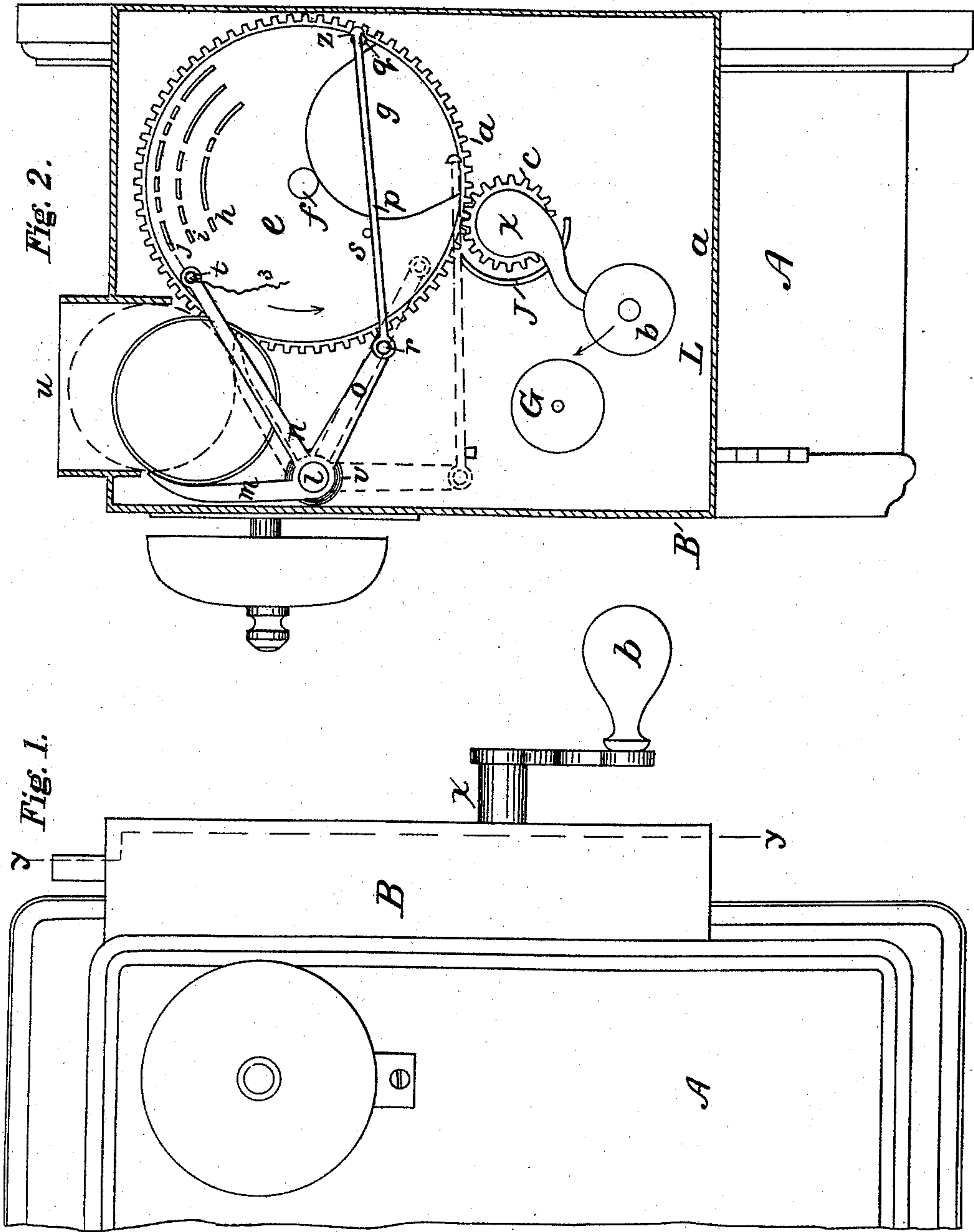


(No Model.)

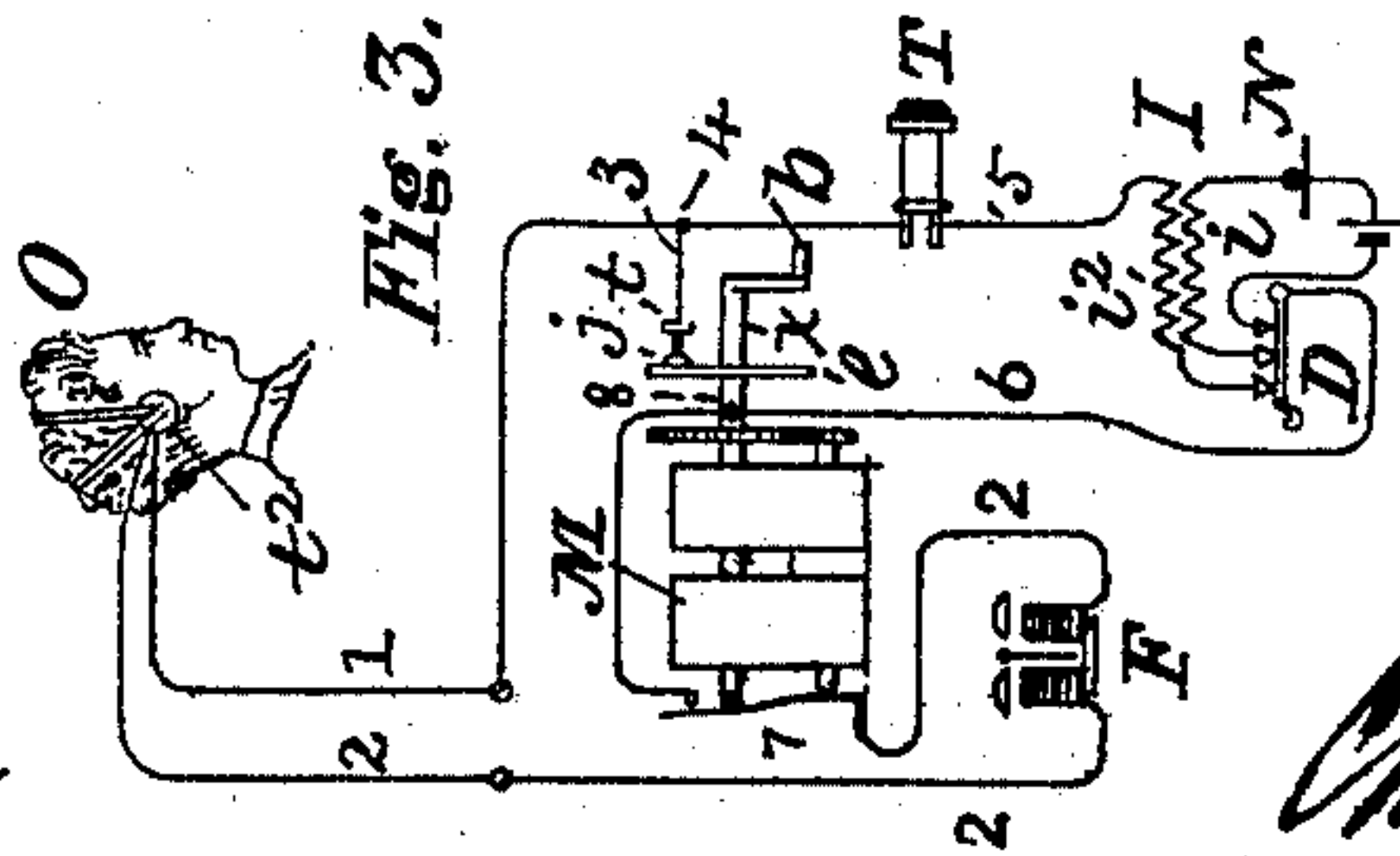
C. C. BLAKE.
COIN CONTROLLED TELEPHONE APPARATUS.

No. 526,608.

Patented Sept. 25, 1894.



Attest.
Joseph A. Gately
Notary Public.



Inventor.

Charles C. Blake

UNITED STATES PATENT OFFICE.

CHARLES C. BLAKE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE
AMERICAN BELL TELEPHONE COMPANY, OF MASSACHUSETTS.

COIN-CONTROLLED TELEPHONE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 526,608, dated September 25, 1894.

Application filed February 6, 1894. Serial No. 499,274. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. BLAKE, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain
5 Improvements in Coin-Controlled Telephone Apparatus, of which the following is a specification.

This invention relates to automatic coin controlled toll boxes for telephone substations or pay stations, of that class in which the call apparatus is freely accessible to the customer who after making the call, and being answered by the operator, states the place with which communication is desired, and is
15 then informed of the proper amount of toll and instructed to place the same in a slot designated for the purpose, and wherein the tolls being so deposited are caused to transmit certain distinctive signals to the central
20 or other receiving station, whereby the operator is enabled to ascertain the value of the deposited coin or coins, and as a consequence to check the amounts and to know whether the proper sum has been deposited.

My invention relates to a specific form of toll box in which the different coins by reason of their variation in diameter operate a switch which makes contact with a specified moving metallic surface or surfaces producing one or more makes and breaks in an electric circuit which constitutes a characteristic signal for each coin, which signals are heard in the operator's telephone at the central or switching station.

The invention further provides that after the coin has thus served to operate the switch and cause its distinctive signal to be indicated to the listening operator, it shall release the said switch and drop into a cash
40 box, and in its passage thereto it may strike against a gong the resonance of which will be heard microphonically by the said operator. The apparatus is inclosed in a case which is secured to the right hand side of a magneto
45 call box. The spindle which operates the magneto generator armature is prolonged and extends through the said case, and has upon its end the operating crank. A pinion upon the spindle meshes into a gear pivoted to the
50 back of the apparatus case. To the side of this gear is secured a metal disk or plate

which has upon its face one or more narrow concentric projections extending about one quarter of the circle, which serve as contact surfaces; each of which consist of a series of
55 contacts to produce a Morse or other characteristic signal. A combined spring actuated lever and contact maker is arranged in connection with the said disk so that upon the insertion of any coin, the said contact maker
60 will be directed to the concentric contact surface associated with the said coin to produce its characteristic or distinctive signal, all of which I will proceed to describe in detail.

In the drawings associated herewith Figure
65 1 is half front view of a magneto bell box showing the invention applied to its side. Fig. 2 shows a side view of the bell box and a section on line *y y* of Fig. 1, through the case which incloses the coin controlled appa-
70 ratus; and Fig. 3 is a diagram representing the circuit arrangement of my invention in connection with the bell box.

A represents the magneto bell box of a telephone substation outfit, which maintains the
75 magneto generator, call bell, and switching apparatus and circuit connections, all as usual and in a well known manner.

B is a casing which is secured to the side
80 of the bell box.

x is the magneto generator, operating spindle prolonged to extend through the casing B, and bears upon its end the usual crank *b*. Upon the spindle *x* is a pinion *c* which meshes into the gear *d*, which rotates upon the stud
85 *f* projecting from the back of the casing. The gear *d* has secured to its face the metal disk or plate *e*, which has a portion of one side cut away to form a coin receiving cavity *g*, and bears upon one quarter of its surface the
90 broken concentric metal projections *h, i, j*. These concentric projections are broken up to represent dots and dashes which may represent Morse or any distinctive characters; each of the concentric projections represent-
95 ing a different number or arrangement or both.

m, n, o, are three levers, all joined to one hub and rotating on the stud *l*.

v is a spiral spring, having one of its ends
100 secured to the stud *l*, and the other to the hub of the levers *m, n, o*, in such a manner as to

force the said levers to normally assume the position shown in dotted lines. The lever *m* curves slightly inward at its end. The lever *n* bears upon its end a contact maker *t* insulated therefrom, and the lever *o* has pivoted to its end the rod *p* which has upon its end an inwardly projecting lip or stud *z*. When in its normal position, the rod *p* rests upon the top of the flange or guard *J*.

10 The operation is as follows: The person who wishes a connection through the central switching station, rings up by turning the crank *b* in the usual manner. Upon ascertaining that the connection can be had, the person puts into the slot *u* the proper coin, say a silver half-dollar. The coin falls to the position shown in dotted line upon the lever *m*. By rotating the crank *b* the stud *q* upon the rim of the gear *d* catches the lip *z* on the rod *p* and pulls the three levers around into the position shown in full lines, raising the coin upward until the lever *m* is in its full line position, when the coin drops down between the inner face of the lever *m* and the edge of the plate *e*. By this time the lip *z* has been forced off from the stud *q* by the stud *s* on the plate *e* striking the rod *p*. The spring *v* forces the lever *m* against the coin and the insulated point *t* of the lever *n* is directed to the concentric projection which corresponds with the diameter of the coin, in this case the one marked *j*. The crank *b* still being turned, the plate *e* revolving in the direction of the arrow, and the successive projections of segment *j* pass under and touch the insulated contact pin *t*, sending the characteristic signal of the half dollar by makes and breaks of the circuit to the central station, as will be seen by reference to Fig. 3. In the said figure 40 *M* is the magneto generator, whose spindle *x* terminates in the crank *b*. *e* is the plate provided with concentric projections *h, i, j*; and *t* is the insulated pin or contact. While the calling person is turning the cranks *b*, he has the telephone *T* at his ear, and the hook *D* being up the generator coil and the magnets of call bell *F* are in circuit, and as the pin *t* makes contact with the projections of the series *j*, a circuit is formed from pin *t*, wires 3 and 1, operator's head telephone *t*², wire 2, including magnets of bell *F*, spring 7, coil of generator *M*, spindle *x*, plate *e*, and projections *j*; and as long as the crank is turned and the circuit is made and broken at *j*, 50 "clicks" will be heard by the operator *O* in the telephone *t*² distinctive in character of the coin inserted. It will be seen that the current flowing in the circuit is generated by the magneto machine *M*. The circuit from the point 8, by wire 6, lever *D*, secondary *i*² of induction coil *I*, wire 5, including receiving telephone *T*, to point 4, forms a part of the main circuit with the central station, normally, but is a shunt circuit while the crank 55 *b* is being turned as described, and by which the calling person keeps informed of the operations which take place. As the plate *e* is

rotated in the direction of the arrow, its cavity *g* passes under the coin, which falls into it, and is carried around and drops into the lower part *L*, of the casing *B*, which serves as the cash box. A gong *G* may be placed in the path of the falling coin so that it shall strike it, and the resonance of the gong will be heard at the central station through the substation microphone *N*, and thus be an evidence to her that the coin has reached the cash box.

It will be seen that the substation apparatus can be used as freely with the coin device attached as without it, and that all the operations necessary for local service can be carried out; and that for any service requiring an additional charge, the requisite means for securing payment therefor are provided.

Having now fully described my invention, I claim—

1. The combination in an automatic toll apparatus for telephone substations of an electric circuit extending between two stations, of one or more moving metallic surfaces arranged to produce a Morse or other characteristic or distinctive signal; a contact pin directed by the diameter of a coin; and a magneto generator in the said electric circuit at one station; and an operator's telephone at the other station; whereby upon the operation of the said magneto generator a distinctive signal is produced in the said operator's telephone.

2. The combination in an automatic toll apparatus for telephone substations, of an electric circuit extending between a central station and a substation; of one or more moving concentric metallic surfaces arranged to produce a Morse or other characteristic signal; a contact pin directed by the diameter of a coin; and the coil of a magneto generator, in the said electric circuit at the substation; and an operator's telephone at the central station whereby upon the operation of the said magneto generator a distinctive signal is produced in the said operator's telephone.

3. In a coin controlled apparatus for telephone substations operated by the crank of a magneto generator the combination with the generator coil of a series of moving signal transmitting surfaces arranged to produce respectively distinctive or characteristic signals; and a contact pin directed by coins of varying size into selective contact with the said signaling surfaces respectively, whereby the said selected surface and contact pin are brought into the circuit of the said generator coil, substantially as set forth.

4. In a coin controlled apparatus for telephone substations, means for producing distinctive signals through an electric circuit, consisting of one or more moving signal transmitting surfaces, and a contact pin controlled by coins of varying size and caused to engage thereby selectively with some one of the said transmitting surfaces arranged in circuit with a generator coil as set forth.

5. An automatic toll apparatus for telephone substations operated by the crank of a magneto generator, means for producing distinctive signals in an electric circuit, consisting of a rotatable disk or plate, having upon its face one or more metallic projecting surfaces, as described and provided at one of its sides with a coin cavity; of a contact pin actuated by the diameter of a coin, arranged in circuit with the magneto generator coil;

and a coin receptacle; substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 30th day of January, 1894.

CHARLES C. BLAKE.

Witnesses:

GEO. WILLIS PIERCE,
FRANK C. LOCKWOOD.