

No. 851,266.

PATENTED APR. 23, 1907.

F. WALLOCH.

LINE SELECTOR OF INTERCOMMUNICATION TELEPHONE APPARATUS.

APPLICATION FILED NOV. 22, 1904.

2 SHEETS-SHEET 1.

Fig. 1

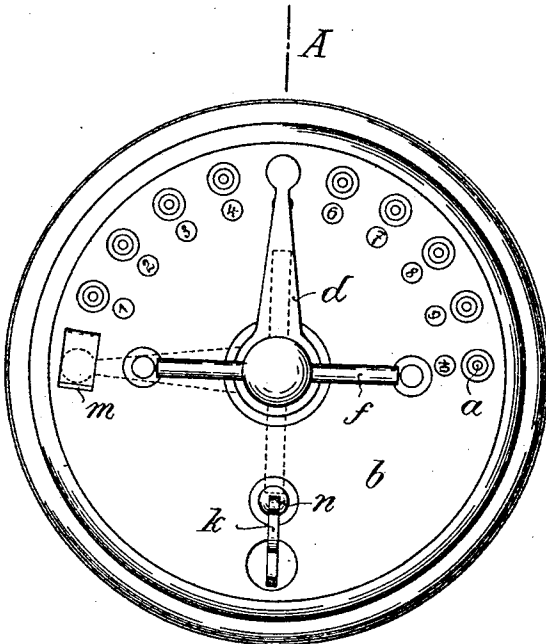


Fig. 2

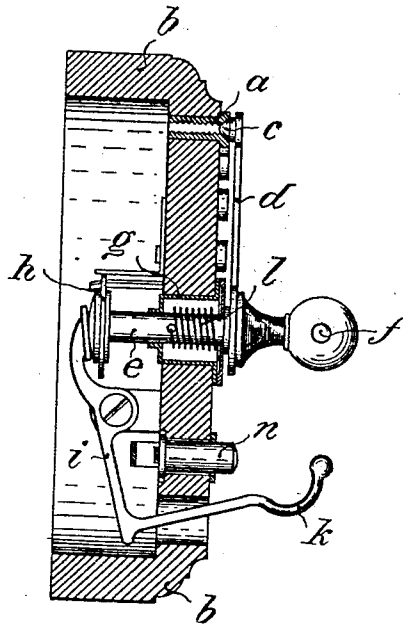


Fig. 3

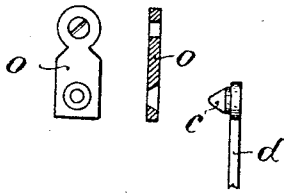


Fig. 4

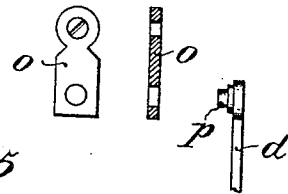
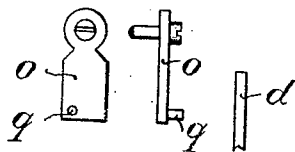


Fig. 5



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Sloper, 488,666,
Rousseau, 567,170.
Gold, 735,966,
Werner et al., 794,134, Class 179-99.
Leimer, 790,966,
.. .. 90.

99.

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2 SHEETS—SHEET 2.

Fig. 6

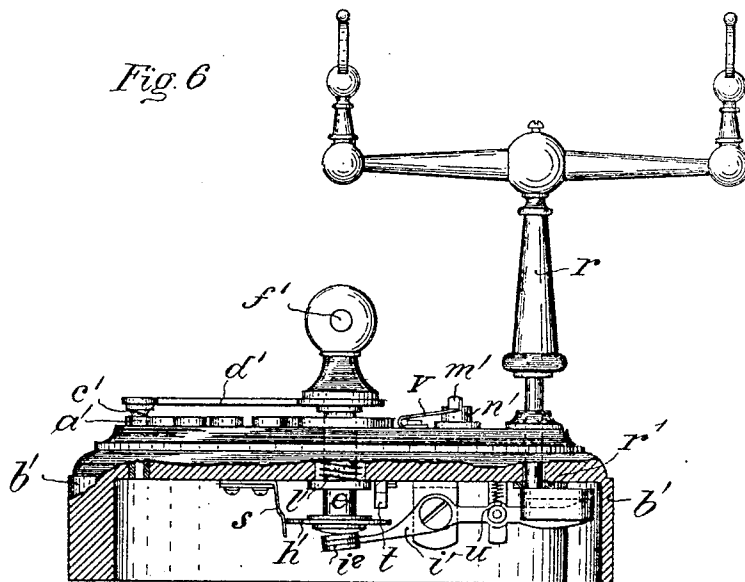
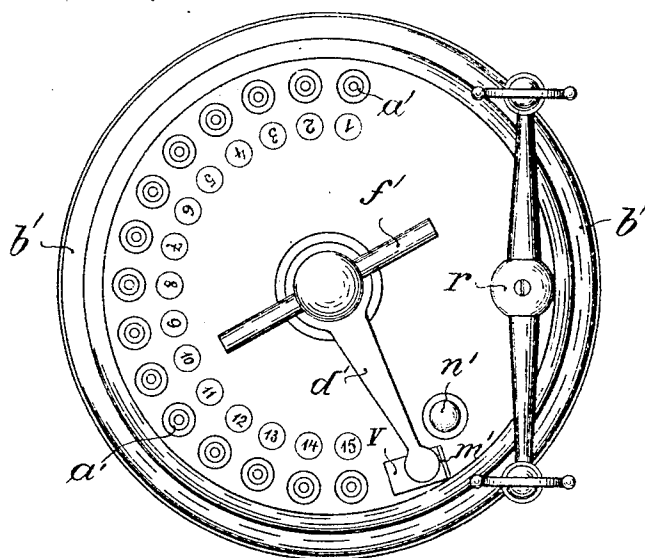


Fig. 7



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UNITED STATES PATENT OFFICE.

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LINE-SELECTOR OF INTERCOMMUNICATION TELEPHONE APPARATUS.

No. 851,266.

Specification of Letters Patent.

Patented April 23, 1907.

Application filed November 22, 1904. Serial No. 233,866.

To all whom it may concern:

Be it known that I, FRANZ WALLOCH, a subject of the German Emperor, residing at Berlin, Gitschinerstrasse 14, Germany, have invented certain new and useful Improvements in Line-Selectors of Intercommunication Telephone Apparatus; 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.

In the line selectors hitherto employed, with a lever switch that is automatically returned to the "home" position the locking device which retains the selector lever in the closed circuit position is arranged on the lever arm itself and acts likewise as a circuit closing device. Under this arrangement when the selector lever is brought from the normal or "home" position to the desired contact this lever touches the intermediate contacts thereby causing disturbances in the line wires. In order to enable the lever to return automatically to the position of rest, it is necessary to provide a ratchet wheel which acts in conjunction with a pawl and has as many teeth as there are contacts in the line selector, the positions of which contacts must correspond exactly with the positions of the detent teeth so as to ensure effective working of the line selector.

In the present invention the locking of the selector lever is effected with any one of the series of fixed contacts to which the line wires are connected, the contact being furnished for this purpose with a recess or plughole, into which a pin or plug arranged on the selector lever is inserted. The selector lever can be automatically and easily returned to the "home" position by means of a coiled spring, a counterweight or the like. When the contact of the lever is constructed in the form of a plug the satisfactory closing of the same is ensured and considerably augmented by the pressure exercised on the switch by the coiled spring, whilst at the same time the inconvenience connected with the management and other disadvantages of the ordinary plug contact are avoided.

The invention is illustrated by way of example in the accompanying drawings:—Figure 1 being a plan, Fig. 2 a section through A B in Fig. 1, Fig. 3 to 5 are details, Fig. 6 and 7 show a modification.

In the form as shown in Fig. 1 and 2 the

fixed contacts connected with the line wires are formed of metal tubes *a* inserted at the contact points 1 to 10 in a suitable non-conducting support or casing *b*. The end of the metal tube *a* which projects outwards is countersunk and serves for the reception of a correspondingly formed conical plug *c* which is carried on the end of the selector lever *d*. Lever *d* is fixed on the spindle *e* which is guided in a sleeve or box *g* in the casing *b* and provided with an operating handle *f* at its outer end. On the opposite end of the spindle *e* a stop *h* is arranged adjacent the free end of a lever *i* which carries a hook *k*. When the telephone transmitter is hung on the hook *k* the inner end of the lever *i* comes against the shaft *e* forcing it outward against the action of a spring *l* and causing the plug *c* to be withdrawn far enough to clear the fixed contacts. The spring *l* is so arranged in the box *g* that its tendency is to retain the selector lever *d* in the "home" position shown in broken lines in Fig. 1 in which position the plug *c* comes into contact with a suitably flexible stop *m*. The casing *b* is furnished with a push button *n* or ringing key and other necessary accessories.

When it is desired to put into circuit any one of the line wires connected with the contacts 1 to 10 for the purpose of communicating with a distant station, the transmitter which is not shown is first taken off the hook *k*, whereupon the contact arm *d* is drawn toward the contacts by the spring *l* so that the plug *c* may be inserted and will be retained in the contact of the particular line wire which is to be put into circuit, as shown in fully drawn lines in Fig. 1. When the conversation is ended the telephone transmitter is hung on the hook *k*, whereby the lever *i* pushes the spindle *e* outwards against the spring *l*. The plug *c* comes out of the metal contact tube *a*, so that the selector lever *d* is released and automatically returned to the "home" position by means of the coiled spring *l*. In Fig. 3 to 5 various forms of contacts are shown. In Fig. 3 the plug-hole is arranged on a contact-plate *o*. The latter may, as shown in Fig. 4 be provided with a cylindrical boring in which a cylindrical pin *p* on the contact arm *d* engages. According to Fig. 5 a stud *q* is arranged on the contact plate *o* whilst the contact arm *d* has a flat contact-surface.

In the form as shown in Figs. 6 and 7 the

lever i' is cooperating with a standard r which is vertically guided in a box r' in the casing b' and serves for supporting the telephone transmitter. The other end of the lever i' is provided with an insulated stop i^2 adjacent to the free end of the spindle e on which a contact plate h' is fixed. This contact plate h' cooperates with contact springs s, t fixed to the casing b' by screws or other suitable means. The spring s is connected to the negative pole of the circuit including the bell by means of a wire (not shown in the drawings) whilst the spring t is connected to the positive pole of the bell-circuit.

In the position according to Fig. 6 the spring s is in contact with the plate h' and the spring t without contact with this plate. When the telephone transmitter is laid upon the standard r the latter is pressed down and thereby the lever i' is moved against the action of the spring u and pushes the spindle e' outwards against the spring l' which automatically returns the spindle e' to the "home" position. Adjacent to the stop m' is provided an inclined plane v on which the plug c' rests, thereby drawing the spindle e' outwards far enough to bring the plate h' in contact with the spring t . By this means the contact-plate h' is alternately brought in and out of connection with the negative and positive pole of the bell-circuit.

What he claims and desires to secure by Letters Patent is:—

1. In a line selector, the combination of a casing, fixed contacts on the casing for connection with the line wires, a selector lever, a spindle on which said lever is secured, said spindle being rotatably mounted in the casing and slidably guided therein to permit the selector lever to pass over the contacts without touching the same, and means tending to bring the selector lever in engagement with the fixed contacts.

2. In a line selector, the combination of a casing, fixed contacts on the casing for connection with the line wires, a selector lever, a spindle on which said lever is secured, said spindle being rotatably mounted in the casing and slidably guided therein to permit the selector lever to pass over the contacts without touching the same, means tending to bring the selector lever in engagement with the fixed contacts, locking means on each contact to hold the selector lever in engagement with the contacts, and means for returning

the selector lever automatically to the normal position.

3. In a line selector the combination of a support or casing, contacts fixed on this support or casing, a spindle loosely mounted and slidably guided in this support or casing, a selector lever fixed on this spindle, a plug arranged on the free end of the lever, means for automatically returning the lever to the "home" position; with means for alternately bringing the spindle of the selector lever in and out of contact with contact springs adapted to be connected to the bell-circuit, as described.

4. In a line selector the combination of a support or casing, contacts fixed on this support or casing, a spindle loosely mounted and slidably guided in this support or casing, a selector lever fixed on this spindle, a plug or pin arranged on the free end of the lever, means for automatically returning the lever to the "home" position; with a contact plate fixed on the spindle of the lever, contact springs cooperating with the contact plate, one of the contact springs being adapted to be connected with the positive pole and the other with the negative pole of the bell-circuit and means for bringing the selector lever in conductive connection with the positive pole, when in "home" position and with the negative pole when in circuit closing position as described.

5. In a line selector the combination of a support or casing, contacts fixed on this support or casing, a spindle loosely mounted and slidably guided in this support or casing, a selector lever fixed on this spindle, the free end of which passes over the contacts and can be put in conductive contact therewith; with a standard slidably guided in the support or casing and serving as a rest for the telephone transmitter, means for automatically returning the selector lever to the normal position, when the telephone transmitter is laid on the standard and an inclined plane or surface on which the free end of the selector lever ascends when reaching the normal position as described.

In testimony whereof he has affixed his signature, in presence of two witnesses.

FRANZ WALLOCH.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.