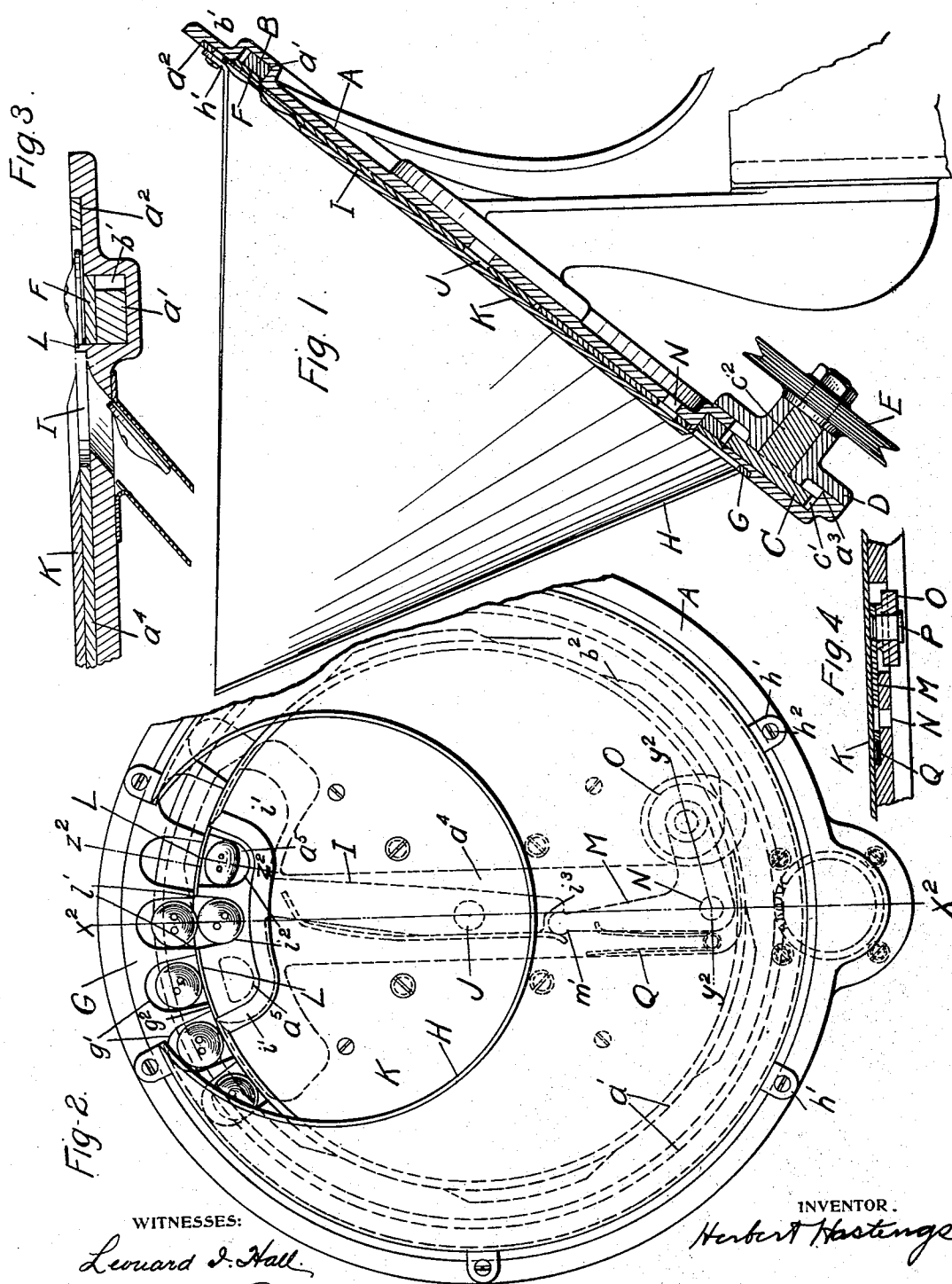


H. HASTINGS.
 BUTTON FEEDING DEVICE.
 APPLICATION FILED MAR. 15, 1909.

Patented Nov. 7, 1911.
 2 SHEETS—SHEET 1.

1,008,032.



WITNESSES:

Leonard J. Hall,
 John W. Vickrey

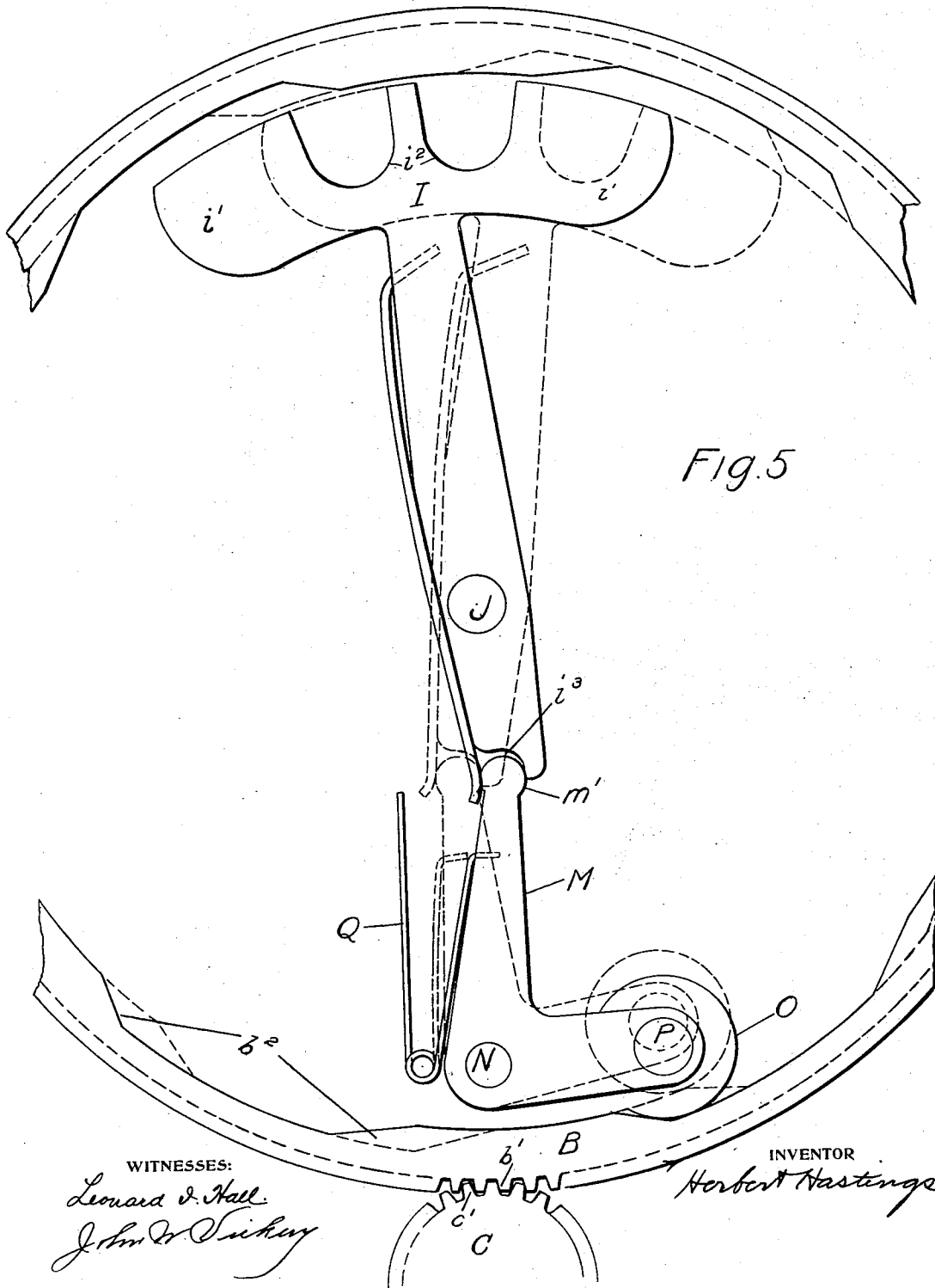
INVENTOR.

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WITNESSES:

Leonard V. Hall.
 John W. Siskney

INVENTOR

Herbert Hastings

UNITED STATES PATENT OFFICE.

HERBERT HASTINGS, OF ROCHESTER, NEW YORK, ASSIGNOR TO GERMAN-AMERICAN
BUTTON COMPANY, OF ROCHESTER, NEW YORK.

BUTTON-FEEDING DEVICE.

1,008,032.

Specification of Letters Patent.

Patented Nov. 7, 1911.

Application filed March 15, 1909. Serial No. 483,646.

To all whom it may concern:

Be it known that I, HERBERT HASTINGS, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented a new and useful Button-Feeding Device, of which the following is a specification.

My invention relates to improvements in button feeding devices known as the "inclined hopper" type; and the objects of my invention are, first, to provide a button feeding device with a container that will hold a quantity of buttons in bulk, second, to provide means for selecting buttons with a predetermined side uppermost from the container, third, to deliver at predetermined intervals one or more of the buttons thus selected. I attain these objects by the mechanism and parts shown in the drawings in which—

Figure 1 is a section in elevation through the center line $x^2 x^2$ of Fig. 2 of my invention. Fig. 2 is a plan view looking perpendicularly upon the bottom of Fig. 1. Fig. 3 is a partial sectional view taken at $z^2 z^2$ of Fig. 2. Fig. 4 is a partial sectional view taken at lines $y^2 y^2$ of Fig. 2. Fig. 5 is an enlarged view of parts shown in Figs. 1, 2, 3 and 4 to better illustrate the delivering means.

Similar letters and numbers refer to similar parts in the different views.

The hopper bottom A is the means directly and indirectly of supporting, guiding and holding all the parts of my device, and it is itself attached in any convenient manner to the machine to which it supplies buttons, and the buttons are conveyed thereto by any suitable means, either by gravity through a chute or otherwise. This bottom A has an annular groove a^1 enlarged at the top into a larger and shallower annular recess a^2 . In recess a^1 is a revoluble toothed ring B provided with teeth b^1 which mesh with teeth c^1 in the driving pinion C which is revolubly supported in a recess a^3 of bottom A by the bracket D which is secured to the under side of A, within this bracket pinion C has a bearing stem c^2 on the ex-

terior end of which is a driving pulley E which may receive rotation from any convenient source. To the upper face of ring B is secured a flat ring F for the purpose of keeping dirt, etc., out of the teeth of the ring, to the upper face of F is secured a serrated selecting ring G which occupies recess a^2 in A. Around the circumference of G and extending somewhat over the face thereof is a hopper shell H with lugs h^1 through which screws h^2 pass for securing said shell to A, this hopper shell serves to hold the buttons in bulk over the selecting ring G and also holds said ring and attached rings in their respective places. The serrations g^1 in selecting ring G are somewhat larger than the buttons, and the thickness of said ring is proportioned to the thickness of the edge of the button so that if a button gets in one of the serrations with its oval side down the ring is not thick enough to reach the edge of the button, and it is therefore brushed out by the other buttons or falls out of itself. After thus collecting the buttons the desired side up, in the ring G it is necessary to deliver them therefrom at regular intervals. To accomplish this I provide an oscillating delivery member I which occupies a recess a^4 in bottom A and is fulcrumed at the center thereof on a pin J and is covered and protected by the plate K. The outermost end of delivery member I is elongated at i^1 and the outer circumference thereof is slightly smaller than the inner circumference g^2 of selecting ring G so that there is a narrow separating flange L between ring G and delivering member I, the elongated portion of I has two recesses i^2 opening through the circumference thereof and just long enough to accommodate a button so that its outer edge comes inside of flange L; at the center line of the hopper the flange L is cut away at l^1 allowing unobstructed passage from the serrations in ring G to the recesses i^2 in I as these serrations pass this opening and thus one button at a time passes by gravity into the delivery member I and only one since any subsequent ones that may

be presented are held up in the ring G by the button in i^2 and continues around therein until it reaches the opening l^1 when there is no button in i^2 , in this way a number of serrations g^1 pass said opening for each button delivered and thus the chances of having a button to deliver at the desired time are multiplied. Through the bottom A of the hopper underneath the elongated end i^1 of delivery member I and in line of the travel of the recesses i^2 as I is oscillated and at either side of the receiving point, are openings a^5 through which the buttons are delivered, alternately first on one side then on the other. To accomplish this the lower end of delivery member I is forked at i^3 and receives one end m^1 of a bell crank lever M which is pivoted on a stud N secured to bottom A, the other end of said bell crank lever carries a roller O revolubly fixed thereto by stud P, which roller contacts with the inner circumference of the toothed ring B and is yieldably held thereagainst by the influence of the spring O so that as the depressions and rises b^2 formed on the inner circumference of said ring B, come opposite said roller said bell crank is alternately oscillated in one direction by said rises and in the opposite direction by said spring thus communicating an oscillating motion with a dwell to delivery member I thus carrying a button first over one opening a^5 and then over the other releasing and delivering a button at each oscillation. There are two recesses i^2 in the delivery member spaced so that when one is at the delivery point the other is at the center in line with opening l^1 receiving a button from the selecting ring G. It sometimes happens that a button sticks between the openings a^5 and the delivery recess i^2 , if this happens at the positive stroke of the bell crank lever M undue strain would be put on these parts and to obviate this danger one side of the forked opening i^3 of I is made yieldable thus allowing the delivery member to remain stationary in such a case.

Having thus described my invention what I claim and desire to secure by Letters Patent is—

1. In a hopper in combination a revoluble ring provided with button carrying notches extending from the inner edge thereof toward the outer edge, a bottom provided with a discharge opening within said ring, a movable plate covering said opening having a button pocket cooperating with said button carrying notches, means for rotating the ring, and means for moving the plate to deposit a button from its pocket into the discharge opening.

2. A hopper having a revoluble ring provided with notches open at the inner circumference thereof, a bottom provided with a

discharge aperture within said ring, a movable plate covering the aperture provided with a button pocket, means for rotating the ring and devices actuated by the latter for periodically operating the plate to move its pocket over the discharge aperture.

3. In a hopper having an inclined bottom provided with a discharge opening near its upper edge and a revoluble feed ring supported on the bottom and passing above the opening therein, of a plate arranged within the ring and covering the opening and provided with a pocket cooperating therewith and means for periodically operating the plate to move its pocket over the discharge opening.

4. In an inclined hopper a revoluble ring having internally discharging button notches, a bottom provided with an annular recess to receive the ring and a discharge opening inside of said ring, a plate covering said opening and provided with a pocket, means for rotating the ring and intermittently actuating the plate to move its pocket over the discharge opening.

5. In a hopper having an inclined bottom provided with a plurality of discharge openings, a revoluble ring arranged in proximity to said bottom, a plate covering said openings and provided with a corresponding plurality of button pockets, means for rotating the ring and intermittently operating the plate to move its pockets over the openings.

6. In an inclined hopper a bottom provided with an annular recess and a shallow recess inside thereof provided with a discharge opening, a plate arranged in said shallow recess covering said opening and provided with a button pocket, a feeding ring lying in the annular recess, means for rotating it and intermittently operating the plate to move its pocket over the discharge opening.

7. In a hopper having a bottom provided with an annular recess and having a discharge aperture, a driven ring lying in the recess and a notched feed plate attached to the ring, of an oscillatory plate covering the aperture, means for driving the ring, cam faces on the latter and a lever attached to the hopper bottom and cooperating with the cam faces to move said plate in one direction.

8. In a hopper having a bottom provided with an annular recess and having a discharge aperture, a gear ring lying in the recess and a notched feed plate attached thereto, of a plate pivoted to the inner side of the hopper bottom covering the aperture therein, cam faces in the ring and a lever coacting with the cover plate cooperating with the cam faces and arranged beneath the hopper bottom, and means for rotating the ring.

9. A hopper having an inclined bottom provided with a discharge opening and an annular recess, a shell connected to the bottom having lugs projecting over the edge
5 of the recess, a selecting ring lying in the latter beneath the lugs, a pivoted plate arranged within the hopper covering the open-

ing, means for revolving the selecting ring and means for moving the plate.

HERBERT HASTINGS.

Witnesses:

LEONARD I. HALL,
MILTON NOYES.