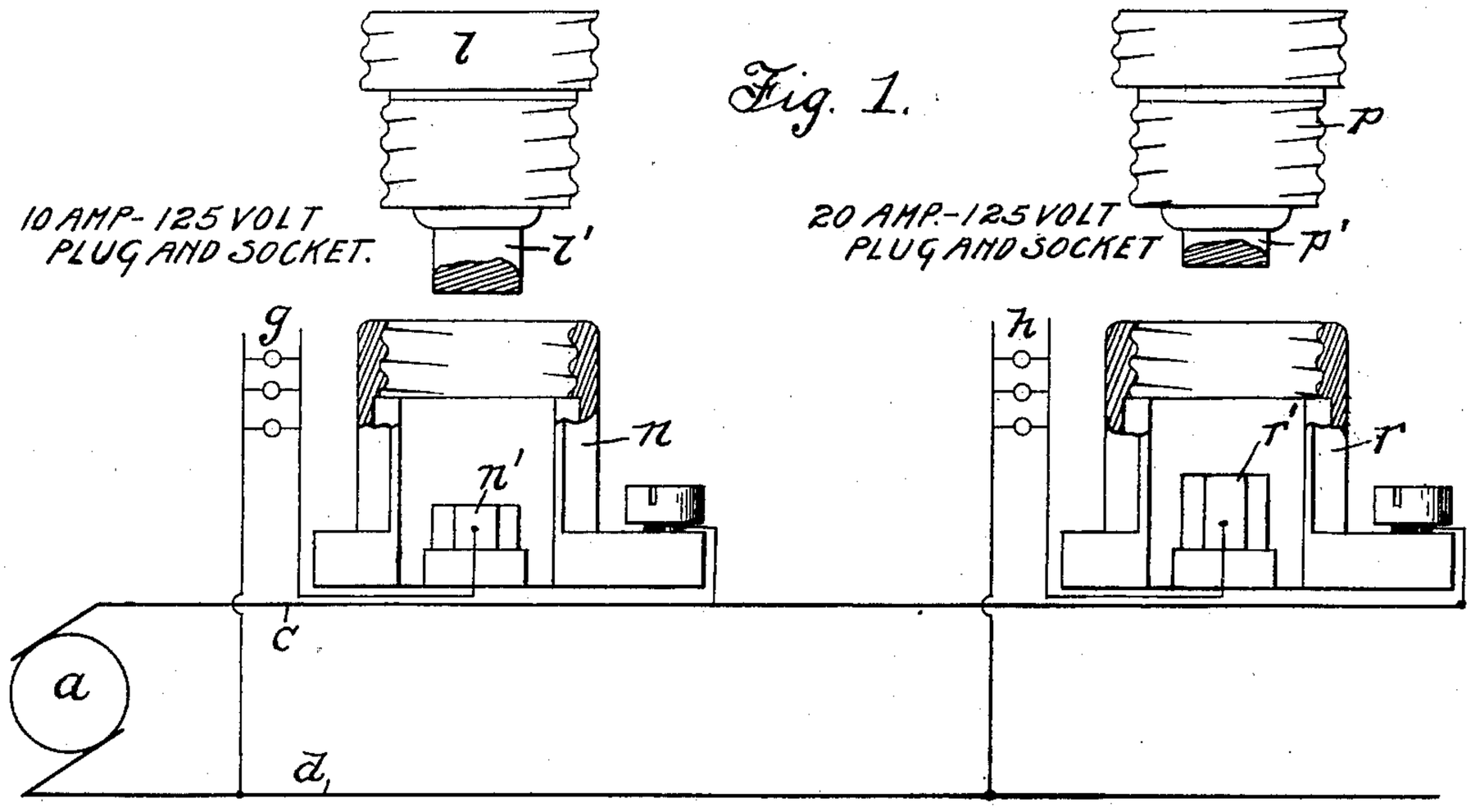
No. 731,779. PATENTED JUNE 23, 1903.

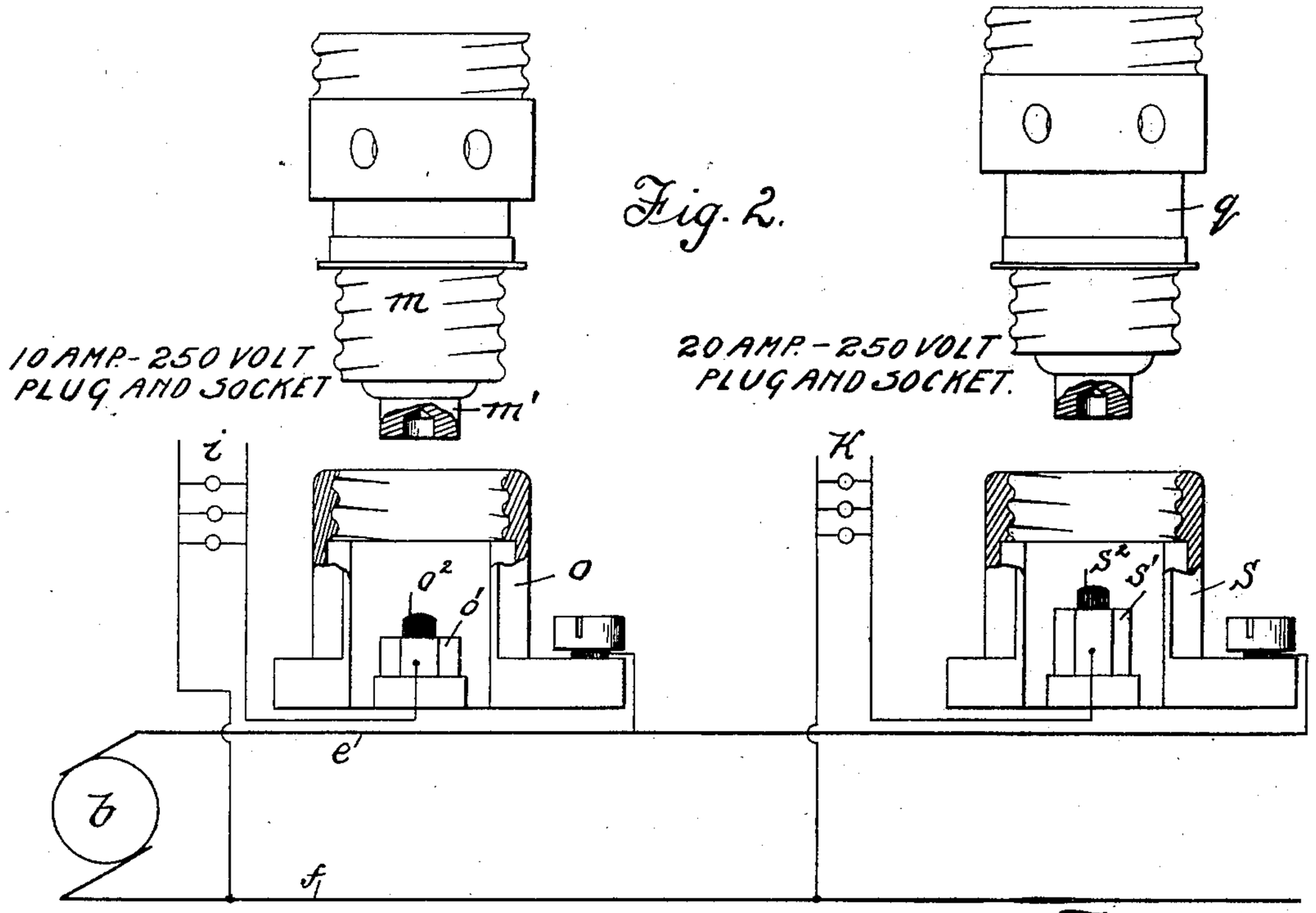
R. HUNDHAUSEN.

NON-INTERCHANGEABLE CONTACT PARTS.

APPLICATION FILED NOV. 24, 1899.

NO MODEL.





Witnesses:
Max Zabel.
C. J. Schmidt.

Inventor:
Rudolf Hundhausen,
By Charles A. Brown & Cragg
Attorneys.

No. 731,779. Patented June 23, 1903.

UNITED STATES PATENT OFFICE.

RUDOLF HUNDHAUSEN, OF WILMERSDORF, GERMANY, ASSIGNOR TO SIEMENS & HALSKE ELECTRIC COMPANY OF AMERICA, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

NON-INTERCHANGEABLE CONTACT PARTS.

SPECIFICATION forming part of Letters Patent No. 731,779, dated June 23, 1903.

Application filed November 24, 1899. Serial No. 738,159. (No model.)

To all whom it may concern:

Be it known that I, RUDOLF HUNDHAUSEN, a subject of the Emperor of Germany, residing at Wilmersdorf, near Berlin, Germany, have invented a certain new and useful Improvement in Non-Interchangeable Contact Parts, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a system of non-interchangeable contact parts, and has for its object the provision of a system employing means adapted for preventing improper connection of contact parts with terminals of electric circuits of different voltage and amperage.

More particularly, my invention has for its object to prevent the improper insertion within a terminal socket of a lamp or fuse, for example, the voltage for which it is designed being less than the voltage of the circuit connected with the socket or the amperage for which it is designed being greater than that which is designed for the said socket.

By means of my invention I am enabled to supply a given district with a number of working circuits for conveying current at different voltages without danger of having current-conducting means, such as fuse-plugs, which are designed for a low voltage, connected with terminals of a circuit for conveying current at higher voltage. In addition to preventing plugs or other current-conducting means designed to be associated with one circuit from being connected with terminals of a circuit of higher voltage I am also enabled to prevent the current-conducting means or plugs which are capable of connection with terminals of the same circuit from being connected with terminals of conductors having current of lower amperage connected with said circuit.

My invention is of particular utility for preventing the improper connection of fuse-plugs with terminals of the same circuit or terminals of circuits conveying current at different voltages.

In practicing my invention I employ guards which, while permitting of the connection of plug and socket terminals that may properly be connected, the said guards also prevent the engagement of plug and socket terminals that should not be connected.

I will explain my invention more particularly by reference to the accompanying drawings, illustrating two embodiments thereof, in which—

Figure 1 illustrates diagrammatically a circuit for conveying current at one voltage, plugs and sockets of my invention being associated therewith. Fig. 2 illustrates diagrammatically a circuit for conveying current at higher voltage than that conveyed by the circuit illustrated in Fig. 1, plugs and sockets being associated with the circuit in accordance with my invention.

Like parts are indicated by similar letters of reference in both views.

In Fig. 1 it may be assumed for the sake of demonstration that the generator *a* creates a current having a pressure of one hundred and twenty-five volts, while Fig. 2 illustrates a generator *b* for conveying current at a higher voltage—say two hundred and fifty volts. The feeder-conductors *c d* of the system shown in Fig. 1 and feeder-conductors *e f* of the system shown in Fig. 2 extend from the generators to the districts of consumption, where they are connected with the consumption-mains. I have illustrated consumption or working circuits *g* and *h* in Fig. 1, containing translating devices connected in parallel between the mains of the consumption-circuits, the translating devices of each of the consumption-circuits *g* being designed for current at one hundred and twenty-five volts in this instance, while, for the sake of demonstration, it may be assumed that the mains of the consumption-circuits *g* convey current having a volume of ten amperes, while the mains of the consumption-circuits *h* convey current of a greater volume—say twenty amperes.

In the systems shown in Fig. 2 I have indicated consumption-circuits *i k*, between the mains of which translating devices are connected in parallel, these translating devices being designed for current of greater voltage

than that supplied to the translating devices g and h, as, for the sake of demonstration, a current at two hundred and fifty volts. The mains of consumption-circuit i may in this instance convey current of lower amperage than the mains of consumption-circuit k—as, for example, a current of ten amperes—while the mains of consumption-circuits k may carry current of increased amperage—for example, a current of twenty amperes.

It may be assumed that systems of electrical distribution shown in Figs. 1 and 2 both supply consumption-circuits at the same consumption center. For example, mains of the consumption-circuits for conveying current at different voltage and amperage may be located in a single room near the mains of the different circuits conveying current of different voltage and amperage which are located in the same room; but care has to be exercised on the part of those desiring to make connections with these circuits or who manipulate the fuse-plugs in order to make the proper connections, and even though great care be exercised troublesome mistakes will be made. By means of my invention it will be impossible to make improper connections which will rupture the conductors or injure the translating devices.

In practicing my invention the construction shown in Figs. 1 and 2 may be adopted where the Edison type of plugs and sockets is employed. The plugs l and m, associated with the circuit-conductors leading from the generators a and b, respectively, are provided with extensions l' m', adapted for engagement with circuit-terminals n' o' in the sockets n and o. The terminal o' is provided with a projection o^2, preferably made of ivory, which is adapted to engage a corresponding recess in the extension m'. The terminal n' is not provided with such a projection, nor is the extension l' provided with a recess, so that although the plugs and sockets are adapted to be associated with a circuit for conveying current of the same amperage, fuse-plug l for completing the consumption-circuit g of low voltage is not capable of completing the consumption-circuit i of higher voltage, so that the plug l cannot by mistake be inserted in the socket o. The construction of the plugs p and q and the sockets r and s is similar to the construction of the plugs l and m and sockets n and o with the exception to be noted, so that the plug p of lower voltage cannot be inserted within the socket s for completing the consumption-circuit k of higher voltage, nor can the plugs p and l be fully inserted within the sockets o and s, respectively. The plug p and socket r are designed for a current of higher amperage than the plug and socket l and n. Although the fuse-plug l may be inserted within the socket r to complete the consumption-circuit h, the plug p cannot be inserted far enough within the socket n to complete the consumption-circuit g, since the extension p' of the plug p is shorter than the extension l' and cannot come in contact with the terminal n'. The extension p' being shorter than the extension l', the terminal r' should be longer than the terminal n' to enable the parts p' r' to come in contact. As will be apparent from an inspection of the drawings, the plug q cannot be inserted far enough within the socket o to complete the consumption-circuit i. In order to enable the plug q to complete the consumption-circuit k, the terminal s' is longer than the terminal o'.

While I have herein shown and particularly described the preferred embodiment of my invention, I do not wish to be limited to the precise construction and arrangement shown, as changes may be made without departing from the spirit of my invention; but,

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. In a system of non-interchangeable electrical contact appliances, the combination with a plurality of terminal sockets adapted for connection with circuits of different voltages and unlike amperage, of a corresponding plurality of terminal fuse-plugs for said sockets, projections of insulating material within sockets adapted for connection with the circuit of higher voltage for preventing the plug designed for insertion within the socket adapted for connection with the circuit of lesser voltage from being connected within the socket connected with the circuit of higher voltage, and means associated with the same sockets adapted for connection with circuits of lesser amperage for preventing connection therein of fuse-plugs designed for insertion within sockets adapted for connection with circuits of greater amperage, substantially as described.

2. In a system of non-interchangeable electric contact appliances, the combination with a plurality of high-tension terminal sockets for different amperage, of a second plurality of low-tension sockets for different amperage, a corresponding plurality of terminal plugs for said sockets, insulating-stops for the high-tension sockets and plugs, adapted for interposition between plug and socket, said insulating-stops being adapted to permit contact between plug and socket when a high-tension plug is inserted within a high-tension socket and to prevent contact when a low-tension plug is inserted therein, and means associated both with the high-tension and low-tension sockets adapted for connection with circuits of lesser amperage for preventing connection therein of plugs designed for insertion within sockets adapted for connection with circuits of greater amperage, substantially as described.

3. In a system of non-interchangeable electric contact appliances, the combination with a plurality of high-tension terminal sockets for different amperage, of a second plurality of low-tension sockets for different amperage, a corresponding plurality of terminal plugs for said sockets, insulating-stops for one set

of terminal sockets adapted for interposition between plug and socket, said insulating-stops being adapted to prevent the connection of plugs designed for insertion within a socket adapted for connection with a circuit of lesser voltage within the socket connected with the circuit of higher voltage, and means associated both with the high-tension and low-tension sockets adapted for connection with circuits of lesser amperage for preventing connection therein of plugs designed for insertion within sockets adapted for connection with circuits of greater amperage, substantially as described.

4. In a system of non-interchangeable electric contact appliances, the combination with a plurality of terminal sockets adapted for connection with circuits of different voltage and unlike amperage, of a corresponding plurality of terminal fuse-plugs for said sockets, insulating-stops provided within sockets adapted for connection with the circuit of a given voltage for preventing the plug designed for insertion within the socket adapted for connection with the circuit of different voltage from being connected within the aforesaid socket connected with the circuit of given voltage, and means associated with the same sockets adapted for connection with circuits of lesser amperage for preventing connection therein of fuse-plugs designed for insertion within sockets adapted for connection with circuits of greater amperage, substantially as described.

In witness whereof I hereunto subscribe my name this 27th day of October, A. D. 1899.

RUDOLF HUNDHAUSEN.

Witnesses:

HENRY HASPER,

WOLDEMAR HAUPT.