

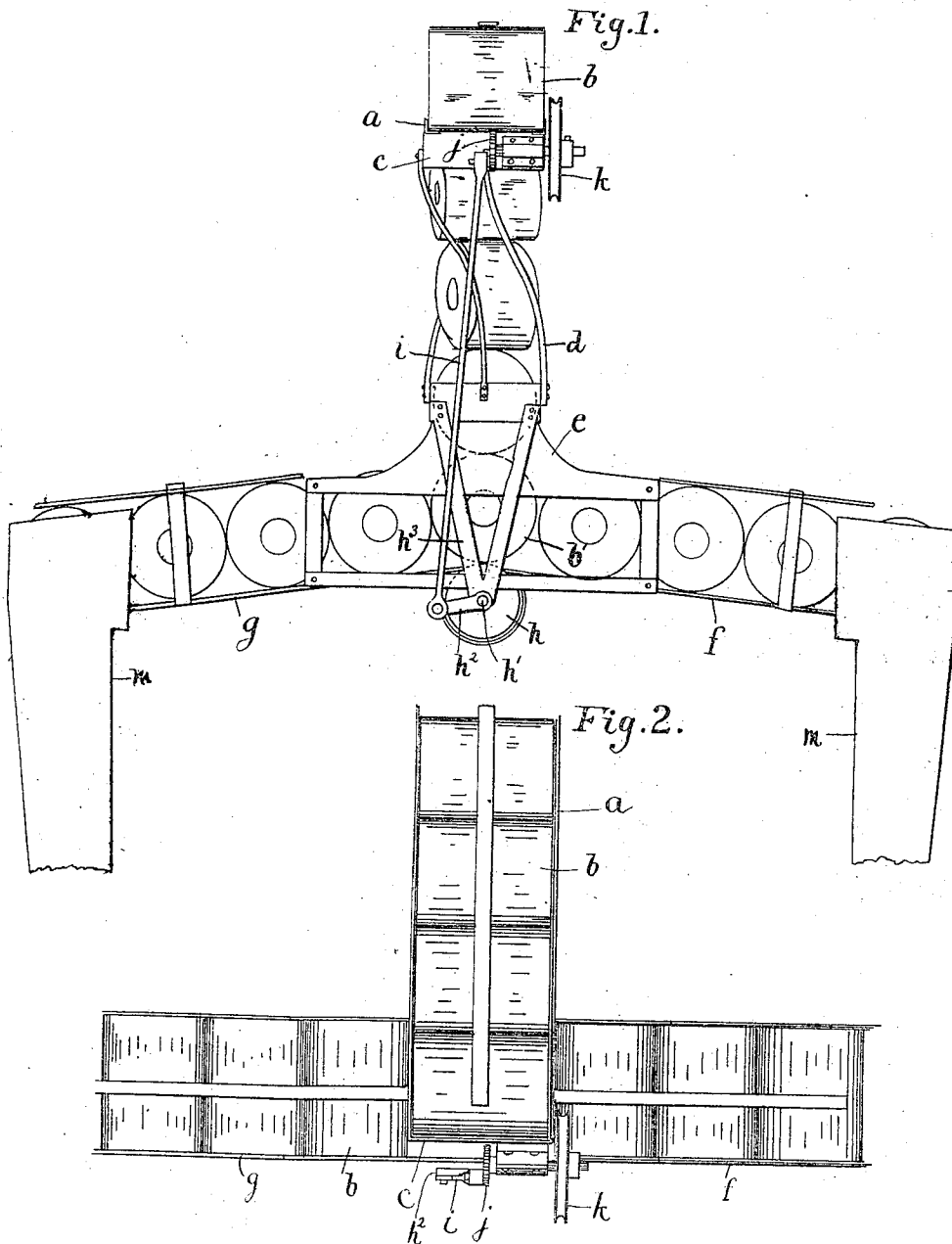
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MECHANISM FOR FEEDING A SINGLE LINE OF CANS IN TWO OPPOSITE DIRECTIONS.

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1,058,287.

Patented Apr. 8, 1913.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES P. BAXTER, JR., OF PORTLAND, MAINE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES P. BAXTER, JR., of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Mechanism for Feeding a Single Line of Cans in Two Opposite Directions, of which the following is a specification.

My invention relates to mechanism for feeding a single line of cans in two opposite directions.

In canning factories it is customary to store the empty cans in the upper part of the factory and to feed them to the filling machines through vertically disposed spouts. The cans are first placed on their sides in an inclined runway leading from the can room and they are allowed to roll in a continuous line along this runway. From the runway the cans drop into a vertically disposed hopper where they are righted so as to stand in an upright position and from the hopper they pass into a vertical spout which terminates on the table of the filling machine. The cans are fed to the filling machine by intermittently removing the bottom can from the lower end of the vertical spout causing the column to drop the depth of one can.

By experience it is found that a single runway carrying a single line of rolling cans is sufficient to carry from the can room all the cans necessary for two filling machines and the object of the present invention is to divide the single line of rolling cans into two parts and to direct them into two runways leading in opposite directions to two filling machines.

A further object of the invention is to cause the cans to feed equally toward each machine or to feed them unequally according to the requirements of each machine. Thus if each machine is running at the same rate of speed the feed will be equally toward each, but if one machine stops the cans will all be fed toward the machine which is running. In other words by the use of my invention I secure an automatic distribution of the single line of cans between the two machines according to the requirements of each.

My invention may best be understood by reference to the accompanying drawing, in which is shown mechanism constructed according to my invention for automatically dividing a line of cans into two parts.

In the drawing, Figure 1 is a side elevation, and Fig. 2 is a plan view.

In the drawing, *a* indicates the inclined track or runway leading from the can room and on which the cans *b* are first placed. At the lower end of the runway *a* is a frame *c* somewhat larger than the can, through which the cans drop as they reach the end. The frame *c* constitutes the upper end of what is essentially a vertical spout in the lower end of which the separating mechanism is placed. In the present instance the can fillers are located at the sides of the upper runway *a* so that it is necessary to change the direction in which the cans roll to a direction at right angles to the runway *a*. This vertical spout is thus formed to twist or change position of the can 90 degrees. As here shown, the vertical spout is made in open or skeleton form by means of curved rods *d* which constitute guides for guiding the cans as they pass downward. The upper ends of the rods are secured to the frame *c* and the lower ends to a casing *e* which is open at the top to receive the cans in their new position. The casing *e* has beside the opening at the top an opening at each end and from end to end it forms a runway which slopes from the center to the ends, and is thus adapted to receive the cans at the top and discharge them at the two ends in opposite directions. Each end of the casing *e* connects with a runway *f* and *g*. The cans are made to roll first in one direction and then in the opposite direction from the casing by means of a movable bottom or floor which reciprocates in opposite directions in line with the runways *f* and *g*. This reciprocation takes place with comparative rapidity and through a small limit of motion so that it will start the lower can of the column in one direction or the other according to the resistance which it meets. This reciprocating movable bottom I prefer to form by means of a pivoted drum *h* which is made to reciprocate on its pivotal center. The upper surface of the drum is directly beneath the upper opening in the casing *e* so that the lower can in the column rests on the drum as it falls down.

The drum is secured to a shaft *h'* journaled to the lower ends of the hangers *h*³ and to the shaft is secured the crank *h*² to which is pivoted a connecting rod *i*. The upper end of the connecting rod *i* is connected to a crank disk *j* on the end of a shaft

journalled on the side of the frame *c*. A driving pulley *h* is secured to the shaft and this is connected with a suitable source of power. The rotation of the pulley and the crank disk *j* act to reciprocate the drum *h*, turning it a limited distance first in one direction and then in another. The movement is relatively fast so that the can *b'* which rests on the drum is moved first one way and then the other a limited distance. If the can on each side is stationary and practically in contact with this bottom can *b'* then the latter will remain in its place supporting the column above in the vertical spout.

If the horizontal line of cans in either the runway *f* or *g* moves along so that the nearest can is not in contact with the can *b'* then the latter will be moved in the direction where there is no resistance and when it is once started in either direction the column of cans above will push it out horizontally, causing it to move down one runway until the following can drops into the drum. If both lines move away from the can *b'* at the same time this can will be started one way or the other as chance may direct but having started down one runway the following can will start down the other as there will be no adjacent can in that direction. If one line stops feeding and the other continues all the cans will move down the line which is feeding. By means of the reciprocating movable bottom or the vertical spout, I am able to make an automatic separation of the cans, sending them in whichever direction they are needed. At the end of each of the runways *f* and *g* there is a vertically disposed hopper *m* connecting with a vertical spout terminating at the filling machine and

in the hopper are means not shown for righting the cans as they fall. It is evident that the vertical spout which twists the cans may be made straight so that the cans will not change position as they fall.

Other moving means than those here shown may be employed to start the cans from the bottom of the vertical spout and other changes may be made without departing from the spirit of the invention.

I claim:—

1. In a machine for feeding a single line of cans in two directions, the combination of an inclined upper runway for carrying a single line of cans in rollable position, a vertical spout into which said runway discharges, two lower runways leading in opposite directions from the bottom of said vertical spout, a movable bottom to said spout and means for reciprocating said movable bottom in line with the two lower runways.

2. In a machine for feeding a single line of cans in two directions, the combination of an inclined upper runway for carrying a single line of cans in rollable position, a vertical spout into which said runway discharges, two lower runways leading in opposite directions from the bottom of said vertical spout, a rotatable drum in the bottom of said vertical spout on which the column of cans rests and means for reciprocating said drum to start the bottom can in the direction of least resistance.

In testimony whereof I have affixed my signature, in presence of two witnesses.

JAMES P. BAXTER, Jr.

Witnesses:

S. W. BATES,

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