W. D. BROOKS.

Soldering-Machine.

No. 161,200. Patented March 23, 1875.

Fig. 1

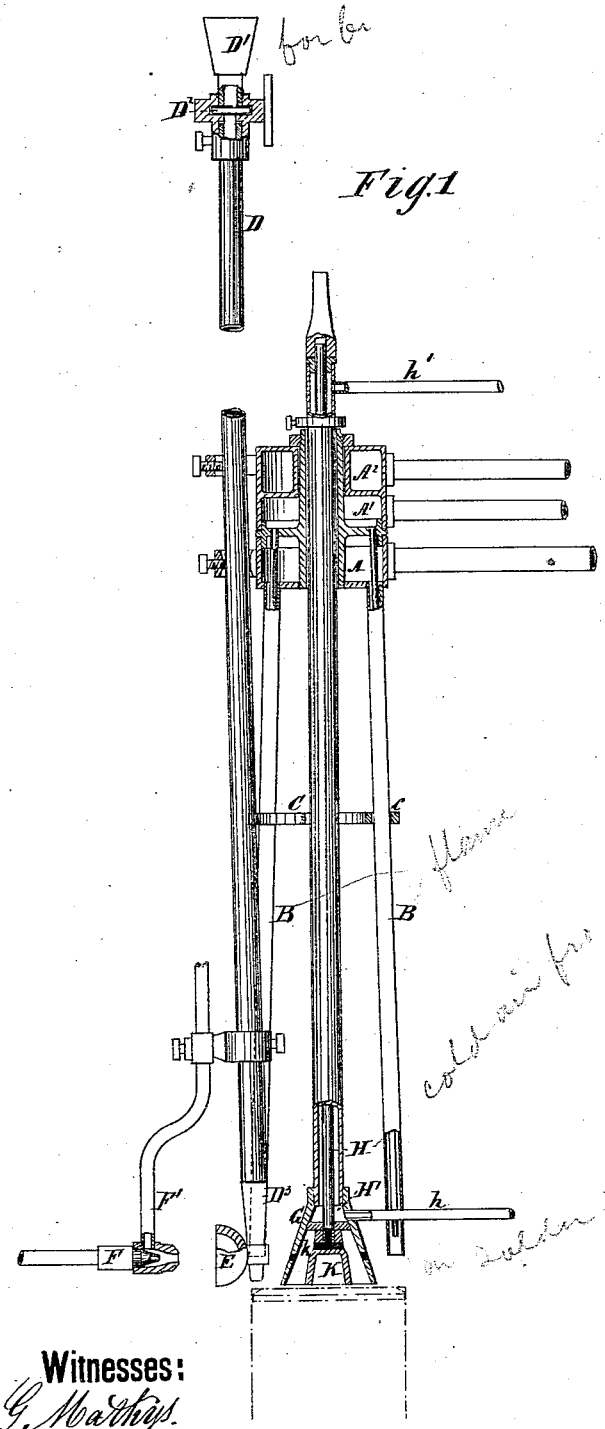


Fig. 2.

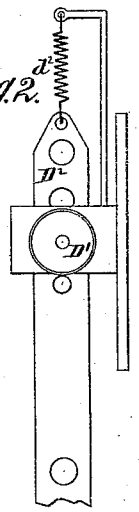
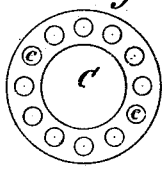


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM D. BROOKS, OF BALTIMORE, MARYLAND, ASSIGNOR TO MARY C. BROOKS AND GEORGE D. BROOKS, OF SAME PLACE.

IMPROVEMENT IN SOLDERING-MACHINES.

Specification forming part of Letters Patent No. **161,200**, dated March 23, 1875; application filed March 15, 1875.

To all whom it may concern:

Be it known that I, WILLIAM D. BROOKS, of Baltimore city, in the State of Maryland, have invented a new and Improved Soldering-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a side elevation, partly broken out. Fig. 2 is a top view of the slide-valve. Fig. 3 is a plan view of the sliding ring C.

The invention relates to means whereby the caps and heads of cans may be soldered in a rapid, thorough, and economical manner.

These means will first be fully described, and then clearly pointed out in the claims.

A A^1 A^2 represent, respectively, the gas, air, and water chambers of a soldering-machine, and B the pipes from whose free ends the flames are impinged on the solder and powdered rosin in the seam that is to be soldered. In order to adjust these to two, three, or more different sizes of can, I employ a ring, *c*, having holes *c*, through which the pipes are inserted. These pipes B are more or less elastic, and on them the ring *c* is made to slide, being held at any point of adjustment by the tension of the pipes.

On the upper end of pipe D is a funnel, D^1, in whose throat is located a slide-valve, D^2, that is closed by a spring, d^2, and opened by a cord, extending within reach of a workman below. By this means the bit of solder for each can being placed in the funnel is readily dropped, at the exact moment desired, into the tapering nozzle D^3, to which is attached a bowl, E, into which is impinged the flame of a blow-pipe, F F′. The solder is thus instantaneously melted, and caused to flow into the seam or joint, and further liquefied by the impinging flame of the burners. G is a cap-protector, apertured on the side to allow the escape of heated air. In the upper part of this protector I fasten a tube, H, opening thereinto, and connected with a bellows or other air-forcing apparatus, whereby cold air may be conveniently forced upon the cap to prevent it from injury. In practice, I find that this protector G will itself gradually become heated, and more or less heat the incoming air. Thus the injury of cap from heat will not be entirely precluded. To cool the protector G, as well as the entering air, I make a chamber, H′, in its neck, leading water thereto by a pipe, *h*, and carrying it off by another pipe, *h′*, that surrounds the air-injecting pipe.

Experiment has shown that this improvement achieves fully the object, and seems to leave naught wanting in that regard.

When there is a hole in the center of cap, and still further to cool the protector G, I use a hollow plug, K, with side apertures *k*, that cause the cooling air to strike the sides of protector. This plug is provided with a shank, that screws into the protector.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The elastic pipes B, and apertured sliding ring C *c*, combined as described, to allow of adjustment to different sizes of can.

2. The combination, with nozzle D^3, of the bowl E, and blow-pipe F F′, arranged as described, to fuse the solder quickly, and cause it to flow through said nozzle upon the joint of can.

3. The air-injecting tube H, protector G, and water-chamber H′, combined, to keep the cap from injury by the heat.

4. The hollow plug K, having side apertures *k*, combined with the air-injecting tube H, to force the air out upon the inner face of protector G, in the manner and for the purpose set forth.

WM. D. BROOKS.

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