

(No Model.)

C. H. AYARS.
CAN SOLDERING MACHINE.

No. 550,773.

Patented Dec. 3, 1895.

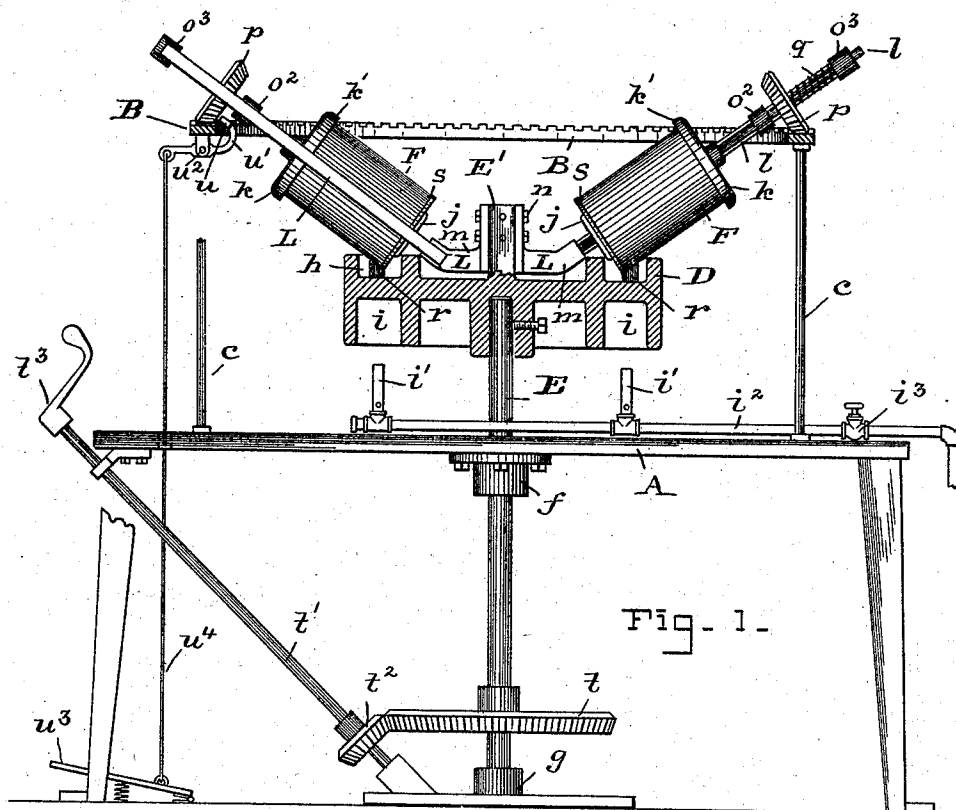


Fig. 1.

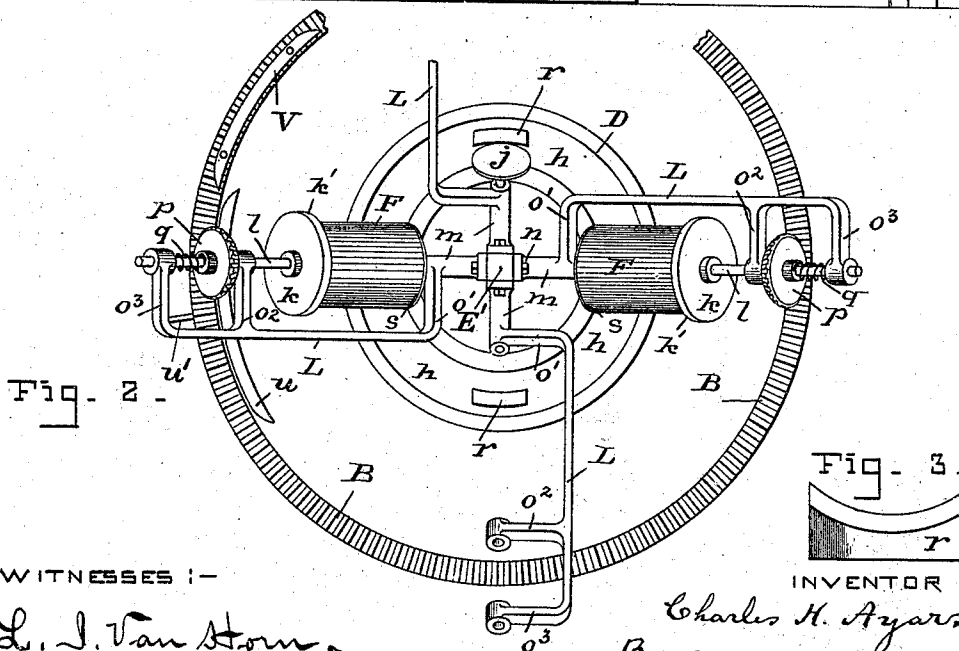


Fig. 2.

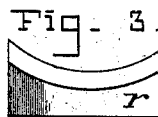


Fig. 3.

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CHARLES H. AYARS, OF SALEM, NEW JERSEY.

CAN-SOLDERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 550,773, dated December 3, 1895.

Application filed January 23, 1895. Renewed September 26, 1895. Serial No. 563,802. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. AYARS, a citizen of the United States, residing at Salem, in the county of Salem and State of New Jersey, have invented certain new and useful Improvements in Can-Soldering Machines, of which the following is a specification.

This invention relates to an improved machine for soldering the end seams of round cans, such as are used for packing fruits and vegetables.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation showing the machine, a part being in section. Fig. 2 is a top view or plan showing the principal parts of the machine. Fig. 3 shows the metal soldering-block *r*.

The letter A designates a suitable stand, and B a stationary circular rack supported by vertical rods *c* above the stand. A circular-shaped revoluble solder-bath D is mounted on an upright shaft E, which is concentric with respect to the circular rack and turns in a bearing *f*, and whose lower end is in the step *g*. This solder-bath has on its upper side a suitable trough *h* for molten solder and on its lower side an annular groove or chamber *i*, into which heating-flames are projected from the burners *i'* immediately below, and which are supplied with fuel by the pipe *i''*. A cock *i'''* in the pipe regulates the fuel-supply. The solder-bath is in the center of the said circular rack, but on a lower horizontal plane.

At the center of the solder-bath plate is a post E', which projects upward and which for practical purposes might as well be a continuation of the upright shaft E. This post has a number of can-holder devices attached to it—in the present instance four. Each can-holder comprises, essentially, two revoluble disks or clamps *j k* to bear on the ends of a can F and hold it in an inclined position, so that the lowermost edge at the center of the machine may take down into the solder-trough *h*.

The particular shape of the frame or arm which carries the two disks *j k* may vary. In the present instance an arm L has an inclined shank or foot *m*, which is secured by screws *n* to the post E', and thereby the said arm has

an upwardly-inclined position. All the arms L radiate from this post E'. The upper end of this arm projects over the stationary circular rack B. The arm L has three lateral branches *o' o'' o'''*. The lowermost disk or clamp *j* is smaller than the upper one *k* and has a spindle, which is mounted so as to turn freely on the shank part *m*. The upper disk or clamp *k* is large enough to cover the entire end of the can F and has around its edge a flange *k'*, which encircles the said can end. This disk, with the flange, insures that the end of the can-body will be truly centered. This upper disk is mounted on the lower end of a shaft *l*, which turns in bearings in the two lateral branches *o'' o'''*. This shaft is movable endwise and carries a suitable wheel or pinion *p*, which engages with the circular rack B, and a spiral spring *q* around the shaft and between the pinion and the branch *o'''* serves to move the shaft endwise and keep the flanged disk *k* pressed onto the end of the can, and thereby the can F is clamped between the two disks *j k*.

All of the can-holders have the same construction.

A steel block *r* has a concave face on top, and is secured within the annular trough *h* in such position that the lowermost edge of the can F will rest upon and revolve on said concave face. A steel block of this kind is placed in the trough adjacent to each small disk. As the concave face of the steel block *r* is concentric with the axis of the lower small disk *j*, it serves to center the lower end of the can on the disk and also smooths the solder on the seam when the can is revolved and soldered.

Suitable means are employed to revolve the upright shaft E, the solder-bath D, and all the can-holders. It will be seen that as all these revolve about the axis of the said shaft E each can F will also separately revolve with its lower end seam *s* submerged in the solder-bath and resting on one of the steel blocks *r*. In the present instance the revolution of the parts is effected by a gear-wheel *t*, fixed on the upright shaft E, and an inclined shaft *u* has a pinion *t'*, which meshes with the said gear-wheel. This inclined shaft has a crank-handle *u'*, by turning which the solder-bath D and other parts will be set in motion.

The large disk k of any can-holder is retracted against the pressure of the spring g to take out a can or to put one in position by means of a curved plate u , carried on an arm u' , pivoted at u^2 below the circular rack B. A treadle u^3 is on the floor, and a wire u^4 connects the pivoted arm u' with the treadle. It will thus be seen that by depressing the treadle the curved plate u will be tilted in contact with the pinion p , and thereby move the shaft l endwise and retract the disk k . In the operation of this machine the treadle should be depressed to remove a can at the instant that the side seam of the revolving can is downward. Thus the cans will be taken out with the side seam down. This is important, as it tends to keep the molten solder in the lower end of said seam until the solder chills.

Another curved plate V is stationary. The pinion p , by passing on the outer side of the said plate, will cause the shaft l to be moved endwise and the disk k to be retracted to insert a can. In this machine three or four cans are in process of operation at once, and all will receive the same number of revolutions.

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

1. In a can-soldering machine the combination of a stationary circular rack; a revoluble solder bath having a trough for molten solder and mounted concentrically with respect to the circular rack; and can-holder devices connected with said revoluble solder bath so as to be carried around therewith in a horizontal plane and each can-holder having two revoluble clamps to independently rotate the can.

2. In a can soldering machine the combination of a stationary circular rack; a revoluble solder bath having a trough for molten solder and mounted concentrically with respect to the circular rack; can holder devices connected with said revoluble solder bath, so

as to be carried around therewith in a horizontal plane, and each can-holder inclining from said solder bath upward and over the circular rack and provided with a pinion which meshes therewith.

3. In a can soldering machine the combination of a stationary circular rack; a revoluble solder bath having a trough for molten solder and mounted concentrically with respect to the circular rack; can holder devices connected with said revoluble solder bath, so as to be carried around therewith in a horizontal plane; and a metal block having a concaved top-face and located in the said solder trough adjoining each can-holder.

4. In a can soldering machine the combination of a stationary circular rack; a revoluble solder bath having a trough for molten solder and mounted concentrically with respect to the circular rack; and provided on its lower side with a circular heating groove; burners stationary below the said circular groove; and can holder devices connected with said revoluble solder bath, so as to be carried around therewith in a horizontal plane and each can-holder having two revoluble clamps to independently rotate the can.

5. In a can-soldering machine the combination of a stationary horizontal circular rack; a vertical shaft mounted concentrically with respect to said circular rack; a solder bath mounted on said shaft and revoluble in the center of the circular rack and on a lower horizontal plane than said rack; can-holders inclining from the central solder bath upward to the circular rack and carried around with the rotation of the solder bath and means for imparting rotary motion to each can held in the can holders.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES H. AYARS.

Witnesses:

CHARLES B. MANN, Jr.,
L. ISMY VAN HORN.