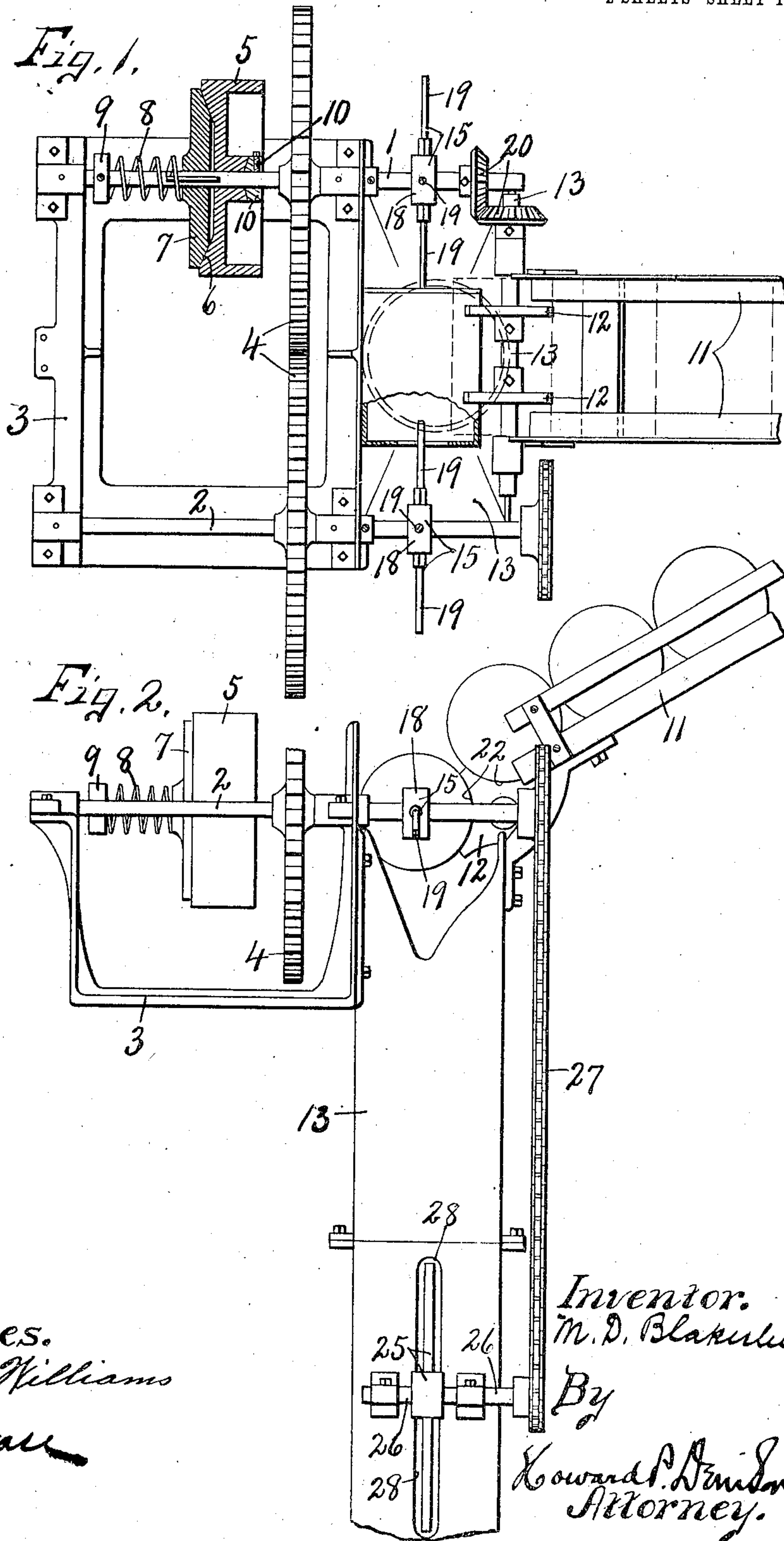


M. D. BLAKESLEE,
CAN FEEDING AND RIGHTING MACHINE.
APPLICATION FILED OCT. 15, 1907.

934,134.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2

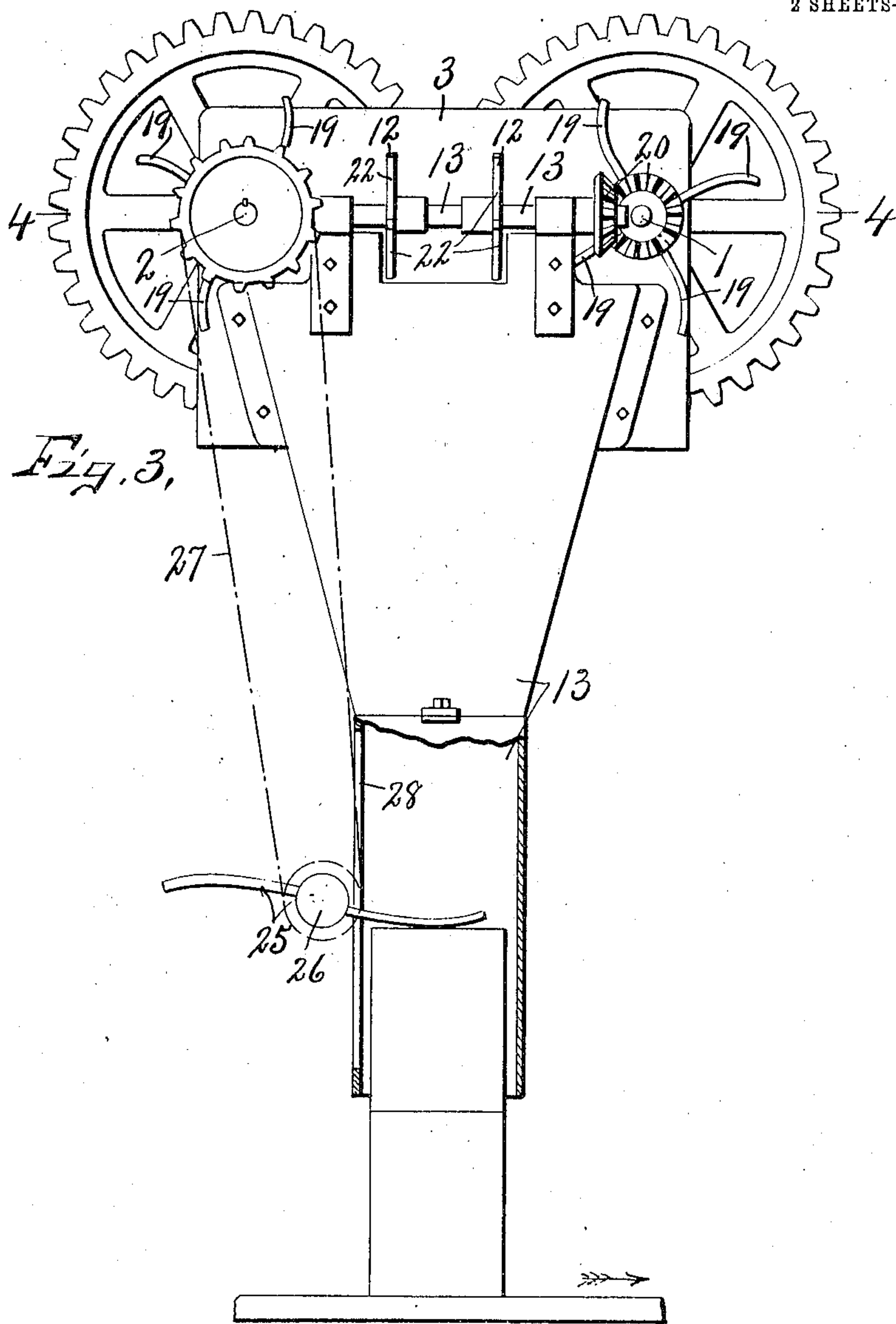


Fig. 3,

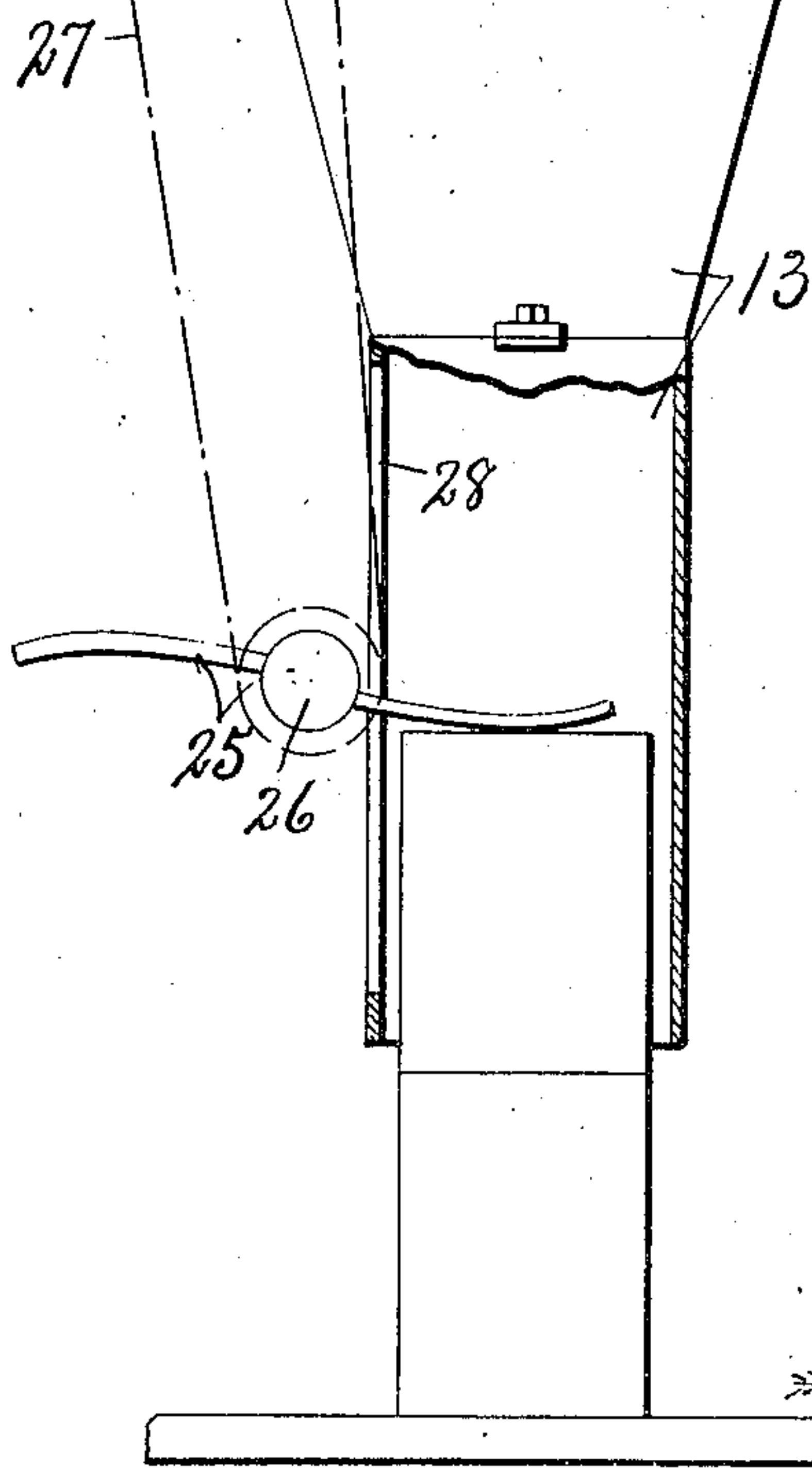
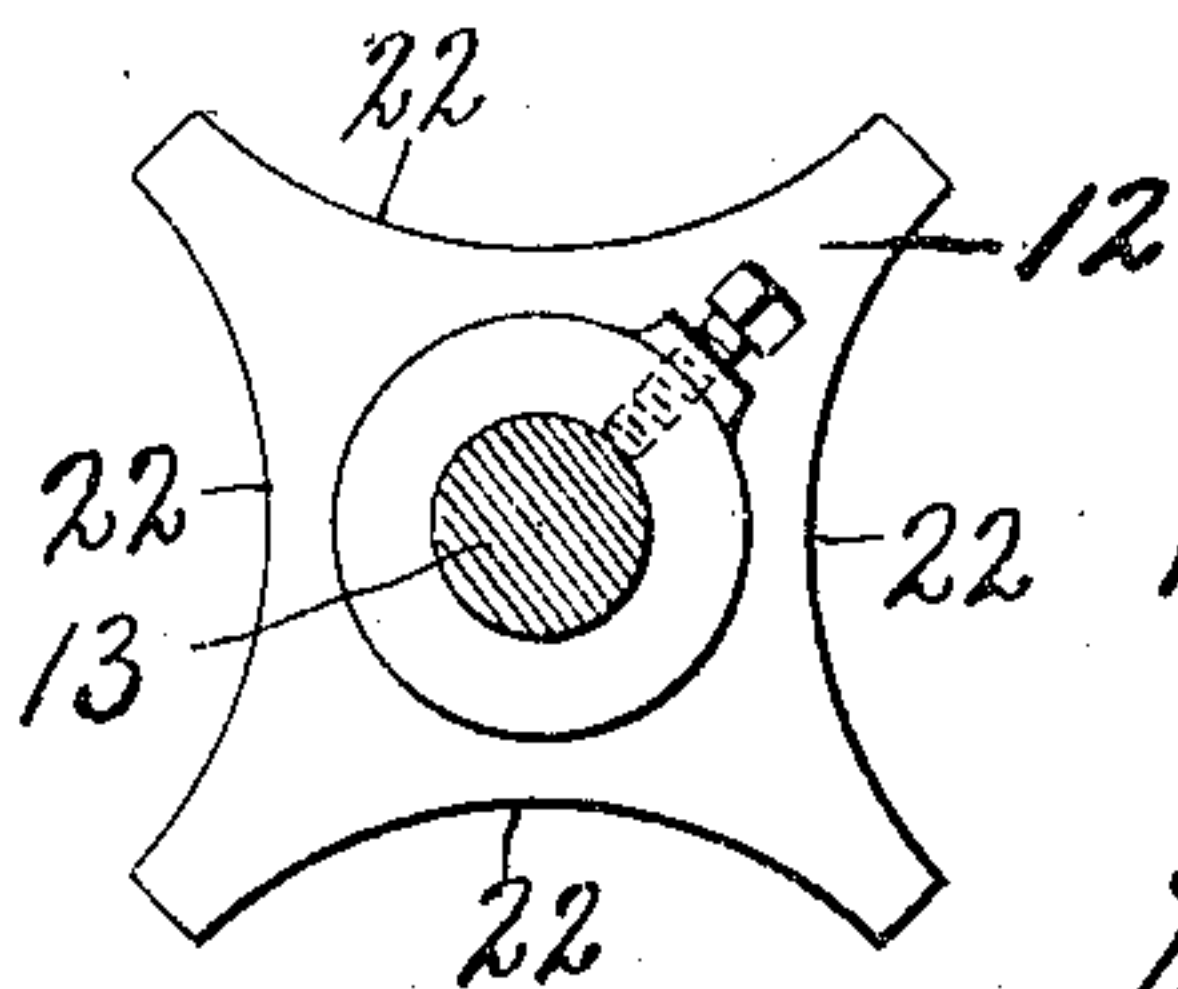


Fig. 4.



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UNITED STATES PATENT OFFICE.

MERTON D. BLAKESLEE, OF CAZENOVIA, NEW YORK

CAN FEEDING AND RIGHTING MACHINE.

934,134.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed October 15, 1907. Serial No. 397,533.

To all whom it may concern:

Be it known that I, MERTON D. BLAKESLEE, of Cazenovia, in the county of Madison, in the State of New York, have invented new and useful Improvements in Can Feeding and Righting Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

10 This invention relates to certain improvements in can righting machines of the class set forth in my application Serial No. 360,660, filed March 5, 1907, and allowed July 24, 1907, and refers more particularly to the means for advancing the cans one by one into position to be engaged and righted by the opposite rotating righting fingers.

My object, therefore, is to provide the machine with a drum or a pair of coaxial rotary can receiving and feeding elements by which the cans are positively spaced and fed one at a time between and in position to be engaged by the righting fingers, thereby avoiding the use of underlying spring supports and delicate mechanisms which are susceptible to injury by misuse in the hands of unskilled operators.

20 A further object is to provide a suitable stop mechanism which is positively driven from one of the righting finger shafts and is used in connection with a slip feed driving mechanism or friction clutch between the pulley and main driving shaft for the purpose of stopping the feeding of the cans should they become congested in the chute into which the righted cans are deposited.

Other objects and uses relating to the specific parts of the mechanisms will be brought out in the following description.

40 In the drawings—Figure 1 is a top plan, partly in section, of a can righting machine embodying the various features of my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a front elevation of the can righting mechanism showing the lower end of the chute in section and omitting the in-feeding can guide. Fig. 4 is an end view of one of the can-feeding and spacing disks showing the shaft in section.

50 In carrying out the objects stated, a pair of parallel shafts —1— and —2— are mounted side by side a suitable distance apart upon the supporting frame —3— and are provided with intermeshing gears —4—, whereby motion is transmitted from the main driving shaft —1— to the opposed

shaft —2—, said driving shaft —1— being provided with a slip feed driving mechanism, consisting in this instance, of a loose pulley —5— having a friction face —6— co-acting with a clutch member —7— which is keyed to, but movable axially upon the driving shaft and is held in active engagement with the friction face —6— by means of a coil-spring —8. This coil-spring encircles the shaft —1— and is interposed between a tight collar —9— and the adjacent or outer end face of the clutch section —7—, the pressure of the spring being sufficient to drive the righting mechanism hereinafter described, but if the cans become congested in the chute, the righting mechanism including the clutch member —7— may stop and still permit the pulley —5— to be revolved by its driving belt, not shown. This pulley is interposed between the clutch member —7— and a collar —10— rigid on the shaft —1— so as to limit the endwise movement of the pulley —5—.

The shafts 1— and —2— are located a distance apart somewhat greater than the length of the can so as to permit said cans to be fed or rolled along a suitable inclined track or guide-way —11—, which is located in a plane substantially midway between the shafts —1— and —2— and is adapted to feed the cans, one by one, onto a pair of spacing and feeding disks 12— by which such cans are fed one by one sidewise from the adjacent end of the chute —11— into the upper end of an upright chute —13— and between opposed can righting elements —15—. These can righting elements are identical in construction and are secured to their respective shafts 1— and —2— in substantially the same transverse plane, midway between the can seats on the spacing disks 12— and back of the chute 13— so as to bring the righting device substantially axial of the cans.

Each righting device preferably comprises a hub 18— which is secured to its shaft and provided with diametrically opposite arms or fingers —19— which are curved opposite to the direction of rotation and their free ends are adapted to engage or enter the opening in the ends of the can. These righting devices 15— are adjusted so that the free ends of the co-acting fingers are always at similar points in their circles of movement and owing to the fact that the shafts 1— and —2— are parallel the co-acting pairs of fingers

revolve toward each other from the top downwardly, and when such free ends are in the same diametrical plane the distance between them is somewhat shorter than the length of the can so that one finger will engage the bottom of the can and move such can endwise to cause the other finger to enter a slight distance into the opening in the top thereof, and since the fingers rotate in the same direction as the cans are fed downwardly, it is evident that the simultaneous gravitation of the cans, together with the downward movement of the inner fingers, the top of the can will be temporarily supported upon the finger which enters its opening, thereby allowing the bottom to gravitate downwardly, in which position it falls into the chute 13— after freeing itself from the finger which temporarily held it, the latter operation being accomplished by the continued rotation of the holding finger.

The essential feature, however, of my present invention lies in the construction and operation of the disks 12— which are mounted upon a transverse shaft 13— in substantially the same plane as the shafts —1— and —2— and is driven from the shaft —1— by intermeshing gears —20— so that the rotation of the shaft 13— is synchronized with the movement of the righting fingers 15—. These disks are located substantially central with reference to the can guide 11— and center of the chute 13— and are spaced apart a less distance than the length of the can, but a sufficient distance to receive and temporarily hold the can against tilting movement while such can is being fed forwardly into position to be engaged by the righting fingers 19—.

As best seen in Fig. 4, the can spacing and feeding drum consisting of the disks 12— is provided with a series of, in this instance, four concave seats —22— in its periphery, which seats are spaced equidistant apart, and are preferably circular and of the same radius as the radius of the cans, said spacing and feeding drum being timed so as to advance the cans, one by one, between the downwardly feeding co-acting righting fingers 19— so that the latter will approach opposite ends of the center can simultaneously and one of the fingers will enter the opening adjacent thereto and thereby temporarily support this end of the can while the opposite end is free to gravitate downwardly right side up and fall from its holding finger into the underlying chute 13—, which latter is just large enough to permit the cans to fall endwise therethrough without undue friction.

The cans are fed promiscuously with respect to their open ends into any suitable chute, as an inclined guide —11— located in such manner that the advance can will readily ride upon one of the concave faces

or seats —22— of the spacing and feeding drum —12—, such concave seats being successively presented to the cans as fast as they are deposited or fed forwardly into position to be engaged by the righting fingers 19—, as best seen in Fig. 2. That is, while one side of the feeding and spacing drum is placing a can into a position to be righted by the righting fingers, the next succeeding seat is in position to receive the next succeeding can, which in turn, is carried forward in the same manner to the righting fingers and the next succeeding concave seat is similarly brought into position to receive and carry forward the next or third can, and so on, indefinitely until the desired number of cans are advanced to the righting device and brought into an upright position in the chute 13—. It is evident from the foregoing description that this action of advancing and righting the cans one by one is continuous without interruption in the operation of any part of the mechanism and that the open end of the can may be presented to either of the co-acting righting fingers with the result that in either case the cans will be temporarily supported and brought right side up by such fingers and in such position deposited into the chute 13— through which the righted cans successively gravitate and may be continuously removed as fast as they accumulate by any well known conveying means, not necessary to herein illustrate or describe.

If for any reason, as is sometimes the case, the cans become congested in the chute 13—, or rather are deposited into such chute faster than they are carried away, it is desirable to provide some means for temporarily stopping the righting mechanism until the congested cans are removed, and it is preferable to have this action automatic, and for this purpose I provide a rotary sweep —25— having diametrically opposite arms secured to a revolving shaft —26—, the latter being driven by a sprocket chain —27— from the shaft 2. The fingers of this sweep —25— travel through a suitable slot —28— in the side of the chute 13— some distance below its upper receiving end and its operation is synchronized with that of the can righting mechanism in such manner that the fingers will be out of the path of each falling can at the time that it is discharged from the righting fingers, but immediately enters the chute after such can has passed so that if the cans become congested or accumulate in the chute sufficient to extend into the path of movement of the arms of the stopping device —25—, the arm which is sweeping transversely of the chute will simply engage and be checked in its rotation by said accumulated cans, thereby stopping the action of the righting and feeding device until the congested cans are removed, whereupon the

action of the righting and feeding devices will be automatically resumed.

What I claim is:

1. In a can-feeding and righting machine, a pair of co-acting rotary righting fingers revolving on separate parallel axes and a rotary feeding drum between the axes of revolution of said fingers and having concave seats for receiving and feeding the cans to and between the righting fingers.

2. In combination with a can-righting mechanism having arms rotating on separate parallel axes, a can spacing and feeding device consisting of a rotary drum midway between said axes and having concave seats for the cans and whereby the cans are fed one by one to the righting device, and means for feeding the cans consecutively upon said seats.

3. In combination with a can-righting mechanism, a pair of co-acting rotary fingers revolving on separate parallel axes for engaging the opposite ends of the cans, and a rotary can support between said axes for receiving and feeding the cans one by one between the righting fingers.

4. In combination with a can-righting mechanism having opposite pairs of fingers revolving on separate parallel axes, of a rotary can-feeding and spacing mechanism having its axis at right angles to and in the same plane as the first named axes for feeding the cans one by one to the righting mechanism, means for actuating one of said mechanisms, and further means for synchronizing the movement of the other mechanism therewith.

5. In combination with a can-righting mechanism and a slip feed driving mechanism therefor, a chute for the righted cans, a rotary stop revolving in the chute and synchronized with the movement of the can righting mechanism and a rotary can feeding device synchronized with the movement of the righting mechanism for feeding the cans to said righting mechanism.

6. In combination with a can righting mechanism comprising two parallel shafts spaced apart and each having a pair of radial arms rotating in the same plane, a slip-feed driving device on one of the shafts and a rotary can-feeding device between and actuated by one of said shafts for feeding the cans one by one to the righting mechanism.

7. In a can-feeding and righting machine, the combination with opposed rotary can righting fingers for engaging or entering the ends of the cans, of rotary means between the axes of rotation of said fingers for spacing and feeding the cans one by one in

the position to be operated upon by said fingers.

8. In a can-feeding and righting machine, a pair of opposed rotary can righting elements, in combination with a rotary drum having its axis disposed at right angles to those of the righting elements and its periphery provided with concave can seats for temporarily supporting the cans and carrying them forward one by one between said elements, and means for feeding the cans successively into said can seats.

9. In a can feeding and righting mechanism, a pair of parallel shafts each having a pair of diametrically opposite radial fingers, those of one pair traveling in substantially the same transverse plane as those of the other pair, means for synchronizing the movement of said shaft, an additional shaft disposed at substantially right angles to and synchronized with the movement of the first named shafts and a rotary can spacing and feeding device mounted on the last named shaft in a plane between the axes of the first named shafts for feeding the cans one by one in a position to be engaged by co-acting fingers of the first named shafts, and additional means for feeding the cans to the spacing and feeding means.

10. In a can feeding and righting mechanism, a pair of parallel shafts having radial projecting righting fingers traveling in substantially the same transverse plane, gears connecting said shafts, a driving pulley loose on one of the shafts and provided with a friction face, a friction clutch member slidable upon but keyed to the last named pulley-shaft and normally spring pressed into engagement with said friction plates for producing a slip feed driving mechanism, rotary means for feeding the cans one by one between said shafts and in a position to be engaged by said fingers, means for transmitting motion from one of the shafts to the rotary feeding means, a chute for receiving the righted cans as they are discharged from the righting fingers, a rotary stop movable in the chute, and means for transmitting rotary motion from one of the shafts to said stop, whereby when the cans become congested in the chute one of them will be engaged by the stop, and the stop thereby checked from further rotation, thereby stopping the action of the can-feeding and righting mechanism irrespective of the pulley.

In witness whereof I have hereunto set my hand this 8th day of October 1907.

MERTON D. BLAKESLEE.

Witnesses:

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C. M. McCORMACK,