(No Model.)

A. S. HIBBARD.

TELEPHONE SYSTEM.

No. 576,577. Patented Feb. 9, 1897.

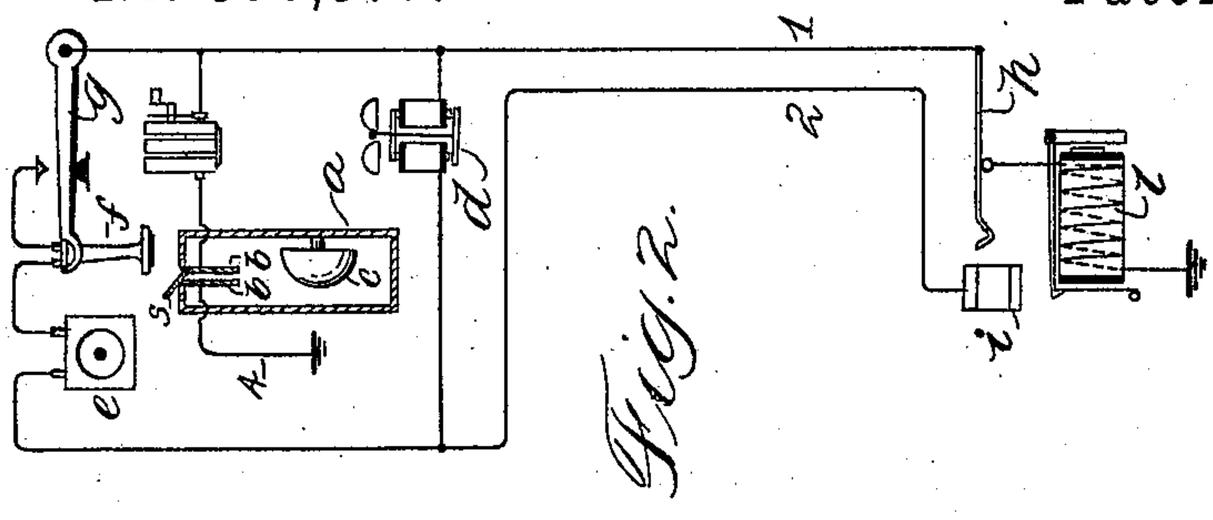
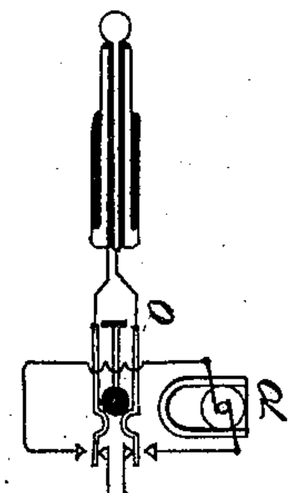


Fig. 2.



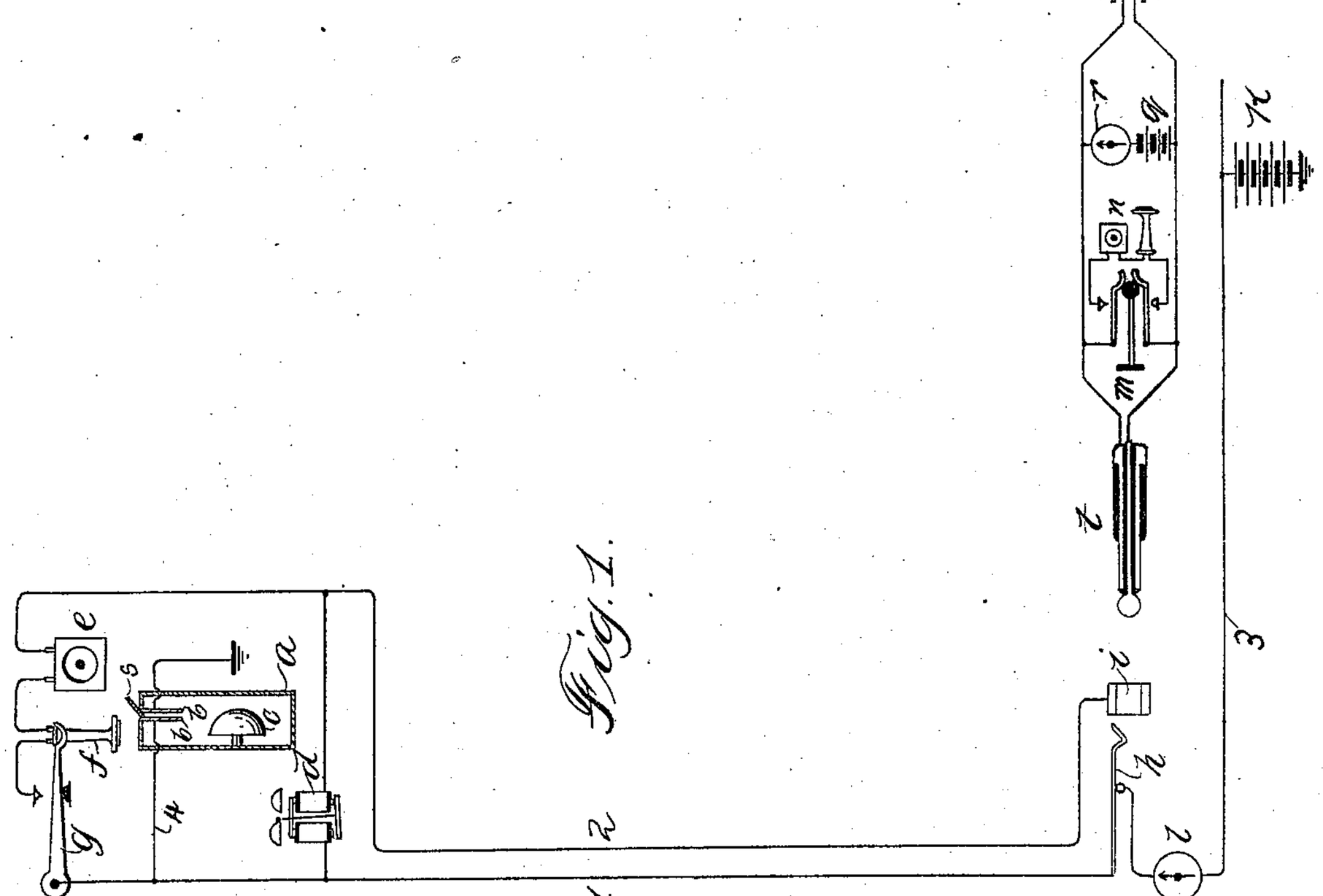


Fig. 1.

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UNITED STATES PATENT OFFICE.

ANGUS S. HIBBARD, OF CHICAGO, ILLINOIS.

TELEPHONE SYSTEM.

SPECIFICATION forming part of Letters Patent No. 576,577, dated February 9, 1897.

Application filed May 4, 1896. Serial No. 590,083. (No model.)

To all whom it may concern:

Be it known that I, ANGUS S. HIBBARD, 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 Telephone Systems, (Case No. 7,) 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 relates to telephone-exchange systems wherein pay or toll substations are employed. In some systems of this class a toll-collecting device is employed, comprising a chute and a receptacle adapted to receive the coins deposited through the chute, a bell or other signal device being disposed within the path of the coin and located near the transmitting-telephone. The person using the telephone signals the central office in any well-known manner, and upon being answered deposits the coin within the chute, the coin striking the signal placed in its path, thereby imparting a characteristic signal which manifests itself through the transmitting-telephone at the toll-station to the operator at the exchange, who thereupon makes the connection desired.

My invention may be applied to this class of toll-collecting devices and may be generally described as consisting of a coin-receptacle provided with a chute or slot, the coin before being deposited within the receptacle being adapted to complete the circuit of a source of electricity through the line-signal device at the central office.

The preferred form of my invention comprises a coin-receptacle containing a signal device adapted to be operated by the falling coin and a coin-chute the sides whereof are constructed of metal strips insulated from each other, which constitute the terminals of a normally open circuit, including the telephone-line or a portion thereof, the line-signal and the source of electricity adapted to actuate the same, the coin being adapted when partially inserted to electrically connect the metallic walls of the chute to close this circuit. The user may then deposit the coin within the receptacle or withdraw it from the chute, according as the line called for is idle or busy.

My invention may be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a diagrammatic illustration of a telephone-exchange system connected with a toll-station equipped in accordance with my invention. Fig. 2 is a diagrammatic view of a modified form of toll-station apparatus to which my invention may be applied.

Like letters and numerals refer to like parts in both views.

The novel apparatus comprises a coin-receptacle *a*, having a chute provided with two metallic walls or portions *b b*, which are insulated from each other, a signal device *c* being contained within the receptacle and disposed within the path of a falling coin. The receptacle *a* is placed in close proximity to the transmitting-telephone to readily impart the signal made by the falling coin to the operator. In associating this apparatus with a telephone-line either the system of circuits and apparatus shown in Figs. 1 or 2 may be employed. At each toll-station illustrated in the drawings is shown the usual substation apparatus, comprising a bell *d* in a bridge connection between the limbs 1 and 2 of the telephone-lines, a transmitting-telephone *e*, a receiving-telephone *f*, and a switch *g*, controlling the connection of the telephone with the main line.

Referring to Fig. 1, the telephone-lines 1 and 2 terminate at the switchboard in a line-spring *h* and a thimble *i*, the line-spring normally resting in contact with a terminal of a conductor 3 in a normally open circuit, with which is included a grounded signaling-battery *k*, line-signal *l*, limb 1 of the telephone-line, and the grounded tap 4, including the normally-disconnected metallic walls *b b* of the coin-chute. Each operator at the central exchange is provided with a number of pairs of connecting-plugs, adapted for insertion within spring-jacks of subscribers to be connected for conversation. The cord-strands connecting the plugs of each pair are associated with a listening-key *m* for bringing the operator's telephone set *n* into circuit with the tele-

phone-line and a ringing-key *o*, adapted to bring the calling-generator *p* into circuit with the called subscriber's signaling-bell. In a bridge between the strands of the cord circuit is included a battery *q* and a clearing-out annunciator *r* of high retardation. The general arrangement and use of the plugs and apparatus associated therewith herein shown is well understood by those skilled in telephony, and I do not deem a further description thereof essential. The user, desiring communication with a subscriber, inserts the coin *s* partially within the chute, as shown, in a manner to electrically connect the walls *b b*, whereby circuit through the line-signal *l* is closed. The operator, in response to the signal conveyed by the indicator *l*, inserts the answering-plug *t* within the corresponding spring-jack and ascertains the connection desired. If the connection can be had, the operator instructs the user to deposit his coin within the receptacle. If the coin be of the proper kind, a characteristic signal is caused by its striking the bell *c*, which is transmitted to the operator, who thereupon makes the desired connection. If the line called for be in use, the user may retain the coin.

In Fig. 2 I have shown the usual form of magneto-generator as being included in the grounded tap 4, the battery *k* being dispensed with. The user, after having placed the coin in the position shown to complete the continuity of the ground-tap 4, may signal the operator at the exchange by rotating the armature of the generator.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a telephone-exchange system, the combination of a telephone-line extending from the exchange to a substation, and a coin-receptacle at the substation with a conductor branching from said telephone-line at the substation including two normally-separated contact portions which are adapted to be electrically connected through a coin while in the hand of the user and an indicating device at the exchange adapted to be included in circuit with said telephone-line, branch conductor, and coin, substantially as described.

2. In a telephone-exchange system, the combination of a telephone-line extending from the exchange to a substation and a coin-receptacle at the substation provided with an aperture for the insertion of a coin with an indicating device at the exchange and a conductor branching from said telephone-line including two normally-separated contact portions placed at or near the mouth of said aperture which are adapted to be electrically connected by a coin while in the hand of the user, to close the circuit through said indicating device, substantially as described.

In witness whereof I hereunto subscribe my name this 1st day of May, A. D. 1896.

ANGUS S. HIBBARD.

Witnesses:
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