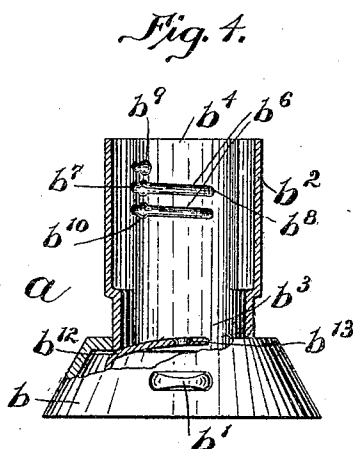
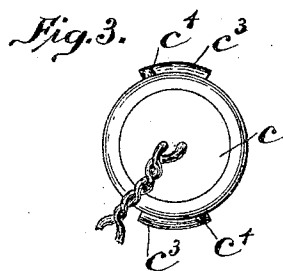
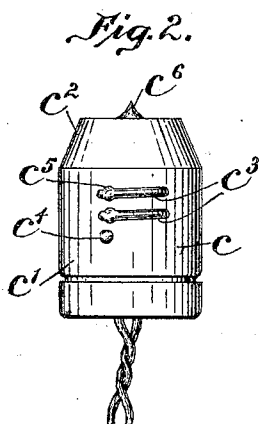
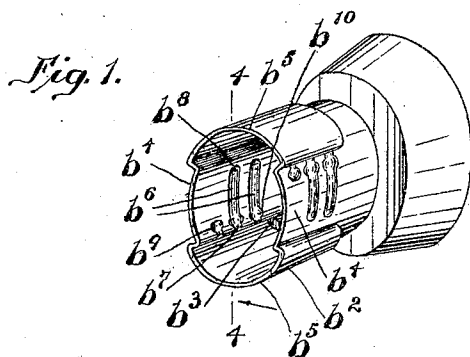


No. 807,051.

PATENTED DEC. 12, 1905.

F. F. STRONG.
ELECTRIC ATTACHMENT PLUG.
APPLICATION FILED APR. 3, 1905.



Witnesses:

Walter H. Naylor.

Olive B. Mosher.

Inventor:

Frederick F. Strong,

by

Geo. H. Maxwell

Attorney.

UNITED STATES PATENT OFFICE.

FREDERICK F. STRONG, OF BOSTON, MASSACHUSETTS.

ELECTRIC ATTACHMENT-PLUG.

No. 807,051.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FREDERICK F. STRONG, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Electric Attachment-Plugs, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is an electric contact-making mechanism of the kind commonly known as "attachment-plugs," having for its object the provision of means for securing quick screw-like action without twisting the cords and quick certain electrical contact. Besides these objects are economy, simplicity, and durability of construction. This class of devices is used for many purposes, and especially by physicians for connecting their electrotherapeutical apparatus to the electric-light circuit by means of a connection which fastens into the socket normally occupied by an incandescent-lamp bulb. The two common types in general use are the so-called "Edison and Thomson-Houston" plug and the "Westinghouse" plug, the former operating by means of a screw-thread and causing great annoyance to the user because of the resulting twisting of the cords and the latter operating by means of holding-springs, which, however, allow more or less play and are liable to produce arcing. Accordingly I have devised a plug in which there are a plurality, preferably two, sets of short broken threads projecting from one part to enter the opposite part and be interlocked therewith by a quarter-turn, my device containing certain alining means and locking means, as well as a wiping contact or terminal, for giving certainty of electrical contact.

The constructional details of my invention will be understood from the following description, reference being had to the accompanying drawings, in which I have shown a preferred embodiment of my invention.

In the drawings, Figure 1 is a perspective view of the receiving part of my invention. Fig. 2 is a view in side elevation of the male portion or entering part of the invention. Fig. 3 is an end view of the latter, and Fig. 4 is a longitudinal sectional view of the part shown in Fig. 1.

It will be understood that the general features of the socket will be of any usual or preferred kind, comprising a base b , containing a switch b' and other usual component parts.

Projecting from this base b is a tubular receiving portion b^2 , having a cylindrical lower part b^3 and oppositely-deflected portions b^4 , which are preferably set in on a smaller radius than the remaining portions b^5 to operate somewhat after the manner of a bayonet-joint. These offset parts b^4 and b^5 are of such proportions and so arranged that when the male part c (to be presently described) enters therein and is given a quarter-turn the portions of said part c which occupied the larger circumference of the parts b^5 will interlock snugly and immovably with the smaller parts b^4 of shorter radius. In the portions b^4 I provide one or more screw-like depressions or broken threads b^6 , opening freely at their outer ends b^7 , but preferably closed at their inner ends b^8 . In other words, these threads do not extend entirely across the inwardly-deflected portions b^4 . Also I prefer to provide a short socket-like or cup-like depression b^9 at one side or the other of the thread or threads b^6 , herein shown at the side nearer the open end of the part b^2 .

The part c or male member of the attachment-plug has a cylindrical body c' for the greater part of its length and preferably terminates in a slightly-tapered end c^2 . At its opposite sides, as herein shown, I provide projecting ribs or threads c^3 , corresponding in number and size and location to the female threads b^6 before mentioned—i. e., as herein shown, there are two of these threads in each group and two groups arranged opposite each other. Viewing Fig. 3, it will be seen that these threads project in such manner as readily to enter the larger portions b^5 of the tubular part of the socket-piece, so that when the male member is placed within the female member and given a quarter-turn the ribs c^3 will fit into the grooves b^6 , thereby quickly and firmly locking the parts together in screw fashion. Adjacent the rear end of the opposite groups of threads c^3 I provide a projection c^4 , adapted to snap into the socket b^9 before described. Also I prefer to provide one or more of the threads or grooves b^6 just within its open end with a slight enlargement, as indicated at b^{10} , and I provide the rear end of the corresponding rib or ribs with a slight enlargement c^5 , as clearly shown in Fig. 2, the result being that when the parts are turned into interlocking position these enlargements c^5 snap into the yielding metal of the receiving portion b^3 , thereby locking the parts against accidental displacement. At its extreme end the member c is provided with a

conical contact or terminal c^6 , and the base b is provided with a spring-contact b^{12} , having at its outer end a small conical hole b^{13} for receiving the contact c^6 . The result is that when the male member c is put in place the pointed end of the terminal c^6 instantly crowds into the tapering hole b^{13} of the yielding terminal b^{12} and is given a wiping or rotary inward movement as the members b c of the attachment-plug become interlocked. This insures a perfect contact, maintaining the contact parts c^6 b^{12} clean and in perfect order.

In use the member c is placed within the member b , the conical end c^6 cooperating with the cylindrical portion b^3 in guiding the parts quickly to proper position, it being understood that the threaded portion of the male member first enters the enlarged threadless portion of the female member. The parts are then given a quarter-turn over toward the right, thereby forcing the ribs c^3 into the grooves b^6 until the ends of said threads strike the ends b^5 of the grooves, and at the same time the enlargements c^5 of the threads snap into the socket portions b^{10} of the grooves, and the projections c^4 similarly lock into the yielding sockets b^9 , thereby making the parts absolutely fast. In accomplishing this movement the conical terminal c^6 is caused to wipe over with a cleaning action the surface of the yielding terminal b^{12} , thereby making perfect electrical contact. All this movement is accomplished by a quarter-turn, the extent of the turning movement depending, of course, upon the length of the threads and grooves.

I am aware that my invention is capable of many other embodiments coming within the spirit and scope of the claims, and accordingly I wish it understood that I am not limited to the constructional details herein shown, except as otherwise specified in said claims.

My plug is adapted to incandescent lamps, apparatus of the kind previously mentioned, and various other uses.

Having described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. An electric attachment-plug, comprising cooperating parts adapted to fit into each other and each provided with a plurality of inde-

pendent threaded portions separated by longitudinal threadless portions, the containing part being tubular and having its threadless portions of greater radius than its threaded portions.

2. An electric attachment-plug, comprising a tubular part having a plurality of narrow threaded portions extending longitudinally thereof and offset on a shorter radius than the intervening threadless portions of said part, and a cooperating part having projecting threaded portions corresponding to the threaded portions of the tubular part, said parts being provided with locking means, operating when the cooperating threaded portions are interlocked, for positively locking the parts in operative relation.

3. An electric attachment-plug, comprising a tubular part, and a cooperating part to enter the same, said two parts having a series of broken threads permitting direct longitudinal insertion of one part within the other part and becoming fully interlocked by a partial relative rotation, said tubular part having a cylindrical inner end, and said cooperating part having a tapering forward end for fitting within the latter.

4. An electric attachment-plug, comprising a tubular part, and a cooperating part to enter the same, said two parts having a series of broken threads permitting direct longitudinal insertion of one part within the other part and becoming fully interlocked by a partial relative rotation, said tubular part having a cylindrical inner end, and said cooperating part having a tapering forward end for fitting within the latter, said tubular part also having a spring-contact perforated at its free end, and said cooperating member having a tapering contact-point for entering said perforated end with a wiping movement as the two parts are rotated.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK F. STRONG.

Witnesses:

GEO. H. MAXWELL,
M. A. JONES.