No. 862,634. PATENTED AUG. 6, 1907.

J. J. GRIFFIN.

AUTOMATIC CAN HEADING MACHINE.

APPLICATION FILED JULY 6, 1906.

5 SHEETS—SHEET 1.

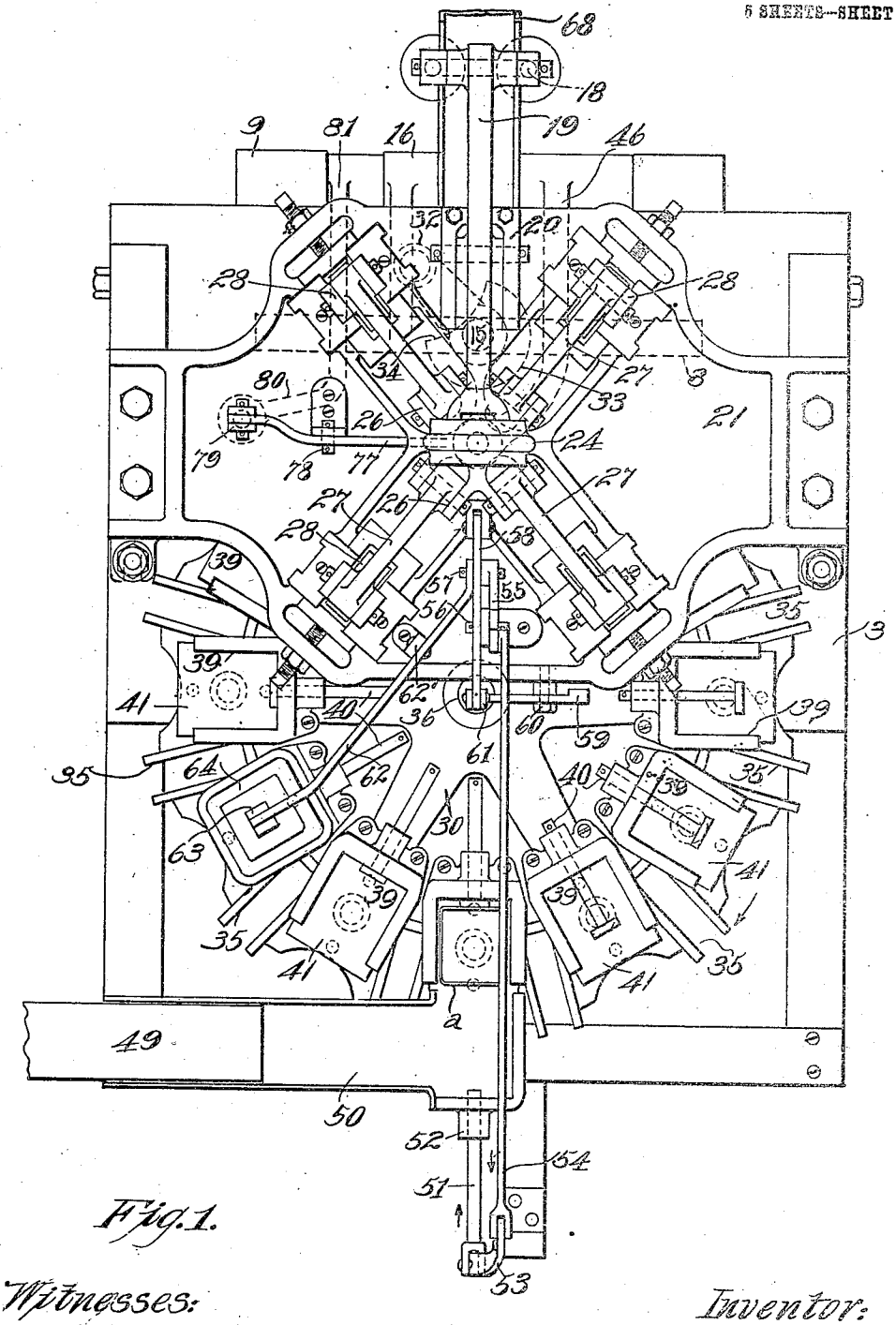


Fig. 1.

Witnesses:
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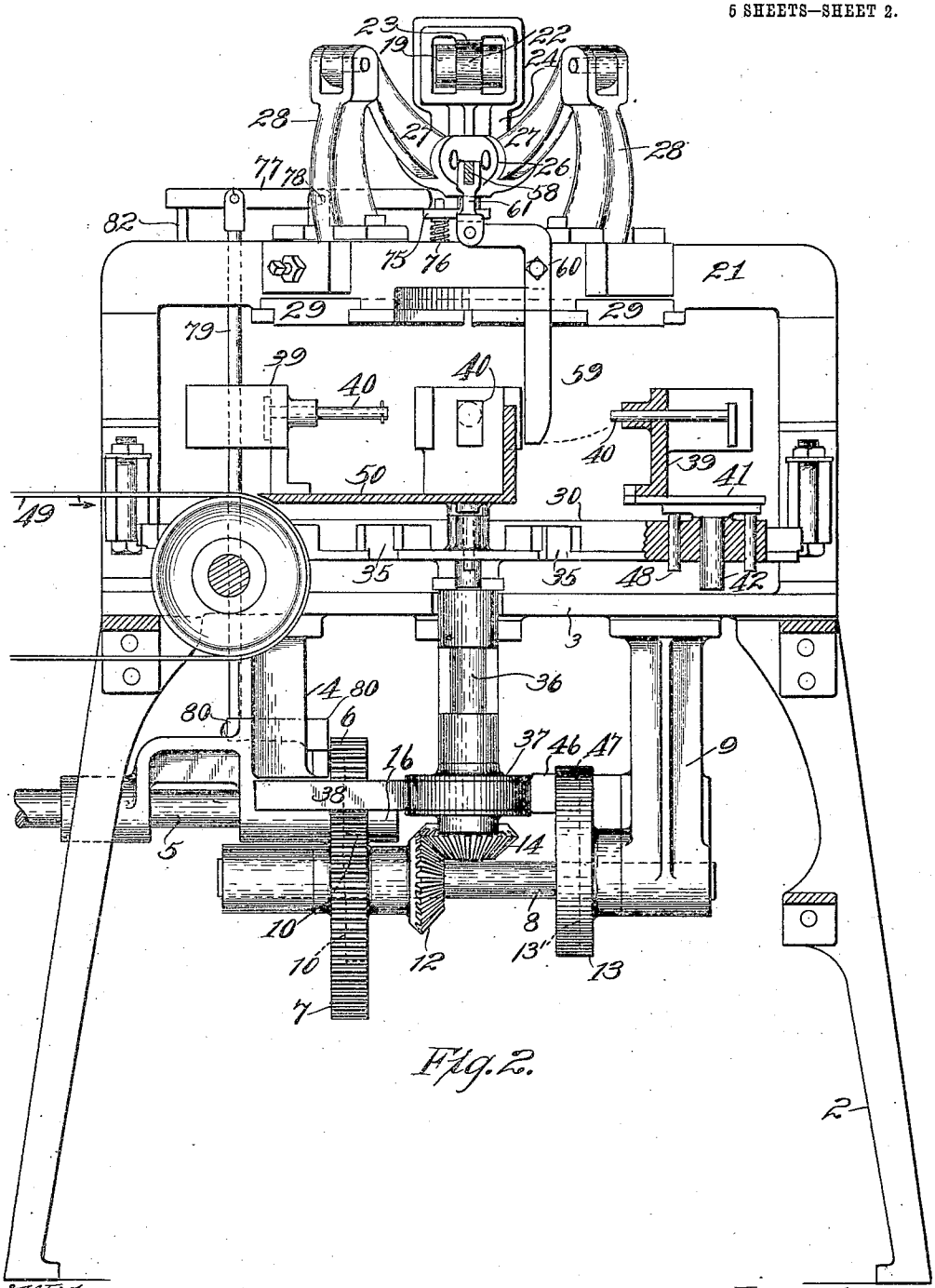


Fig. 2.

Witnesses:
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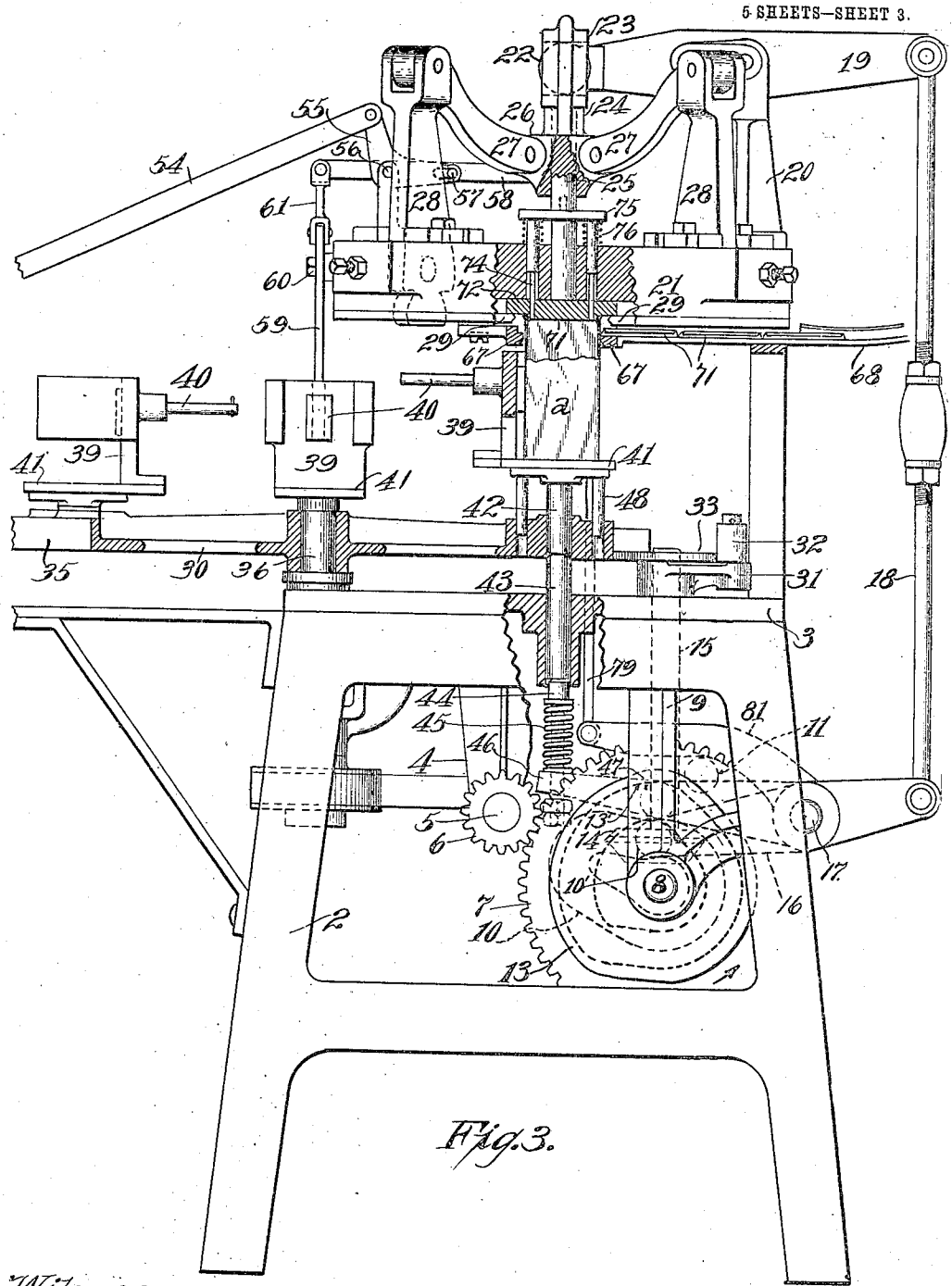


Fig. 3.

Witnesses:
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5 SHEETS—SHEET 4.

Fig. 4.

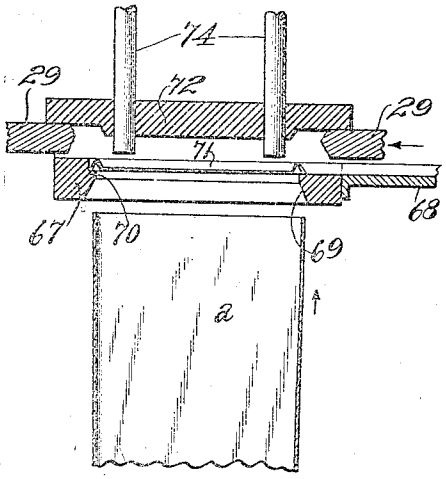
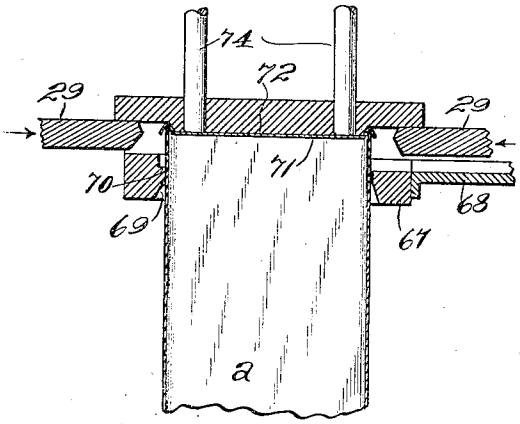


Fig. 5.



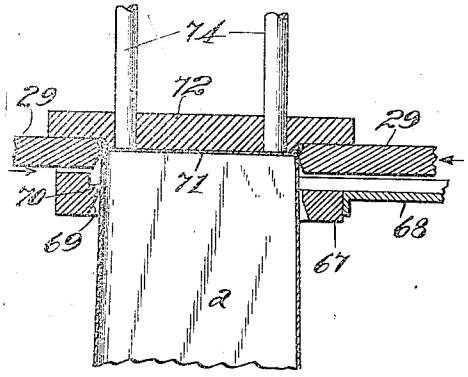


Fig. 6.

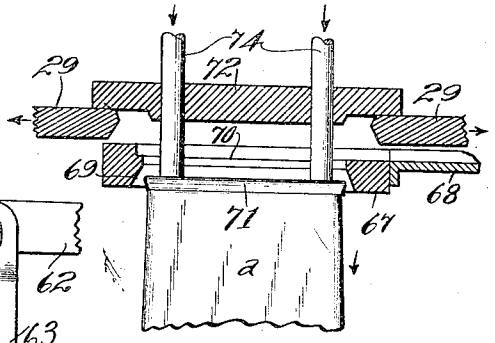


Fig. 7.

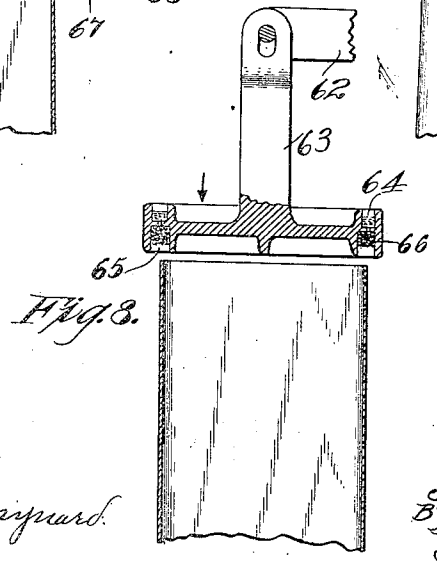


Fig. 8.

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5 SHEETS—SHEET 5.

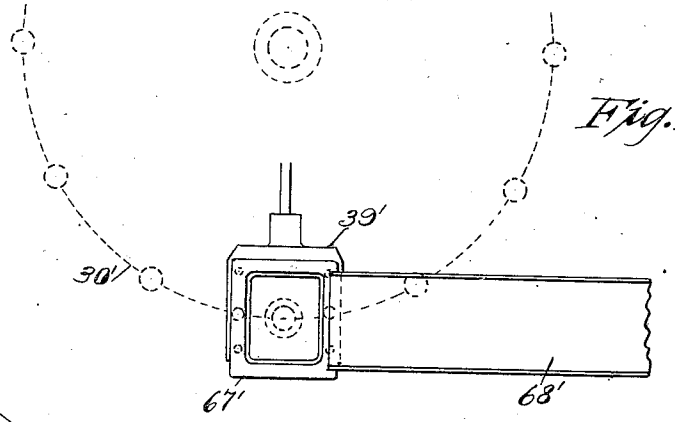


Fig. 10.

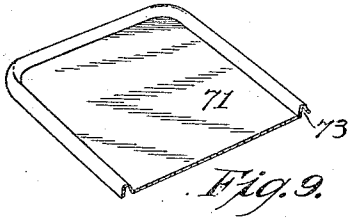


Fig. 9.

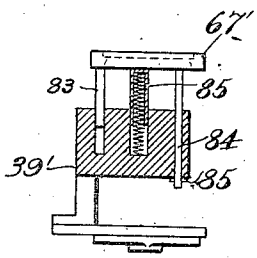


Fig. 11.

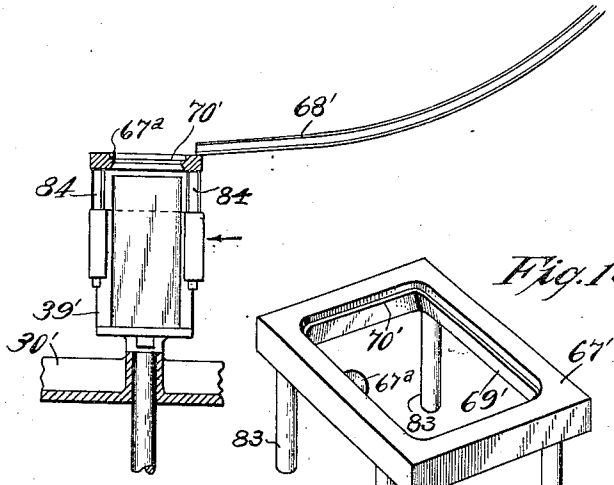
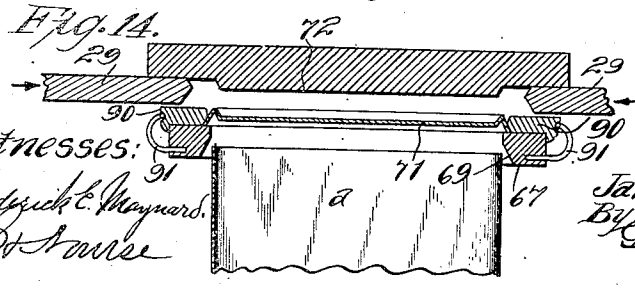


Fig. 12.

Fig. 13.

Fig. 14.



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UNITED STATES PATENT OFFICE.

JAMES J. GRIFFIN, OF SAN FRANCISCO, CALIFORNIA.

AUTOMATIC CAN-HEADING MACHINE.

No. 862,634. Specification of Letters Patent. Patented Aug. 6, 1907.

Application filed July 6, 1906. Serial No. 325,015.

To all whom it may concern:

Be it known that I, JAMES J. GRIFFIN, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Automatic Can-Heading Machines, of which the following is a specification.

This invention has reference to can-making machines, and particularly those by which tops and bottoms are placed on can-bodies of a rectangular cross-section.

It is one of the objects of the invention to provide a satisfactory square or polygonal can-heading machine which will automatically feed tops or bottoms into position to be rigidly fastened to the can-bodies; which will automatically feed the can-bodies into position to be registered with and likewise secured to the top or bottom as the case may be; to provide a machine which will accomplish the aforesaid operations with a minimum amount of attention, and at the same time apply the fluxing fluid to the end of the can-body to be operated upon, in a uniform and reliable manner.

Other objects will appear in the description, among which are the production of a square-can-header of large capacity, and the reduction of cost of manufacture of the cans and a decrease in the percentage of waste product.

The invention consists of the parts and the construction and the combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a plan view of my machine. Fig. 2 is a front elevation of the same in partial section. Fig. 3 is a side elevation in partial section. Figs. 4—5—6 & 7, diagrammatically illustrate the process of applying the heads to the can body. Fig. 8 is a sectional view of the fluxing device. Fig. 9 is a perspective view of a portion of a can head. Fig. 10 is a plan view showing the guide-plate of a modified form of the invention. Figs. 11 & 12 are sections of the same, and Fig. 13 is a perspective view of the same. Fig. 14 shows a modified form of retaining detents.

Referring to the drawings the machine is shown as having a supporting frame 2 upon which is secured a bed plate 3, and depending therefrom is a bearing bracket 4, carrying a shaft 5, adapted to be driven by any appropriate means. Shaft 5 has a pinion 6 rigidly mounted on its inner end, which pinion intermeshes with a suitably proportioned gear 7 fastened on a countershaft 8, which latter is journaled in brackets 9. The gear 7 has the eccentric cam-slot 10 and carries upon one side a cam-roller 11. Shaft 8 carries besides gear 7, a miter gear 12 and a cam 13. The gear 12 is in mesh with and drives a similar gear 14 keyed to a vertically disposed shaft 15 which operates the can body carrier 30, as will be explained later.

A roller 10′ rotatively secured to one arm of a rocking lever 16 travels in the cam slot 10. Lever 16 is pivoted to frame 2 at 17, and its outer end is adjustably connected by the link 18 to another lever 19 pivoted in a yoked standard 20 mounted upon a stationary part 21 of the apparatus. The lever 19 has on its inner end a roller 22 fitting in the box 23 of a head 24 which is vertically slidable upon a fixed stud 25. This head is provided with four yokes as at 26, in which are pivoted the toggle-members 27; the latter coöperating with levers 28 pivoted on the part 21, and designed to reciprocate the squeezing jaws 29. It will thus be seen that a rotation of the cam shaft 8 will rock the levers 16 and 19 causing the head 24 to be raised, thereby forcing the levers 28 outward and the squeezers 29 inward. As the head lowers the squeezers open out again.

The squeezing plates 29 are arranged in a substantially radial form, and are operable simultaneously and in unison in suitable fixed guides, to close in on a can head when the latter is in position on a can body to squeeze the head on the can in a manner well known in the art. I make no claim to these squeezers *per se*.

The can bodies which are to be headed are supported on a rotatable turret or carrier 30 and are adapted to be brought successively into position with respect to the squeezers, and to receive an end and to have the same squeezed in the following manner and by the following means: The vertical shaft 15 has a crank arm 31 keyed to its upper end. The arm 31 is provided with the roller 32 and shaft 15 carries a disk-shaped locking plate 33 which has a cut out portion 34, shown in Fig. 1, for the purpose of clearance with carrier 30. The roller 32 is adapted at each revolution of the crank 31 to enter a radial slot 35 in the carrier 30 for the purpose of intermittently rotating the latter. The carrier 30 is mounted on a shaft 36 which has its lower end provided with a flanged-wheel or pulley 37 against which a friction spring or brake 38 fastened to the machine frame is adapted to bear to limit the rotative movement of the carrier. The shaft 15 is constantly driven, and the roller 32 entering each slot 35 successively will give the carrier a step by step rotative movement. This means of driving is a well known type of stop movement. With each intermittent action of the carrier, the various elements of the machine are timed to begin and complete their separate functions before the carrier is again progressed. The carrier 30 is provided with a plurality of radially disposed can-holders 39, corresponding in size and cross-section to the can bodies to be handled and open on their outer side for the insertion and discharge of the can bodies. Each holder 39 has an ejector or kicker rod 40 opposite to its open side for the purpose of expelling the can-body after it has passed the heading and crimping mechanism. Each holder has a vertical stud 42 projecting downward from its bottom plate 41; this stud is movable vertically in the carrier 30. The several studs 42

are adapted to be brought successively into alinement with a pin 43 which is supported for vertical reciprocation in the bed-plate 3. Pin 43 is adapted to be moved upward through the medium of a push rod 44, which is supported by a spring 45 upon a cam lever 17′ on a fixed part of frame A; the latter being fulcrumed at 17 and being actuated by roller 47 traveling in a cam slot 13′ in the cam 13. The can-holders are prevented from any turning movement by means of the rods 48. The rod 43 and its operating mechanism are so arranged with respect to the squeezers 29 and the operation of the rod 43 is so timed, that at each period of rest of the carrier, a holder will be brought between the squeezers and rod 43 and directly over the latter to be elevated for the purpose of heading and squeezing the can, as will be more fully explained shortly.

The can-bodies are delivered into the holders automatically by suitable means as the following: 49 represents a belt from which the can-bodies to be headed are delivered on to a table 50, and thence shifted transversely by means of a push-rod 51 into a holder which has been brought into suitable position. The push-rod 51 is reciprocal in guides 52 by appropriate means as a lever 53 which is connected by link 54 to one arm of a bell crank lever 55; the latter is fulcrumed at 56 on the stationary support 21. The other arm of the bell crank 55 is pivoted at 57 to a lever 58, which latter is also fulcrumed at 56. The pivot 57 works in a suitable slot in the lever 55 to accommodate the parts to the necessary oscillatory movement. The lever 58 is pivotally connected with a head 24 in such fashion as to impart an oscillatory movement to the lever 58 at each reciprocation of the head 24.

Simultaneously with the infeed of a fresh can-body, by means of the rod 51, into a holder, another can-body which has received its head is being discharged from another part of the machine. This discharge of a can is effected by the lever 58, and the following connections operating successively on the several ejectors 40: 59 represents a lever fulcrumed at 60 to a fixed part of the machine. A link 61 connects lever 58 with lever 59. Each time a can-body-carrier stops and the crimping mechanism is operated, the lever 58 will be rocked to actuate simultaneously the injector rod 51 and the ejector rod 40.

Where the seams of the cans are to be soldered after the head is crimped, it is desirable to deposit a suitable fluxing fluid on the edge of the can before the head is put on. Accordingly I provide the following mechanism which is operated during the period of travel of the can from its point of entry into the machine to the point where it receives its head: 62 is a lever which is fulcrumed to a fixed part of the machine at 62′ and has one end pivoted to the lever 58. The other end of the lever 62 carries a polygonal ring or part 63 which has a trough or reservoir 64 to contain a suitable fluxing liquid. The underside of the part 63 has a continuous groove 65 corresponding in shape and size to the end of a can-body. The groove 65 is filled with an absorbent packing 66 of suitable material, and the bottom of the trough is perforated to allow a limited amount of the fluxing liquid to percolate through and saturate the absorbent packing in the groove 65. Each time that the can-body-carrier stops and the crimpers are actuated, this fluxing mechanism is operated to engage the top edge of a can and squeeze a sufficient amount of the fluxing liquid onto the edge of the can-body and so insure a tight joint when the can finally passes through the solder bath.

Suitably arranged beneath the convergent ends of the squeezers 29 and secured to a fixed part of the apparatus 21 is the can head support and centering ring 67, which constitutes one of the main features of the present invention. This can head support and centering ring, consists of a single piece of metal having a polygonal opening corresponding in size to the outside diameter of a can. The opening in this ring is smaller than a detached head which is adapted to be supported on the ring and in the path of the immediately subjacent can body.

As shown in Fig. 1, where a single ring serves for all of the can-body-holders, the can ends are fed in through a chute 68 disposed beneath the plane of the squeezers 29.

As represented in Fig. 1, and more clearly in Figs. 4—5—6 &-7, the opening of the ring 67 has downwardly divergent walls 69 against which the upper edge of the can body *a* is adapted to engage and to be squared when the can body is lifted. The top of the ring 67 is formed with a surrounding ledge 70 on which ledge a can end 71 is adapted to be supported. These can heads or ends are provided with a continuous groove 73 in which the end of the can is adapted to fit. (By "can-head" I mean either can-top or can-bottom or can-end).

The top of the ring on the side toward the carrier 68 is cut away to form a channel with its bottom in the plane of the top of the carrier 68 and in a plane with the bottom of the ledge 70, so that the can ends can easily slide from the trough 68 into position on the ring and in line with the can body. Each time that the can-body-carrier stops and a can body is lifted through the agency of the rod 43 and its operating mechanism, the top of the can-body *a* first strikes the inclined walls 69 of the ring, and these inclinations act to square up the can which passes on up through the ring, picks up the can-head and carries the latter up against the fixed stop-plate 72 (Fig. 5), the spring pressed pins 74 preventing the head from jumping or shaking off of the can-body during the upward movement of the latter. The stop-plate 72 is suitably shaped and convexed corresponding to the concavity of the top of the can-head.

The lifting of the can body to pass it through the ring and receive its head, precedes slightly the inward movement of the squeezing jaws 29.

The coöperative action of the squeezers 29 with the side walls of the stop-plate 72 upon the head and can-body, results in the proper securing of the head on the can (Fig. 6); and in such a reduction in area of the headed end of the can, that when the can-body is retracted downward through the ring, it will carry the can-head along with it (Fig. 7). Thus it is seen that when the can head is first fed in it is too large to pass through the ring 67; after squeezing however and having been made a part of the can, it will readily slip through the ring as indicated in Figs. 6 and 7.

The ejectment of the headed can from the ring is effected by suitable means as the pins 74 which slide in the stop plate 72. These pins of which there may be any suitable number so as to exert an even pressure on the top of the can-head, are secured to a plate 75, which

is slidable on the stud 25. The downward movements of the pins is accomplished by a lever 77 which is fulcrumed at 78 and has one end to bear on the plate 75, while the other end is connected by a link 79 to an offset portion 80 on lever 81. The latter is fulcrumed at 17 and at each revolution of the shaft 8, the roller 11 is adapted to engage the rocker lever or arm 81, lift the latter and push down on the pins 74 to eject the headed can body from the ring 67. A stop 82, shown in Fig. 2, is adapted to limit the oscillatory movement of lever 77 so that the inner end of said lever will serve as a stop to the upward movement of the pins 74 against the tension of the springs 76.

In operation the can bodies, with their ends to be headed pointing upward, are delivered by carrier 49 upon the table 50 and fed thence into the successive holders 39 on carrier 30 by means of the pusher 51. The ends 71 are correspondingly fed by the chute 68 successively into position on the ring 67. With the drive-shaft operating constantly, the carrier 30 is given a step by step movement through the medium of the stop mechanism 31—32—33. Each time the carrier stops, an empty holder is brought into position to receive a can body from table 50; another holder with its can body is brought beneath the fluxing mechanism; a third holder is brought into line with the squeezing mechanism and the elevating mechanism, and a fourth holder with its can body and crimped-head is brought opposite the knock-out lever 59. During the period of rest of the carrier, pin 43 is lifted to elevate its can-holder and carry a can-body upward through the ring 67 to receive a head, and to have the same squeezed in the manner hereinbefore described. During the squeezing operation the lever 58 is operated to perform a triple function: (1) to actuate pusher 51 to feed in a fresh can body; (2) to operate the fluxing device 63; (3) to actuate the lever 59 and eject a headed can body. With the injecting, fluxing, squeezing and ejecting mechanisms resuming their normal inert positions, the carrier is given another step movement forward to bring a succeeding set of holders and can-bodies into proper position to be operated upon.

In Figs. 9 to 13 inclusive, I have indicated a modification of the invention, in which each of the can-body-holders 39′ may be provided with its individual supporting and centering ring 67′. This it will be noticed is in contradistinction to the previously described machine in which a single supporting and centering ring 67 fixedly positioned in the apparatus, serves for all the can-body holders. In the modified form of the apparatus, the ring 67′ is made in one piece as before and has a ledge 70′ surrounding the opening in the ring providing a support for the can head. The ring 67′ is provided with two short legs 83 at one end, and two long legs 84 at the other end. These legs are adapted to slide in suitable perforations in the walls of the holders 39′. Each ring has a limited up and down movement independent of its holder, and a spring 85 tends normally to lift the ring from its holder. This upward movement of the ring with respect to its holder is limited however, by appropriate means, as the cotter-pins 85 passing through the long legs 84 and engaging suitable stops on the holder 39′. The function of the springs 85 is to normally maintain the rings at sufficient distance above the holders to enable a can to be easily pushed into a holder or out of it beneath a ring. The holders are mounted on a rotary carrier 30′, similar in every respect to the one in Fig. 1, and operated by similar or equivalent means and in a similar or equivalent manner. The same squeezing mechanism, and the same ejector mechanism are employed; consequently it has not been deemed necessary to describe or illustrate these several mechanisms in further detail. The modified form of the device differs only from that first described in the individual mounting of the supporting and centering rings and in the manner in which the heads are delivered upon the rings. Where an automatic feed of the heads is desired, I employ a feed-chute 68′, into which the heads are fed singly and provide one side of each ring with an upwardly projecting knife-edge tang 67^a. The chute 68′ is arranged with respect to the travel of the holders, so that each holder passes beneath the end of the chute in a direction as indicated by the arrow in Fig. 12; with the ring 67′ traveling in sufficient proximity to the end of the chute, the tang 67^a which is arranged close to the opening in the ring, will catch under the edge of a head which projects sufficiently from the mouth of the chute 68′ and draw it on to the ring and center it over a can body. With a cap in this position on the ring, the holder is duly advanced to the squeezing mechanism and lifted to have the head squeezed all in the manner as herein before described.

In both cases it is important to observe that the can-body is pushed through the solid ring; the head of which is too big to pass through the ring, is placed on the body; and the head is squeezed before the can is withdrawn from the ring. After squeezing the head and can body easily pass through the ring; the pusher pins 74 exerting only enough pressure on a head to insure the discharge of a can in case the latter shows a tendency to stick in the ring.

In Fig. 14 I show detents or plates 90, actuated by small spring-wires 91, to hold the can caps securely centered and prevent dislodgment. As the can-body is raised through the centering ring 67, the detents recede sufficiently to permit the cap to pass.

It is possible that various modifications in my invention may be made without departing from the principle thereof, and I do not wish to be understood as limiting myself to my specific construction.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is

1. In a can header, the combination of a can-body-holder, a can-head-supporting-ring above said holder and consisting of a single rigid structure having an opening corresponding in size to the outside diameter of the can body but which opening is smaller than a detached can-head, said ring being adapted to support the head thereon in the path of the immediately subjacent can-body, means for projecting the can-body through said ring to cause it to pick up the loose head supported thereon, squeezing devices above the ring and between which the head-end of the can body is carried, and means for actuating the squeezing devices to cause them to squeeze the said loose head on the can-body, said devices allowing the head-can to be retracted through the ring.

2. In a can-header, the combination with a revolubly-mounted can-body-carrier having a plurality of radially-disposed can-body-holders each having a limited reciprocatory movement, of a squeezing mechanism and a subjacent solid one piece can-head-supporting-ring having an opening which is too small to pass the detached can-head, means for projecting a can-body through the ring, and

means to actuate the squeezing mechanism to squeeze the head on the body and allow the headed-body to be retracted through the ring.

3. In a can-heading machine, the combination with a revolubly-mounted can-body-carrier having a plurality of radially-disposed can-body-holders each having a limited reciprocatory movement, of a superposed can-head-supporting-ring, crimping mechanism above the ring, means for axially alining the crimping mechanism, the ring and the holder, means for actuating the holder to project a can-body through the ring, and means for actuating the crimping mechanism to crimp the head while the can-body is in said projected position.

4. In a can-heading machine, the combination of a revolubly-mounted can-body carrier having a plurality of radially-disposed can-body holders, said holders having a limited reciprocatory movement, a rigid one-piece can-head-supporting-ring having an opening corresponding in size and cross-section to the can-body to be headed, said opening being smaller than the detached can-head, means for projecting the can through the ring to receive a can-head, a stop-plate in the path of the headed can-body, and squeezing mechanism coöperating with said stop-plate to squeeze the head on the can-body.

5. In a can-heading machine, the combination of a can-body carrier having a plurality of radially disposed can-body-holders, said holders having a limited reciprocatory movement, crimping mechanism, a can-head-supporting-ring, means for reciprocating a holder to pass a can through the ring and into proximity with the crimping mechanism, and means for actuating the crimping mechanism.

6. In a can-heading machine, the combination of a carrier having a series of can-body-holders open at one side, means for feeding cans successively into said holders, fluxing mechanism, heading and crimping mechanisms, ejector mechanism for discharging the headed can-body from the holders, and means for operating said carrier and said several mechanisms coördinately.

7. In a can-heading machine, the combination of a rotary carrier having a plurality of radially disposed can-body-holders, said can-body-holders open at one side, ejectors carried by the holders, means for heading and crimping a can while in a holder, and means for operating said ejector to discharge the head can.

8. In a can-heading machine, the combination of a rotary carrier having a plurality of radially disposed can-body-holders, said holders open at one side having a limited reciprocating movement on the carrier, means for placing the heads on the can-bodies, means for crimping the heads, means for reciprocating the holders to carry the can-bodies into position with respect to said heading and crimping means, and means to eject the headed bodies from the holders.

9. In a can-heading machine, the combination of a rotary carrier having a series of radially disposed can-body-holders, means for giving the carrier a step by step movement, crimping mechanism, a can-head-supporting-ring, means for lifting a holder to project a can-body through the ring into position with respect to the crimping means, and means for giving the carrier and crimping means a movement coördinate with the reciprocation of the holders.

10. In a square-can-header, the combination of a revolubly-mounted can-body-carrier having a plurality of radially-disposed can-body-holders, and a can-head-support, one of said parts movable toward and from the other to place a head on the can-body, said can-head-support comprising a solid ring having an opening corresponding in cross-section and size approximately to that of an end of a can-body to be headed, said ring having the sides of the opening adjacent to the end of the can-body beveled to form a funnel-shape guide for the can-body, the opening in said ring being too small to pass the detached can-head but freely passing the can-body, means to squeeze the can-head onto the body after the latter has passed through the ring, and means to push the headed can-body with the attached head back through the ring.

11. In a square can-header, the combination of a revolubly-mounted can-body-carrier having a plurality of radially-disposed can-body-holders, and a can-head-support, one of said parts movable toward and from the other to implace a head on the can-body, said can-head-support comprising a solid ring having an opening corresponding in cross-section and size approximately to that of an end of a can-body to be headed, said ring having the sides of the opening adjacent to the end of the can-body beveled to form a funnel-shape guide for the can-body, the opening in said ring being too small to pass the detached can-head but freely passing the canbody, means to squeeze the can-head onto the body after the latter has passed through the ring, and means to push the headed can-body with the attached head through the ring, said ring having a channel on its upper surface for the insertion laterally of a can-head into position on the ring prior to squeezing.

12. In a square-can-header, the combination of a revolubly-mounted can-body-carrier having a plurality of radially-disposed can-body-holders, and a can-head-support, one of said parts movable toward and from the other to implace a head on the can-body, said can-head-support comprising a solid ring having an opening corresponding in cross-section and size approximately to that of an end of a can-body to be headed, said ring having the sides of the opening adjacent to the end of the can-body beveled to form a funnel-shape guide for the can-body, the opening in said ring being too small to pass the detached can-head but freely passing the can-body, means to squeeze the can-head onto the body after the latter has passed through the ring, means to push the headed can-body with the attached head through the ring, said ring having a channel on its upper surface for the insertion laterally of a can-head into position on the ring prior to squeezing, a stop plate on the side of the ring opposite to the holder and operative in opposition to the holder and co-acting with said squeezing means to crimp the head on the can-body.

13. In a can-heading machine, the combination of a revoluble structure having a plurality of radially-disposed can-body-holders, said holders each having a limited reciprocatory movement, a squeezing mechanism, a single can-head support beneath which the can-holders are successively brought, said support comprising a rigid ring upon which the can-heads loosely rest and said ring having an opening through which the can-body may be projected to pick up a loose head, and means for operating the can-body-holder to cause it to elevate the can-body and loose can-head into the range of action of the squeezing mechanism.

14. In a can-heading-machine, the combination of a can-body holder and a can-head-support, said can-head-support, movable in unison with the holder and having means for engagement with the can-head to position it over the can-body on the holder, and means to move the holder.

15. In a can-heading-machine, the combination of a can-body-holder, a can-head-support carried by the holder, said can-head-support having an opening corresponding to the size and shape of the can-body to be headed, means for positioning the can-heads on the holder, and means for attaching the head so positioned to the can-body.

16. The combination of a rotary carrier having a series of can-body-holders, said holders mounted for vertical reciprocation, a can-head-supporting-ring, means for reciprocating a holder to insert a can into the ring and to position the head on the can-body, and means for securely fixing the head on the can while the can is in the ring.

17. The combination of a rotary carrier having a series of can-body-holders, said holders mounted for vertical reciprocation, a can-head supporting-ring, means for reciprocating a holder to insert a can into the ring and to position the head on the can-body, means for crimping the head while the can is in the ring, means to move the carrier, means to insert can-bodies into the empty holders, and means to apply a fluxing medium to the can-bodies in the holders prior to receiving their heads.

18. In a can-heading machine, the combination of a rotary support, a series of can-body-holders on the support, means for giving the latter a step by step movement, a can-head-supporting-ring, means for operating the holders successively to insert a can-body into the ring, radially operating crimping-members above the ring, and means to operate said crimping members coördinately with the movement of the holders.

19. In a can-heading machine, the combination with a rigid one piece can-head-supporting-ring, of a series of radially operating crimping members on one side of the ring, means on the other side of the ring to support a can-body, and to insert a can-body into the ring, said ring provided with a seat for the can-head, and means for actuating said crimping members coördinately with the movements of the means for inserting the can-bodies into the ring.

20. In a can-heading machine, the combination with a rotary support having a series of radially disposed can-body holders, means for giving the support a step by step movement, means for feeding the can-bodies into the empty-holders, means for applying a fluxing medium to the can-bodies on the holders, a series of radially arranged crimpers, means including a vertically slidable head for operating said crimping members, means for reciprocating the holders and for positioning can-heads on the can-bodies, and connections between said slidable head and said fluxing device to operate the latter.

21. In a can-heading-machine, the combination with a traveling can-body-holder open at one side, means for giving said holder a step by step movement, and the following instrumentalities operative at succeeding periods of rest of said can-body-holder: means to deliver a can-body to the holder, means to apply a fluxing medium to the can-body, means to place a head on the can-body and to crimp the same, and means to eject the headed-can-body from the holder.

22. In a can-heading machine, the combination of a rotary support having a series of radially disposed can-body-holders, and means for giving the support a step by step movement, a crimping mechanism comprising a series of radially arranged crimpers, a sliding-head and toggle connections between the head and said members, a can-head-supporting-ring beneath the crimpers, and means to elevate the holders successively to project succeeding-can-bodies through said ring and into operative position with the crimpers, and means to operate said crimpers coördinately with the movement of said support.

23. In a can-heading machine, the combination of a rotary support having a series of radially disposed can-body-holders, and means for giving the support a step by step movement, a crimping mechanism comprising a series of radially arranged crimpers, a sliding-head and toggle connections between the head and said members, a can-head-supporting-ring beneath the crimpers, means to elevate the holders successively to project succeeding can-bodies through said ring and into operative position with the crimpers, means to operate said crimpers coördinately with the movement of said support, and can-body injecting means and can-body ejecting means operative by the crimping mechanism.

24. In a can-heading machine, the combination of a rotary support having a series of radially disposed can-body-holders, and means for giving the support a step by step movement, a crimping mechanism comprising a series of radially arranged crimpers, a sliding-head and toggle connections between the head and said members, a can-head-supporting-ring beneath the crimpers, means to elevate the holders successively to project succeeding-can-bodies through said ring and into operative position with the crimpers, means to operate said crimpers coördinately with the movement of said support, and means operative by the crimping mechanism for applying a fluxing medium to the can-bodies.

25. In a can-heading machine, the combination with a rotary support having a series of radially disposed can-body holders, means for feeding cans into the holders, means for heading and crimping the can-bodies while in the holders, means for ejecting the headed cans from the holders, said crimping means including radially arranged crimpers, a sliding-head and toggle connections between the head and crimpers, and connections between the head and said can-feeding means to operate the latter.

26. In a can-heading machine, the combination with a rotary support having a series of radially disposed can-body-holders, means for feeding cans into the holders, means for heading and crimping the can-bodies while in the holders, means for ejecting the headed cans from the holders, said crimping means including radially arranged crimpers, a sliding-head and toggle connections between the head and crimpers, and connections between the head and said can-ejector-means to operate the latter.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES J. GRIFFIN.

Witnesses:
REY M. PIKE,
FRANK L. OWEN.