No. 693,158. Patented Feb. 11, 1902.

A. C. ROEBUCK & F. McMILLAN.

ROTARY FEEDING MECHANISM.

(Application filed Sept. 6, 1901.)

(No Model.)

Fig. 1.

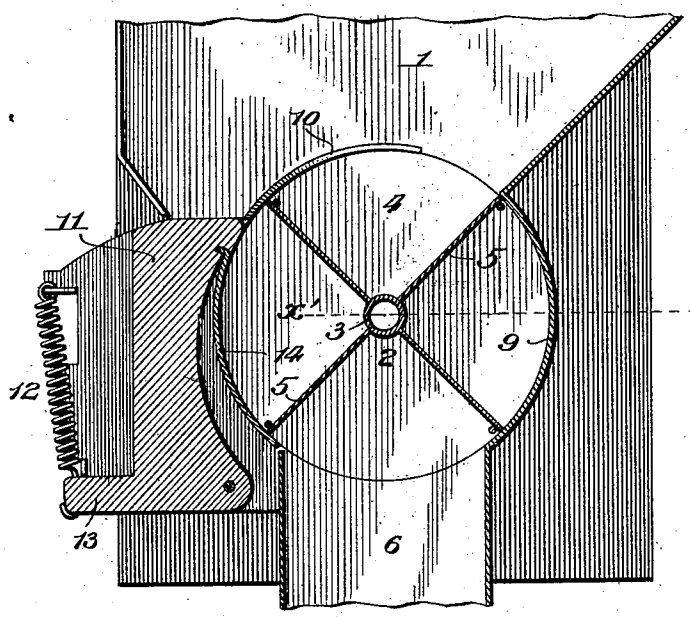


Fig. 2.

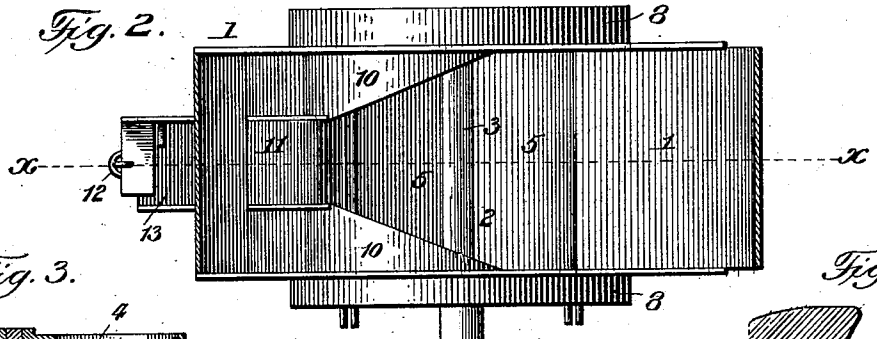


Fig. 3.

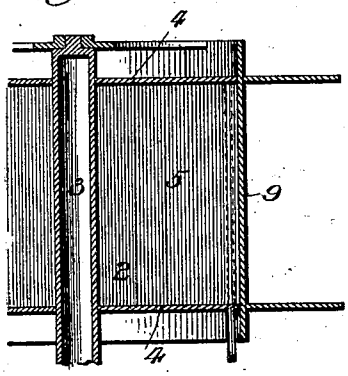
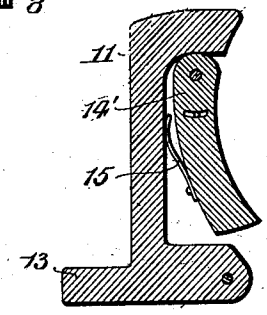


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALVAH C. ROEBUCK AND FRANK McMILLAN, OF CHICAGO, ILLINOIS, ASSIGNORS TO ENTERPRISE VENDING MACHINE COMPANY, A CORPORATION OF ILLINOIS.

ROTARY FEEDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 693,158, dated February 11, 1902.

Application filed September 6, 1901. Serial No. 74,492. (No model.)

To all whom it may concern:

Be it known that we, ALVAH C. ROEBUCK and FRANK McMILLAN, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rotary Feeding Mechanisms, of which the following is a specification.

The present invention relates to a rotary measuring or feeding mechanism for loose granular bodies, and more particularly to that form of such mechanism employed in coin-controlled apparatus for the delivery of peanuts and other like loose granular commodities.

The present improvement has for its object to provide a simple and efficient mechanism for such uses in which the clogging and stoppage of the moving member of the mechanism is prevented in a very perfect manner and the operation of the apparatus rendered easy, certain, and convenient, all as will hereinafter more fully appear and be more particularly pointed out in the claims.

We attain such objects by the construction of parts illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional elevation at line x x, Fig. 2, of a feeding mechanism embodying the present invention. Fig. 2 is a plan view of the same; Fig. 3, a fragmentary horizontal section at line x' x', Fig. 1; Fig. 4, a fragmentary vertical section of a modification.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents a hopper forming the lower end of the containing-chamber for the loose granular body to be measured or dispensed.

2 is a rotary measuring-wheel arranged beneath the hopper 1 and comprising a transverse carrying-shaft 3, circular end heads 4, and a series of radial blades 5, which divide the wheel 2 into an endless series of angular measuring-chambers, that in an intermittent rotation of the measuring-wheel are adapted to be brought serially into communication with the lower and open end of the hopper 1 to fill with a given quantity of the loose granular body and carry the same around in a circular path until a receiving-chute 6 is reached, and into the open mouth of which the contents of the particular angular measuring-chamber is discharged. Such chute 6 constitutes the delivery end of the apparatus and may be of any usual and suitable construction which the particular use of the apparatus may suggest.

7 is a ratchet-wheel secured to one end of the shaft 3 and forming a part of the usual operating mechanism by which intermittent rotary motion is imparted to the rotary measuring-wheel 2.

In the construction so far described and which is usual and common to the present type of feeding mechanisms for granular substances, the circular end heads 4 of the before-described measuring-wheel 2 will turn in close contact with the circular housings or flanges 8 on the usual side plates or extensions of the hopper 1, and which side plates are adapted to connect the hopper portion 1 and the delivery-chute 6 together in fixed relation to each other.

9 is a segmental wall at one side of the chamber, with which the outer ends of the radial blades are adapted to move in close relation in their movement into an active or receiving position with relation to the lower or open end of the hopper 2.

10 represents guard plates or wings arranged in the bottom opening of the main hopper 1, and which in our preferred construction, as illustrated in Figs. 1 and 2 of the drawings, will be arranged in opposed relation in the end walls of the hopper. Such plates or wings are of a curved form, so as to have a close relation to the radial blades 4 in their movement past the same, and have a beveled shape, so as to form a tapering throat between them, which narrows in the direction in which the aforesaid measuring-wheel 2 moves. As so constructed and arranged the said plates or wings 10 are adapted to roll or level off and remove the surplus or projecting pieces or granules of the material from the particular measuring-chamber that

is passing in a filled condition under such plates or wings on its way from the containing-hopper 1 to the discharge-chute 6, and thus avoid to a great extent the danger of a clogging up of the mechanism by such surplus or projecting particles or granules.

11 is a yielding throat-piece which in our preferred construction, as illustrated in Figs. 1 and 2, is of a width equal to the narrow portion of the throat formed by the guard-plates 10, above described, and is arranged between a pair of vertical members 16 16, carried by the stationary housing of the mechanism. Said throat-piece is pivoted at its lower end by means of a pivot-pin 17 between the members 16 16, with its free upper and inner end adapted to rest against the side of the measuring-wheel 2.

12 is a spring one end of which is attached to a suitable bracket on one of the vertical members 16 and the other end to a projecting heel 13 on the throat-piece, the arrangement being such as to hold the upper end of the said throat-piece in yielding contact with the periphery of the measuring-wheel 2.

The throat-piece 11 is preferably of a width equal to the width of the narrow end of the heretofore-described tapering throat formed by the guard-plate or wings 10, with its free end having adjacent relation to such narrow end of said tapering throat, and as so arranged is adapted to be forced outward against the elasticity of the spring 12, with the pressure of any projecting particles or granules in the chambers of the feeding-wheel 2 which have not been removed by the aforesaid guard-wings 10, and thus admit of a free rotative movement of the measuring-wheel without any liability to clogging or binding due to the presence of such projecting particles, and which would be the case were the said throat-piece of a fixed or stationary nature.

14 is a breast-piece of a width equal to the throat-piece 11 aforesaid, one face of which is of a segmental form and adapted to rest against the periphery of the measuring-wheel to retain the granular substance contained within the measuring-chambers of said wheel in position until the discharge-chute 6 is reached. In the present improvement the breast-piece 14 is made yielding, so as to move away from the periphery of the measuring-wheel in the presence of any projecting particles or granules in the measuring-chambers thereof, and such yielding nature may be imparted to the breast-piece by forming the same of spring metal and attaching it at its upper end to said throat-piece 11, as illustrated in Fig. 1, or the said breast-piece 14 may be in the form of a block pivoted at its upper end to the upper end of the throat-piece 11 by a pivot-pin 18 and provided with a spring 15 to hold it in its normal position in contact with the periphery of the measuring-wheel. Independent movement of said breast-piece 14′ is limited by a cross-pin 19, carried by the throat-piece 11, engaging in an elongated slot 20 in the breast-piece, as illustrated in Fig. 4.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a feeding mechanism for measuring quantities of granular material, the combination of a supply-hopper, a receiving-chamber, an interposed feeding-wheel having peripheral pockets or chambers, a tapering and curved guard-plate at one end of the bottom opening of the supply-hopper to constitute a tapering throat for the same, and a yielding throat-piece arranged at the narrow end of said tapering throat to yieldingly contact with that portion of the length of the feeding-wheel left uncovered by the guard-plate, substantially as set forth.

2. In a feeding mechanism for measured quantities of granular material, the combination of a supply-hopper, a receiving-chamber, an interposed feeding-wheel having peripheral pockets or chambers, a pair of tapering and curved guard-plates arranged in opposed relation in the bottom opening of the supply-hopper to constitute a tapering throat for the same, and a yielding throat-piece arranged at the narrow end of said tapering throat to yieldingly contact with that portion of the length of the feeding-wheel left uncovered by the guard-plates, substantially as set forth.

In testimony whereof witness our hands this 28th day of August, 1901, at Chicago, Illinois.

ALVAH C. ROEBUCK.
FRANK McMILLAN.

In presence of—
ROBERT BURNS,
HENRY A. NOTT.