

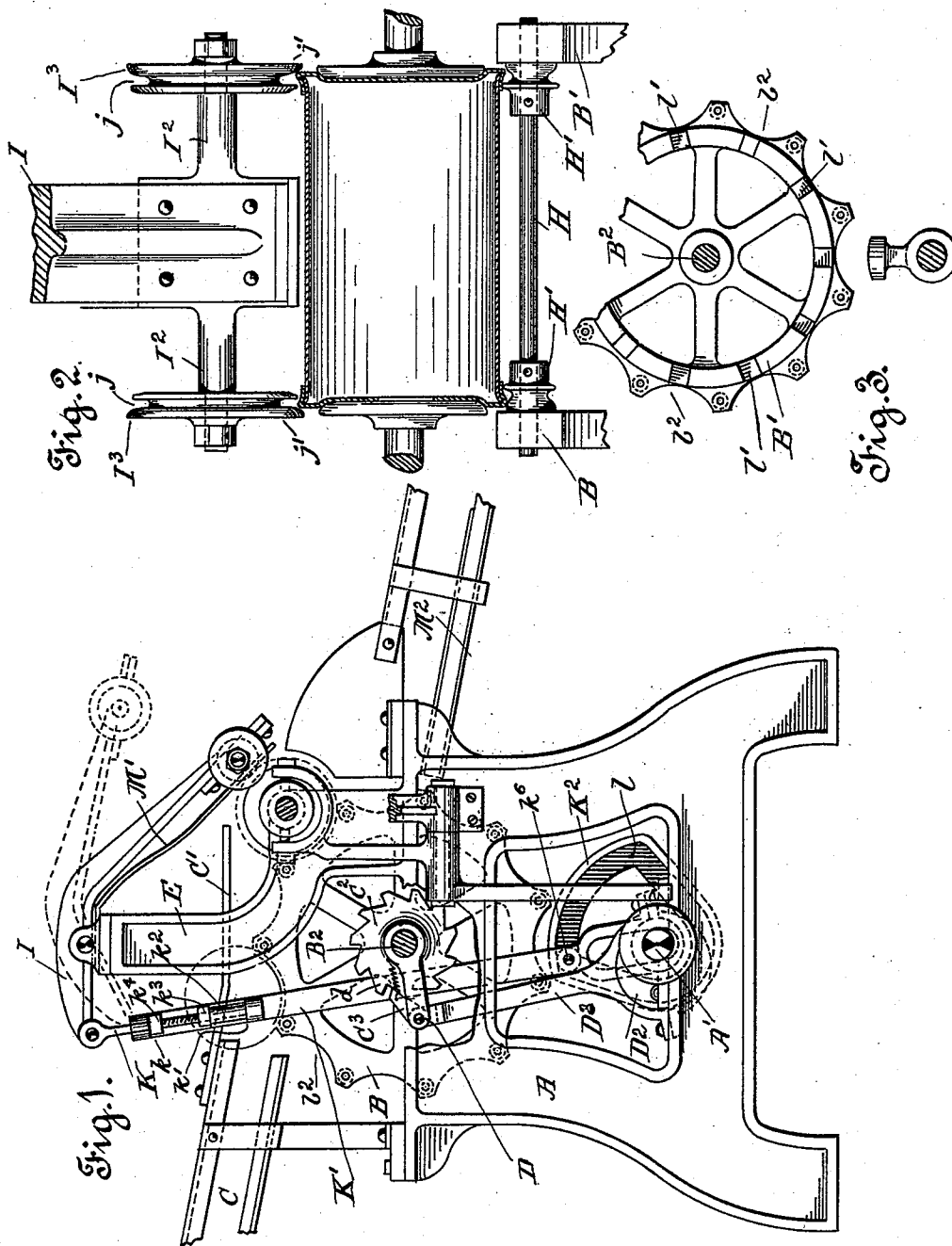
(No Model.)

2 Sheets—Sheet 1.

H. SCHAAKE.
CRIMPING MACHINE FOR CAN BODIES.

No. 528,305.

Patented Oct. 30, 1894.



Witnesses.

W. H. Cobb

Inventor.
Henry Schaa
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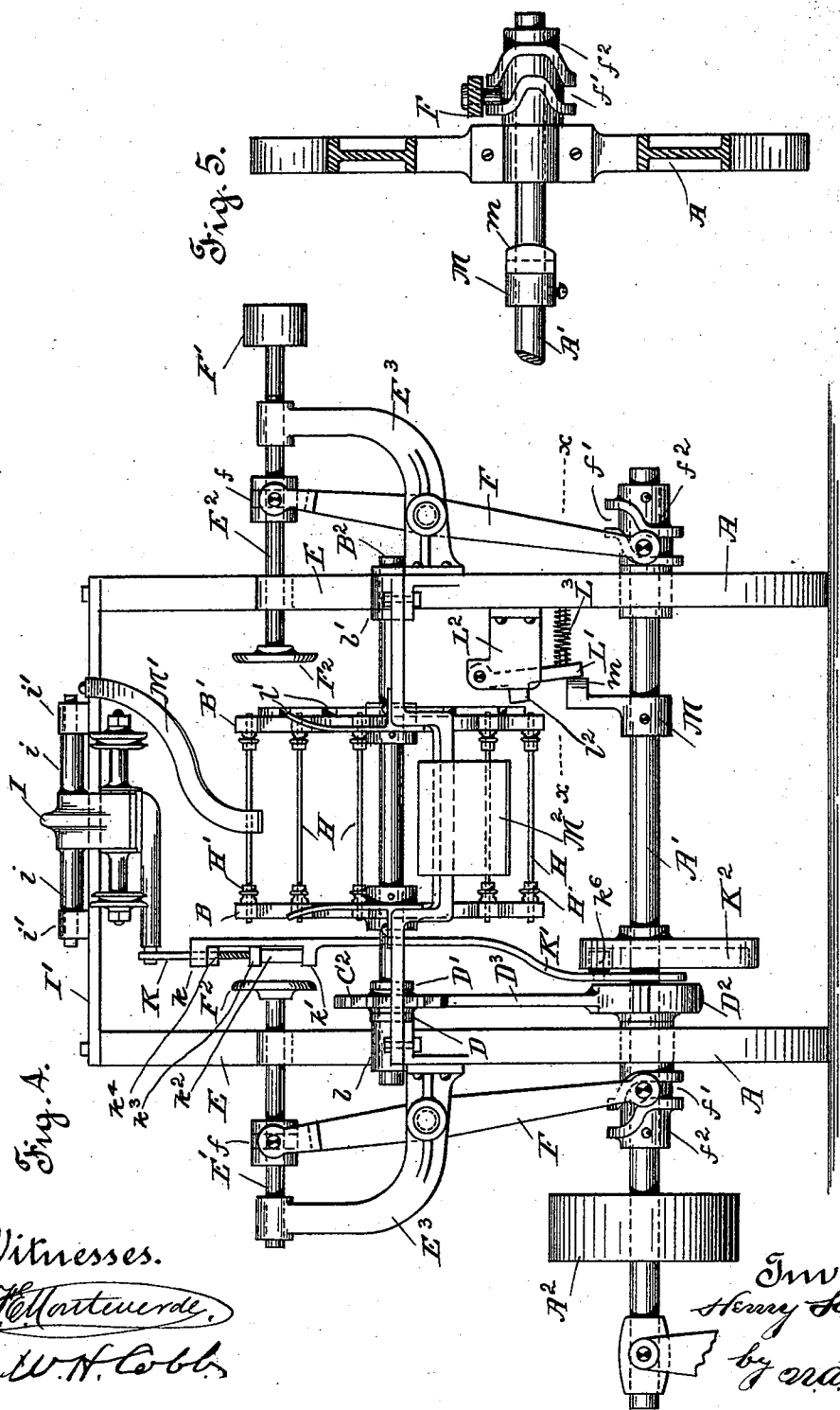
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H. Hartwerde,
W. N. Cobb,

Inventor.
Henry Schaa
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att'y

UNITED STATES PATENT OFFICE.

HENRY SCHAAKE, OF SAN FRANCISCO, CALIFORNIA.

CRIMPING-MACHINE FOR CAN-BODIES.

SPECIFICATION forming part of Letters Patent No. 528,305, dated October 30, 1894.

Application filed August 23, 1893. Serial No. 483,816. (No model.)

To all whom it may concern:

Be it known that I, HENRY SCHAAKE, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Crimping-Machines for Can-Bodies; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My present invention relates to a certain new and useful machine for crimping the can heads upon the can body, in order that the same may be firmly secured thereon and not become displaced during the handling of the can body, which consists in the arrangements of parts and details of construction as will be hereinafter more fully set forth and described.

The heads when placed upon the can bodies, by the use of the heading machine, cannot be relied upon for the reason that the metal is liable to spring and throw the heads or cause the same to be readily detached during handling, or if not detached to become loose, hence making an inferior joint when the ends are soldered, and more especially is this so when the headed bodies are laid aside for a while.

The object of my machine is to provide a crimping device which shall receive and crimp the can bodies as fed from the heading machines mechanically, not by hand, so as to permit of the headed can bodies being stored away for an indefinite length of time without fear of the heads springing from the body, or being fed directly to the soldering machine as desired.

By providing a device for mechanically crimping the can bodies, I am enabled to make employment of the same in such places as work under a continuous system without causing delay in the working of any portion of the entire system; while at the same time I am enabled to crimp the bodies with greater rapidity, less expense and more effectually than by the use of any crimper now known to me.

The invention consists essentially of a car-

rier wheel, having seats cut therein, for receiving the headed bodies, of mechanism for imparting a step rotation to the carrier wheel, of plungers for holding and rotating the bodies during the process of crimping and of a vertically moving crimping device for crimping the bodies while being held and rotated by the plungers.

In order to more fully understand my invention, reference must be had to the accompanying sheets of drawings forming a part of this application.

Figure 1, is a side elevation of the crimping machine. Fig. 2, is a broken front elevation, showing the position of the can body when held between the rotating plungers and that of the crimping device, immediately after the can body has been crimped; Fig. 3, a broken detail view of the carrier wheel; Fig. 4, a front elevation of Fig. 1; and Fig. 5, is a broken top plan view taken on line *x-x*—Fig. 4.

The letter A indicates the frame of the machine, through which extends the shaft A', to the outer end of which is secured the drive pulley wheel A², over which works a belt, not shown, in order to impart motion to said wheel and shaft. Between the side pieces of the frame is located the carrier wheel, which consists, preferably, of two disks, B, B', secured upon the shaft B³, said shaft working in bearings *b, b'*. These disks have seats *b²*, cut within the periphery thereof and said disks I place such a distance apart as will permit of a can body being received therebetween. Of course it will be understood that, if so desired, the carrier wheel may be made solid, but I prefer to make the same of two disks in order to reduce the weight and cost thereof.

The can bodies are conveyed to the carrier wheel by means of the runway C, which leads from the can header or any other suitable point, the rotation of the said carrier wheel being so regulated that as one crimped can body is being discharged an uncrimped one is received, while the discharge end of the runway is so placed that a can body cannot make its escape until released therefrom by the wheel itself, that is to say, that until the wheel has rotated sufficiently far to carry the can body

just received therein from within line with the runway, the same will act as a stop to the discharge of the next can body. See Fig. 1.

In order that the can body may remain in its true position when received by the carrier wheel, the guide strips C', project or extend forwardly from the runway C, which hold the can body therebetween.

The carrier wheel has a step rotation imparted thereto, by means of the ratchet wheel C², secured upon the outer portion of shaft B², the teeth of which are engaged by the pawl C³. This pawl is held between the outer ends of straps D, D' loosely secured to the shaft B², at each side of the ratchet wheel, see Figs. 1 and 4, and said pawl is held inward by tension of the spring d. This pawl is raised and lowered by the eccentric D², which is connected to said pawl by arm D³. The eccentric D² is fastened to the operating shaft A'. Consequently as the said shaft is rotated the arm D³ is raised or lowered, which likewise carries the pawl. As the pawl is raised it engages with the ratchet wheel and rotates the same one tooth, the motion of which is imparted to the shaft B², and carrier wheel.

From the frame A, extends the standard E, through which work the plungers E', E². These plungers are supported by the brackets E³, and are thrown in or out by means of the oscillating levers F, which are fulcrumed to said brackets. The upper end of each lever is connected to a collar f, fastened to the plungers, while the lower end works within the spiral grooves f', cut in sleeves f², rigidly secured to the operating shaft A'. See Fig. 4. As this shaft rotates the lower end of the fulcrumed levers working within the spiral grooves throw the upper end thereof in or out, which carrying the plungers therewith imparts a similar motion thereto. One of these plungers has a rotary motion imparted thereto, through the medium of the pulley wheel F', over which a belt, not shown, works. As the plungers move their full inward distance, the heads F², thereof hold the can body therebetween and the rotating motion of the plunger E², is imparted to said can body and opposite plunger. The heads of the plungers pass within the sockets or seats cut in the carrier wheel, in order to grasp the can body and hold the can body until the same is released by the outward movement of the plungers.

Between the disks of the carrier wheel, or within the seats or sockets, when the wheel is made solid, I loosely secure a number of cross rods H, which serve as a support for the can bodies and which rotate therewith. This is necessary in order to overcome undue friction when the can body is revolved by the plungers. When the carrier wheel consists of two disks the rotatable rods prevent the can bodies from falling therebetween. These rods have secured thereon the grooved collars H', the grooves of which assist in crimping the can bodies, as hereinafter explained.

The crimping device consists of the curved lever I, the arms i, of which are secured within the bearings i', fastened to the cross piece I'. The forward end of said lever has projecting therefrom the lateral extending arms I², to the ends of which I secure the rollers or wheels I³. These rollers or wheels have cut therein the peripheral groove j. The outer flange j', is of greater diameter than the inner one and when the wheels are lowered the flange j', projects below the edge of the can bodies. See Fig. 2. The rear end of the lever I, has connected thereto a downwardly extending screw-threaded rod K, which works through the ears k, k', projecting from rod K'. Upon the lower portion of the rod K, is fitted the thimble k², which bears upon the ear k' and said thimble is held in place by nut k³. The lift of this rod is regulated by this nut and nut k⁴. The lever I, has a vertical movement imparted thereto through the medium of rod K', which is raised or lowered by means of the eccentric cam K², secured to shaft A'. This eccentric has the groove l, cut therein within which works the roll or pin l⁶, projecting from the rod K', as shown. The lower end of this rod is bifurcated and straddles the shaft A'. Consequently as the eccentric is rotated the rod is raised or lowered, the motion of which is imparted to the lever I.

The tension of the crimping device is regulated by the adjustment given the rod K', by the nuts k³ and k⁴.

The mechanism for operating the plungers and crimping device work in unison, that is to say that as the plungers move inward to grasp the can bodies, the forward end of lever I, is thrown downward so as to cause the crimp rolls to contact with the can body.

The pressure with which the crimping rolls bear upon the can body, held between and revolved by the plungers, serves to force the flange of the heads inward and the end of the can body outward, as shown in Fig. 2. As the body is being crimped the end or edges thereof will gradually work within the groove of the crimping rolls and collars H'.

In order that the can body may be caught each and every time by the plungers, it is necessary that the stoppage in the rotation of the carrier wheel be positive at a predetermined point, and in order to accomplish this, I provide a locking device, which engages with the notches l', cut in one side of the carrier wheel. This device consists of the rod L', which is suspended from the bracket L². Said rod is provided with a tooth l², which engages with the notch l' of the carrier wheel when said wheel has advanced one step. This rod is maintained outward by the pressure of spring L³. By means of the cam M fastened to the shaft A', which contacts with the lock rod, the same is released from engagement with the carrier wheel at each rotation of the operating shaft, by reason of the fact that the flange m projecting from the cam M, serves to force the lock rod suf-

ficiently far away from the carrier wheel as to release the tooth from engagement, therewith.

For the purpose of preventing the can bodies moving from their seat in the carrier wheel while being carried toward the crimping rolls, I provide the guard strip M', which is fastened to the cross piece I' and extends downwardly therefrom. See Figs. 1 and 4.

To the front of the machine frame is secured the runways M², which receive the crimped bodies as dropped from the carrier wheel, and conveys the same to the solder bath or any other convenient place.

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

1. In a crimping device for can bodies, the combination with the rotatable carrier wheel, the plungers for holding the can bodies while being crimped, mechanism for operating the plungers, in order to rotate the can bodies while held therebetween, and the crimping rolls, of mechanism for raising and lowering the crimping rolls, and a device for regulating the vertical movement of the crimping rolls in order to adjust the pressure thereof upon the can bodies.

2. In a crimping device for can bodies, the combination with the rotatable carrier wheel, the sockets or seats cut therein, the rods loosely working within the carrier wheel, upon which the can bodies rest and revolve, the plungers for holding the bodies while being crimped, and mechanism for operating the plungers.

3. In a crimping device, the combination with the rotatable carrier wheel, which receives and carries the can bodies while being crimped, of the run-way for feeding the can bodies to the carrier wheel, guide strips for holding the can bodies in position, the crimping rolls, and mechanism for raising and lowering the crimping rolls.

4. In a crimping machine, the combination with the carrier wheel, seats or sockets cut in the periphery thereof, supporting rods loosely working therein, the grooved collars fastened to said rods, the grooved crimping rolls, and mechanism for raising and lowering the crimping rolls.

5. In a crimping machine for can bodies, the combination with the carrier wheel, the crimping rolls, the curved lever carrying the crimping rolls, mechanism for automatically operating the curved lever in order to raise or lower the crimping-rolls, and a device for adjusting the lift of the lever in order to regulate the pressure of the crimping rolls upon the can bodies.

6. In a crimping machine, the combination with the carrier wheel, mechanism for imparting a step rotation thereto, a device for engaging with the carrier wheel in order to give a positive stop thereto, mechanism for automatically releasing said device with each revolution of the operating shaft, plungers for holding the can bodies during the operation of crimping, the crimping rolls, mechanism for automatically raising and lowering the crimping rolls, and a device for regulating the pressure of the rolls upon the can bodies.

7. In a crimping machine, the combination with the carrier wheel, the run-way for feeding the can bodies to the carrier wheel, and the guide strips projecting beyond the end of the runway for holding the can bodies in position when received by the carrier wheel.

8. In a crimping machine, the combination with the carrier wheel provided with can body seats, run-way for supplying cans thereto, guide strips for holding the cans in position, until received between the plungers, plungers for receiving and holding the can bodies while being crimped, said plungers having a rotary motion, mechanism for automatically moving the plungers inward to grasp the can bodies, and outward to release the can bodies after being crimped, the crimping rolls, mechanism for automatically raising and lowering the crimping rolls, run-way for receiving the cans as discharged from the carrier wheel, and the guard for preventing the can from moving from seats in the carrier wheel until in position to be discharged.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY SCHAAKE.

Witnesses:

N. A. ACKER,
LEE D. CRAIG.