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FEEDING AND DELIVERING ARTICLES.

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ATTORNEYS

UNITED STATES PATENT OFFICE.

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To all whom it may concern:

Be it known that I, ORMOND M. LISSAK, a citizen of the United States, residing at Westpoint, county of Orange, and State of New York, have invented a new and useful Improvement in Feeding and Delivering Articles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

While the specific machine illustrated in the accompanying drawings and hereinafter to be specifically described is used to feed cartridges one by one from a reservoir to a machine upon which they are weighed, my invention is broadly applicable to the feeding and delivering one by one of any article.

The object I have in view is to feed automatically from a reservoir or other receptacle articles one by one and prevent more than one such article being delivered at any one time; further, to prevent the automatic delivering operation taking place until and unless the article to be delivered is in proper position to be delivered.

Of course when I speak of a "single article" I include such cases where a simultaneous delivery of a given number of articles is desired.

I will first describe the embodiment of my invention illustrated in the accompanying drawings and then point out the invention in the claims.

In the drawings, Figure 1 is a plan view. Fig. 2 is an elevation, partly in section. Fig. 3 is an enlarged view of a detail. Fig. 4 is an enlarged view of a detail.

As stated before, the specific machine illustrated is one designed for the delivery of cartridges, and it is specifically designed to deliver said cartridges, one by one, from a reservoir to a machine upon which they are weighed. The weighing-machine itself being of the well-known type and forming no part of my invention, I have not deemed it necessary to specifically illustrate the same or its operative mechanism.

A is a rotary table of a cartridge-weighing machine, having the projecting lug *a*.

As a spout leading the cartridges into chute or channel C, in which the cartridges rest on their sides. The width of this chute or channel is sufficient to afford clearance for one cartridge, so that the cartridges follow each other end to end, as shown in Fig. 2. The bottom of the chute or channel is inclined,

but with different inclinations, as shown, Fig. 2, at *c c' c''*, so that the end of a following cartridge lies out of contact with the primer of a preceding cartridge. An offset *b*, arranged in the path of the cartridge, retards the velocity of the cartridge, thus lessening the force of its impact with the preceding cartridge. Secured to the wall of the channel or chute is the frame D, having brackets *d d'*, forming bearings for the rock-shaft E. At the inner or upper end of this shaft is secured the gate F. At the other end of the shaft E is secured the frame G, having the brackets *g*, which form a bearing for the shaft *h*, upon which is secured the gate H. The arrangement is such that when the shaft E is in one position the gate H is moved so as to free the mouth of the chute and the gate F is moved so as to lie across the chute. In the other position of the shaft E the gate F is open and the gate H closed. The distance between gates F and H is substantially equal to the length of the article or articles to be simultaneously delivered at any one time.

e is a counterweight attached to the shaft E and acts to normally hold the gate H closed and the gate F open, the gates H and F moving in opposite directions to open and close the chute or channel at their respective points.

I provide the following means to automatically open and close the gates and to cause the operation only when an article—say a cartridge—is between the gates ready to be delivered from gate H. Secured to the frame D is a plate J, having the jaws *j j'*, between which the gate H swings on its shaft *h* and by which its movement is limited. Connected to the gate H is the counterweight *h'*, acting to hold the gate inward against the jaw *j*. Connected to the gate H is the lug *h''*, which when the gate is in its inner position against jaw *j* is out of alignment of lug *a* on table A. The weight of the counterweight *h'* is such that it is less than the weight of the article or articles to be simultaneously delivered, so that when said article—say a cartridge—lies against said gate its weight is sufficient to overcome the counterweight and swing the gate outward against the jaw *j'* and bring the lug *h''* in line with lug *a*, so that in the revolution of the table when lug *a* strikes lug *h''* the shaft E is rocked, so that gate H opens and delivers the cartridge, while gate F closes, preventing the passage of any further cartridges to the space between gates. When the lug *a* passes beyond lug *h''*, the counterweight *e* returns the shaft, closing

gate H and opening gate F, and the counter-weight h' brings the gate H again against jaw j . A new cartridge then enters the space between gates and acting against gate H moves it outward against jaw j^3 .

The operation is as follows: Initially the gate E is open, gate H closed and swung inward against jaw j . Cartridges being placed in the hopper will pass downward until the first cartridge impinges against gate H, which it swings outward, so that it rests against jaw j^2 . The table-lug a then strikes the lug h^2 , and the gate H is swung so as to open gate H and close gate E. Upon the passage of lug h^2 the gates H and F return to their initial position.

The gate F is formed with its lower end curved concentrically with the rock-shaft E, the curve having as its center the center of the rock-shaft. This enables the gate F to follow the movement of the gate H and at the same time hold any cartridge back, no matter at what time during the movement such cartridge comes along. The lower edge of the gate working on the slope of the cartridge does not interfere with the circular movement of the gate.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. The combination with a delivery channel or chute, of a gate controlling the mouth of said channel, a device adapted in its movement to operate said gate to open the channel, means acting in a direction opposite to the weight of the article in the chute tending to hold said gate out of operative relation with said device.

2. The combination, with a channel or chute, of a rock-shaft, two gates projecting oppositely from said rock-shaft in line with said chute at different points of the chute, whereby, in one position of the rock-shaft one gate

is open, and the other closed and vice versa, at another position of the rock-shaft.

3. The combination, with a chute or channel, of two gates projecting oppositely from said rock-shaft in line with said chute at different points of the chute, a device adapted in its movement to strike the forward of said gates and rock the shaft, and means tending to hold said forward gate out of alinement with said device.

4. The combination, with a chute or channel, of two gates projecting oppositely from said rock-shaft in line with said chute at different points of the chute, means for holding the forward of said gates normally closed and the rearward gate open, a device adapted in its movement to strike the forward of said gates and rock the shaft, and means tending to hold said forward gate out of alinement with said device.

5. The combination, with a chute or channel, of two gates projecting oppositely from said rock-shaft in line with said chute at different points of the chute, a device adapted in its movement to strike the forward of said gates and rock the shaft, a support for said forward gate adapted to allow said gate to swing in and out of alinement with said device.

6. The combination, with a chute or channel, of a gate for closing the mouth of said chute, a device adapted in its movement to operate the gate to open the chute, a support for said gate adapted to allow said gate to swing in and out of alinement with said device.

In testimony of which invention I have hereunto set my hand, at Westpoint, on this 2d day of September, 1904.

ORMOND M. LISSAK.

Witnesses:

WM. WARD,
F. W. COE.