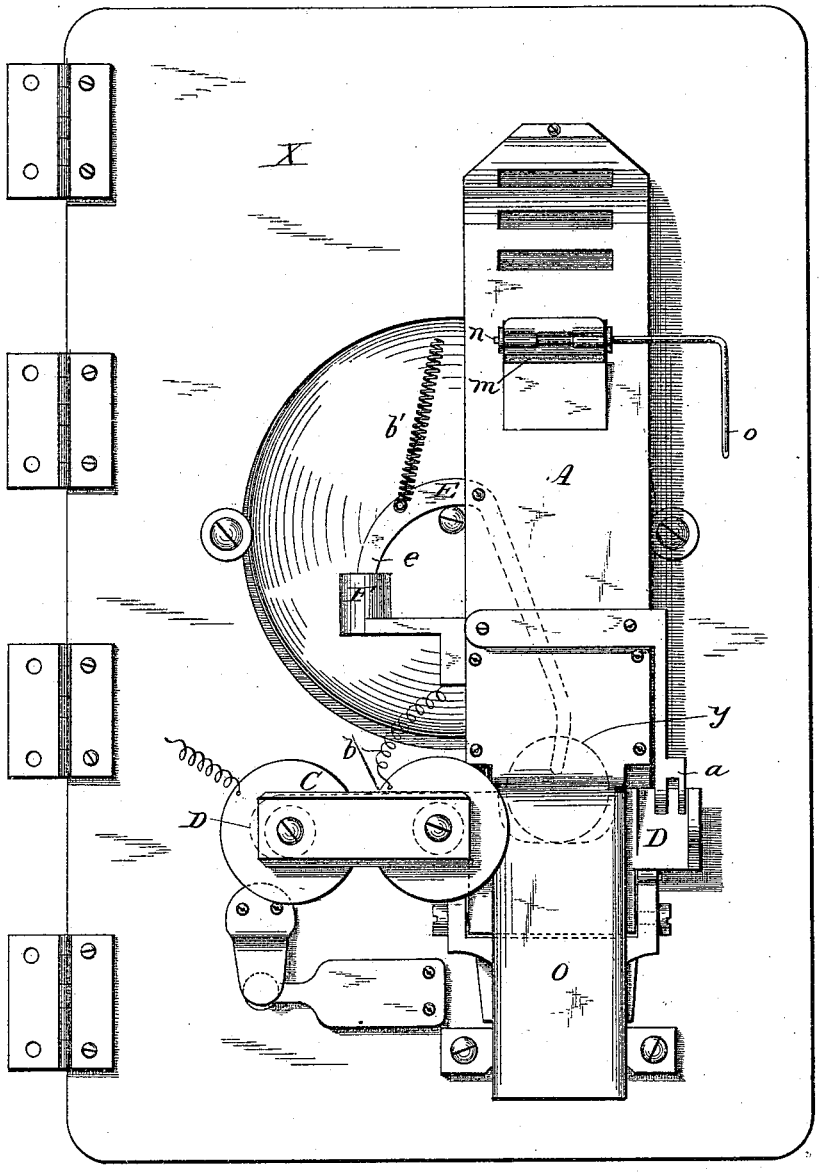
(No Model.) 2 Sheets—Sheet 1.

P. L. ROSE & G. REIN.

TOLL COLLECTING MECHANISM FOR TELEPHONE EXCHANGE SYSTEMS.

No. 346,866. Patented Aug. 3, 1886.

Fig. 1.



Witnesses:
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E. F. Dick

Inventor:
Philip L. Rose and
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Marcellus Bailey
their attorney

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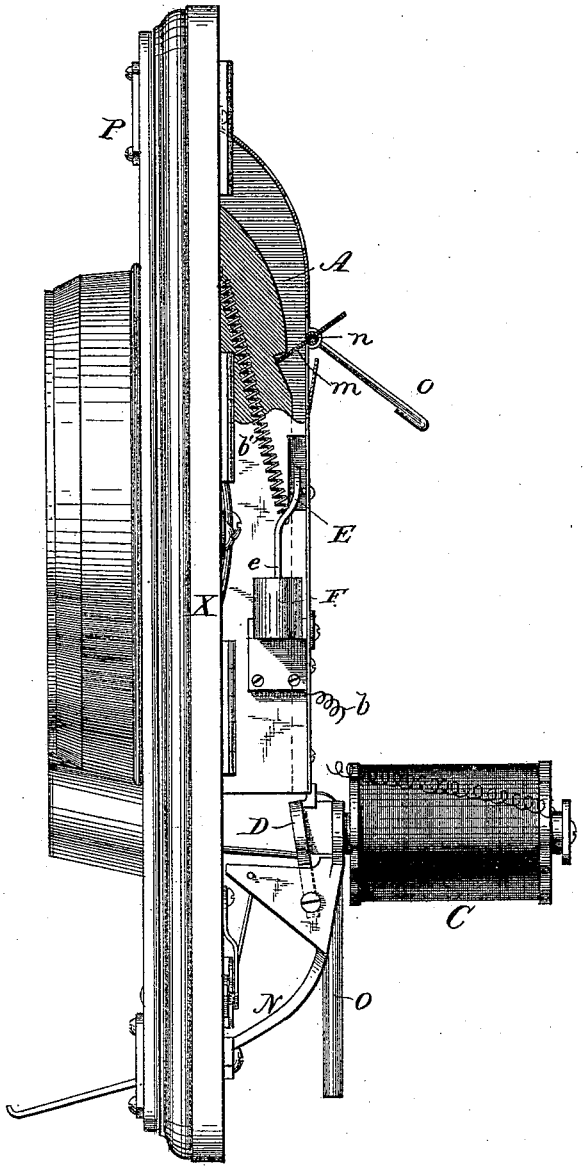
Fig. 2.



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UNITED STATES PATENT OFFICE.

PHILIP L. ROSE AND GUSTAVUS REIN, OF ST. LOUIS, MISSOURI.

TOLL-COLLECTING MECHANISM FOR TELEPHONE-EXCHANGE SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 346,866, dated August 3, 1886.

Application filed June 9, 1886. Serial No. 204,605. (No model.)

To all whom it may concern:

Be it known that we, PHILIP L. ROSE and GUSTAVUS REIN, both of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Toll Collecting or Indicating Mechanism for Telephone-Exchange Systems, of which the following is a specification.

Our invention relates to a mechanism or apparatus whereby the "central office" of a telephone-exchange system cannot be "rung up" or secured until a coin of some particular and arbitrarily-determined denomination or a corresponding check or ticket has been deposited in said apparatus or toll-box. The coin or check or other toll-token when deposited in the box operates on a portion of the apparatus essential to completing the circuit through which the central office is signaled or rung up by the depositor, and for this purpose it is usually dropped into a chute or passage-way, in which it comes in contact with and operates a device controlling said portion of the apparatus.

In our application for Letters Patent filed December 3, 1885, bearing Serial No. 184,628, on which Letters Patent No. 346,865, of even date herewith, issued to us, we have shown and described a toll-collecting apparatus of this character, in which the chute or passage-way for the toll-token is combined with a movable stop which arrests the toll-token until moved to one side or the other far enough to permit the onward passage of the same, the movement of the said stop in the direction requisite to direct the coin into the cash-receptacle of the toll-box being accomplished by and during the return of the handphone or its support to the position which it occupies when not in use. In this, as well as in any other automatic telephone toll system where the coin or toll-token is used for the purpose above indicated, it is possible for the user or depositor, if he be so inclined, to withdraw the toll-token after it has accomplished its purpose, and to thus use the same token or coin over and over again, this being effected by tying to the coin or token a silk or other fine thread, by means of which the coin can be dropped far enough to operate the toll-switch or circuit making or breaking device, and can then be pulled out again after it has been used.

It is the object of our improvement to prevent the possibility of this occurrence, to which end our invention consists in the combination, with the movable stop and the toll-switch or circuit making or breaking device to be operated by the coin or token, of a chute or passage-way for said coin, and a trap or gate located in the chute at a point between the inlet-opening thereof and the toll-switch or circuit making or breaking device arranged and operating to permit the onward passage of the toll-token, but to prevent the same from being withdrawn after reaching the toll-switch.

The nature of our improvement and the manner in which the same is or may be carried into effect will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a view of so much of the apparatus and circuit-connections as needed to illustrate our improvement, the chute and contiguous parts being shown on enlarged scale. Fig. 2 is a side elevation of the same, some of the parts being shown in section.

The apparatus in connection with which our our improvement is represented is one similar to that shown and described in our aforesaid application for Letters Patent filed December 3, 1885, Serial No. 184,628, and in Fig. 1 is a view from the rear of the door of the generator and bell box, to which we preferably apply said apparatus.

In the drawings, X is the door or other support for holding the apparatus. Near its top is an inlet-opening, P, for the insertion of the coin or other toll-token. Upon the inside of the door is the chute or passage-way A, which extends from said opening to the movable stop D, which, in this instance, is the armature of the bell or switch electro-magnet C. The stop by spring *a* is normally held in a position in which it will intercept the coin or other token *y*, being cut away so that its top forms a knife-edge, on which the coin rests, as indicated in Fig. 1. According as the armature moves to one side or the other of this position the coin will drop therefrom into one or the other of the branch chutes N O, in the former case re-

turning to the depositor, in the latter case passing down into the company's cash box or receiver. The armature is moved in the direction to discharge the coin into N by the attractive power of its magnet C, and in the opposite direction by mechanical appliances connected to and actuated by the handphone support, all as described in our aforesaid application for Letters Patent.

The toll-switch in the present instance consists of a pivoted elbow-lever, E, the short upper arm of which has a contact point or electrode, *e*, which normally is immersed in the mercury-cup F, which constitutes the other electrode, circuit-connections *b* and *b'* leading from said electrodes, whereby, when the latter are in contact, a short circuit is established around the magneto-generator of the telephone-call. When the electrode *e* is in this position, the longer arm or tail of the switch-lever E extends into the interior of the chute A through a slot or opening formed for this purpose in the side of the latter, so as to normally stand in the path of the coin or token *y*. Consequently when the latter is dropped into the box in its descent through the chute, and by the time it brings up against the movable stop D, it will have pushed aside the tail of the lever, and thus lifted the electrode *e* from the mercury-cup with the effect of breaking or opening the short circuit *b b'* around the generator.

It is manifest that if the coin or token *y* should have a string attached to it it might be dropped down into the chute far enough to do the work required of it, and might then be pulled back and out again. To prevent this is the object of our improvement; and to this end we place in the chute at some point between the inlet-opening and the switch-lever a trap or gate which, while permitting the ingress of the coin, will effectually prevent it from being withdrawn after it once passes said trap. Manifestly this trap or gate can be variously arranged, and it may be a gravity-trap or spring or weight actuated. In the present instance it consists of a flap, *m*, pivoted at *n* in the rear wall of the chute, extending thence in a slanting direction forward and downward, so that its free edge will rest against the inner face of the opposite wall of the chute, being retained normally in that position by a weight, *o*, on the pivot pin or shaft *n*, which overbalances the weight of the flap to such an extent as to hold the same normally in position to close the chute, but not with sufficient force to offer any material resistance to the free downward passage of the deposited coin or token. Under this arrangement it will be seen that the entrance of the toll to a position in which it can operate the switch-lever is permitted, but that the toll after reaching that position cannot be withdrawn.

We do not restrict ourselves to any particular point of location of the trap, provided, of course, that it is between the inlet-opening and the toll switch or lever or other device for operating the same; and, as before said, said trap can be spring-actuated or gravity or weight actuated, as preferred.

What we claim, therefore, herein as new and of our invention is—

In automatic toll collecting or indicating mechanism for telephone-exchange systems, the combination, with the chute or passage-way into which the coin or toll token is dropped, the movable stop, and the toll-switch or circuit-changing lever or device, of a self-closing trap or gate located in the chute at a point between the inlet-opening and the said switch or circuit changing lever, and arranged and adapted to operate substantially in the manner and for the purposes hereinbefore set forth.

In testimony whereof we have hereunto set our names this 27th day of May, 1886.

PHILIP L. ROSE.
GUSTAVUS REIN.

Witnesses:
WELLINGTON ADAMS,
T. S. MCPHEETERS.