

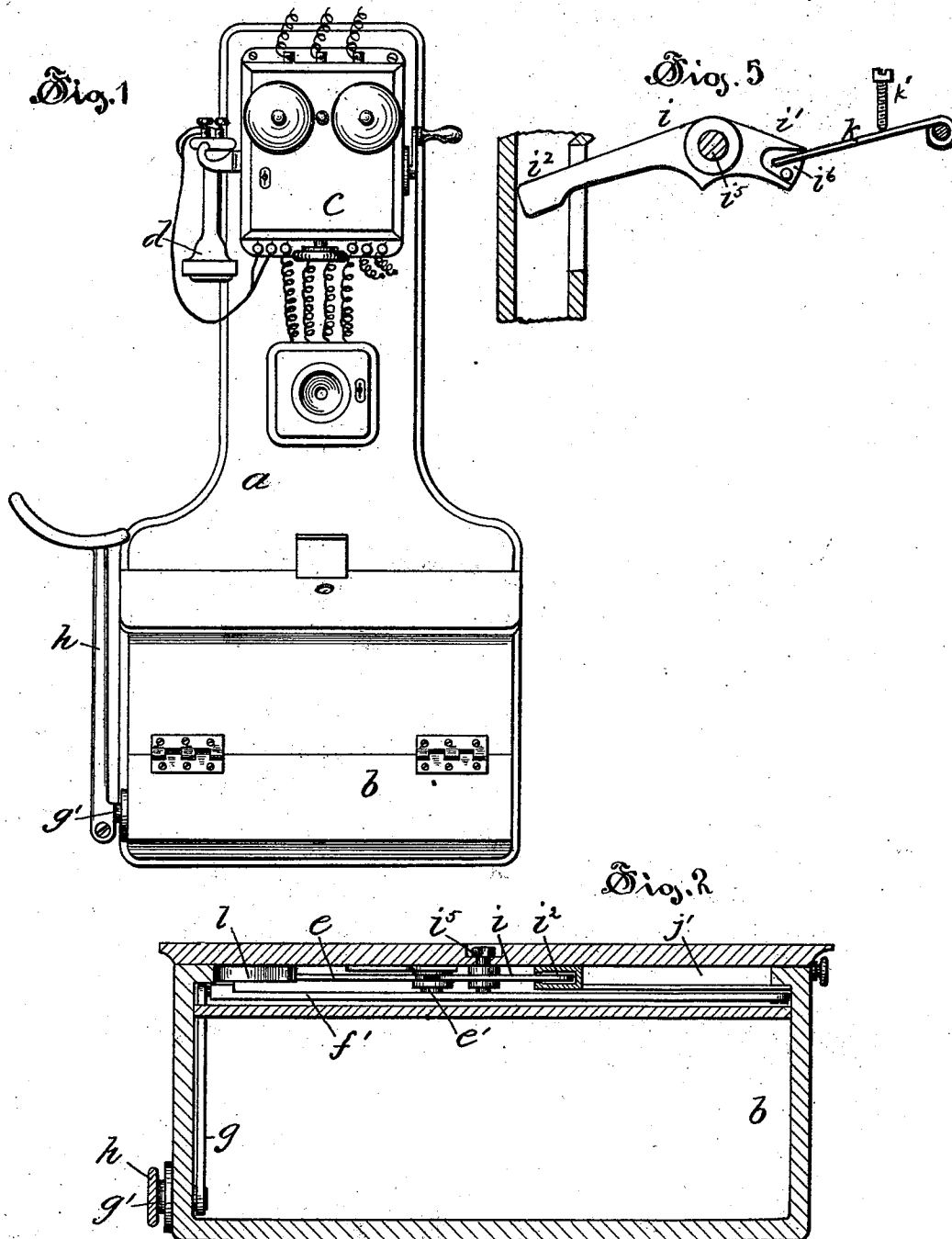
(No Model.)

2 Sheets—Sheet 1.

W. GRAY.
TELEPHONE TOLL APPARATUS.

No. 510,535.

Patented Dec. 12, 1893.



Witnesses:

Nancy A. Williams.

A. B. Jenkins.

Inventor,

William Gray
by Chas. L. Burdett,
att'y

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3

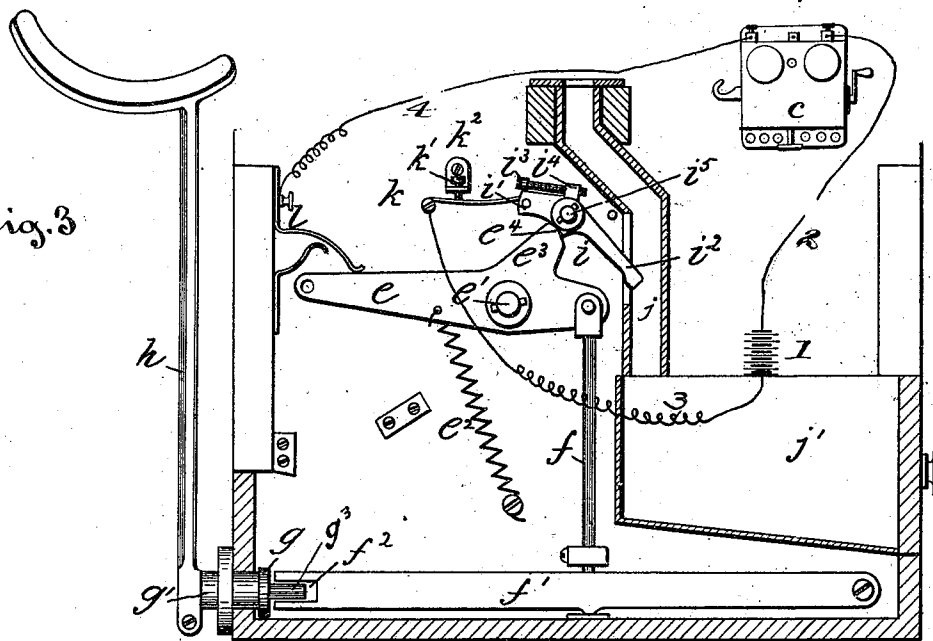
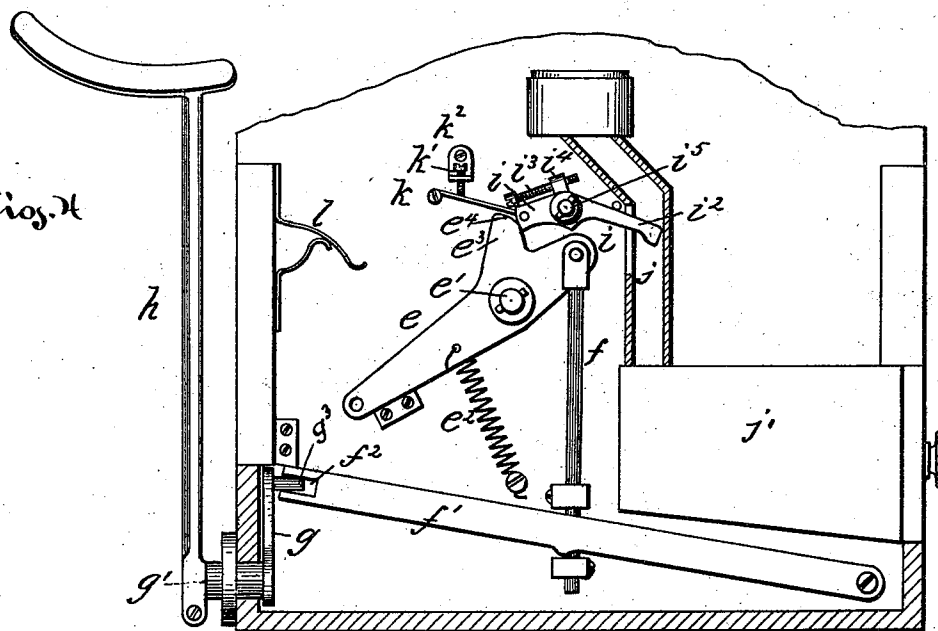


Fig. 4



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UNITED STATES PATENT OFFICE.

WILLIAM GRAY, OF HARTFORD, CONNECTICUT, ASSIGNOR OF ONE-HALF
TO CHARLES SOBY, OF SAME PLACE.

TELEPHONE-TOLL APPARATUS.

SPECIFICATION forming part of Letters Patent No. 510,535, dated December 12, 1893.

Application filed May 21, 1889. Serial No. 311,636. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GRAY, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Telephone-Toll Apparatus, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of my invention is to provide an apparatus by means of which public stations may be established for telephone users and a toll collected by requiring the insertion of a coin before connection can be made between the station and any other point on the line; and to this end my invention consists in the details of the several parts making up the apparatus as a whole, and in their combination, as more particularly hereinafter described and pointed out in the claims.

Referring to the drawings: Figure 1 is a view in front elevation of my improved apparatus, the major part being located within the battery box. Fig. 2 is a detail plan view of the apparatus cutting the box in section on a plane passing through the coin channel and looking downward. Fig. 3 is a detail view in elevation of the apparatus with parts broken away to show construction and illustrating the position of the parts when the connection is made by swinging the arm rest, with the magneto bell shown as detached from the back-board and the telephone removed from the hook. Fig. 4 is a detail view in elevation of the apparatus with parts broken away to show construction and illustrating the position of the parts when locked. Fig. 5 is a detail rear view, on enlarged scale, of the trip lever and its spring.

In the accompanying drawings the letter *a* denotes the back board, to which the battery box *b* is secured, and of which it usually forms a part.

c is the magneto bell and *d* the telephone.

The pivot *e* is secured to the back board supports the tumbler or switch *e*, that is adapted preferably to swing in a plane parallel to the board so as to insure a compact arrangement of the moving parts.

The pull rod *f* is, in the form of my improvement herein illustrated, connected to the lever *f'*, that extends across the back board

and has a slot *f*² with which a pin *g*³ on the end of the lever *g* engages, the said lever *g* being connected to a rock shaft *g'* that also supports an arm rest *h*, the several levers being so connected that by a swinging movement of this arm rest the lever *f'* is depressed or raised in such a way as to cause the tumbler *e* to swing in a vertical plane. A spring *e*² is secured at one end to the back board and at the other to the tumbler *e* in such manner as to hold the latter normally in the position shown in Fig. 4 of the drawings, that is with the trip device *i* in the locking position. This trip lever *i* is pivoted to the back board in such position that one end *i'* engages the lug *e*³ that is formed on the tumbler *e*, while the other end or arm *i*² of the trip lever projects into the coin channel *j*. This trip lever bears a counterpoise *i*³ that consists of a screw mounted in the lug *i*⁴ projecting on one side of the pivot, and arranged so that its weight may be moved to the right or to the left so as to form a means for a delicate adjustment of the trip lever upon its pivot *i*⁵. A return spring *k* secured to the back board projects into a socket *i*⁶ in the trip lever, but only makes contact with the lower surface of this socket, or with a lug corresponding with said wall of the socket, when the trip lever is rotated beyond a certain point by the swinging movement of the tumbler. In its normal position the trip lever has a limited swinging movement on its pivot, the weight of a coin on the end *i*² being sufficient to throw that part of the end *i'* that is in contact with the cam on the arm *e*³ of the tumbler into such position that the stop which this part *i'* forms against the swinging movement of the tumbler by its contact with the lug *e*³ is removed to a position that enables the cam *e*⁴ in the swinging movement of the tumbler to completely open the coin channel and allow the coin to move down into a drawer or coin receptacle *j'*. The trip lever is so arranged that the arm *i*² projecting into the coin channel through an opening in the wall of that channel obstructs the passage of a coin and moves only a sufficient degree to unlock the tumbler and allow the pull rod to be operated so as to put the battery into circuit so that the magneto bell may be operated to call

the central office or other station that is connected with the station where this device is located. When the pull rod is operated, as by pushing upon the arm rest *h*, the tumbler is swung on its pivot until its arm engages the spring *l* that projects into the path of movement of the tumbler, and this spring *l* is connected to a binding-post appurtenant to the magneto bell by means of the wire 4, and the wire 2 extends from another binding-post appurtenant to the magneto bell to one of the poles of the battery 1, while the other pole of the battery is connected to the trip lever or to the stud that supports the spring *k* by means of the wire 3. An adjusting screw *k'* is borne in a block *k²* in such position that its lower end is in contact with the spring *k*, and it is used to control the position of this spring *k* with reference to the trip lever *i*,—that is, so that the outer end of the spring that engages the lever may move vertically in a position that will limit the free movement of the trip lever to the proper point to secure the proper engagement of the end *i* of the lever with the cam *e⁴* on the tumbler. The coin introduced in the slot is employed to tilt the lever a limited distance and to hold it in proper position to be operated by the tumbler, the lever permitting the further movement of the coin only after the tumbler has been swung a certain distance.

The method of operating this apparatus has been made sufficiently clear in describing the several parts, but as the invention described herein may be embodied in an apparatus varying in details from the specific parts above enumerated I do not limit myself to the specific and peculiar combination of the several parts described and shown.

The main object is to provide a coin controlled tumbler or switch that requires the positive operation of certain mechanism apart from electricity to complete the circuit between the battery and the magneto bell, the said circuit being normally kept open until a coin has been employed to unlock that part of the apparatus that thereafter is mechanically used to close the circuit.

I claim as my invention—

1. In a telephone apparatus, in combination with a magneto bell, the battery and connecting wires, a spring connection on one side of a break in the circuit with one pole of the battery, a swinging tumbler in electrical connection with the other pole of said battery, and a tilting trip lever having one arm projecting into the coin channel and its other arm forming a stop that in the normal position of the trip lever locks the tumbler against

swinging movement, all substantially as described.

2. In a telephone apparatus, in combination with a magneto bell, the battery and connecting wires, the contact piece connected to one pole of the battery, the tumbler or switch connected to the other pole of the battery, the pull rod connected to the tumbler, the within described mechanism for operating the pull rod, the trip lever with a stop located in the path of movement of a part of the tumbler, and the trip lever spring, all substantially as described.

3. In a telephone apparatus, the coin controlled trip lever having one arm located in the coin channel and the other arm forming a stop and located in the path of movement of a tumbler, the counterpoise borne on the trip lever, the trip lever spring projecting into a socket in the trip lever and normally out of contact with the walls of the socket, the tumbler or switch, the pull rod pivotally connected to said tumbler, the swinging arm rest *h* in operative connection with the pull rod, the contact spring located in the path of movement of the tumbler and in electrical connection with one pole of the battery, and the battery with one pole in electrical connection with the spring *l* and the other in electrical connection with the tumbler *e*, all substantially as described.

4. In a telephone apparatus, in combination, the magneto bell, the connecting wires, the coin controlled apparatus consisting of the tumbler *e*, having a lug *e³*, with a cam *e⁴*, pull rod *f*, the within described tumbler operating mechanism, the tilting trip rod *i* with one arm forming a stop in the path of movement of the lug *e⁴* on the trip lever *e* and the other arm *i²* projecting into a coin channel *j*, the coin channel *j*, the trip lever spring *k*, the pull rod pivotally connected to the tumbler, the within described rod operating mechanism, and the contact spring *l*, all substantially as described.

5. In a coin controlled device, the coin channel *j*, the trip lever *i* with the arm *i²* projecting into the coin channel, the arm *i'*, having the spring socket *i⁵*, the counterpoise *i³*, the adjustable trip lever spring *k* projecting into the spring socket *i⁵* and normally out of contact with the wall of said socket, the tumbler *e* with the lug *e³* and the cam *e⁴*, and the pull rod *f* pivotally connected to the tumbler, all substantially as described.

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Witnesses:

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