire by the use of charcoal.

I am aware that a soldering apparatus, combining a soldering-iron with a combustion-chamber and a reservoir for a combustible liquid, so as to be portable, and thus dispense with the usual charcoal-furnace, has been used, as set forth in the Letters Patent No. 122,092, to Joseph Williams, dated December 19, 1871, and therefore I do not desire to claim, broadly,

a portable soldering implement, heated by the combustion of a hydrocarbon flowing from an attached fountain; but

I claim as my invention—

The soldering implement, consisting of the soldering-iron proper A, provided with the concavity a', in combination with the goose-neck c', provided with the adjustable thimble c'', the rigid tube C, adjustable cock c''', handle 5, and reservoir B, substantially as set forth and described.

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