

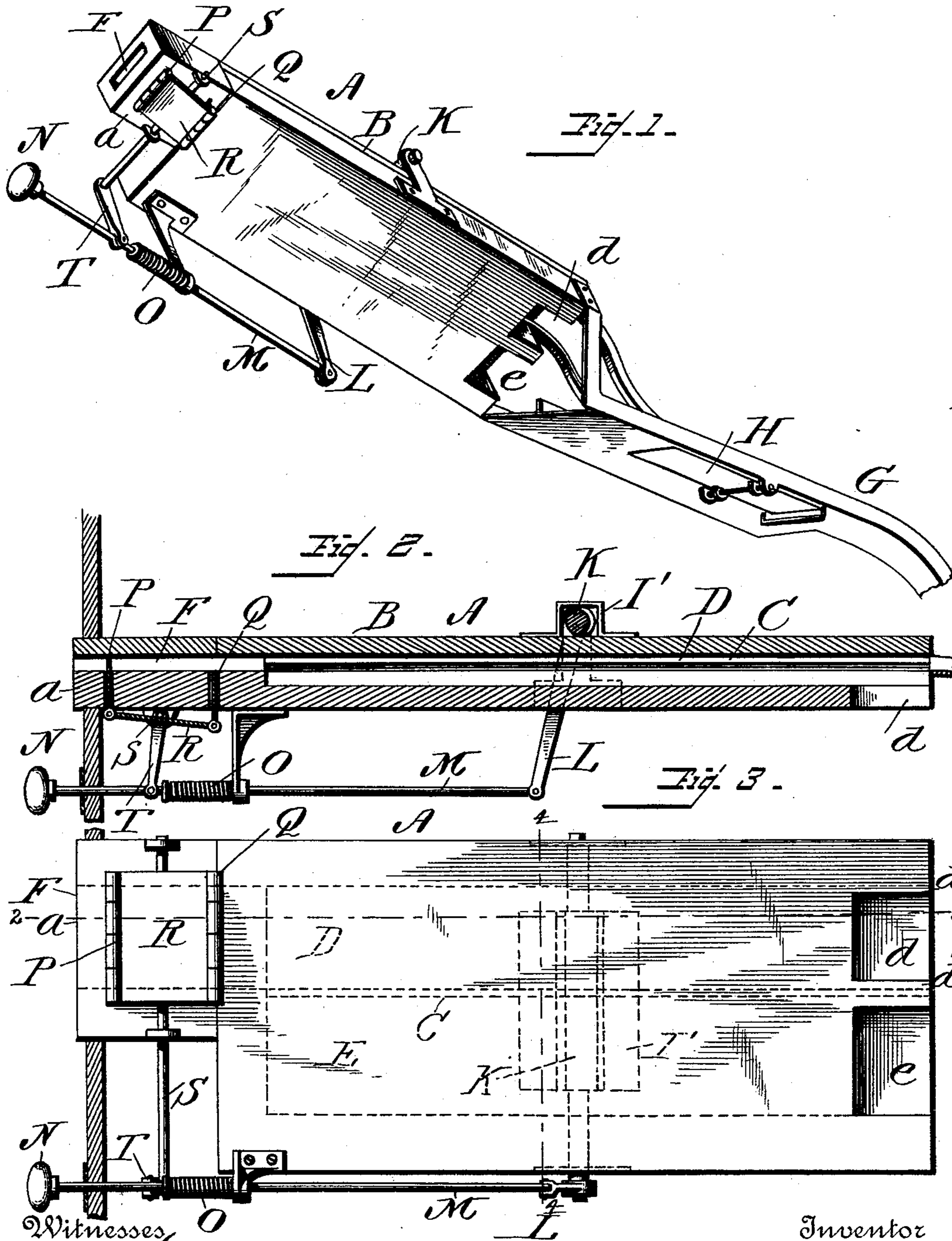
(No Model.)

2 Sheets—Sheet 1.

R. F. AVERY.
COIN CHUTE.

No. 480,360.

Patented Aug. 9, 1892.



Witnesses
"Spiden"
Albert Spiden.

Inventor
Russell F. Avery
By his Attorney Woodbury Lowery

(No Model.)

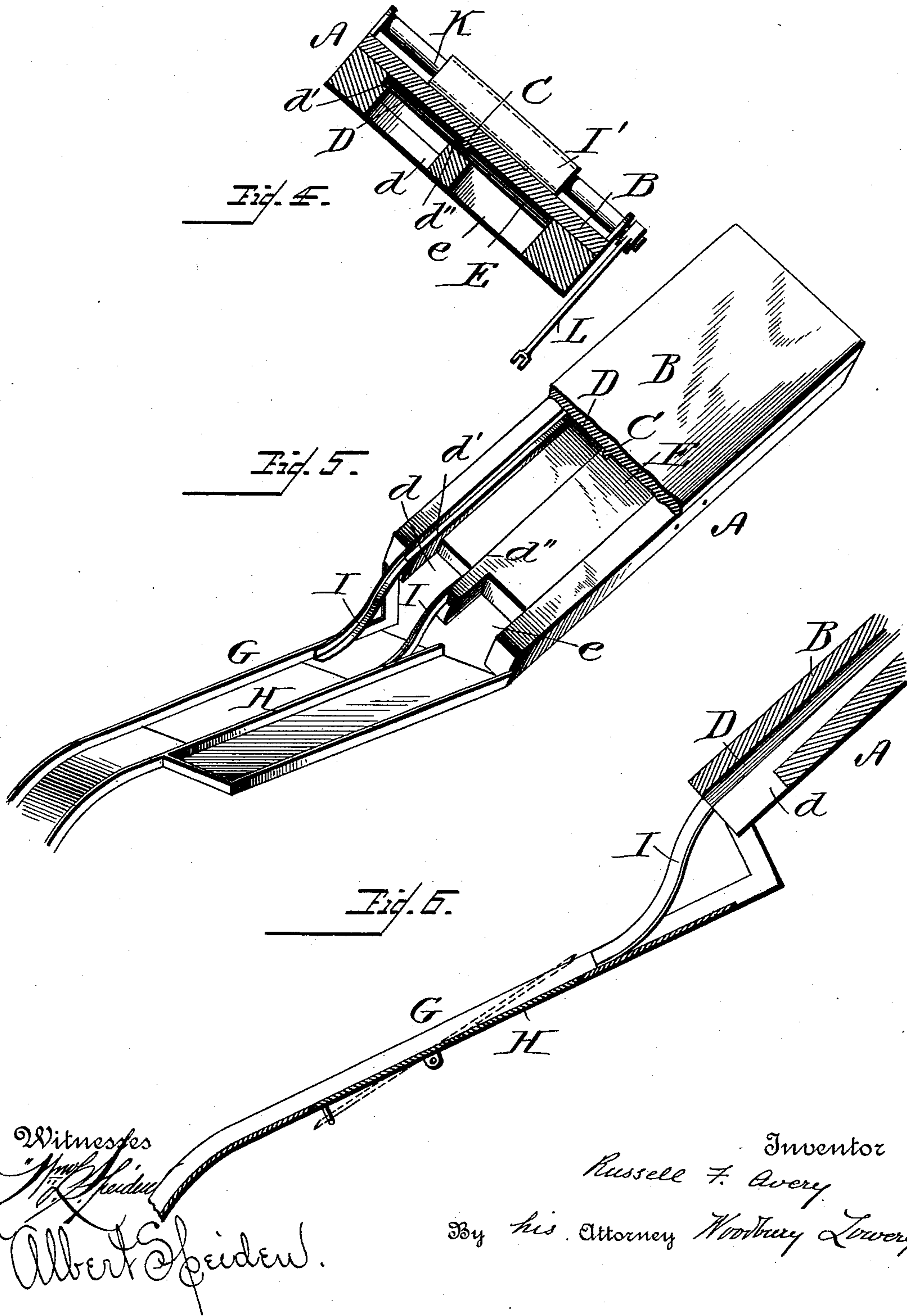
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

RUSSELL F. AVERY, OF SPOKANE FALLS, WASHINGTON, ASSIGNOR TO JACOB GOETZ, TRUSTEE, OF SAME PLACE.

COIN-CHUTE.

SPECIFICATION forming part of Letters Patent No. 480,360, dated August 9, 1892.

Application filed April 16, 1891. Serial No. 389,260. (No model.)

To all whom it may concern:

Be it known that I, RUSSELL F. AVERY, a citizen of the United States, residing at Spokane Falls, in the county of Spokane and State of Washington, have invented a new and useful Coin-Chute, of which the following is a specification.

My invention consists in a coin-chute adapted to be attached to any coin-operated device the mechanism of which is actuated by a coin, and is of such construction that it will allow of the passage through its entire length and the final exit of a coin of a certain size and weight only and will automatically reject all coins, tokens, or objects not of the size and weight required.

My invention consists of a case having a lid provided with a central rib, which when closed separates the case into two parallel longitudinal channels in such wise that a coin of the requisite thickness on being dropped through a slot into one channel will continue its descent therein until its final exit, while a coin of less thickness will slip beneath the rib into the second channel, from which it will drop out through an aperture provided for that purpose. The first channel is also provided with a terminal aperture of such diameter that the required coin will pass over it, whereas coins of sufficient thickness to remain in the channel, but of insufficient diameter, will fall through. To the exit end of the first channel is attached at a convenient angle a slide having flush with its surface a balanced section in such wise that the coin on its exit from the end of the first channel is guided thereover and if of excessive weight automatically tips the section and is dropped through the slide, while a coin of the proper weight continues over the slide without affecting the balance and makes its final exit at the end of the slide. I also provide means for opening and closing the slot proper and for opening the lid when necessary.

In the accompanying drawings, which illustrate my invention, Figure 1 is a view of my improved coin-chute. Fig. 2 is a longitudinal cross-section of the double channel of the coin-chute without the end balance attachment on the line 2 2 of Fig. 3. Fig. 3 is a top

plan view of the same. Fig. 4 is a horizontal cross-section of the double channel of the coin-chute on the line 4 4 of Fig. 3. Fig. 5 is a view in perspective of the entire coin-chute with the lid and gate actuating devices removed, showing the two channels and the end balance attachment; and Fig. 6 is a longitudinal cross-section of the balance attachment and the connecting end of the double channels of the chute.

A is a case or box open at its lower end and having a lid B, provided with a longitudinal inwardly-projecting rib C, which when the lid is closed separates the interior of case A into two channels D and E, but without entirely closing the communication between the two channels, so that an object of sufficient thinness will slide from channel D between the bottom of the case and the rib C into the channel E. A slot F in the top of the case A communicates with the channel D, and in the bottom of the lower end of the channel D is an aperture *d* of less diameter than that of the channel, so that slides *d'* *d''* are provided on each side of said aperture, which extend to the open end of the case A. The channel E is also provided with an aperture *e* at its lower end, which may be of the same diameter as the channel.

To the lower open end of the case A and forming a prolongation of the channel D is secured a slide G. A balanced plate H is located in the slide G flush with its surface and forming a continuation thereof and so adjusted as to tilt when an object above a given weight passes over it and expel the same from the slide. In the drawings, Figs. 5 and 6, a guide I conducts from the open end of the channel D onto the slide G; but the slide G may be so located in respect to the channel D as to render such a guide unnecessary.

In operation the coin-chute has a downward angle sufficient to cause the coin to pass through it when deposited therein and is tilted to one side at a sufficient angle to allow of the thin coins sliding sidewise beneath the rib C into the channel E. I have found an angle of forty-five degrees in both instances to give good results, but do not limit myself to any particular angle, provided al-

ways that the chute is so located that a coin may pass through into the lower channel.

When the coin-chute is in its proper position, as described, with the lid B closed, its operation is as follows: On inserting a coin into the slot F it descends into the channel D, and, if not of the requisite thickness, slides under the rib C, where it either jams between the rib and the bottom or, passing into the channel E, continues its course therein until it falls out through the aperture *e*. If of the requisite thickness, but of smaller diameter, the coin passes through channel D until it reaches aperture *d*, where it also is dropped out. If of the requisite thickness and diameter but overweight, it passes through the channel D over the slides *d'* *d''*, through the guide I onto the slide G, where on reaching the balance H it tilts the latter and is cast out of the slide. Finally, if the coin complies with all these requisites of thickness, diameter, and weight, it passes without obstruction through the entire chute. A receptacle receives the rejected coins as they fall from the slots and balance.

The balance H is shown in the drawings as adjusted for coins of overweight; but it can equally well be adjusted to weigh for underweight. Neither do I confine myself to any particular weighing mechanism for the balance H.

In order to raise the lid B and release any coins that may have become jammed in the channel D or between the rib C and the case and to allow them to slide off to one side and out of the apertures, as already described, I provide the following device: The lid B is loosely retained by a keeper I' to an eccentric shaft K, which latter rests in bearings on the sides of the case A. A lever L connects the shaft K with a rod M, extending beyond the case, in such wise that when the rod M is pushed in by means of its push-button N against the stress of the spring O the eccentric shaft K is rotated, bears against the strap I' and raises the lid, and when the rod is released it returns to its normal position, in which it is pushed out by spring O and closes the lid B. I also provide two gates P and Q, which alternately open and close the slot F in the following way: The gates P and Q reciprocate in transverse slots in the bottom *a* of case A and are each hinged to opposite ends of the bar R, which latter is centrally pivoted to a shaft S. A lever-arm T connects the shaft S with the rod M. It follows that when the rod M is pushed in it closes the lower gate Q and opens the upper gate R for the reception of a coin, while at the same time raising the lid B and freeing the case A from any obstructions. On introducing the coin it is retained in the slot by gate Q until the rod M is released, whereupon the lid B is automatically closed, as already described, the gate Q opened to allow the coin to descend, and the gate P closed, in which condition the

gates and lid have returned to their normal position. The object of the gates P and Q is to prevent the throwing of anything through the slot F by holding it in one hand and striking it with a finger of the other and also to retain the coin in the slot until the lid to the channels has been closed.

While I have shown the rib C as attached to the lid, I do not limit myself to that manner of securing it, the essential feature of this part of my invention being the forming of two channels in an inclosed case by a longitudinal rib, leaving sufficient space between the rib and either the top or bottom of the case for the passage of a coin, which space can be opened by the moving of the lid of the case. Neither do I limit myself to the particular construction of the various devices constituting my coin-chute, as they may be greatly varied without departing from the spirit of my invention.

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

1. The combination, with a coin-chute, of a device for automatically allowing the passage of a coin of determined thickness, a device for automatically allowing the passage of a coin of determined diameter, and mechanism actuated from the exterior of the coin-chute for releasing a coin of undue thickness arrested in the thickness-determining device, substantially as described.

2. The combination, with a coin-chute, of devices for automatically determining the passage of a coin therein in respect to its two dimensions, mechanism actuated from the exterior of the coin-chute to release and automatically reset said measuring devices, and gates for inserting and retaining the coin introduced into the slot of the coin-chute during the releasing of the dimension-measuring devices and automatically delivering the coin from the slot and closing the same when the measuring mechanism is reset, substantially as described.

3. The combination of the case having a slot therein and a movable lid to said case having secured thereto a longitudinal rib adapted to divide the case into two parallel channels, with a longitudinal passage between said channels and beneath said rib when said lid is closed, substantially as described.

4. The combination of the case having a slot therein, a lid to said case having secured thereto a longitudinal rib adapted to divide said case into two channels, with a longitudinal passage between said channels and beneath said rib when said lid is closed, and suitable connections between the case and the lid, whereby the lid can be opened and closed, substantially as described.

5. The combination of the case, a slot therein, an upper and lower gate located in said slot, a lid to said case, a longitudinal rib dividing said case into two channels, and suit-

able connection between the case, the lid, and the two gates, whereby when the upper gate is opened the lid is also opened and the lower gate closed, and vice versa, substantially as described.

5 6. The combination of the case having the apertures *d* and *e*, a slot in said case, an upper and a lower gate located in said slot, a lid to said case, a longitudinal rib in said case, 10 and suitable connections between the case, the lid, and the two gates, substantially as described.

15 7. The combination of the case having the slot therein, a lid to said case, a longitudinal rib forming when closed two channels in said case, a slide connected with one of said channels, and a balance in said slide, substantially as set forth.

20 8. The combination of the case having the apertures *d* and *e*, a slot in said case, an upper and a lower gate located in said slot, a lid to said case, a longitudinal rib forming two channels, as described, a slide connected with one of said channels, a balance in said slide, 25 and suitable connections between the case,

the lid, and the two gates, substantially as described.

9. The combination of the case A, having the apertures *d e* at the open end of the case, the slot F at the other end of the case, the 30 gates P and Q, located in the slot, the bar R, hinged to the gates, the shaft S, pivoted to the bar R, the lever-arm T, connected to the shaft S, the lid B, closing the case and having the rib C, the keeper I', secured to the lid, the 35 eccentric shaft K, loosely retained by the keeper and mounted in bearings in the case, the lever-arm L, connected to the shaft K, the actuating-rod M, connected to the levers T and L, the spring O, connected to the actuat- 40 ing-rod M, the slide G at the open end of the case, the guide I, connecting said slide and case, and the balance H, located in the slide, substantially as described, and for the purpose set forth.

RUSSELL F. AVERY.

Witnesses:

G. J. DONOVAN,
J. M. KINNAIRD.