(No Model.)

2 Sheets—Sheet 1.

S. J. SENECA.

CAN SOLDERING MACHINE.

No. 414,728. Patented Nov. 12, 1889.

Fig. 1.

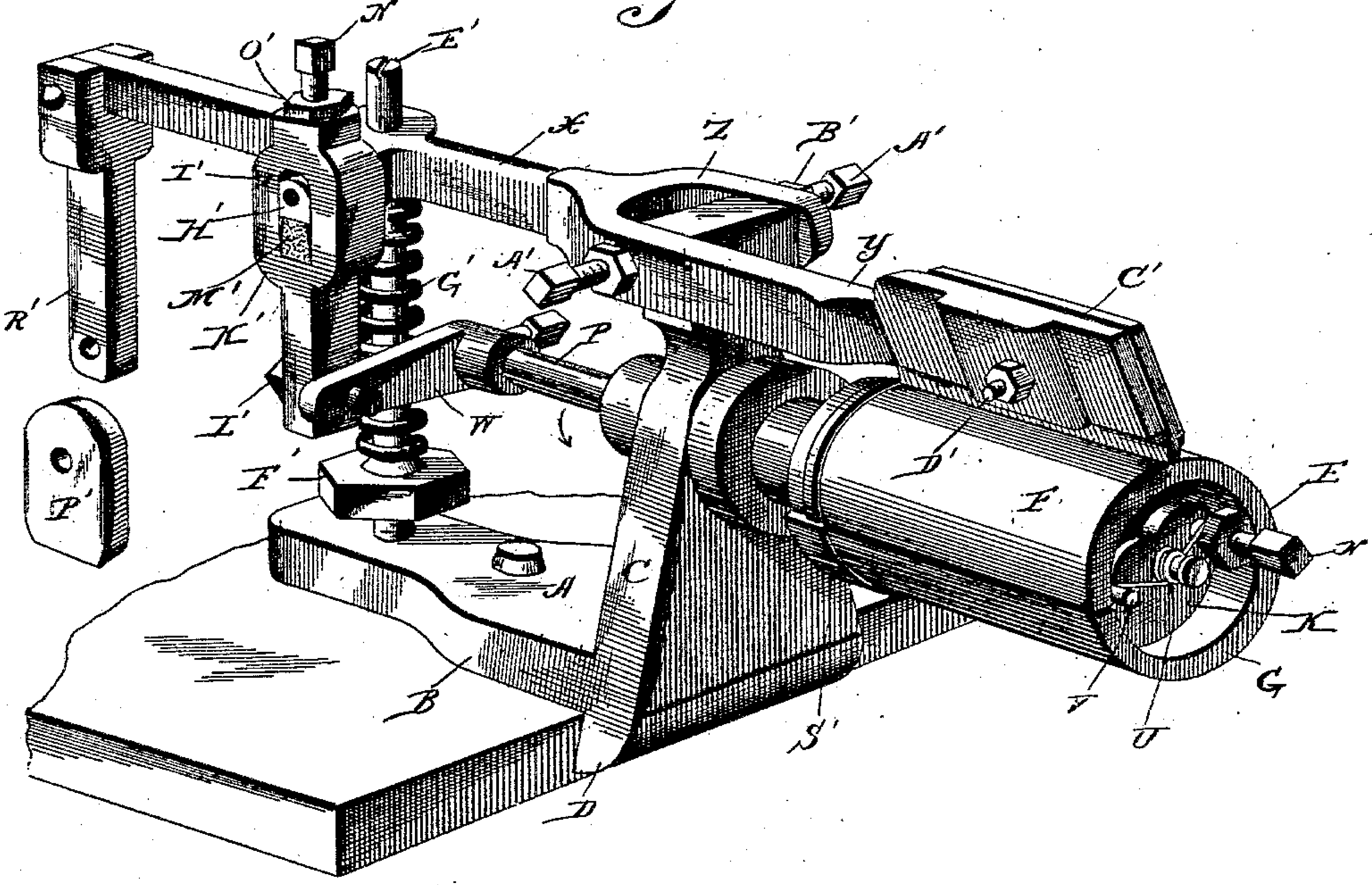
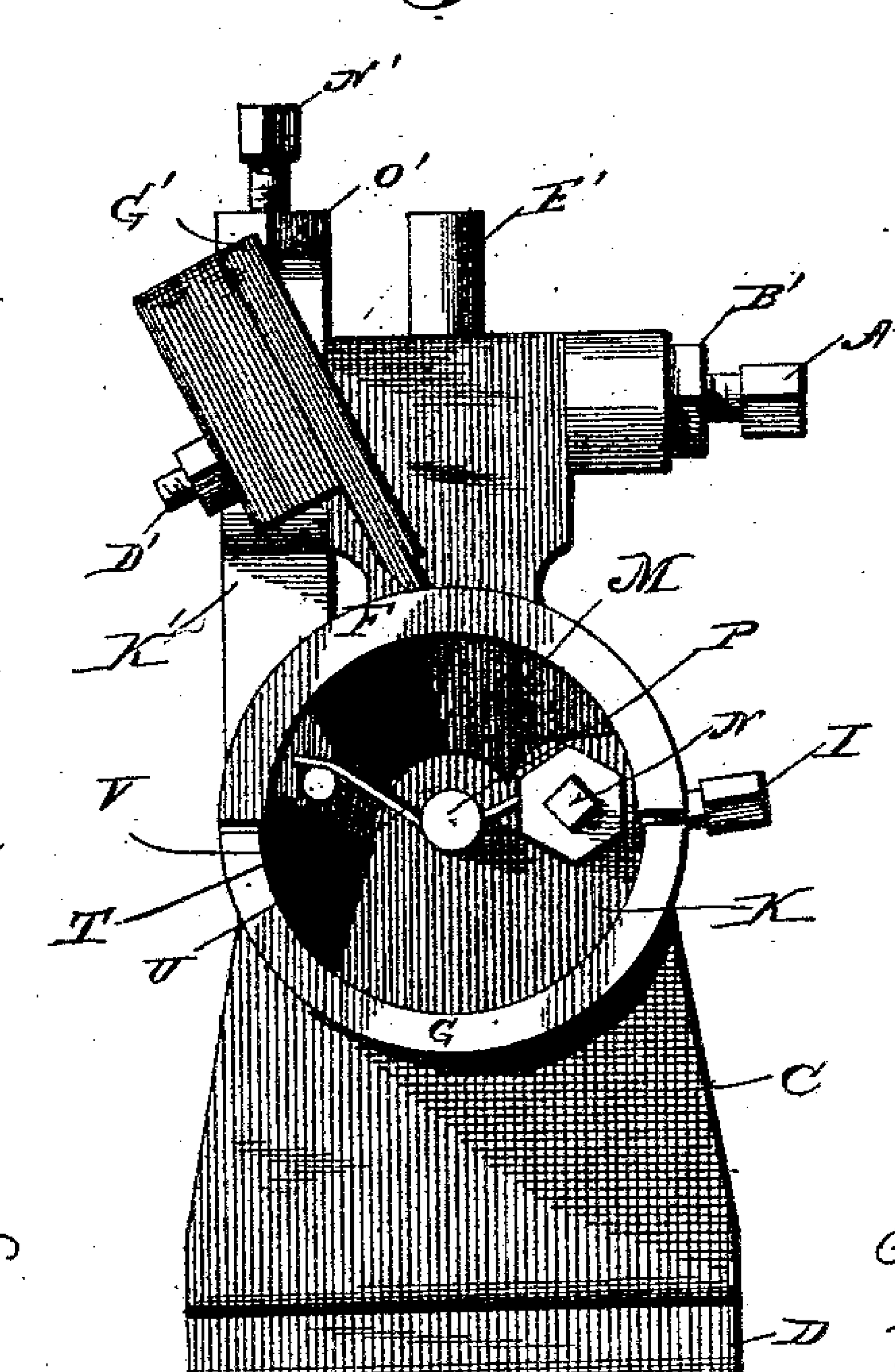


Fig. 2.



Witnesses
H. S. Rohrer
Wallace Greene

Inventor:
Stephen J. Seneca
by Schuyler Duryee
Attorney

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

S. J. SENECA.

CAN SOLDERING MACHINE.

No. 414,728. Patented Nov. 12, 1889.

Fig. 3.

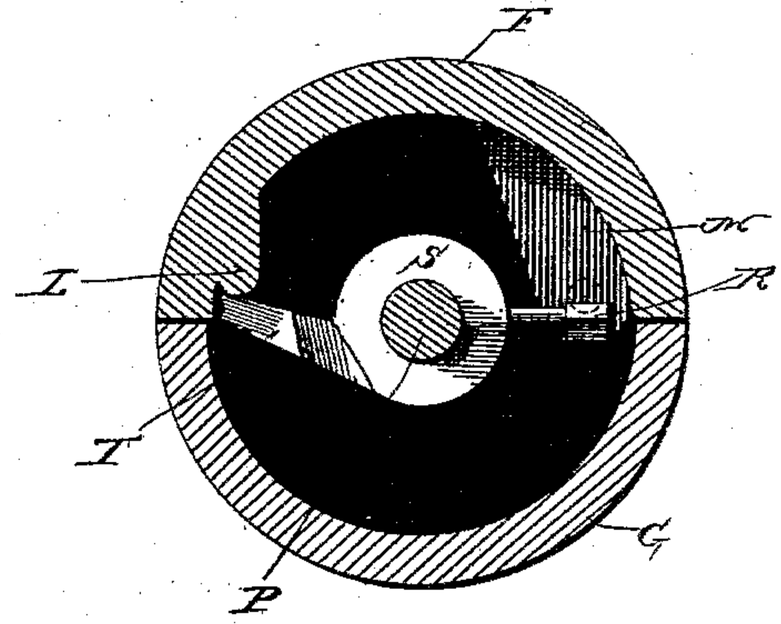
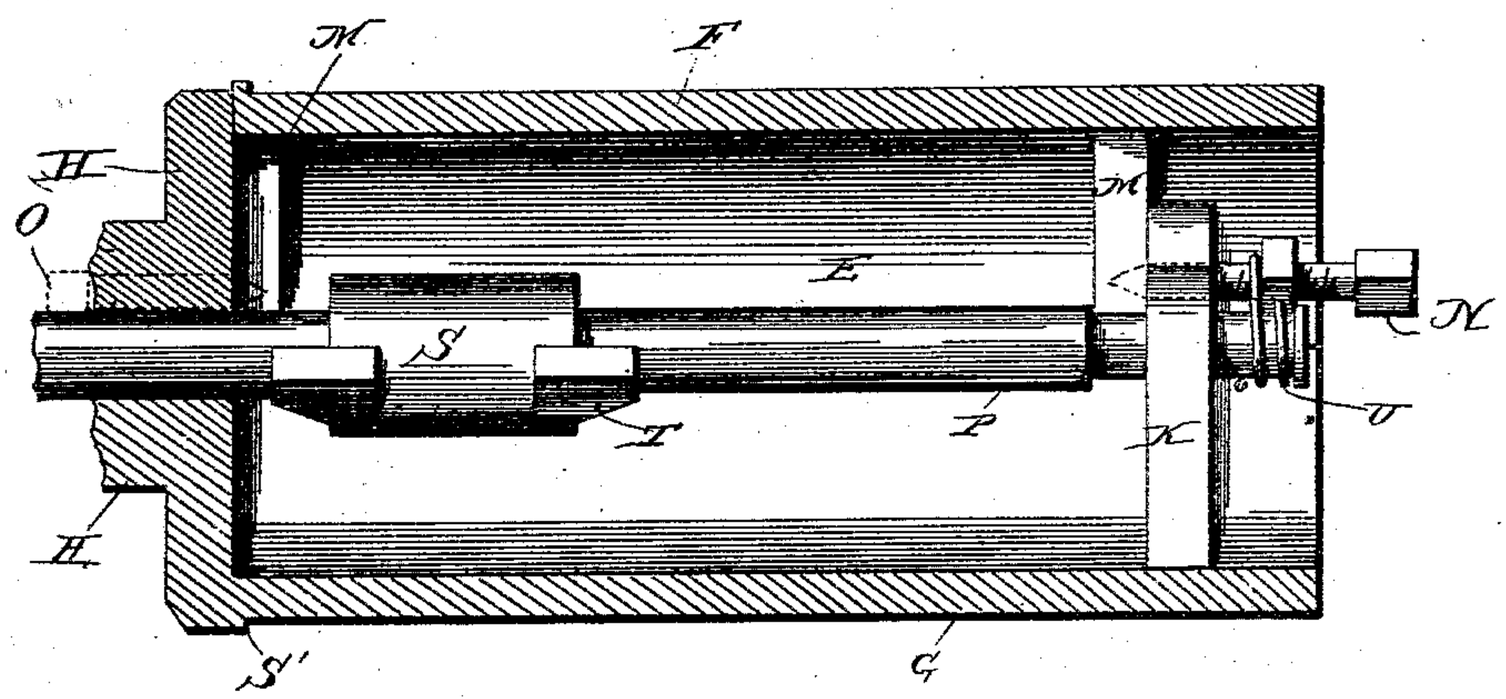


Fig. 4.



Witnesses.
H. S. Robinson
Wallace Greene.

Inventor:
Stephen J. Seneca
by Schuyler Duryee
Attorney.

UNITED STATES PATENT OFFICE.

STEPHEN J. SENECA, OF HAVRE DE GRACE, MARYLAND.

CAN-SOLDERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 414,728, dated November 12, 1889.

Application filed March 13, 1889. Serial No. 303,137. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN J. SENECA, a resident of Havre de Grace, in the county of Harford and State of Maryland, 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 pertains to make and use the same.

My invention relates to an improvement in can-soldering machines in which the side seams of cans are soldered, and has for its object the gaging of the cans, so that they will be of uniform exterior diameter regardless of the thickness of the metal used. This result I attain by the peculiar combination of devices illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a can-soldering machine embodying my improvements. Fig. 2 is a front end elevation of the same. Fig. 3 is a transverse sectional view of the gaging-cylinder, and Fig. 4 is a longitudinal sectional view of the same.

The bracket A, which forms the frame or support of the machine, has a horizontal arm B, adapted to be bolted on a table or other object, and has a vertical arm C, the lower end of which depends below the arm B and forms a flange D, adapted to bear against the edge of the table, to thereby more securely hold the bracket thereon.

The gaging-cylinder E comprises two independent semi-cylindrical sections F G. The latter is formed integrally with a sleeve H at one end, which sleeve is fitted in an opening in the vertical bracket-arm C and secured therein against rotation by a set-screw I. Near the outer end of said section G, on the inner side thereof, is formed an arm or web K, which is arranged transversely, as shown. The section F has a flange or lip L on its inner side near one edge and has lugs or ears M on its inner side at the opposite edge, one of said lugs or ears bearing against the inner end or head of the section G and the other bearing against the arm or web K. Pivotal bolts N O engage threaded openings in the head and in the web, respectively, and the inner pointed ends of the said bolts engage conical openings in the outer sides of the lugs or ears M, and thereby serve to pivot or hinge the section F near one edge to one side of the section G, and thereby adapt the said section F to be opened from or closed toward the section G. Pivotal pins or a continuous rod may be substituted for the bolts, if preferred.

Arranged concentrically in the gaging-cylinder and extended through the bore of the sleeve and through an opening in the web or arm K is a rock-shaft P, and secured on the same by a set-screw R and collar S is an arm T, which is adapted to engage the lip or flange L. A spring U has its central portion coiled on the outer end of the rock-shaft P. One arm of the spring engages a stud V, that projects from the lug or ear M near the outer end of the cylinder, and the opposite arm of the spring bears on the bolt N. A rock-arm W is attached to the inner end of the rock-shaft P by means of a collar and set-screw, as shown.

The operating-lever X is bifurcated near its center to form a long arm Y and a shorter arm Z, the said arms being arranged on opposite sides of the upper end of the vertical bracket-arm C and pivoted thereto by pointed screws A′, having jam-nuts B′. The outer portion of the arm Y, which extends over the gaging-cylinder, is inclined, as shown, and forms a head, to one face of which is attached a knife or straight-edge C′ by means of a central pivotal set-screw D′. A vertical bolt-rod E′ has its upper end fitted and guided in an opening in the lever X, and has its lower end bearing in the horizontal arm B of the bracket. An adjusting-nut F′ operates on the threaded lower portion of the said bolt-rod, and on the latter is fitted a coiled extensile spring G′ of considerable power, which bears between the adjusting-nut and the lever, and thereby serves to normally elevate the inner end of and depress the outer end of the latter. A horizontal offset arm H′ projects from one side of the lever X and extends through a vertical slot I′ in a link K′. The lower end of the latter is connected to the rock-arm W by a pivotal bolt L′. A buffer M′, of rubber or other resilient material, is arranged in the lower portion of the slot below the offset arm, and an adjusting-screw N′ works in a threaded opening in the upper end of the link, the lower end of the said screw

being adapted to bear on the offset arm, and said screw having a jam-nut O′, whereby it may be secured against rotation. A plate P′ is employed to cover the slot, and is secured in position on the outer side of the link by a screw, which engages registering openings in the plate and offset arm. A coupling R′ is pivotally connected to the outer end of the lever X and to a treadle or foot-lever of suitable form. (Not shown.)

The operation of my invention is as follows: When the treadle or foot-lever is depressed, the lever X is thrust downward against the tension of the spring G′ and the lever Y raises the blade C′ from the gaging-cylinder, and the link K′ causes the rock-arm W to partly rotate the rock-shaft P in the direction of the arrow in Fig. 1, thereby moving the cam-lever T from the lip or flange L and permitting the spring U to close the section F against the section G. The cylindrical portion of the proposed can with its edges overlapped is then slipped on the gaging-cylinder until it comes in contact with the annular shoulder S′ at the inner end thereof, the operator taking care to compress the tin as closely as possible on the cylinder. He then relieves the pressure on the foot lever or treadle, and the spring G′ causes the lever-arm Y to descend and the knife or straight-edge to impinge on the lapped edges of the tin, and as the inner end of the lever X moves upward the link K′ and rock-arm W partially turn the rock-shaft P in the opposite direction to the arrow before mentioned, causing the arm T to engage the lip or flange L and partially open the section F of the cylinder from the section G, thereby expanding the tin cylinder to the requisite exterior diameter. The soldering-iron is than drawn along the edge of the knife on the lapped edges of the tin, and the latter thereby soldered, when the completed tin cylinder is removed and the operation before described repeated. The force of the spring G′ is employed to depress the lever-arm Y and to partly open the cylinder, and is thus distributed between the said lever-arm and cylinder, both being moved until the moving knife and the moving portion of the cylinder come in contact. If a substance—such as sheet-tin—is inserted between the said knife and cylinder, it follows that the latter must necessarily move a less distance than it would otherwise, and this movement of the cylinder is increased or decreased according to the decreased or increased thickness of the tin.

It will be obvious from the foregoing that no matter how the thickness of the tin employed for making the cans may vary the exterior diameter of all the cans soldered on the machine will be the same, and hence the heads of the cans may be more readily, cheaply, and expeditiously soldered on than would be possible if the exterior diameters of the cans vary, as now. Moreover, a better quality of can, and one that is less liable to be defective and to contain air-holes in its soldered joints, may be manufactured by the use of my improved machine.

The slot I′ and offset arm H′ permit a certain amount of lost motion between the lever X and the link K′, and the cylinder may be adjusted and caused to expand cylindrical tins to any required exterior gage by means of the screw N′, as is obvious.

Having thus described my invention, I claim—

1. In a can-soldering machine, the gaging-cylinder having the hinged longitudinal section, the stud V, the spring U, to engage said stud and hinged section and normally close the latter, the rock-shaft, and the arm to engage and open the hinged section, substantially as described.

2. In a can-soldering machine, the combination of the gaging-cylinder having the hinged section, the rock-shaft having the arm to engage and open said section, the said rock-shaft having also the rock-arm, the lever having the knife or straight-edge adapted to bear on the gaging-cylinder, and the link connecting the said lever and the said rock-arm, substantially as described.

3. In a can-soldering machine, the combination of the non-revoluble gage-cylinder having the hinged longitudinal section, the rock-shaft having the arm to engage and open said hinged section and having the rock-arm, the lever having the offset arm and carrying the knife or straight-edge, the latter being adapted to bear on the cylinder, the link connected to the rock-arm and having the slot receiving the offset arm, the buffer in said slot under said offset arm, and the adjusting-screw N′, substantially as described.

4. The gaging-cylinder having the longitudinal hinged section F, with lug L, the spring U, to normally close the same, and the rock-shaft having the arm T to engage and open the said section, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

STEPHEN J. SENECA.

Witnesses:
SCHUYLER DURYEE,
EDUARD CASHMAN.