

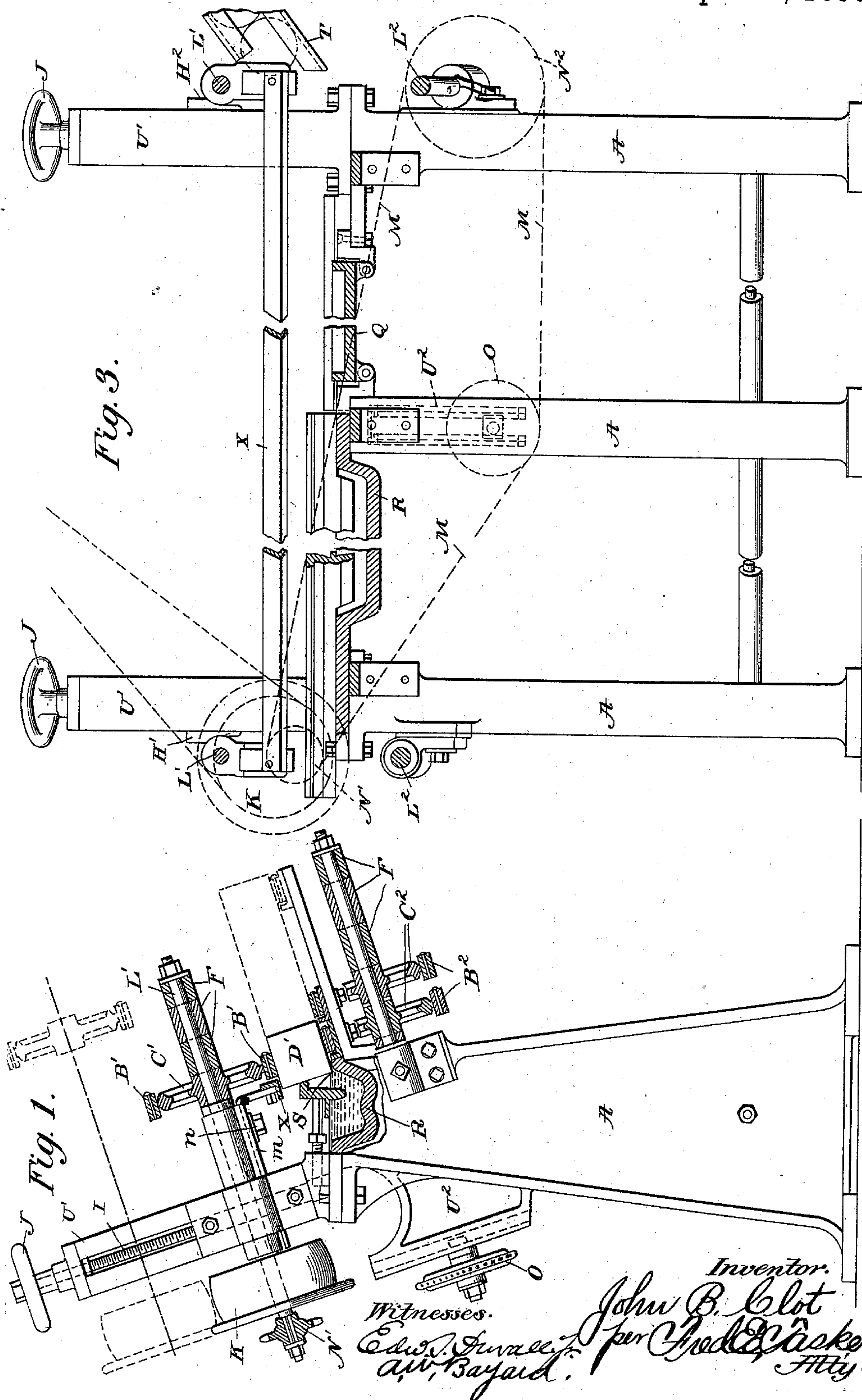
(No Model.)

2 Sheets—Sheet 1.

J. B. CLOT.  
CAN SOLDERING MACHINE.

No. 559,074.

Patented Apr. 28, 1896.



Inventor.  
John B. Clot  
per Fred W. Wacker.  
Att'y.

Witnesses.  
Edw. J. Sumner,  
A. W. Bayard.

(No Model.)

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Fig. 2.

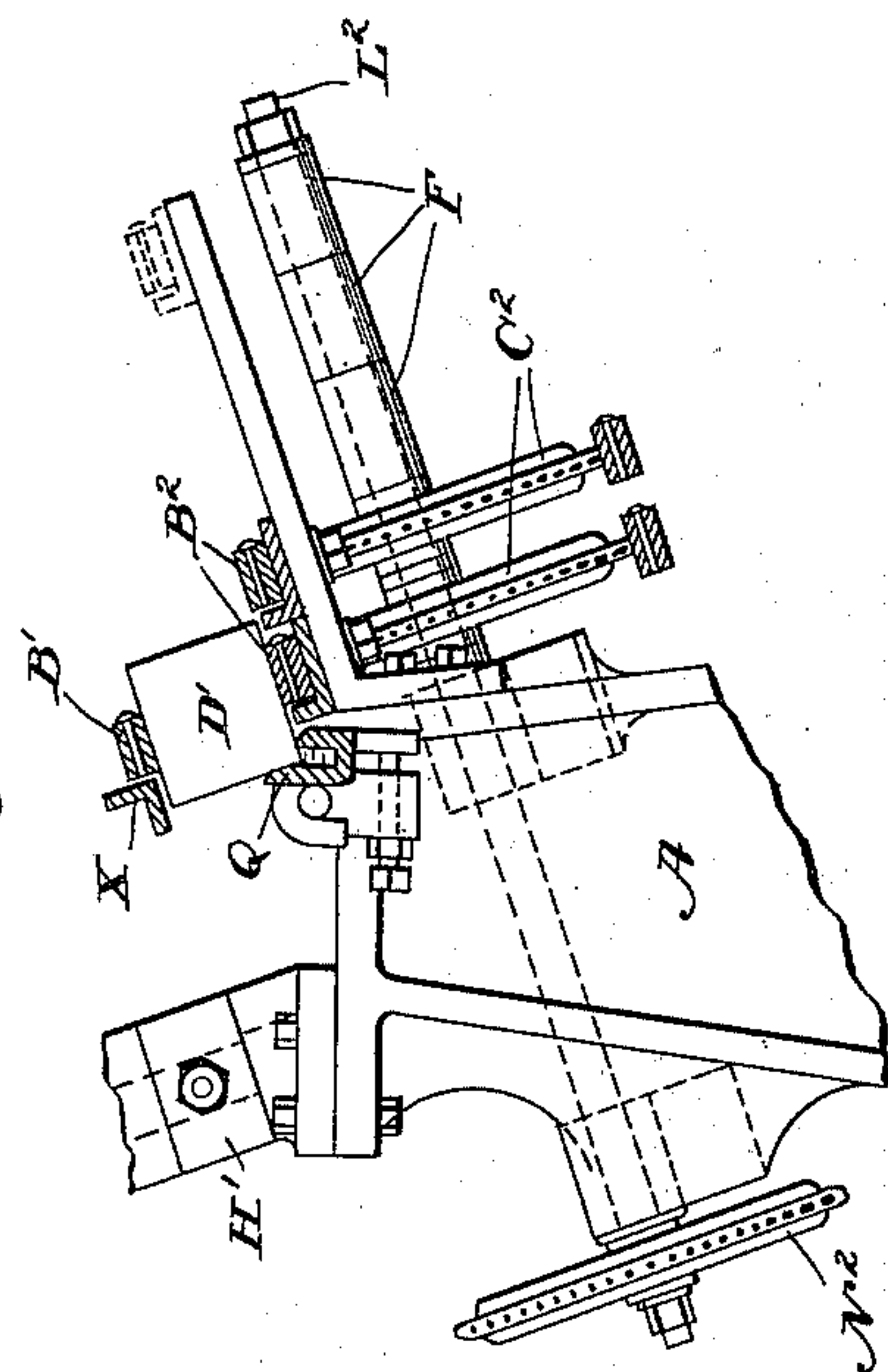
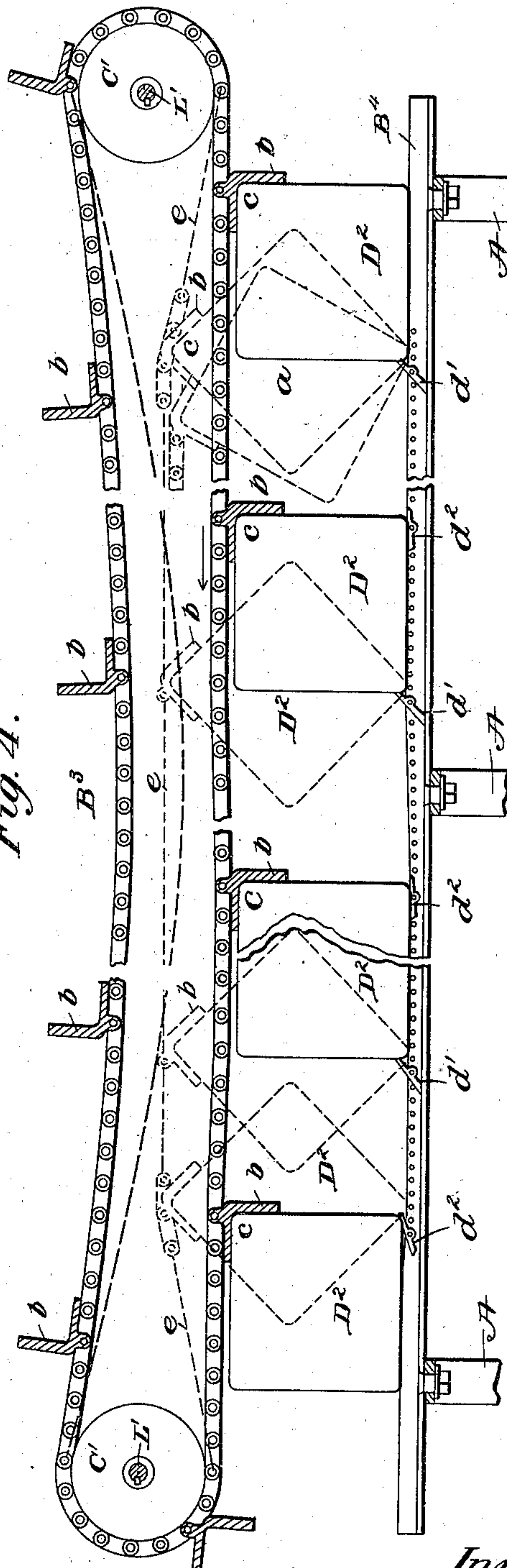


Fig. 4.



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# UNITED STATES PATENT OFFICE.

JOHN B. CLOT, OF SAN FRANCISCO, CALIFORNIA.

## CAN-SOLDERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 559,074, dated April 28, 1896.

Original application filed May 17, 1894, Serial No. 511,510. Divided and this application filed October 29, 1895. Serial No. 567,242. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. CLOT, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, 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.

This invention relates to a machine for the manufacture of metallic cans, and more especially it pertains to the mechanism for soldering the ends of such cans, no matter what the various dimensions may be.

The present application is a division of another pending application for Letters Patent upon a can-soldering machine, filed May 17, 1894, Serial No. 511,510. Said application describes and claims, among other things, a special combination of mechanical parts designed for operation in connection with round cans, while in the present application a combination of parts is described and claimed designed for operation in connection with square cans.

The present invention therefore consists, essentially, in the construction, arrangement, and combination of parts, substantially as will be hereinafter described, and then more particularly pointed out in the claims.

In the annexed drawings, illustrating my invention, Figure 1 is an end elevation, partially in section, of my improved can-soldering machine. Fig. 2 is another partial end view, in another plane, of the same machine, showing the acid or cleaning bath. Fig. 3 is a partial front view of the same machine, showing various details thereof in a plane opposite to that in which Figs. 1 and 2 appear. Fig. 4 is a detailed side elevational view of various parts of the machine, including the feeding or impelling chains which move the cans.

Similar letters of reference designate corresponding parts throughout all the different figures of the drawings.

Referring to the drawings, A A designate pedestals forming the main supporting-frame.

B' B<sup>2</sup> denote the impelling-chains or endless moving belts which move or roll the cans

when the latter are of cylindrical form, and C' C<sup>2</sup> denote sprocket-wheels by which the chains B' B<sup>2</sup> are supported and driven.

When the cans D' are of small diameter, only the top chain B' is driven, the cans rolling on the lower chains B<sup>2</sup> or on a fixed bed, and making several revolutions while traversing the length of the solder-bath; but for larger cans the chains B' B<sup>2</sup> are moved differently, as will now be explained. The outer of the chains B<sup>2</sup> and the top chain B' are so arranged as to be adjusted laterally outward by means of the loose collars F', which can be transposed from one side to the other of the outer wheels C<sup>2</sup> and the upper wheels C' to intermediate points or to the extreme positions for the longest cans.

A guide-bar X is provided for the bottom part of the chain B' to keep it in a straight line, and this bar X is also adjusted laterally with the wheels C' and the chain B' by means of the sliding brackets m, held by the screws n, as seen in Figs. 1 and 3.

The varying diameter of the cans D' D<sup>2</sup> is accommodated by raising the top wheels C' and the chain B' by means of the sliding saddles H' H<sup>2</sup>, mounted on the standards U' and raised and lowered by means of the screws I and hand-wheels J.

Driving power for the chain B' is applied on the pulley K on the shaft L', and from there transmitted, by a driving-chain M, from the wheel N' on shaft L' to the wheel N<sup>2</sup> on the shaft L<sup>2</sup>, (seen on the right in Fig. 3,) so the rate of revolution between the wheels N' N<sup>2</sup> and the relative speed of the top and bottom chains B' B<sup>2</sup> is as the diameter of the wheels N' and N<sup>2</sup>. A set of wheels of different diameters is provided, and relative speed of the chains B' and B<sup>2</sup> can be varied as the size or diameter of the cans D may demand. As the wheel N' is raised and lowered with the saddle H' provision must be made to maintain a constant tension of this driving-band and also to accommodate the chain M, this latter being done by means of an idle intermediate pulley O, running on a stud and arranged to be moved up and down and be clamped at any point on the bracket U<sup>2</sup>, as shown in Figs. 1 and 3.

Q is an acid-trough through which the rims



or joints to be soldered first pass, so as to clean the surfaces and remove oil or grease.

R is a solder-bath heated to the melting-point by a furnace or any suitable means, preferably by gas or gasolene burners, the bath being kept full or to one level, so the joints of the can D will be immersed uniformly, as seen at S, Fig. 1.

The solder-bath R and acid-bath Q are made only long enough to accommodate the largest cans of rectangular section, as will be explained in a future place.

The cans D' are fed to the machine by a gravity-chute T, as shown in Fig. 3, and are discharged in a similar manner after soldering.

For cans of square or rectangular section the chains B<sup>2</sup> are removed and a fixed rack B<sup>4</sup> substituted, as shown in Fig. 4, which will next be referred to, the parts being shown enlarged, so as to admit of plainer explanation. The top chain B<sup>3</sup> is provided with jaws b, that are loosely pivoted on the rivets or cross-pins in the chain, so arranged that when hanging free on the lower or operating side of the chain they will take the position and engage the cans D<sup>2</sup>, as shown at c, Fig. 4.

In the rack B<sup>4</sup> are mounted a series of hinged pawls d' d<sup>2</sup>. These pawls are pivoted near the middle, but so proportioned in section that when free they swing into the position shown at d', and when covered by the cans D<sup>2</sup> will lie flat or parallel to the rack-bar B<sup>4</sup>, as shown at d<sup>2</sup>. These pawls d' d<sup>2</sup> can be adjusted to various distances between them by means of a series of holes in the rack B<sup>4</sup>, as shown in the drawings, and as the length of the sides or the size of the cans D<sup>2</sup> may require.

The operation is as follows: The cans D<sup>2</sup> are fed into the machine by hand, so that each of the jaws b will engage a can. The can then slides along on the rack-bar B<sup>4</sup> until it comes in contact with one of the pawls d', and is rolled over, as shown at a, Fig. 4, and dips into the acid-bath Q and the solder-bath R. There is then a pause, exposing the seam to be soldered for a brief period to the melted solder in the bath R until the next succeeding jaw b moves along, and the can is again turned one-fourth of a revolution and another seam or joint is immersed in the melted solder. The pawls d' d<sup>2</sup> are adjust-

able by means of series of holes in the bar B<sup>4</sup>, as shown in Fig. 4, and can be so spaced that cans of any dimensions can thus be soldered.

The dotted line e in Fig. 4 indicates the upper position of the chain B<sup>3</sup> as the cans D<sup>2</sup> are rolled or turned. It will thus be seen how the spaces between the jaws b result in giving pauses in the time of movement of the cans.

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

1. In a soldering-machine, baths for soldering and scouring, and impelling-chains as herein described, the top chain being provided with pivoted angular jaws to engage and turn cans of square section, substantially as described.

2. In a can-head-soldering machine, baths for soldering and scouring, and an impelling-chain having pivoted angular jaws to turn rectangular cans, and in combination therewith, detents to engage the bottom of the cans, so that they will be rolled or turned, substantially as described.

3. In a can-head-soldering machine, baths for soldering and scouring, an impelling-chain provided with jaws to turn cans of rectangular or square section in the manner described, and adjustable pivoted detents to engage the bottom of the cans, substantially as described.

4. In a can-soldering machine, the combination with the endless moving carrier having pivoted jaws which engage the cans, of a series of pivoted detents which engage the opposite sides of the cans, substantially as described.

5. In a can-soldering machine, the combination of soldering-baths, an endless moving carrier having pivoted jaws for engaging the ends of the cans, a stationary bed on which the cans move, said bed being provided with pivoted adjustable fingers for engaging the opposite sides of the cans and retarding them and permitting them to roll, substantially as specified.

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

JOHN B. CLOT.

Witnesses:

ALFRED A. ENQUIST,  
WILSON D. BENT, Jr.