

No. 668,305.

Patented Feb. 19, 1901.

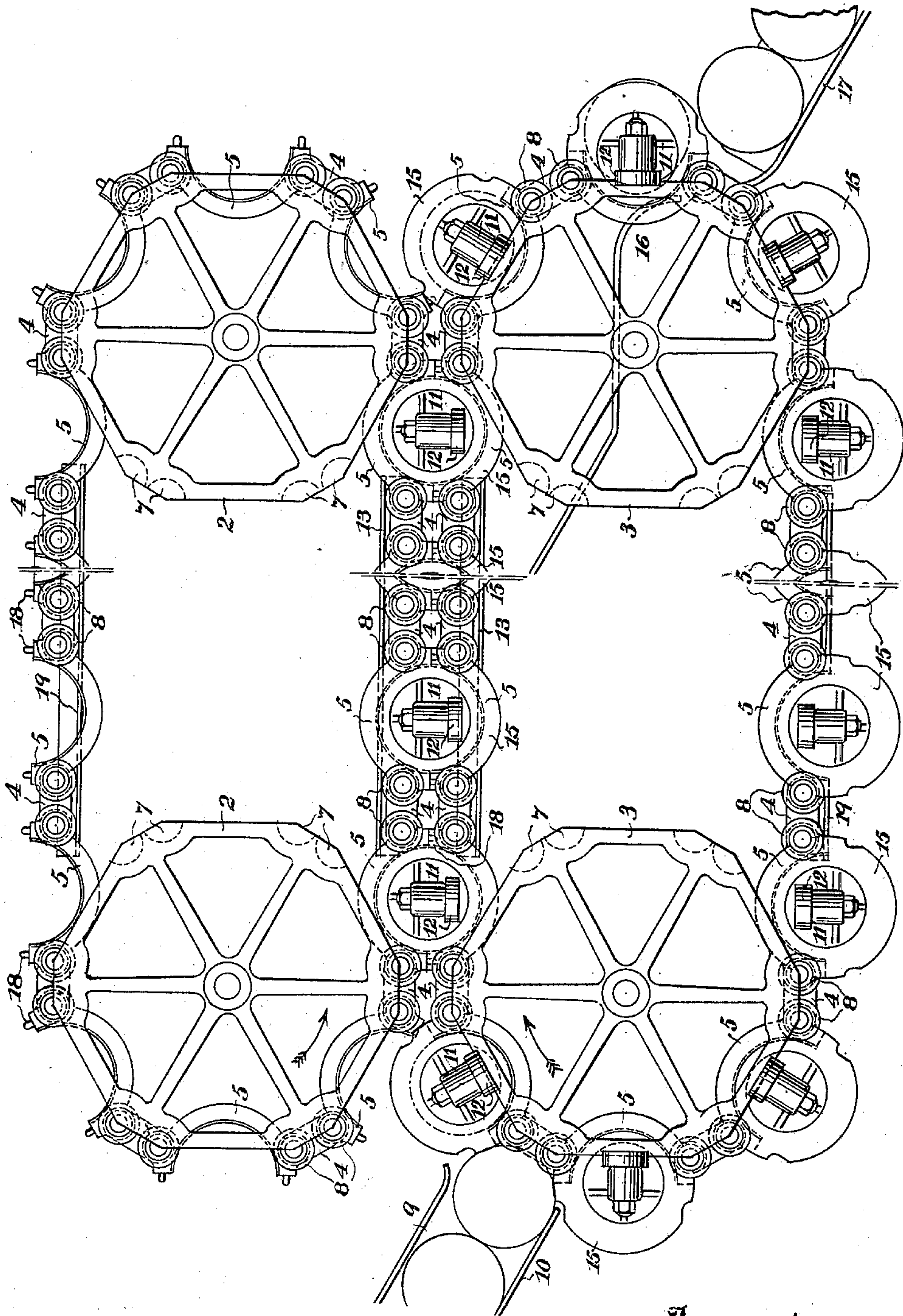
W. S. CASE.  
CAN HEADING MACHINE.

(Application filed Oct. 30, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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2 Sheets—Sheet 2.

Fig. 2.

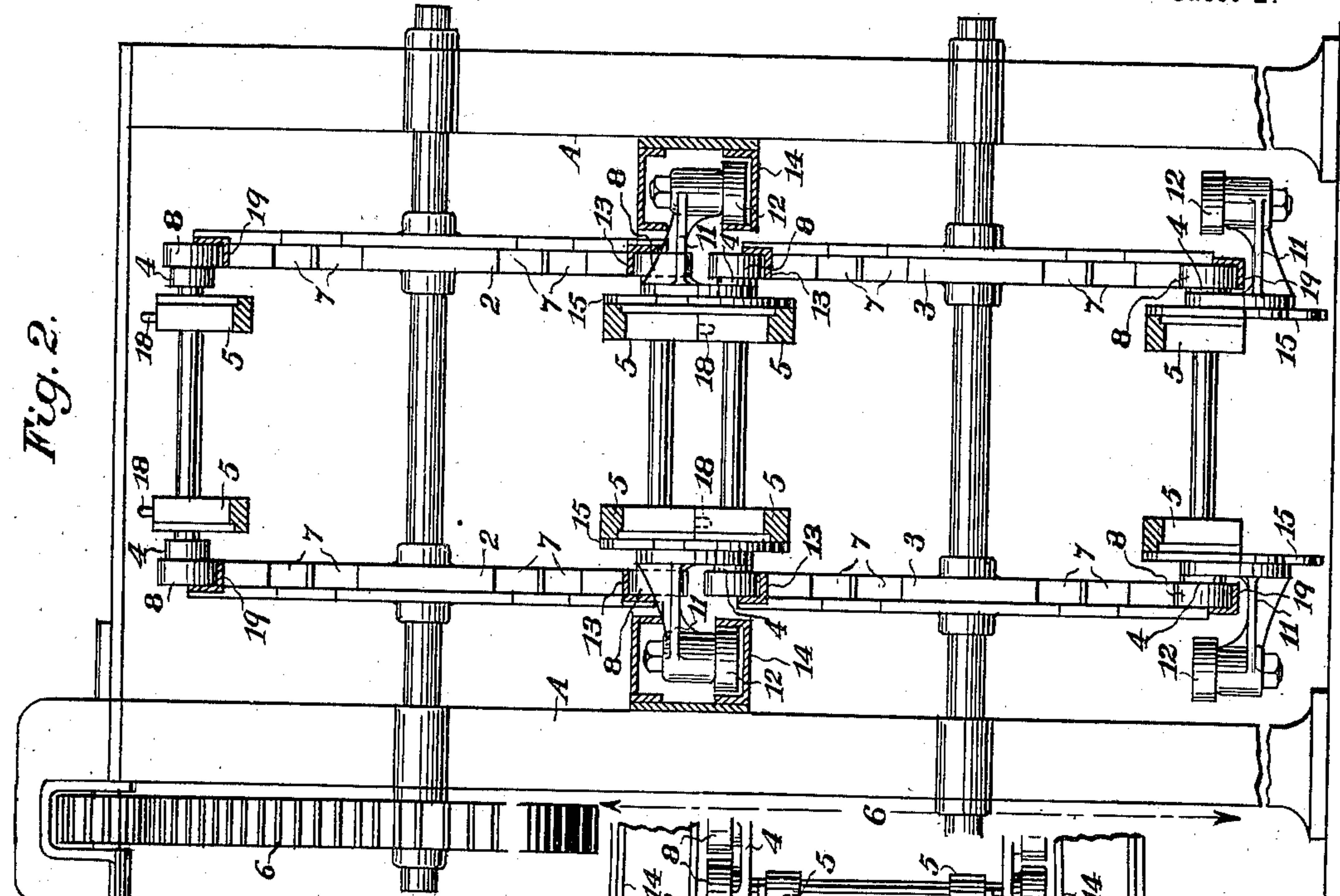


Fig. 4.

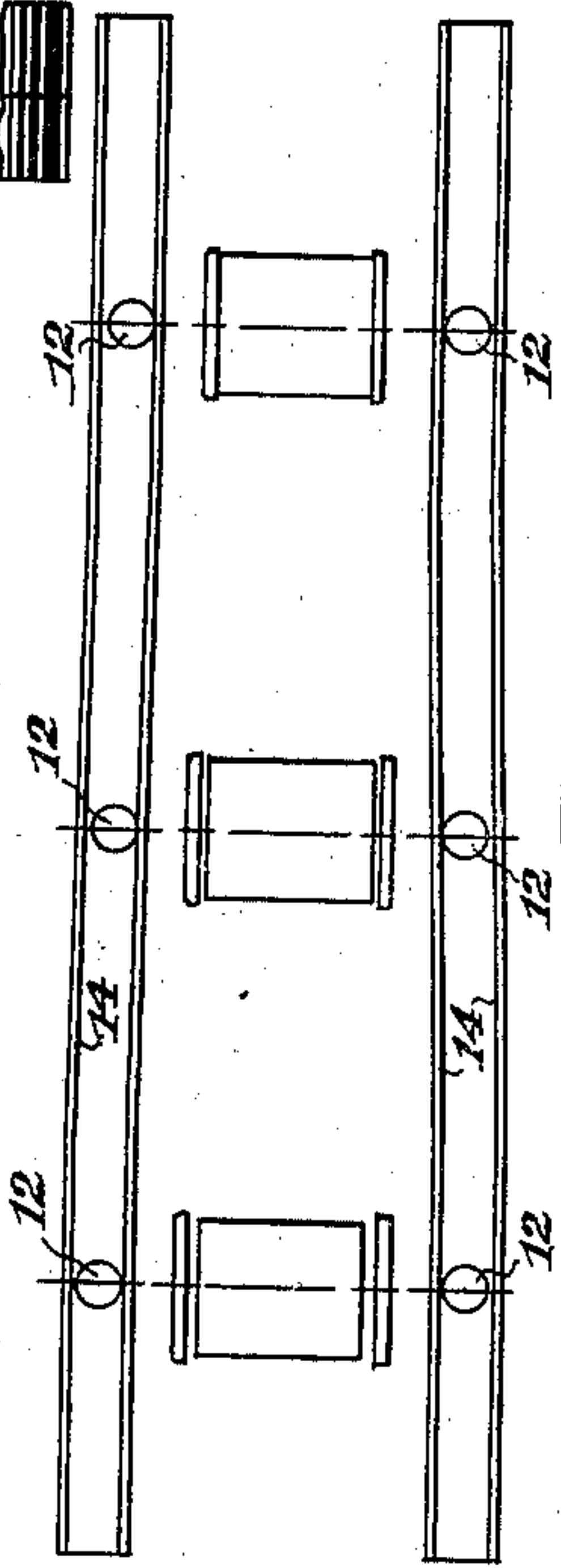
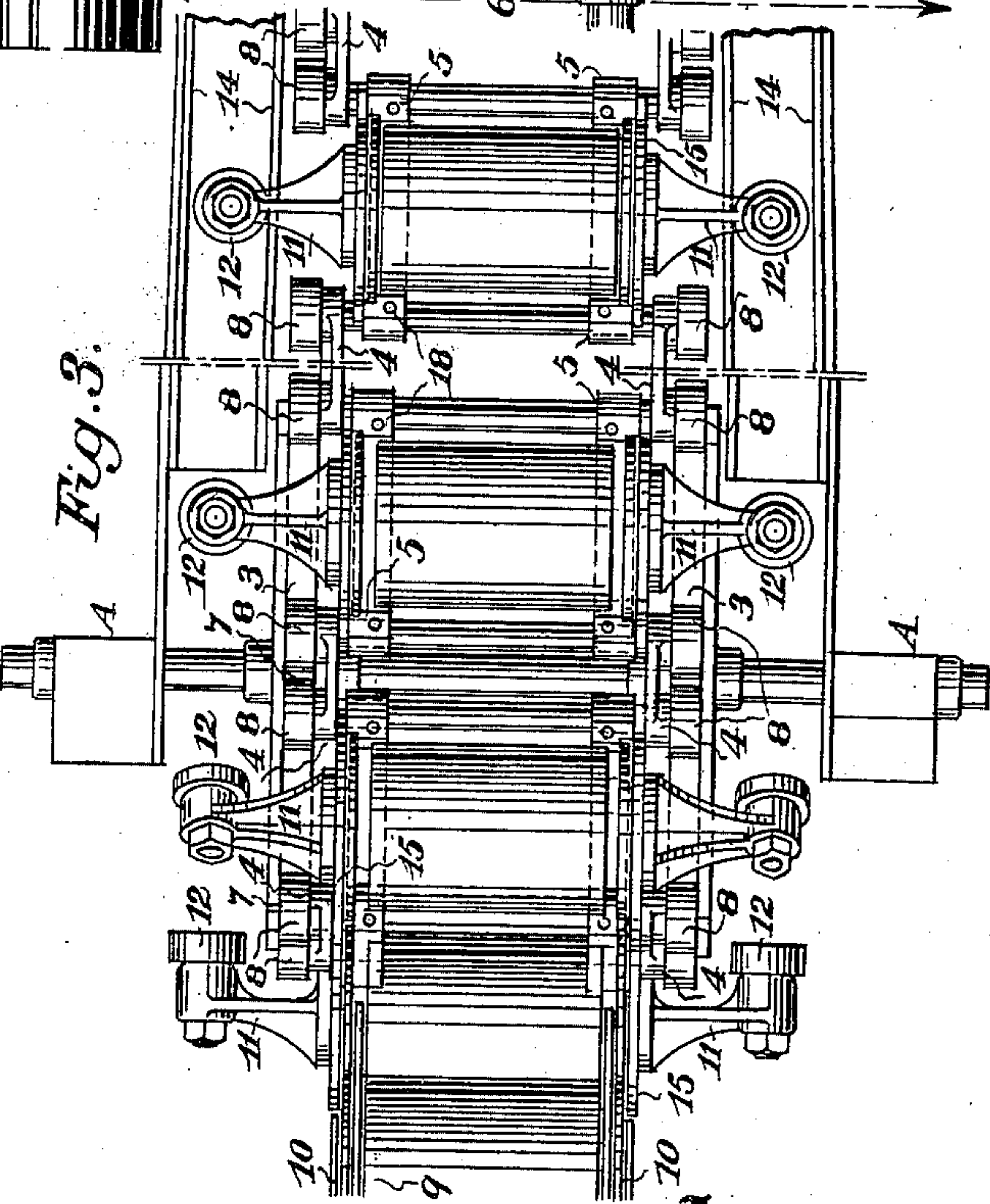


Fig. 3.



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# UNITED STATES PATENT OFFICE.

WILMER S. CASE, OF HAYWARD, CALIFORNIA.

## CAN-HEADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 668,305, dated February 19, 1901.

Application filed October 30, 1900. Serial No. 34,904. (No model.)

*To all whom it may concern:*

Be it known that I, WILMER S. CASE, a citizen of the United States, residing at Hayward, county of Alameda, State of California, have invented an Improvement in Can-Heading Machines; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an apparatus which is designed to place heads upon the ends of metal cans.

It consists of segmental jaws linked together in endless series or chains, the jaws forming one half or segment, being carried by suitable wheels or drums located at a distance apart sufficient to accommodate a chain of segments of any desired length. The other halves form a like chain of segments passing around other wheels or drums, the two sets being so journaled and driven with relation to each other that the wheels at one end rotating toward each other bring the segments together to form complete circular clamps, and at the other end they rotate away from each other to separate the segments and allow the completed product to be discharged. Feed devices are so disposed that can bodies and heads are delivered so as to be received and inclosed in the segments previously described. Axially-moving plungers are connected with each pair of segments, and inclines located in the path of travel of these plungers act to gradually force them inwardly, so that the heads against which the plungers press are forced upon the ends of the cans, so that when delivered from the discharge end of the apparatus the cans are headed and are in readiness to be soldered or otherwise closed and secured.

My invention also comprises details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal elevation of my apparatus. Fig. 2 is a sectional end view. Fig. 3 is a plan of a portion of the apparatus. Fig. 4 is a plan, on a reduced scale, of the runways and illustrating the method of placing the head on the can-bodies.

The object of my invention is to provide an apparatus which without any excessively-rapid movements of any of its parts provides

a large capacity for placing heads upon cans in a rapid and perfect manner.

As shown in the present application, the apparatus is designed for simultaneously placing heads upon the opposite ends of can-bodies; but it will be manifest that heads can be placed upon either end alone by providing in the place of one of the heading devices a support for that end of the can which is not to receive a head.

The mechanism may be supported and carried upon any suitable framework or structure, which is here shown in the form of vertical posts A, with suitable connecting-bars, by which the whole structure is made sufficiently rigid. At each end are journaled the two sets of wheels or drums 2 and 3. The drums 2 are located in line above the drums 3, and their peripheries are so constructed as to engage and support the connecting-links 4 of segments 5, so that the segments will always move in unison and will exactly register when they come together. These segments are made of a size to inclose the can-bodies and have countersunk depressions in their outer ends adapted to receive and hold the can-heads in line with the ends of the can-bodies, so that by proper appliances the heads may be pressed upon the ends of the can-bodies without danger of mashing or crushing either part.

The location of the wheels 2 and 3 with relation to each other is such that during their revolution the segments are carried around the upper and lower parts of the wheels, respectively, and then passing around the wheels they are brought together in a line between the two and remain closed in this position, each grasping a can body and heads, and they thus traverse the space between the wheels at the entering and those at the discharge end, while the supplemental mechanism, to be hereinafter described, presses the can-heads upon the ends of the cans during the period while they are traversing this space.

The wheels 2 and 3 are caused to revolve in unison by means of gear-wheels, as at 6, fixed upon the shafts of said wheels and engaging with each other, and power may be applied from any suitable counter-shaft to rotate these gears.

In the drawing Fig. 2 I illustrate but one



of the wheels 6, a broken line with arrow-heads indicating the position of the companion wheel.

It will be manifest that the distance between one end and the other of a machine may be varied to suit conditions and requirements; but it is sufficiently great, so that there will always be a considerable number of cans traversing the space, and the number which can be headed in any given time will depend upon the rapidity with which they can be supplied to the machine.

As shown in the accompanying drawings, the wheels 2 and 3 are polygonal in shape, and the longer sides are of a length approximately equal to the greater diameter of the segments. Between each of these longer sides are depressions, as shown at 7. The ends of each segment are connected together by the links 4, and upon these links are rollers 8, which fit into the depressions 7 as the segments pass around the wheels. That portion of each segment nearest the center of the line of travel of the cans has a sufficient interior diameter to clasp a can-body of the size for which the apparatus is designed, and these can-bodies are delivered by a chute 9, so as to be received and inclosed by the succeeding pairs of segments as they pass around the wheels 2 and 3. The can-heads are in like manner delivered through channels 10, Fig. 3, upon each side of and substantially in the same plane of the chute 9, and they are received into the countersunk or enlarged channels at the outer ends of the segments, these countersunk channels being sufficiently larger than the interior portions of the segments, so that when the segments are closed they will in like manner inclose and fit the peripheries of the can-heads. Thus when the can body and the heads have been clamped between two approaching pairs of segments the heads will be in line with the ends of the can-bodies and in readiness to be forced thereon.

11 represents yokes or supporting-frames upon which the wheels 8 are journaled, and upon the projecting ends of these yokes are journaled other wheels 12, having their axes at right angles with those of the wheels 8 and exterior thereto. The wheels 8 enter angle-iron guides 13 as the segments close together, and these guides, extending between the pairs of wheels 2 and 3, serve by their pressure upon the wheels 8 to retain the segments closed together while the operation of forcing the heads upon the cans takes place. This operation is effected by means of inclined channel-iron tracks or runways 14, in which the rollers 12 travel. These tracks are solidly supported and are sufficiently separated at the end from which the rollers 12 approach to allow the latter to enter them. From this point the channels or runways 14 gradually approach the line of travel of the segments and cams, and thus move the rollers 12 toward each other. Upon the inner ends of the carriers or yokes upon which the rollers

12 are mounted are plunger-heads 15. These plungers, standing in line with the can-heads, will be pressed against them by the movement of the rollers 12 over the inclined tracks or guides 14 until the heads have been forced upon the cans. The guides 14 converge, as before described, to a point where the heads will have been forced upon the ends of the can-bodies, and thereafter from that point to the discharge end these guides extend parallel with the line of travel. When the cans have reached the discharge end of the apparatus, the segments passing, respectively, around the wheels 2 and 3 will separate and open away from each other, and the cans being carried by the lower halves of the segments will contact against arms 16, which project into their path, and force them out of the segments and into a receiving-chute or other directing device or receptacle, as shown at 17. The edges of one set of segments, as the upper ones, are provided with pins, as 18, and the lower segments have formed in them holes which register with the pins, so that when the segments have been brought together they will form absolute cylinders to grasp and shape the cans and heads in readiness to be forced together. The rollers 8 upon the upper segment in returning between the wheels 2 are supported and travel upon tracks 19, which are fixed in their line of travel and the wheels of the lower set of segments in like manner travel upon similar tracks in the lower part of the apparatus.

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

1. A can-heading machine consisting of endless chains of segments adapted to grasp the cans between them, wheels or drums journaled with relation to each other so that the two sets of segments will be brought together, and caused to register and travel in a line between the receiving and discharge end, and means for supplying can-bodies and can-heads simultaneously to the central and end portions of the segments.

2. A can-heading machine consisting of two sets of endless chains of segments, and wheels about which the chains are caused to travel, said wheels being located so that each pair of segments approach and close together to form complete circular clamps, chutes by which can-bodies and can-heads are simultaneously delivered into said segments before the latter close together, and plungers slidable axially with the segments, and means whereby said plungers are caused to approach and force the heads upon the can-bodies.

3. A can-heading machine consisting of two endless chains of segments, wheels about which said chains are caused to travel so as to approach and unite at the receiving end and open and separate at the discharge end, feed-chutes by which can-bodies and can-heads are simultaneously delivered so as to



be received and inclosed by the segments, plungers slidable axially in line with the segments and inclosed cans, and convergent guides between which said plungers move between the receiving and discharge ends of the apparatus whereby the heads are forced upon the cans.

4. In a can-heading apparatus, two endless chains of segments, wheels by which said chains are caused to close at one end and to open at the other, intermediate mechanism by which the wheels are caused to rotate in unison and pins projecting from the meeting faces of one series of segments, and corresponding holes in the other series whereby the segments are caused to register when they meet.

5. In a can-heading machine, endless chains including segments and connecting-links, wheels journaled and driven in unison and about which said chains pass, rollers carried upon the ends of the pins which connect the links and segments, and guide-tracks upon which the rollers travel.

6. In a can-heading machine, endless chains of segments, wheels journaled and turnable in unison about which said chains travel and so located that the segments approach and close at the receiving end, and open and separate at the discharge end pivoted links connecting the segments, rollers journaled upon the pivot-pins, and angle-iron tracks between which the rollers travel whereby the segments are retained in closed condition while passing from one end to the other.

7. A can-heading apparatus, consisting of endless chains of segments linked together

having rollers upon the ends of the linked pivot-pins, wheels driven in unison around which said chains of segments pass and by which they are caused to close and register at the receiving end, chutes by which can bodies and heads are delivered so as to be inclosed between the pairs of segments as they come together, guide-tracks upon which the wheels of the segments travel whereby the segments are retained in closed condition, plungers slidable axially of the segments and contained cans, wheels carried by the plunger-supports, convergent tracks against which said wheels travel whereby the plungers are caused to approach and force the heads upon the can-bodies.

8. A can-heading apparatus consisting of endless chains of segments flexibly connected, wheels and mechanism by which they are revolved in unison about which said chains pass and by which the segments are closed together, chutes by which the cans and heads are delivered so as to be inclosed by the segments as they approach each other, plungers slidable in line axially with the segments and contained cans, rollers carried by the plunger-supports, convergent tracks upon which said rollers travel whereby the heads are forced upon the ends of the can-bodies, and arms so disposed as to contact with the can-bodies after the segments have opened and separated whereby the cans are ejected therefrom.

In witness whereof I have hereunto set my hand.

WILMER S. CASE.

Witnesses:

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CHAS. E. TOWNSEND.