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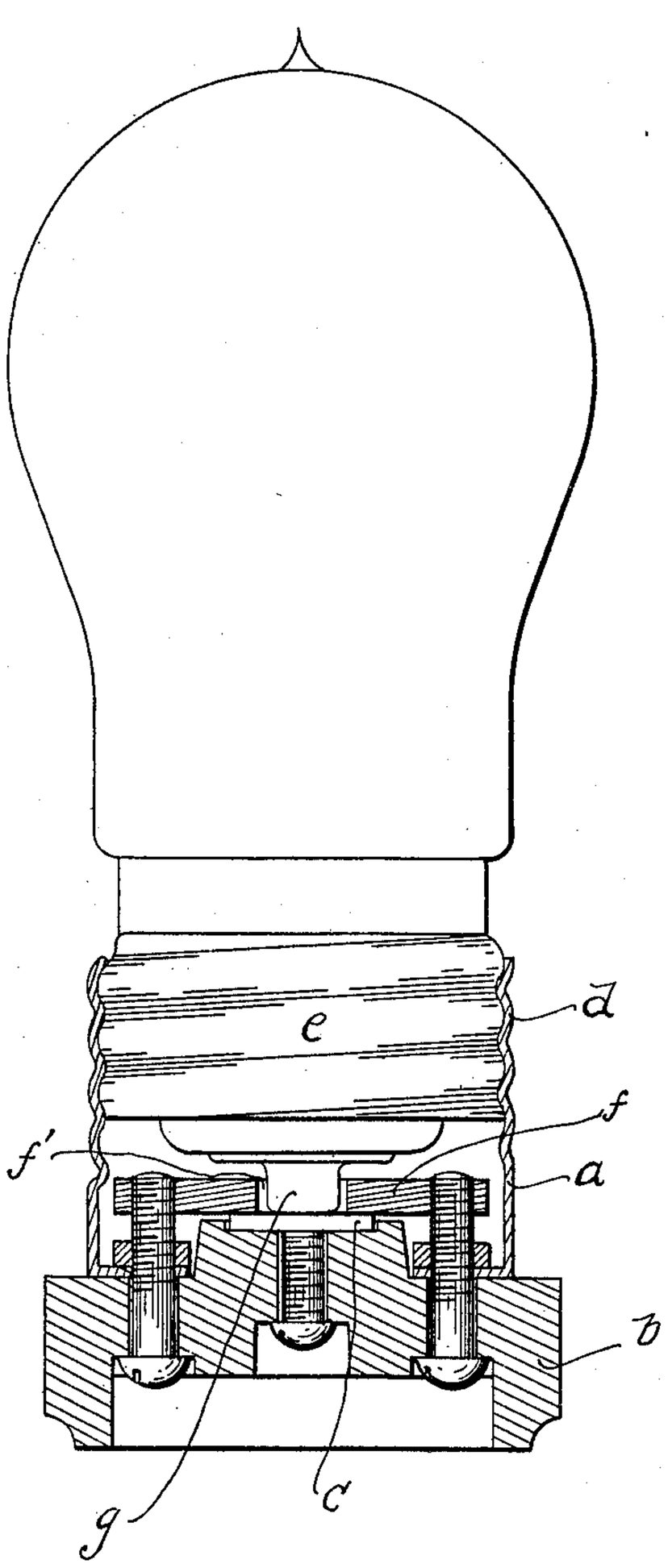
M. FRÖSCHL & R. HUNDHAUSEN.

SYSTEM OF NON-INTERCHANGEABLE ELECTRICAL CONTACT PARTS.

(Application filed Mar. 6, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

MORIZ FRÖSCHL, OF VIENNA, AUSTRIA-HUNGARY, AND RUDOLF HUNDHAUSEN, OF WILMERSDORF, GERMANY, ASSIGNORS TO THE SIEMENS & HALSKE ELECTRIC COMPANY OF AMERICA, OF CHICAGO, ILLINOIS.

SYSTEM OF NON-INTERCHANGEABLE ELECTRICAL CONTACT PARTS.

SPECIFICATION forming part of Letters Patent No. 656,454, dated August 21, 1900.

Application filed March 6, 1899. Serial No. 708,015. (No model.)

To all whom it may concern:

Be it known that we, MORIZ FRÖSCHL, a citizen of Austria-Hungary, residing at Vienna, Austria-Hungary, and RUDOLF HUNDHAUSEN, a subject of the Emperor of Germany, residing at Wilmersdorf, near Berlin, Germany, have invented a certain new and useful Improvement in Systems of Non-Interchangeable Electrical Contact Parts, (Case No. 181,) of which the following is a full, clear, concise, and exact description.

Our invention relates to a system of non-interchangeable electrical contact parts, and has for its object the provision of means for preventing the improper establishment of connection between the terminals of an electric circuit.

More particularly our said invention aims to prevent the insertion in a given terminal socket of a lamp or fuse, for example, the capacity of which is greater than is designed for the said socket.

In many instances it is highly desirable to secure electrical apparatus wherein the translating devices or fuses of various capacities are not interchangeable. The necessity for such apparatus is at once apparent when it is considered that in electrical practice certain portions of the apparatus are used and controlled by those who are unskilled in the art or are desirous of using translating devices of greater capacity than those for which the proposed circuit considered is designed. Moreover, it is practically necessary in such apparatus to guard against the change or removal of the selective part which prevents such improper use. To be more precise, we may cite as an illustration that it is extremely desirable to provide an effective fuse which is capable of being inserted between proper circuit-terminals only in the circuits for which the said fuse is adapted to carry the current, or, again, in plants where the lamp-hour system of payment for current obtains the provision of non-interchangeable contact parts which prevent the connection of lamps of greater capacity in circuit obviates frequent abuse of said system.

Our present invention consists in providing means for making it mechanically impossible to effect the improper connection in circuit of fuses, lamps, or other translating devices, whereby the bases and sockets of given capacities are adapted to be connected each to each.

We will describe our invention more particularly in connection with an Edison socket adapted to receive either an incandescent lamp or the commonly-known Edison fuse-plug. The socket generally corresponds in construction to devices of the same class commonly employed, but in accordance with our invention is provided with a guard having an opening of definite size adapted to receive the tip or stem of a base or fuse plug of corresponding capacity, the stems and guard-openings being constructed of a size to correspond with the capacity of the connected translating device. The guard or selective part is threaded for the purpose of being screwed into position within the socket and may be thus held in place by means of a screw or screws inserted from the rear of the socket, by reason of which construction said guard may not readily be removed or tampered with.

We will describe our invention more fully by reference to the accompanying drawing, which is a vertical sectional view of a lamp-socket of unitary capacity with the base of an incandescent lamp of corresponding capacity inserted therein.

The casing *a* of the lamp-socket is provided upon the porcelain base *b*, which carries the terminal parts of the connected circuit. The contact part *c* is adapted to be connected with one wire of the energizing-circuit. The threaded terminal sleeve *d*, wherein the base *e* of the lamp or fuse-plug is screwed, is electrically connected with the other wire. It will be seen that the contact part *c* is placed in a recessed portion of the porcelain base, over which a sheet of insulating material *f* is secured, the same being provided with a central opening of predetermined size, through which the contact-tip of a size corresponding to the opening provided upon the base of the lamp is adapted to extend and effect connection with the coacting terminal *c*. It will be

at once apparent that the circuit through the conductor of the lamp or fuse-plug inserted in the socket, as the case may be, is not established until the centrally-disposed tip *g* extends through the corresponding opening *f'* in the insulating guard-plate *f* and engages with contact part *c*.

From the above it will be seen that our invention contemplates the provision in the socket and upon the base of two coacting contact parts, which are adapted to engage and complete the circuit through the connected translating device, one of said contact parts being proportioned in accordance with the capacity of the translating device, while the other is associated with a corresponding guard or insulating-shield to secure non-interchangeability. Thus it would be impossible to secure connection in a given socket with a lamp-base designed for sockets of larger capacity, since the stem of a large lamp could not be inserted in the opening of a guard-plate adapted to receive the stem of a smaller one. Assuming that the socket is employed by inserting an Edison fuse-plug therein, it will be at once perceived that a plug adapted to carry twenty amperes of current could not be inserted in a socket adapted to receive plugs having a smaller current-carrying capacity.

It will be seen that by constructing the tips *g* of the bases to correspond generally to the capacity of the fuse or translating device a system of contact parts which are thoroughly non-interchangeable is obtained. The value of this feature will be appreciated, since a standard and definite length of fuse may be employed in all the fuse-plugs which are capable of securing a sufficient break in the connected circuit, whereas if such fuses be constructed to conform generally in length to their respective capacities, as is requisite should this dimension be relied upon for securing non-interchangeability, the heaviest current necessarily must be provided with the shortest fuse, which obviously is highly undesirable. Inasmuch as the mere alteration of the guard-plate secures the conversion of a socket, so that it will fit a lamp of any size, such guard-plate preferably is secured in position in a manner to prevent its ready removal from the socket.

We do not desire to be understood as limiting ourselves to the precise details of the apparatus as set forth in this specification; but,

Having now disclosed our invention, what we claim as new, and desire to secure by these Letters Patent, is—

1. In a system of safety contact appliances of the class described, the combination with stems or tips each forming one terminal contact part, the same being proportioned to correspond generally in size to the respective capacities of the connected electrical devices, of coacting contact parts with which the same are adapted to be engaged and complete the circuit, and insulating guard-plates associated to exclude therefrom terminal tips corresponding in size to devices of greater capacity than said plates are designed to receive said guard-plates being secured in position by means of screws inserted from the rear of the supporting parts, said screws holding contact parts in place thereby preventing their ready removal, substantially as described.

2. In a device of the class described, the combination with a terminal sleeve *d*, of a contact part *c*, the same being respectively connected with the energizing-circuit, of a base adapted to be inserted within the sleeve, a coacting tip *g* corresponding in size to the capacity of the connected translating device or fuse, and a guard-plate *f* disposed before the contact part *c* having an opening therein adapted to receive said tip and exclude those of larger size, said guard-plate being threaded, whereby it may be screwed securely in position within the terminal sleeve, and a fastening device adapted to secure both the guard-plate and the sleeve in position, substantially as described.

3. In a system of non-interchangeable electrical contact appliances, the combination with contact-sockets, of contact-making bases or parts adapted to fit therein, contact-tips corresponding in size to the capacity of the connected device, each of said tips forming one circuit-terminal, coacting contact parts adapted to be engaged thereby, and insulating guards or shields associated therewith having openings adapted to receive the corresponding contact-tips and prevent the establishment of circuit connections between said contact parts and tips of larger size, said guard-plates being threaded and secured in position within their respective sockets by means of screws inserted from the rear said screws also serving to hold the sockets in place, substantially as described.

In witness whereof we hereunto subscribe our names this 19th day of January, A. D. 1899.

MORIZ FRÖSCHL.
RUDOLF HUNDHAUSEN.

Witnesses as to signature of Moriz Fröschl:
ALVESTO S. HOGUE,
HANS H. BAYER.

Witnesses as to signature of Rudolf Hundhausen:
HENRY HASPER,
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