No. 607,266. Patented July 12, 1898.

J. F. NEILSON.

CAN END CRIMPING MACHINE.

(Application filed Oct. 27, 1897.)

(No Model.)

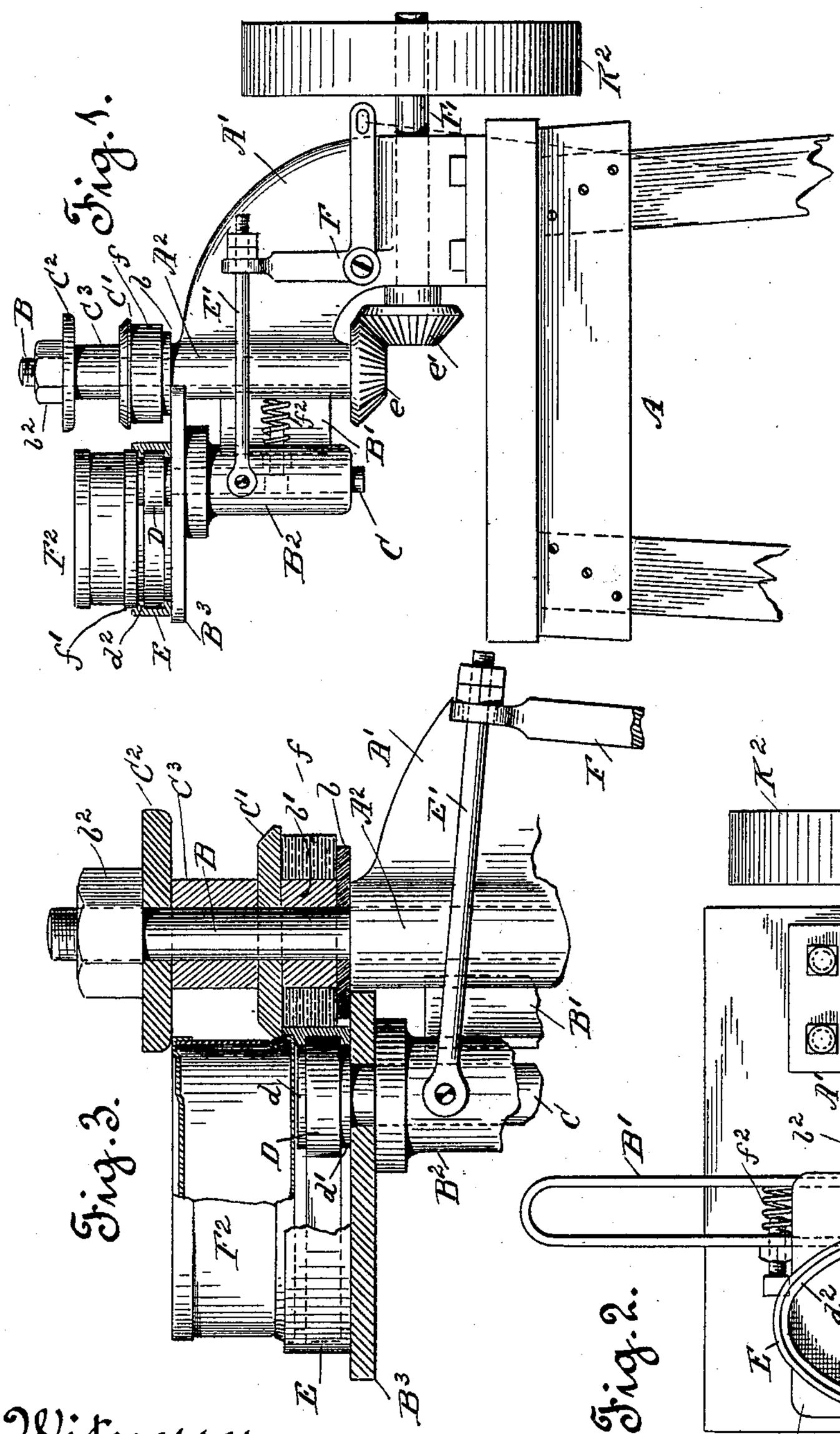

Fig. 1.

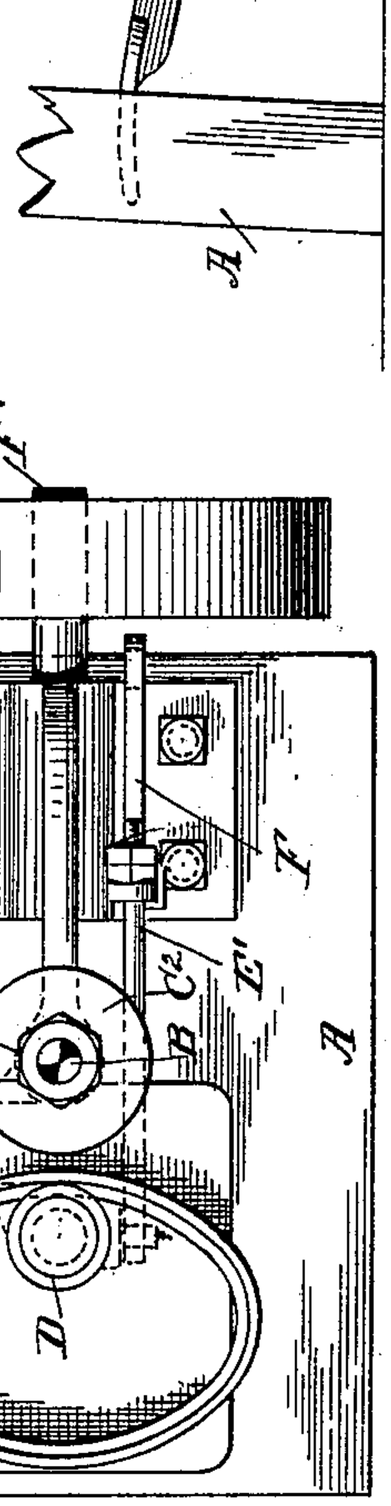

Fig. 3.

Fig. 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES F. NEILSON, OF NEW WESTMINSTER, CANADA.

CAN-END-CRIMPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 607,266, dated July 12, 1898.

Application filed October 27, 1897. Serial No. 656,518. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. NEILSON, a subject of the Queen of Great Britain, residing at New Westminster, in the Province of British Columbia, Dominion of Canada, have invented certain new and useful Improvements in Can-End-Crimping Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to a certain new and useful apparatus for crimping the ends onto can-bodies; and it consists in the arrangement of parts and details of construction, as will be hereinafter fully set forth in the drawings and described and pointed out in the specification.

The present invention is designed more especially for the crimping of ends onto oval, substantially square, or other irregularly-shaped can-bodies; and the object is to provide an apparatus adapted to crimp the ends onto any-shaped can-body, thus avoiding the necessity and expense of having independent machines for crimping the ends onto each style or shaped can used in the packing of the goods.

Referring to the drawings forming a part of this application, Figure 1 is a side view in elevation, showing the can in position to be placed against the crimper-disk. Fig. 2 is a top plan view of the machine; and Fig. 3 is a broken detail view, partly in section, showing the position of the can while being crimped.

In the drawings the letter A is used to indicate any suitable base for the crimper, to the top of which is secured in any manner the supporting-bracket A′. The forward or outer end of this bracket terminates in a sleeve A^2, in which works the crimper-spindle B, the shoulder *b* of said spindle resting upon the upper end of the sleeve A^2. To this sleeve at one side is attached one end of the spring-clamp B′, the opposite end of which is attached to the sleeve B^2, located in advance of the sleeve A^2. The sleeve B^2 has attached to its upper end the plate or holding-platform B^3, through which platform and sleeve extends the guide-spindle C.

By preference the supporting-bracket A′, sleeve A^2, spring-clamp B′, sleeve B^2, and platform B^3 are made integral or in one casting, although this feature is immaterial, as the parts may be made separate and secured together in any suitable or well-known manner.

Upon the crimper-spindle B is keyed or is otherwise secured, so as to rotate with the spindle, the crimping-disk C′, which is upheld by the collar *b*′, which collar rests upon the shoulder *b*. Above the crimping-disk C′ is located the disk C^2, which is fixedly held on the spindle, so as to rotate therewith. This disk is held a distance above the crimping-disk by means of the collar C^3. The distance or space between the disk C^2 and crimping-disk may be increased or decreased by the use of a longer or shorter separating-collar C^3. The disk C^2, collar C^3, crimping-disk C′, and collar *b*′ are held firmly down upon the shoulder *b*, so as to rotate with the crimper-spindle B, by means of the lock-nut b^2, which screws onto the screw-threaded end of the said spindle B. By releasing or unscrewing this lock-nut the parts may be readily removed from the spindle B. If desired, the collar *b*′ may be formed integral with the crimping-disk C′ and form the hub thereof.

The upper end of the guide-spindle C terminates in an enlarged circular head D, the upper and lower ends of which are reduced, so as to form shoulders *d d*′. This guide-spindle is driven, as hereinafter explained, by the spindle B.

Upon the holding-platform B^3 is loosely placed, over the guide-spindle C, the detached can-holding ring E. This ring is shaped to correspond with the shape of the can—that is, if the can be oval, substantially square, or round the holding-ring is of like shape. This ring is provided slightly below its edge with an inwardly-projecting rib d^2, which serves as a seat or support for the can to be crimped, the flange of the can end extending slightly above the edge of the can-holding ring.

To the lower end of the crimper-spindle B is attached the bevel-pinion *e*, which meshes with the pinion *e*′, secured upon the inner end of the drive-shaft F′. This shaft extends through the bracket A′ and has secured upon its opposite end the belt-wheel K^2, which is driven from any suitable machinery by means of a belt. (Not shown.) The motion of the drive-shaft by means of the pinions is trans-

mitted to the crimper-spindle B to impart motion to the collar b', crimping-disk C', and disk C^2.

In the present machine the guide-spindle sleeve B^2 is moved toward or from the sleeve A^2 by means of the fulcrumed foot lever or treadle E^3, said lever or treadle being connected to one arm of the bell-crank lever F, which bell-crank lever is fulcrumed to the supporting-bracket A'. To the opposite arm of this bell-crank lever is attached one end of the connecting-rod E', the other end being fulcrumed to the sleeve B^2 of the guide-spindle C.

When it is desired to crimp a can, the can-holding ring corresponding to the shape of the can to be crimped is placed upon the platform B^3 between the head D of the guide-spindle and the rubber or elastic cushioned face f of the collar b'. Within the can-holding ring is then placed the can F^2 to be crimped, its lower end resting upon the seat d^2 of the holding-ring and its end flange f' projecting slightly above the edge of the said ring, Fig. 1. The operator then depresses the fulcrumed lever or treadle, which throws the lower arm of the bell-crank lever F downward and its upper arm rearwardly. As the sleeve B^2 is connected to the upper arm of the bell-crank lever, it will be drawn toward the sleeve A^2 with the rearward movement of said arm. As the sleeve B^2 is drawn toward the sleeve A^2 the guide-spindle C is moved therewith, its head D engaging the inner face of the can-holding ring E and carrying the same over until firmly held between the said head D and the elastic cushion f of the collar b'. When the can-holding ring has been moved over its full distance, the edge of the crimping-disk will bear firmly against that portion of the can-end flange projecting above the edge of the can-holding ring, Fig. 3. As the flange of the can is brought against the crimping-disk the upper end of the can is placed beneath the disk C^2, which serves to hold the can in its seat while being crimped. The crimper-spindle B being a continuously-rotating one it is obvious that as the can-holding ring is firmly held between the surface of the rotating collar b' and the head of the idle-spindle C the said ring will be caused to revolve with the rotation of the spindle B, the idle guide-spindle turning in its sleeve and being driven by the frictional contact of the head D with the inner face of the can-holding ring. As the can-holding ring is thus rotated the can is carried therewith, and as the crimping-ring C' rotates against the projecting portion of the can-end flange during the entire movement of the can the said flange will be firmly crimped onto the end of the can-body. The moment the flange of the end has been crimped onto the can-body the operator releases the pressure upon the foot-treadle, when the resiliency of the spring-clamp B' returns the parts to the position illustrated in Fig. 1 of the drawings.

To assist the spring-clamp in its movement a spring f^2 is interposed between the jaws thereof, and to limit the inward movement of the sleeve B^2 to avoid danger of the can-body jamming against the crimper an adjustable stop pin or bolt works through one of the jaws and engages with the opposite jaw when the sleeve B^2 has been moved the proper distance.

The only change necessary to adapt the present machine to crimp a substantially square or other shaped can instead of an oval-shaped can consists in using a can-holding ring of such shape as conforms to that of the can to be crimped. No change in the other working parts of the machine is required. It will thus be seen that by keeping on hand a supply of various-shaped can-holding rings the described machine may be used for the crimping of any number of different-shaped cans.

The present machine is illustrated as being used for the crimping of what are known as "small" or "half-pound" cans or cans used for packing of salmon, sardines, potted ham, tongue, or similar articles. However, it is equally as well adapted for large-sized cans. For use in the crimping of larger-sized cans it is only necessary that the disk C^2 be raised so as to come above the upper end of the can.

Having thus described my invention, what I claim as new, and desire to secure protection in by Letters Patent, is—

1. In a can-end-crimping machine, the combination with the rotary crimping-disk, of a loose rotating can-holding ring which holds and supports the can during the operation of crimping, of mechanism for throwing the can-holding ring toward the crimping-disk so as to cause the said disk to engage with and crimp the projecting flange of the can carried and supported by the holding-ring and for moving the said ring from the disk after the flange of the can has been crimped and of devices for imparting rotary motion to the said can-holding ring.

2. In a can-end-crimping machine, the combination with the crimping mechanism, of a loose can holding and supporting ring shaped to conform to the shape of the can to be crimped, and of mechanism for moving the can-holding ring toward and from the crimping-disk.

3. In a can-end-crimping machine, the combination with the crimping mechanism, of a loose can holding and supporting ring shaped to conform to the shape of the can to be crimped and of devices actuated by said crimping mechanism for imparting rotary movement to the can-holding ring.

4. A can-end-crimping machine provided with a loosely-working and detached can seat or holder consisting of a rotatable holding-ring shaped to conform to that of the can to be crimped and having on its inner face a supporting-seat for the can.

5. In a can-end-crimping machine, the combination with the crimping mechanism, of a

loose can-holding ring shaped to conform to that of the can to be crimped, a seat formed therein upon which the can rests, means for placing the can carried by the holder into engagement with the crimping mechanism to impart rotary motion to the said holder.

6. In a can-end-crimping machine, the combination with the crimping mechanism, of a loosely-working can-holding ring shaped to conform to the can to be crimped, mechanism which moves the can-holding ring carrying the can toward and from the crimping mechanism and imparts rotary motion to the can-holding ring, and of a device for holding the can in its seat during the crimping operation.

7. In a can-end-crimping machine, the combination with the rotatable crimper-spindle, of the sleeve within which the same works, the crimping device carried by the said spindle, the guide-spindle working within a guide-spindle sleeve, a spring-clamp connection between the said sleeves, of mechanism for moving the guide-spindle sleeve toward the sleeve of the crimper-spindle, and of a can-holding seat carried by said guide-spindle sleeve.

8. In a can-crimping machine, the combination with the crimper-spindle, of the crimping-disk carried thereby, the elastic cushioned collar mounted upon the said spindle below the crimping-disk, a guide-spindle provided with a circular head, a can-holding ring loosely fitting over the said head, said ring conforming to the shape of the can to be crimped, and of mechanism for moving the holding-ring toward the crimping-disk in order to clamp the said ring between the head of the guide-spindle and the face of the roll carried by the crimper-spindle so as to impart rotary motion to the said can-holding ring.

9. In a can-end-crimping machine, the combination with the crimping mechanism, of a can-holding ring shaped to conform to the shape of the can to be crimped, rolls or spindles between which the can-holding ring is located and means actuated by said crimping mechanism for driving one of said rolls.

10. In a can-end-crimping machine, the combination with the crimping mechanism, of a detached can-holding ring which receives and supports a can and which is shaped to conform to that of the can to be crimped, and of mechanism for placing the can carried by the holding-ring into engagement with the crimping mechanism in order to cause rotation of the ring carrying the can and devices for moving the ring outward or away from the crimping mechanism after the can has beem crimped.

11. In a can-crimping machine, the combination with a crimping member, and means for driving the same, of a can-holder, means actuated by the driving means having contact with and moving the holder, and means for varying the relative positions between the holder and its driving means.

In testimony whereof I affix my signature, in presence of two witnesses, this 12th day of October, 1897.

JAMES F. NEILSON.

Witnesses:
A. K. WALFENDEN,
LETUS N. CROWELL.