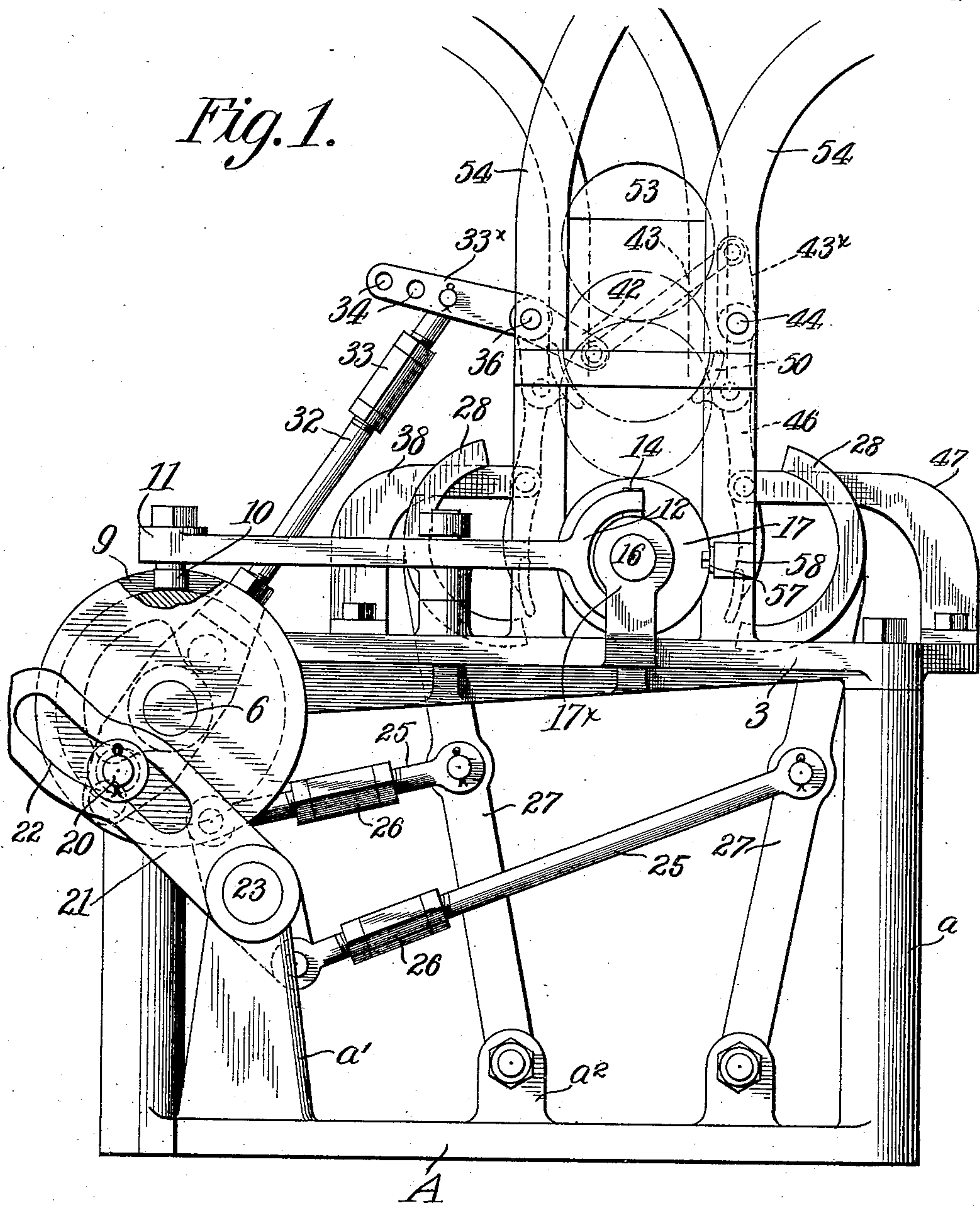


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J. BRAKELEY.
CAN HEADING MACHINE.
APPLICATION FILED DEC. 31, 1907.

Patented Mar. 9, 1909.
3 SHEETS—SHEET 1.



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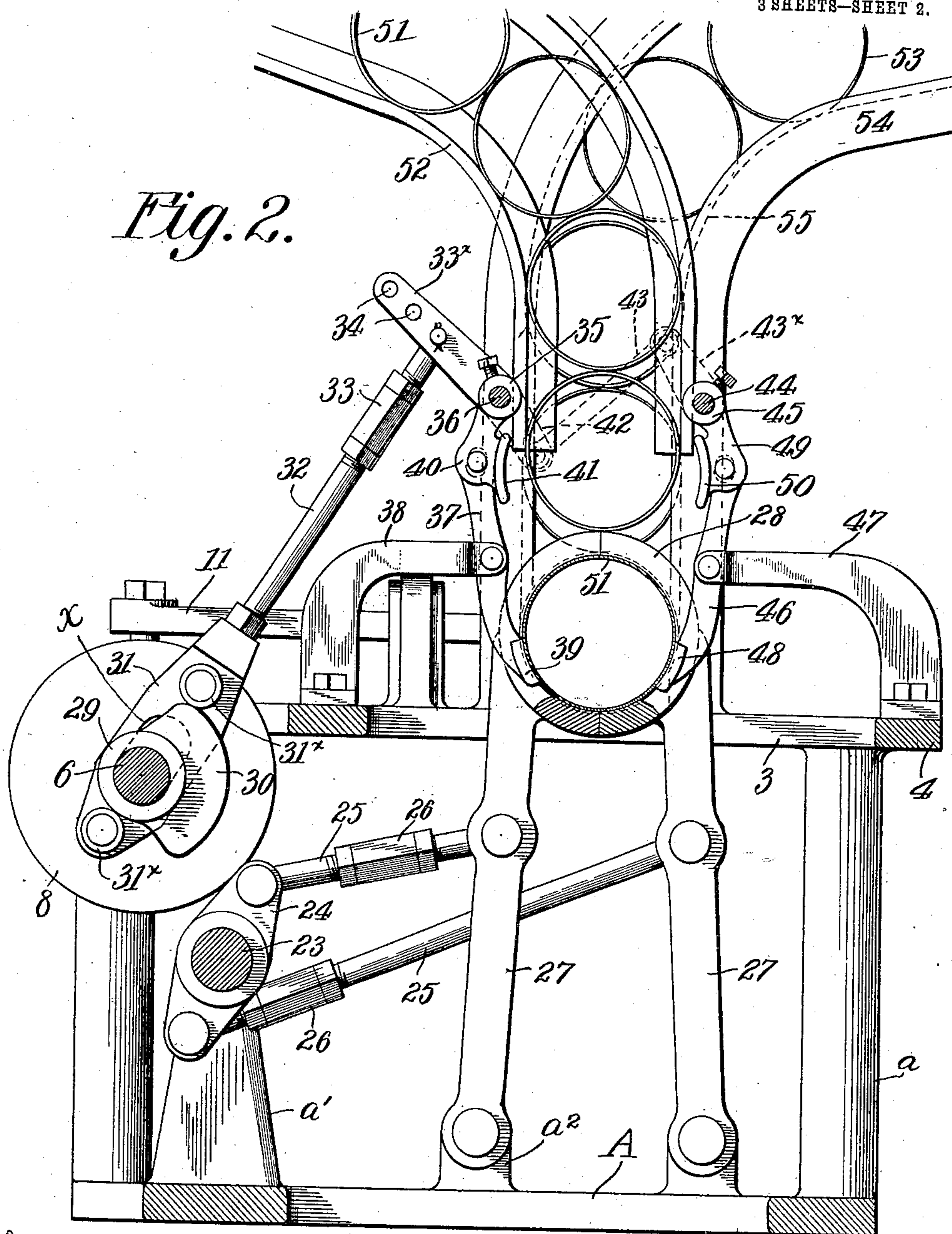


Fig. 2.

Inventor

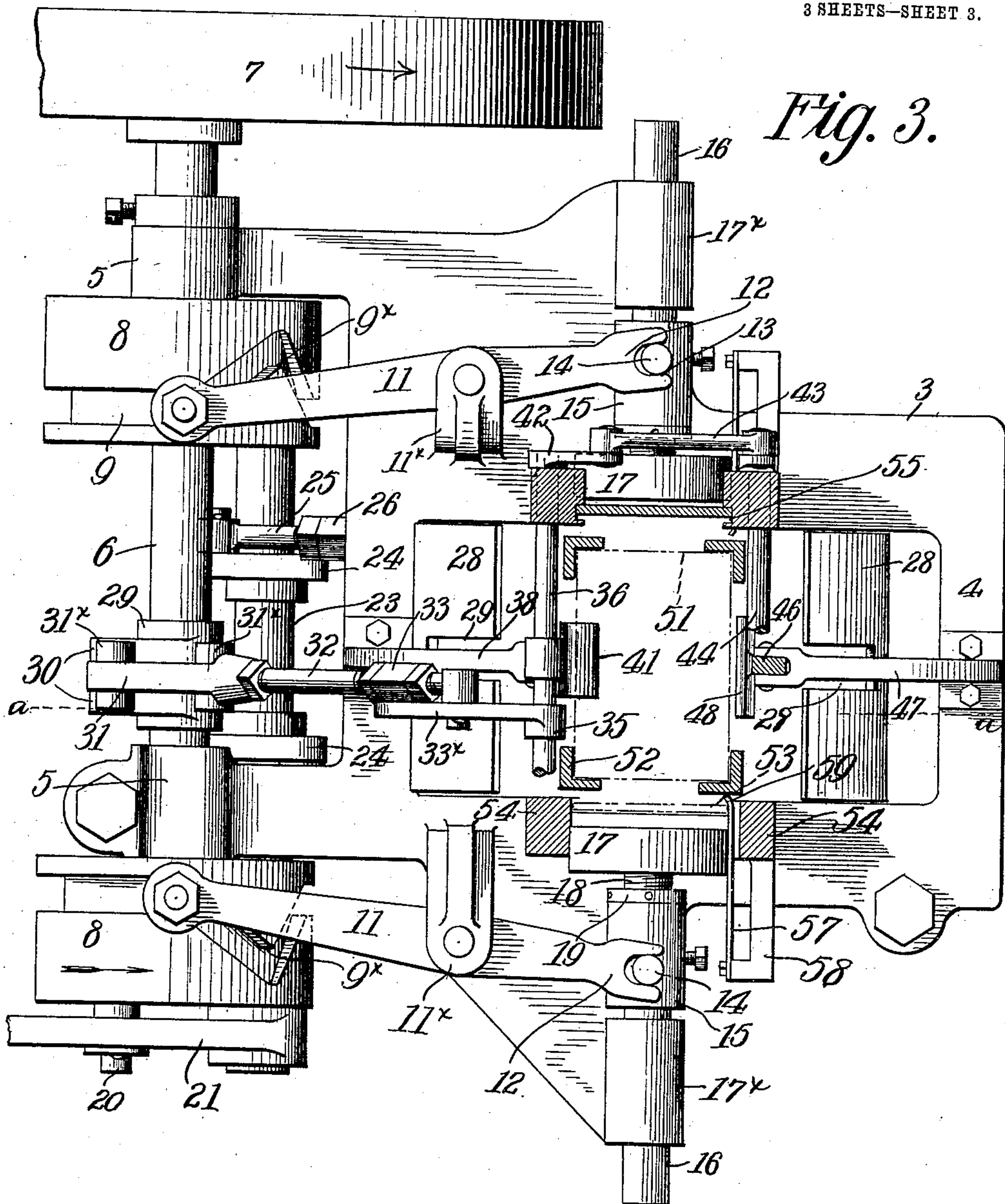
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3 SHEETS—SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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CAN-HEADING MACHINE.

No. 914,695.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed December 31, 1907. Serial No. 408,797.

To all whom it may concern:

Be it known that I, JOSEPH BRAKELEY, a citizen of the United States, residing at Freehold, in the county of Monmouth and State of New Jersey, have invented certain new and useful Improvements in Can-Heading Machines, of which the following is a specification.

The object, in general, of this invention is to provide an improved form of can-capping machine, that is, a machine for placing caps or heads on cans; and, among the particular ends in view, may be mentioned the simplification of the construction of devices of this nature, thereby cheapening the cost of manufacture and, thus, the cost to the purchaser, and the provision of a machine which shall be absolutely positive, certain and efficient in operation, and exceedingly durable in use.

With these objects in view, and others appearing as the specification proceeds, the invention comprehends the novel construction, combination and arrangement of parts of a device characterized by my invention, as will be hereinafter fully described in the specification, summed up in the claims, and illustrated in the drawings.

The drawings display, as an example, for illustrative purposes, a machine capable of carrying out the underlying principles of my invention, and in these drawings: Figure 1 is a side elevation of the machine in open position; Fig. 2 is a vertical section, on line $a-a$, Fig. 3, showing the parts in closed position; and Fig. 3 is a plan view, partly in section, with the parts in the position shown in Fig. 1.

Now, referring in detail to the drawings, A represents a base, having standards a , a' , a'' rising therefrom and supporting the operative parts of my machine. Bolted, or otherwise secured to the right-hand end standards a is a cast frame 3, having right-angled end portions 4. Mounted in suitable bearings 5, 5 is a rotatable shaft 6, operable through the medium of a band-pulley or wheel 7. Fast on and moving with the shaft are what may be called cam-wheels 8, 8, having, each, a circumferential cam-groove 9, including a staggered portion 9^x . Engaging said groove may be any suitable object, such as a roller 10 carried at one end of a horizontal lever 11, pivoted to a stationary supporting-member 11^x , the other end of which is provided with a yoke 12,

each end of which terminates in an auxiliary yoke 13, engaging a pin 14 on collars 15, 15, secured to reciprocable shafts 16, 16, mounted in suitable bearings 17^x , 17^x , and carrying at their inner ends cap-engaging members 17, 17. Cap-engaging members 17 are adjustable, since the shaft 16 is threaded, as shown at 18, and adjustment is accomplished simply by loosening member 19, turning the shaft as desired, and then tightening up the screw.

The outer face of one cam-wheel 8 carries, eccentrically, a pin 20, on which works an elongated plate 21, having a cam-slot 22, and being fast at its lower end to one end of a rock shaft 23, mounted in bearings in the standard a' . At points intermediate of the ends of the shaft 23 are rocker-arms 24, 24, to each end of which is pivotally connected links 25, 25, of differing lengths. These links are each most desirable in two sections united by a turn-buckle 26, whereby the sections may be brought nearer to each other, or farther apart, as may be desired. The other ends of said links 25 are pivotally connected to arms 27, pivotally mounted, at their lower ends, in bearings in the standards a'' , and carrying at their upper ends semi-circular cradles 28, or shoes, adapted to be brought together, as shown in Fig. 2, and thus completely encircle, circumferentially, and hold the can during the capping operation. The cradles or shoes advantageously work in the space embraced by the right-angled end-arms of frame 3, and are provided with transverse slots 29.

Fast on shaft 6, about centrally thereof, are two collars 29, 29, carrying a cam-plate 30. Also carried by said shaft 6 is a boxing 31 provided with a longitudinally-extending slot X therethrough, through which said shaft passes, said slot permitting limited transverse movement of said boxing on said shaft. In the upper end of the boxing is held a link 32, formed desirably in two sections adjustably held by a turnbuckle 33, whereby the sections may be moved nearer to each other, or farther apart, as the exigencies of the particular situation may require. Carried by the sides of the boxing 31 are rollers 31^x working on the edge of the cam-plate 30, whereby the link 32 is given an up-and-down throw or thrust. The upper end of the link 32 is suitably pivotally and removably secured to a lever 33^x , in one of the openings 34 provided

therein, the provision of this series of openings permitting adjustment when desired. The lower end of this lever is fast on a collar 35 and rigidly secured to a rock-shaft 36 supported in suitable bearings. Carried by the said collar 35 is a depending toggle-lever, the longer arm 37 of which is fulcrumed on an arched, stationary support or standard 38, suitably bolted or otherwise secured to the top framework of the machine, the said toggle lever 37 has a curved or arc-shaped gripping-member 39 at its lower end. The shorter arm 40 of the toggle-lever is pivoted at its lower end to the longer arm and also carries, at its lower end, a similar curved or arc-shaped gripping-member 41.

Shaft 36 has secured to it, at one end, a crank-arm 42, which is pivoted, at its end, to a link 43 pivoted to a crank arm 43^x secured to a shaft 44 mounted in suitable bearings on an appropriate stationary support. Shaft 44 carries fast thereon a collar 45, which carries a depending toggle-lever, the longer arm 46 of which is fulcrumed on a rigid support 47 bolted or otherwise suitably secured to the frame 3, the longer arm 46 has a curved or arc-shaped gripping member 48 at its lower end. The shorter arm 49 of the toggle-lever is pivoted at its lower end to the longer arm and also carries, at its end, a similar curved, or arc-shaped, gripping-member 50.

The can-blanks, in the shape of open-ended cylinders, 51, are delivered to the capping-machine through a skeleton chute, comprising four angle-bars 52 (the can appearing in dotted lines, therebetween, in Fig. 3). The chute, it will be noticed, terminates short of the top frame-work of the machine.

The cap-blanks, or disks 53, are delivered, in two lines or streams, continuously to the capping machine through two skeleton chutes, each comprising two spaced bars 54 extending upward from the top frame-work of the machine (as seen most clearly in Fig. 1) and provided, facing each other, with guiding grooves 55 extending from the top and terminating at a point just above the cap-engaging members 17, 17. From this point on the walls of the grooves (see the lower pair of bars 54, Fig. 3) are cut away, so as to allow for reciprocation between said bars 54 of the cap-engaging member 17. In order to retain the cap-disks at this point against displacement, or dislodgment, I provide leaf-springs 57 (Fig. 3) bolted or otherwise suitably secured to the end of angle-irons 58 extending at an angle from the bars 54, said springs having curved ends 59, and serving to prevent jarring loose or displacement of the cap-disks. The leaf-springs yield backward under forward movement of the cap-engaging members 17, and resume their normal position upon retraction of said members 17, as will be readily understood.

The operation of my machine may be

briefly described as follows, assuming the parts to be in the position shown in Figs. 1 and 3, being the so-called "open position" of the device; and in this position it will be noted (see Fig. 1) that the cradles or shoes 28 are open, or out of engagement with a can-blank, or cylinder; that the grippers 39, 48 are also open; and that the lowermost can-blank is held by the grippers 41, 50. Now, band-pulley or wheel 7 is put in motion, in the direction indicated by the arrow, Fig. 3, and revolving shaft 6. The parts will now assume the positions shown in Fig. 2, the so-called "closed position", in which position it will be noticed that the cradles or shoes 28 have closed upon the can-blank; that the grippers 39, 48 have also closed; and that the grippers 41, 50 have opened to allow the can-blank to fall and be encircled by the cradles. Simultaneously, the two cap-engaging members 17 have been reciprocated toward each other, to drive the caps or heads on the cans. The movements just described have been effected by the coöperation of the following parts: The shaft 6 commencing to rotate, revolves cam-plate 30, which engages the top roller 31^x and causes the same to slide on the curved surface of the cam-plate, thus projecting the link 32 upward; pushing the lever 33^x upward on its pivot; rocking the shorter arm 40 of the toggle-lever backward to withdraw its gripping member 41 from engagement with the top-most can-blank or cylinder; shifting the longer arm 37 of the toggle-lever on its fulcrum into engagement with the falling can-blank or cylinder; pulling crank-arm 42 forward; pulling link 43 forward; pulling crank-arm 43^x downward on its pivot; rotating shaft 44; rocking the shorter arm 49 of the toggle-lever backward to withdraw its gripper 50 from engagement with the top-most can-blank, or cylinder; and shifting the longer arm 46 of the toggle-lever, on its fulcrum, into engagement with the falling can-blank, or cylinder. Simultaneously, the rotating shaft 6 has caused eccentrically-disposed cam-pin 20 to ride up the curved slot 22 in the plate 21, and, when the pin has reached the upper extremity of the slot, it rocks the plate 21; rotating the shaft 23; rocking the rocker-arm 24; moving the links 25, 25 in diametrically opposite directions; rocking the two arms 27, 27, on their pivots, toward each other; and bringing the cradles or shoes 28, 28, into contact with the fallen can which has been just previously caught by the grippers 39, 48. Simultaneously, also, cam-plate 8 has been revolved, until the walls of the staggered portion 9^x of the cam-slot 9 strike the roller 10, whereupon the lever 11 is rocked on its pivot, and, by reason of its yokes 13 engaging the pins 14 on the collar 15, and said collar being fast on the shaft 16, said shaft is driven forward,

bringing the member 17 into engagement with the cap and forcing the same on the can-blank, or cylinder, the same operation, of course, taking place at both ends of the machine.

While I have described above, with some degree of particularity, the different parts of the device, yet it is to be understood that the various details of construction may be varied or altered at will, within the scope of the appended claims without affecting the spirit of the invention, or sacrificing any of its advantages.

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

1. In a can-capping machine, means for guiding the can-blanks, in a continuous stream to the machine, cradles for engaging and holding the can-blank during the capping-operation and for releasing the can after such operation, means for capping the blank so held, means for engaging and holding the next preceding can-blank simultaneously with the release of the can-blank just operated upon, depending, pivoted arms carrying the cradles, and means, including links connected to said arms above the pivotal point thereof, for moving the same to close and open the cradles.

2. In a can-capping machine, means for guiding the can-blanks, in a continuous stream to the machine, cradles for engaging and holding the can-blank during the capping-operation and for releasing the can after such operation, means for capping the blank so held, means for engaging and holding the next preceding can-blank simultaneously with the release of the can-blank just operated upon, depending pivoted arms carrying the cradles, operating-links connected to said arms, a power-driven shaft, a cam-wheel fast thereon, and means connected to said cam-wheel and to said links and operable through the movement of said wheel to actuate said links.

3. In a can-capping machine, members for engaging and holding the can-blank during the capping operation and for releasing the can after such operation, depending, pivoted arms carrying said members, operating links connected to said arms above the pivotal point thereof, a plate pivotally supported at its lower end, means for rocking said plate on its pivot, and mechanism intermediate said plate and the links and operable through the movement of the plate to actuate said links.

4. In a can-capping machine, members for engaging and holding the can-blank during the capping operation and for releasing the can after such operation, depending, pivoted arms carrying said members, operating links connected to said arms, a plate pivotally supported at its lower end, a wheel engaging with said plate for rocking the same on its

pivot, means for rotating said wheel, and mechanism intermediate said plate and said links and operable through the movement of the plate to actuate said links.

5. In a can-capping machine, members for engaging and holding the can-blank during the capping operation and for releasing the can after such operation, depending, pivoted arms carrying said members, operating-links connected to said arms, a plate pivotally supported at its lower end, a wheel carrying a roller engaging with said plate for rocking the same on its pivot, means for rotating said wheel, and mechanism intermediate said plate and said links and operable through the movement of said plate to actuate said links.

6. In a can-capping machine, members for engaging and holding the can-blank during the capping operation and for releasing the can after such operation, depending, pivoted arms carrying said members, operating links connected to said arms, a slotted plate pivotally supported at its lower end, a wheel provided with a roller engaging in the slot of said plate for rocking the latter on its pivot, means for rotating said wheel, and mechanism intermediate said plate and said links and operable through the movement of the plate to actuate said links.

7. In a can-capping machine, members for engaging and holding the can-blank during the capping operation and for releasing the can after such operation, depending, pivoted arms carrying said members, adjustable operating links connected to said arms above the pivotal point thereof, a plate pivotally supported at its lower end, means for rocking said plate on its pivot, and mechanism intermediate said plate and the links and operable through the movement of the plate to actuate said links.

8. In a can-capping machine, members for engaging and holding the can-blank during the capping operation and for releasing the can after such operation, depending, pivoted arms carrying said members, operating links connected to said arms above the pivotal point thereof, each said link being in two sections united by a turnbuckle, whereby the length of said link may be increased or diminished, a plate pivotally supported at its lower end, means for rocking said plate on its pivot, and mechanism intermediate said plate and said links and operable through the movement of said plate to actuate said links.

9. In a can-capping machine, means for feeding can-blanks one by one, and comprising, in part, the following elements: members directly engaging the bottom blank prior to release thereof, a link operatively connected, through intermediate mechanism, with said members, a boxing secured to the lower end of said link and provided with a longitudinally-extending slot and with pro-

jections, a power-shaft passing through said slot, and a cam-plate carried by said shaft and engaging said projections to rock the links, whereby to open and close said can-engaging members.

10. In a can-capping machine, means for feeding can-blanks one by one, and comprising, in part, the following elements: members directly engaging the bottom blank prior to release thereof, a link operatively connected, through intermediate mechanism, with said members, a boxing secured to the lower end of said link and provided with

a longitudinally-extending slot and with two rollers, a power-shaft passing through said slot, and a cam-plate carried by said shaft and engaging said rollers to rock the links, whereby to open and close said can-engaging members.

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

JOSEPH BRAKELEY.

Witnesses:

S. C. COWART,

W. RYALL BURTIS.