June 6, 1933. C. H. KIRBY 1,912,376

AUTOMOBILE TELEPHONE

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Fig. 2

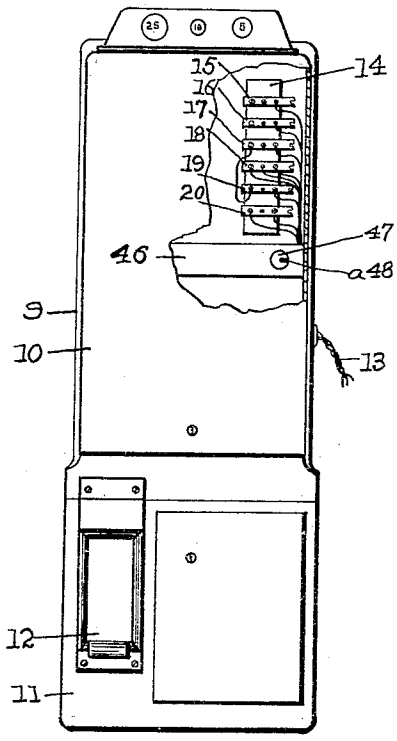
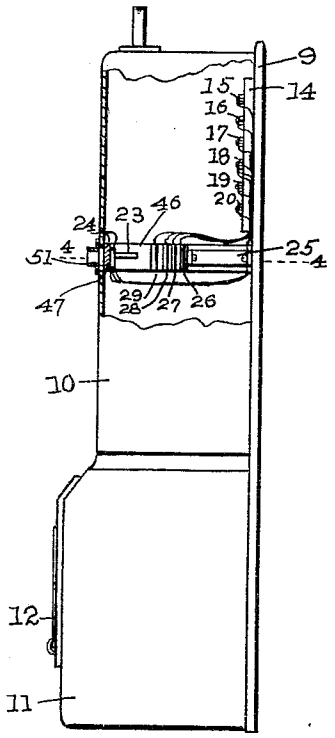


Fig. 3



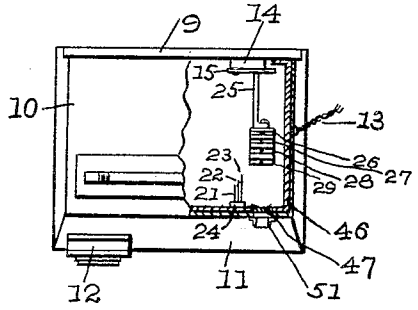


Fig. 1

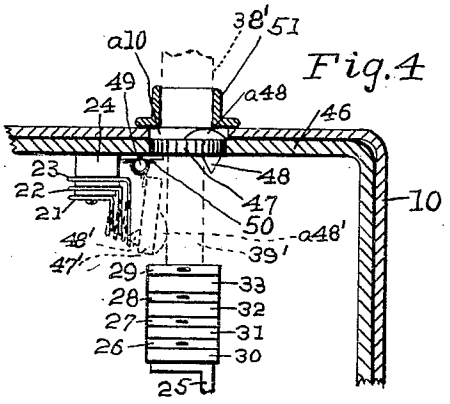


Fig. 4

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AUTOMOBILE TELEPHONE

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Fig. 8

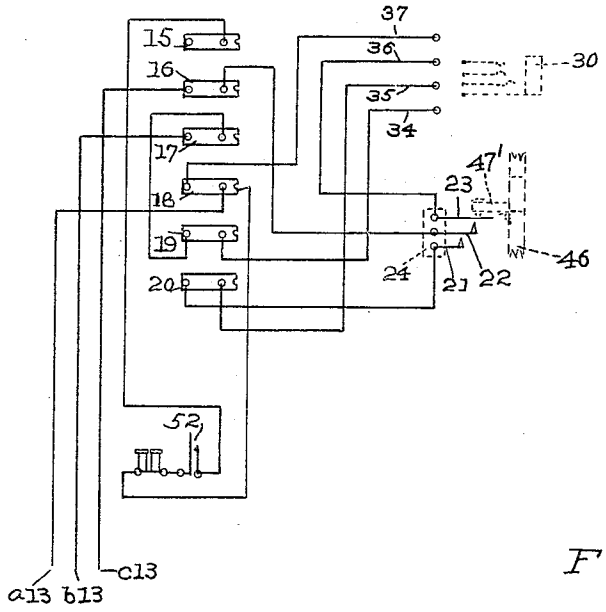


Fig. 6

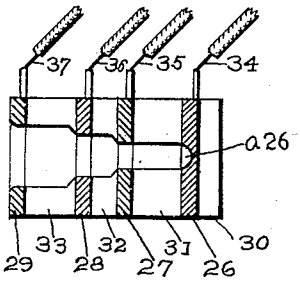


Fig. 7

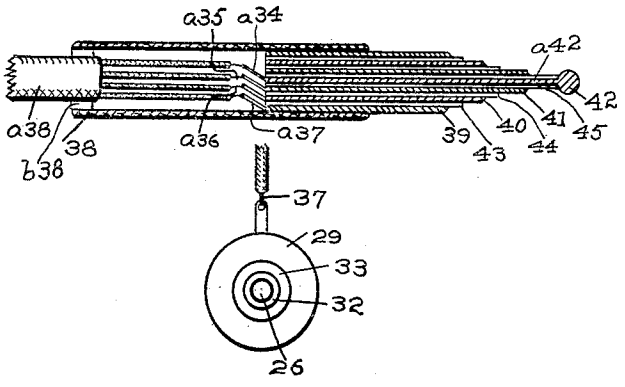


Fig. 5

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UNITED STATES PATENT OFFICE

CHARLES H. KIRBY, OF BELLINGHAM, WASHINGTON

AUTOMOBILE TELEPHONE

Application filed September 10, 1932. Serial No. 632,474.

My invention relates to improvements in automobile pay telephones and has for an object to provide a particular pay telephone coin collector installation, exclusive of the usual transmitting and receiving instruments thereof, but having a particular switch and jack therein, for setting up at places conveniently accessible to occupants of automobiles in each of which is a usual portable transmitter and receiver set and a particular plug cable connected therewith for operating the particular switch and plugging in the particular jack of the stationary coin collector installation in order that those in the automobile, while therein, may call up the connected telephone exchange, deposit a coin in the collector and be connected with those at a desired terminal telephone for conversing therewith from the automobile.

Other objects of my improvement will appear as the description proceeds.

I attain these and other objects of my invention with the device illustrated in the accompanying two sheets of drawings, forming a part of this specification, in which Figure 1 is a top plan view of the box of my automobile pay telephone, Fig. 2 is a front elevation of Fig. 1, Fig. 3 is a side elevation of Fig. 2, Fig. 4 is an enlarged view of a fragmentary portion of Fig. 3 in horizontal section on the line 4—4 thereof, Fig. 5 is an end elevation of my telephone instrument jack drawn on a larger scale, Fig. 6 is a side elevation of Fig. 5 on a medial, vertical, longitudinal plane, Fig. 7 is a medial longitudinal section of my telephone plug drawn on a larger scale, and Fig. 8 is a diagram of the wiring of my automobile pay telephone box.

Similar characters refer to similar parts throughout. Certain parts are broken away to show other parts hidden thereby.

With more particular reference to the designated parts: The instrument box has the back board 9, the upper removable cover 10 fastened to the back board, and the coin box 11 is also fastened to the back board beneath the cover 10. On the front of the coin box is the usual return-coin receptacle 12. The severed three-wire cable 13 is shown as entering one side of the box cover 10. The terminal block 14 is fastened on the back board 9 within the cover 10, and on this block are mounted the wiring terminals 15, 16, 17, 18, 19 and 20, shown best in Figs. 2 and 3. On the insulating block 24 are fastened the spring contacts 21, 22 and 23, see Figs. 1, 3 and 4. On the back board 9 is fastened the bracket 25 to the outer end of which is fastened the telephone instrument jack consisting of the annular wire terminal contact discs 26, 27, 28 and 29 fastened flatwise together with annular insulating discs 31, 32 and 33 intervening, respectively, and insulating block 30 between the end contact disc 26 and the bracket 25. The said jack discs and intervening insulation are disposed with the axes of their openings coinciding. The said disc openings diminish in diameter relatively from the end disc 29 while in the inner end disc 26 the contact is made with the recess *a*26. The wires 34, 35, 36 and 37 are connected with the jack discs 26, 27, 28 and 29 respectively, as shown in Fig. 6.

The contact end of the plug consists of the three metal sleeves 39, 40 and 41 with intervening insulating sleeves 43 and 44 respectively, and a central wire *a*42 with the insulating sleeve 45 between it and the metal sleeve 41, while the wire *a*42 terminates in the ball 42. The insulating sleeve 38 serves as a shank for the plug one end thereof fitting over the outer end of the outer contact sleeve 39, being fastened thereto, and the other end extended beyond the sleeve 39 to receive the plug cable *a*38. The plug cable is composed of the four wire cables *a*34, *a*35, *a*36 and *a*37 respectively connected with the central wire *a*42 and the sleeves 41, 40 and 39. The outer end of the shank 38 is filled with insulating cement around the cable *a*38 at *b*38.

When the plug is extended into the jack the ball 42 makes contact with the disc 26, the sleeve 41 makes contact with the disc 27, the sleeve 40 makes contact with the disc 28 and the sleeve 39 makes contact with the disc 29. Thus contact is made between the wires *a*34, *a*35, *a*36 and *a*37 of the cable and the wires 34, 35, 36 and 37 respectively leading

from the jack, by extending the said plug into the said jack.

Base strap 46 is fastened to the interior of the front and one side of the box cover 10 disposed horizontally. An opening in the front part of the strap 46 is closable by the door 47, hinged at 49 and maintained closed against a small force by the hinge spring 50. Door 47 has exterior boss *a*48 and interior boss 48 thereon. An opening *a*10 in the front of the box cover 10 registers with the said door opening in the strap 46, as also does the thimble 51 fastened to the said front wall of the cover 10 on the outside thereof. The axes of the said door opening in the strap 46, and the thimble 51 coincide with the axis of the jack 26–29 and, when the contact end of the plug 39–42 is extended into the thimble 51, it may be pressed against the boss *a*48 on the door 47 causing the door to open and occupy its dotted position at 47′ and allowing the plug to be fully extended into the jack 26–29, as shown in dotted lines at 38′, 39′ in Fig. 4, where the plug is shown as bearing against the door boss at *a*48′. With the outer door boss at *a*48′, the inner door boss is at 48′, forcing spring contact 23 into its dotted position in Fig. 4, causing the same to bear on the spring contact 22 and forcing it into its dotted position shown in the said Fig. 4 where it in turn contacts with the spring contact 21, resulting in the three spring contacts 21, 22 and 23 making electrical connection with each other. These spring contacts will continue in contact during the period that the jack is occupied by the plug. But when the said plug is withdrawn from the cover 10, not only will all of the jack and plug connections be broken, but the door 47 will be closed by the reaction of spring 50, thus allowing the spring contacts 21, 22 and 23 to separate and return to their solid-line positions, breaking the circuits established by the opened door.

The wires *a*13, *b*13 and *c*13, of Fig. 8, compose the cable 13 of Figs. 1 and 2 which comes from the telephone exchange. In the coin collector installation illustrated herewith the wire *a*13 connects with the terminal 18 which has one wire leading to the transmitter jack disc 29 and another wire leading to the coin-relay switch 52. The wire *b*13 connects with the terminal 17 which by a jumper is connected with the terminal 19, which in turn is connected to the receiver jack disc 26. The wire *c*13 connects with the terminal 16 and from thence to the spring terminal 22.

In the diagram Fig. 8 opposite to the ends of the four wires 34–37 are indicated in dotted lines the four jack discs 26–29 associated with the insulation disc 30 thereof.

The wire 36 connects with the transmitter-return jack disc 28 and with the spring contact 23. The terminal 20 is connected to the spring contact 21 and to the jack wire 35 which connects with the receiver-return jack disc 27.

The plug cable consists of the two wires *a*37 and *a*36 connected with the telephone transmitter in the automobile and the two wires *a*35 and *a*34 connected with the telephone receiver in the automobile.

It thus follows that when the plug is inserted in the jack both the telephone transmitter and the telephone receiver in the automobile from which the plug cable is extended are connected with the telephone exchange to which the cable 13 leads.

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

1. A telephone coin collector installation including a jack composed of separate contact discs disposed opposite a door opening in the cover of the said installation, a group of separate spring contacts disposed adjacent the said door opening and the said jack, electrical connections with the wires of a cable from a telephone exchange, electrical connections from individual members of the said group of spring contacts to contact discs of the said jack and to the said exchange cable connections, a door hinged to close the said door opening which when opened is disposed to bear on the said group of spring contacts, and a telephone jack plug extended through the said door opening forcing the said door against the said spring contacts causing all of them to contact with each other and also extended into the said jack making contact with the contact discs thereof.

2. A pay telephone equipment consisting of, a stationary telephone coin collector installation including a jack composed of separate contact discs disposed opposite a door opening in the cover of the said installation, a group of separate spring contacts disposed adjacent the said door opening and the said jack, electrical connections with the wires of a cable from a telephone exchange, electrical connections from the individual members of the said group of spring contacts to contact discs of the said jack and to the said exchange cable connections, a door hinged to close the said door opening which when opened is disposed to bear on the said group of spring contacts, a telephone jack plug extended through the said door opening forcing the said door against the said spring contacts causing all of them to contact with each other and also extended into the said jack making contacts with the said contact discs thereof, and a cable of wires connected to the said plug and with the transmitting and receiving instruments of a portable telephone set thereof.

CHARLES H. KIRBY.