(No Model.) 4 Sheets—Sheet 1.

J. H. CLAPP.

MACHINE FOR CRIMPING AND DOUBLE SEAMING CANS.

No. 457,908. Patented Aug. 18, 1891.

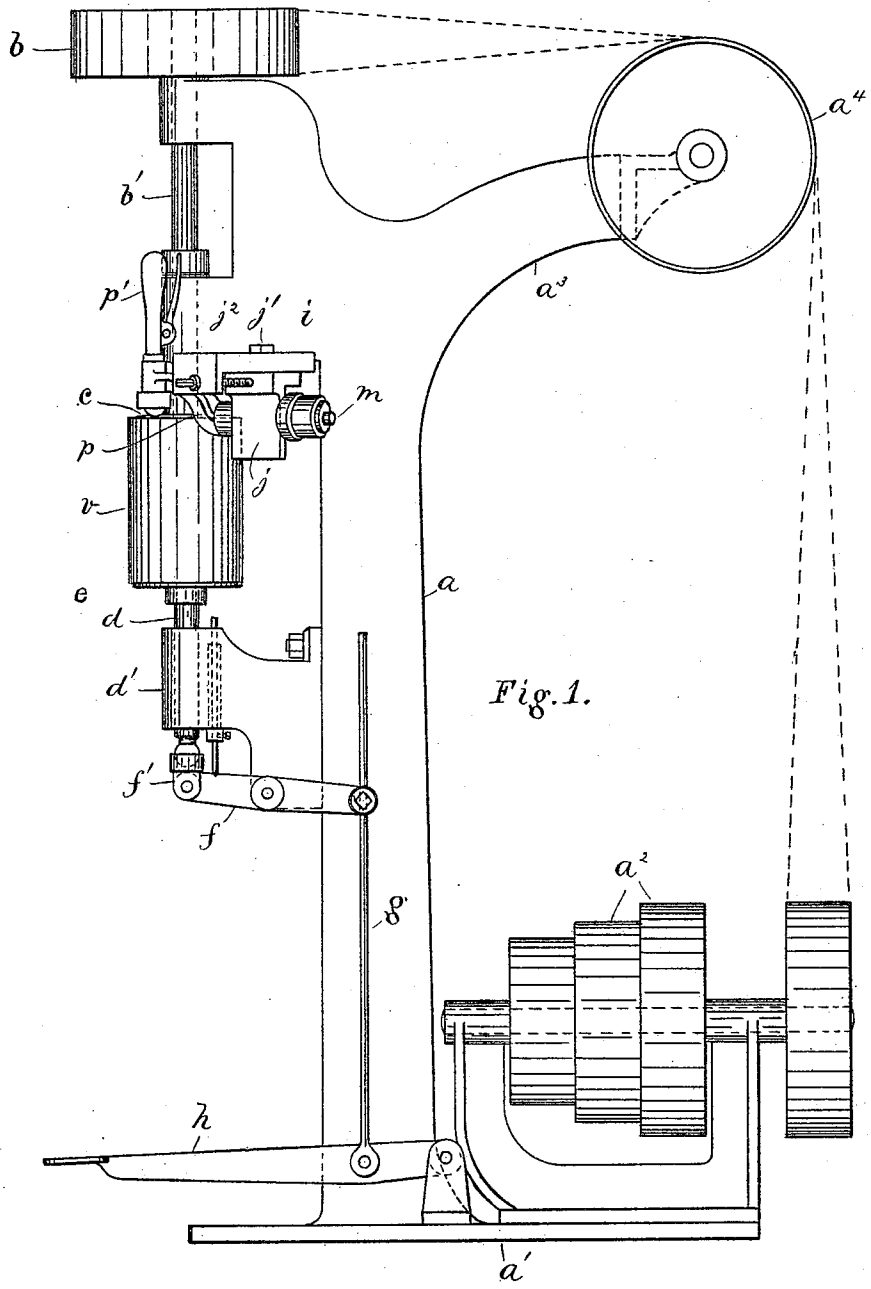


Fig. 1.

Witnesses
Eva Fletcher
Wm. A. Fletcher

James H. Clapp Inventor,
By his Attorney, David H. Fletcher.

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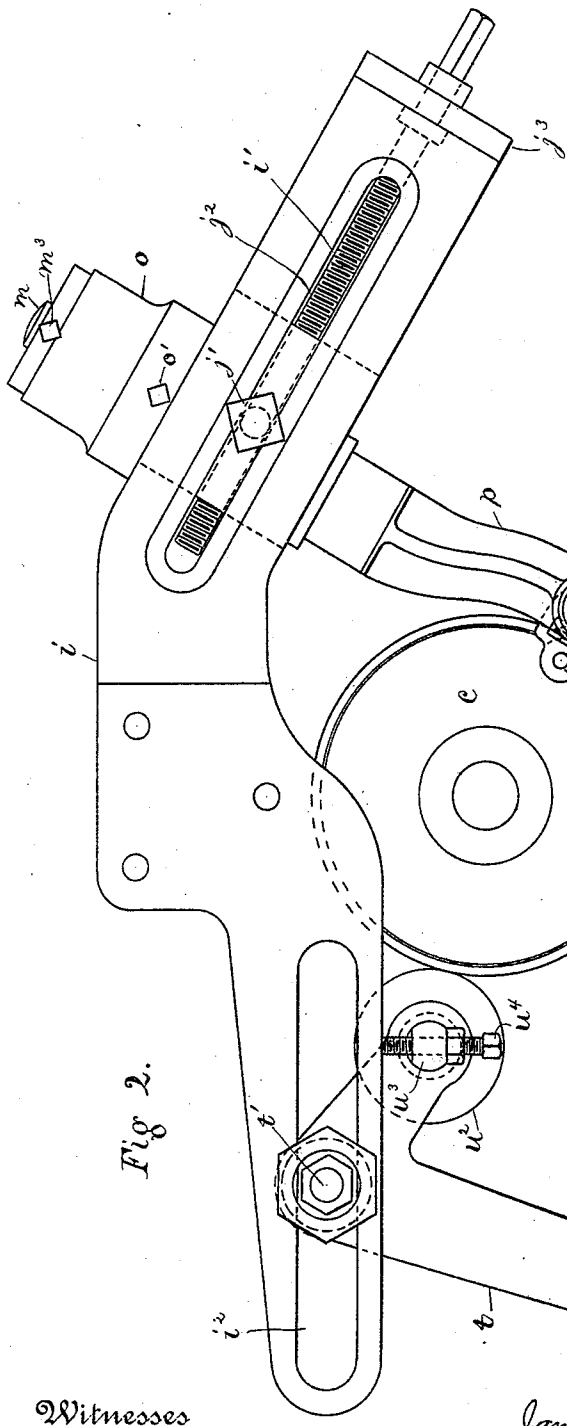


Fig 2.

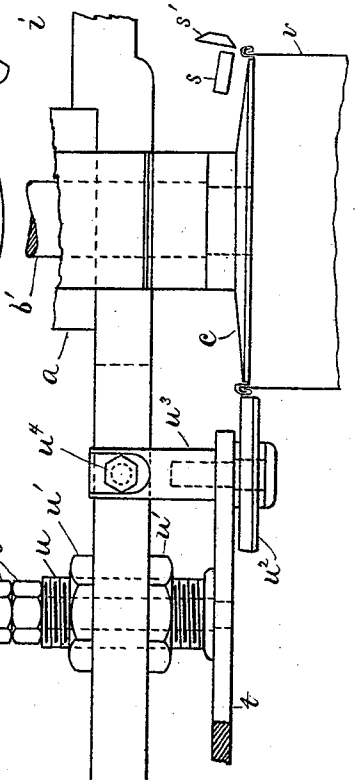


Fig 3.

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J. H. CLAPP.

MACHINE FOR CRIMPING AND DOUBLE SEAMING CANS.

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Fig. 8.

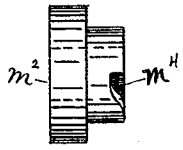


Fig. 9.

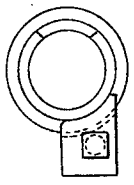


Fig. 10.

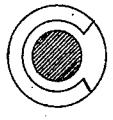


Fig. 4.

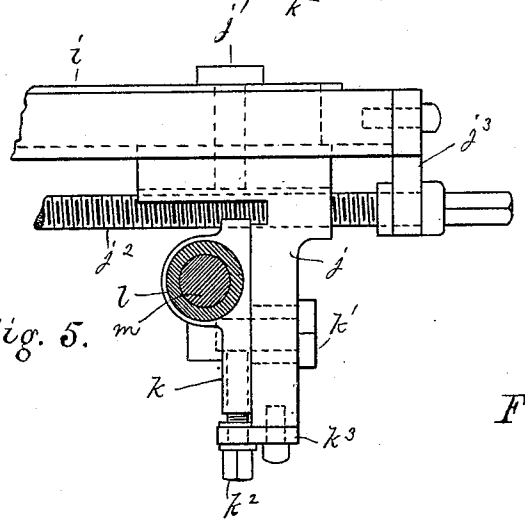


Fig. 5.

Fig 6.

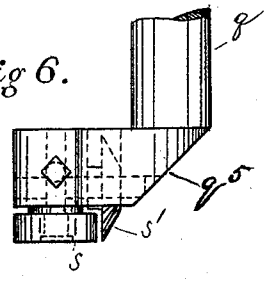
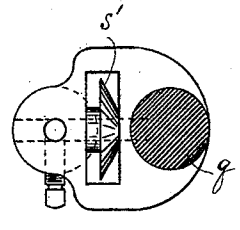


Fig 7.



Witnesses
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J. H. CLAPP.

MACHINE FOR CRIMPING AND DOUBLE SEAMING CANS.

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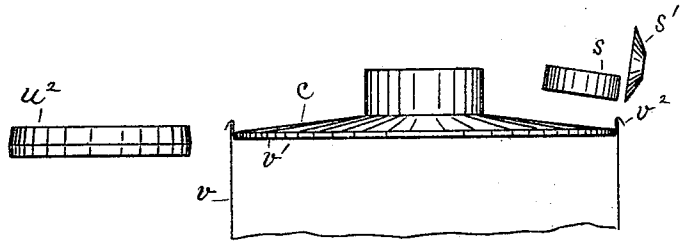


Fig 11.

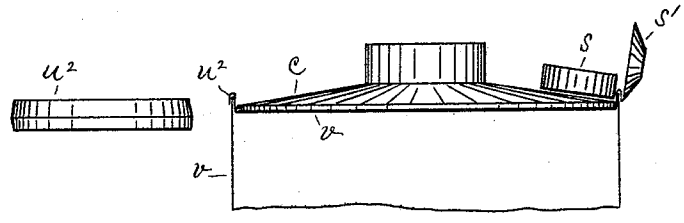


Fig 12.

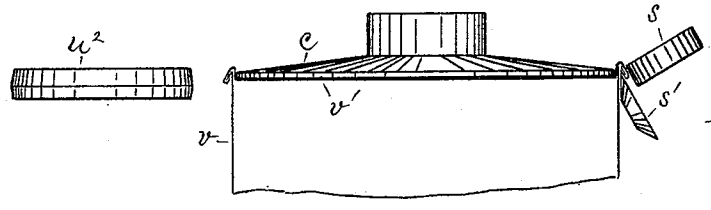


Fig 13.

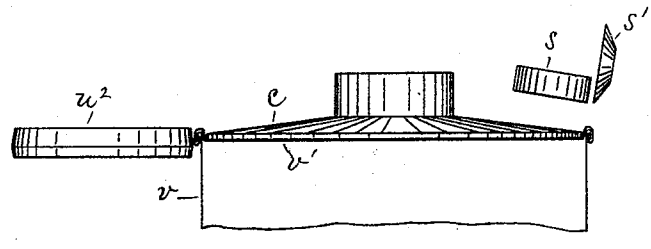


Fig 14.

Witnesses
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M. A. Fletcher.

James H. Clapp Inventor
By his Attorney David H. Fletcher.

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UNITED STATES PATENT OFFICE.

JAMES H. CLAPP, OF CHICAGO, ILLINOIS, ASSIGNOR TO JAMES LEWIS BOARD, OF SAME PLACE.

MACHINE FOR CRIMPING AND DOUBLE-SEAMING CANS.

SPECIFICATION forming part of Letters Patent No. 457,908, dated August 18, 1891.

Application filed April 10, 1891. Serial No. 388,385. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. CLAPP, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Crimping and Double-Seaming Cans, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which corresponding letters of reference in the different figures indicate like parts.

The object of my invention is to provide a cheap and simple machine for crimping and double-seaming cans in one operation, whereby the forming-rolls may be manipulated by hand and controlled at the will of the operator in such a way that the rolls may be permitted to act upon the seam until the latter is completed and no longer, the pressure upon said seam being sufficient to form it but not enough to cause injury thereto.

A further object is to render said machine adjustable to cans of varying height and diameter.

To these ends my invention consists in the combination of elements hereinafter more particularly described and claimed.

Figure 1 in the drawings shows a side elevation of my improved machine. Fig. 2 is an enlarged plan view in detail of a portion of the working parts of said machine, showing a can and forming-rolls with their immediate connections. Fig. 3 is a front view of the same. Fig. 4 is a sectional view in detail of the crimping device. Fig. 5 is an enlarged face view in detail of the adjusting device for regulating the position of the tool with respect to the diameter of the can to be acted upon. Fig. 6 is a front view, in detail, of the end of the flanging-tool. Fig. 7 is a plan view thereof partly in section. Fig. 8 is a side view in detail of one of the collars connected with the rock-shaft. Fig. 9 is an end view thereof, the shaft being removed. Fig. 10 shows the same in a different position; and Figs. 11, 12, 13, and 14 show front side views of a portion of one end of a can, indicating, respectively, the normal and other positions of the forming-rolls as they act in flanging and double-seaming a can.

Referring to the drawings, a indicates the standard of my improved machine, which is rigidly attached to a base a', upon which is mounted in suitable bearings a shaft for the reception of the driving-pulleys a^2. An arm a^3, Fig. 1, serves as a support for a shaft upon which is mounted pulleys a^4, over which may be trained a twisted belt (indicated in dotted lines) to drive a pulley b, mounted upon a vertical shaft b', to the lower end of which is attached the usual can-chuck c. A shaft d in alignment with the shaft b' is secured loosely in a bearing formed in a bracket d' attached to the standard a. Said shaft is capable of a limited vertical movement, and has attached to its upper end a can-chuck e. The lower end of the shaft is connected by means of a ball-and-socket joint with a block f', loosely connected to one end of a lever f. Said lever is pivoted upon the bracket d' and its opposite end is connected by means of a rod g to a treadle h, whereby the chuck e may be raised and lowered in the usual way. Bolted to a forward projection upon the standard a is a horizontal plate i, which extends laterally upon the sides of the standard. Said plate is provided with two slots i' i^2, as clearly shown in Fig. 2, through the former of which is passed a bolt j', whereby there is secured to said plate an adjustable block j, which is fitted into a groove j^2, as clearly shown in Fig. 4 and indicated in dotted lines in Fig. 5, thereby enabling the block to maintain its proper relation to the plate while being adjusted and to remain rigid when the bolt j' is tightened. An adjusting-screw j^3, swiveled in an end piece j^3, enables the block j to be adjusted, for the purpose hereinafter stated.

Attached to the block j by means of a bolt k' is a sliding block k, which is rendered vertically adjustable by its connection with a screw k^2, swiveled in a block k^3, attached to the lower end of the block j, as shown in Figs. 4 and 5. Within the block j is secured a removable hollow sleeve l, in which is loosely mounted a rock-shaft m, having a groove m' formed in its end, as shown in Fig. 4. A collar m^2 is rigidly attached to said end by means of a set-screw m^3. A spiral spring n surrounds a portion of the collar m^2 and sleeve l, one end being connected to said collar and

the other to an outer sleeve o, which incloses the whole and is adjusted and held in position by means of a set-screw o'. A notch m^4 in the end of the collar m^2, Figs. 4 and 8, serves to receive a pin l' placed in a bore in the end of the sleeve l and pushed out by means of a suitable spring, as shown. This device serves to limit the oscillatory movement of the rock-shaft. A bent arm p is formed upon the end of the shaft m, integral with which is a handle p', the axis of which is substantially at right angles to the axis of said shaft and in the same plane. A sliding rod q is loosely adjusted within a bore in said handle. Surrounding a stem upon the upper end of the handle is a spiral spring q', which, engaging with a head q^2 attached by means of a screw to said stem and a stop q^3 within the handle, serves to hold the rod q normally in a raised position. An elbow-lever r is pivoted at r' to a lug upon the handle, and the short end is arranged to engage with a notch q^4 in the rod q. Thus it will be seen that a movement of the lever r will serve to reciprocate the rod q. Upon the lower end of the rod q is formed a block q^5, to which are loosely secured crimping-rolls $s\ s'$, the axes of which are in a common plane, but at right angles to each other. The bend of the arm p and the adjustment of the rolls $s\ s'$ is such that a line drawn between the meeting faces of the rolls when in their normal position may be slightly eccentric to the axis of the shaft m, but may be caused to coincide therewith when the rod q is projected by means of the lever r.

A bent lever t is adjustably attached to the plate i by means of a stud t', rigidly secured thereto, which is passed through a sleeve u, Fig. 3, the outside of which is screw-threaded, said sleeve being passed through the slot i^2 and attached to said plate by means of lock-nuts $u'\ u'$. Lock-nuts $t^2\ t^2$ serve to hold the pin t' loosely in place within the sleeve. A finishing-roller u^2 is loosely attached to a stud beneath the short end of said lever, while a stud w^3 projects upwardly therefrom, through which is passed a set-screw w^4, adapted to strike against the plate i, and thus limit the movement of the lever.

The bracket d' is capable of being adjusted up and down, so that cans of varying lengths may be received between the chucks $c\ e$. In Figs. 1, 2, and 3, and 11 to 14, inclusive, the can v is shown in position to be operated upon by the forming-tools.

Having thus described the various parts of my improved machine, I will now explain its operation. The can-body v, having the stamped end v' adjusted thereon, is placed upon the chuck e and the treadle depressed so as to cause the can-head v' to be brought into conjunction with the chuck c, as shown in Fig. 11. The lever r is then actuated by the hand of the operator and serves to project the tool-holding rod q downwardly, so that the flange of the can-head, together with a portion of the upper end of the can-body, is brought between the rolls $s\ s'$ of the crimping-tool. The first effect as the can is rotated by the chucks is to cause the flange v^2, which is flaring, as shown in Fig. 11, to be bent parallel to and pressed against the can-body, as shown in Fig. 12. This operation being completed, the handle p is tilted, thus causing the crimping-rolls $s\ s'$ to grip the part v^2, together with a portion of the can-body, and crimp or turn it over in the manner shown in Fig. 13. The handle p is then released and the spring q' withdraws the tool from the can, while the spring n, Fig. 4, serves to tilt the handle p to its normal position, the rolls $s\ s'$ again appearing, as shown in Fig. 14. As soon as the operation of crimping is completed the lever t is actuated so as to cause the finishing-roll u to press against the flange, as indicated in Figs. 2, 3, and 14, thereby completing the operation of double-seaming.

By means of the screw j^3 acting upon the block j the crimping-tool may be moved so as to conform to the position of the periphery of cans of varying diameter, while the screw k^2 enables the tool to be adjusted vertically. The vertical movement of the bracket d' enables the chucks to be adjusted to cans of varying length, so it is obvious that the range of adjustment of my improved machine is very great, the angle of the slot i' being such as shown in Fig. 2, as always to retain the crimping-tool in the plane of the axis of the can.

The simplicity of the machine is such as to enable it to be operated with great speed and ease by workmen of ordinary skill, while each operation may be completed without causing either tool to act longer upon the metal than is actually necessary to complete the work. At the same time all undue pressure upon the seam is avoided.

Having thus described my invention, I claim—

1. The combination, in a machine for crimping and double-seaming cans, of revoluble can-chucks, means for actuating the same, a pivoted oscillatory handle arranged in the plane of the axis of the can, a tool-holding rod in conjunction with said handle, crimping-rolls upon said rod, means for holding said rod in a normal position with relation to said handle, a hand-lever for projecting said rod to bring the rolls into conjunction with the can, and a spring for returning said handle to its normal position after having been oscillated by the operator, substantially as shown and described.

2. The combination, in a machine for crimping and double-seaming cans, of can-chucks, a bent oscillatory arm forming the extension of a rock-shaft mounted in a vertically and laterally adjustable bearing, a spring for holding said shaft in a normal position, a handle upon the free end of said arm, a crimping-tool mounted loosely in said handle, means for normally holding said tool out of engagement with the can, and a hand-lever for pro-

jecting the same into operative engagement therewith, substantially as shown and described.

3. The combination, in a machine for crimping and double-seaming cans, of revoluble can-holding chucks, a bent oscillatory arm forming the extension of a rock-shaft mounted in a vertically and laterally adjustable bearing, a spring for holding said shaft in a normal position, a handle upon the free end of said arm, a crimping-tool mounted loosely in said handle, the axis of which is in the same plane with but at right angles to the axis of said shaft, means for normally holding said tool out of engagement with the can, a hand-lever for projecting said tool into operative engagement with the flange of the can, and a bent hand-lever pivoted in a laterally-adjustable bearing and provided with a finishing-roll for compressing the can-seam when crimped, substantially as specified.

4. The combination, in a machine for crimping and double-seaming cans, of revoluble can-holding chucks, a bent oscillatory arm forming the extension of a rock-shaft mounted in a vertically and laterally adjustable bearing, a spring for holding said shaft in a normal position, a handle upon the free end of said arm, a crimping-tool mounted loosely in said handle, the axis of which is in the same plane with but at right angles to the axis of said shaft, means for normally holding said tool out of engagement with the can, a hand-lever for projecting said tool into operative engagement with the flange of the can, a bent hand-lever pivoted in a laterally-adjustable bearing and provided with a finishing-roll for compressing the can-seam when crimped, and a vertically-adjustable bracket for the reception of the lower can-chuck, substantially as set forth.

In testimony whereof I have signed this specification, in the presence of two subscribing witnesses, this 30th day of March, 1891.

JAMES H. CLAPP.

Witnesses:

R. D. WARDWELL,

D. H. FLETCHER.