5—10—25c SLUG REJECTOR

THEORY OF OPERATION

When a piece of metal that is an electrical conductor is passed through a magnetic field, a small voltage is generated within the metal. The voltage thus generated, short-circuited within the body of the metal, causes currents to flow in it. These currents set up magnetic forces in opposition to the magnetic field. The opposing fields tend to resist the force which drives the metal.

Since various metals have different degrees of electrical conductivity, it is possible to detect one metal from another by noting the behavior of each in the magnetic field.

The speed of a metal coin rolling or falling through a magnetic field will be governed by the electrical conductivity of the metal. This is the basic principle used in the detection of coins in the 5 — 10 — 25c slug rejector.

5 — 10 — 25c SLUG REJECTOR

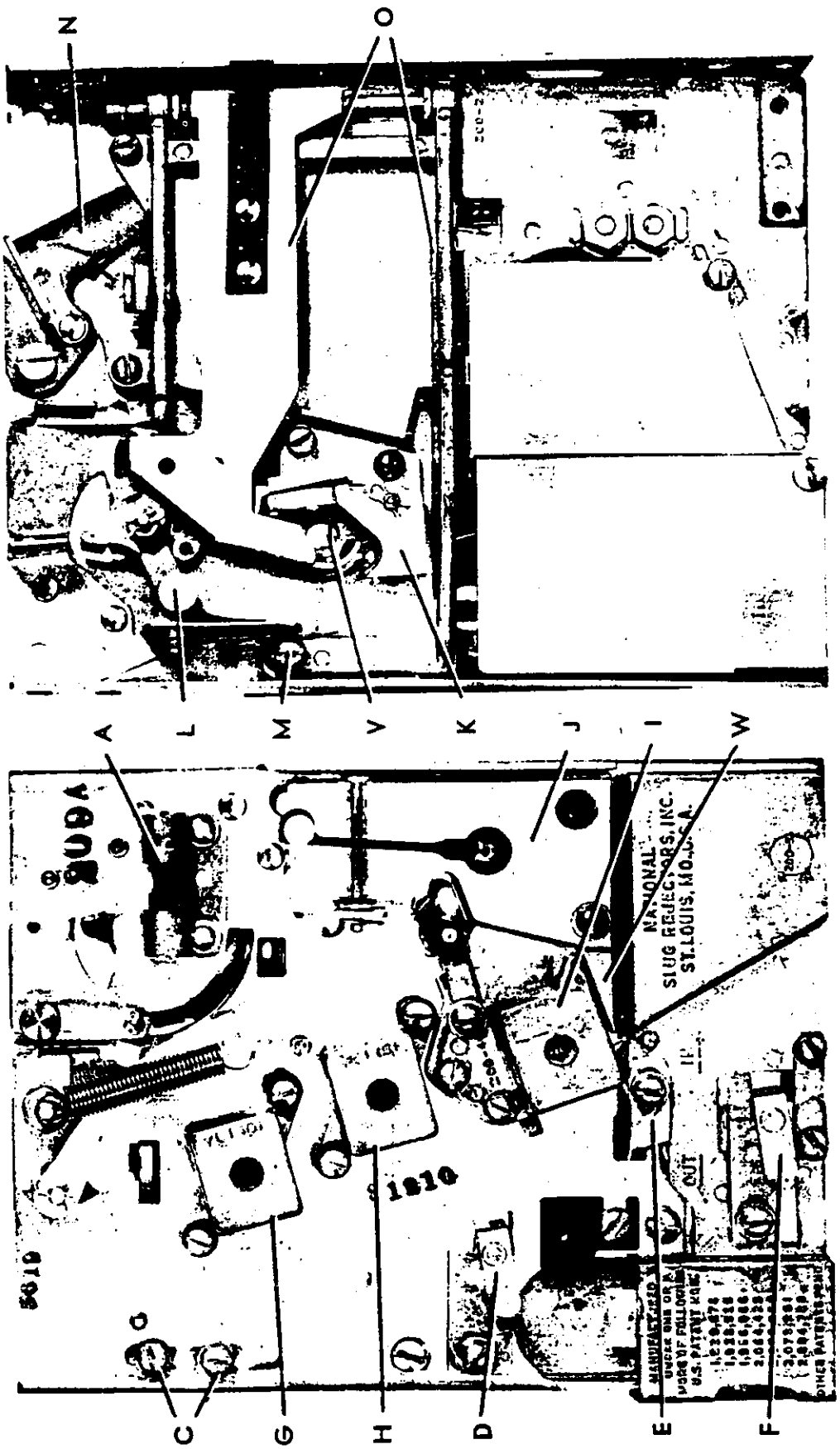


FIG. 1

LEVELING

IT IS ABSOLUTELY NECESSARY THAT THE SLUG REJECTOR BE LEVEL. The spirit level, (A), is provided for indicating the position of the rejector.

SERVICE NOTES

It is recommended that the magnets never be removed unless absolutely necessary. If they are removed, they should be handled with care and a soft iron "keeper" should be placed across the pole faces.

The 10c scavenger gate, (J), has an adjusting screw, (M), which is set to allow the gate to just close. If the screw is not far enough in, the gate will not close. If the screw is too far in, the rear scavenger gates, (O), will be held open.

The 5c undersize gauge, (K), must work freely at all times. If any adjustment is made, the unit should be tested with dimes as well as nickels since the undersize gauge wire, (V), on this gauge, also serves to deflect dimes into the proper path.

The rotary quarter sizer, (L), has no adjustment but should work freely at all times, turning easily with the weight of the quarter.

The scavenger wiper blade, (N), is effected by the adjustment of the deflector, (C), for fast moving 25c size slugs. It is important that this part move freely and returns to its normal position after the scavenger is released.

Use no lubricants.

KEEP THE REJECTOR CLEAN AND LEVEL. If it is necessary to dismantle the rejector for cleaning, be sure to replace washers under the screw heads so the screws will not protrude into the path of a coin.

Adjustments of the slug rejector are given in Figures 2 to 9, inclusive. These illustrations also show the paths of coins and slugs through the rejector. Before making any adjustments, study the illustrations so the reason for the adjustment is fully understood. Guess work and "cut and try" is seldom successful and usually results in unsatisfactory operation.

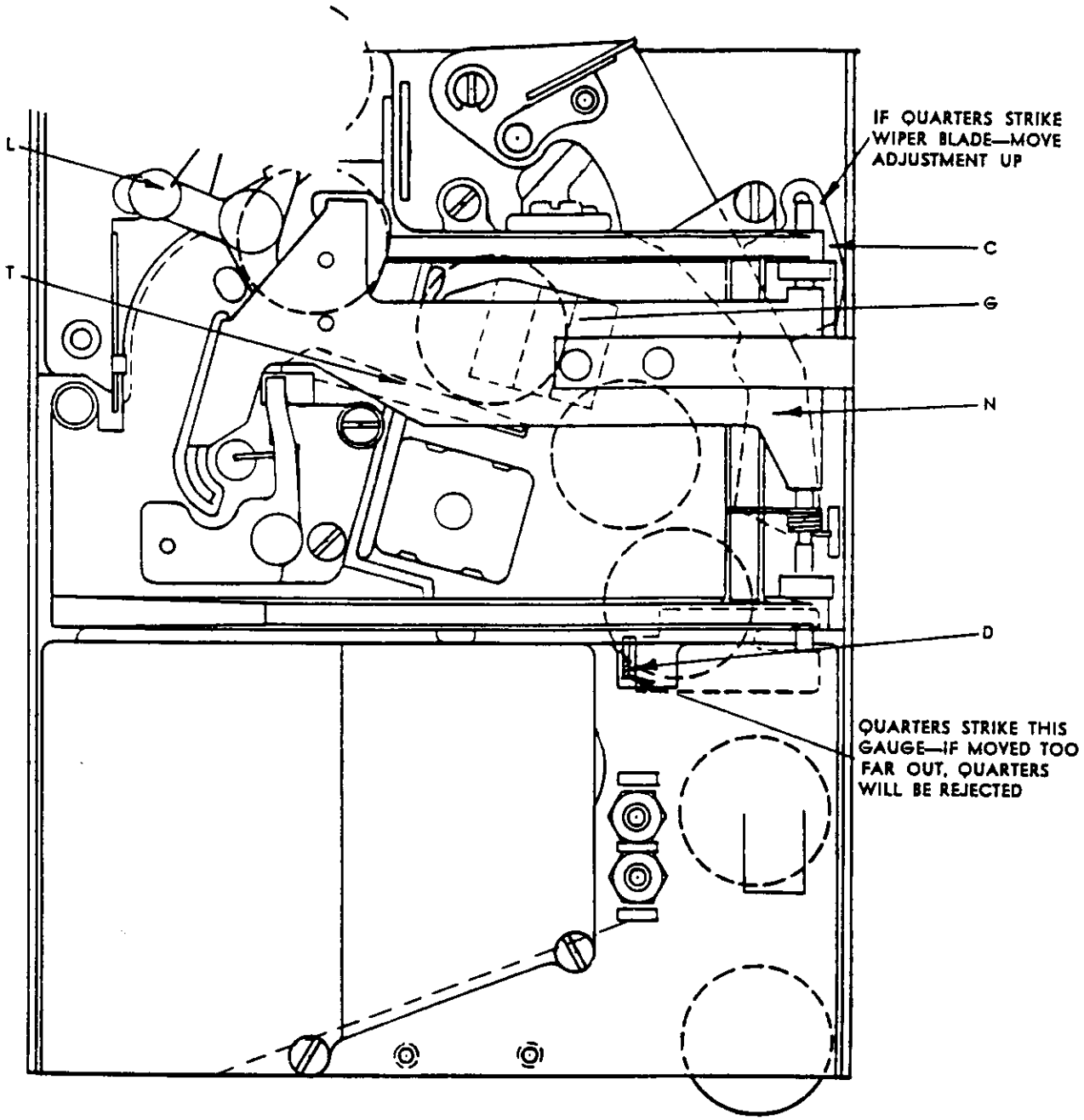


FIG. 2—PATH OF 25c COIN

Fig. 2 shows the path of a genuine 25 cent coin. The coin first drops in the arms of the rotary sizing gauge (Item L) which turns under the weight of a good coin and deposits it upon inclined rail (Item T). As the coin rolls down the rail past the 25c magnet (Item G) its speed is checked (by generated currents) and it leaves the rail at an angle that will permit it to miss the brass deflector (wiper blade) (Item N) and land with its center of gravity to the right of the copper deflector (Item D), thus it is accepted.

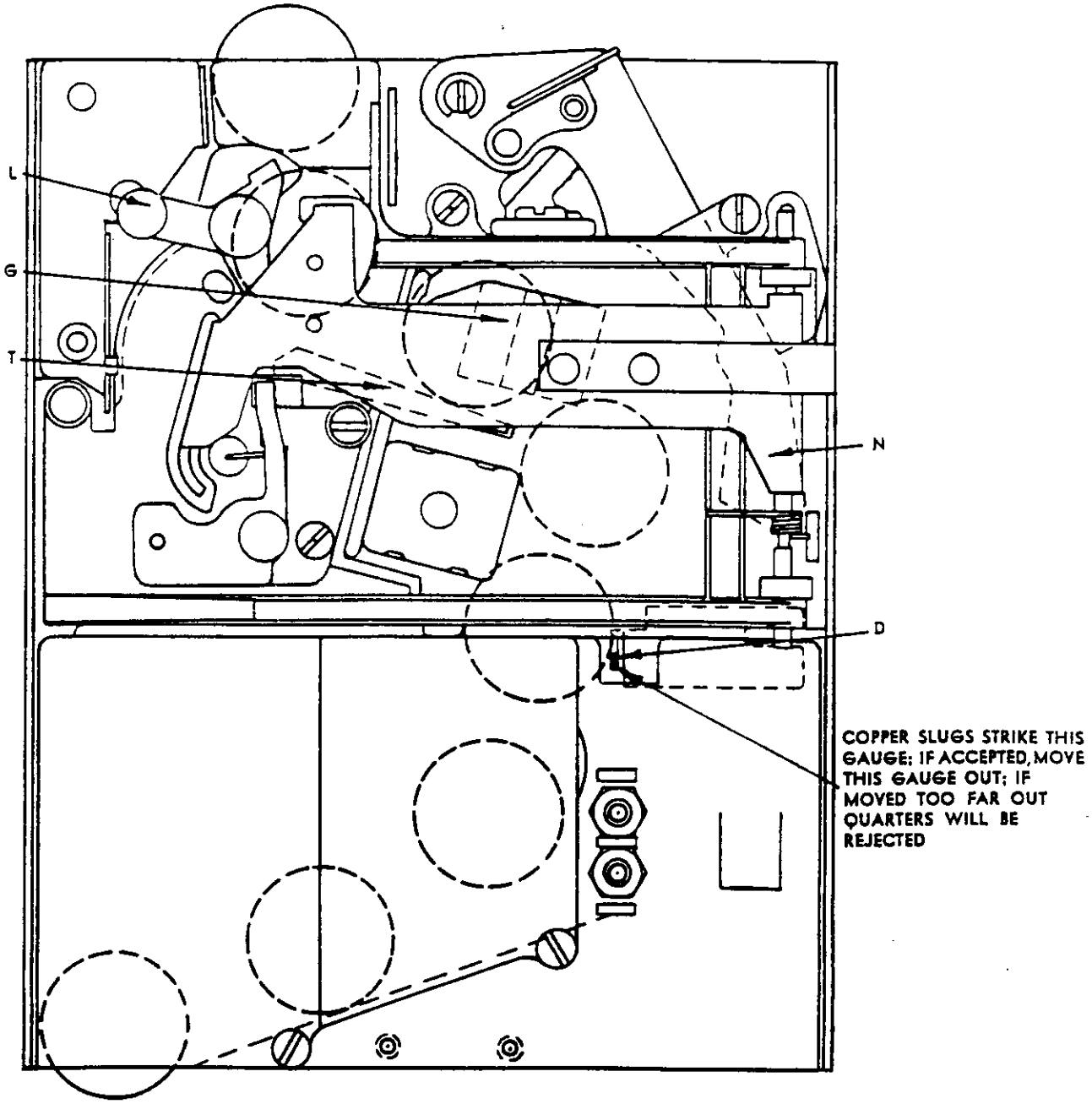


FIG. 3—PATH OF 25c SIZE COPPER SLUGS

A 25c size slug of copper follows the same path as the quarter until it reaches the magnet (Item G). Since copper is a very good electrical conductor, currents of a rather high order are generated. The copper slug will drop almost straight down at the end of the rail and strike the copper deflector (Item D) with its center of gravity to the left.

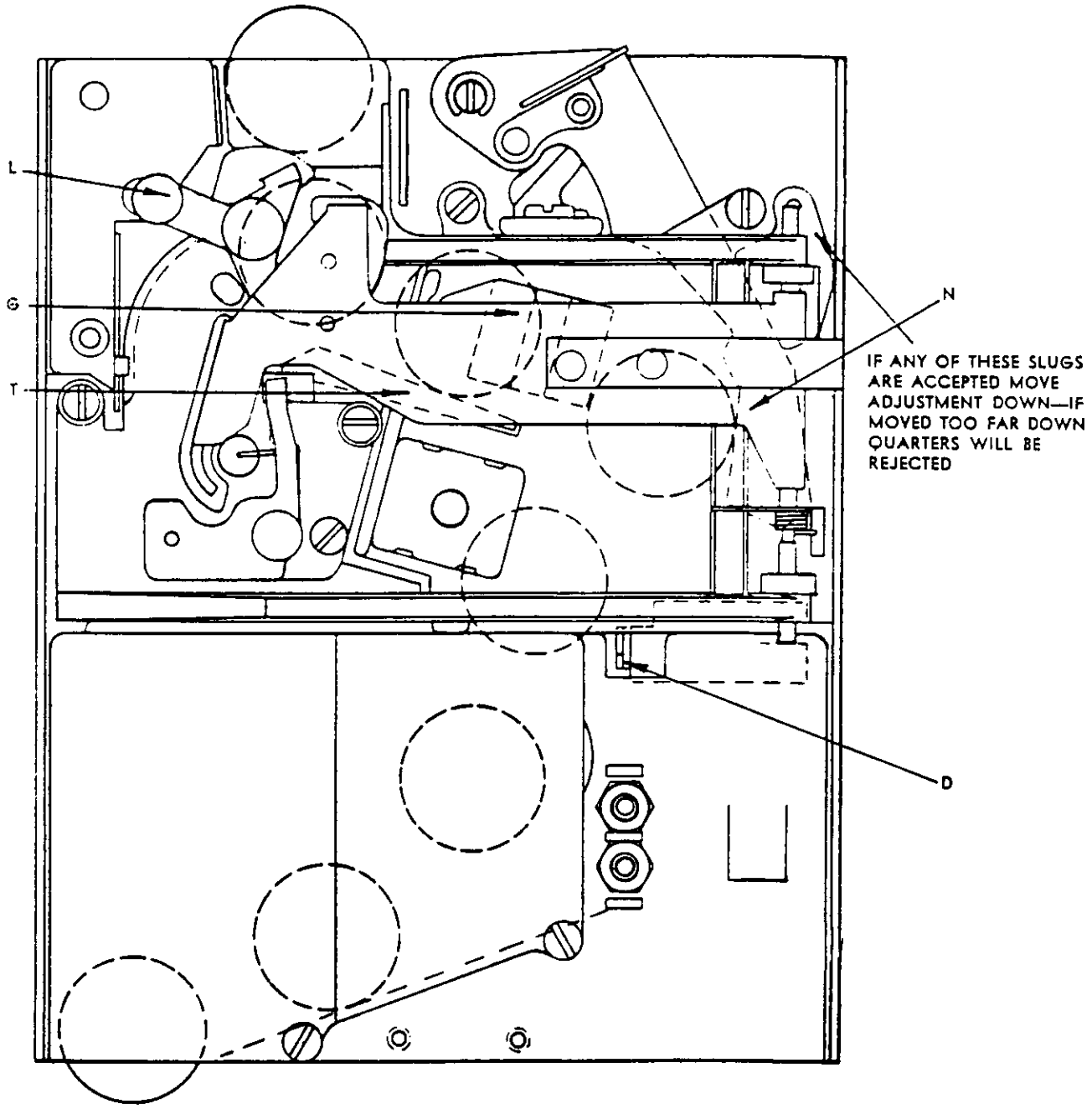


FIG. 4—PATH OF 25c SIZE BRASS, LEAD, ZINC, OR GERMAN SILVER SLUGS

25c size slugs of brass, lead, zinc or German silver have a higher electrical resistance than a quarter and as a result go through the magnetic field at a greater speed. This raises the angle in which they leave the rail to a point where they strike the brass deflector (wiper blade) (Item N) and are deflected to the left of the copper gauge (Item D).

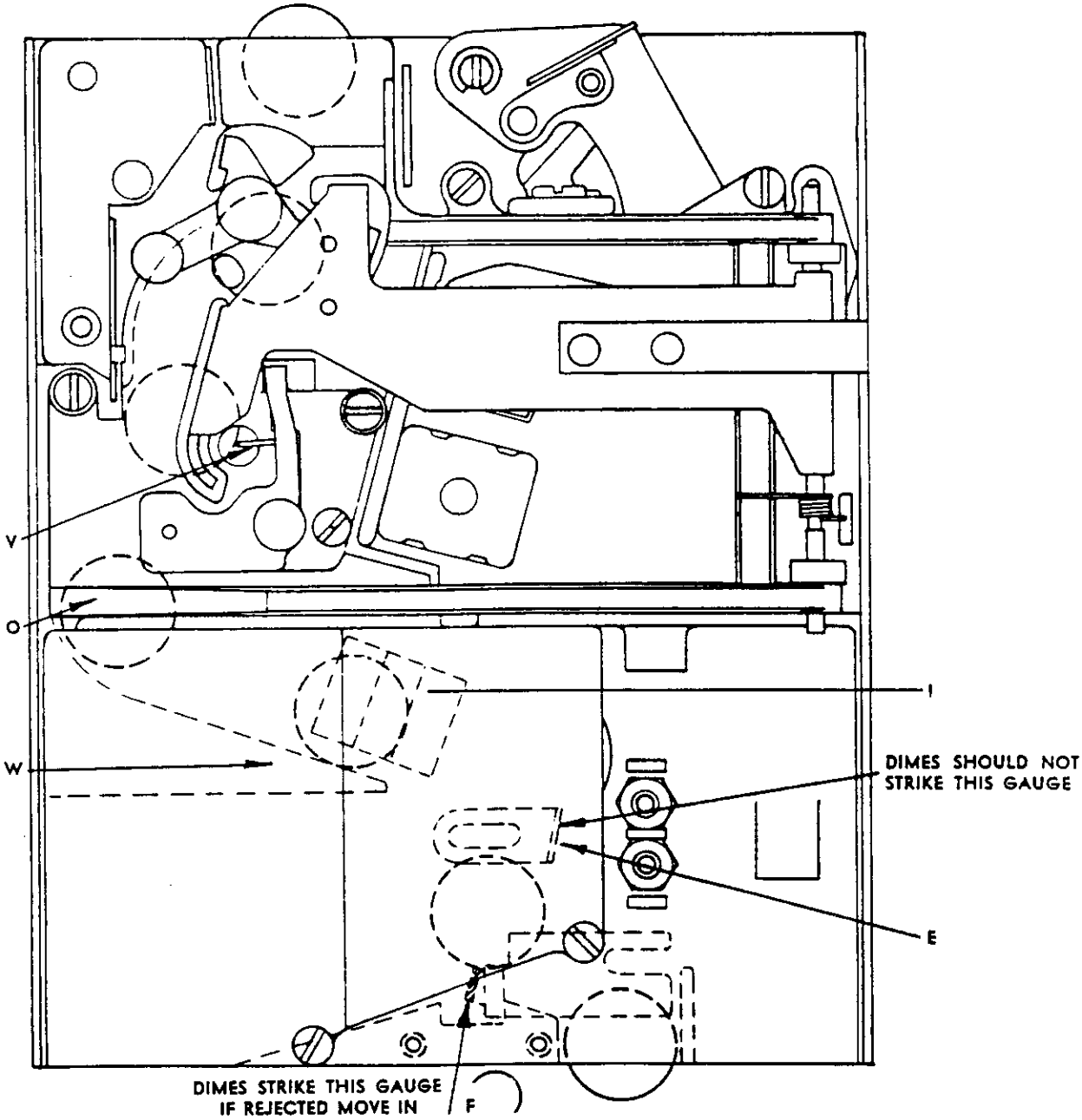
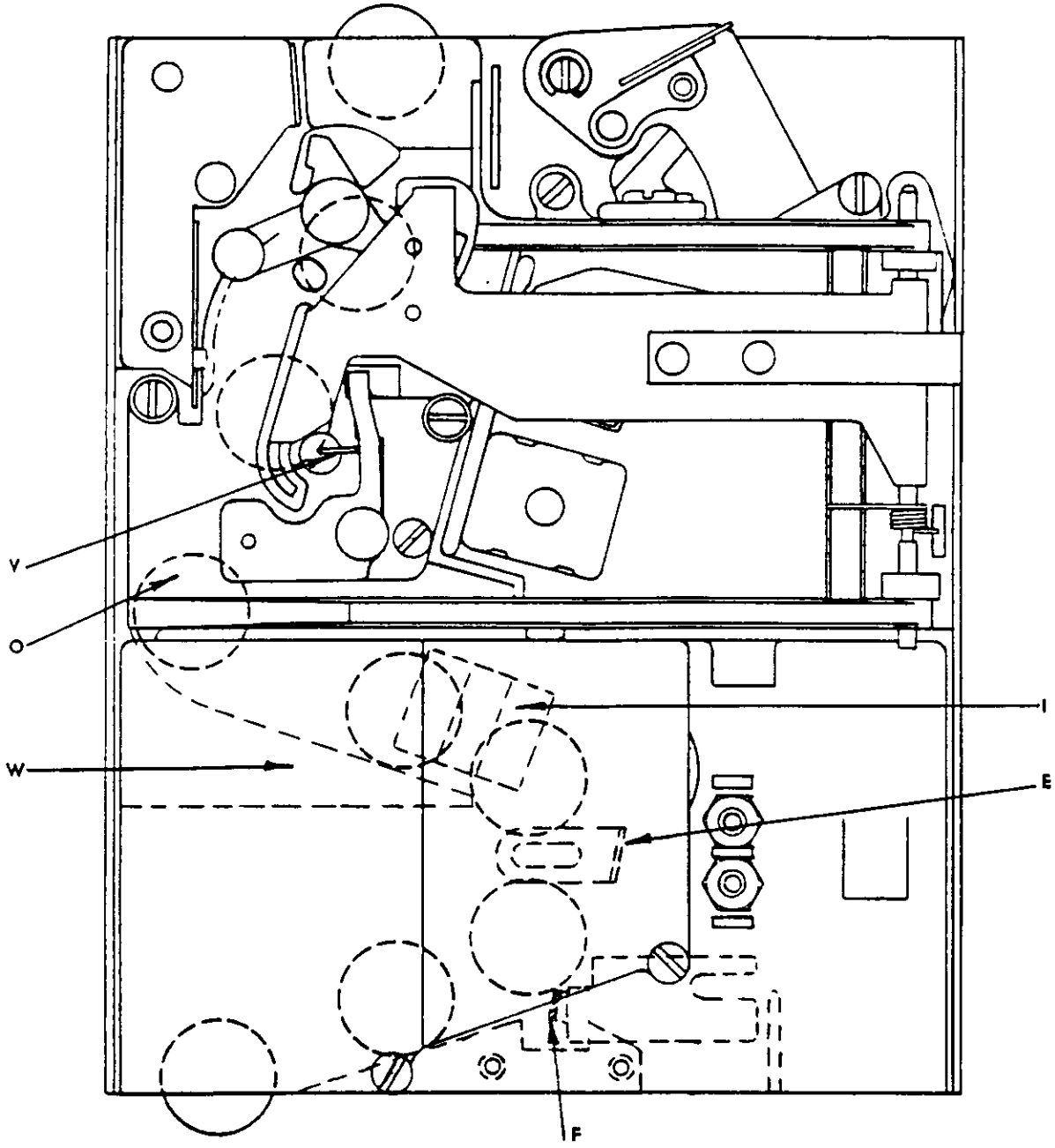


FIG. 5—PATH OF 10c COIN

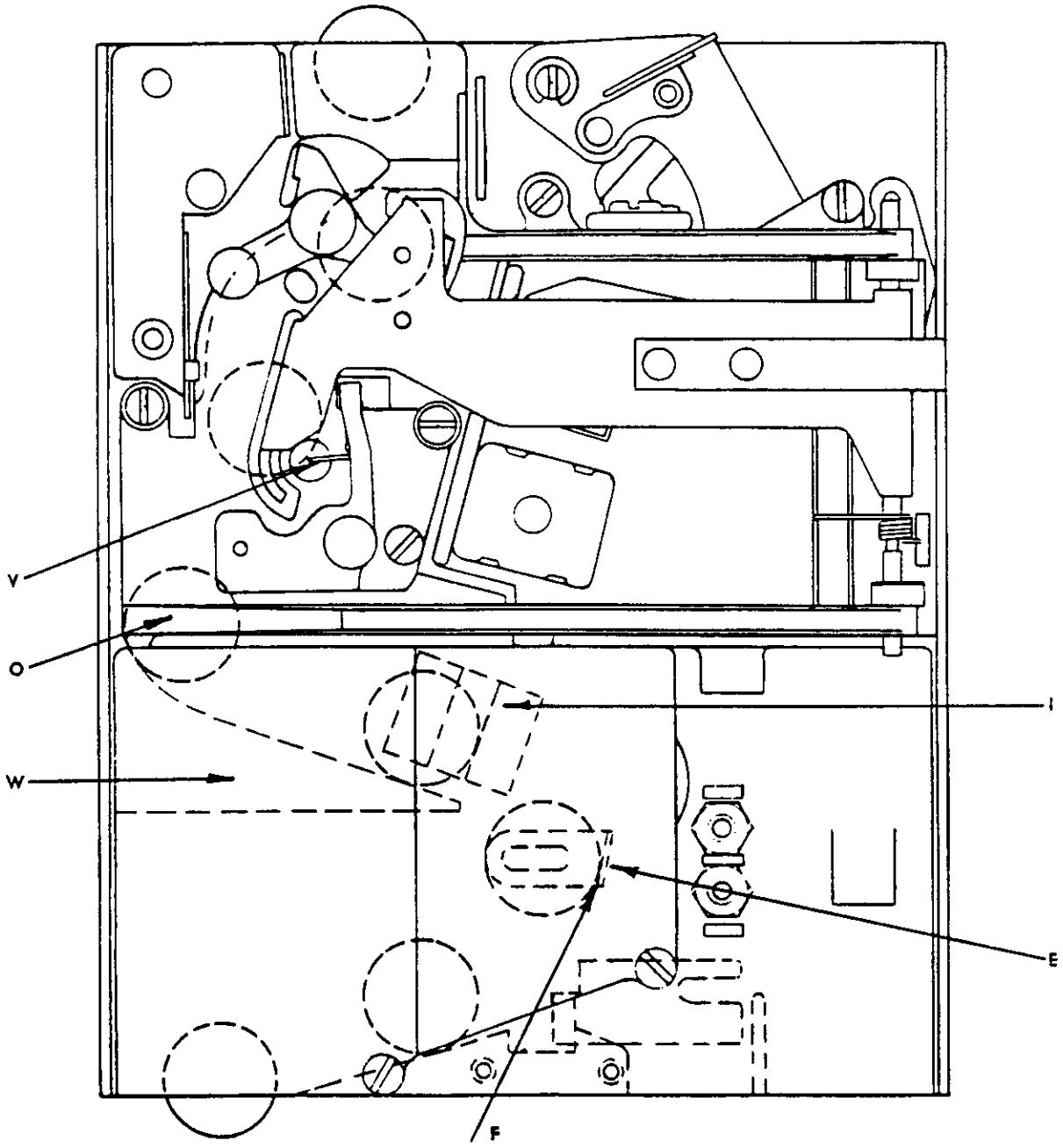
As a 10c size coin enters the slug rejector it passes through the 25c rotary gauge and to the left of the 5c undersize gauge wire (Item V) (oversize 10c slugs stop here). At the bottom edge of the scavenger gate (Item O) the dime is deflected through an opening in the frame plate of the unit and is deposited on the 10c rail (Item W) which is mounted on the bottom edge of the 10c scavenger gate (undersize slugs are rejected here) if the coin is of the correct size it rolls down the 10c rail (Item W), passing through the field of magnet (Item I) where its speed is retarded enough to prevent it from striking brass deflector (Item E) and will land on copper deflector (Item F) with its center of gravity to the right.



COPPER SLUGS STRIKE THIS GAUGE—IF ACCEPTED MOVE GAUGE OUT
IF MOVED TOO FAR OUT DIMES WILL BE REJECTED

FIG. 6—PATH OF 10c SIZE COPPER SLUGS

10c size slugs of copper follow the path of the dime to the magnet where it is retarded more than a dime due to the higher conductivity of copper. The copper slug as a result drops off the rail onto the copper deflector gauge (Item F) with its center of gravity to the left.



THESE SLUGS MUST STRIKE THIS GAUGE TO BE REJECTED

FIG. 7—PATH OF 10c SIZE LEAD, ZINC, BRASS, OR GERMAN SILVER SLUGS

10c size slugs of brass, lead, zinc or German silver also pass the magnet (Itm I) via the route of a good 10c coin, here again the spurious coins having a higher electrical resistance will leave the rail (Item W) at a higher rate of speed and strike the brass deflector (Item E).

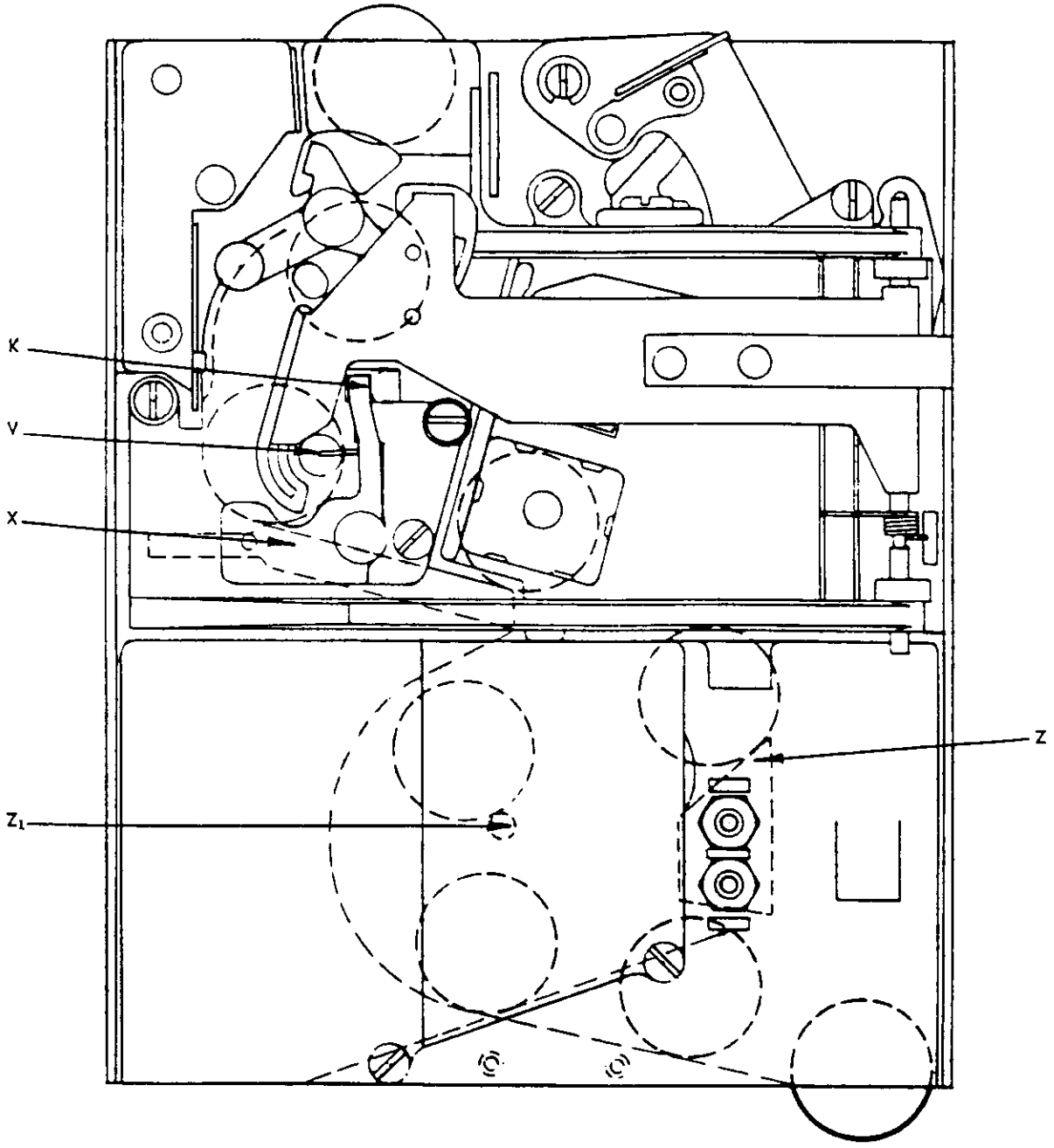


FIG. 8—PATH OF 5c COIN

The 5c coin will pass through the 25c rotary gauge and engage the 5c undersize gauge lever (Item K). If the coin is of the correct diameter, lever K will turn slightly on its pivot and withdraw undersize gauge wire (Item V) from the path of the coin to permit it to drop on the rail (Item X). The genuine 5c coin, having an unusually high resistance will roll down rail X at a high rate of speed striking the anvil (Item Z) from which it will rebound with enough force to clear the barrier stud (Item Z1). Thus it is shown that 5c coins are tested for hardness as well as electrical resistance.

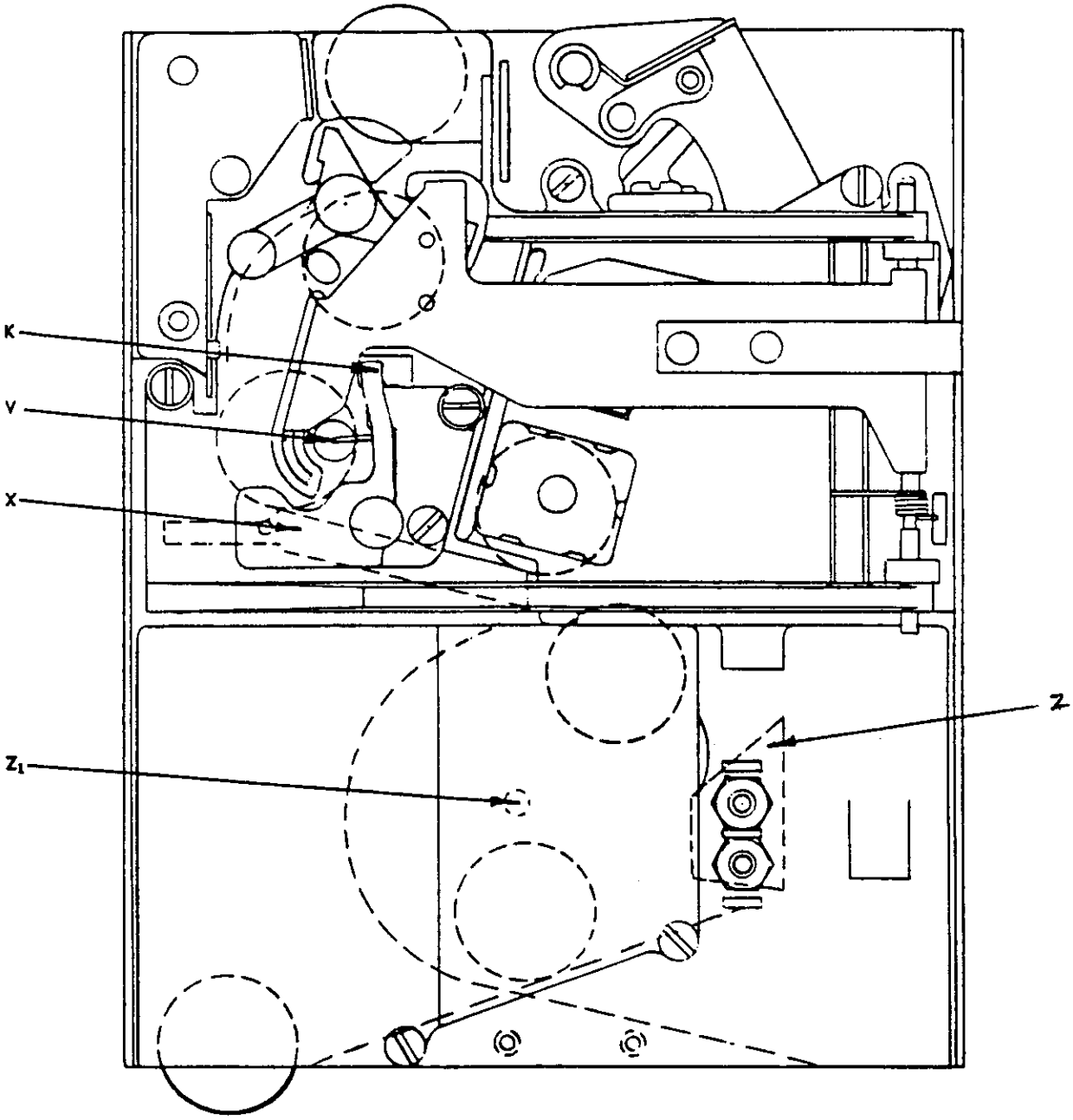


FIG. 9—PATH OF 5c SIZE BRASS, ZINC OR COPPER SLUGS

5c size slugs of brass, copper or zinc all have electrical resistance much lower than the alloy of which nickels are made and as a result will be slowed down in the magnetic field, this will cause all such spurious coins to strike the anvil too low or miss it entirely and thus be rejected.