

(No Model.)

2 Sheets—Sheet 1.

B. MARINOVITCH & G. SZARVADY.
TELEPHONE SYSTEM.

No. 476,887.

Patented June 14, 1892.

Fig. 2.

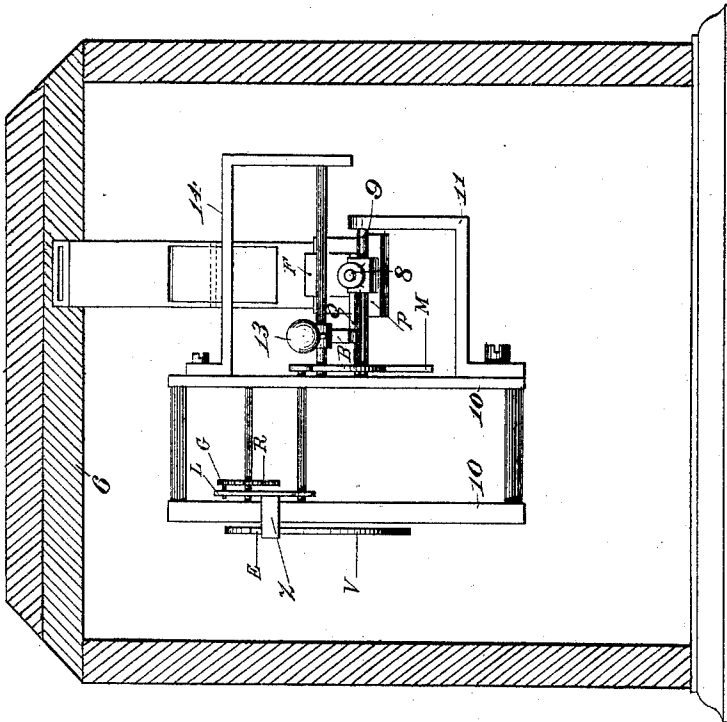
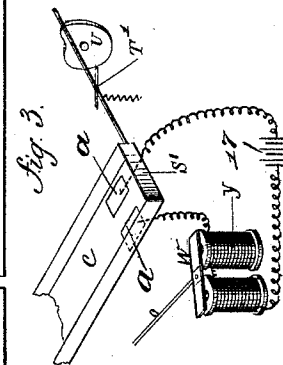
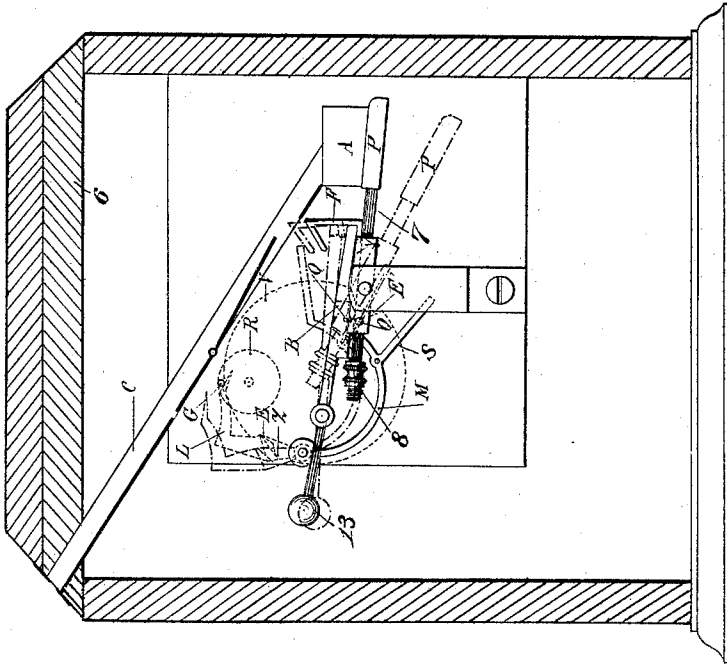


Fig. 1.



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Fig. 4

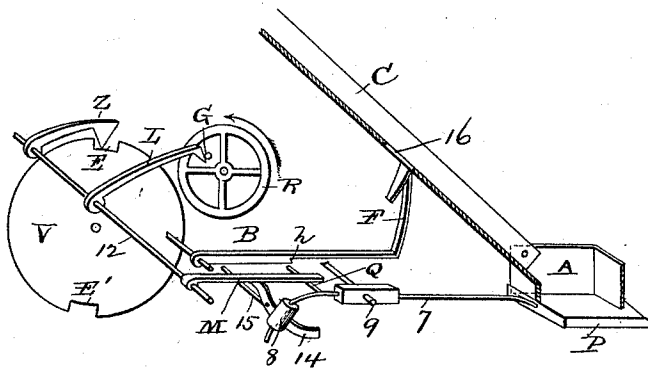
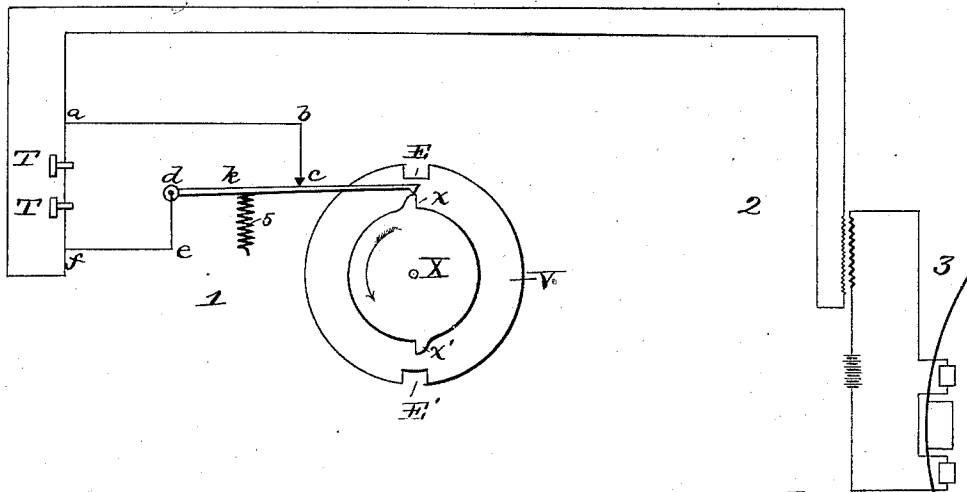


Fig. 5



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UNITED STATES PATENT OFFICE.

BÉLIZAIRE MARINOVITCH AND GÉZA SZARVADY, OF PARIS, FRANCE.

TELEPHONE SYSTEM.

SPECIFICATION forming part of Letters Patent No. 476,887, dated June 14, 1892.

Application filed September 5, 1889. Serial No. 323,042. (No model.) Patented in France October 30, 1886, No. 179,369, and in England August 19, 1889, No. 13,057.

To all whom it may concern:

Be it known that we, BÉLIZAIRE MARINOVITCH and GÉZA SZARVADY, electrical engineers, both residing at 1 Boulevard St. Denis, Paris, France, have invented a certain new and useful Apparatus for Giving Temporary Use of Telephones in Exchange for Coins, (for which we have obtained Letters Patent in France, dated October 30, 1886, No. 179,369, and in Great Britain, dated August 19, 1889, No. 13,057,) of which the following is a specification.

This invention relates to improvements in coin-controlled apparatus, its object being to give the use of the telephone for a predetermined period of time on the insertion into the apparatus of a coin of proper denomination.

According to the present invention the telephone-line is normally short-circuited, and when a suitable coin is inserted it effects the release of a spring-driven mechanism, which in turn effects the opening of the short circuit for a predetermined period of time, after which the telephone-circuit is again short-circuited and remains so until another coin is inserted.

An apparatus constructed in accordance with the present invention is shown in the accompanying drawings, in which—

Figure 1 is a vertical section through the apparatus with the interior mechanism shown in elevation. Fig. 2 is a similar section at right angles to that shown in Fig. 1. Fig. 3 is a perspective view of an electrically-operated detent, the circuit through which is closed by the coin. Fig. 4 is a perspective view, partly in section, of a mechanical detent and operating mechanism therefor, and Fig. 5 is a diagram illustrating the principle of our invention.

Referring to Fig. 5, there is shown a public or toll station 1 and a central station 2. The public station 1 is shown equipped with two telephonic receivers T T, while the central station 2 is shown provided with a transmitter 3; but it will be understood that both stations are provided with receivers and transmitters, although not so shown in the drawings.

Around the receivers T T there is a short circuit *a b c d e f* and switch-lever *k*, which latter makes and breaks the short circuit at *c*. The lever *k* is prolonged beyond the contact *c*, and its outer end rides on the edge of a rotating cam-disk X in the path of diametrically-opposite cam-projections *x x'* on the edge of said disk X. Normally the cam-disk X is in the position shown in Fig. 5—that is, with the apex of one of the projections *x* or *x'* engaging under the free end of the lever *k* and holding the latter in contact with the point *c*, so as to complete the circuit, and thus short-circuit the telephone T T. When the cam X is rotated in the direction of the arrow, in the manner hereinafter described, the cam projection rides from under the lever *k* and the latter is drawn onto the edge of the cam-disk and away from the point *c* by a spring 5, so that the short circuit is broken as soon as the cam X has begun its rotation and impulses on the main line will then pass through the telephones T T.

According to our invention the short circuit around the telephones is maintained when they are not in use, and in order to obtain the use of the telephones it is necessary to employ a suitable coin or token, which will effect the release of clock-works or a spring-motor, which in turn drives the cam X, and thereby effects the breaking of the short circuit around the telephones. Such mechanism is shown in Figs. 1, 2, and 4, to which reference is now made.

There is a case or box 6, in which is an inclined coin-chute C, with its upper end accessible and of such size as to admit the insertion of a coin or token of the proper denomination. The lower end of the chute opens into a receptacle A, the bottom of which is closed by a plate or pan P on one end of the lever 7, the other end of which latter carries an adjustable counter-weight 8. The lever 7 is pivotally supported by a pin 9, having bearings at one end in the frame 10 of a spring-motor or clock-works (not shown) and at the other end in a bracket 11, also secured to the said clock-work frame. The counterweighted arm of the lever 7 has projecting from it a pin Q, in the path of which is an arm M, fast

on a rock-shaft 12, so that when the pan P is depressed by the weight of a coin falling into it the pin Q will engage the arm M and raise the latter, thus rocking the shaft 12 in its bearings. Fast on the shaft 12 there is a pawl-arm L, the free end of which is normally in the path of a stop G on a wheel R, the latter being the last wheel and the only one shown of the train of gear constituting the clock-works or spring-motor. The construction is such that when the arm M is lifted by the pin Q the pawl-arm L will be moved out of the path of the pin G, and the wheel R will then be free to rotate under the action of the spring by which the clock-works is driven. The clock-works also actuate a wheel-disk V, having a slow rate of rotation and provided with notches E E' in its periphery at diametrically-opposite points.

On the arm L, as in Fig. 1, or fast on the shaft 12, as in Fig. 4, there is a pawl-arm Z, with its free end cam-shaped or beveled, as shown, and normally within one of the notches E or E', but adapted to ride on the periphery of the disk V. When the shaft 12 has been rocked (by the insertion of a coin in the apparatus in the manner before described) to carry the pawl-arm L out of the path of the pin G on the wheel R, the arm Z is at the same time partially lifted from the notch in the disk V, and as the latter is now rotated by the clock-works the pawl Z will be lifted by the edge of the notch in the disk engaging one of its inclined faces and ultimately will ride on the periphery of the disk, holding the pawl-arm L out of the path of the pin G of the wheel R until the other notch E or E' is reached. The depression of the pan P by a coin having through the lever 7, pin Q, arm M, shaft 12, and pawl L released the clock-works, the latter will not stop until the pawl Z falls into the other notch in the disk V, and thereby permits the pawl-arm L to again move into the path of the pin G on the arm R.

The cam X, Fig. 5, is fast on the same spindle that carries the disk V, and consequently turns with it, the construction being such that the short circuit around the receivers T T' is closed when the clock-works are held against rotation and is opened when they are released, as will be readily understood.

To prevent the pan P when depressed by a coin from returning to its normal position too quickly to effect the release of the clock-works, we provide a lever B, which may have a counter-balance 13, as shown in Figs. 1 and 2. This lever B is pivotally supported between the frame of the clock-works and a bracket 14, secured to said frame. The lever B is in the path of the pin Q on the lever 7, and when the pan P is depressed by a coin the said pin Q engages under the lever B and turns it on its pivot until the pin enters a notch h in the under side of said lever B, thus locking both the levers 7 and B in the inclined positions. As the pawl Z rides out of the notch E or E' it rocks the shaft 12 on its bearings and lifts

the arm M away from the pin Q. The arm M has an angle-piece S, which engages the lever B as the said arm M is lifted by the pawl Z, and by lifting the said lever B disengages it from the pan-lever 7, thus permitting the pan to return to its normal position, closing the bottom of the receptacle A.

In Fig. 4 the arm is shown provided with an angle-extension 14, carrying a laterally-projecting pin 15, which latter engages and lifts the lever B, as described, thus releasing the pan-lever 7; but the latter is prevented from returning to its normal position by the extension 14, which engages the pin Q on the lever 7 and holds the latter in the inclined position. The free end of the lever B is formed with an angle extension or finger F, which when the said arm is lifted enters the chute C through an opening 16 in the bottom thereof and prevents a second coin inserted into the chute from reaching the pan P before the apparatus has returned to its normal position.

In Fig. 3 is shown an electrically-operated mechanism for controlling the escapement for the clock-works. The lower end of the chute C is closed by a gate S' on one end of a lever T', the other end of which bears on a cam U, and near the said lower end of the chute, which latter is in this construction of insulating material—such, for instance, as wood, rubber, or the like—there are two contact-plates a a, forming the terminals of an electric circuit, including a source 17 of electricity and electro-magnets y, so that when a coin has reached the bottom of the chute it will bridge the contacts a a and complete the circuit, thus energizing the magnets, which then attract an armature W, connected by a rod o to a detent controlling the clock-works.

The cam U is driven by the clock-works, and when the latter are at rest it holds the gate S' across the end of the chute. When a coin is inserted, the electric circuit is closed and the clock-works are released and set in motion. They rotate the cam U, which is shaped to rock the lever T' on its pivot, thus moving the gate S' away from the chute and permitting the coin to escape therefrom. As the cam U continues to rotate it returns the gate to its normal position, thus closing the chute preparatory to the insertion of another coin.

Having thus fully described our invention, we claim and desire to secure by Letters Patent—

1. In a telephone system, the combination, with a main line and a telephone therein, of a normally-closed short circuit around the said telephone, a circuit-breaker in said short circuit, and a motor controlling the circuit-breaker and automatically closing the short circuit after the latter has remained open for a predetermined period of time, substantially as described.

2. In a telephone system, the combination, with a main line and a telephone therein, of a normally-closed short circuit around said telephone, a circuit-breaker in said short cir-

cuit, a motor controlling said circuit-breaker, and a coin-operated detent for said motor, substantially as described.

3. In a telephone system, the combination, 5 with a main line and a telephone therein, of a normally-closed short circuit around said telephone, a circuit-breaker in said short circuit, a spring-motor or clock-works controlling said circuit-breaker, a detent for the 10 clock-works, an electro-magnet for operating the detent, and an electric circuit including

the magnet and provided with terminals adapted to be bridged by a coin or token, substantially as described.

In testimony whereof we have signed our 15 names to this specification in the presence of two subscribing witnesses.

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Witnesses:

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