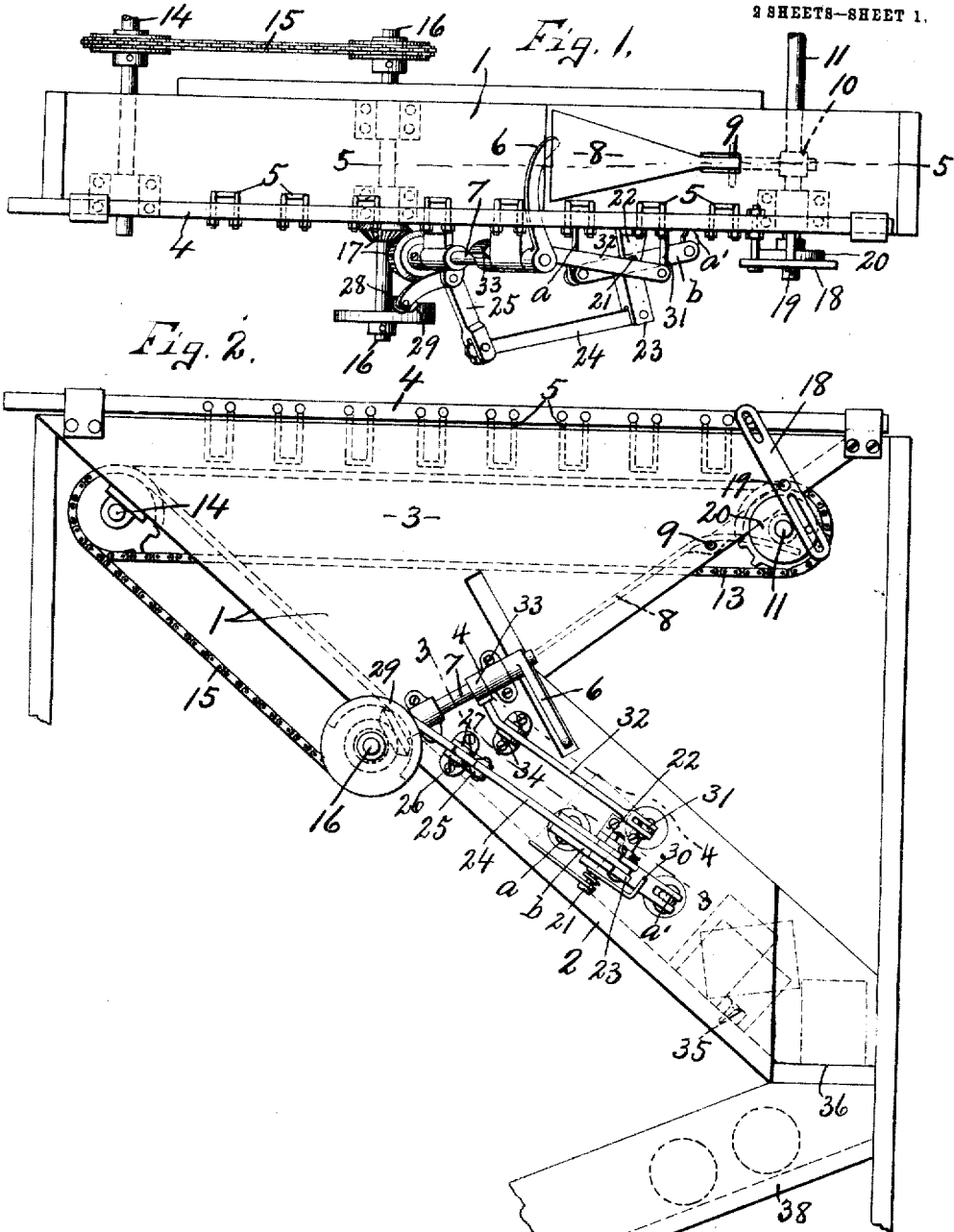


M. D. BLAKESLEE.
MECHANICAL CAN ROLLER.
APPLICATION FILED AUG. 17, 1907.

945,685.

Patented Jan. 4, 1910.

2 SHEETS—SHEET 1.

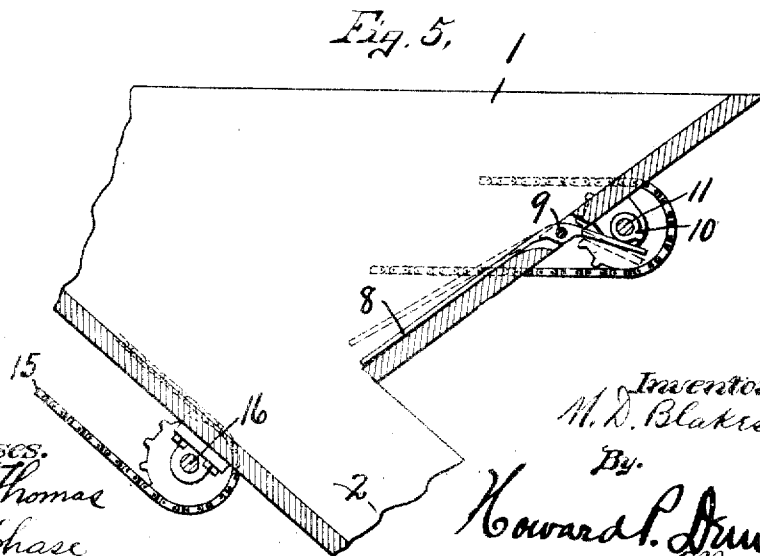
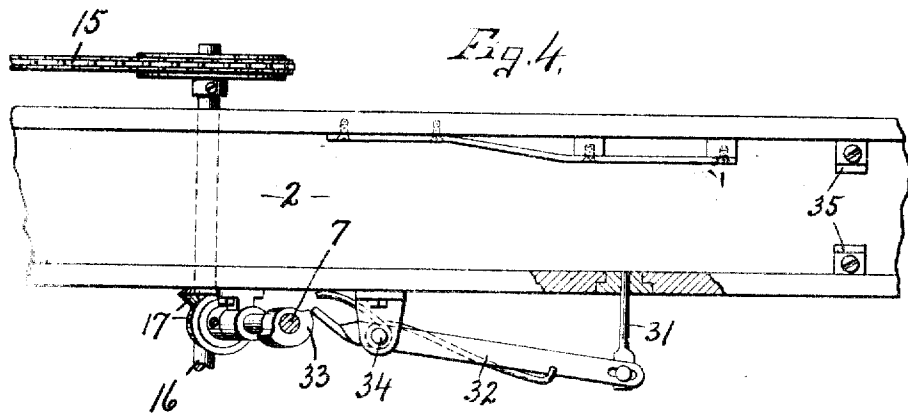
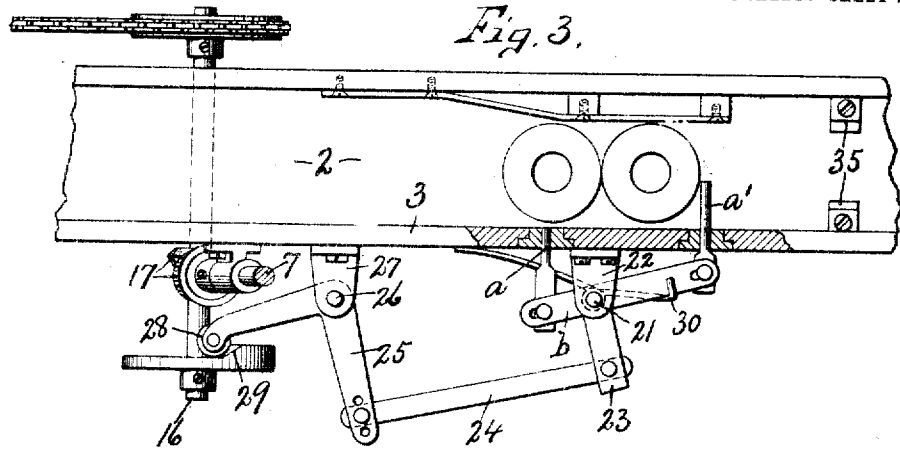


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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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MECHANICAL CAN-ROLLER.

945,685.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed August 17, 1907. Serial No. 388,978.

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 Mechanical Can-Rollers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in mechanical can rollers of the class set forth in my Patent No. 876,291, issued January 7, 1908, in which the empty cans may be promiscuously dumped and deposited in quantities, and are automatically separated or selected, and fed by gravity, one by one, either by allowing them to slide endwise or sidewise down an inclined chute, and are caused to automatically adjust themselves to a rolling position in a second inclined chute, from which they roll successively onto a suitable conveyer, or to a righting device, not shown.

In the practical operation of the device set forth in my patent previously referred to, I have discovered that sometimes, but not frequently, the cans will lodge at the junction of the hopper with the inclined chute, or in the chute in such manner as to prevent the automatic feeding of such cans by gravity, resulting in the congestion of the cans at such point and necessitating watchfulness and readjustment of the cans by the attendant.

The object of my present invention is to avoid these difficulties and to render the device entirely automatic and reliable without necessitating the careful watchfulness of an attendant. This object is carried out by providing a vertically movable agitator in the bottom of the hopper near its junction with the inclined chute, and by providing an additional tripping finger movable through one side of the chute to prevent overturning of the cans, one upon the other while in transit along said chute.

A further object is to render the alternate action of the tripping fingers more positive by bringing the actuating elements into closer proximity thereto.

In the drawings—Figure 1 is a top plan of a mechanical can roller similar to that set forth in my patent referred to except that the movable part of the hopper is omitted. Fig. 2 is a side elevation of the mechanism shown in Fig. 1. Fig. 3 is a top plan, partly in section, of a portion of the inclined chute

leading from the hopper showing the tripping mechanisms and guide for the cans. Fig. 4 is a sectional view of the chute and additional tripping device taken on line 60 4-4, Fig. 2, except that a greater portion of the chute is shown in top plan. Fig. 5 is a sectional view taken on line 5-5, Fig. 1, except that the agitator arm is shown in full lines.

The empty cans are deposited promiscuously, by hand, or otherwise, into a suitable hopper —1—, and are fed by gravity therefrom upon the bottom of an inclined chute —2— along which they are adapted to slide upon their ends, being tripped so as to fall upon their sides, in which position all of the cans discharge ends-foremost from the chute onto an underlying ledge of less than half the width of the cans, and are thereby caused to tilt to a rolling position into an additional inclined chute in the same manner and for the same purpose as set forth in my patent previously referred to. As the cans are fed into the hopper —1— they lodge against an upright wall —3— where they are agitated by a reciprocatory bar —4— having pendent agitating fingers —5— which engage and arrange the cans lengthwise on the inclined bottom of the underlying chute —2—, the opposite sides of the hopper being inclined downwardly so as to cause the cans to slide by gravity into the upper end of said chute, at which point they are agitated by a revolving finger —6— on the shaft —7— to prevent congestion of the cans, and to facilitate their arrangement singly in said chute. The revolving finger —6— traverses the upper side of the chute at its junction with the hopper in a plane just above the cans when on the bottom of the chute, thereby brushing the superfluous cans back from the mouth of the chute and keeping them arranged singly therein so as to feed by gravity in succession. As a further protection against the congestion of the cans at the junction of the hopper with the chute, I provide the inclined bottom of one side of the hopper with a vertically movable agitator —8—, as best seen in Figs. 1 and 5—, said agitator being located just above the mouth of the chute and consists of a lever pivoted at —9— in the adjacent side of the hopper —1— and having its lower end broadened and flattened to nearer the width of the chute so as to agitate or brush the superfluous cans away from said junction.

tion, or back up into the hopper to allow the underlying cans to arrange themselves into the chute, the upper end of said agitator or lever being extended laterally through the adjacent side of the hopper in the path of a revolving cam or eccentric —10—, which is mounted on a revolving shaft —11—, and operates to rock the agitator —8— upon its pivot —9— at regular intervals. This shaft —11— is driven by a chain —13— from a driving shaft —14—, which is also connected by a chain —15— to a shaft —16—, the latter being provided with intermeshing gears —17— for transmitting motion to the shaft —7— of the revolving agitating finger —6—.

The reciprocatory agitator bar —4— is actuated from the shaft —11— through the medium of a lever —18— which is pivoted at 19— to the hopper —1— and has one end eccentrically connected to a disk —20— on the shaft —11— while its other end is pivotally connected to the sliding bar —4—, as best seen in Fig. 2.

It is obvious from the foregoing description that the agitators —4—, —6— and —8— are synchronized in their movements and are all driven from the same driving shaft 14—.

A pair of reciprocatory escapement pins —a— and —a'— are guided in one side of the chute —2— and are actuated laterally to cause the cans to feed one by one down along the bottom of the inclined chute —2—, said pins being mounted upon the opposite ends of the lever —b—, which is pivoted at —21— to a bracket —22— on the adjacent side of the hopper —2—, and is provided with a laterally projecting arm —23—. This arm —23— is connected by a link —24— to a bell-crank lever —25—, the latter being pivoted at —26— to a bracket —27— on the adjacent side of the hopper —2—, and is provided with a roller —28— which is engaged by a rotary cam —29— on the shaft —16— for rocking the bell-crank —25— and transmitting similar motion through the link —24— to the lever —b—, thereby alternately moving the pins or fingers —a— and —a'— into and out of the path of succeeding cans, the cam —29— operating the lever —b— in one direction, which lever is actuated in the opposite direction by a spring —30—, as best seen in Figs. 2 and 3. As a further means for preventing lodgment of one can upon the other as they slide down the chute —2—, I provide an additional reciprocatory finger —31—, which is also guided in the adjacent side of the chute —2—, and is actuated by a lever —32— and cam or eccentric —33—, said lever being pivoted at —34—, while the cam —33— is secured to the rotary shaft —7—, as best seen in Figs. 2 and 4. This finger —31— is located in a plane above the

fingers —a— and —a'— and is positioned so as to engage and tilt the cans which are on end over on their sides, and at the same time is sufficiently elevated above the bottom of the chute to allow the cans which are sliding upon their sides to pass thereunder, and also to engage and hold back any cans which may overlap one upon the other, thereby allowing said cans to feed, one by one, along the chute. If for any reason the cans should not engage the finger —31— and slide along the bottom of the chute on end, the lower end of the can will encounter the tripping stops —35— which are secured to the bottom of the chute in advance of the fingers —a—, a'— and 31—, thereby causing the momentum of the can to overturn it and causing it to fall upon its side on the bottom of the chute —2—, in which position it discharges itself end first upon an underlying ledge —36— of less than half the diameter of the can, which causes the can to tilt laterally upon its side into a rolling position upon the bottom of an underlying inclined chute —38—, as best seen in Fig. 2, the latter chute leading to a can righting device not shown.

Aside from the agitator —8— and its actuating mechanism together with the additional escape finger and plunger —31— and its actuating mechanism and also the actuating mechanism for the fingers —a— and —a'—, the hopper and chutes and other parts associated therewith are the same as in my patent previously referred to and it is believed to be unnecessary to further describe the same.

It is obvious from the foregoing description that although the cans are placed promiscuously into the hopper —1—, they are fed one-by-one, by gravity along the bottom of the inclined chute —2— and are discharged one-by-one, successively in a rolling position upon the inclined chute —38—, where they are rolled successively into a suitable righting device, or upon any other available support where it may be desired to arrange the cans side by side in rows.

What I claim is:

1. In a mechanical can roller, a hopper and an inclined chute leading therefrom, in combination with a vertically vibratory agitator-arm at the bottom of one of the inclined sides of the hopper adjacent to its junction with the chute, and actuating means for the agitator arm.

2. In a mechanical can roller, a hopper and an inclined chute leading therefrom, a vertically vibratory arm extending along one of the inclined sides of the hopper adjacent to the chute and having a flaring lower end, and means for vibrating the arm.

3. In a mechanical can roller, a hopper and an inclined chute leading therefrom, a vertically vibratory arm pivoted to the

hopper and having a flat broadened end extending along one of the inclined sides of the hopper into proximity to its junction with the chute, and means for rocking said arm upon its pivot at regular intervals.

4. In a mechanical can roller, a hopper and an inclined chute leading therefrom, escapement pins movable alternately into engagement with successive cans as they are fed along the chute for causing said cans to feed one by one, means for actuating said pins, and an additional pin movable into and out of the chute in a plane above the first-named pins, and actuating means for the last named pin.

5. In a mechanical can roller, a hopper and an inclined chute leading therefrom, a rotary sweep traversing the upper end of the chute at its junction with the hopper, driving means for said sweep, a pair of escapement pins movable through one side of the chute and alternately into engagement with successive cans to cause the latter to gravitate one by one along said chute, connections between said pins, and driving mechanism for actuating the pins, and an additional reciprocatory pin movable in the same side of the chute in a plane above the first named pins, and into and out of engagement with the upper ends of the cans when moving along the chute, and means actuated by said driving mechanism for actuating the last named pin.

6. In a mechanical can roller, a reciprocatory agitator movable along one side of the hopper, a vertically movable agitator pivoted to one of the inclined sides of the

hopper and extending into proximity to the chute, a rotary shaft, means actuated by the shaft for operating the first named agitator, additional means actuated by said shaft for operating the second agitator, a rotary finger at the junction of the hopper and chute and traveling across the low end of said arm, means for actuating the finger, a pair of escapement pins movable alternately into and out of engagement with the cans to cause them to feed one by one along the chute, means for actuating said pins, and an additional finger movable transversely of the chute in a plane above the first named fingers, and means for actuating said additional finger.

7. In a mechanical can roller, a hopper into which the cans are deposited promiscuously in quantities, an inclined chute leading from the hopper, a rotary finger at the junction of the chute with the hopper, a driving shaft for said finger, a pin movable transversely in the chute, and means actuated by said shaft for reciprocating said pin.

8. In a mechanical can roller, a hopper, an inclined chute leading from the hopper, a pair of pins movable alternately back and forth transversely of and within the chute, a rotary finger at the junction of the chute with the hopper, a driving shaft for said finger, and means for transmitting motion from the shaft to said pins.

In witness whereof I have hereunto set my hand this 5th day of August 1907.

MERTON D. BLAKESLEE.

Witnesses:

H. E. CHASE,

M. M. NORR.