

No. 649,322.

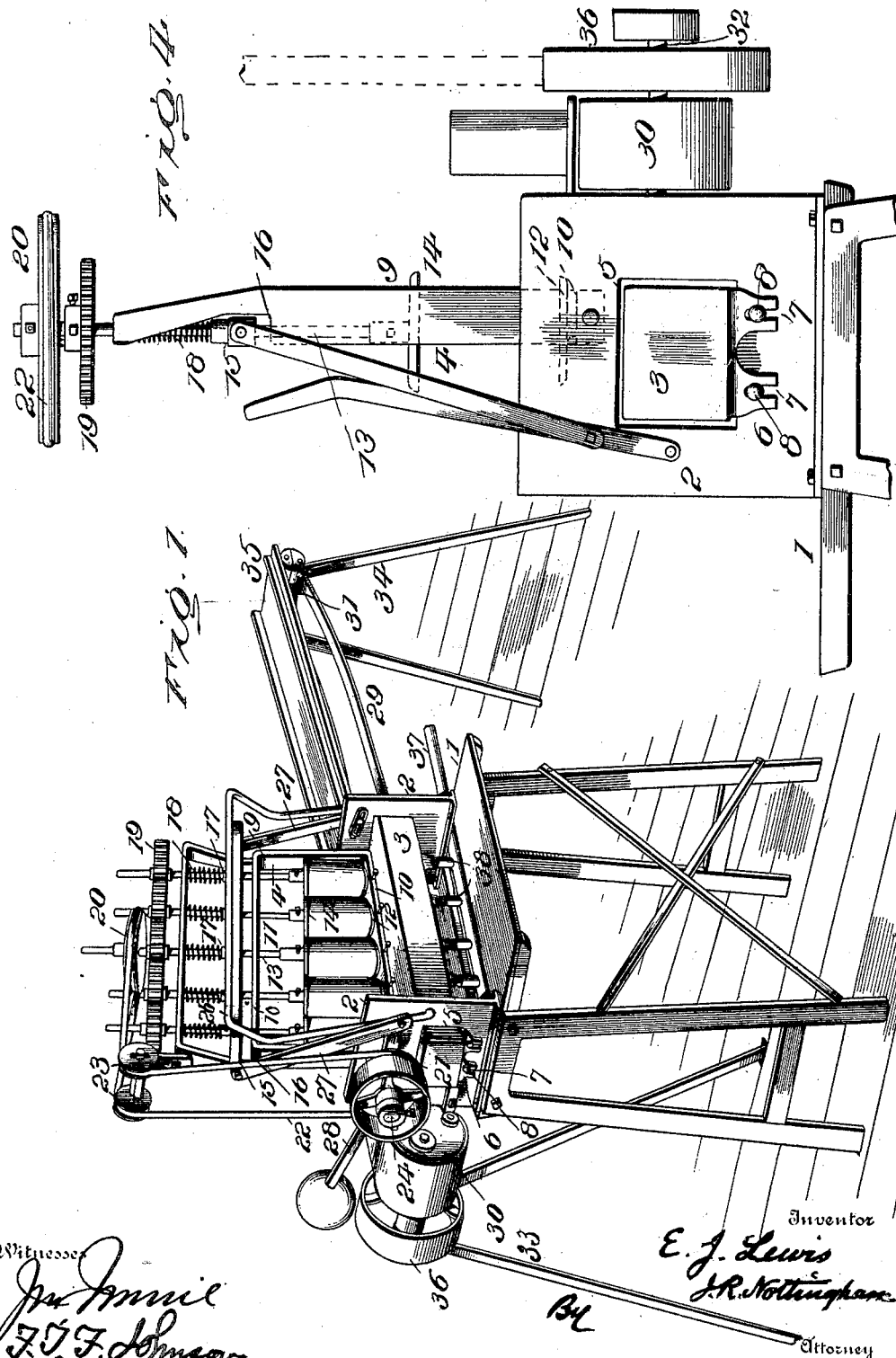
Patented May 8, 1900.

E. J. LEWIS.  
CAN SOLDERING MACHINE.

(Application filed Feb. 9, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
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Fig. 2

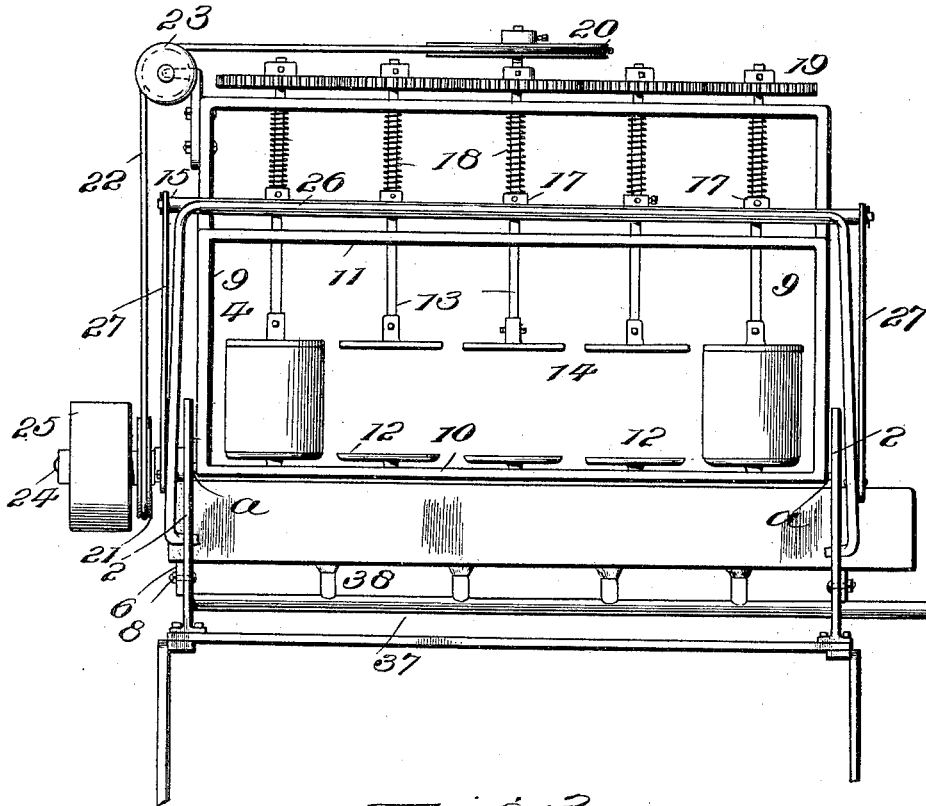
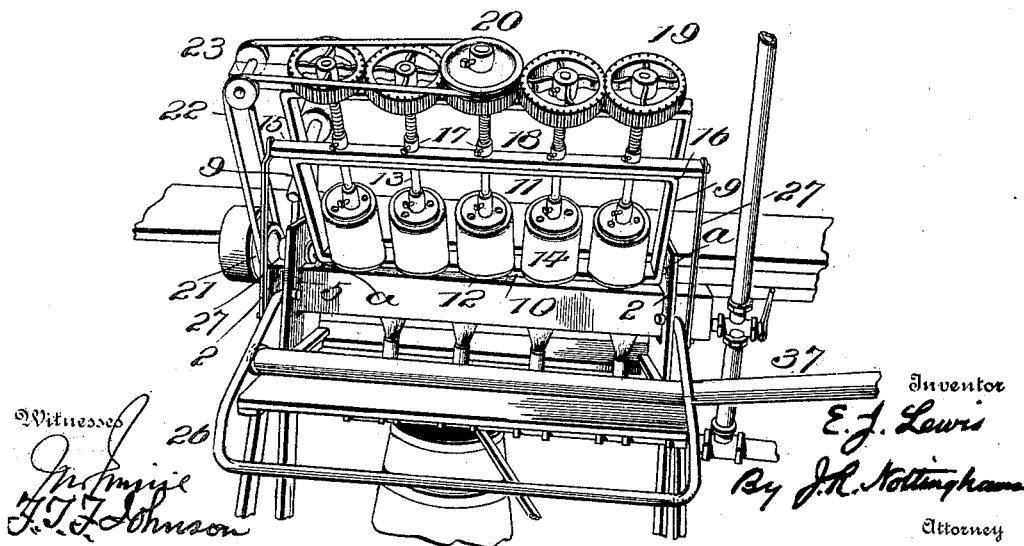


Fig. 3



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# UNITED STATES PATENT OFFICE.

ELGIE J. LEWIS, OF MIDDLEPORT, NEW YORK.

## CAN-SOLDERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 649,322, dated May 8, 1900.

Application filed February 9, 1900. Serial No. 4,653. (No model.)

*To all whom it may concern:*

Be it known that I, ELGIE J. LEWIS, a citizen of the United States, residing at Middleport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Can-Soldering Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to can-soldering machines; and it consists, essentially, of certain new and novel mechanism for holding the spring-actuated clamps out of engagement with the cans and for tilting the can-holding frame so that the lower edges of the cans may be dipped into the solder contained in a suitable vat or other vessel.

The invention also consists of the general construction and arrangement of the can-holding devices and the mechanism for rotating the cans during the soldering operation.

The primary object of the invention is to simplify and cheapen the cost of construction without in any way impairing the efficiency of the machine.

Other objects of the invention will become apparent upon the detail description thereof.

In the drawings, Figure 1 is a front perspective view of my improved machine, showing the can-holding frame in normal position; Fig. 2, a front elevation with the can-conveyor detached; Fig. 3, a similar view, slightly in perspective, showing the can-holding frame in tilted position to bring the lower edge of the cans in contact with the solder-bath; and Fig. 4, an end elevation.

In the several views the numeral 1 indicates the base or bed of the machine, which is provided with upright pieces 2, which are adapted to support the solder vat or box 3 and in which the can-holding frame 4 is journaled. The end pieces are provided with rectangular openings 5, and the bottom edge of each opening forms a seat for the respective ends of the solder-vat, by which it is normally supported. The openings 5 are somewhat deeper than the vat is high in order to provide for a vertical adjustment of said vat to accommodate different sizes of cans, it be-

ing necessary to raise the vat so that the lower edges of the cans in their tipped position may always be a sufficient depth in the solder. To provide for this adjustment, I adjustably secure to the inner side of each end piece a seat 6. The lower edge of these seats are provided with slots 7, through which pass securing-bolts 8, projecting from the end pieces 2. By raising the ends of the vat and adjusting the seats 6 thereunder the solder-line can be brought to the desired height to furnish solder to the lower edges of the cans. The supply of solder is occasionally replenished by dropping in a fresh bar.

The can-holding frame 4 is composed of the sides 9, joined together by top and bottom bars 10 and intermediate bar 11. The bottom bar is provided with a series of can-seats 12, and the top and intermediate bars are perforated to receive a series of spindles 13, to the lower ends of which are attached clamping-heads 14. The spindles also pass through a locking-bar 15, and the sides of the can-holding frame are provided with recesses 16, which allow for a slight vertical movement of said spindles necessary to clamp the cans to their seats. To each spindle above the locking-bar is adjustably secured a nut or collar 17, which may be set at any desired point to limit the downward movement of the spindle to a distance sufficient to clamp the nut. Between the nut and the top bar each spindle is provided with a coil-spring 18, the tension force of which serves to firmly hold the can clamped between the head 14 and the seat 12. Each spindle is provided with an intermeshing gear-wheel 19, and the upper end of the center spindle of the series projects slightly above the others and is provided with a band-pulley 20. Power to rotate the spindles is received from a band-pulley 21, which is connected with the pulley 20 by a band or cord 22, running over guide-pulleys 23, secured to one end of the frame. The band-pulley 21 is secured on a short shaft 24, journaled in a suitable bearing secured to one of the upright supports 2, and the shaft is driven by a drive-wheel 25, which receives its power from any suitable source. The can-holding frame is journaled in the supports 2 at a just above the solder-vat.

The mechanism for tilting the can-holding frame consists of a bail-lever 26, pivoted to the supports 2 and pivotally connected by links 27 to the ends of the locking-bar, which projects slightly beyond the sides of the frame. The pivotal points of the bail-lever are located some distance below the pivotal points of the can-holding frame and a sufficient distance in front thereof to maintain said frame in a vertical position when the bail-lever is in its "up" position. If necessary to employ additional means to hold the frame in its vertical position, a weighted arm 28 may be employed, which arm is secured to the lower end of one of the sides 9 of the frame.

In operating the machine the cans are placed between the clamping-heads and seats, and the bail-lever being pulled slightly outward the locking-bar drops a short distance, allowing the springs to exert a force sufficient to firmly clamp the cans to their seats. Power being applied to rotate the spindles, the bail-lever is then pulled down to its limit, tilting the frame in the position shown in Fig. 3. As thus tilted the lower edges of the cans will receive the solder as they are rotated. After the soldering operation is completed the bail-lever is raised, returning the can-holding frame to its normal or vertical position with the spindles raised, so that the cans may be pushed out upon the conveyer-belt and carried to a suitable place for cooling.

The can-conveyer consists of a suitable belt 29, which runs over pulleys 30 and 31. The pulley 30 is mounted on a short shaft 32, having one end journaled in a bearing secured to one of the upright supports 2 and the other end journaled in a bearing secured on a support 33. The other pulley 31 is mounted on a suitable shaft journaled in bearings secured on a support 34. Suitable guides 35 are arranged, one to each side of the belt, to prevent the cans from falling off as they are being moved away by the conveyer-belt. The belt is driven by a drive-wheel 36, which receives its power from any suitable source.

The solder in the vat may be heated by any suitable means, preferably by running a gas-pipe 37 under the vat and providing it with suitable burners 38.

Various modifications or changes may be made without departing from the spirit of my invention or sacrificing the principles thereof, and it will be noted that the cans may be quickly and easily placed between the clamps, and when properly soldered pushed off with any convenient implement.

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

1. In a can-soldering machine, the combination with a suitable base and supports, of a can-holding frame, pivoted to said supports provided with spring-controlled spindles, carrying clamping-heads, and a locking-bar for

locking said spindles against the spring-pressure and in normal position.

2. In a can-soldering machine, the combination with a suitable base and supports, of a can-holding frame pivoted to said supports, a vertically-movable locking-bar, and means for releasing the bar and tilting said frame.

3. In a can-soldering machine, the combination with a suitable base and supports, of a can-holding frame pivoted to said supports, said frame being provided with suitable recesses, a vertically-movable locking-bar having its ends operating in said recesses, means pivotally connected to said bar and the supports, whereby the cans may be clamped and released and the frame tilted.

4. The combination with a suitable base and end supports, of a frame pivoted to said supports and provided with can-seats, a series of spring-actuated spindles carrying clamping-heads at their lower ends and intermeshing gear-wheels at their upper ends, a locking-bar adapted to hold the spindles in a normal position, and means for lowering said bar to release said spindles.

5. The combination with a suitable base and end supports, of a frame pivoted to said supports and provided with can-seats, a series of spring-actuated spindles carrying clamping-heads at their lower ends and intermeshing gear-wheels at their upper ends, a locking-bar for holding the spindles in normal position, and a pivoted lever pivotally connected to the locking-bar, whereby said spindles may be released from their normal position and the frame tilted.

6. The combination with a suitable base and end supports, of a frame pivoted to said supports and provided with can-seats, a series of spring-actuated spindles carrying clamping-heads at their lower ends and intermeshing gear-wheels at their upper ends, a locking-bar for holding the spindles in normal position, recesses in the sides of the frame to receive the ends and allow for a vertical movement of the locking-bar, a pivoted lever connected pivotally by links, to the ends of said locking-bar, whereby the bar may be lowered to release the spindles and the frame tilted.

7. The combination with a suitable base pivoted with upright supports, and a vertically-adjustable solder-vat, of a can-holding frame pivoted to said supports, a vertically-movable locking-bar, a pivoted lever pivotally connected to said locking-bar, whereby the cans may be clamped, released and the frame tilted, and a can-conveyer.

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

ELGIE J. LEWIS.

Witnesses:

FRANK A. RINN,  
CHAS. A. HOYT.