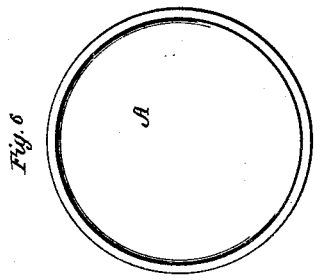
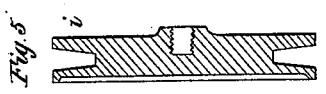
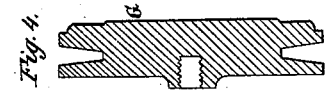
# D. P. Newell.

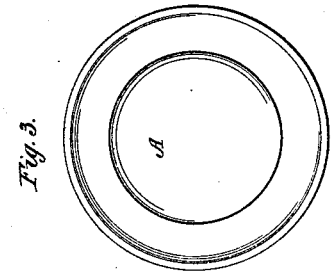
## Soldering Machine.

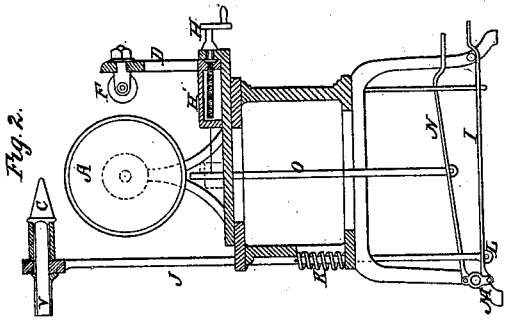
No. 99,103. Patented Jan. 25, 1870.

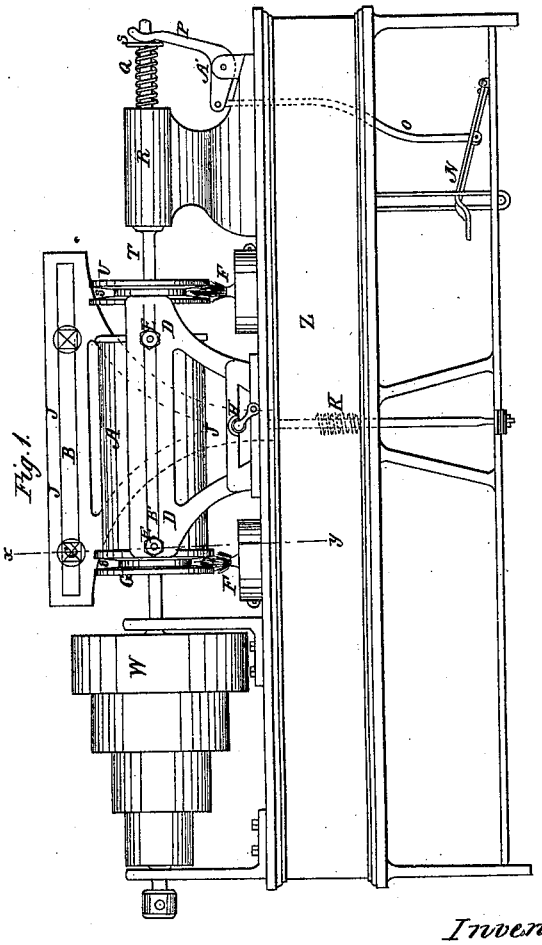



Witnesses:
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# United States Patent Office.

DANIEL P. NEWELL, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF, SOLMON WASHBURN, AND CHARLES R. OTIS, OF SAME PLACE.

*Letters Patent No.* 99,103, *dated January* 25, 1870.

## IMPROVEMENT IN SOLDERING-MACHINES.

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

*To whom it may concern:*

Be it known that I, DANIEL P. NEWELL, of the city of Chicago, in the county of Cook, and State of Illinois, have invented certain new and useful Improvements in Machines for Soldering; and I do hereby declare that the following is a clear and exact description of the same, reference being had to the accompanying drawings, and to the figures and references marked thereon, forming and making a part of this specification.

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

Figure 1 is a front upright view of my soldering-machine.

Figure 2 is an end view, taken through the line *x y* of fig. 1.

Figure 4 is a vertical sectional view of one of the chucks I use.

Figure 5 is a vertical sectional view of another chuck I use.

Figure 3 is a view of one end of a can, and

Figure 6 is another view of an end of a can I solder by this improvement.

The nature and object of my invention are to construct a machine whereby soldering cans and other similar cylindrical forms can be soldered with economy and rapidity.

My soldering-machine resembles, in many respects, an ordinary lathe, in which—

Z is the bed, supported by legs resting upon the floor.

W is a nest of pulleys, fastened to the axle, which supports the chuck G.

T is an axle, revolving in the box R, and supports the chuck U.

Q is a coiled spring, wrapped around the axle T, and between the end of the box R and the rest S, which is fastened permanently to the axle T.

P is a bent lever, the upper end of which works against the rest S, and it is supported upon a fulcrum at the angle A′ in the lever.

O is a connecting-rod between the bent lever P and the foot-lever N, thus making the lever N of the second order.

The chucks G and U are made with a deep recess in the rim, as shown at S′ S′, for the purpose of facilitating heating them.

J J is a frame, which holds two soldering-irons, C C. These soldering-irons are made hollow, as shown at V, fig. 2.

B is a slot in the frame J J, in which is fastened, with set-screws, the soldering-irons C C.

The frame J J extends down in a single post at the rear of the machine, and the lower end is joined to the foot-lever I, at L, between the fulcrum M and the end where the power is supplied.

K is a coiled spring around the post of the frame J J, and between a pivot in the post and the middle beam of the frame.

D D is a frame, supporting the two crimping-wheels E E.

B′ is a slot in the frame D D.

H is a screw, working in the block H′, which supports the frame D. This screw is worked by a handle, as illustrated.

F F are lamps located under the chucks G and U.

The operation of my invention is as follows:

The body or circular part of the can is first made before it is placed in the machine. The ends, or top and bottom of the can are formed in a press, in the ordinary way, and are then placed in position on the body of the can. The can is then placed in the lathe, with one end next to the chuck G. The foot is placed on the lever N, which drives the chuck U against the other end of the can, and firmly holds it in position. Motion is communicated to the can now in position by a belt over the pulleys W. The crank of the screw H is then worked, which forces the crimping-wheels E E against the ends of the can, which closes down or crimps the ends of the can, and prepares them for soldering. The screw is then reversed, which removes the crimping-wheels E from the can, the can all the while being kept in motion. The chucks G and U are kept in a heated condition by the lamps F F. These heated chucks heat the foil or surface of the tin, and prepare it for the further action of soldering. The soldering-irons C C are heated by the action of heat through the hollow handle V. Each soldering-iron is heated in the same way. The foot is placed upon the lever I, which moves the frame J J down, and the soldering-irons C C are brought in contact with the can. At the proper time, the operator touches the ends of the soldering-irons with solder, and, the can being kept in revolving motion constantly, the operation of soldering is at once completed.

By removing the foot from the lever I, the coiled spring K acts, and lifts the soldering-irons C C from the can.

In soldering, it is necessary that the tin or foil on the surface of the metal should be melted, so as to unite with the solder which is put on by the soldering-iron.

The lamps F F keep the chucks constantly heated to the requisite degree, and, by the time the crimping is done, and the seam is ready for soldering, the surface of the tin is sufficiently heated for the operation of soldering.

It will readily be seen, that by revolving the chuck, and heating it at the same time, the operation of sol-

dering is greatly facilitated, as the can revolves, instead of carrying the soldering-iron around the seams, or of holding the can in one hand, and soldering it with the other, as is done in the old way. Any other method of heating the chucks would accomplish the same thing.

The chucks can be made to fit any design or form of head for a can that may be desired. Different forms of the surface of the chucks are shown in figs. 4 and 5.

The frame J J can be constructed with a hinge at the point where the two arms of the frame unite, as shown at the dotted lines in fig. 1, so as to throw the upper part of the frame, with the soldering-iron, back from the work.

On removing the foot from the lever N, the spring Q acts, and drives the chuck back from the work, when the can is removed.

It will be seen that the two ends of a can are simultaneously soldered by the same operation in the above-described improvement, thus economizing one-half of the labor and time.

The soldering-irons C C and crimp-wheels E E can be adjusted to any length of work by means of set-screws.

By removing the lamps F F, the operation of soldering can be carried on without the chucks being heated, and with the same result, thus using cold chucks instead of hot ones.

Having thus described my invention,

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

1. In a soldering-machine, the combination of heated chucks with soldering-irons, substantially as and for the purpose described.

2. The slotted frame J J, hollow soldering-irons C C, spring K, and foot-lever I, when arranged as described.

3. The slotted frame D D, crimping-wheels E E, when supported by the block H′, and operated by the screw H, in combination with the recessed chucks G U, as described.

4. The recessed chucks U G, lamps F, axle T, box R, spring Q, rest S, bent lever P, rod O, foot-lever N, in combination with the slotted frame J J, hollow soldering-irons C C, and crimping-wheels E, substantially as described.

DANIEL P. NEWELL.

Witnesses:

JAS. A. COWLES,

ROBERT H. FORRESTER.