

(No Model.)

E. C. LEWIS.
TOOL FOR CRIMPING METAL BUNGS.

No. 426,825.

Patented Apr. 29, 1890.

Fig. 1.

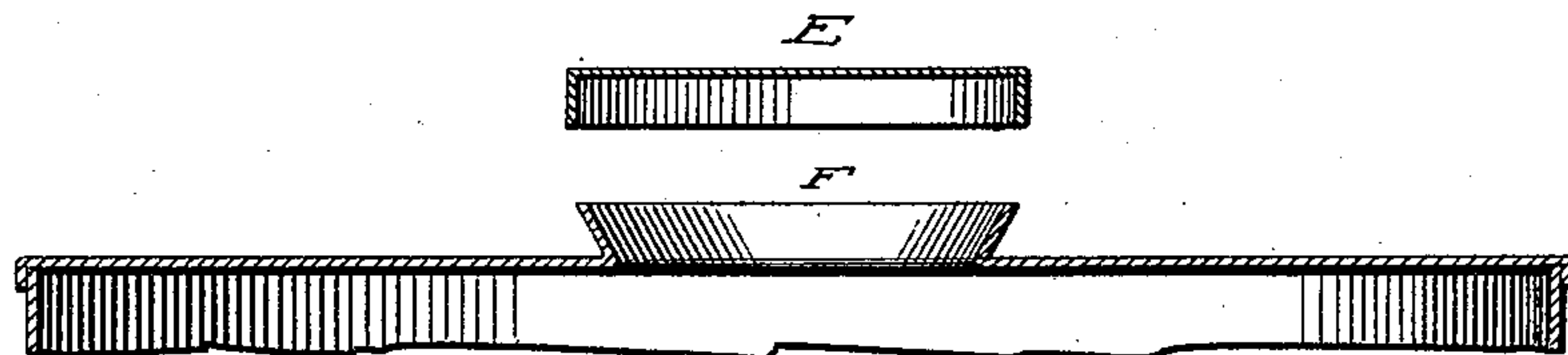


Fig. 2.

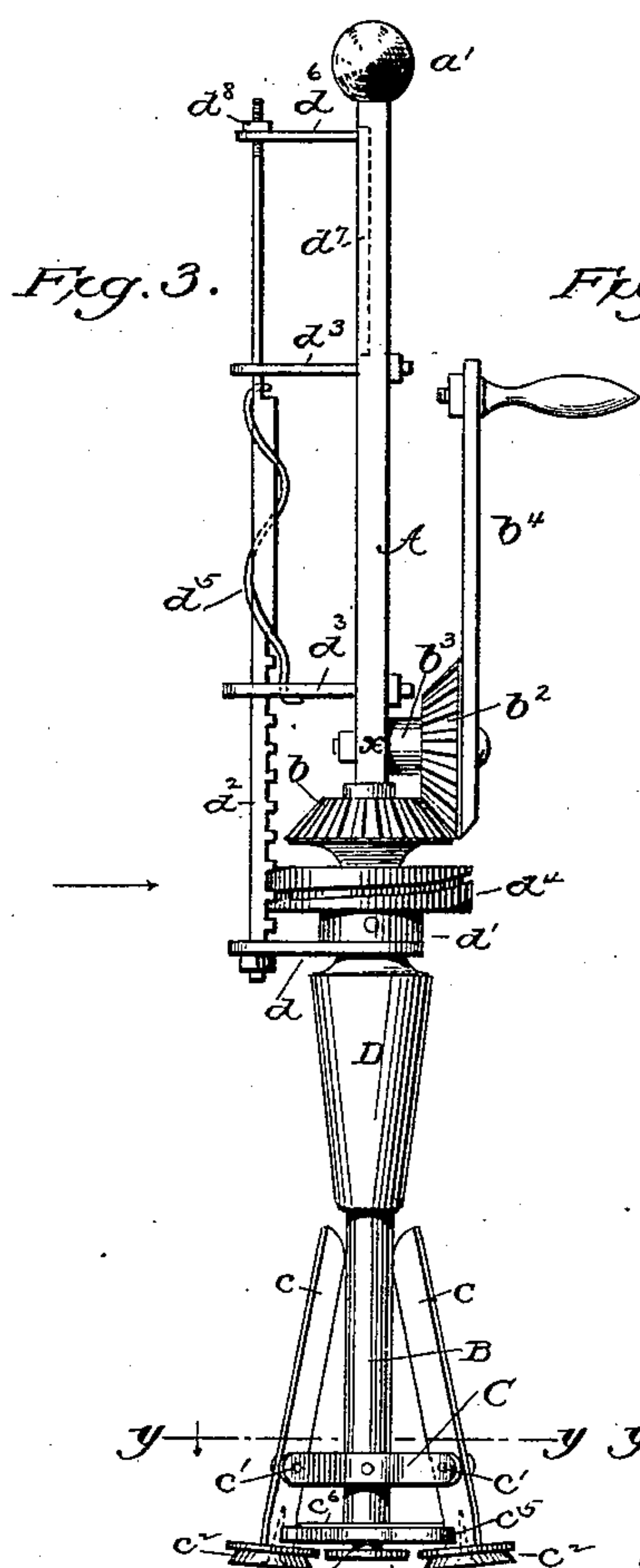
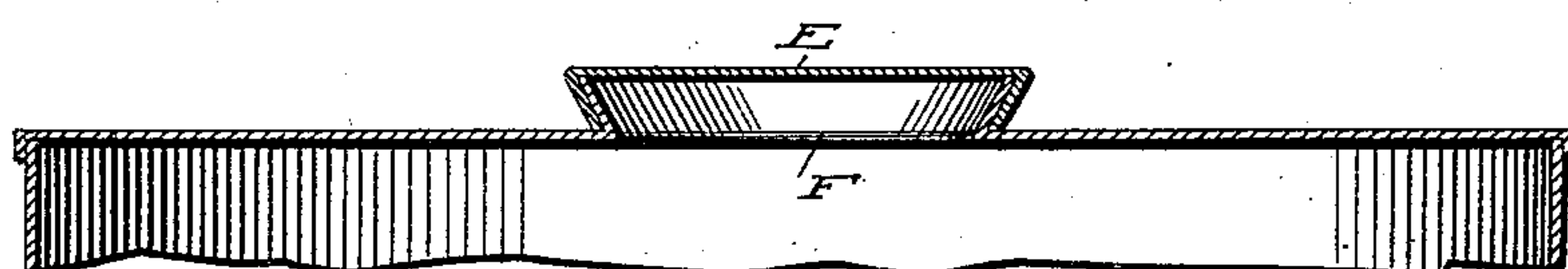


Fig. 3.

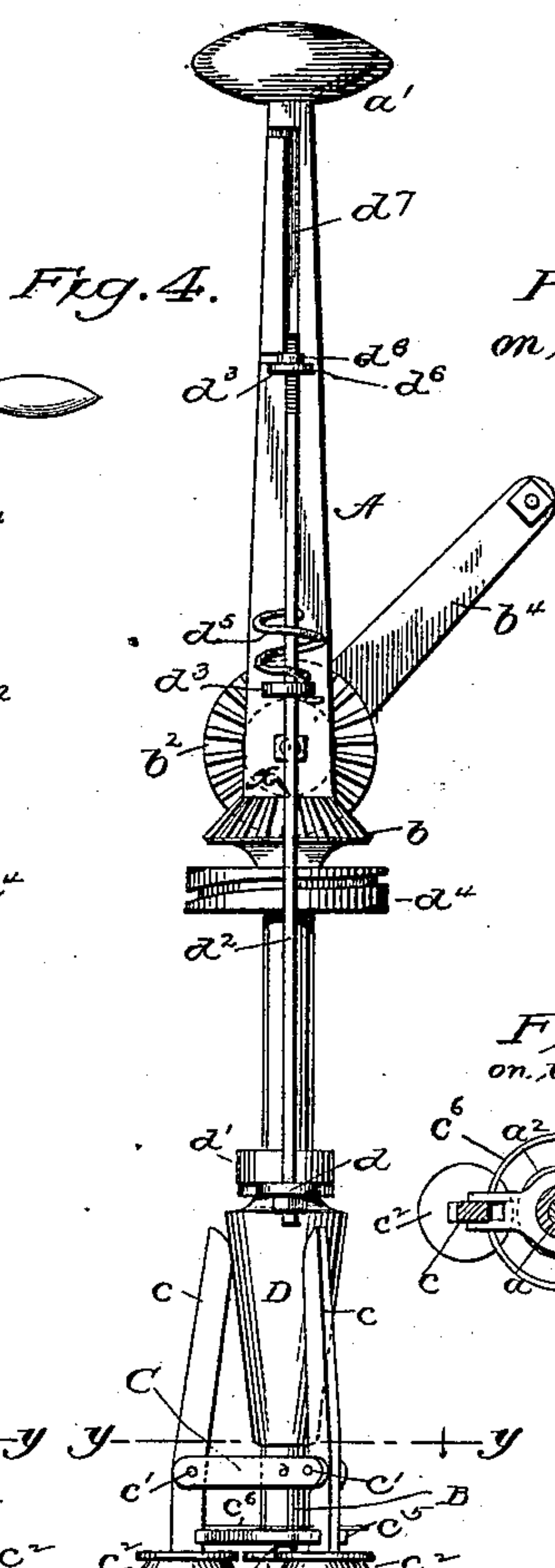


Fig. 4.

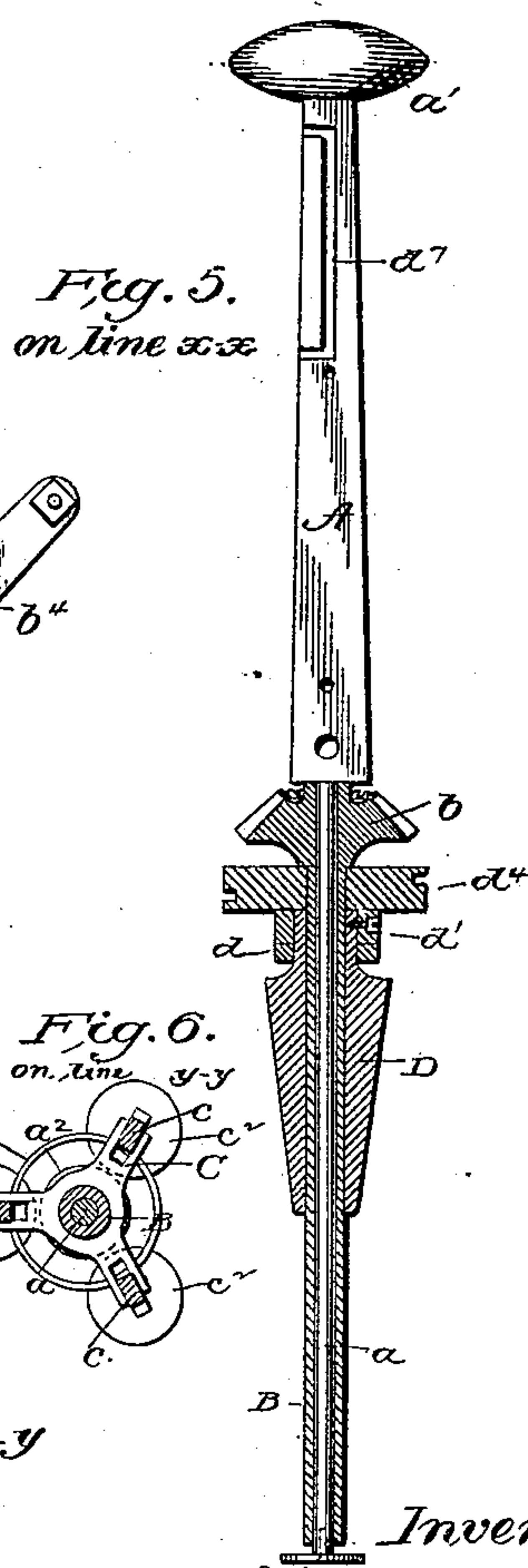
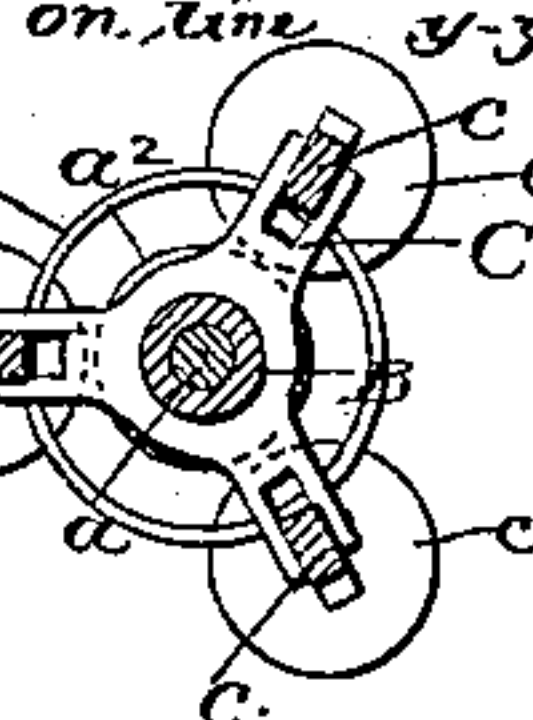


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

EUGENE C. LEWIS, OF NASHVILLE, TENNESSEE.

TOOL FOR CRIMPING METAL BUNGS.

SPECIFICATION forming part of Letters Patent No. 426,825, dated April 29, 1890.

Application filed February 14, 1890. Serial No. 340,430. (No model.)

To all whom it may concern:

Be it known that I, EUGENE C. LEWIS, of Nashville, in the county of Davidson and State of Tennessee, have invented certain Improvements in Tools for Crimping Metal Bungs, of which the following is a specification.

At the present day it is the common practice to provide sheet-metal vessels with flanged mouths or necks and to close these mouths by applying thereover a peripherally-flanged cap or bung, which is secured in place by crimping its flange inward around the flange or neck of the vessel.

My invention relates to a portable tool or instrument for thus crimping and securing the bungs, and which is also adapted for securing the tops and bottoms of sheet-metal cans to their bodies.

The tool consists, essentially, of a series of crimping-rolls carried by levers on a rotating frame and combined with gearing for imparting a rotary motion, and with automatic devices whereby the levers are operated to close the rollers inward against the periphery of the bung while traveling around the same.

In the accompanying drawings, Figure 1 is a sectional view of a can and of the bung for closing the same. Fig. 2 is a similar view showing the bung secured in place. Fig. 3 is a side view of my crimping-tool. Fig. 4 is a front view of the same, looking in the direction indicated by the arrow. Fig. 5 is a sectional view on the line xx . Fig. 6 is a section on the line yy of Figs. 3 and 4.

Referring to the drawings, A represents a metal bar having its lower end in the form of a round rod or spindle a , while its upper end is flattened and provided with a fixed handle a' , which serves as a means of holding the instrument, preventing its rotation, and applying pressure to the bung. At its lower end the spindle a is provided with a fixed circular plate a^2 , intended to rest on top of the bung in order to hold the same down in place upon the can and to prevent its rotation during the crimping operation.

B is a sleeve or tube mounted to revolve freely around the spindle a and provided at its upper end with a beveled pinion b , through which it receives motion from a pinion b^2 , which latter is mounted on a fixed stud b^3

and provided with a hand-crank b^4 , the rotation of which imparts a rotary motion to the sleeve or tool. Near its lower end the sleeve is provided with a plate or spider C, fixed rigidly thereto and having in its outer edge the vertical slots to receive three levers c , which are sustained by horizontal pivots c' and provided at the lower end with horizontal crimping-rolls c^2 . These rolls may be attached to the ends of the levers by screws, as shown, or in any other manner which will admit of their free rotation. A plate c^5 is secured to the lower end of the sleeve and provided with notches to receive the lower ends of the levers above the rollers, and this for the purpose of giving the levers lateral support. A spring c^6 in the form of an elastic ring is seated between and against the lower ends of the three levers and tends to throw them outward, so as to maintain the separation of the rollers.

A cone D is mounted to slide freely upward and downward on the sleeve for the purpose of separating the upper ends of the levers, and thereby causing the lower ends to close inward against the bung. The upper end of this cone has a neck inserted loosely through an arm d and secured by a collar d' . The arm d is attached to the lower end of a rack-bar d^2 , which slides vertically through fixed guide-arms d^3 on the side of the bar A. A worm-wheel d^4 , fixed to and revolving with the sleeve, engages the rack-bar, as shown in Fig. 1, so that as the sleeve rotates the worm causes the rack-bar to descend and carry the cone D gradually downward between the levers, the effect of which is to gradually close the crimping-rolls inward toward the center. The rack-bar is mounted so that it may turn around its longitudinal axis in order to disengage its teeth from the worm-wheel, so that after the cone has been carried down and the crimping operation completed the rack-bar may be disengaged and the cone lifted instantly to its original position. A spiral spring d^5 , attached at one end to the rack-bar and at the other to the frame, tends to turn the rack out of engagement with the worm-wheel. A finger or latch d^6 is fixed to the upper end of the rack-bar, and the bar A provided in its upper end with a groove d^7 , (clearly shown in Fig. 5,) its upper and lower ends opening laterally through the edge of

the bar. Before the operation commences the latch is turned into the upper end of the groove and, engaging in the vertical portion of the same, holds the rack in engagement.

5 As the cone and rack-bar descend, the latch travels downward in the vertical portion of the groove and maintains the rack in engagement. At the completion of the operation the latch reaches the lower end of the groove and re-
10 leases the rack-bar, which is immediately turned by the spring d^5 so as to throw the latch out of the bar, whereupon the rack and its connections are lifted, as before explained.

The manner of using the tool is as follows:

15 A circular peripherally-flanged bung E is seated loosely over the inclined flange or mouth F on the can. (See Fig. 1.) The operator grasping the handle of the instrument seats the plate a at the lower end centrally upon the
20 bung and applies a moderate pressure to hold the bung down in place and to prevent the parts from rotating. He then revolves the crank b^1 , holding the frame at rest. As a result of this operation the sleeve and its levers
25 cause the rollers to travel around the outer edge of the bung, and at the same time the worm-wheel, through the rack-bar, causes the cone D to gradually descend, separating the upper ends of the levers and causing the roll-
30 ers to be carried inward toward the center, so that they act to crimp or close the flange of the bung inward tightly around and beneath the mouth of the can. This operation continues until the bung is firmly attached and
35 a close joint produced between it and the can, after which the latch releases the rack and permits the cone to be lifted, so that the rollers may separate and permit the removal of the tool.

40 In order that the crimping-rolls may be closed to a greater or less extent, I so connect the finger d^6 to the rack-bar that the finger may be adjusted longitudinally thereon. By adjusting the finger at different points on the
45 bar the latter will be released at a lower or higher point in its descent, according to the adjustment of the finger. As shown in Fig. 3, the upper extended end of the rack-bar is

threaded and screwed into the end of the arm d^6 , above which a nut d^8 is applied. 50

Having thus described my invention, what I claim is—

1. The hand-tool for crimping bungs, consisting of the standard A, provided at its upper end with the fixed handle as a means of
55 applying pressure and preventing rotation of the standard, in combination with the rotary sleeve provided with the driving-pin, the pinion driving-gear mounted on a journal on the standard and provided with a hand-crank, 60 the levers pivoted to the rotary sleeve, the rollers mounted on the lower ends of the levers, the sliding cone encircling the sleeve and acting between the upper ends of the levers, and gearing, substantially as shown, to 65 automatically advance the cone.

2. The bar or standard, the rollers, their levers, and the lever-carrying sleeve revoluble around the standard, in combination with the crank and gearing to revolve the sleeve, the
70 sliding cone, its rack-bar, and the worm-wheel to actuate the rack, said elements combined substantially as shown.

3. In combination with the standard, the revoluble sleeve provided with the pinion and
75 worm-wheel, the hand-crank and pinion, the levers mounted on the sleeve, their rollers, the sliding cone, its controlling-arm, the rack-bar mounted to turn out of engagement with the worm-wheel, and the finger to maintain 80 the engagement.

4. In combination with the frame, the rotary sleeve, its roller-carrying lever, and the sliding cone to operate the levers, the worm and rack to move the cone, and the rack-con- 85 trolling finger d^6 , adjustably connected to the rack, whereby the machine may be adjusted to close the crimping-rolls to a greater or less extent.

In testimony whereof I hereunto set my
90 hand, this 24th day of January, 1890, in the presence of two attesting witnesses.

EUGENE C. LEWIS.

Witnesses:

G. STRITCH,

A. P. JACKSON.