

UNITED STATES PATENT OFFICE.

CHARLES E. SCRIBNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC COMPANY, OF SAME PLACE.

TOLL-BOX FOR TELEPHONES.

SPECIFICATION forming part of Letters Patent No. 574,046, dated December 29, 1896.

Application filed May 14, 1896. Serial No. 591,521. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. SCRIBNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Toll-Boxes for Telephones, (Case No. 417,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention is a locking device for coin-receptacles of telephone toll-boxes designed to be controlled or operated from the central station with which the telephone-line is connected.

It consists in the combination, with the coin-receptacle, of a lock, an electromagnet or other electrically-actuated appliance controlling the lock, and circuit connections between the line and the electromagnet at the substation and between the line and suitable appliances at the central station, by the agency of which an operator at the central station may determine or prevent the actuation of the lock at the substation.

The invention contemplates also locking mechanism adapted for release by the usual key or other device in coöperation with the electromagnet.

The utility of this invention in telephone-exchange practice is twofold. It gives security against the opening of the coin-receptacles by unauthorized persons, and it necessitates in the collection of the coins coöperation between the collector and an operator or chief stationed at the central office, thus serving as a check for the chief upon the movements of the collector.

The invention is illustrated in the accompanying drawings:

In the drawings, Figure 1 represents the usual apparatus of a telephone "toll-station" connected by a telephone-line with signaling apparatus in a switchboard at a central office. The coin-receptacle of the toll-box is provided with locking mechanism in accordance with the present invention. Fig. 2 is a view of the form of locking device shown in Fig. 1. Fig. 3 shows another form of locking mechanism, the apparatus being shown in elevation with a partial section. Fig. 4 is a sectional view

of the toll-box on line *xx* of Fig. 3, showing in plan from beneath the locking mechanism represented in Fig. 3.

In the form represented in Fig. 2 the locking device consists of a key-lock *a* of ordinary construction and an electrically-controlled lock *b*. The latter appliance comprises a catch *b'*, carried on a pivoted lever *b²*, an armature *b³*, fixed to the lever, and an electromagnet *b⁴*, acting upon the armature. Both locks *a* and *b* may be mounted upon the door *c* of the toll-box or coin-receptacle. The latch *a'* of lock *a* and the latch *b'* of the electrically-controlled lock *b* are adapted to engage recesses *d* and *d'*, respectively, in the body of the box when the door is closed. Obviously the latch *a'* may be disengaged from its catch in recess *d* by means of a suitable key in lock *a*, or the latch *b'* may be disengaged from its catch by a sufficient current through the magnet *b⁴*; but in order that the door of the box may be opened both appliances must be simultaneously actuated.

In associating this device with a telephone-line the system of circuits represented in Fig. 1 may be employed. In that figure the usual telephone appliances are represented at a substation—a bell *e*, a generator of signaling-current *f*, a transmitting-telephone *g* and a receiving-telephone *h*, and a switch *i*, controlling the connection of these instruments with the line-circuit. The wires 1 and 2 of the line extend to a central station and are connected there with a spring-jack *k* and an annunciator *l*, both of well-known form.

The toll-receiving box *m* may be located near the telephone. The terminals of the lock-controlling magnet *b⁴* are connected by wires 3 and 4 with the line conductors 1 and 2 of the telephone-line. A switch *n* is preferably interposed in these conductors for the purpose of disconnecting the magnet from the telephone-line when the latter is in use for conversation.

At the central station the attendant at the switchboard is provided with a plug *o*, adapted for insertion into the spring-jack *k*. The conductors of the plug may be connected with the usual listening-key *p* for bringing the operator's telephone *q* into the circuit of a telephone-line. The plug-circuit is connected

also in this invention with another key *r*, which is adapted, when its switch-springs are forced outward by the operation of the key, to loop a battery *s* or other source of current into a bridge of the plug-circuit, and thus into the circuit of the line.

Obviously under ordinary circumstances access to the coin-receptacle cannot be had even with the aid of the key for lock *a*. Neither can the operator at the central station, by connecting her plug with the line and looping the battery *s* into the circuit, release the door of the toll-box. In the process of collecting the coins, however, the collector must obtain connection with the operator's telephone and must instruct her to apply the battery *s* to the telephone-line in order that the electric lock may be operated. Then the collector must place the switch *n* in position to bring magnet *b*⁴ into connection with the line and must turn the key in lock *a*. Thus the toll-box cannot be opened without the cooperation of the collector at the substation and the operator at the central station. If desired, the means of applying the battery *s* may be under the charge of a chief collector at the central station, who may be thus kept informed of the movements of the toll-collectors.

Figs. 3 and 4 represent a form of locking mechanism in which the electrically-controlled portion and the key-controlled portion are more closely related to each other than in the preceding form. In the contrivance illustrated in those figures the latches *a'* and *b'* engage each other directly. The ranges of movement of the two latches are such that the withdrawal or retraction of either alone will not bring about their disengagement from each other. Thus if the latch *b'* be retracted by the excitement of the magnet controlling it it will still remain in engagement with the latch *a'*, or if the latch *a'* be withdrawn by means of the key, the latch *b'* remaining unmoved, the parts will still be in engagement. When, however, the latch *a'* is retracted by means of the key and the latch *b'* is at the same time withdrawn by the excitement of its magnet, the two parts release each other and permit the door to be opened.

Obviously the same circuit connections might be employed with the mechanism of Figs. 3 and 4, and the same mode of operation would be followed as in the form illustrated in Fig. 1.

Numerous other contrivances might readily be designed to accomplish more or less directly the same result attained by means of this apparatus.

My invention is not limited to any specific mechanism, but involves generally a lock or releasing device controlled jointly by a part adapted to be electrically operated from a central station and a part constructed to be manually operated at the substation.

I therefore claim as new and desire to secure by Letters Patent—

1. The combination with the telephone and the telephone-line thereof at a toll-station, of the toll-box or coin-receptacle, an electrically-controlled locking device for the toll-box connected with the telephone-line, a spring-jack or socket for the line at a central station, and means for connecting therewith a source of electric current to release the said locking mechanism, substantially as described.

2. The combination with the toll-box of a telephone-line, of locking mechanism therefor controlled by a manually-actuated part and an electrically-actuated part jointly, said electrically-actuated part being connected with the telephone-line, and means for connecting with said line a source of current to operate said electrical part, substantially as described.

3. The combination with the toll-box of a telephone toll-station, of a manually-controlled lock for the said box, an electrically-controlled lock for the box connected with the telephone-line, a source of current at a central office of the line, and means for connecting the source of current with the line to actuate the said electrically-controlled lock, as described.

In witness whereof I hereunto subscribe my name this 7th day of April, A. D. 1896.

CHARLES E. SCRIBNER.

Witnesses:

ELLA EDLER,

LUCILE RUSSELL.