No. 734,176. PATENTED JULY 21, 1903.

R. B. HAZLETT.

ELECTRICAL COIN INDICATING DEVICE.

APPLICATION FILED JAN. 30, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

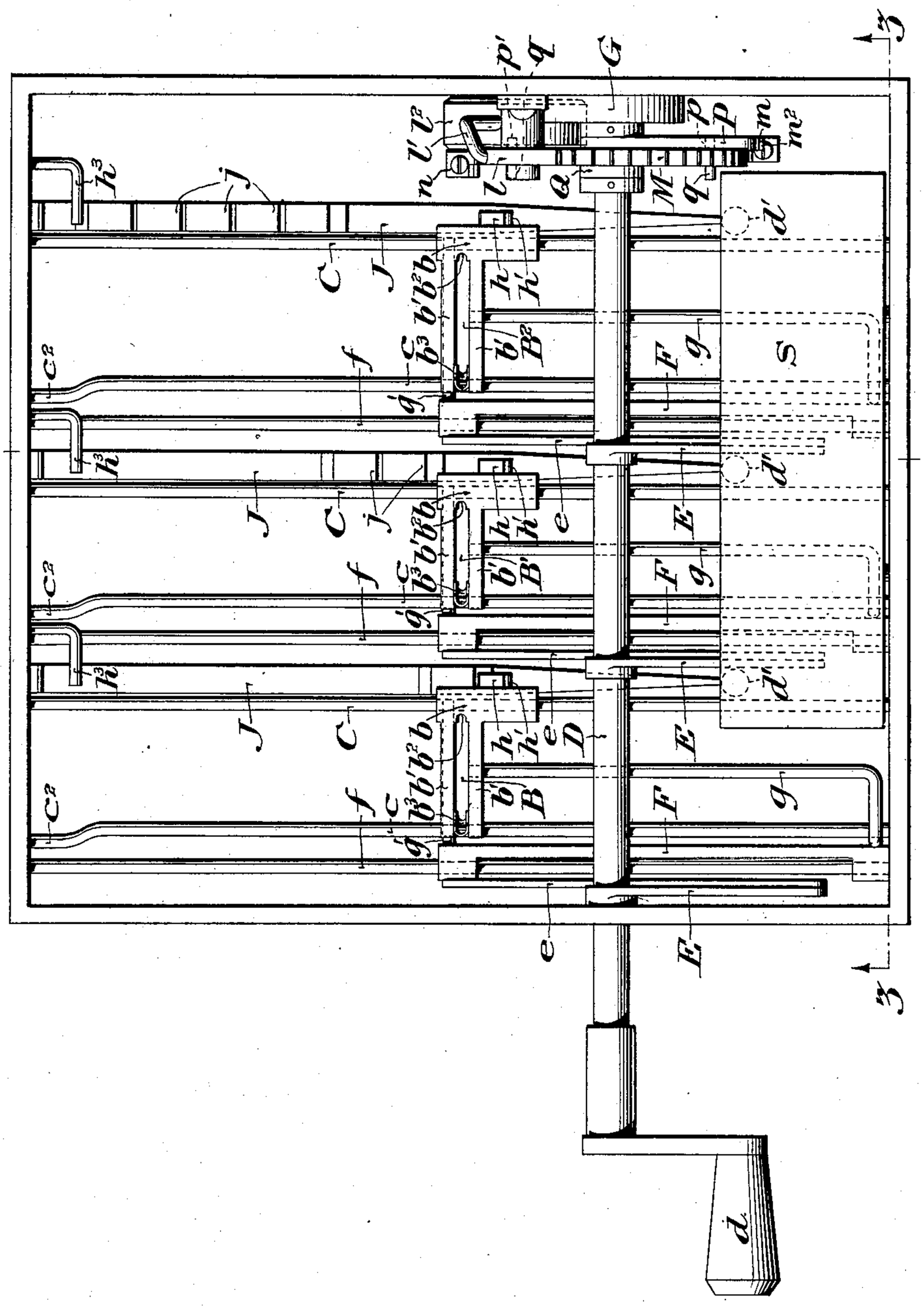

FIG. 1.

WITNESSES:

Arthur E. Page Jr.

James H. Bell

INVENTOR:

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by his attorneys

Pelley & Page

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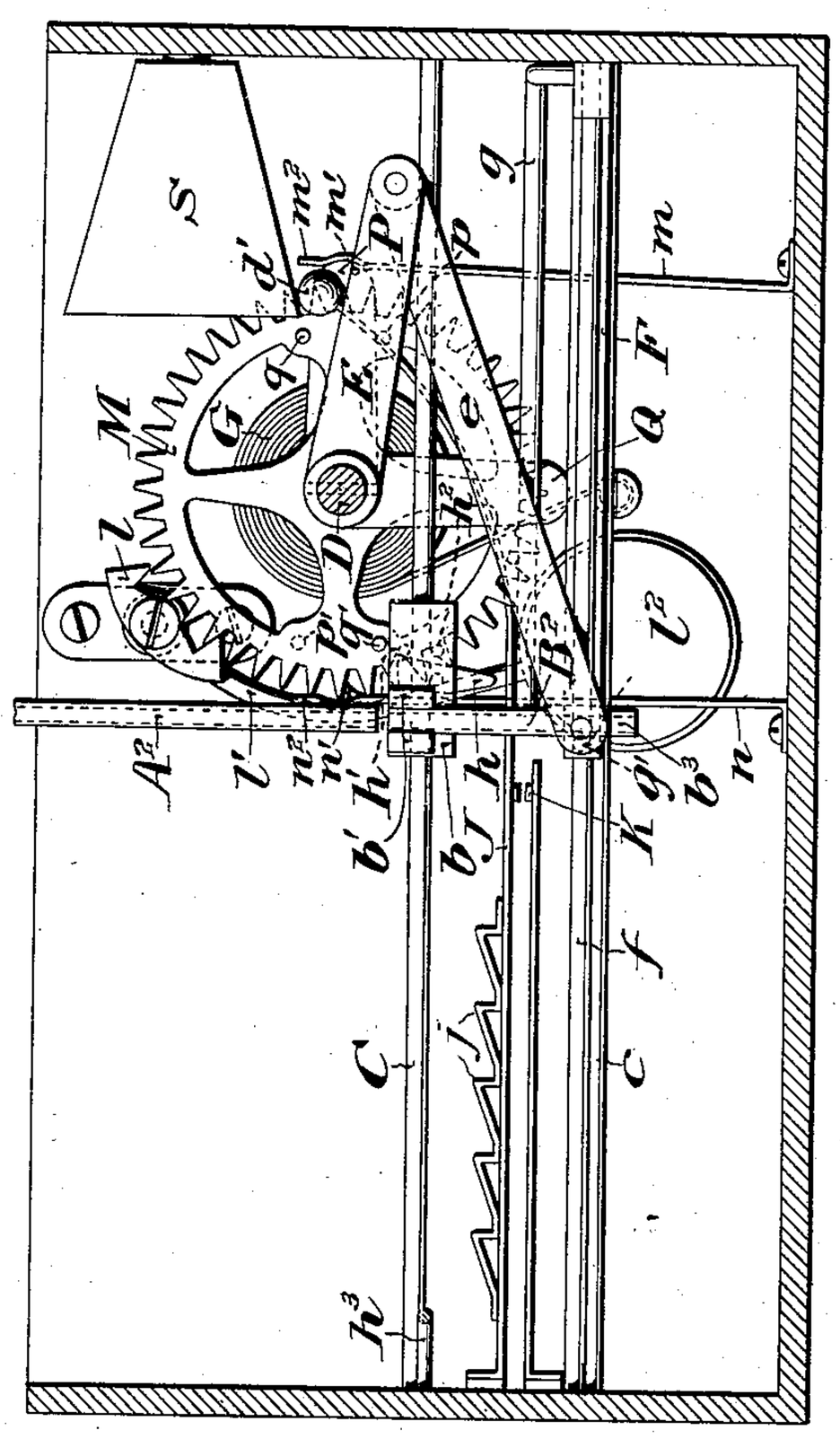
NO MODEL. 3 SHEETS—SHEET 2.

FIG. 2.



WITNESSES:

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NO MODEL. 3 SHEETS—SHEET 3.

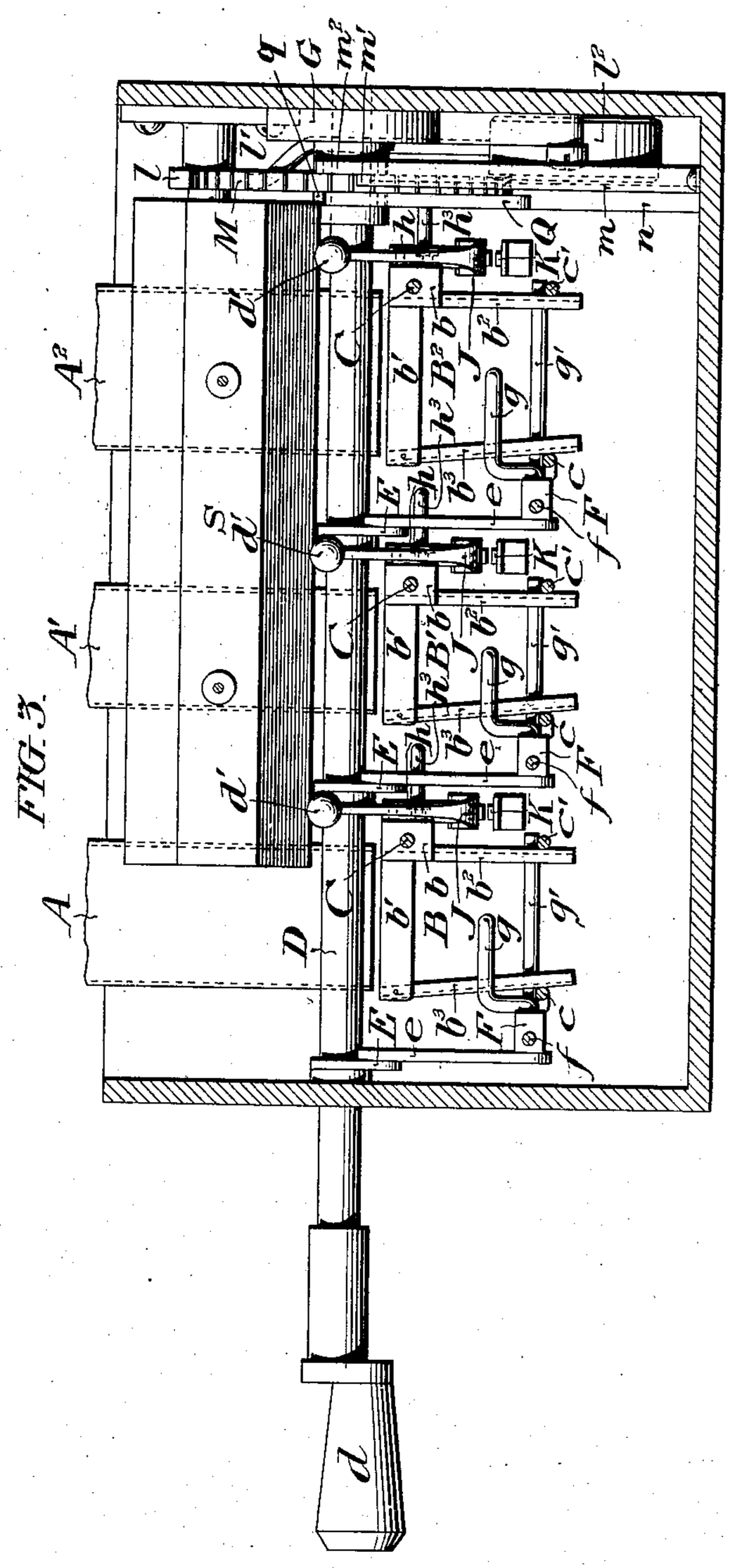

FIG. 3.

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No. 734,176. Patented July 21, 1903.

UNITED STATES PATENT OFFICE.

ROMEO B. HAZLETT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO CHARLES E. WILSON, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRICAL COIN-INDICATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 734,176, dated July 21, 1903.

Application filed January 30, 1902. Serial No. 91,844. (No model.)

To all whom it may concern:

Be it known that I, ROMEO B. HAZLETT, a citizen of the United States, residing in the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electrical Coin-Indicating Devices, (Case C,) whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to an electrical coin-indicating device by means of which the deposit of any particular coin within it is electrically indicated at a distance therefrom.

My invention is applicable to the collection of tolls at a pay telephone-station, but it will be understood that its application is not thus limited, as it may be used to indicate at a distance the deposit of a particular coin for whatever purpose the collection of the coin or its indication is desired.

In general my device consists of a series of coin-pockets adapted to receive current coins of the different denominations and which when any one has been filled with the coin which it is adapted to receive may be so moved as to effect the making and breaking of an electric circuit, the number of such disturbances of the circuit being so arranged as to indicate at any point of the circuit which of the coin-pockets has moved, and consequently what coin has been deposited.

In the accompanying drawings, Figure 1 is a plan view of my device. Fig. 2 is a longitudinal vertical section along the line 2 2, Fig. 1. Fig. 3 is a vertical cross-section along the line 3 3, Fig. 1. Fig. 4 is a detail view of the tappet and stops carried by the sliding block.

The apparatus is understood to be inclosed in a box or other suitable receptacle which is fitted with slots capable of receiving, respectively, nickels, dimes, and quarters or other current coins. Slotted coin-tubes leading from these slots are shown in the drawings, (lettered, respectively, A A′ A².) Immediately contiguous to and in alinement with the ends of these tubes are three corresponding sliding coin-pockets B B′ B². The pockets are all alike in construction, so that a description of the pocket B will suffice to describe them all. A slide-block *b* has two horizontal arms *b′ b′*, between which the coin will pass. Below one end of the slot thus formed a vertical grooved side bar b^2 is made fast to the slide-block *b*. Below the other end of the slot a vertical grooved side bar b^3 is pivoted at its upper end between the arms *b′ b′*. A straight rod C extends from the front to the back of the apparatus mounted in its housings. Slide-block *b* has a corresponding aperture cut through its length, through which this rod is passed, so that the slide-block, and with it the coin-pocket, may run freely back and forth upon the rod. At a lower level two other rods or wires *c c′* are mounted parallel to the rod C, forming a runway between which the lower ends of the side bars b^2 b^3 are held as the coin-pocket slides back and forth. Rod *c′* being immediately beneath rod C, the edge of the grooved bar b^2 bearing against it holds the coin-pocket always in a horizontal position. The distance between the rods *c′* and *c* is so spaced that the lower end of the side bar b^3 is normally held too close to side bar b^2 to allow a coin which has been introduced into the pocket and which is resting between the two grooved bars b^2 b^3 to pass out from their lower extremities and fall. At the extreme back of the apparatus, however, rod *c* has a short outward deflection c^2, where it is farther from rod *c′*, so that when the coin-pocket is pushed back to this point at the extremity of its play any coin which it contains will be allowed to drop from the pocket.

A rotating shaft D is mounted in the housings of the apparatus transverse to the slide-rods, which have been mentioned. It has a handle *d* at its projecting extremity and the following parts and connections, whereby when a coin has been deposited in the pocket B rotation of the shaft causes the pocket to be slid to the back of its play, where it may drop its coin, while reverse rotation of the shaft will restore the pocket B to its initial position beneath the coin-slot A.

An arm E is fixed upon the shaft, to the extremity of which is pivoted a link *e*, the other end of which is pivotally attached to a slide-bracket F, which runs freely on a slide-rod *f*, which is parallel to rod C and, like it, mounted between the housings of the apparatus. To this slide-bracket is attached a bent wire

g, the free end of which when the slide-bracket is in its extreme forward position reaches nearly to the plane of the coin-pocket. Furthermore, it is so centered that if there be a coin resting in the pocket the wire when thrust back by rotation of shaft D will strike the coin, and thereby force the pocket back with it, while if there be no coin within the pocket the wire will pass freely back between the side bars b^2 b^3 of the pocket without touching it, and therefore without effecting any movement of it. The slide-bracket F also carries a cross-wire g', passing behind the side bars b^2 b^3, and thus engaging them when the slide-bracket moves forward and drawing the pocket to its place beneath the coin-tube.

Near the right-hand end of the shaft D the inner extremity of a coiled band-spring G is made fast to it, the outer end of the spring being made fast to a post fixed against the side of the apparatus. The rotation of the shaft D, which is occasioned by depressing the handle, is against the torsional effect of this spring.

Upon considering the parts thus described it will be observed that if the pocket B is empty rotation of shaft D, although it moves the slide-bracket F back and forth, has no effect upon the coin-pocket; but, on the other hand, if the proper coin has been deposited therein if the shaft be rotated by depression of the handle the coin-pocket carrying the coin will be driven to the rear end of its stroke, at which point it is free to drop its coin, and thereupon if the handle be released the torsion of the spring G returns it to its former position, bringing the empty pocket again into line with the slotted coin-tube A.

It will be understood that the coin-pockets differ only in respect to their size, so as to be adapted to different coins, so that whichever one or ones contain coins will be caused to reciprocate when the handle is rotated, while the empty ones remain stationary. In order that the reciprocation of the pockets may be electrically registered, I provide the following connections: On the side of the slide-block b triangular tappet h is pivoted, its large upper end slightly overbalancing its dependent point. The motion of the tappet is limited in one direction by a stop-pin h', against which it comes to rest in an almost vertical position when its lower extremity is pushed back. Its motion is limited in the other direction by a stop-pin h^2, against which it comes to rest in a nearly horizontal position. A spring-bar J is mounted in line with the path of this tappet as it reciprocates and has teeth or projections j upon its upper surface in position to come into contact with the depending point of the tappet. When slide-block b is pushed back, the point of the tappet coming into contact with the fixed tooth is pushed forward, so as to tilt the tappet to its horizontal position, so that it completes its backward motion without exerting pressure on the spring-bar J. Upon reaching the end of this stroke it is pushed into vertical position again by contact with the wire h^3. During the return motion the tappet is upright, resting against stop-pin h', and can no longer yield to the projection. Consequently it depresses the spring-bar J as many times as there are projections upon it. Immediately below the spring-bar J is an electrical contact-point K, which, with a corresponding point fixed to the spring-bar, forms an electrical switch. A similar spring-bar and electrical switch are situated beneath each of the lugs pivoted to the sides of the slide-blocks of the coin-pockets, the only difference between them being the number and position of the projections upon the spring-bars. All of these electrical switches thus formed are inserted in parallel within an electrical circuit, which is carried to whatever point it is desired that registration or indication of the operations of the coin-pockets shall be effected.

For the sake of convenience it is best that the projections upon the different spring-bars shall correspond to the value of the coins. Thus the spring-bar corresponding to the pocket adapted for the deposit of a five-cent piece contains but one projection, that corresponding to the ten-cent pocket contains two projections, and that corresponding to the twenty-five-cent pocket contains five projections. The projections on the several spring-bars are preferably so arranged, as shown in the drawings, that the projections on one bar will not be in line with the projections on any other bar. With this arrangement if two coins—as, for instance, a ten-cent piece and a twenty-five-cent piece—are deposited in their respective pockets and the device operated the tappets of the respective pocket will operate their respective spring-bars to close the circuit twice in the one case and five times in the other case, thus closing the circuit seven times in all, notifying the operator at the central station that thirty-five cents has been deposited. From the coöperation of these parts it follows that by the deposit of any coin or coins into their proper coin-pockets the making and breaking of the electrical circuit to which the apparatus is connected will occur as many times as the coin-pockets contain the value of five cents. It is also useful to have in connection with the apparatus means whereby the deposit of a coin is indicated not only electrically, as has been explained, but also by means of audible signal which may be heard by the person operating the device. To this end a resonator or bell S is made fast to the apparatus, and each one of the spring-bars J is provided at its end with a small clapper d', the clapper normally resting close to but not in contact with the bell, so that upon each depression of any one of the spring-bars a tap is thereby given by the clapper upon the bell. This is useful not only for the purpose of enabling the person using the

device to know that it is correctly operating, but when used in connection with a public pay-station it acts as a check upon or supplement to the electrical connections. By reason of the telephonic connections the taps of the bell may be heard by the operator at the central station, and in case the electrical connections for recording the movements of the coin-pockets are out of order the bell-taps may be used as a substitute therefor.

In order to prevent tampering with the device by improperly moving the handle backward and forward short distances, so as to cause a repetition of the contacts without deposit of a coin, I have provided devices which only allow rotation of the shaft in one direction until a complete semirevolution has been effected, whereupon rotation is only allowed in the other direction until the shaft returns to its initial position. To this end an escapement-wheel M is made fast to the shaft, which wheel is made subject to regulation in three respects, as follows: An ordinary escapement-anchor l is pivoted in such relation to the escapement-wheel as to control its motion. The lower edge of the escapement-anchor carries an arm l' with a weight l^2 on the end thereof. The escapement thus provided prevents rapid rotation of the shaft in either direction, and, furthermore, the vibration of the weight l^2, which is thereby occasioned, is useful in occasioning a jarring of the apparatus during the rotation of the shaft, which prevents the accidental sticking of the coin within the pocket.

In front of the escapement-wheel M is mounted a spring-detent m, having a detaining-point m' and also alongside thereof an upward extension m^2. This detent prevents rotation of the shaft D in the direction occasioned by the depression of the handle unless its point is pressed back out of reach of the teeth of the escapement-wheel by means of the swinging arm P coming into contact with the extension m^2.

In the rear of the escapement-wheel M is mounted a spring-detent n, having a detaining-point n' and also alongside thereof an upward extension n^2. This detent prevents rotation of shaft D in the direction occasioned by the opposite motion of the handle unless its point is pressed back out of reach of the teeth of the escapement-wheel by means of swinging arm Q coming into contact with the upward extension n^2.

The operation of the device as a whole is as follows: A coin being deposited in the proper pocket, the handle d is pressed downward, rotating the shaft D in the same direction, causing, through the arm E and link e, the slide-bracket F to move rearward. As the slide-bracket moves rearward the end of one of the bent wires g will strike the coin in the pocket and will cause the pocket to move rearward. As the pocket moves rearward the tappet h, carried by the slide-block b, will as it strikes the projection j of the spring-bar J be turned against the stop-pin h^2 and will pass over the projections without depressing the bar. As the pocket reaches the outward deflection c^2 of the rod c the lower end of the pivoted side bar b^3 is moved outward, permitting the coin to drop from the pocket. As the pocket reaches the rearward limit of its stroke the tappet h strikes the end of wire h^3 and is turned to horizontal position with its upper end resting against the stop-pin h'. This movement of the several parts is effected against the torsional force of spring G, and the movement is regulated by the action of the escapement-anchor l on the toothed wheel m, which is held from backward movement by the spring-detent n. When this movement is complete and not until it is complete, the detent n is pressed back out of engagement with the teeth of wheel M by the arm Q, as above described, and the detent m is by the movement of arm P permitted to engage the teeth of wheel M. The handle d being released, the shaft D is rotated by the spring G in a direction opposite to its first rotation and through the arm E and link e pulls the slide-bracket F toward its initial position. The cross-wire g' of the slide-bracket engages the rear of the pocket, causing the pocket to return with the slide-bracket toward its initial position. In this return movement the tappet h strikes the projection j on the spring-bar J, forcing the free end of the bar downward to close the circuit and immediately releasing the spring-bar as the tappet passes over the projection. As the spring-bar is thus permitted to resume its normal position the clapper d' strikes the bell S. The number of projections on the spring-bar J will determine the number of times the circuit is closed, and of course the bell will be struck as often as the spring-bar is pressed down and released. In case two or more coins of different denominations are deposited each in its proper pocket all of the pockets containing coins will be forced back and in returning will each through its tappet h effect one or more closures of the circuit, depending upon the denomination of the coin and the corresponding number of projections on the spring-bars. By reason of the fact that the projections on the several spring-bars are not in line with each other, as above described, the closing of the circuit by the different spring-bars will take place at different times.

P and Q are arms mounted freely upon the shaft, one on each side of the escapement-wheel. On the side facing arm P two pins $p\ p'$ are inserted in the side of the escapement-wheel, and likewise on the side facing arm Q two pins $q\ q'$ are inserted in the escapement-wheel. The operation of these two detents is as follows: In the position of the drawings it will be seen that the front detent m is pressed away from the escapement-wheel by the swinging arm P, which is in a horizontal position, so as to engage the

extension m^2. The swinging arm Q is hanging freely below the shaft, so that the detent n is in engagement with the teeth of the escapement-wheel. Under these circumstancss the shaft can only rotate in the direction occasioned by the depression of the handle, any reverse motion being prevented by detent n. This condition continues until a half-revolution is completed, whereupon swinging arm Q, which has been picked up by the pin q during the rotation of the wheel M, is brought into contact with the extension n^2 of detent n, freeing it from engagement with the escapement-wheel. At the same moment, however, detent m is placed in engagement with it by reason of the depression of arm P by contact with pin p'. Immediately, therefore, further rotation of the shaft in the same direction is prevented by detent m. Rotation of the shaft in the opposite direction, however, is permitted, and this permission continues until a half-revolution has again been completed, whereupon pin p again picks up arm P and pushes detent m out of engagement with the escapement-wheel, and simultaneously pin q' pushes arm Q out of engagement with detent n, restoring the parts to the original position.

Having thus described my invention, I claim—

1. In a coin-indicating device, the combination of a slideway; a coin-pocket resting therein; a parallel slideway carrying a sliding piece with connections to a rotating shaft whereby rotation of the shaft reciprocates the sliding piece; connections whereby reciprocation of the sliding piece is communicated to the coin-pocket provided the proper coin is deposited therein, but otherwise not; and an electrical circuit including a switch which is actuated by the reciprocation of the coin-pocket, substantially as described.

2. In a coin-indicating device the combination of a slideway, a coin-pocket arranged to slide freely thereon, a slide-rod, a slide-bracket, a rotary shaft, connections between the shaft and slide-bracket by which the latter is reciprocated on the slide-rod by rotation of the shaft, means by which the shaft may be manually rotated in one direction, spring mechanism for rotating the shaft in the other direction, means carried by the slide-bracket for engaging a coin in the coin-pocket to cause the coin-pocket to move with the slide-bracket when the shaft is manually operated, means also carried by the slide-bracket for engaging the coin-pocket to cause it to move with the slide-bracket when the shaft is rotated by the spring mechanism, and an electric circuit including a switch arranged to be operated by the coin-pocket; substantially as described.

3. In a coin-indicating device, the combination of a slideway, a coin-pocket arranged to slide freely thereon, a slide-bracket, a rotating shaft, connections between the shaft and slide-bracket by which the latter is reciprocated on the slide-rod by rotation of the shaft, means by which the shaft may be manually rotated in one direction, spring mechanism for rotating the shaft in the other direction, escapement mechanism connected with the shaft arranged to regulate its rotation in both directions, means carried by the slide-bracket for engaging a coin in the coin-pocket to cause the coin-pocket to move with the slide-bracket when the shaft is manually operated, means also carried by the slide-bracket for engaging the coin-pocket to cause the latter to move with the slide-bracket when the shaft is rotated by the spring mechanism, and an electric circuit including a switch arranged to be operated by the coin-pocket; substantially as described.

4. In a coin-indicating device the combination of a series of parallel slideways, a coin-pocket for each slideway arranged to slide freely thereon, a series of slide-rods parallel with the slideways, a slide-bracket for each of the slide-rods each slide-bracket carrying a push-rod arranged to engage a coin in one of the coin-pockets, means common to all of the slide-brackets for reciprocating them on the slide-rods to effect reciprocation of any coin-pocket which contains a coin, and an electric circuit including a series of switches each arranged to be actuated by the reciprocation of one of the coin-pockets; substantially as described.

In witness whereof I, the said ROMEO B. HAZLETT, have hereunto signed my full name with the attestation of two witnesses.

ROMEO B. HAZLETT.

Witnesses:

JAMES H. BELL,

C. BRADFORD FRALEY.