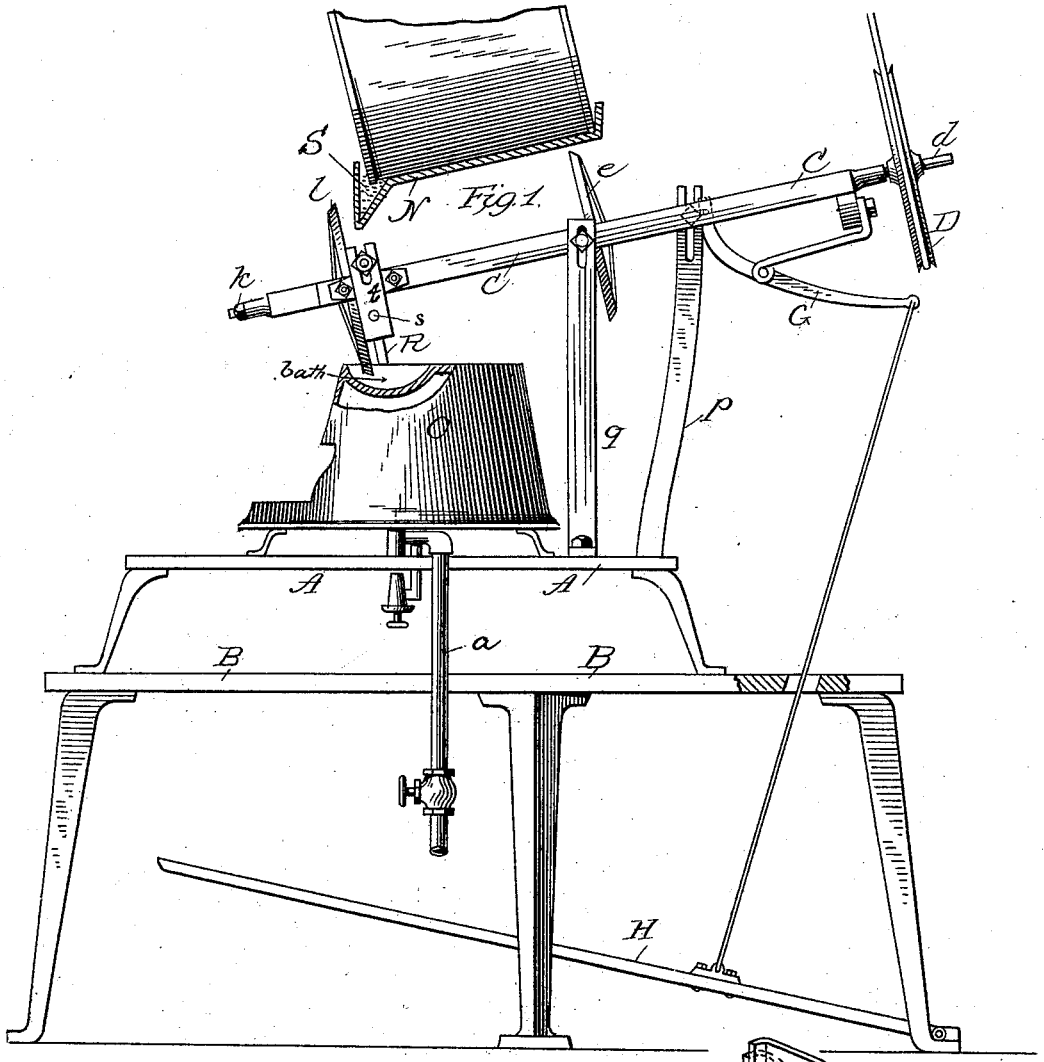
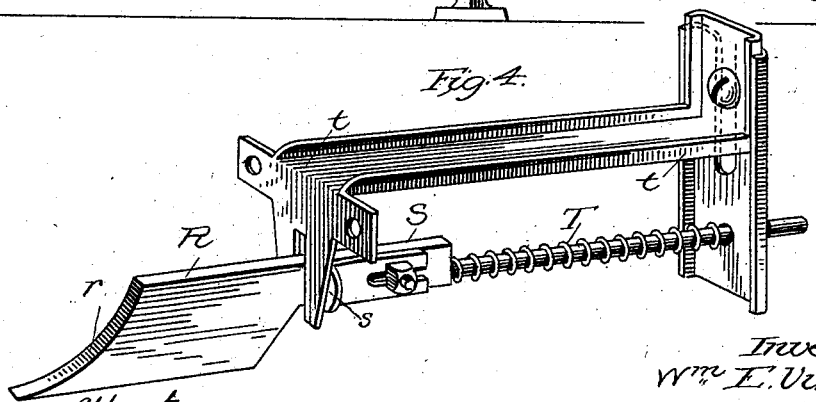
(No Model.) 2 Sheets—Sheet 1.

W. E. VINCENT.

SOLDERING MACHINE.

No. 343,508. Patented June 8, 1886.





Attest
Miller Donaldson
F. L. Middleton

Inventor:
Wm. E. Vincent:
by Joyce & Spear
Attys.

(No Model.) 2 Sheets—Sheet 2.

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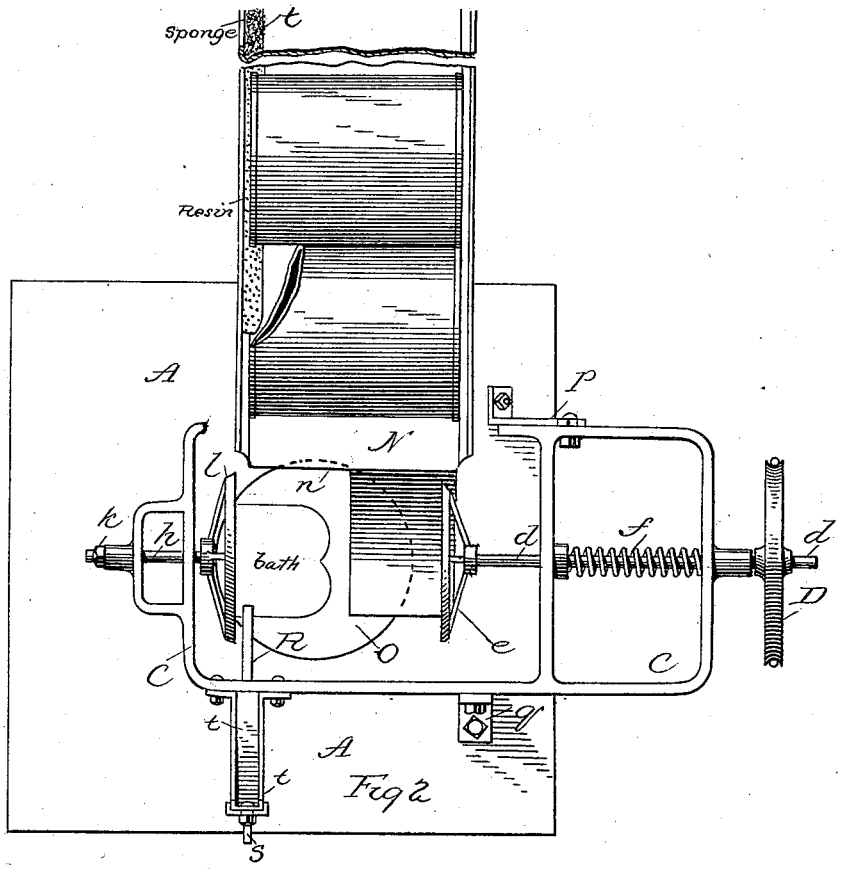
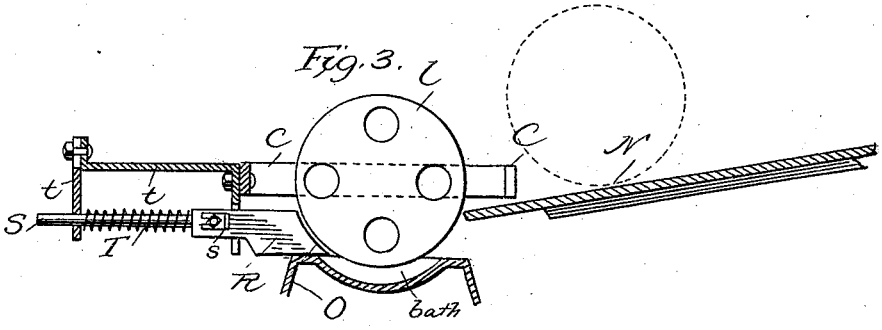


Fig 2



Attest
Walter Maldson
F. L. Middleton

Inventor
Wm E. Vincent.
by Joyce & Spear
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM E. VINCENT, OF PORT DEPOSIT, MARYLAND, ASSIGNOR TO REYNOLDS BROS., OF SAME PLACE.

SOLDERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 343,508, dated June 8, 1886.

Application filed April 7, 1886. Serial No. 198,161. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. VINCENT, of Port Deposit, in the county of Cecil and State of Maryland, have invented a new and useful Improvement in Can Soldering or Floating Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to machines for soldering cans of that class in which the can is rotated with the end seam immersed in a bath of solder kept hot by the application of flame to the pot which contains the solder.

The invention consists in improvements in the construction of the machine, the principal part relating to the soldering-iron, which is adapted to adjust itself automatically to the can as the latter is revolved with the iron in contact, also to mechanism for applying the flux.

In the accompanying drawings, Figure 1 shows a side elevation of the machine. Fig. 2 is a plan view, and Fig. 3 is an end view, partly in section, showing the soldering-iron in side elevation. Fig. 4 shows in perspective the soldering-iron and its supporting-bracket.

In these drawings, A represents the base or stand on which the mechanism is mounted. It is shown as located upon a table, B, with a gasoline-burner on the end of the pipe *a* projecting from below. Mounted above the stand is a frame, C, in one end of which is supported a shaft, *d*, on which is a driving-pulley, D. The shaft *d* is mounted in bearings in the frame, so as to turn freely, and it is permitted also limited longitudinal movement in its bearings. On the inner end it carries a disk, *e*, which is adapted to bear against the end of the can to be soldered, and is made slightly less in diameter than the diameter of the can. The shaft is pressed inward by a spring, *f*, coiled on the shaft between the end of the frame and the collar *g*, fixed on the shaft. It may be drawn backward by means of a lever, G, which is connected to a treadle, H, so that by depressing the treadle the spring is compressed and the shaft drawn backward. In line with this shaft is another shaft, *h*, mounted in bearings on the other end of the frame. This has rotary but no longitudinal movement, except that it may be adjusted to compensate for wear and to adapt it to the different standard sizes of cans by means of a set-screw, *k*. This shaft carries a disk corresponding to the disk *e*, and marked *l*. When the disk *e* is drawn back, the space between the faces of the two disks is sufficient to receive the can, and when the spring *f* is allowed to act it presses the disk *e* against the end of the can, clamping it between the two disks. On one side and mounted upon the standard is an inclined chute, N. It is cut away, as shown at *n*, on its inner end to allow the lower end of the can to drop sufficiently to bring its edge or under seam into the solder, which is kept in an ordinary pot, O.

It will be understood that the chute N is sufficiently inclined toward the solder-pot to allow the cans to roll freely down, and it is also inclined laterally enough to bring the edge of the can into the solder. The chute is supported on the table in suitable standards. The frame C is supported upon standards *p q*, being bolted thereto by bolts which pass through slots in the ends of the standards, so that the inclination of the frame may by varied at will.

The solder-iron (marked R) is formed with a curve, *r*, at its forward end, adapted to fit the curve of the can-body. It has a shank, S, and an adjustable stop, *s*, by means of which its forward movement may be limited to adjust it to the different standard sizes of cans. It is mounted in bearings in a small frame, *t t*, and is pressed forward by a light spring, T, coiled on its shank. The solder-iron is supported at its front end by its lower edge resting upon the top of the solder-pot, as shown in Fig. 3, and it is thus permitted to move gently back and forth to adapt itself to any inequalities in the can-body. The frame *t t* is bolted on one side of the main frame C in such relation to the disk *l* that the edge of the soldering-iron will bear upon the can close to the overlapping flange of the head, it being understood that the machine is adapted to solder outside heads.

The action of the soldering-iron is well known to those skilled in the art, and its mode of action in drawing the solder need not be explained. The novel feature in this iron consists in its longitudinal and automatic adjustability to the can. As the cans drop from the chute into position between the clamping-

disks, they are not always accurately held concentric with the axis of the clamping-disks, and where the soldering-iron is held rigidly its action is defective, owing to this occasional eccentric position of the can when held between the disks. The spring on the shank of the soldering-iron is a light one, exerting only force sufficient to hold the edge of the iron constantly against the can-body, allowing it to yield and follow easily the surface of the can as the can revolves. The small frame which holds the soldering-iron, being bolted to one side of the frame, may be removed at any time for repairs. Instead of the spring I may use a weight to press the iron to the can.

In order to apply the flux to the cans as they are advanced to the soldering-pot, I have formed the chute with a channel, S, on the lower edge thereof. At the upper end this channel is filled with sponge *t*, and farther down in the channel is placed powdered resin or other suitable flux. The sponge may be kept wet by water dropped or supplied in any of the well-known ways. The channel for the resin terminates at a safe distance from the solder-pot and the sponge or resin or other flux are in line and so arranged in relation to the sides of the chute that the edge of the can rolls down, passing over the sponge and flux, and the parts about the seam are first moistened and then covered with flux, which adheres to the moistened surfaces. Other means may be used for moistening besides the sponge, but this is convenient and effective.

I claim as my invention—

1. In combination with the mechanism for clamping and revolving the cans, the soldering-iron having its edge conforming to the curve of the can-body movable longitudinally in its bearings, and held against the can-body by means of a spring or weight, all substantially as described.

2. In combination with the longitudinally-movable soldering-iron and its spring, all arranged in the described relation to the disks which clamp the can, the adjustable stop, whereby the iron is adapted to different standard sizes of cans, all substantially as described.

3. In combination with devices for revolving the can, and with a solder-pot, a chute having a channel on its lower edge for holding the flux, and a sponge in line therewith for moistening the can-surface, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM E. VINCENT.

Witnesses:
FRANK. D. COOK,
B. I. CALDWELL.