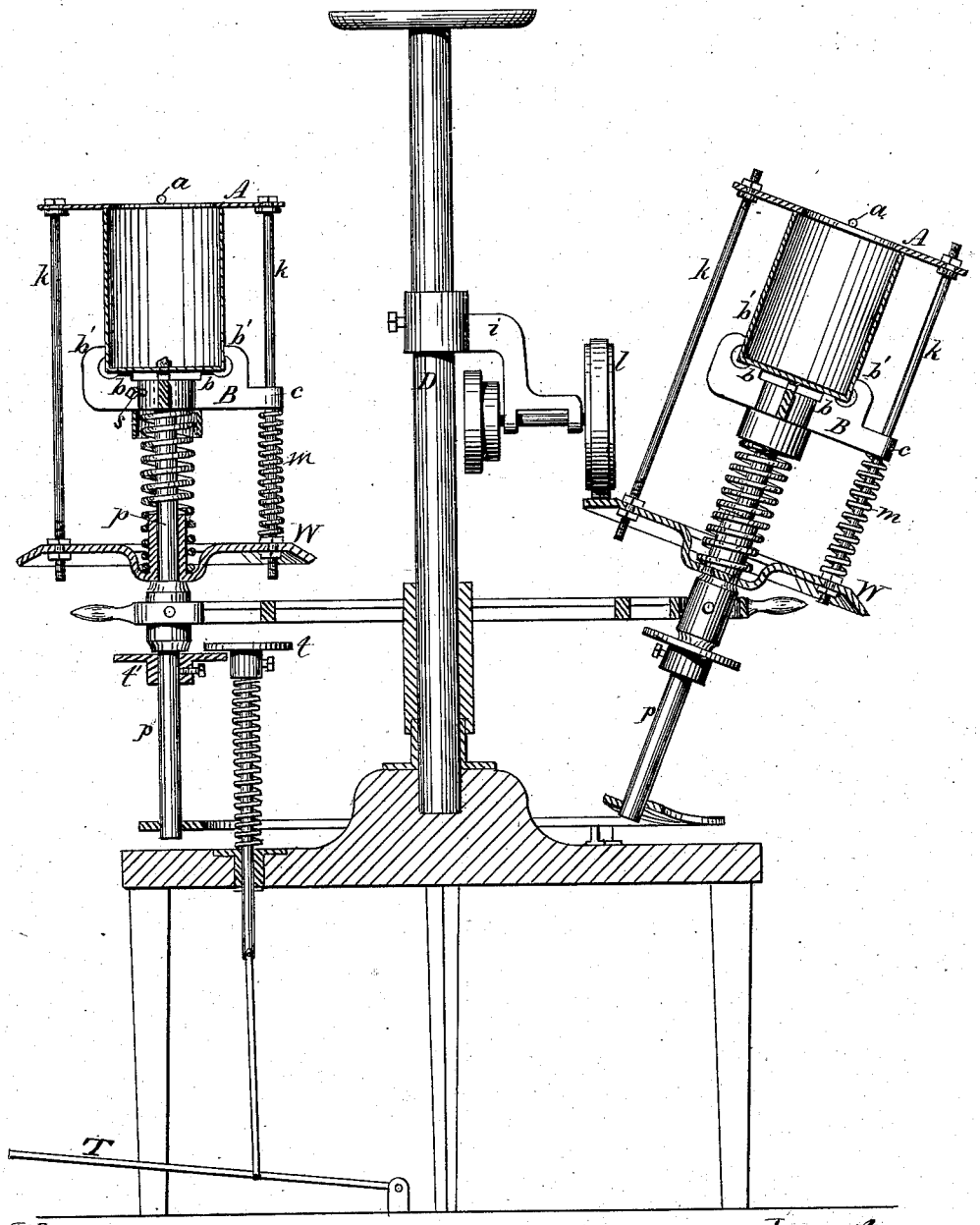
W. D. BROOKS & R. GORNALL.

SOLDERING-MACHINE.

No. 192,813. Patented July 10, 1877.



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UNITED STATES PATENT OFFICE.

WILLIAM D. BROOKS AND RICHARD GORNALL, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN SOLDERING-MACHINES.

Specification forming part of Letters Patent No. **192,813**, dated July 10, 1877; application filed February 20, 1877.

To all whom it may concern:

Be it known that we, WILLIAM D. BROOKS and RICHARD GORNALL, of Baltimore, in the county of Baltimore and State of Maryland, have invented a new and useful Improvement in Soldering-Machines; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which our invention is represented by a vertical section.

This invention, which is an improvement upon the machine described in Letters Patent No. 184,755, granted to us November 28, A. D. 1876, consists, first, in the employment of an indicator for indicating to the skilled operator the position of the drop of solder within the can; secondly, in substituting a new and improved device instead of the disk for holding the cans; thirdly, in a new mode of applying the springs which hold the can in place on the disk; fourthly, in a new mode of applying the friction-wheel to the large wheel; and, fifthly, in the combination of devices employed for unlocking and releasing the cans.

The first feature of our invention is carried into practice, as here represented, by attaching an indicating-knob, *a*, or other equivalent mark, upon the top plate A of the can-holder, opposite to the point where the solder is to be dropped, in order to indicate to the unskilled attendant the proper point within the can at which he is to drop the solder, and to indicate to the eye of the skilled attendant the point within the can where his soldering-iron, if inserted, will at once come in contact with the solder that has been dropped therein by the other attendant. This simple device greatly facilitates the labor of the skilled operator, and prevents him from accidentally burning the metal of the can with the hot iron while feeling around the seam to find the solder.

The second part of our invention is designed to prevent the metal of the disk from too rapidly cooling the edge of the can; and it consists in supporting the can upon a spider, B, provided with small projections *b b*, upon which the can is seated, and with fingers or vertical projections *b' b'*, which prevent the can from moving laterally out of place. The spider thus constructed may be attached to the vertical post *p* by means of a set-screw, *s*, so as to be readily removed for the purpose of substituting one of different size or form.

The third part of our invention consists in applying the springs *m*, which lock the can in place, to the side rods *k k*, instead of applying them to the central post or shaft *p*, as heretofore. In this case the spiders are made with an extension or extensions, *c*, through which the side rods pass, and the springs are arranged around the two opposite side rods, so as to rest on the upper surface of the large wheel W, and press upward with equal force against the extensions *c c*. The springs may thus be made lighter than before, and the can and holder will be more steadily guided and held.

In the fourth part of our invention, we support the driving friction-wheel *l* by a bracket, *i*, adjustably attached to the central standard D, the whole being arranged in such a position that as the can is inclined the upper edge of the large wheel W will be brought against the lower edge of the friction-wheel *l*, as clearly shown in the drawing. This mode of rotating the can at the moment of soldering we find preferable in practice to that heretofore employed by us.

In carrying into practice the fifth part of our invention, we omit the cam heretofore used for raising the side rods and top plate, and thus unlocking and liberating the can, and we accomplish the same object more conveniently and with less expenditure of power by means of a treadle, T, connected by a rod with a disk, *t*, arranged to bear down upon a disk, *t'*, attached to the rod *p*, which supports the spider B. The rod *p* slides vertically within the casting which forms the shaft of wheel W, as shown, and when the operator's foot is taken from the treadle the springs *m* return it and the spider to their respective positions for holding the can. A hand-lever or other known equivalent for a treadle, as a substitute therefor, will of course come within the limits of our invention.

Having thus described our invention, we claim as new—

1. The combination of an indicator with the can-holding mechanism, for the purpose herein set forth.

2. The spider B, constructed with supporting-points *b*, upon which the can is held, and with projections *b'*, which prevent the can from lateral displacement, substantially as described.

3. The combination of the spider B, constructed with the points *b* and fingers *b'*, and the side rods *k*, springs *m*, and lateral extensions *c* of the spider, substantially as described.

4. The large wheel W, and means for inclining it during its movement around the central standard, in combination with the friction-wheel *l*, supported from said standard, so as to bear upon the upper edge of the large wheel when inclined, substantially as described.

5. The combination of the treadle T with the can-holder or spider B and the springs *m*, mounted on the side rods *k*, for raising the holder, whereby the depression of the treadle depresses the can-holder on its rotary support, and removes the can from the plate A, which meanwhile remains stationary, as herein set forth.

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