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Fig. 2.

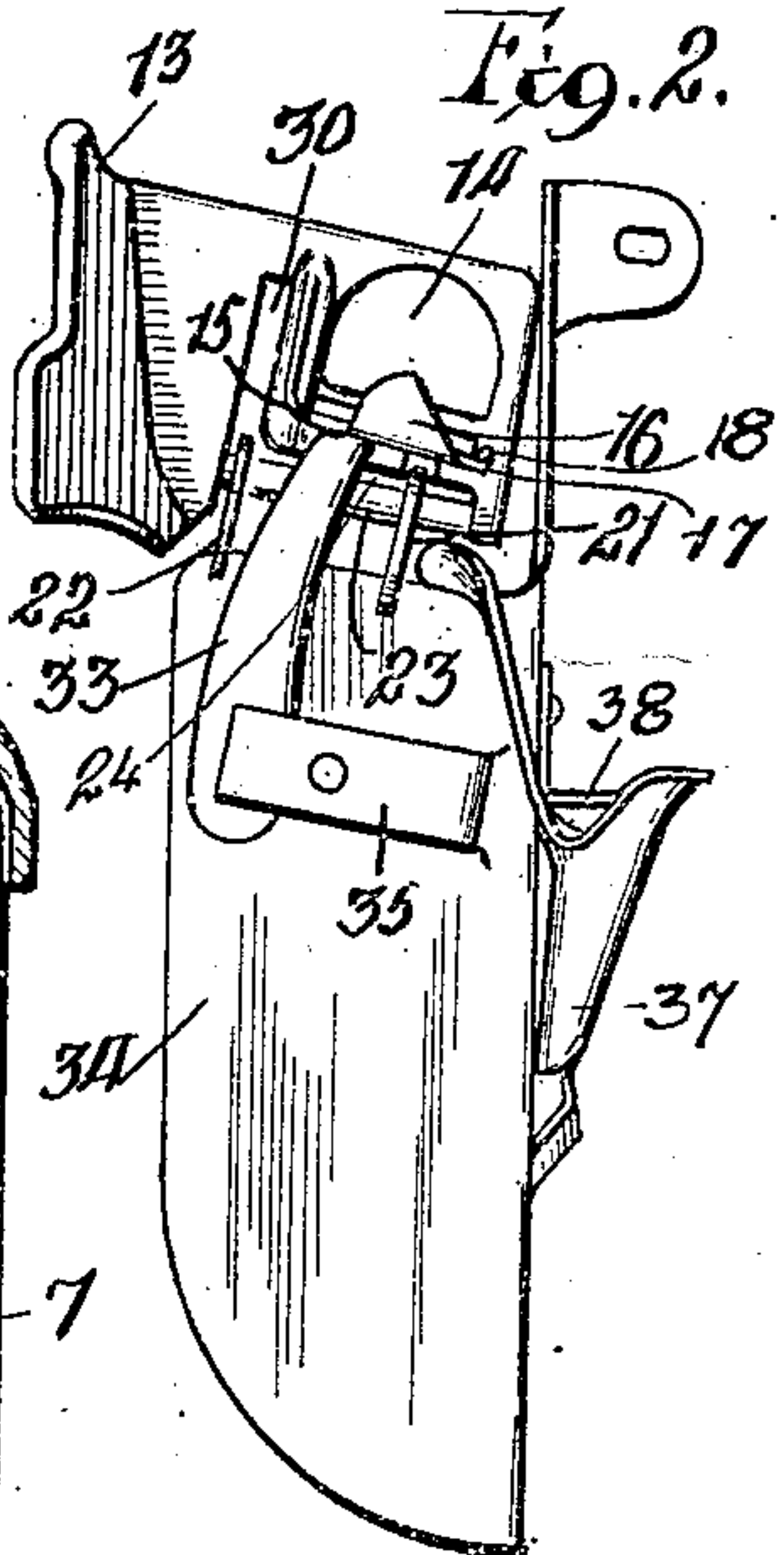


Fig. 5.

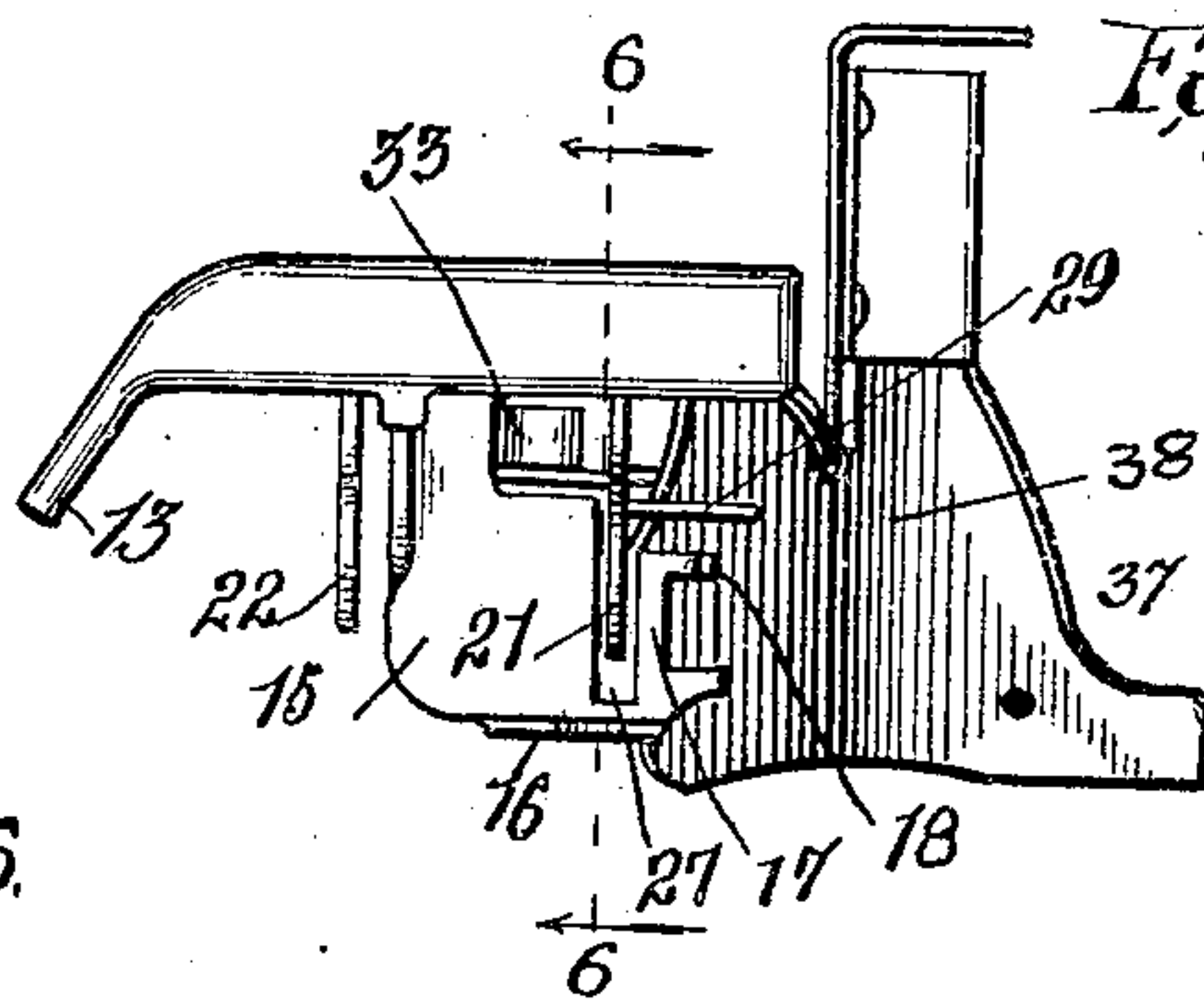
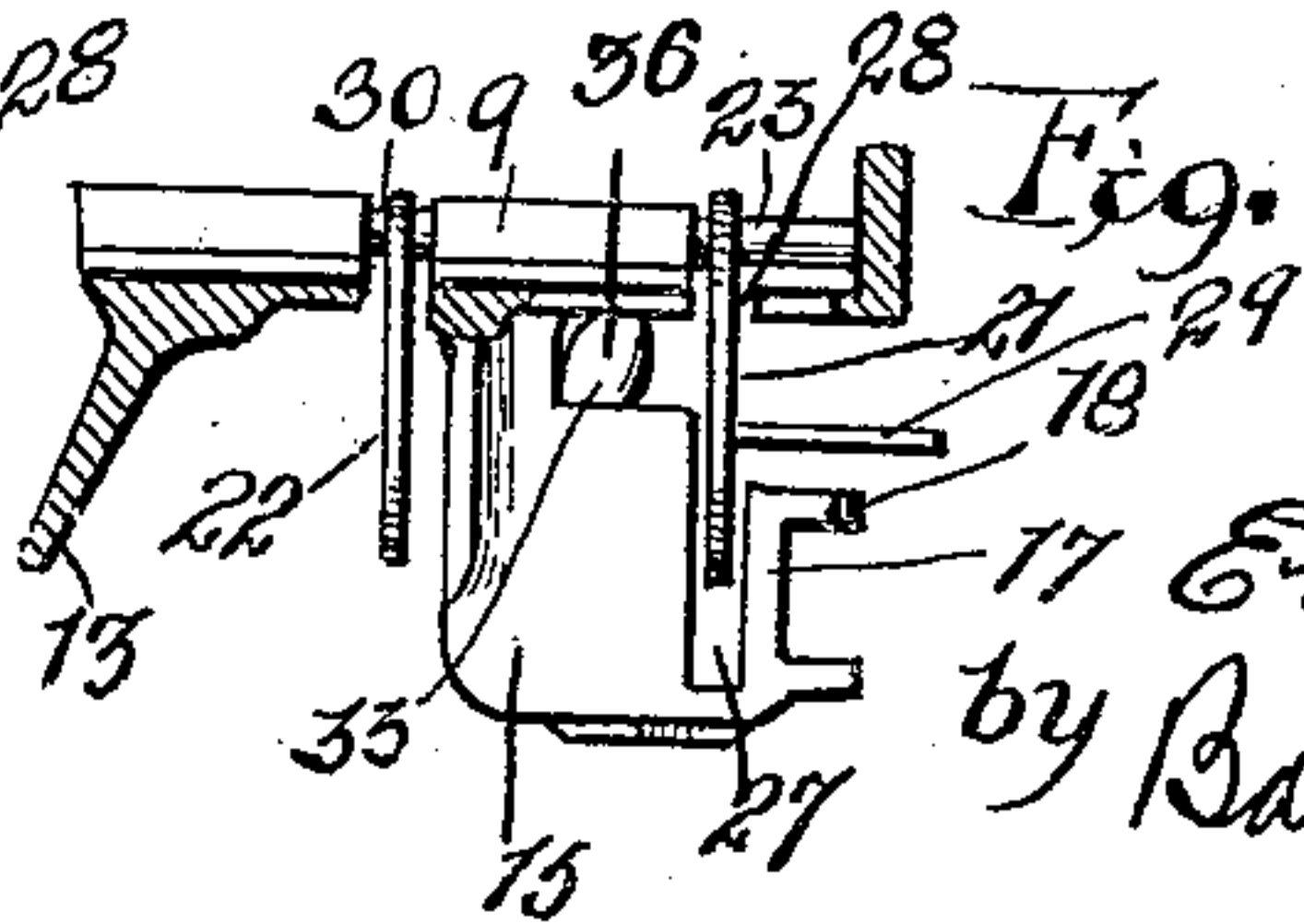


Fig. 4.



Inventor:
-17 Erik S. Hagen
by Baunig & Baunig

А. Н. 5.

UNITED STATES PATENT OFFICE.

ERIK S. HAGEN, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
GLOBE VENDING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

COIN-CHUTE.

958,490.

Specification of Letters Patent.

Patented May 17, 1910.

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To all whom it may concern:

Be it known that I, ERIK S. HAGEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin-Chutes, of which the following is a specification.

The coin chute of the present invention is intended for use in connection with vending machines to carry the coin from the point of insertion to the discharge mechanism for the machine; and the object of the present invention is to provide a chute which will receive the coin in vertical position and turn the coin at substantially right angles to its initial position prior to its delivery to the discharge mechanism.

A further object of the invention is to so arrange the chute that the slugs or tokens will be thrown out by the action of kickers operated by the movement of the discharge mechanism, and so that washers or other perforated slugs will be thrown out of the path of travel by the action of a finger adapted to catch the washer or perforated slug and prevent its fall to position in the actuating mechanism.

The invention consists of the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of the coin chute of the present invention, shown in connection with suitable discharging mechanism in the base of a vending machine; Fig. 2 a rear view of the track and diverting plate; Fig. 3 a perspective view of the coin chute; Fig. 4 a transverse section taken on line 4—4 of Fig. 3, looking in the direction of the arrow; Fig. 5 a top or plan view of the track and diverting plate; and Fig. 6 a section taken on line 6—6 of Fig. 5, looking in the direction of the arrow.

The chute is in the form of a runway 6, which is secured to a casing 7 of a vending machine, and communicates with a slot 8 in the wall of the vending machine through which the coins are inserted. The chute has a downward slope from the slot and lies slightly out of vertical position in order to enable the coins to roll down the chute and rest against the wall of the same without falling outwardly therefrom. The chute, as a whole, is given a slightly tapered formation, the larger end being at the receiving

end of the trackway, and the contracted portion being at the discharge end thereof, for the purpose of diverting a slug or false token therefrom. The runway is provided along its lower edge with a ledge 9, which coöperates with an overhanging flange 10 along the upper edge of the runway, leaving a space, between the ledge and the flange, of proper width to receive a coin of the intended denomination, and adapted to prevent the passage of a slug or token of greater diameter than the intended coin. The runway, intermediate of the ledge or flange, is provided with upper and lower shoulders 11 and 12 respectively, which serve to reduce the contact surface for the coin, allowing only the face of the coin, around its periphery, to contact the wall of the runway. The runway, at its outer end, is provided with a rearwardly extending tongue 13, which is secured to the inner face of the casing of the vending machine, and provides a rigid attachment for the runway. The inner or discharge end of the runway terminates in an arch opening 14 which merges into the overhanging flange 10. This end of the wall of the runway, beneath the overhanging flange 10, which is cut away to provide an arch opening 14, as before stated, is of suitable size to permit a coin of proper denomination to fall sidewardly therethrough; and immediately behind the opening is a sloping platform 15 provided at its farther edge with a guard wall 16, the platform being just large enough in area to receive a coin of the proper denomination.

The platform, as will be apparent from an inspection of Fig. 2, slopes transversely from the runway down toward the guard wall 16, and also slopes forwardly to the inner or discharge edge 17, which edge is formed so as to have in its center a slightly upturned finger 18 which projects from the edge and is adapted to catch and hold a washer or other perforated slug and prevent its sliding or jumping from the discharge side of the platform down into the operating mechanism, which is suitably positioned to receive the coin after it has jumped or shot over the edge of the platform.

The discharging mechanism forms no part of the present invention and its working parts need not be described in detail. It is, however, provided with a pocket 19,

which is located below and slightly forward of the end of the platform, and is adapted to receive the falling coin 20 after it leaves the chute.

5 In order to prevent slugs or tokens from lodging or wedging in the runway, inner and outer kickers 21 and 22 are provided. Both of the kickers are mounted upon a rock shaft 23 which is pivoted beneath the
10 ledge 9 and extends in parallel relation thereto. The ledge is cut away to provide a space 24 within which the rock shaft operates. The shaft is pivoted between the end face 25 of the uncut portion of the
15 ledge and the end wall at 26, as best shown in Fig. 3. The kicker 21 is of segmental formation and operates within a slot 27 in the platform 15 and a slot 28 in the undercut portion of the ledge 9, which slots are
20 in alinement with each other and provide, in effect, a continuous slot of suitable length to permit the kicker to swing above the level of the platform 15. The kicker is provided with a rearwardly extending pin
25 29, which is intended to throw down any washer or perforated slug which is caught and hung on the finger 18 under which the pin 29 is adapted to swing. The forward
30 kicker 22 is adapted to swing through a slot 30 in the wall of the runway, forward of the slot 28 and the arched opening. The slot 30 is of sufficient length to permit the kicker to be swung clear through the opening, thereby knocking out of the runway any
35 slug or token that may have lodged therein. The forward kicker has pivoted thereto an operating arm 31 which connects with a movable arm 32 on the discharging mechanism of the machine. It is immaterial, how-
40 ever, so far as the present invention is concerned, how motion is imparted to the rock shaft, since it may be transmitted from any suitable part of the particular discharging mechanism with which the chute coöperates.
45 In order to prevent the descent of iron or steel slugs, a magnet 33 is provided, which is secured to the side wall of a deflecting plate 34 by an arm 35, and extends upwardly therefrom, as best shown in Fig. 2,
50 so that its upper end may seat within the recess 36 on the platform 15 and intercept false tokens and coins. The deflecting plate has connected therewith a chute 37, having a mouth 38 suitably positioned to receive
55 and return to the customer worn coins of insufficient weight to jump from the platform or shelf 15 into the pocket 19. This protects the customer against the loss of the coin which is so worn as to be thrown out.
60 In operation, a coin is inserted through the slot 8 in the wall of the vending machine and rolls down, as indicated in dotted lines, between the ledge 9 and the overhanging flange 10, the slope of the runway causing
65 it to roll, and the rearward leaning of the

runway preventing it from falling forward out of the open side of the runway. When the coin reaches the arched opening 14, its leaning position will cause it to topple
70 through the opening and onto the sloping platform, whence it slides or jumps from the finger 18 and is caught in the pocket 19 of the discharging mechanism. The distance between the platform and the pocket
75 is calculated with reference to a coin of proper weight, size and denomination, so that a slug or token of improper weight will not make the required jump and will fail to enter the pocket below the platform. If
80 a washer or perforated slug be inserted, it will either be caught and hung on the finger 18 or it will be so diverted from its course by the action of the finger that it will fail to enter the pocket. If a slug or token of
85 improper diameter be inserted, it will wedge between the ledge and the overhanging flange of the runway and will fail to make its descent. A steel or iron slug will be
90 either caught or retarded by the magnet so that it will fail to make the jump and enter the pocket, even though of proper size and weight. If a slug or token be lodged within
95 the runway or upon the platform, it will be knocked out by the upward swing of the kickers which are raised with every operation of the discharging mechanism, so that
there will be no possibility of a slug or token remaining lodged within the runway and obstructing the subsequent operation of the
100 machine. The pin 29 serves to dislodge any washer or perforated slug which may hang or lodge upon the finger 18. The chute as a whole is of strong and compact structure,
105 and the arched formation of the chute enables a coin to be turned from vertical to substantially horizontal position within a very short space and in a very easy and convenient manner.

What I regard as new and desire to secure by Letters Patent is:

1. A coin chute in the form of a runway
110 downwardly sloping and inclined sidewise to enable the coins to roll down the chute and rest against the wall of the same without falling outwardly therefrom, and, hav-
115 ing in its wall an opening adapted to permit a coin to topple therethrough, a platform, behind the runway and adjacent to the opening, adapted to receive the coin, and a
120 finger, on the edge of the platform, adapted to divert a washer or perforated slug, substantially as described.

2. A coin chute in the form of a runway
125 downwardly sloping and inclined sidewise to enable the coins to roll down the chute and rest against the wall of the same without falling outwardly therefrom, and, hav-
130 ing in its wall an opening adapted to permit a coin to topple therethrough, a platform, behind the runway and adjacent to the open-

ing, adapted to receive the coin, and a kicker, adapted to operate through the platform, for dislodging slugs or tokens therefrom, substantially as described.

5 3. A coin chute in the form of a runway downwardly sloping and inclined sidewise to enable the coins to roll down the chute and rest against the wall of the same without falling outwardly therefrom, and, hav-
10 ing in its wall an opening adapted to permit a coin to topple therethrough, a platform, behind the runway and adjacent to the opening, adapted to receive the coin, a
15 finger, on the edge of the platform, adapted to divert a washer or perforated slug, and a kicker, adapted to operate through the platform, for dislodging slugs or tokens therefrom, substantially as described.

20 4. A coin chute in the form of a runway downwardly sloping and inclined sidewise to enable the coins to roll down the chute and rest against the wall of the same without falling outwardly therefrom, and, pro-
25 vided with an opening adapted to allow a coin to topple sidewise therethrough, a platform, behind the chute and adjacent to the opening, the runway and platform being provided with slots, and kickers operating
30 through the slots, substantially as described.

5. A coin chute in the form of a runway downwardly sloping and inclined sidewise to enable the coins to roll down the chute and rest against the wall of the same without falling outwardly therefrom, and, pro-
35 vided with an opening adapted to allow a coin to topple sidewise therethrough, a plat-

form, behind the chute and adjacent to the opening, the runway and platform being provided with slots, kickers operating through the slots, and a rock shaft to which the kickers are secured, substantially as de-
40 scribed.

6. A coin chute in the form of a runway, set at an incline and provided with a lower ledge and an overhanging flange, the run-
45 way being provided with an arched opening of a size to permit a coin to topple sidewise therethrough, a sloping platform adjacent to the opening, the platform and runway being provided with slots, a rock shaft journaled
50 below the level of the lower ledge, and kickers secured to the rock shaft and movable within the slots, substantially as described.

7. A coin chute in the form of a runway, 55 set at an incline and tilted sidewise and provided with a lower ledge and an overhanging flange, the runway being provided with an arched opening of a size to permit a coin to topple sidewise therethrough, a sloping
60 platform adjacent to the opening, the platform and runway being provided with slots, a rock shaft journaled below the level of the lower ledge, kickers secured to the rock shaft and movable within the slots, 65
and a finger on the discharging edge of the platform, substantially as described.

ERIK S. HAGEN.

Witnesses:

WALKER BANNING,
PIERSON W. BANNING.