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PATENTED FEB. 2, 1904.

J. D. PEACHEY.  
TELEPHONIC CALL INSTRUMENT.

APPLICATION FILED JAN. 6, 1903.

NO MODEL.

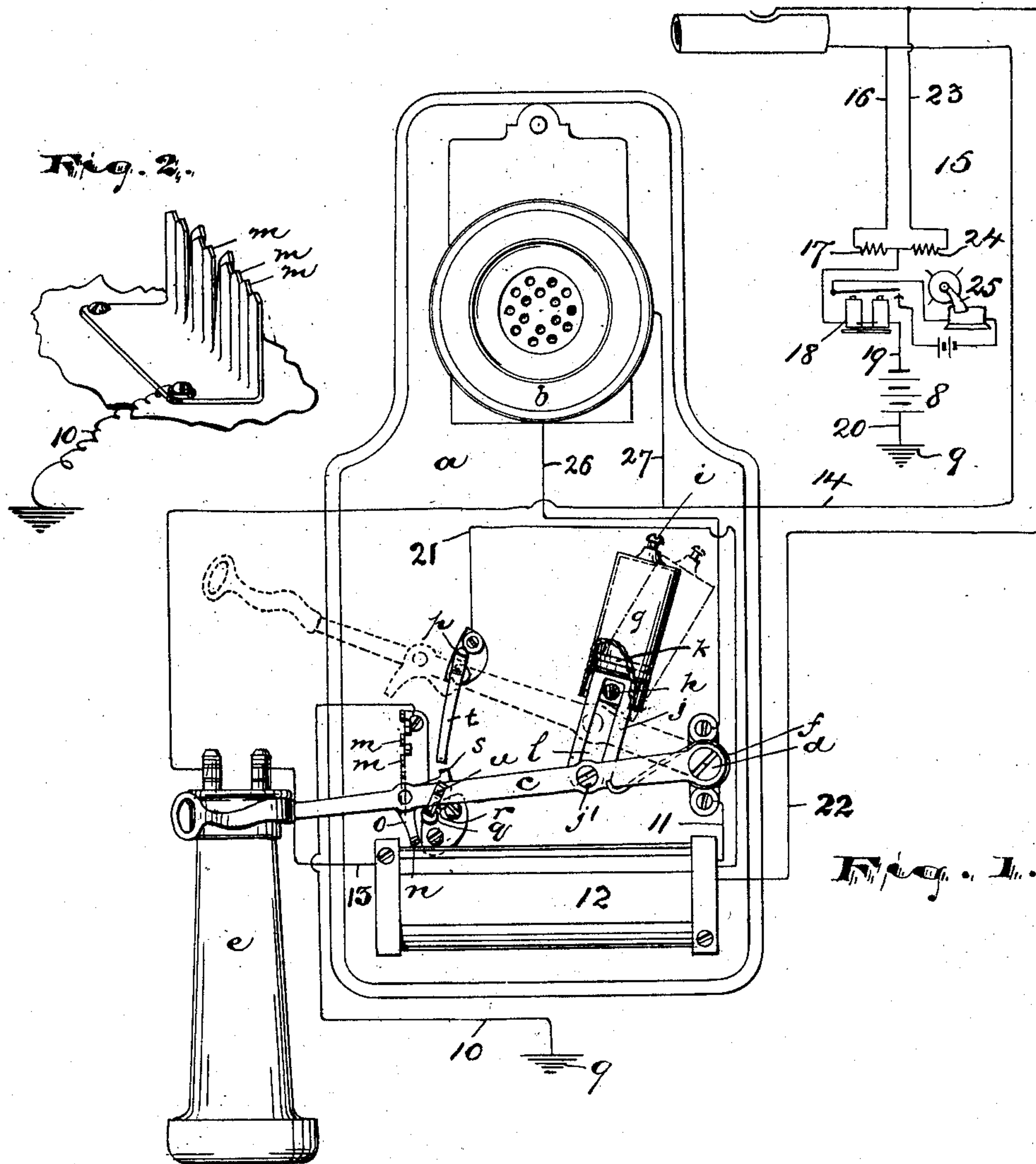


Fig. 2.

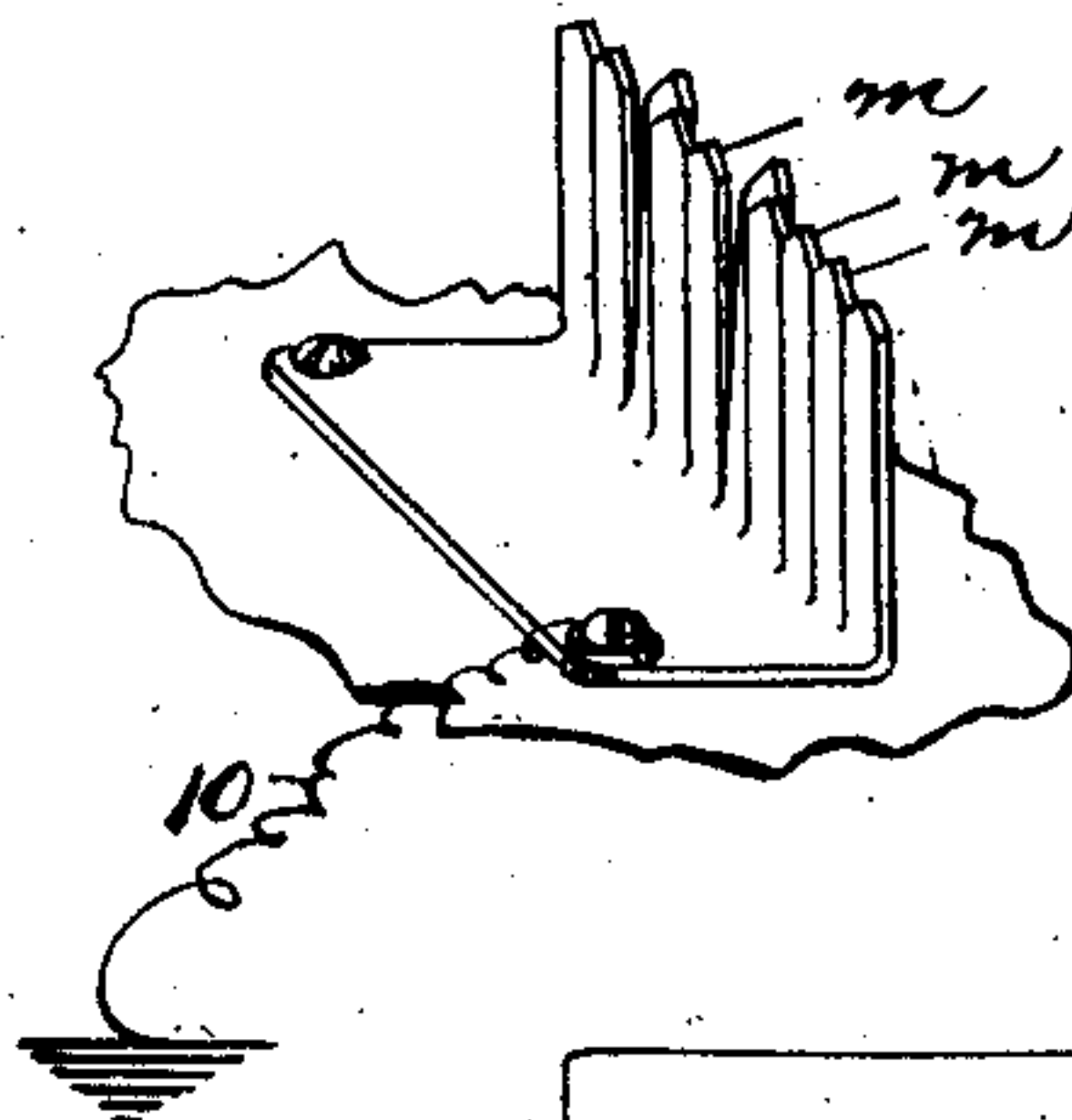


Fig. 3.

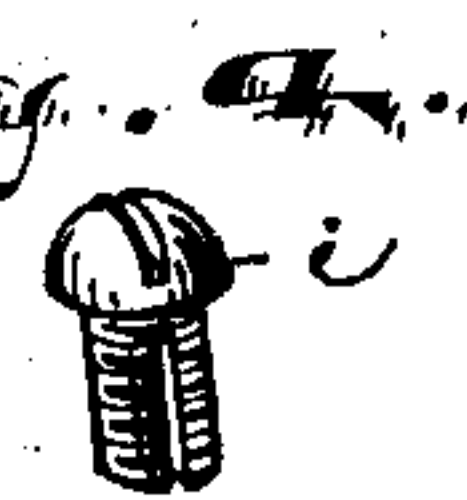


Fig. 4.

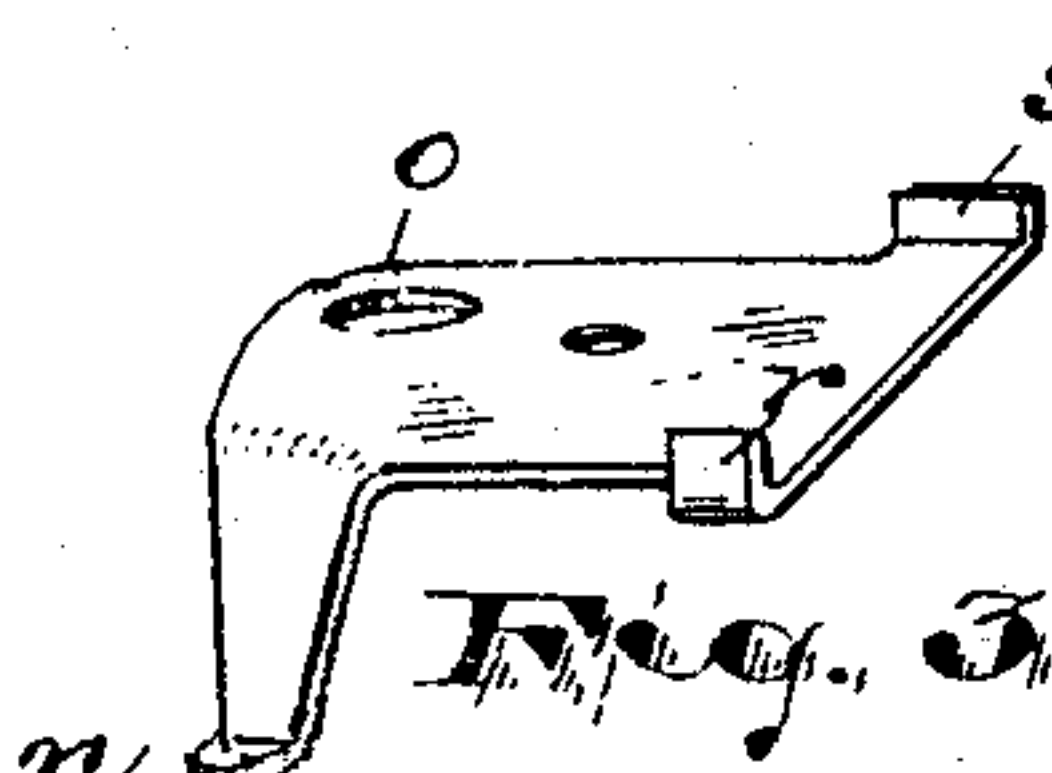


Fig. 5.

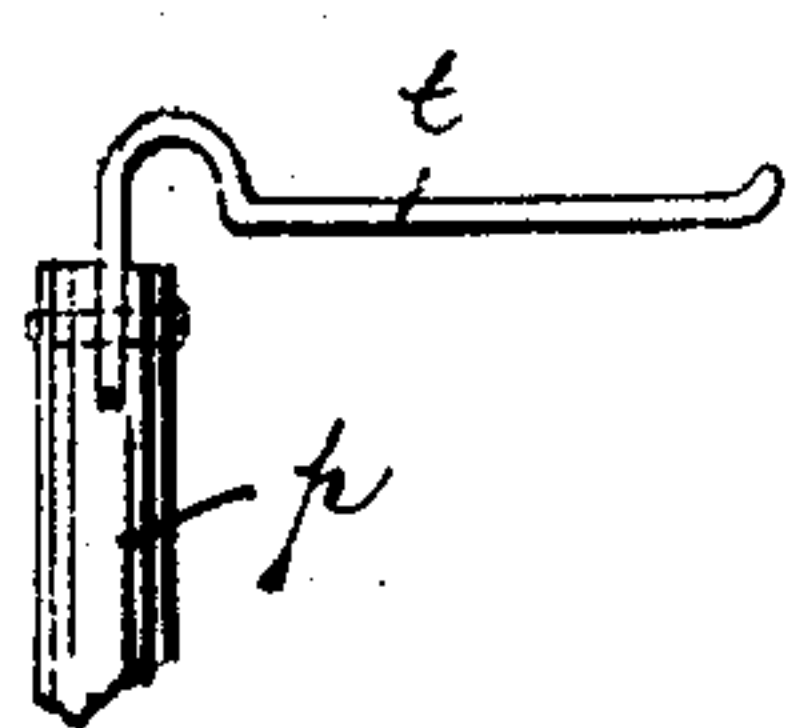


Fig. 6.

WITNESSES:

Henry Krug  
M. V. Doyle.

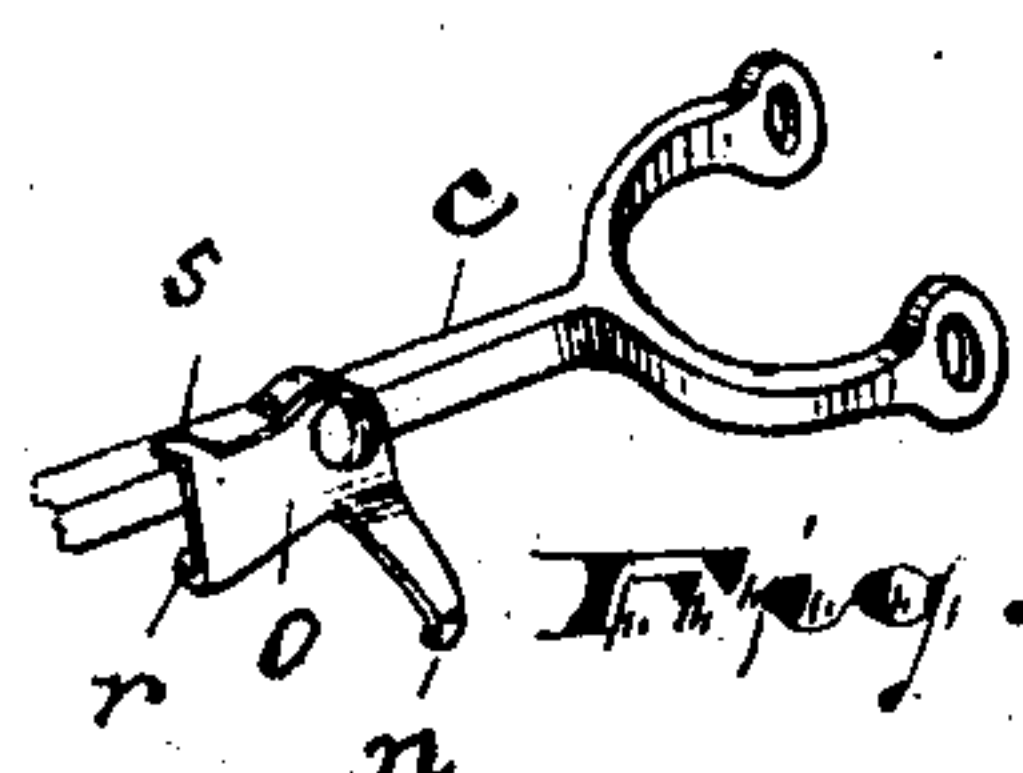


Fig. 7.

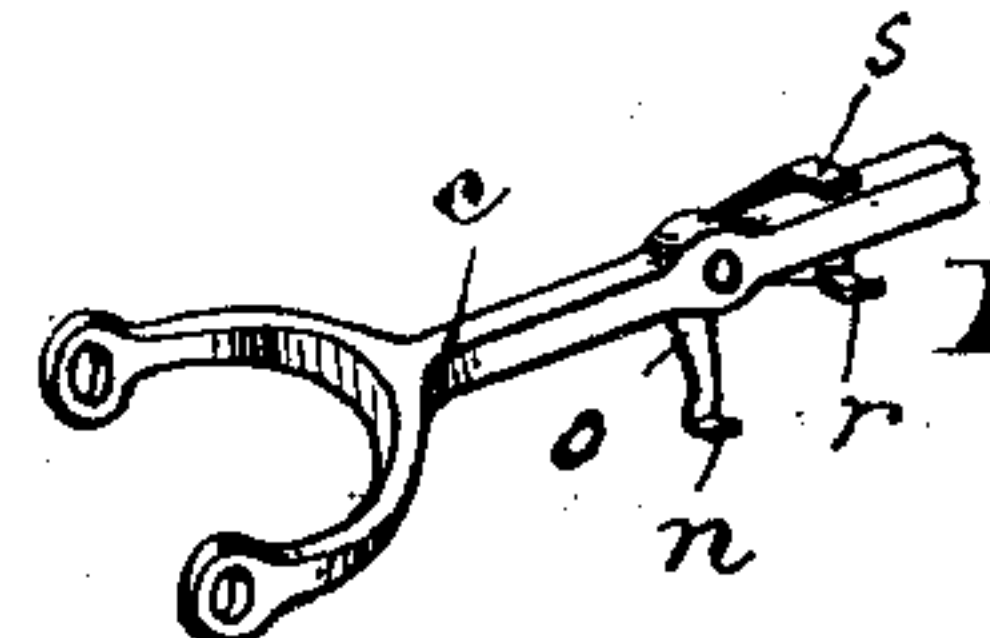


Fig. 8.

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## TELEPHONIC CALL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 751,103, dated February 2, 1904.

Application filed January 6, 1903. Serial No. 137,991. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN D. PEACHEY, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Telephonic Call Instruments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The objects of this invention are to simplify the construction and arrangement of parts and secure greater compactness, whereby the work desired can be accomplished in a less bulky device, to enable the registering of the call or signal to be accomplished upon the upward movement of the receiver-hook, whereby the number registered may be seen or known before the conversation over the telephone begins, to enable the instrument to be employed in connection with series or multiple circuits, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved telephonic call instrument and in the arrangements and combinations of parts, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like characters of reference indicate corresponding parts in each of the several figures, Figure 1 is a front elevation of the improved telephonic instrument in connection with portions of central-station connections shown diagrammatically. Fig. 2 is a perspective view of a contact-comb employed to cooperate with a contact-point on or of the hook of the instrument. Fig. 3 is a perspective view of the said contact-point adapted to be applied to the said hook. Fig. 4 is a detail view of a certain regulating-screw adapted to be employed in connection with a pneumatic cylinder used with a piston for retarding the upward movement of the hook. Fig. 5 is a detail elevation

of a stop or post having a certain contact-spring thereon, and Figs. 6 and 7 are perspective details showing the opposite sides of the receiver hook or lever.

The said switch-hook *c* is of peculiar construction and is adapted under normal conditions to automatically close the circuit to enable a call to be registered at the central office, as will be hereinafter more fully described, the said switch-hook being operated to close the circuit by means of a spring *f*, arranged about the fulcrumal post of the switch-hook, as shown clearly in Fig. 1, and arranged to normally raise the said switch-hook a limited distance when released from the weight of the receiver *e*. To control the up movement of the said switch-hook *c*, whereby it will slowly rise under the power of the spring *f* to enable the number of the subscriber's station to be transmitted and distinctly registered upon the tape at the central office, so that the said tape can be clearly read by the attendant, I have provided a pneumatic check comprising a cylinder, piston, and attachments similar in general construction to those of a pneumatic door-check. Of the said pneumatic check, *g* indicates the cylinder, which is pivoted at its lower end upon a stud or post *h*, attached to the plate *a*. *i* indicates a screw disposed at the vented upper end of the cylinder *g*, the said screw *i* being preferably slotted, and thus adapted to regulate the escape of air through the vent-perforation of said cylinder in any suitable manner, so that the switch-hook *c* may rise more or less rapidly under the power of the spring *f*. *j* indicates the piston-rod pivotally connected with the switch-hook at a point *j'* about midway between the hooked free end and fulcrum *d*, and *k* indicates the piston within the said cylinder *g*, which piston is retarded by the slow-issuing air and is in turn adapted to check the progress of the switch hook or lever when released from the receiver, as above referred to.

The pivotal arrangements of the cylinder *g* upon its supporting-stud *h* and of the piston-rod *j* in connection with the switch-hook *c* serve to permit an oscillating movement of the said switch hook or lever on its fulcrum



without any binding of the said parts when the switch hook or lever rises slowly against the outflow air within the cylinder, as will be understood.

5 I prefer to slot the piston-rod *j*, as shown at *l* in Fig. 1, so that there will be no interference thereof with the supporting-stud *h* of the cylinder.

Contiguous to the switch-hook, preferably  
10 a little in from the hooked extremity, is arranged a series of contact-points *m* of peculiar construction adapted to extend out into engagement with a contact spring-arm *n*, formed on a bell-crank or lever *o*, fulcrumed  
15 upon said switch-hook *c*. Said contact-points are in connection with the ground, as indicated in Fig. 1.

The series of contact-points *m* is of peculiar construction in that it resembles a sheet-metal  
20 comb the points or teeth of which are of considerable length, as in Fig. 2, and are separated by slots, saw-cuts, or the like, the extremities of said teeth being oppositely inclined or *V* shape to enable the coöperating  
25 contact spring-arm *n* to slide over the extremities without catching. Being of sheet metal, any of the teeth may be easily bent out of the path of the coöperating spring-arm *n*, so that  
30 there will be a longer interval of time elapse between certain of the contacts, whereby a longer space or spaces will appear at the central office upon the tape or ribbon upon which  
the number of the subscriber's station is or is to be recorded, and thus by merely bending  
35 one, two, or more of the teeth I can secure a large variety of identifying-numbers upon the said tape to indicate from which station the signal is being or has been transmitted.

The coöperating spring-arm *n* and the bell-  
40 crank lever *o*, of which it is a part, are thrown into and out of alinement with the series of contact-points by means of stops or posts *p* *q*, fixed upon the board *a* at or near the upper and lower limits of movement of the switch-  
45 hook, the said bell-crank lever *o* being adapted to engage the said stops alternately, so that when the receiver *e* is placed upon the switch-hook and the latter drops to its lowest position a bearing *r* of the bell-crank will engage  
50 the post *q*, and the contact-arm *n* on said bell-crank lever will thereby be thrown into alinement with the series of contact-arms *m*, so that when the said switch-hook *c* rises under the power of its spring *f* when released from the  
55 receiver *e* the contact extremity of the said arm *n* will engage the extremities of the series of contact-points one after another to effect the desired signal. When the switch-hook *c* arrives at the upper limit of its movement,  
60 then a second bearing *s*, formed on said bell-crank, will engage the post *p*, and then the said contact-arm will be thrown automatically out of the path of the series of contact-points, so that there will be no contact of terminals

when the receiver *e* is returned to its position 65 between the prongs of the hook *c*.

The bell-crank lever *o* is so arranged on its fulcrumal bearings as that it will maintain its position on the body of the hook *c* after  
70 having been moved by engagement with the posts, as above described. This is effected by a frictional contact either directly with the switch-hook or by contact with an intermediate  
75 spring interposed between the bell-crank lever and the said switch-hook in any suitable manner. This spring is not shown, as it does not form an essential element of my invention.

The bearings *r* *s* of the bell-crank lever *o* for engaging the posts, as described, are preferably bent to lie against the upper and lower  
80 edges or surfaces, respectively, of the body of the hook *c*, the said turned or bent bearings serving as stops for limiting the movements of the crank upon the hook, and thus  
85 maintaining the said bell-crank lever in proper operative relation to secure the desired oscillations of the spring-contact *n* to and from the line of the contact-points.

In connection with the stop or post *p* I prefer to employ a contact-spring *t*, adapted to  
90 engage the metallic lever *c* immediately before the contact-point contacts with the teeth when the instruments are connected in multiple with the main circuit, so that the call-  
95 ing-current has two paths of transmission to the central office and so that should one wire be broken the current may travel or pass over the other wire.

When the instruments are connected in series, the spring *t* is dispensed with, and the  
100 post *p* is employed as a stop and thrower for the lever-contact *o* only. The post *q* may be provided with a similar spring *u* to insure a perfect contact.

In operating the device to effect a call the  
105 receiver *e* is withdrawn from the hook *c*, and the latter rises under the power of the spring *f*. The lever-contact *n* immediately enters into engagement with those teeth *m* of the comb which are properly bent into the path  
110 of said contact-point *n* to effect the desired call-number. When such contact is made, the current generated at the battery 8 at the central office passes through the instrument and connecting-wires and ground in any suitable  
115 manner; but preferably it flows, as may be traced on the drawings, as follows: Starting from the ground 9 and ground-wire 10, Figs. 1 and 2, the current passes through the comb contact-point *m* to the hook-contact *n* and the  
120 hook *c* to the fulcrum *d* and thence through the wire 11, Fig. 1, to the induction-coil 12 and thence out through wire 13 to the receiver *e*. Thence it passes through wire 14 to the central office 15, the current flowing through  
125 wire 16, resistance-coil 17, relay 18, and wire 19 to the battery 8, over the wire 20, and thence to the ground. This current may split or



divide and also pass from the fulcrum *d* through wire 25, transmitter *b*, wire 27, to wire 14, and thence to central office 15. As shown in the drawings, the current may divide and in part pass from the lever *c* over contact-spring *t*, wire 21 to primary winding of coil 12, wire 22, to central office and at said office through wire 23, and thence to the ground, as before. The calls are recorded on the register 25, operated by the relay 18, in the usual manner.

I am aware that other arrangements of wires and connections may be employed without departing from the spirit or scope of the invention.

Having thus described the invention, what I claim as new is—

1. The improved telephonic electrical registering call system, comprising a registering device, battery and connections stationed at a central office, telephone set stationed distant from said central office in electrical connection with said office and its battery and registering device, having, its receiver-hook fulcrumed at one side of its case opposite that through which the hooked end extends and having intermediate of said hooked end and its fulcrum a pneumatic check comprising a cylinder and piston connected to said receiver-hook, a contact-point and a spring for raising said hook when the said hook is relieved of the weight of the receiver, and a comb having a series of contact-points stationed in the path of the contact-point of the hook whereby when the hook rises automatically under the power of the spring, a contact of points will be made and records of the contacts effected upon the register at the central office preliminary to a conversation or call being transmitted over the wires and electrical connections, said parts being combined, substantially as set forth.

2. The improved telephonic registering call system comprising a registering device, battery and electrical connections, and a telephonic set having a receiver-hook fulcrumed at one end and having at its opposite end the prongs to receive the receiver of the said set, a piston pivoted to said lever at a point intermediate of said fulcrum and prongs, a pneumatic vented cylinder in which said piston operates, spring adapted to raise said hook when the latter is relieved of the weight of its receiver, and a series of contact-points electrically connected with said register, the individual points being adapted to successively contact with the hook as it rises, and close electrical connection with the register, whereby a record will be effected on said register preliminary to the transmission of a conversation over the telephonic line of connections, substantially as set forth.

3. The improved telephonic registering call

system comprising a registering device, battery and electrical connections, and a telephonic set having a receiver-hook and spring adapted to raise said hook when the latter is relieved of the weight of its receiver, and a series of contact-points electrically connected with said register, the individual points being adapted to successively contact with the hook as it rises and close electrical connection with the register, and a pneumatic check in connection with the hook to retard its movements, said check comprising a piston pivoted on said receiver and a vented and pivoted cylinder into which the said piston extends, whereby a record will be effected on said register preliminary to the transmission of a conversation over the telephonic line of connections, substantially as set forth.

4. The combination, in telephonic registering call system, with the telephonic set having a receiver and receiver-support and a spring to operate the support when relieved of the weight of the receiver, of a bell-crank contact fulcrumed on said receiver-support and a series of contacts adapted to engage with the said bell-crank contact, and stops adapted to shift said bell-crank contact and limit the movement of the support, substantially as set forth.

5. The combination, in a telephonic registering call system, with the telephonic set having a receiver, a movable receiver-support and a spring to move said support when the receiver is withdrawn therefrom, of a bell-crank contact fulcrumed on said receiver-support and having, distant from the fulcrum, projecting bearings to engage the edges of the support, the movement of bell-crank contact being limited by said bearings, and a series of cooperating contacts, and electrical connections arranged and adapted to operate, substantially as set forth.

6. In a telephonic call system, the combination with the receiver-hook fulcrumed at one end and having the prongs between which the receiver may be seated at the opposite end, of an intermediate piston connected to said hook, a vented cylinder in which the said piston works, a spring adapted to force the piston lengthwise of the cylinder, and an electrical contact-terminal arranged on said lever at a point between the piston and the prongs and adapted to engage a series of contacts stationed adjacent to said receiver-hook, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of December, 1902.

JOHN D. PEACHEY.

Witnesses:

CHARLES H. PELL,  
C. B. PITNEY.