

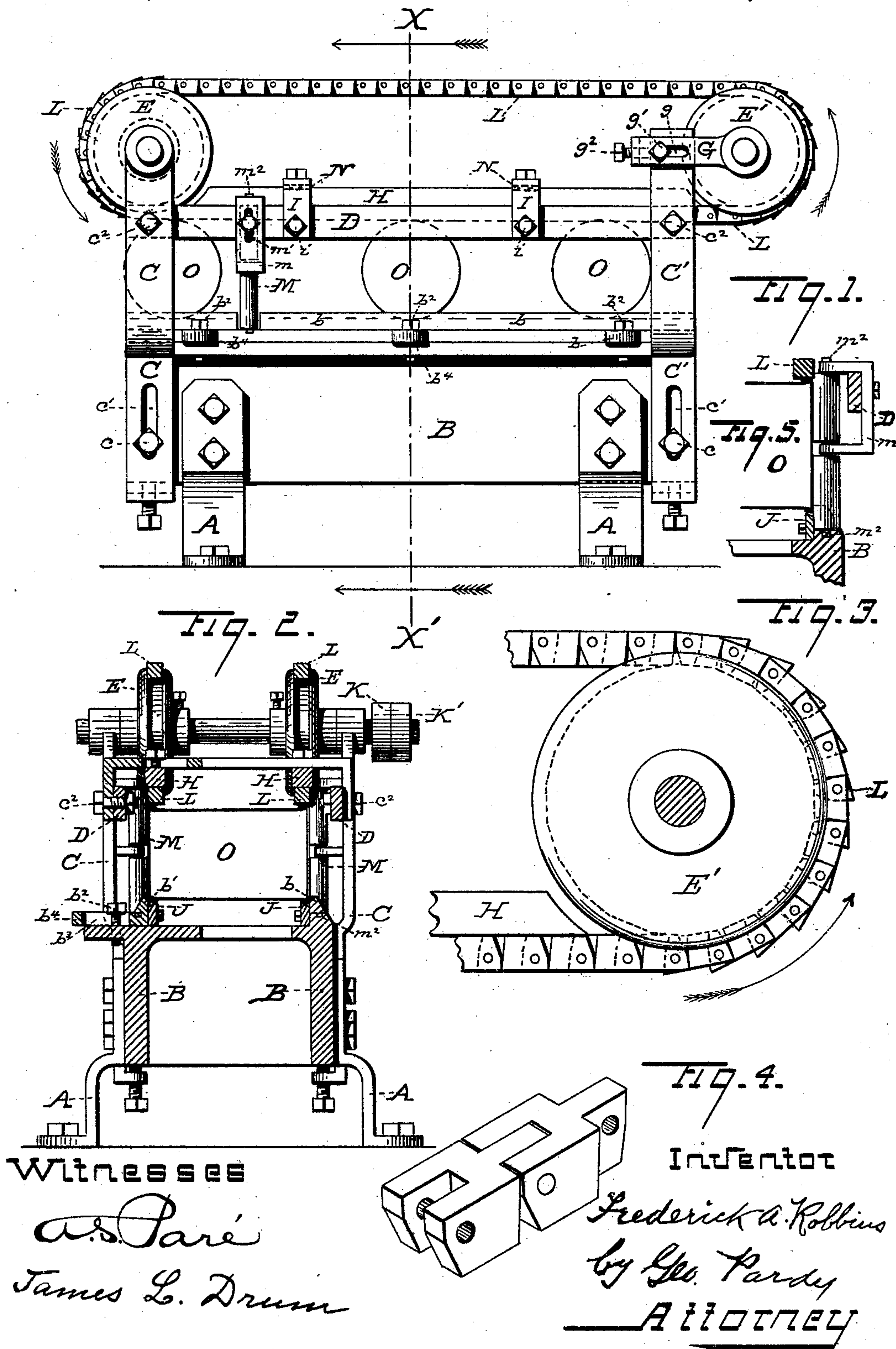
(No Model.)

F. A. ROBBINS.

MACHINE FOR CRIMPING THE HEADS OF METAL CANS.

No. 424,133.

Patented Mar. 25, 1890.



UNITED STATES PATENT OFFICE.

FREDERICK A. ROBBINS, OF SAN FRANCISCO, CALIFORNIA.

MACHINE FOR CRIMPING THE HEADS OF METAL CANS.

SPECIFICATION forming part of Letters Patent No. 424,133, dated March 25, 1890.

Application filed August 5, 1889. Serial No. 319,811. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK A. ROBBINS, a citizen of the United States, and a resident of the city and county of San Francisco, State of California, have invented a new and useful Machine for Crimping the Heads of Metal Cans, such as are used for the packing of provisions, fruits, and the like, of which the following is a specification.

My invention relates to the crimping of the heads after they are placed upon the can-body at the point near the inside extremity of the overlap of the heads; and it consists in the novel arrangement of parts constituting the machine, as more fully described below.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of the machine with all its parts in place. Fig. 2 is a transverse sectional elevation on the line X X' of Fig. 1. Fig. 3 is an enlarged view of the driving wheel and chain. Fig. 4 is a perspective view of the links of the chain. Fig. 5 is a detached detail of certain guide-rollers which prevent the heads from canting.

In all the figures of the drawings the same letters of reference are used to indicate the same parts.

In putting cans together before they go to the soldering-bath, the heads of course should be pressed uniformly tight upon the body, and also it is desirable to add as much strength to the joint as possible, so as to not altogether rely upon the solder, both of which results are accomplished by this crimping process.

The machine is supported on the legs or standards A. These carry a bed-frame B of cast-iron.

C and C' are standards, which are fastened to the side of the bed-frame by the bolts c c, accommodated in the slots c' c', so that they may be adjusted as to their vertical height to the different-sized cans that may be operated upon. These standards C and C' are also secured to the bars D D by the bolts c² c². The upper part of the standards C carries directly the spindle of the chain-sheave E, while the other standards C' carry horizontal bearers G, supporting the spindle of the adjustable chain-sheave E'.

In Fig. 1 the means of adjusting this chain-sheave E' is clearly shown. The horizontal bearer has a slot g, in which the fastening-bolt g' has room to play, the adjusting set-screw g² at the back of the bearer being used to make the adjustment before tightening the fastener-bolt. By this means we are enabled to take up the slack of the chain caused by wear, &c.

H H are bars extending from one sheave to the other and bearing upon the top side of the lower portion of the chain. The purpose of these bars is to insure the chain maintaining a perfectly straight and rigid under surface where it bears on the periphery of the can-heads. The method of securing these bars is by fastening them to the angle-irons I I by the bolts i i, which angle-irons are themselves fastened to the bars D D by the bolts i' i'.

N N are rubber washers.

The table or bed-plate of the machine has a vertical rim b, which is solid with the bed-plate at one side. At the other side of the bed-plate is a corresponding rim b', adjustable to suit the different sizes of cans. The method of adjusting is by unscrewing the fastening bolts b² b², which work in the slots b³ b³, provided in the extension of the rim b⁴, as shown in Fig. 2. Immediately on the inner edge of each of these rims there are provided the crimping-bars J J, which should be made of tempered steel. They are fastened by top bolts to the inside of the vertical rim b on either side. The upper edges of these bars are slightly beveled, as shown.

K is the driven pulley, fitted on the spindle on the fixed sheave E and belted to any convenient driving-pulley near by, K' being the ordinary loose pulley. The chains L L passing over the sheaves must have a smooth flat outer surface, and the inner surface may as well be of the same character.

The particular manner in which the links are formed is immaterial as long as they serve their purpose.

Fig. 4 gives a thorough idea as to the construction of the chains I have preferred to adopt.

A device M M for pressing the heads squarely on the body of the cans as they are rolled forward under the chain is shown in

Figs. 1 and 2 and in detached detail in Fig. 5. It consists in rollers, two or more, which will rotate by the action of the can as it rolls by, enough of these sets of rollers being supplied
 5 to insure the holding of the heads securely in place during the entire passage of the can through the machine. I show but one set of these rollers in Fig. 1, so as not to obscure the drawing by their repetition. These rollers
 10 are fastened to the machine as follows: D is a bar running between and being fastened to the standards C and C'. Brackets *m m* are fastened to this bar where the rollers occur. The brackets should be adjustable vertically;
 15 hence the fastening-bolt works in a slot *m'*. This bracket supports the upper end of the vertical spindle *m²*, which forms the axis of the rollers, the lower end of said spindle being stepped into the bed-frame. (See Figs. 2
 20 and 5.)

By referring to Fig. 3 it will be seen that the circumference of the chain-sheaves E and E', as shown by the dotted line, is not exactly round, but is flattened in places so as to ac-
 25 commodate the links of the chains.

The mode of operation is as follows: The several parts of the machine being suitably adjusted to the size of the cans to be operated upon, the machine is started by shifting
 30 the driving-belt from the loose onto the fast pulley. The cans O are then fed in at the forward end, either by hand or in some suitable automatic manner—such as being carried forward by an endless belt, rolled down a
 35 chute, or otherwise. The can immediately passes under the lower side of the chains and rests upon the crimping-bars. As it passes along a gentle pressure, which must not be too great, is brought to bear upon the edges
 40 of the heads, and the crimping is effected. As before explained, the heads, as they pass the guide-rollers, will be pressed evenly upon the can-body. The limit to the number of cans that may be fed into and operated upon
 45 by the machine will depend upon the speed of the machine and the rapidity with which they are fed into it.

What I claim as my invention, and desire to secure by Letters Patent, is—

50 1. In a machine for crimping the heads of round metal cans, the combination, with the bed-plate having the straight crimping-edges and guides mounted thereon, and adjustable

toward and from each other to accommodate cans of different length, of the conveyer run-
 55 ning parallel with said crimping-edges and adjustably connected to the bed-plate, whereby cans of different diameters may be accommodated, substantially as described.

2. In a machine for crimping the heads of
 60 round metal cans, the combination of the longitudinal crimping-edges and the conveyer above the same, independently adjustable toward and from each other at opposite ends, whereby the pressure on the cans may be
 65 gradually increased, or vice versa, substantially as described.

3. In a machine for crimping the heads of round metal cans, the combination, with the longitudinal crimping-surfaces over which
 70 the cans roll, of the conveyer above the crimping-surfaces for engaging the cans mounted on an adjustable support at one end, whereby the same may be adjusted and the pressure on the cans increased as they move
 75 forward, substantially as described.

4. In a machine for crimping the heads of round metal cans, the combination, with the longitudinal crimping-surfaces, of the endless-chain conveyer mounted on rollers above the
 80 crimping-surfaces and arranged to press upon the cans, substantially as described.

5. In a machine for crimping the heads of round metal cans, the combination, with the surfaces and endless-chain conveyer between
 85 which the cans are passed, of the unbroken longitudinal supports for the chain, whereby the surface and chain are kept a regular distance apart, substantially as described.

6. In a machine for crimping the heads of
 90 round metal cans, the combination, with the surface and conveyer between which the cans are passed, of the side guides and rollers for pressing the heads firmly on the cans, substantially as described.
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7. In a machine for crimping the heads of round metal cans, the combination, with the longitudinal crimping-surfaces and the endless-chain conveyer, of a roller therefor at one end mounted in fixed bearings and a
 100 roller at the opposite end journaled in an adjustable support, substantially as described.

FREDERICK A. ROBBINS.

Witnesses:

JAMES L. DRUM,
 GEO. PARDY.