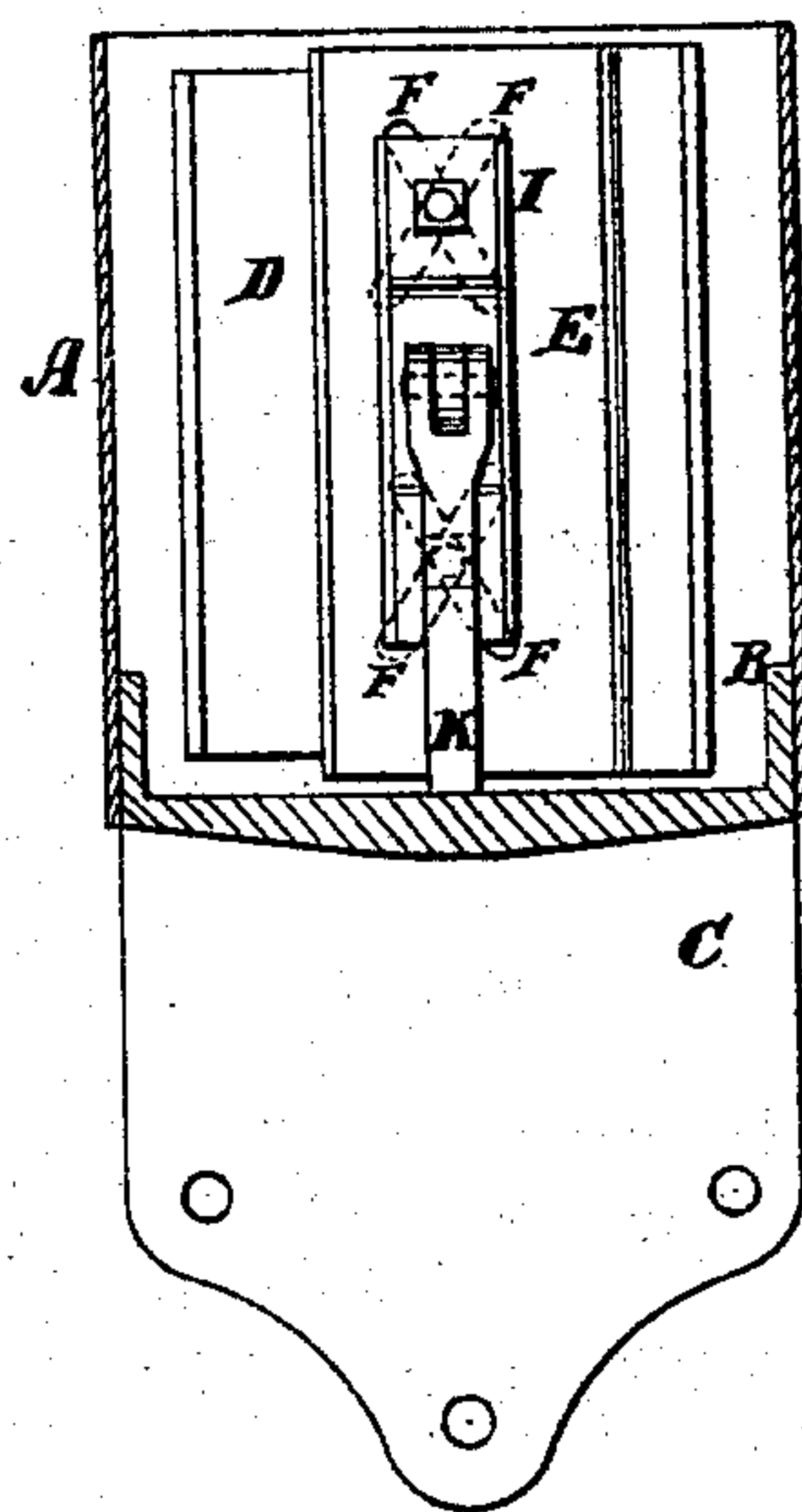
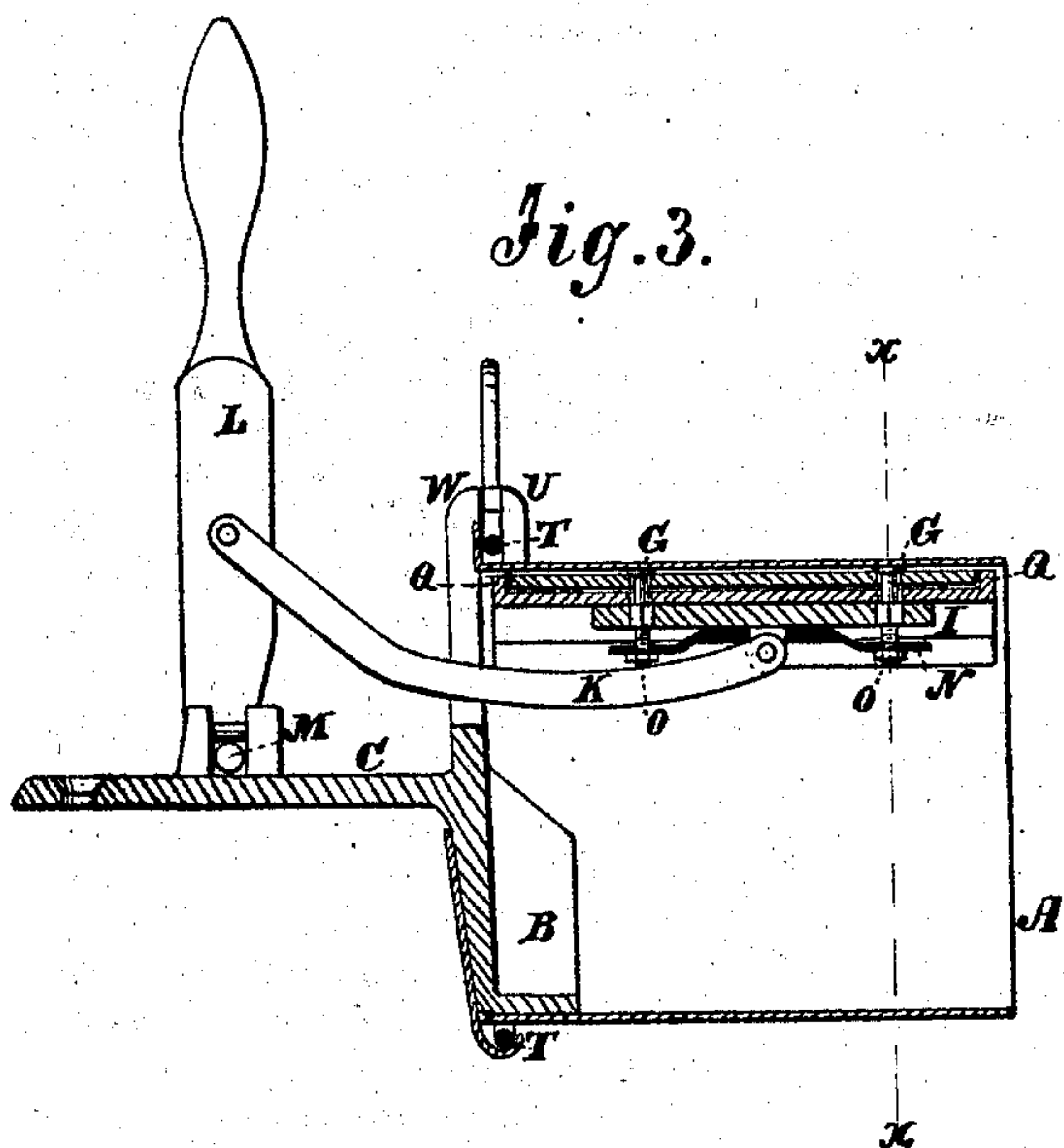
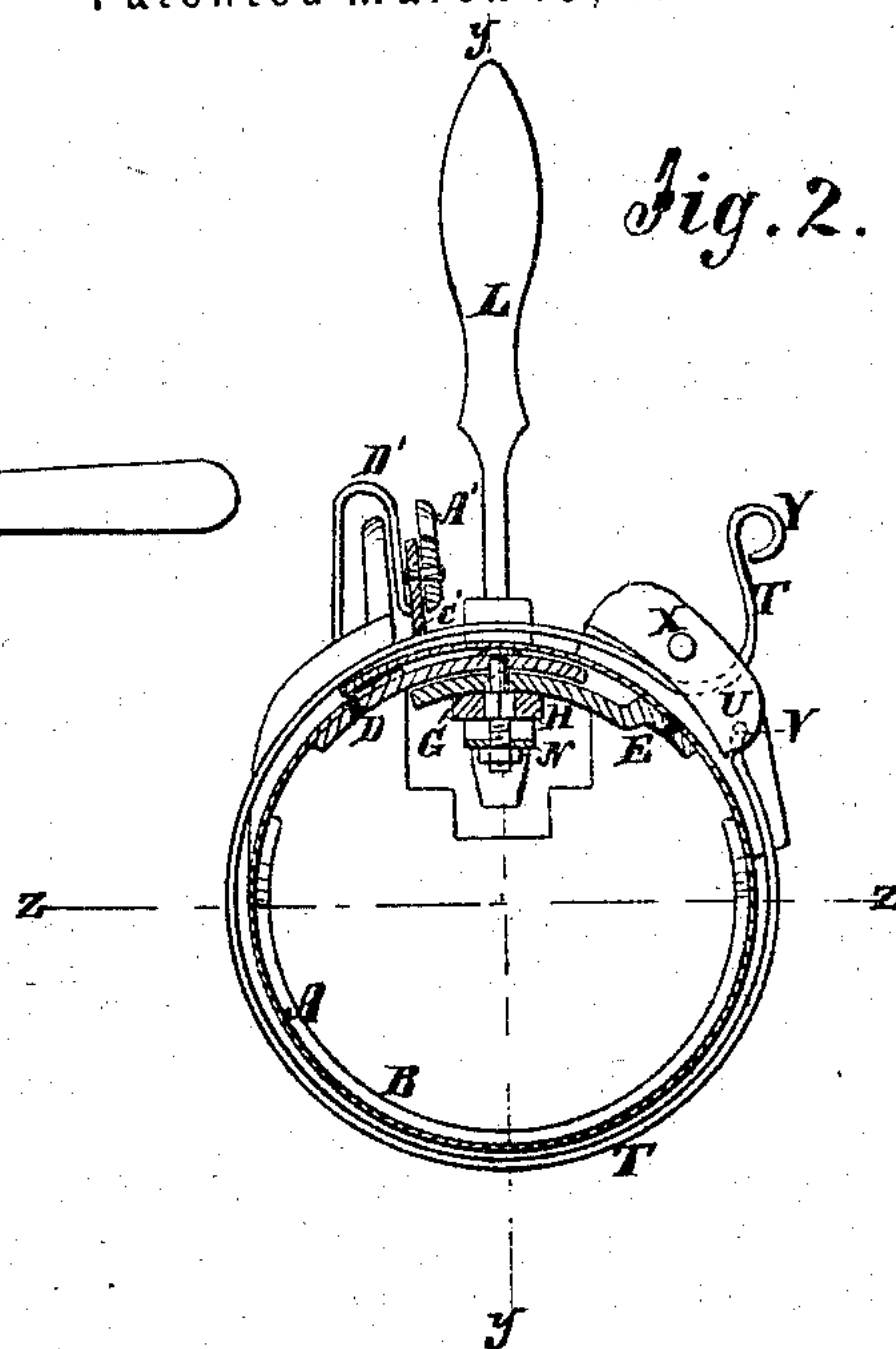
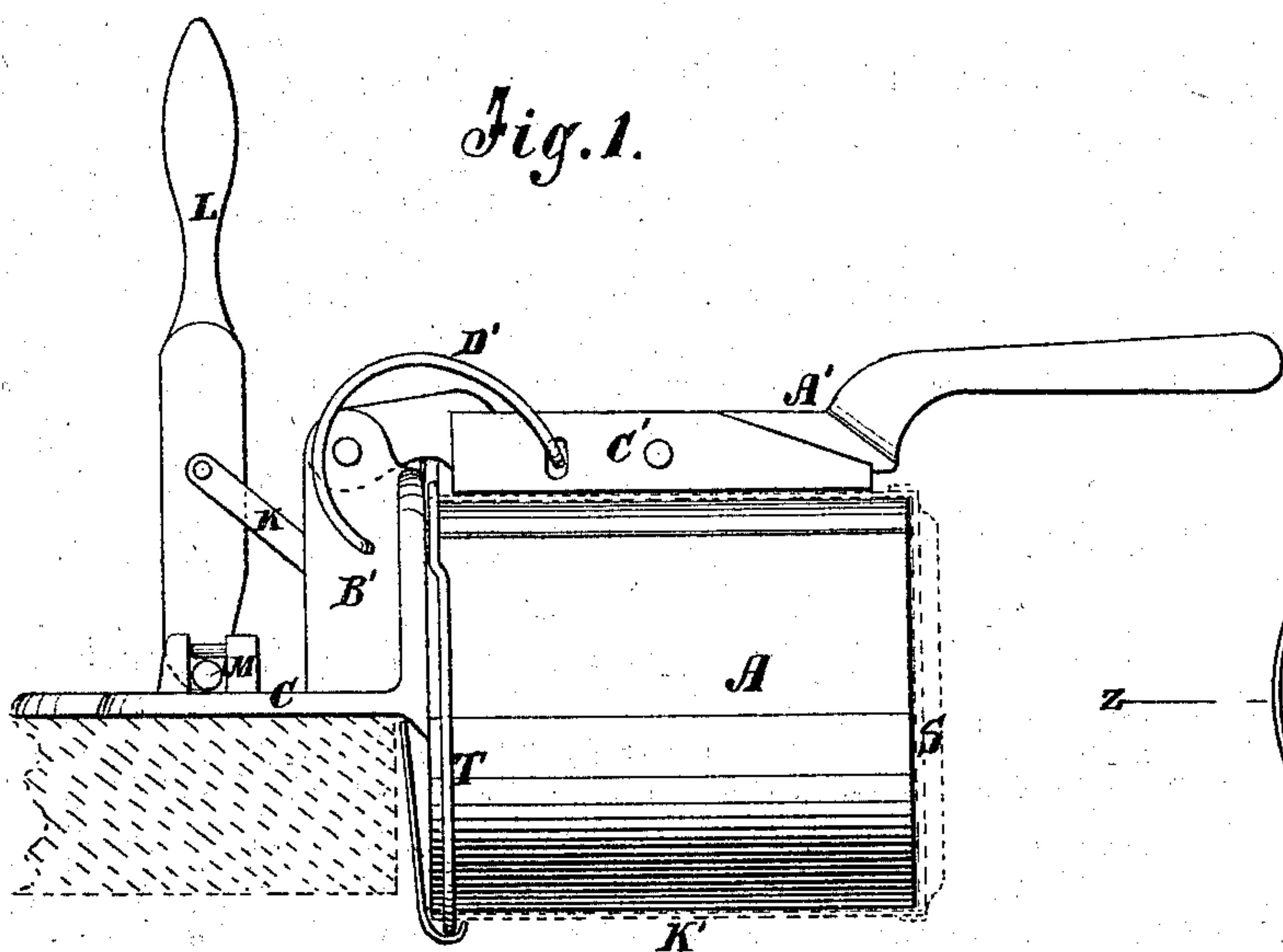


W. REDHEFFER, J. REDHEFFER, Jr., T. G. REDHEFFER,
L. A. SMITH.

Machines for Holding and Soldering Cans.

No. 137,027.

Patented March 18, 1873.



Witnesses:

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PER

UNITED STATES PATENT OFFICE.

WILLIAM REDHEFFER, JAMES REDHEFFER, JR., THOMAS G. REDHEFFER, OF KANSAS CITY, MISSOURI, AND LUKE A. SMITH, OF PAWNEE, KANSAS; SAID SMITH ASSIGNS HIS RIGHT TO SAID WILLIAM REDHEFFER, JAMES REDHEFFER, JR., AND THOMAS G. REDHEFFER.

IMPROVEMENT IN MACHINES FOR HOLDING AND SOLDERING CANS.

Specification forming part of Letters Patent No. 137,027, dated March 18, 1873.

To all whom it may concern:

Be it known that we, WILLIAM REDHEFFER, JAMES REDHEFFER, Jr., and THOMAS G. REDHEFFER, of Kansas City, in the county of Jackson and State of Missouri, and LUKE A. SMITH, of Pawnee, in the county of Bourbon and State of Kansas, have invented a new and Improved Soldering Apparatus, of which the following is a specification:

Our invention relates to improvements in expanding apparatus for holding the cylinders and heads of cans and other articles, and expanding said cylinders into the flange of the cap at one end and to a hoop or band at the other end by the action of a sliding piece having pins working in oblique slots, arranged crosswise of each other in the ends of the cylindrical expanding and contracting cylinder, on which the cylindrical parts of the cans are held, of the character described in the patent granted to LUKE A. SMITH, October 31, 1871, No. 120,466; and the invention consists, first, of a spring combined with said sliding piece, the slotted ends of the expanding and contracting holder, and the aforesaid pins calculated to hold the parts together snugly and take up any slackness or looseness between the lapping ends of the said expander. Secondly, the invention consists of an arrangement of the metal plates, having the oblique slots for actuating the ends of the expander, calculated to prevent one part of the said expander from overrunning the other endwise, under the influence of the sliding piece carrying the pins. Thirdly, the invention consists of a clamp or vise, of novel construction, for holding and adjusting the aforesaid adjustable band. Fourthly, the invention consists of a presser-lever, for pressing the edges of the can to be soldered together at the seam, with a blade so pivoted to it as to act alike whether the expander be extended much or little, as for large or small cans.

Figure 1 is a side elevation of our improved soldering apparatus. Fig. 2 is a transverse sectional elevation taken on the line *y y* of Fig. 2; and Fig. 4 is a horizontal sectional elevation taken on the line *z z* of Fig. 2.

Similar letters of reference indicate corresponding parts.

A is a cylindrically-formed piece of sheet metal larger than the cylindrical part of the can to be formed and about the same length, which is in the middle portion of one end between its edges, riveted or otherwise made fast to a semicircular flange, B, representing the lower half of a circle in a vertical plane, and attached to a base-plate, C, so that the said sheet-metal piece A extends horizontally from said support, which is attached to the top of a bench or any other thing for holding it permanently. This cylindrically-formed piece A is open and overlapped at the ends along the top at or about the center. One end has a curved cast-metal plate, D, attached to its under side; the other end has the curved cast-metal plate E attached to it and overlapping D. These two plates have each two slots through them diagonal to the lengthwise direction—those of one plate crossing those of the other, as clearly shown in dotted lines at F; and the pins G of a sliding plate, I, pass through these slots, as clearly shown in Figs. 2 and 3, so that when said plate moves endwise the cylinder A will be expanded or contracted, according to which way the said plate I moves.

As thus far described the apparatus is similar to that described in the aforesaid patent.

We now propose, for the purpose of operating this sliding plate, to connect it by a rod, K, with a lever-handle, L, at the rear of cylinder A, and pivoted to the base-plate, as shown at M, instead of having a prolongation of the plate I out through the front for a handle, as heretofore, whereby we avoid the objectionable projection at the front, and facilitate the application and removal of the work; and we can apply covers with a hole; besides, we can have as much leverage for working the slide I as we may need.

We utilize the pins G of plate I, which enter the slots F for expanding and contracting cylinder A, for bolts also for holding plates D, E, and I together by the yielding force of a spring, N, and, therefore, do not connect them

rigidly to plate I, but have them provided with a head above plate D, and pass through the slots F, also through plate I, and also extend beyond the lower wall and pass through the spring N, receiving a nut, O, below the spring, by which to confine the spring and impart the necessary tension to it. As the bolts are liable to be turned by sliding in the slots so that the nuts would be unscrewed, we make them square at P, where they pass through plate I to prevent such turning.

In moving the plate I forward and back its friction and that of the heads of the pins G tend to move the plates D E and the parts of the cylinder A connected to them more or less, sometimes moving one more than the other, as the machine was heretofore arranged. We, therefore, now provide the flanges Q on the plate E at the ends, so confining plate D between them that one cannot overrun the other. The cylindrical part of the can is placed on the cylinder A, with the edges to be soldered together overlapping each other, as shown by the dotted lines K', Fig. 1. The cover is then put on the outer end, with its flange overlapping said piece K, and the inner end is placed under a hoop, T, which is to be of the same size as the flange of cover S; then the said piece is expanded by the cylinder A, being worked by the lever L, slotted plates, &c., as much as the said flange of the cover and the hoop will allow. Now, in order to adapt the apparatus for large or small covers, we propose to use a hoop of wire, T, or any equivalent thereof, instead of the permanently-fixed flange heretofore used, and to attach it at one end to a clamp or vise-jaw, U, as shown at V, and we confine the other end between said jaw U and another permanent one, W, by a bolt and nut X, which, being loosened, will allow of moving the unattached end of the hoop toward or from the point V, where the other end is attached, so that it can be readily taken up for small covers or let out for large ones. The said hoop extends above the vise after passing through it, terminating in a handle, Y, for convenience in shifting it. Any other suitable clamp or vise for holding the spring may be used.

We now propose to have a presser, A', for

pressing together the edges to be soldered after the part K' has been expanded, the said presser being in the form of a lever, and pivoted to a stand, B', rising up from the plate C; and in order to adapt said presser to act alike throughout the whole length of covers of different sizes, which will of course vary relatively to the pivot of the presser as to height, we have a blade, C', pivoted to the presser near about the center, so that it will shift on said pivot so that its bearing-edge will act alike throughout the length of the can. A spring, D', is provided with said presser to throw it up after it is released by the operator at the completion of the work.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination of the spring N with the sliding plate I and the plates D E, substantially as specified.
2. The said spring connected to plate I by the pins which actuate the plates D and E, and said pins provided with a head above plate D, and made square in the part passing through plate I, substantially as specified.
3. The plates D E confined against over-running each other endwise by flanges Q, substantially as specified.
4. The arrangement of the adjustable hoop T and the vise U W X, substantially as specified.
5. The combination, with the expander A, of a presser A', substantially as specified.
6. The combination, with said presser, of an adjustable blade C', substantially as specified.

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R. W. QUARLES,

GEO. W. GALVIN.