G. O. SANDERSON.

Soldering Furnace.

No. 77,921. Patented May 12, 1868.

Fig. 2

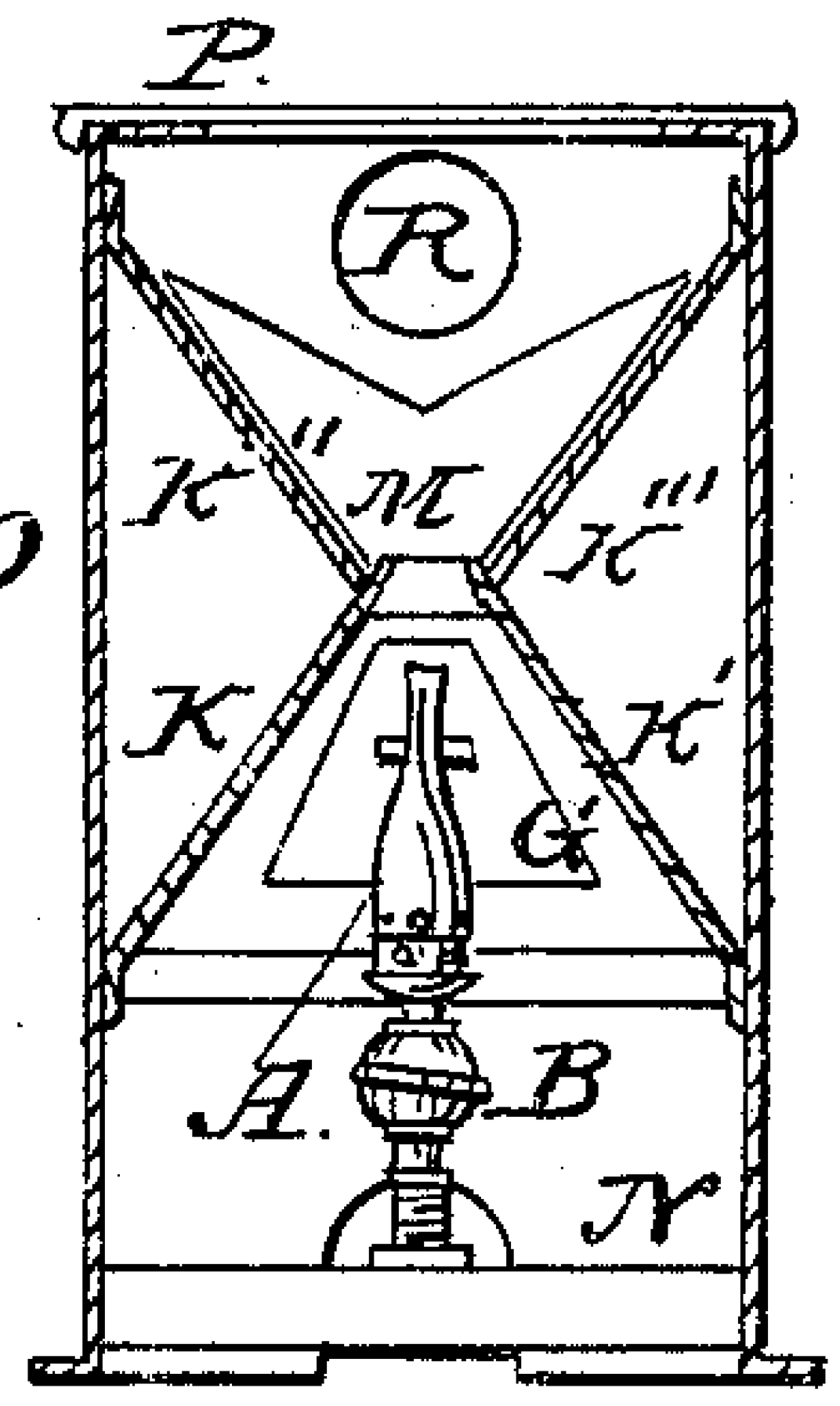


Fig. 1.

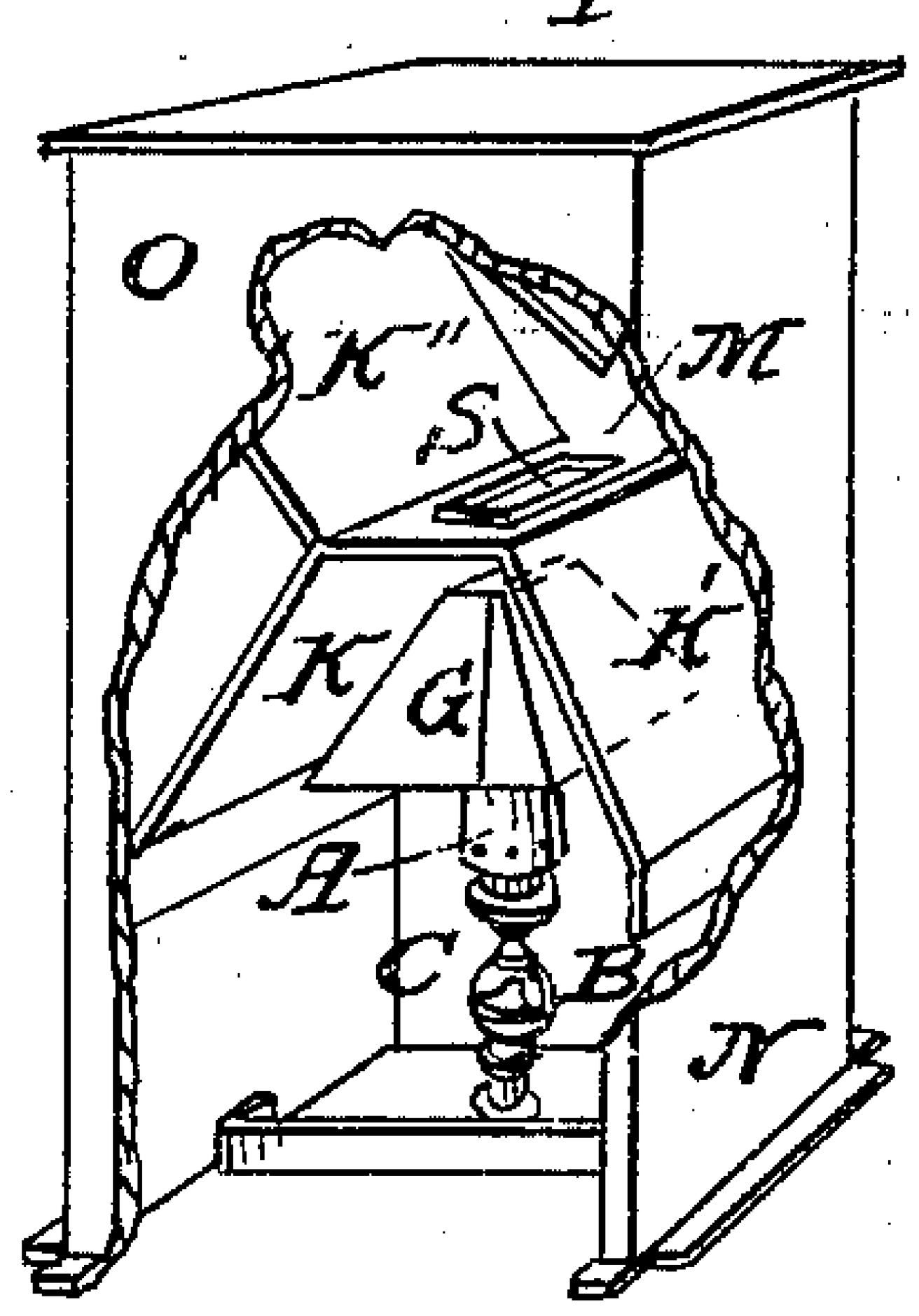


Fig. 4.

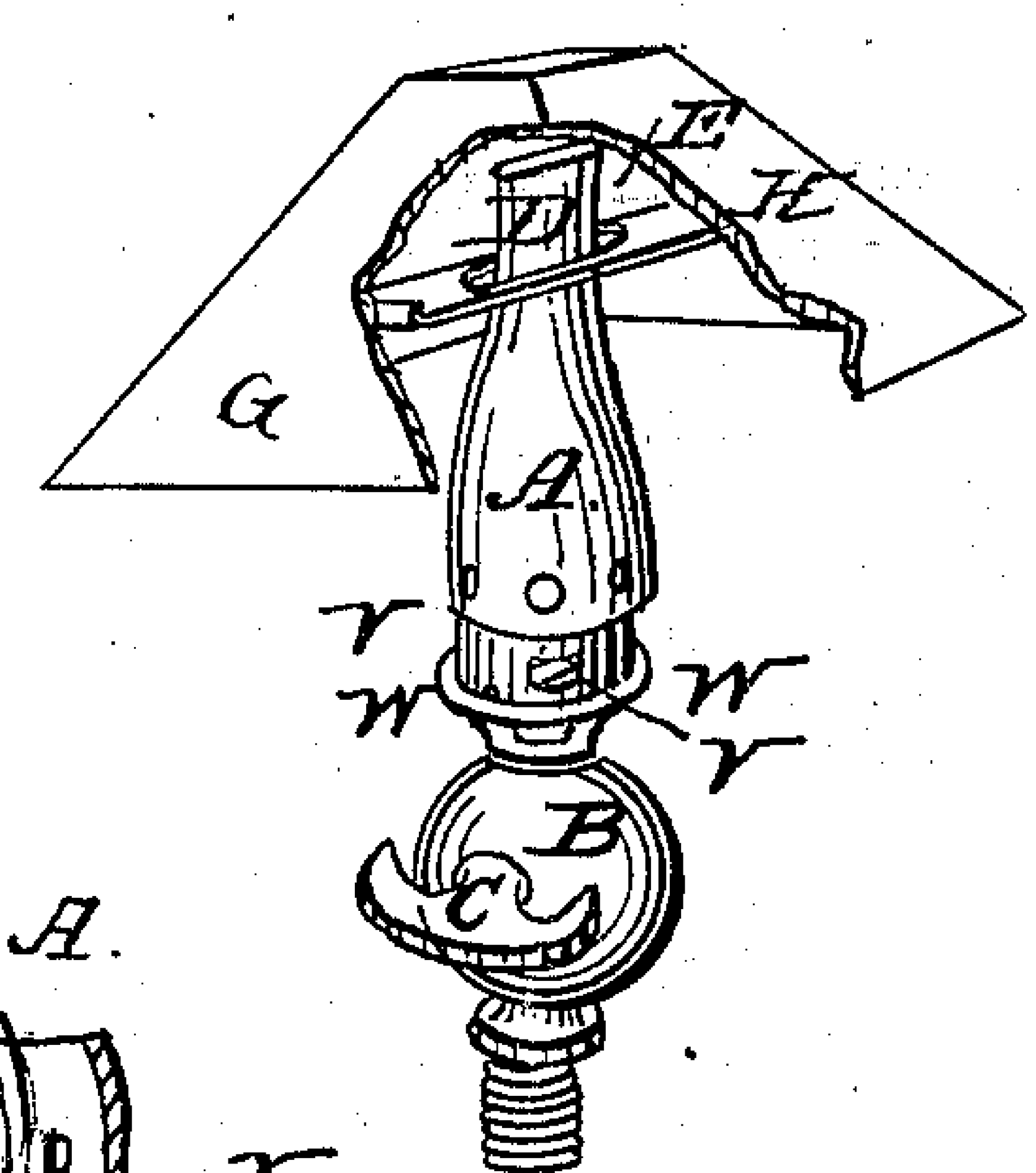


Fig. 3.

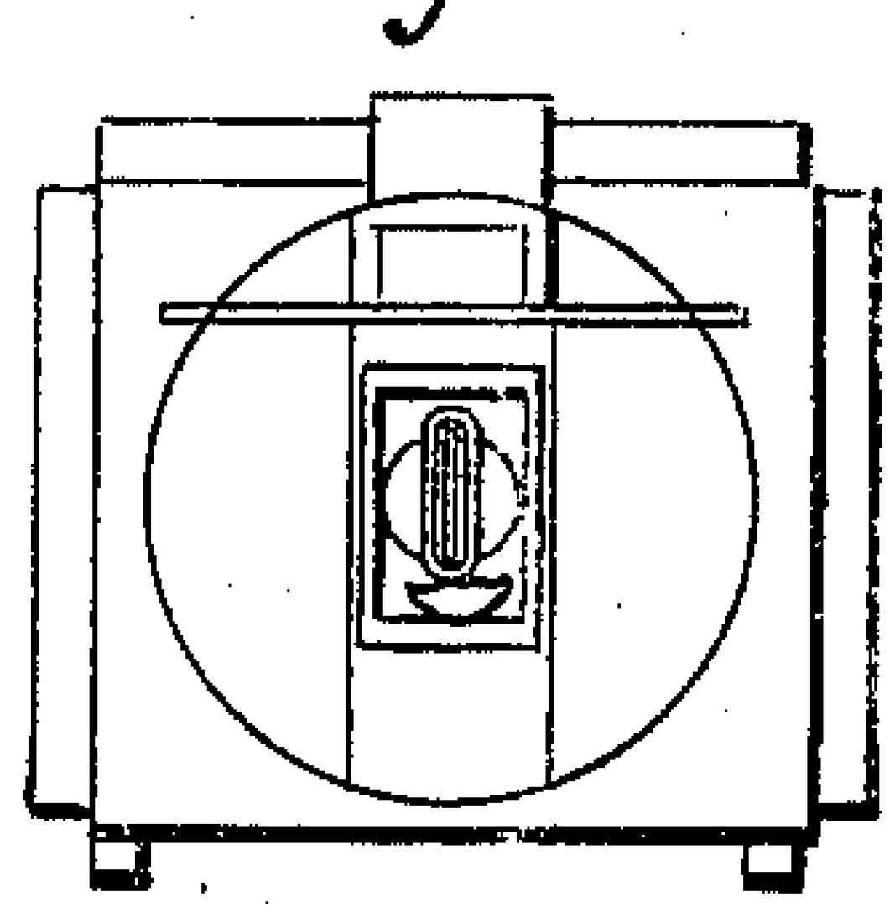
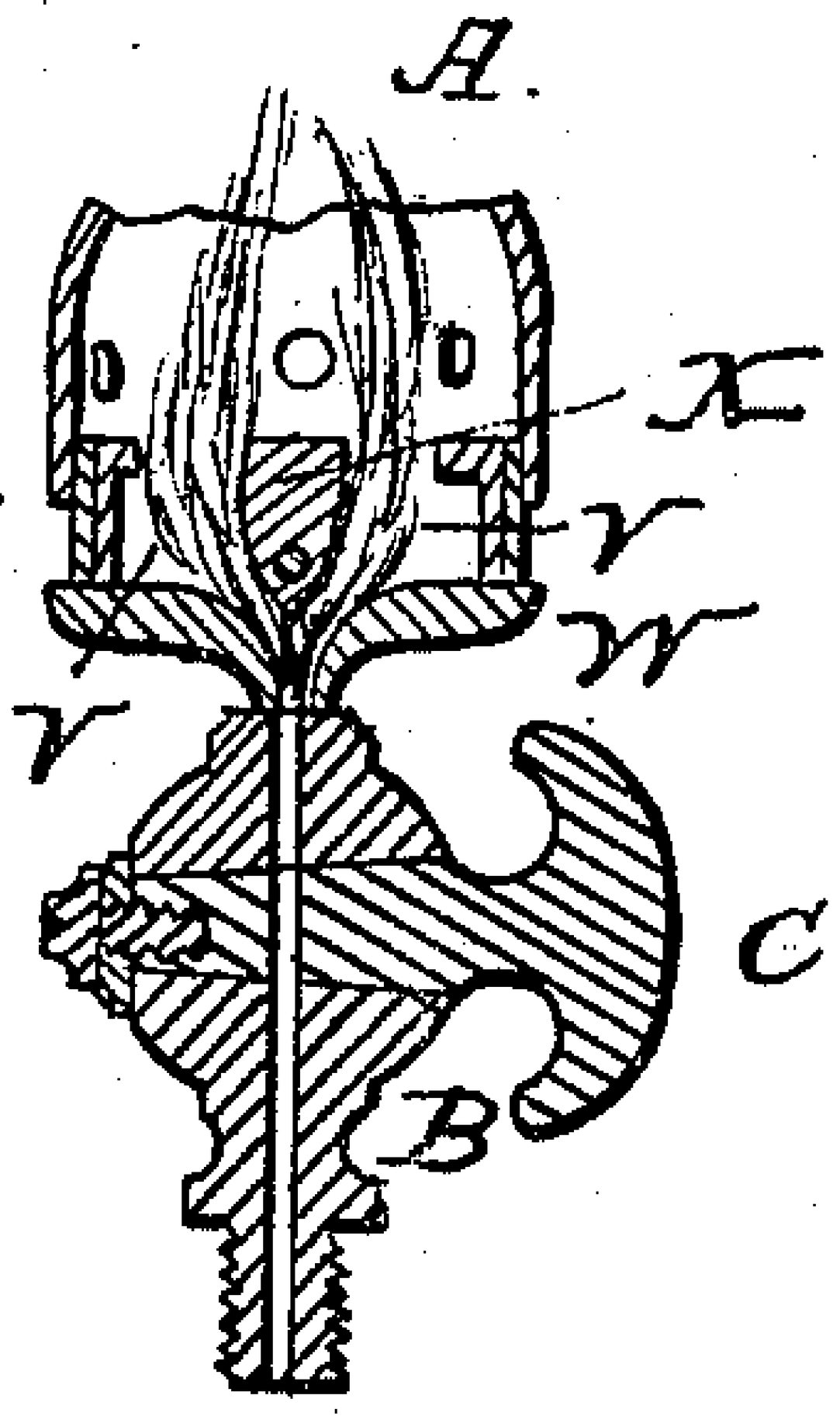


Fig 5



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Letters Patent No. 77,921, *dated May* 12, 1868.

IMPROVEMENT IN SOLDERING-FURNACES.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, GEORGE O. SANDERSON, of Boston, in the county of Suffolk, and State of Massachusetts, have invented certain new and useful Improvements in Tinners' Furnaces; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in combining a peculiarly-constructed Bunsen burner with an air-deflector and an improved portable furnace, the whole, when combined, serving as a furnace for heating tinners' and plumbers' soldering-coppers, or for heating glue for cabinet-makers, &c., &c.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and use.

In the drawings—

Figure 1 represents a perspective view of my improved tinners' furnace. In this sketch, part of the casing is omitted, so as to show the interior construction.

Figure 2 is a vertical section,

Figure 3 is a plan, and

Figure 4 is a perspective view of the burner with the air-deflector attached.

Figure 5 is a vertical section of my Bunsen burner.

I construct my improved furnace as follows: The case, N O, figs. 1 and 2, is made of sheet metal, in form represented in the drawings. The top of this case has a large circular opening, as shown in fig. 3, which may be closed by the sliding cover, P, figs. 1 and 2. R, fig. 2, is a small circular opening in the rear of the case, through which the products of combustion may be taken. K K′, figs. 1 and 2, are metallic plates, made fast to the sides of the case, and so inclined as to concentrate the heat, and cause it to pass through the opening S, fig. 1. K″ K‴ are two similar plates of metal, attached in the case, and arranged as shown in the drawings, so as to form a heating-chamber. M, figs. 1 and 2, is a fork-shaped piece of metal, upon which any small article, a soldering-copper for instance, may be placed to be heated.

The front of the case has two openings, one near the top, through which to place the article to be heated, and one near the bottom, to admit air to supply the flame. Neither of the openings is shown in the drawings, as the form and size are not essential parts of my invention.

B, figs. 4 and 5, represents a gas-cock, having attached to its upper end a ring, W W, constructed as shown in the drawings, so as to form a support for the tube A D E.

My Bunsen burner differs from all others in the form of the tube A D E. It is customary to make this tube cylindrical, or slightly conical, but I make it as shown in fig. 4, that is, having a circular base and a flattened upper end, D E, so that it admits of having a large mixing-chamber, and yet discharge but a thin sheet of gas at its upper end, so that the flame cannot "snap down."

All who are conversant with the Bunsen burners, are aware that the tubes in which the gas and air are mixed must be long in proportion to their diameters, or they will not work; hence, when a large flame is required, it has been customary to place a number of small tubes side by side. By my invention I obviate this necessity, for by simply flattening the upper end of the tube, the tube itself may be quite large and yet work perfectly.

The air-openings V V′, figs. 4 and 5, may be made as shown in the drawings.

X, fig. 5, is a small rod, placed immediately over the orifice of the gas-cock, so that the escaping gas will be deflected and diffused, and thus more thoroughly mixed with the inflowing air.

G, fig. 4, is a pyramidal-shaped deflector, attached to the tube A D E by the cross-bar H.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The flattened tube A D E, when made and arranged substantially as described, and for the purpose set forth.

2. The combination, as well as the arrangement, of a Bunsen burner with a deflector, G, the pieces K K′ K″ K‴, and the case N O, made substantially as described, and for the purpose set forth.

GEO. O. SANDERSON.

Witnesses

A. HUN BERRY,

F. G. PARKER.