

A. S. MUNGER.
Seaming-Machines.

No. 144,691.

Patented Nov. 18, 1873.

Fig. 1.

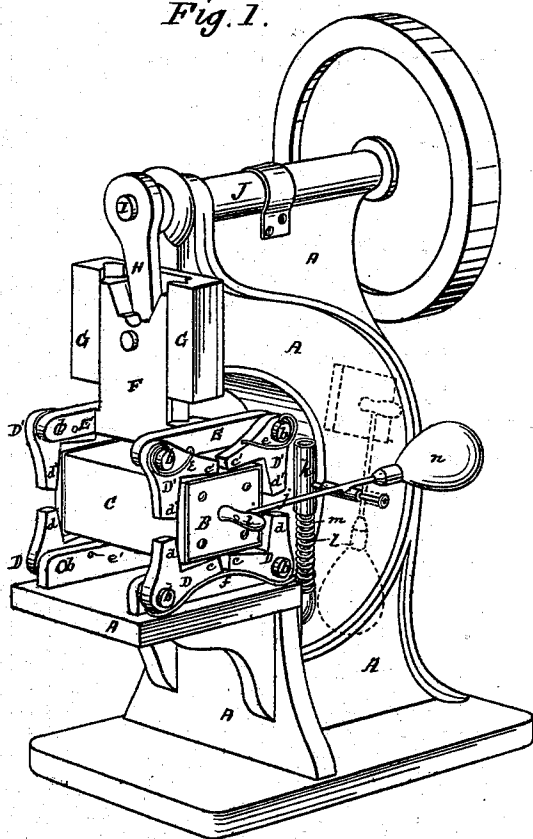


Fig. 2.

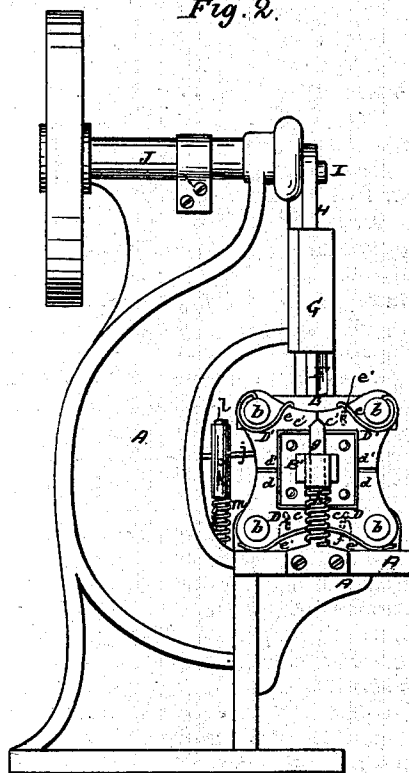
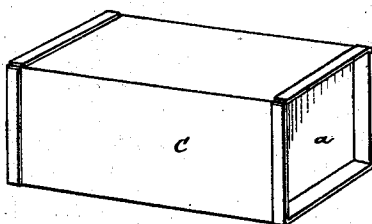


Fig. 3.



Witnesses.

John I. Buckley
John A. Wildman

Inventor.

Alfred S. Munger
by atty A. H. H. H.

UNITED STATES PATENT OFFICE.

ALFRED S. MUNGER, OF BROOKLYN, NEW YORK, ASSIGNOR TO EDWARD T. COVELL, OF NEW BEDFORD, MASSACHUSETTS.

IMPROVEMENT IN SEAMING-MACHINES.

Specification forming part of Letters Patent No. **144,691**, dated November 18, 1873; application filed August 16, 1873.

To all whom it may concern:

Be it known that I, ALFRED S. MUNGER, of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Machines for Closing the Seams of Metallic Cans, of which the following is a specification:

My present invention may be considered as based upon the machine for which Letters Patent were granted to Edward T. Covell on the 21st September, 1869, No. 94,947, afterward reissued in two divisions on the 5th March, 1872, my invention having particular reference to a machine of the kind described in division No. 4,777 of said reissue.

The machine in which my improvements are embodied contains the yielding, supporting, or anvil plates, operating in conjunction with compressing-jaws to close the seams between the head and body of the can, as described in said patent. I have, however, for the purpose of preventing the jaws from exercising a percussive action on the can, or, in other words, from bringing their acting faces all at once, and throughout their whole extent, on the seams, and also for the purpose of obtaining increased power in the action of the jaws on the seam, so combined and arranged the jaws that they gradually press the seams instead of suddenly striking them, the contact of the jaws with the metal of the joints or seams being progressive, beginning first at one end of each jaw, and thence gradually extending to the other end, and the action of the jaws partaking of the nature of a "toggle-joint" movement, in order to exercise greater pressure upon the can.

The nature of my invention, and the manner in which the same is or may be carried into effect, will be readily understood by reference to the accompanying drawing, in which—

Figure 1 is a perspective view of a machine embodying my improvements. Fig. 2 is an elevation of the same from the side of the stationary anvil-plate. Fig. 3 is a representation of a can, showing the angular recesses in the heads, in which the anvil-plates fit.

The operative parts of the machine are supported in a press-frame, A, of suitable construction. B B' are the yielding or adjustable

anvil-plates to fit in the recessed heads *a* of the can C. The jaws D D' are located at each end of the machine, the jaws of each set being in the same plane, and the two sets being placed at the proper distance apart to operate upon the end seams of the can placed between them. I mount each jaw on an axis or pivot, *b*, located at the angle or bend of the jaw, and so arrange each jaw that, in its normal position, one of its ends—viz., that end which stands at angles or crosswise to the line of motion of the movable or reciprocating jaws—will be tilted so as to be nearest the can, and thus to come in contact with the seam before the rest of the jaw, when the seam is about to be closed.

The arrangement of the jaws, which I have found on the whole most practicable and best fitted for the purpose, is represented in the drawings. It will, however, be understood that the same may be varied to a considerable extent without departure from my invention.

In the machine shown in the drawing I employ on each side a set of four jaws, two of which, D', are bodily and together movable in a right line toward and away from the other two, D, which are stationary, in the sense that they have no reciprocating movement. The jaws of each set are so formed and arranged that, when brought or closed together, they will inclose a space corresponding in shape and dimensions to the contour of that part of the can designed to be clamped between them. The ends or parts *c c'* of the jaws, which are at an angle or lie crosswise to the line of motion of the reciprocating jaws, are tilted inwardly, as indicated in Fig. 1, the parts *c* of jaw D being tilted upward, and the parts *c'* of jaw D' being tilted downward. The ends *d d'* of the jaws, therefore, which compress the vertical portions of the seams, are tilted outwardly away from the can. The jaws are held in this position normally by means of springs *e* or *f*, springs *e* being independent, one for each jaw, and springs *f* being bow-springs, one for each pair of jaws. These springs can be as stiff as may be desired, and any suitable spring arrangement for the purpose may be employed in lieu of the foregoing. Stop-pins *e'* on the frame and cross-head, working in

slots on the jaws, as indicated by dotted lines in Fig. 2, limit the range of movement of the jaws, and the extent to which they may be tilted.

The reciprocating jaws are carried by a suitable cross-head, E, attached to a slide, F, playing up and down in guides G, and driven by a pitman, H, jointed to a crank, I, on shaft J, to which a rotary movement is imparted by suitable means.

The operation of the jaws is as follows: Supposing the can placed between and supported by the anvil-plates, the upper jaws being raised for this purpose, as indicated in Fig. 1, shaft J, being put in revolution, will now cause the movable jaws to descend. As soon as they make contact with the can the latter, owing to the vertical yielding of the anvil-plate, will be forced upon the lower stationary tilting-jaws. The upper jaws continuing their descent, the can will finally be tightly compressed, and the seams closed. The compressing action of each jaw is progressive. The parts *c c'* alone are first brought in contact with the can, and then the combined movement of the movable jaws causes all the jaws to tilt on their pivots, pressing the parts *c* or *c'* of each pair outwardly in line with one another, and drawing the parts *d d'* inwardly and in line, as indicated in Fig. 2. Thus each jaw, in closing on the seam, has a tilting movement, by which all parts of its acting face are gradually, and in succession, brought to bear upon the can, their action differing, in this respect, from the jaws shown in said reissue No. 4,777, which make contact simultaneously at all points with the can, delivering a blow rather than exercising the progressive pressure which is exercised under my arrangement of the jaws.

In said patented machine, the pressure of the jaws on the can is due to the crank and pitman alone; but in the present machine the jaws have a compound or "toggle-joint" movement in addition to the direct movement due to the pitman. The jaws are thus enabled to act with better effect, and the same amount of work can be produced with less wear and tear of machinery.

The jaws I have represented are designed to act on cans of rectangular sectional area. It will be understood that they may be otherwise arranged to operate on cans of other shapes; and that a greater or less number of jaws than

shown herein may be employed, according to the necessities of the work.

One of the anvil-plates, B', slides on a vertical post or standard, *g*, and is upheld by a spring, *h*. The other plate, B, is provided with a projecting stem or handle, *i*, which is fastened to a lever, *j*, parallel with the face of the plate, and supported on a horizontal axis or pivot projecting from a cylindrical sleeve, *k*, which sleeve fits, and can slide up and down on a rod or standard, *l*, and is upheld thereon by a spring, *m*. The rear end of the lever is weighted, as shown at *n*. The sleeve can rise and fall to permit the vertical adjustment and yielding of the anvil-plate. It can also rotate to serve as a hinge upon which the anvil-plate can be turned toward or away from the head of the can. The weight *n* serves to tilt the lever when the anvil-plate is removed from the can, so as to bring the anvil-plate, when it is not required for use, to the position indicated in dotted lines in Fig. 1, thus holding it out of the way. This arrangement of the movable and adjustable anvil-plate is described in order that the construction and operation of the mechanism may be fully understood; but I do not claim it as of my invention.

Having now described my invention, and the manner in which the same is or may be carried into effect, what I claim and desire to secure by Letters Patent, is—

1. In a machine for closing the seams of metallic cans by means of jaws closing on anvil-plates supporting the can, as described, compressing-jaws, pivoted and normally tilted with reference to the can, substantially as shown and specified, so that each jaw, in closing on the seam, shall first make contact, at one of its ends, with the can, and then, by the act of further closing, be tilted so as to bring the acting surface gradually and progressively in contact with the same, as set forth.

2. The pivoted stationary and reciprocating compressing-jaws, and the springs for tilting the same with reference to the can, in combination with the yielding or adjustable anvil-plates, substantially as shown and set forth.

In testimony whereof I have signed my name in the presence of two subscribing witnesses.

A. S. MUNGER.

Witnesses:

JOHN BULKLEY,
D. B. TREADWELL.