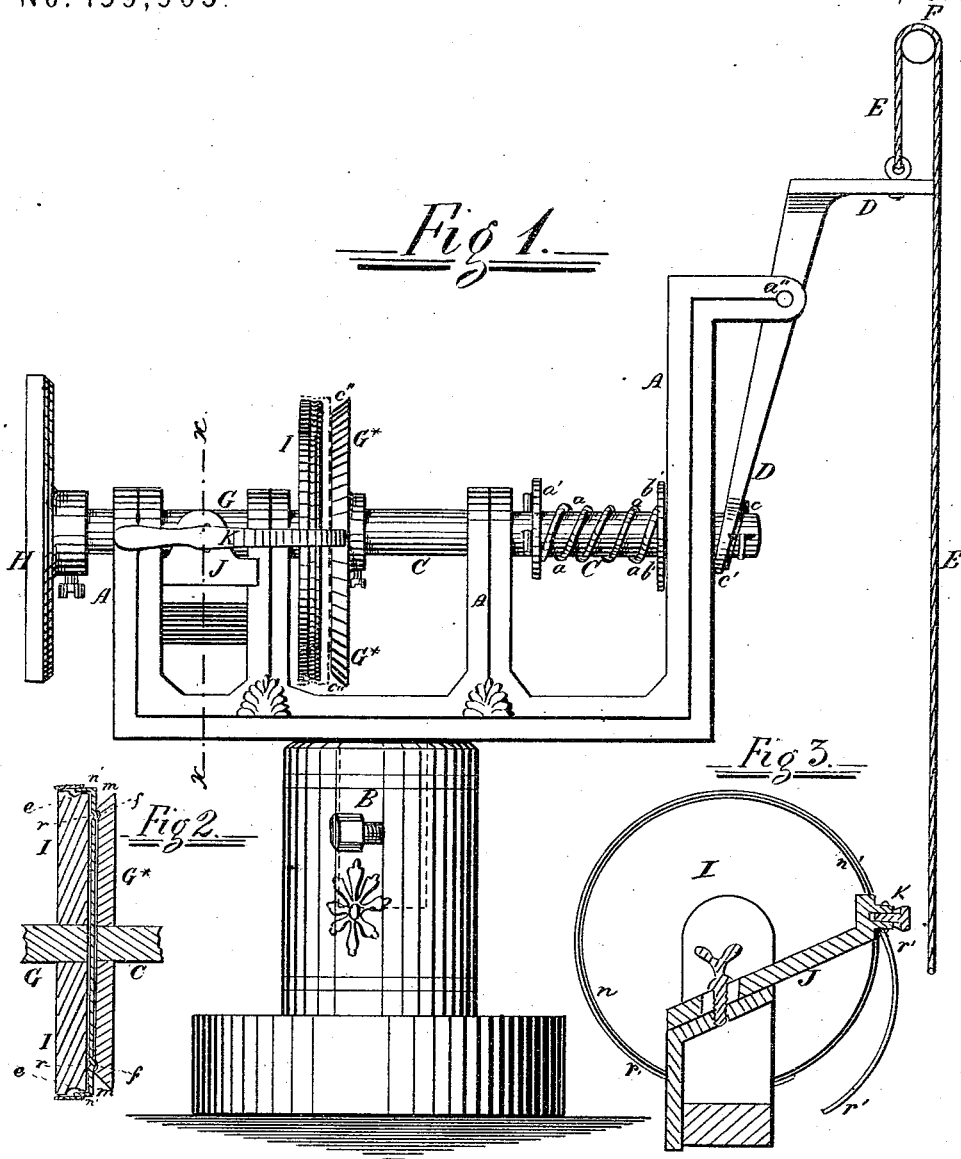


G. H. CHINNOCK.

Machine for Soldering Sheet-Metal Lids.

No. 159,903.

Patented Feb. 16, 1875.



Witnesses.

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# UNITED STATES PATENT OFFICE.

GEORGE H. CHINNOCK, OF BROOKLYN, NEW YORK, ASSIGNOR TO LEONARD RICHARDSON, OF SAME PLACE.

## IMPROVEMENT IN MACHINES FOR SOLDERING SHEET-METAL LIDS.

Specification forming part of Letters Patent No. **159,903**, dated February 16, 1875; application filed November 6, 1874.

*To all whom it may concern:*

Be it known that I, GEORGE H. CHINNOCK, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Apparatus for Soldering the Lids of Sheet-Metal Cans, of which the following is a specification:

This invention consists in certain novel combinations of mechanical devices, whereby the operation of soldering the circumferential strips or rims to the lids of sheet-metal cans is very greatly facilitated, a more satisfactory joint being formed by the solder, and the work being done much more rapidly and conveniently than has been found practicable with the appliances hitherto in use.

Figure 1 is a side view of an apparatus constructed for operation according to my invention. Fig. 2 is a longitudinal section, taken in a vertical plane of a portion of the same; and Fig. 3 is a transverse vertical sectional view, taken in the line *xx* of Fig. 1.

The supporting-frame A is constructed with suitable bearings for the working-parts, hereinafter described, and, preferably, is socketed in a base or pedestal, B. C is a sliding shaft, forced inward by a spiral spring, *a*, coiled around it with one end pushing upon an annular stop, *a'*, and the other against the frame A at *b'*. D is a lever pivoted at *a''*, and the forked lower end *c'* of which straddles the outer end of the shaft C, and is held thereto by a pin, *c*. A cord, E, extends from the upper arm of the lever D over a pulley, F, and thence descends to a treadle, or any other suitable means of pulling downward upon the cord, such downward movement of the cord actuating the lever to draw the shaft C outward; the purpose of which will presently herein appear. Upon the inner end of this shaft C is a circular disk, G\*, the axis of which is coincident with that of the shaft, and the circumference of which may be beveled outward, as shown at *c''*. In the outer face of this disk, concentric with its axis, is a groove, *f*. G is a shaft, arranged in line with the shaft C, but incapable of longitudinal movement. Upon the outermost extremity of this shaft G is a pulley, H, whereby rotary movement is given thereto. Upon its inner end is a circular disk, I, with

its circumferential surface of cylindrical contour, and its face or inner surface flat. In the disk I is a peripheral groove, *e*. At J is a fixed rest, which carries at its outwardly-projecting extremity a pressure-spring, K, that projects past and presses inward upon the periphery of the disk I.

In the use of the apparatus, the sliding shaft C is drawn outward, and thus affords room for placing the lid to be soldered upon the disk I, as indicated in dotted outline in Fig. 1, and shown more fully at *m* in Fig. 2, the flange *n'* of the lid resting upon the circumference of the disk I, with its edge projecting to or over the groove *e* therein. The shaft C is then released, whereupon the spring *a* forcing the same inward brings the disk G\* against the lid, thereby clamping the latter firmly, but with an elastic pressure, between the two disks, with the head *r* of the lid resting in the groove *f* in the disk G\*. The end of the strip or rim *r'*, to be soldered to the flange *n'*, being provided of the requisite size and shape, is then thrust under the presser-spring K, and partially overlapping the flange *n'*, to which, by a drop of solder, it is secured. This done, a rotary motion (from any suitable source of power) is given to the shaft G through the pulley H, and, as a consequence, the lid *m* and the strip *r'* are both carried around, the former being pressed upon the latter during such revolution by the presser-spring K. While the lid, with the strip pressed to its flange, as just described, is being thus rotated, the soldering-iron with, of course, the requisite quantity and kind of solder, is applied at the upper side, to solder the strip to the aforesaid flange, the groove *e* being partially underneath the line of junction, and permitting the edge of the strip to be pressed snug upon and over the edge of the flange, and preventing the distribution of the solder inward to the opposite edge of the strip, which would interfere with the subsequent use of the lid as provided with the said strip. The groove *f*, in the face of the disk G\*, by receiving the head in the back or outer side of the lid, is enabled to hold the latter more firmly than if a merely plain surface were held by the clamping action of the two disks.

It will be seen that the strip is soldered to the lid during a single revolution of the latter; also, that the soldered or finished lid may be readily removed to make way for another to be operated upon in like manner by simply causing the sliding shaft C to bring the disk G\* away from the disk I; also, that the presser-spring, by holding the strip down to its place on the flange, contributes greatly to the ease and thoroughness with which the soldering operation is performed; also, that the machine, so far as the rotation of the disk is concerned, may be operated by hand as well as power, if desired; also, that the lever, pulley, and cord may be made to actuate the sliding shaft by simply pulling upon the latter without the use of the treadle hereinbefore indicated; also, that, when desired, the said lever, pulley, and cord may be substituted by other well-known mechanical devices for actuating the sliding shaft C without affecting the principle of my invention; my said invention, moreover, being more particularly applicable to the work of soldering the strips to flanged covers of cans made according to the invention patented by me November 19, 1872; but is capable of application to any analogous

purposes, or to work of similar character. Of course the disks I G\* are removable from their respective shafts, in order that disks of different sizes may be used, as occasion may require.

What I claim as my invention is—

1. The combination of the disks G\* I, arranged to clamp the flanged lid between them and the presser-spring K, arranged to press the strip upon or against the flange of the lid clamped as set forth during the rotation of the same and during the operation of soldering, substantially as and for the purpose specified.

2. The peripheral groove e, formed in the disk I, arranged to act in conjunction with the disk G\* and presser-spring K, the whole combined for operation, substantially as and for the purpose set forth.

3. The groove f, arranged in the face of the disk G\*, acting in conjunction with the disk I, the whole combined for operation, substantially as and for the purpose set forth.

GEO. H. CHLNNOCK.

Witnesses:

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