2 Sheets--Sheet 1.

J. F. SPENCE.

Soldering Machines.

No. 142,956. Patented September 16, 1873.

Fig. 1.

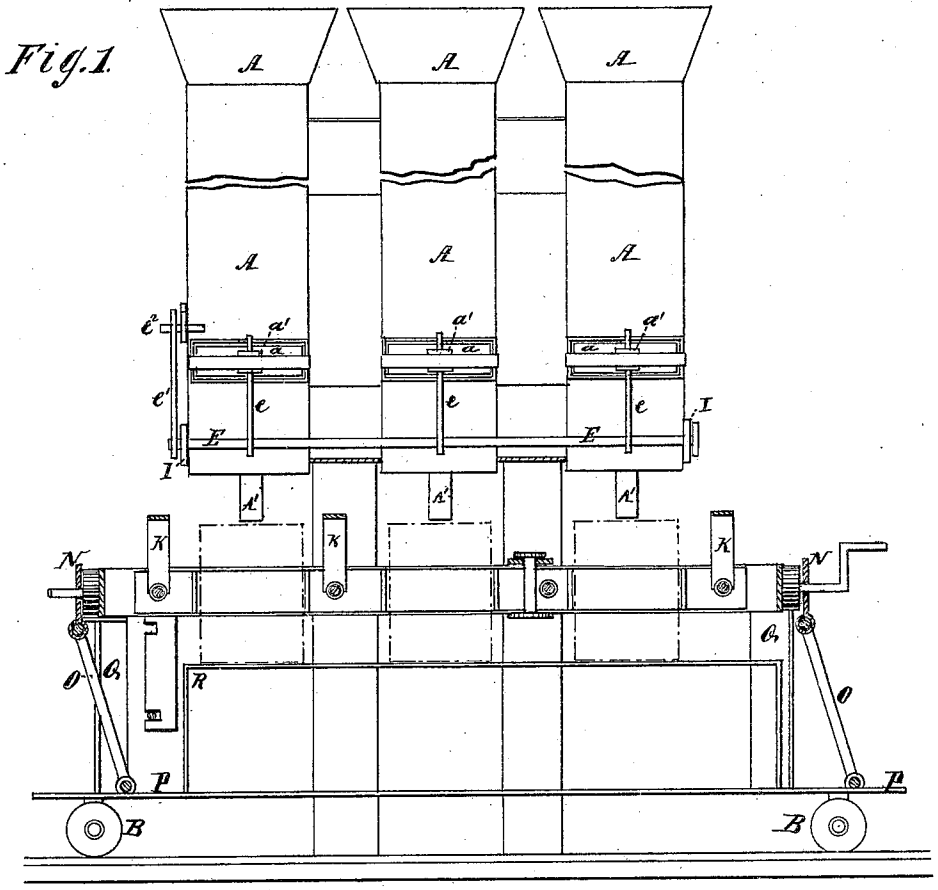
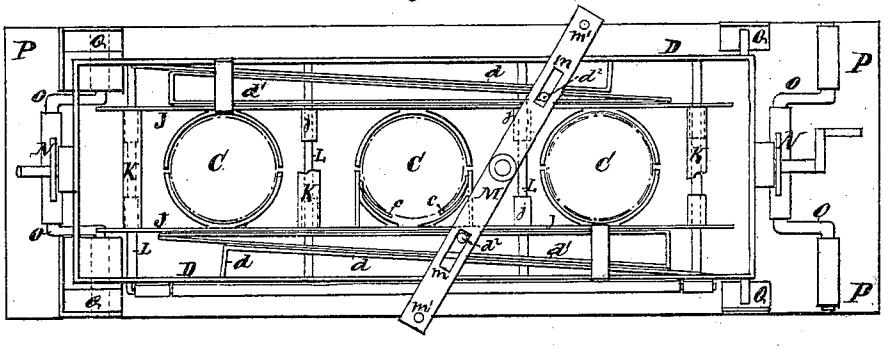


Fig. 2.



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2 Sheets--Sheet 2.

J. F. SPENCE.

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No. 142,956. Patented September 16, 1873.

Fig. 3.

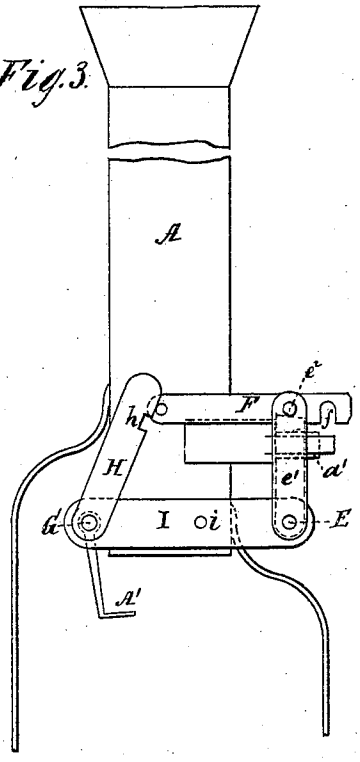


Fig. 4.

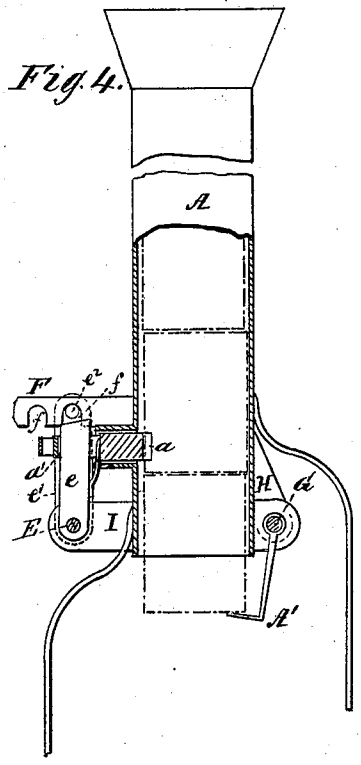
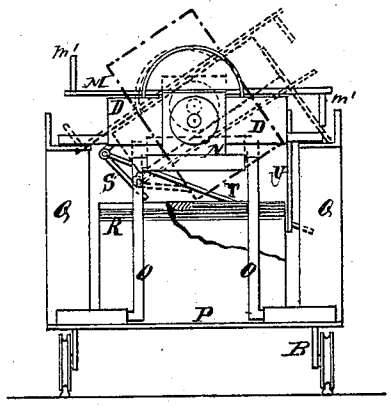


Fig. 5.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SOLDERING-MACHINES.

Specification forming part of Letters Patent No. **142,956**, dated September 16, 1873; application filed May 22, 1873.

To all whom it may concern:

Be it known that I, JAMES F. SPENCE, of Williamsburg, in the county of Kings and State of New York, have invented a new and Improved Apparatus for Feeding and Holding Cans for Soldering-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification.

The invention consists in providing means for feeding cans to a soldering apparatus, and for reversing them so that both heads may be soldered to the body in rapid succession, and without the removal of the cans from their holder, as hereinafter fully described, and pointed out in the claim.

Figure 1 is a front elevation with the lower part in vertical section. Fig. 2 is a top view of the can-holder car. Fig. 3 is a side elevation of a can-feeding tube with feeding apparatus. Fig. 4 is a vertical section thereof, and Fig. 5 is an end view of the can.

In the drawing, A A represent vertical tubes, open at both ends, made flaring at the top, and provided with the horizontal sliding clamps *a*, while A′ are vibrating rests that are movable inward and outward under the lower end of tubes. B is a car or truck, on which is supported two or more can-holders, C, arranged at intervals to correspond to the position of the circles of burners which are used in soldering the heads to the body of cans. D is a forwardly-oscillating and half-rotary rising-frame, on which the holders are made fast. The cans are placed in the tubes A, and are held by the sliding clamps *a* (which have a rear spring to enable them to adjust themselves to cans of different size) until the holders C come under the lower end of the tubes. The clamps *a* are then withdrawn, and the cans allowed to drop upon the rests A′, and subsequently into the holders C. A spring-clamp may be substituted for the clamp *a*, if preferred. The carriage B is now moved forward until the cans are in position under the circles of burners, when it is stopped and a head soldered into one end of the can-body. The holders C are then turned one-half revolution, which brings uppermost the other end of body, to which a head is likewise soldered. The holders C are then slightly vibrated to bring the cans into an oblique position, when they are loosened and allowed to slide out into a receptacle prepared for them, guided by an apron which is attached to the rotary frame. In order to enable the sliding clamps *a* to be moved by hand at the proper time, I use a rock-shaft, E, having the arms *e* that fit into loops a' of slides, and an arm, e^1, having a side stud, e^2, that receives the notches *f f* of the latch F. The slide-clamp is locked so as to support the tube or not, according to the notch which is placed over the stud e^2. G is a second rock-shaft, to which is attached the shanks of vibratory rests A′, and also the spring-latch H, whose notch *h* fits over a side stud, *i*, in the cross-piece I, which contains the bearing of both rock-shafts. The can-holders C are made with inner springs *c c* to enable them to hold cans of different size, and in two parts, each attached to a separate longitudinal plate, J. The latter are connected by bow-springs K, and provided with short tubes *j* that slide on guide-rods L. The frame D has the reversed stationary wedges *d d*, against which work the reverse movable wedges d^1 d^1 that are actuated backward and forward by the cross-lever M. The latter turns upon a central pivot, and has slots *m m*, through which pass the vertical pins d^2 d^2 of wedges, and also has reversed rods m', by which the lever is operated. The frame D is journaled in plates N N that are pivoted upon the upper side of yokes O O, the latter being themselves pivoted in the base-plate P. These yokes are limited in their throw by the upward end flanges of supports Q, and by the ends of car platform or table R. I use a pivoted apron, S, that is provided with an arm, T, which is locked in a notch of the fixed latch U. After the cans are loosened and dropped they slide against the apron S, and are guided to the floor or receptacle provided for them.

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

1. The tubes A, having sliding clamps *a* and movable rests A′, to receive, hold, and drop cans into movable holders C, in the manner described.

2. The holders C, arranged in a rising half-

rotary frame, D, to enable them to be reversed, in the manner set forth.

3. The hand mechanism, consisting of shaft E, having arms e e^1, by which the slides are operated, at the times and in the manner specified.

4. The can-holders C, made in two parts, and combined with the separate plates J J, connected by springs, and movable to or from each other, to clamp or unclamp the cans, in the manner described.

5. A can-holder, provided with springs c to allow it to hold firmly cans of greater or less magnitude, in the manner set forth.

6. The fixed and reversed wedges d d of frame D combined with reversely-moving wedges d^1 d^1, provided with studs d^2, and moved by the slotted lever M to open and close the can-holding plates J, in the manner specified.

7. The pivoted frame D, pivoted plates N N, and the pivoted yokes O O, combined to allow the cans to be moved forward, raised, and then reversed, in the manner described.

8. The combination, with the rotary can-frame D, of an apron, S, over which the cans slide gently off the said table, in the manner set forth.

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