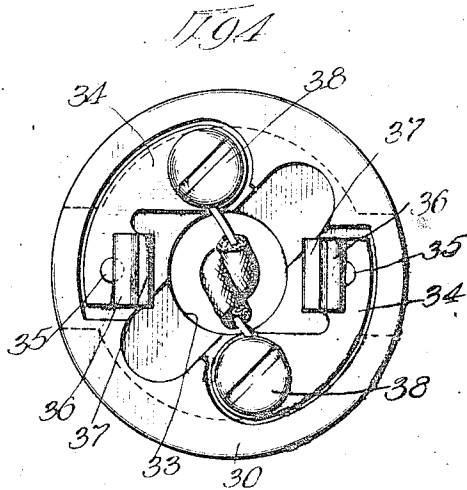
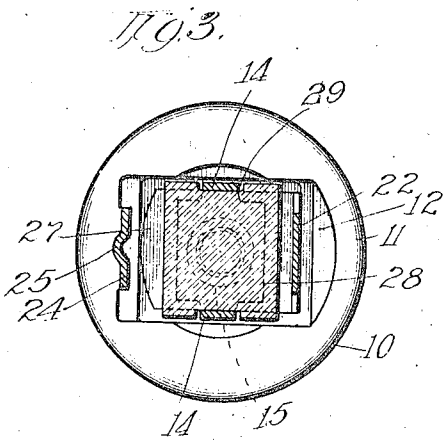
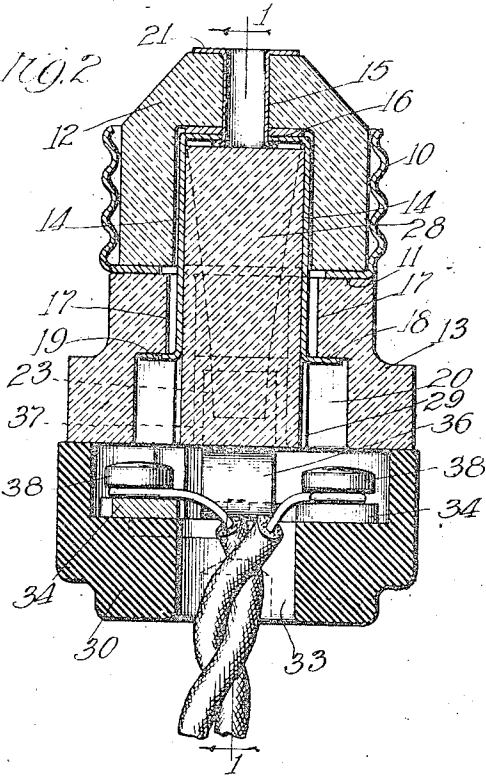
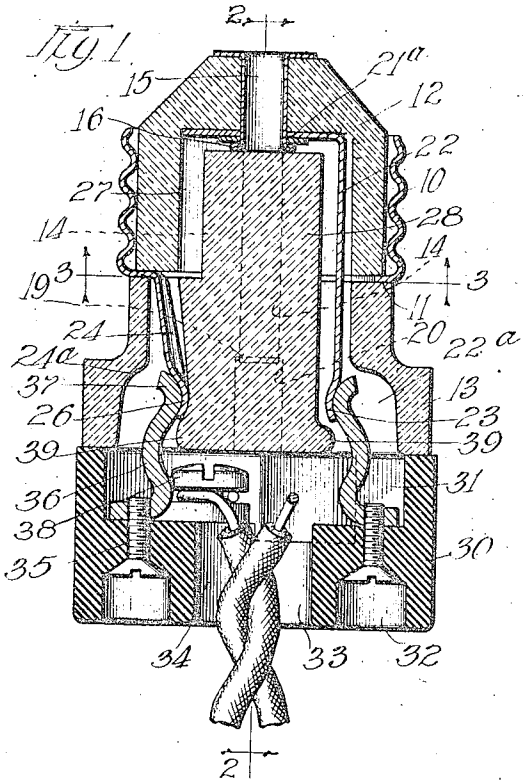


R. B. BENJAMIN.
SEPARABLE ATTACHMENT PLUG.
APPLICATION FILED DEC. 9, 1914.

1,286,919.

Patented Dec. 10, 1918
2 SHEETS—SHEET 1.



Witnesses:

Robert Weir
W. L. Pollard

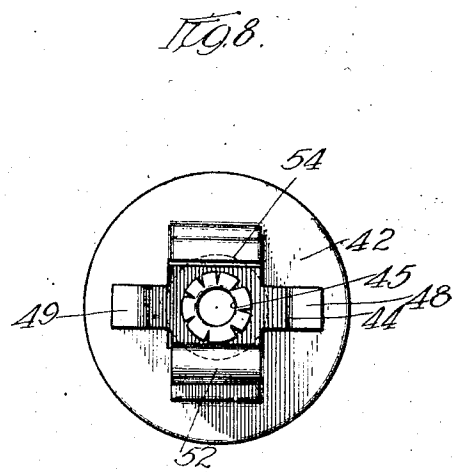
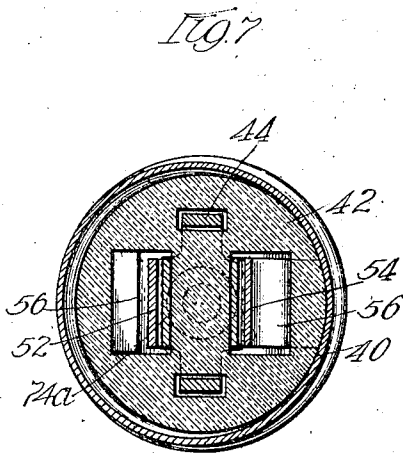
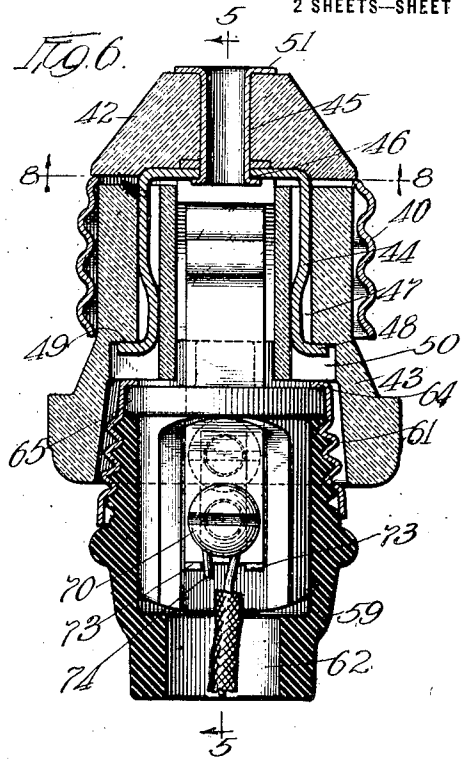
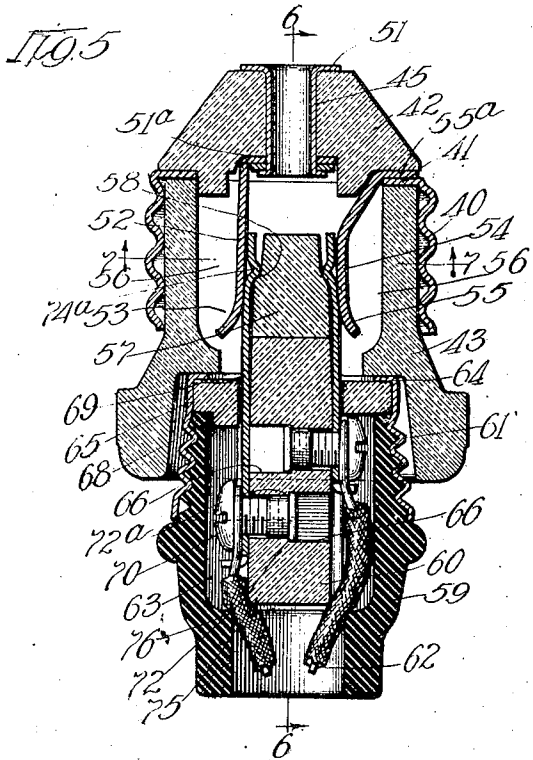
Inventor
Reuben B. Benjamin
By James Addington, Ames & Seibold
Attys.

R. B. BENJAMIN.
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2 SHEETS—SHEET 2.



Witnesses:

Robert H. H. H.
O. L. Pollard

Inventor:

Reuben B. Benjamin
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UNITED STATES PATENT OFFICE.

REUBEN B. BENJAMIN, OF CHICAGO, ILLINOIS, ASSIGNOR TO BENJAMIN ELECTRIC MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SEPARABLE ATTACHMENT-PLUG.

1,286,919.

Specification of Letters Patent.

Patented Dec. 10, 1918.

Application filed December 9, 1914. Serial No. 876,199.

To all whom it may concern:

Be it known that I, REUBEN B. BENJAMIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Separable Attachment-Plugs, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to separable attachment plugs; that is to say, to plugs of the kind which comprise an insertible member adapted to be screwed into a lamp socket or the like, and a binding terminal carrying member which is separably connected to the insertible member.

One of the objects of my invention is to simplify the construction of plugs of this character as well as to provide a plug which will be convenient and safe in use.

Further objects will appear from the detailed description to follow.

In the drawings, in which I have illustrated two embodiments of my invention;

Figure 1 is an axial section of an attachment plug embodying my invention substantially on the line 1—1 of Fig. 2; showing the manner in which the separable contacts engage each other;

Fig. 2 is an axial section, substantially on the line 2—2 of Fig. 1, showing the manner in which the parts of the insertible portion are secured together;

Fig. 3 is a section on the line 3—3 of Fig. 1;

Fig. 4 is a plan view of the binding terminal carrying portion;

Fig. 5 is an axial section of a modified form of separable attachment plug embodying my invention, substantially on the line 5—5 of Fig. 6, showing the manner in which the separable contacts engage each other, and showing details of the inner construction of the binding terminal carrying member;

Fig. 6 is an axial section substantially on the line 6—6 of Fig. 5, showing the manner in which the parts of the insertible member are secured together;

Fig. 7 is a section on the line 7—7 of Fig. 5; and

Fig. 8 is a bottom view of the upper por-

tion of the insertible member, showing the U-shaped member and one of the contacts secured thereto.

Referring now to the drawing in detail, and first to the modification of Figs. 1, 2, 3 and 4, reference character 10 indicates a threaded shell contact preferably formed of sheet metal having an inwardly extending flange 11 which is held in place between the insulating members 12 and 13 of the insertible member of the plug, which portions are held together by means of a U-shaped strip 14 of sheet metal. This strip 14 is secured to the portion 12 by means of a hollow rivet or eyelet 15 which extends through an opening 16 in the U-shaped strip 14. The arms of the U-shaped strip 14 extend through openings 17 in the lower insulating portion 13 and are bent over as at 18 to engage shoulders 19 forming walls of the recesses 20 in the insulating portion 13. The hollow rivet 15 is flanged over as at 21 to secure it to the portion 12 and also to form a center contact for engagement with the center contact of the socket. This hollow rivet 15 also extends through an opening 21^a in the spring contact finger 22 which extends downwardly into a recess 22^a in the insulating portion 13, which finger has a curved end 23 for engagement with the contact on the terminal carrying member of the plug. Formed integral with the threaded shell contact 10 and extending from the flange 11 thereof is a contact finger 24 which extends into an opening 24^a in the insulating portion 13 and is provided with a stamped up portion 25 forming a reinforcing rib and a curved portion 26 for engagement with the contact on the terminal carrying member. The insulating portion 12 is provided with a rectangular recess 27 into which extends a rectangular portion 28 formed integral with the insulating portion 13. Grooves 29 are formed in two of the opposite sides of the rectangular extension 28 to accommodate the arms of the U-shaped member 14. The binding terminal carrying member 30 is provided with a recess 31 in its upper face to accommodate the binding screws and plates, and is provided with a pair of recesses 32 in its lower face to accommodate the heads of the securing screws for the binding plates. It is also provided with an axial opening 33 for the passage

of the conductor wires. The binding plates 34 are secured to the member 30 by means of screws 35. Formed integral with the binding plates 34 are inwardly extending contacts 36 having curved end portions 37 for engagement with the contacts on the insertible member.

The conductors are secured to the binding plates by means of binding screws 38. Small ledges 39 are provided at the lower edges of the recesses 22^a and 24^a for the purpose of preventing any possibility of the ends 37 of the contacts 36 entering between the contact ends 23 and 26 and the inner walls of the recesses 22^a and 24^a. These small ledges 39 also lessen the chance of accidents due to a person touching both of the contacts of the insertible member simultaneously or due to the contacts being bridged by reason of a conducting member being accidentally put into the insertible member.

The binding terminal carrying member can be separated from the insertible member or connected thereto with great ease, it being only necessary to overcome the resiliency of the spring contact 22, it being noted that the contact 24 is designed to be comparatively rigid by reason of the reinforcing rib 25.

The shape and arrangement of the parts are such that the binding terminal carrying member will be separated from the insertible member wherever a pull is exercised on the conductors regardless of the direction in which the pull may be applied.

In the modification of Figs. 5, 6, 7 and 8 reference character 40 indicates a threaded contact shell having an inwardly extending flange 41 which is clamped between the insulating portions 42 and 43 of the insertible portion of the plug. The portions 42 and 43 are held together by means of a U-shaped strip 44 of sheet metal which is secured to the portion 42 by means of a hollow rivet or eyelet 45 extending through an opening 46 in the U-shaped member. The arms of the U-shaped member extend through openings 47 in the insulating portion 43 and are bent or riveted over as at 48 against shoulders 49 forming walls in the recesses 50 in the insulating portion 43. The hollow rivet 45 is flanged over at its upper end at 51 to secure it to the portion 42 and to form a center contact for engagement with the center contact of the socket. The hollow rivet 45 also extends through an opening 51^a in a spring contact finger 52 which is bent outwardly as at 53 to engage the contact on the binding terminal carrying member. A contact member 54 is provided with an outwardly bent portion 55 for engagement with a contact on the binding terminal carrying member and has a bent over portion 55^a clamped between the insulating portion 42 and the flange 41 of

the contact shell 40. The contacts 52 and 54 extend downwardly into recesses 56 in the insulating portion 43 which recesses are separated by a partition 57 which is provided with shoulders 58 for the purpose of making a secure connection between the insertible member and the binding terminal carrying member.

The binding terminal carrying member comprises an insulating sleeve portion 59 forming a hand grip, an insulating portion 60 to which the contact fingers are secured and a screw threaded shell or sleeve 61 for securing the portions 59 and 60 together. The insulating portion 59 has an axial opening 62 for the passage of the conductor wires and has a central opening 63 to accommodate the insulating portion 60. The threaded shell 61 has an inwardly extending flange 64 forming an abutment for engagement with a shoulder or abutment 65 on the insulating member 60. The member 60 has a pair of transversely extending openings 66 therethrough and a pair of longitudinally extending apertures 68 through which the contact fingers 69 extend. The contact fingers 69 are secured to the insulating portion 60 by means of screws 70 engaging nuts 71 having shoulders 72 for engagement with shoulders 72^a in the openings 66. The lower ends of the contact fingers 69 are bent upwardly, as at 73, to hold the ends 74 of the conductors in place. The upper ends of the fingers 69 are provided with offset portions 74^a for engagement with the shoulders 58. The conductors are gripped and held in place between the corners 75 of the insulating portion 60 and the edge of the shoulder 76 on the insulating portion 59 so that the strain on the conductors is not transmitted to the binding screws 70.

In assembling the insertible portion of this modification the threaded shell contact 40 is slipped in place over the insulating portion 43, the contact 54 is dropped in place in the recess 56, the portion 55^a resting on the flange 41 of the shell and the insulating portion 42 is then placed in position, the arms of the U-shaped member 44 being inserted in the openings 47 and afterward bent over at 48 to secure the parts 42 and 43 together. It is noted that in both modifications the threaded shell has an inwardly extending flange which is clamped between two insulating portions which insulating portions are held together by means of a U-shaped member.

In the modification of Figs. 1 to 4, on account of its spring tension, the finger 22, before it is engaged by the contact 36, bears against the outer wall of the recess 22^a, which thus prevents the finger 22 from moving outwardly to a position where it would not properly engage the contact 36.

Having thus described my invention what

I claim as new and desire to secure by Letters Patent is:—

1. An attachment plug comprising a two part base, a shell contact having a flange held between said parts, and means for securing said parts together including a U-shaped member having its middle portion secured to one part and its ends secured to the other.
2. An attachment plug comprising a two part base, a shell contact having a flange held between said parts, a center contact extending through one of said parts, a U-shaped member having its middle portion secured to said center contact and its ends secured to said other part.
3. An attachment plug comprising a two part base, a shell contact having a flange held between said parts, a center contact extending through one of said parts, a U-shaped member having its middle portion secured to said center contact, the other part having a pair of openings therein through which the ends of said U-shaped member extend, the ends of said U-shaped member which extend through said opening being bent over to hold the parts together.
4. An attachment plug comprising a two part base, a shell contact having a flange held between said parts, a hollow rivet forming a center contact extending through one of said parts, a U-shaped member having its middle portion secured to said center contact and its ends secured to said other part.
5. A separable attachment plug comprising a two part base, a shell contact having a flange held between said parts, and means for securing said parts together including a U-shaped member having its middle portion secured to one part and its ends secured to the other, contact members carried by said base, an insulating member and contacts carried thereby for detachably engaging said first named contacts.
6. A separable attachment plug comprising a two part base, a shell contact having a flange held between said parts, a center contact extending through one of said parts, a U-shaped member having its middle portion secured to said center contact and its ends secured to said other part, a contact member also secured to said center contact, an insulating member and a contact carried thereby for detachably engaging that contact which is secured to the center contact.
7. An attachment plug comprising a two part base, one of said parts having a recess and the other part having an extension fitting in said recess, and means for securing said parts together comprising a U-shaped member having its middle portion secured to one of said parts within said recess, and its arms secured to the other of said parts.
8. An attachment plug comprising a two part base, one of said parts having a recess

and the other part having an extension fitting in said recess, and means for securing said parts together comprising a U-shaped member having its middle portion secured to one of said parts within said recess, and its arms embracing said extension and secured to the other of said parts.

9. A separable attachment plug comprising a two part base, a shell contact having a flange held between said parts, one of said parts having four openings therein, a U-shaped member having each arm secured in a separate one of said openings and having its middle portion secured to the other part, a pair of contacts carried by said base each extending into a different one of said openings, and an insulating base carrying a pair of contacts for detachably engaging said first contacts.

10. A quick detachable connector device, comprising a first contact for quick detachable engagement with another contact, a binding terminal for said first contact, an integral insulating base supporting said first contact and binding terminal, and a housing for said binding terminal comprising two separably connected portions embracing said insulating base.

11. A quick detachable connector device comprising a first contact for quick detachable engagement with another contact, a binding terminal for said first contact, an integral insulating base supporting said first contact and binding terminal, said base having an abutment and a housing for said binding terminal comprising two separably connected portions embracing said insulating base, one of said portions having an abutment engaging said first abutment.

12. A quick detachable connector device comprising a first contact for quick detachable engagement with another contact, a binding terminal for said first contact, an integral insulating base supporting said first contact and binding terminal, and a housing for said binding terminal comprising two separably connected portions embracing said insulating base, one of said portions comprising an insulating handle portion.

13. A quick detachable connector device comprising a first contact for quick detachable engagement with another contact, a binding terminal for said first contact, an integral insulating base supporting said first contact and binding terminal, and a housing for said binding terminal comprising two separably connected portions embracing said insulating base, one of said portions comprising an insulating handle portion and the other portion comprising a sheet metal shell for holding said base on said handle portion.

14. A quick detachable connector device comprising a first contact for quick de-

tachable engagement with another contact, a binding terminal for said first contact, an integral insulating base supporting said first contact and binding terminal, and a housing for said binding terminal comprising two separably connected portions embracing said insulating base, one of said portions comprising an insulating handle portion and the other portion comprising a sheet metal shell for holding said base on said handle portion, said shell being screw threaded on said contact portion.

15. A quick detachable connector device comprising a first contact for quick detachable engagement with another contact, a binding terminal for said first contact, an integral insulating base supporting said first contact and binding terminal, and a housing for said binding terminal comprising two separably connected portions embracing said insulating base, one of said portions comprising an insulating handle portion and the other portion comprising a sheet metal shell for holding said base on said handle portion, said shell being screw threaded on said contact portion, said base and housing having cooperating portions forming a cord grip.

16. A quick detachable connector device comprising a first contact for quick detachable engagement with another contact, a binding terminal for said first contact, an integral insulating base supporting said first contact and binding terminal, and a housing for said binding terminal comprising two separably connected portions, one of said portions comprising an insulating handle portion and the other portion comprising a sheet metal shell for holding said base on said handle portion, said shell being screw threaded on said contact portion, said base and handle portion having cooperating portions forming a cord grip.

17. A quick-detachable connector device comprising an insulating base having an annular flange portion, said flange portion having two openings therethrough, two substantially-parallel contact blades secured to said base and extending through said openings, two binding-screws, one for each blade, supported by said base, and a housing for said screws comprising two interengaging sleeve members surrounding said insulating base, one of said sleeve members having a shoulder engaging said annular flange portion.

18. A quick-detachable connector device comprising an insulating base, a pair of substantially parallel contact blades supported thereby, a pair of binding-screws, one for each blade also supported by said base, said

screws extending substantially perpendicular to said blades, and a housing for said screws comprising two sleeve members surrounding said base and screws and having a threaded engagement with each other, said base having a portion clamped between said sleeve members.

19. A quick-detachable connector device comprising an insulating base, a pair of substantially parallel contact blades supported thereby, a pair of binding-screws, one for each blade also supported by said base, said screws extending substantially perpendicular to said blades, and a housing for said screws comprising two sleeve members surrounding said base and screws and having a threaded engagement with each other, said base having an annular flange, one of said sleeve members being a sheet-metal member having an inturned flange overlying said shoulder and the other of said sleeve members being an insulating member having a shoulder engaging said annular flange.

20. A quick detachable connector device comprising an insulating base, a pair of substantially-parallel contact blades supported thereby, a pair of binding-screws, one for each blade also supported by said base, said screws extending substantially perpendicular to said blades, and a housing for said screws comprising two sleeve members surrounding said base and screws and having a threaded engagement with each other and removable from said base by movement in opposite directions away from each other.

21. In a connector, an insulating base, a contact supported by said base, a binding-terminal for said contact supported by said base, an insulating housing for said binding-terminal, and means for holding said housing on said base comprising a shell engaging said base and having a screw-threaded engagement with said housing.

22. In a connector, an insulating base, a contact supported by said base, a binding-terminal for said contact supported by said base, an insulating housing for said binding-terminal, and means for holding said housing on said base comprising a shell engaging said base and having a screw-threaded engagement with said housing, said housing having a passage therein through which the cord may pass to said terminal.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

REUBEN B. BENJAMIN.

Witnesses:

MARGARET THIELEN,
ANNE SOLOMON.