

(No Model.)

2 Sheets—Sheet 1.

G. B. SNOW.  
SOLDERING IRON HEATER.

No. 417,107.

Patented Dec. 10, 1889.

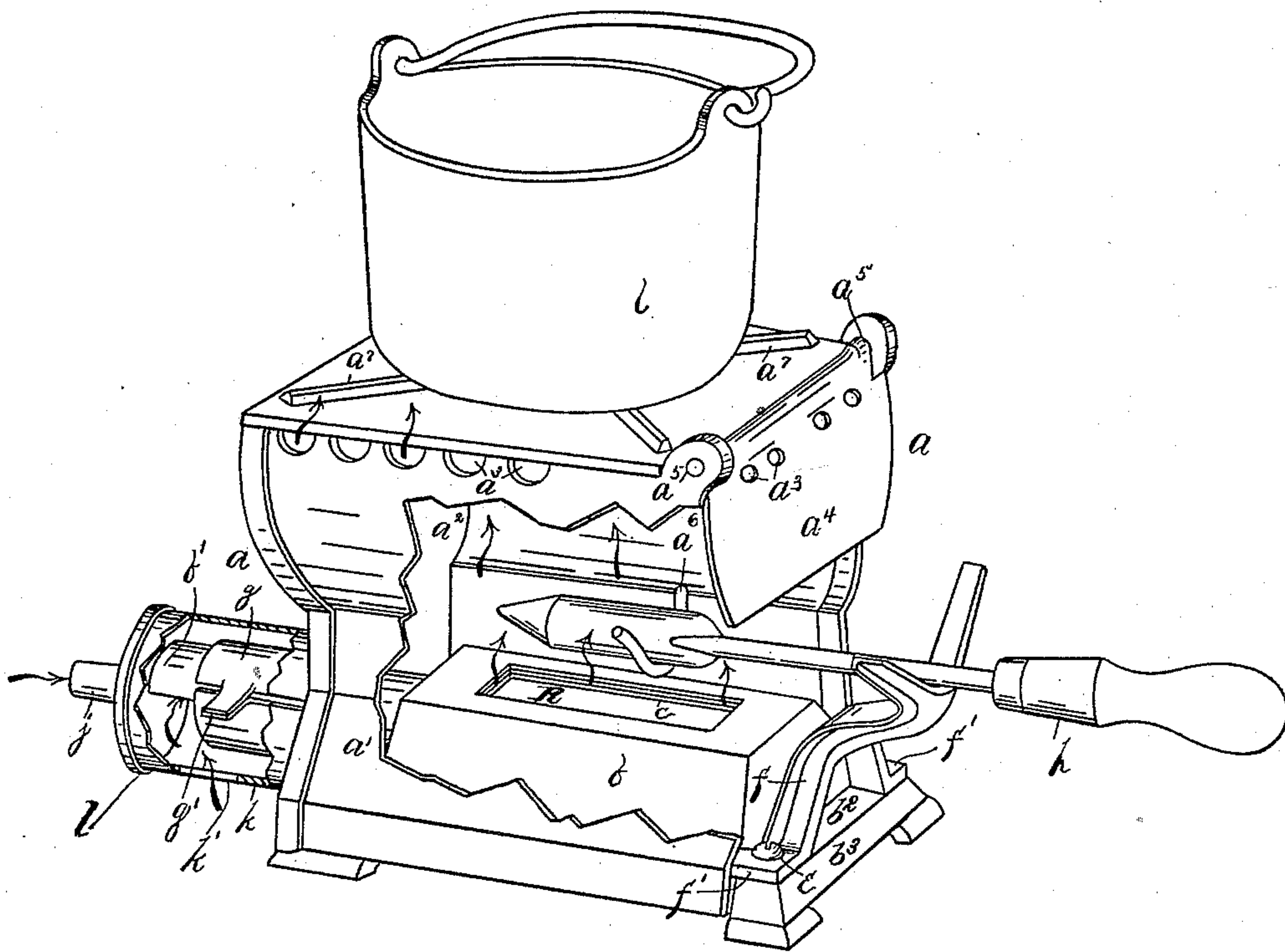


Fig. 1.

Witnesses:  
Otto Hoddick.  
William Gram Jr.

Inventor  
George B. Snow.

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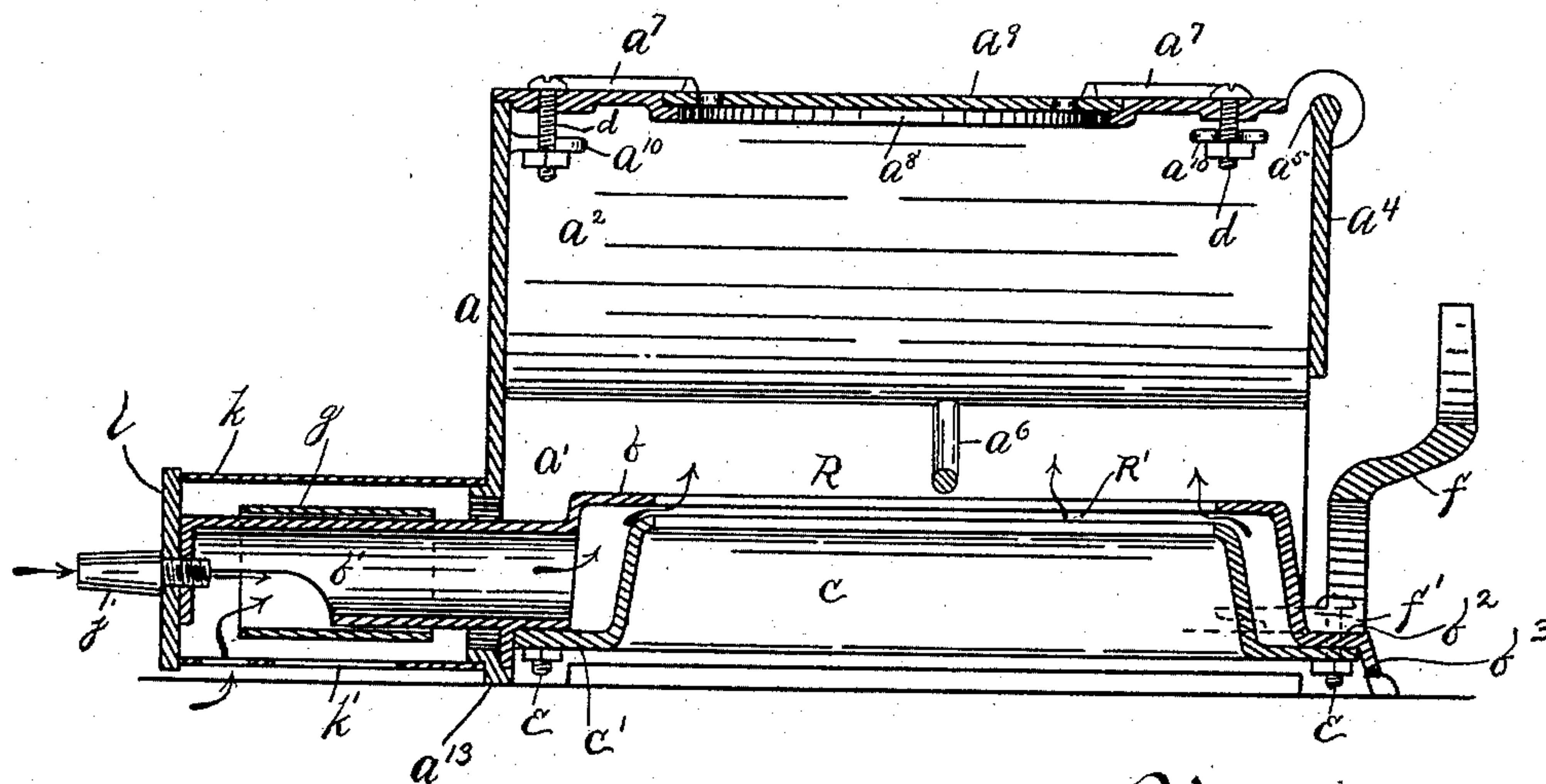


Fig. 2.

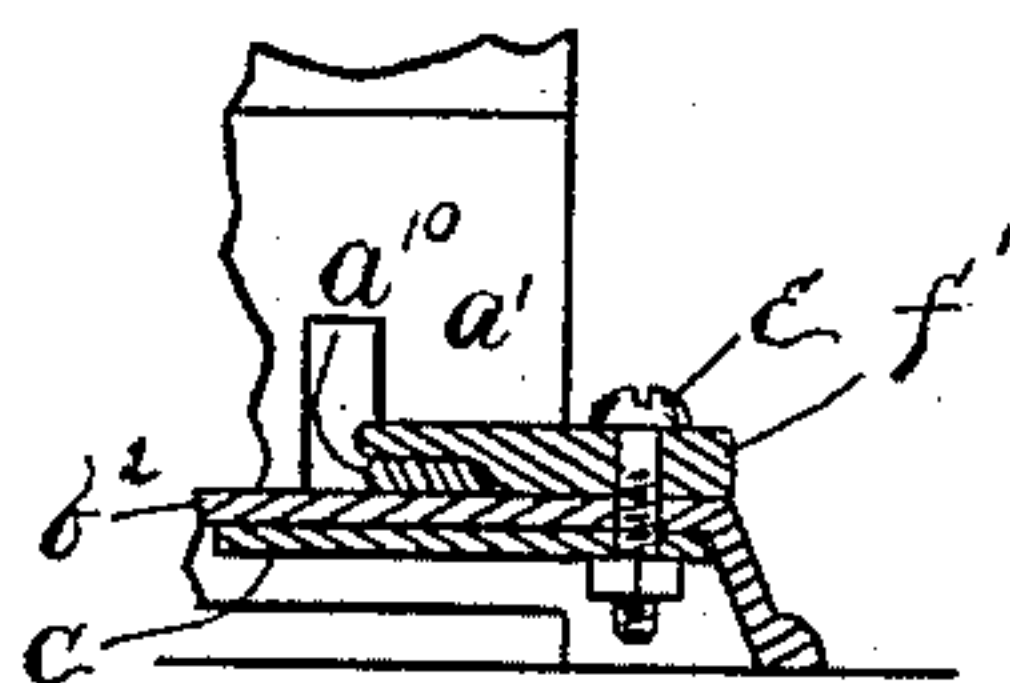


Fig. 3.

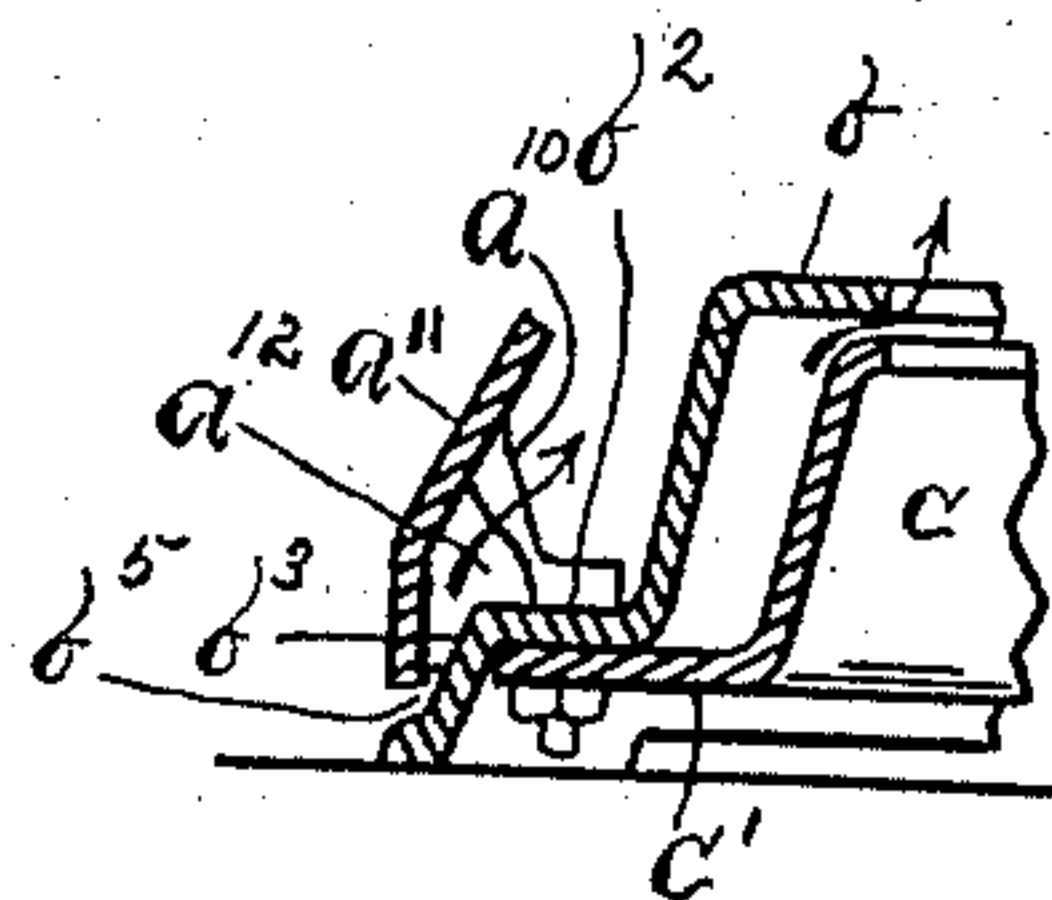


Fig. 4.

Witnesses:

Otto Hoddick.  
William Gram Jr.

Inventor

George B. Snow.



# UNITED STATES PATENT OFFICE.

GEORGE B. SNOW, OF BUFFALO, NEW YORK.

## SOLDERING-IRON HEATER.

SPECIFICATION forming part of Letters Patent No. 417,107, dated December 10, 1889.

Application filed September 24, 1888. Serial No. 286,167. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE B. SNOW, of the city of Buffalo, in the county of Erie and State of New York, have invented a new Gas-Heating Apparatus for Tinnerns' Soldering-Irons, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved apparatus, the side of the hood being broken away in order to show the construction of the burner. Fig. 2 is a vertical central longitudinal section thereof. Figs. 3 and 4 are detail sectional views of one corner of the device, taken at right angles to each other.

The object of this invention is to provide a heater for tinnerns' soldering-irons which will not be clogged and put out of order by the accidental dropping of solder and flux. Its object is also to protect the gas-burner from drafts, so that the flame will burn steadily even though the apparatus be exposed to a strong breeze.

It also consists in a simple and secure fastening by which the burner is connected to its hood, enabling the apparatus to be handled as one piece.

The burner *b* is a rectangular dish-shaped casting, with a flat flange *b*<sup>2</sup> running around its edge and a skirting *b*<sup>3</sup> projecting downward from the flange, the corners forming feet upon which the apparatus rests. At one end of the burner, and forming part thereof, is the usual mixing-tube *b'*, having at its end the gas-jet *j*. Inside the body of the burner *b* is a similar pyramidally-shaped casting *c*, which, by means of a flange *c'* upon its lower part, is bolted to the burner *b*, luting being used to make the joint between the two gas-tight. The top of the casting *c* does not meet the casting *b* except at its ends, and passages *R'* are thus formed on either side, by which the mixture of gas and air escapes into a rectangular space *R*, as denoted by the arrows. Two flat horizontal flames are thus formed, which meet as they rise and envelop the tinnerns' soldering-bit *h*.

A Y-shaped casting *f* is bolted to the corners of the burner *b* at the end opposite the mixing-tube, to form a support for the handle of the soldering-bit *h* while heating.

The end of the soldering-bit is supported by an arm *a*<sup>6</sup>, which extends from one side of the hood *a* to the other at about the same height as the supporting portion of the casting *f*, as shown in Fig. 1. The hood *a* is made up of four castings, forming the sides, back, and top, bolted together as stove-plates usually are. The lower edges of the sides *a''* (see Fig. 4) extend downward around the skirting *b*<sup>3</sup> of the burner *b*, a small air-space *b*<sup>5</sup> being left between the two. The hood *a* rests upon the flange *b*<sup>2</sup> by means of lugs or shoulders *a*<sup>10</sup> *a*<sup>12</sup>, cast upon the sides of the hood *a*. (See Fig. 4.) The lug *a*<sup>10</sup> is situated at the front corner of the hood *a* and opposite the foot *f* of the Y-shaped support, and they interlock, as shown in Fig. 3. A lug *a*<sup>13</sup> is formed at the lower edge of the back casting of the hood, which locks under the lower edge of the skirting *b*<sup>3</sup> of the burner, as will be seen by reference to Fig. 2. A forward movement of the hood *a* when it is placed upon the burner *b* will therefore lock and securely fasten it thereupon. It is retained by means of the sleeve *k* and back plate *l*, which are held by the shoulder of the jet *j* when it is screwed into the mixing-tube *b'*. The sleeve *k* is perforated at the lower part *k'* to allow air to pass into the mixing-tube. There is also a considerable space between the exterior of the mixing-tube and the back plate of the hood *a*, so that a portion of the air-supply can be drawn from the interior of the hood. This arrangement of the parts is designed so that air may be drawn into the mixing-tube from either the passage *k'* or from the exterior of the hood, air finding access thereto through the space *b*<sup>5</sup>, as shown by the arrow-mark in Fig. 4. The air-supply of the burner is thus fully protected from disturbance by outside drafts, and the flame will burn steadily, though the apparatus is placed where it is subjected to a strong breeze.

The sleeve *g*, which surrounds the mixing-tube *b'* and is adapted to slide thereon, is adapted to partially or wholly close the air-opening of the tube, and thereby regulate the air-supply.

Connection being made with a gas-main at *j*, the gas will pass into the mixing-tube *b'* carrying air with it. The mixture escapes at



the slits  $R'$  into the rectangular space  $R$ , and the two flames rise, meet, and surround the soldering-bit  $h$ . The flames being thin are quickly penetrated by air rising through the space  $R$ , and combustion is quickened and the resulting heat intensified, so that the soldering-bit is quickly heated. As the space  $R$  inside the burner is entirely open, any solder or flux dropping from the soldering-bit will pass through it to the bench, and it is manifestly impossible for the burner to become clogged, as is frequently the case when the gas issues from a wire-gauze surface directly under the soldering-bit. The waste heat rises to the top of the hood, which is thus heated and can be used for heating articles previously to soldering them or for melting lead or soft solder, a griddle  $a^9$  being provided which can be removed to allow the heat to pass around the pot or ladle containing the metal.

I claim as my invention—

1. A soldering-iron heater consisting of a burner having a central orifice therethrough

and adapted to emit the gas through horizontal passages around the edges of the central orifice, in combination with an inclosing hood carrying supports to sustain the soldering-iron above the orifice, substantially as described.

2. The combination, with the burner  $b$ , and the hood  $a$ , inclosing said burner, but leaving the annular air-space  $b^5$  between them, of the gas-mixing tube  $b'$ , communicating with the burner, and the perforated sleeve  $k$ , surrounding the said tube, substantially as described.

3. The combination, with the burner  $b$  and hood  $a$ , provided with fixed locking devices for limiting movement in one direction, of the sleeve  $k$ , end piece  $l$ , and jet  $j$ , adapted to prevent the separation of the said burner and hood in the opposite direction, substantially as described.

GEORGE B. SNOW.

Witnesses:

WILLIAM GRAM, Jr.,  
JOHN E. ROBIE.