

F. J. RUSSELL.
 SCREW PLUG ELECTRICAL RECEPTACLE.
 APPLICATION FILED OCT. 25, 1909.

955,438.

Patented Apr. 19, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

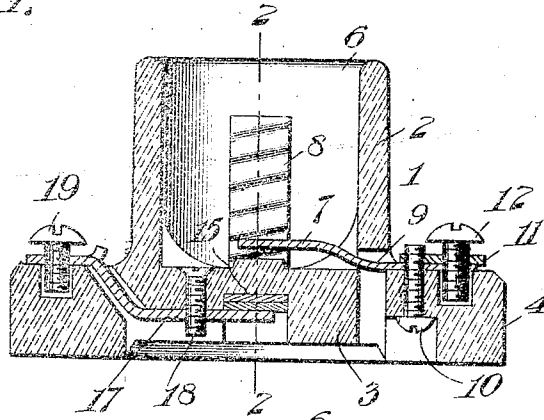


Fig. 2.

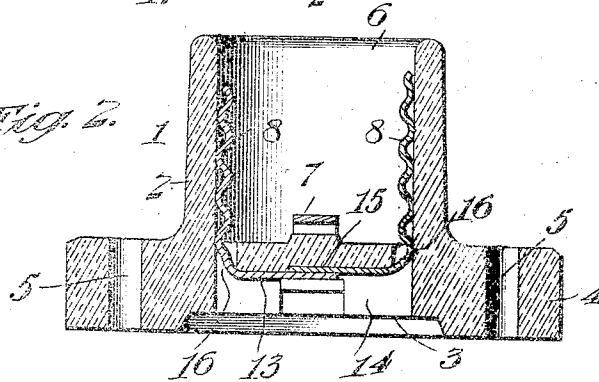
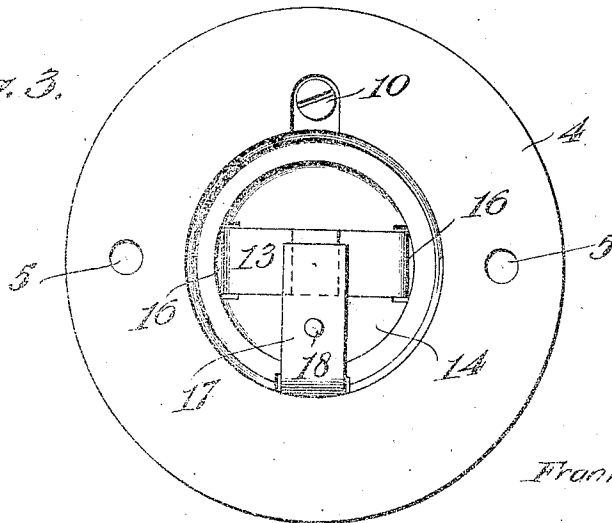


Fig. 3.



Witnesses

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3 SHEETS—SHEET 2.

Fig. 4.

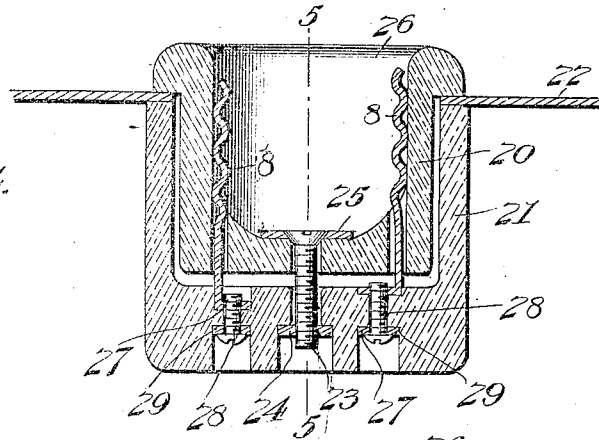


Fig. 5.

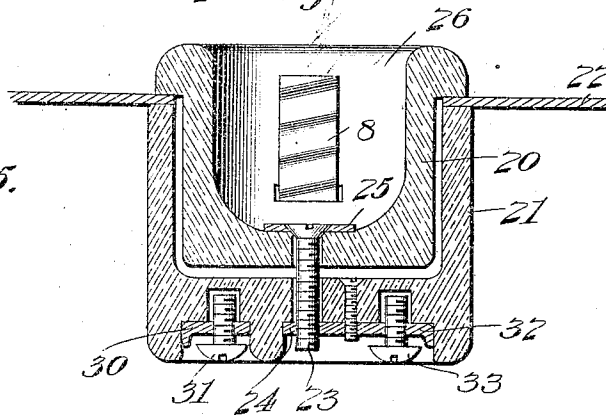
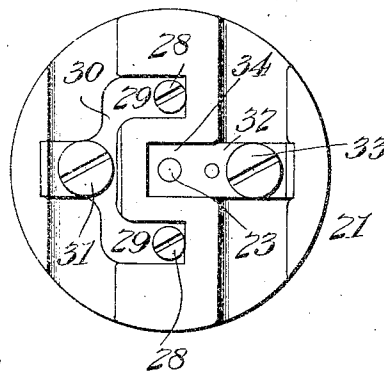


Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 7.

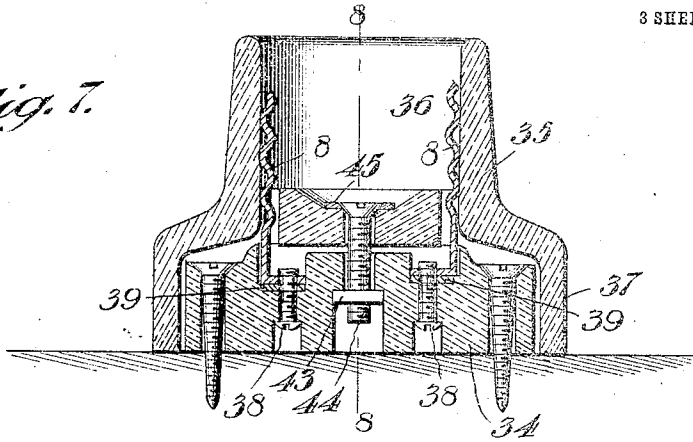


Fig. 8.

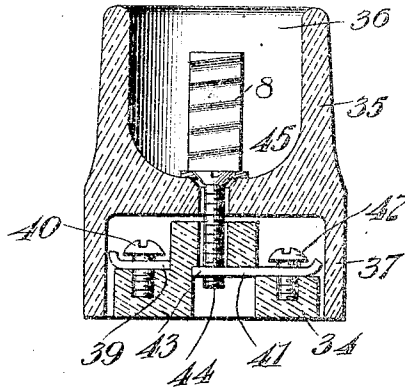


Fig. 9.

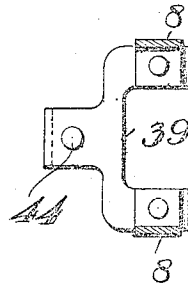
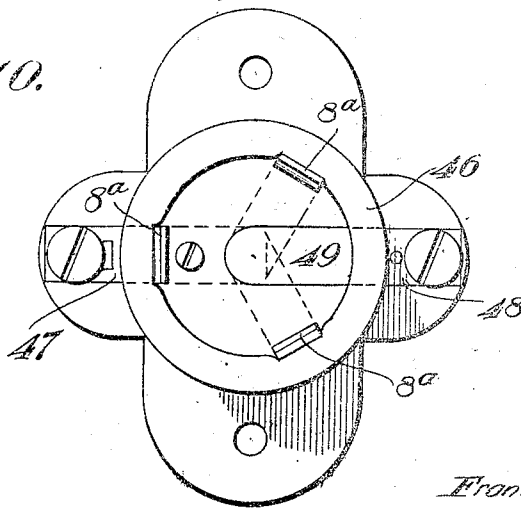


Fig. 10.



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SCREW-PLUG ELECTRICAL RECEPTACLE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK J. RUSSELL, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Screw-Plug Electrical Receptacles, of which the following is a specification.

This invention relates to the subject of electrical receptacles to receive the plug of an incandescent lamp, or an extension circuit plug, and more particularly to the screw-plug type of receptacle wherein the lamp plug has a threaded supporting engagement within the plug-receiving socket of the receptacle body.

To this end the invention has specially in view an improvement in the means which provide for the threaded support and electrical contact of the plug within the receptacle body, dispensing entirely with the use of the screw shell contact ordinarily used for that purpose, and also obviating the necessity of providing a complete series of threads in the body of the receptacle itself, or in any part arranged therein.

With these general objects in view, the invention, in brief, contemplates a very simple and practical construction of side plug contact for electrical receptacles which secures a wide separation of the opposite polarity contacts within the receptacle. At the same time the improved side plug contacts are of such a nature and so arranged as to minimize the number of joints, screws, and moisture-pockets, while at the same time insuring the greatest possible simplicity of assembling and manufacturing. Furthermore, the improvement admits of utilizing the strongest arrangement of a light body of porcelain.

The invention is necessarily susceptible to embodiment in a variety of forms without departing from the spirit or scope thereof, but a few preferred embodiments are shown in the accompanying drawings, in which—

Figure 1 is a sectional view of one form of electrical receptacle equipped with the improvement contemplated by the present invention; Fig. 2 is a similar view on the line 2—2 of Fig. 1; Fig. 3 is a bottom plan view of the form of the receptacle shown in Fig. 1; Fig. 4 is a sectional view of an electrical sign receptacle equipped with the present invention; Fig. 5 is a similar view on the

line 5—5 of Fig. 4; Fig. 6 is a bottom plan view of the receptacle construction shown in Figs. 4, 5 and 6; Fig. 7 is a sectional view of an electrical molding receptacle embodying the present invention; Fig. 8 is a similar view on the line 8—8 of Fig. 7; Fig. 9 is a view showing the wire terminal connection for the side plug contact strips employed in the form of the receptacle shown in Figs. 7 and 8; Fig. 10 is a plan view of an illustrated modification of the invention, wherein more than two of the side contact strips are employed.

Like references designate corresponding parts in the several figures of the drawing.

Referring to the application of the invention shown in Figs. 1, 2 and 3 of the drawing, the receptacle body designated in its entirety by the numeral 1 is illustrated as being of the one-piece porcelain type and embodying in its construction the usual cup or socket part 2, and an integral base 3 having a widened annular supporting flange 4 pierced by screw-holes 5 to receive the screw or equivalent fasteners for holding the same in position, said supporting flange also being designed to support and expose on the front side thereof the opposite polarity wire terminals. The cup or socket part 2 of the receptacle body includes the usual plug-receiving socket 6, and exposed within this socket is the center plug contact 7 and the side plug contact 8—8. The center plug contact is shown as simply consisting of a spring arm or plate extended laterally through a side opening 9 in the receptacle and having its free inner end portion lying centrally within the bottom portion of the plug-receiving socket, while the outer or external end portion of the center plug contact 7 is held by means of a fastening screw 10 to one of the external wire terminal plates 11, exposed on the front side of the flange 4 and equipped with the usual binding screw 12.

According to the present invention the side plug contact 8—8 consists of relatively narrow and oppositely arranged crimped metal strips arranged parallel to the axis of the socket and of the plug. In the construction shown in Figs. 1, 2 and 3, a pair of these strips 8 is employed, with the separate strips in diametrically opposite arrangement. A distinguishing feature of the invention resides in having the crimps of one strip in complemental spiral or screw-thread rela-

tion to the crimps of the other strip or strips, in other words, said contact strips being in such relation to each other as to form a receiving thread for the electrical plug.

On account of the complementary screw-thread relation between the separated strips it will be observed that the outer extremities of these strips are out of transverse alignment, but it is preferable, for manufacturing purposes, to have these strips duplicates and of the same length. Hence, with strips 8 of the same length, the relation referred to may be preserved by providing a deeper seat for the fast end of one strip than for the fast end of the other strip. This is shown in Fig. 2 of the drawing, wherein the opposite strips 8 are shown as provided with or formed at their inner ends with supporting flanges 13 lying within a seating recess 14 in the outer side of the bottom or base 3 and arranged in overlapping contacting relation, with one of the flanges or ends 13 seated in a channel or rabbet 15. In the construction referred to, the inner end portions of the opposite strips 8 pass entirely through bottom openings 16 piercing the base at the bottom of the socket. The overlapping contacting ends of the strips 8 are metallically engaged by the inner end portion of the other wire terminal plate 17 held in place by a fastening screw 18 and having its outer exposed end portion equipped with the usual binding screw 19.

In Figs. 4, 5 and 6 of the drawings the invention is shown applied to an electrical sign receptacle having a two-part body consisting of the inner and outer telescoping cup members 20 and 21 clamping, respectively, upon opposite sides of an interposed sign sheet or other supporting element 22. The two cup members 20 and 21 are detachably and adjustably held together by means of a center combined assembling and conducting screw 23 engaging a threaded nut 24 seated in the bottom part of the outer cup member 21, the head of said screw engaging and holding in place a center plug contact plate 25 seated on the bottom of the plug-receiving socket 26 within the inner cup member 20. The side plug contacts 8 in the sign receptacle embodiment of the invention are of the same kind and bear the same relation as the strips 8 previously referred to, but are provided at what has been termed their inner ends with short supporting flanges 27, which are respectively seated in pockets of different depths in the bottom part of the cup member 21 and held in place by combined fastening and conducting screws 28, which screws also respectively pass through the opposite legs 29 of a Y-shaped wire terminal plate 30, carrying a binding screw 31 and seated in a recess formed in the outer side of the bottom of the cup member 21. The outer or opposite polarity wire terminal plate 32 carries

the nut part 24 previously referred to, and also is equipped with a binding screw 23.

In the embodiment of the invention shown in Figs. 7, 8 and 9 the parts are shown applied to an electrical molding receptacle essentially consisting of the separate base member 34, and a cup member 35 provided with the plug-receiving socket 36, and also having the integral base flange 37 fitting over and housing the base member 34. In this form of the invention the mounting of the side contact strips is in all essentials the same as shown in Figs. 4, 5 and 6 of the drawings, that is, the said strips 8 extend through the bottom of the plug-receiving socket and are provided at their inner ends with short supporting flanges 27 held to the base member 34 by the screws 38, and also in metallic connection with one of the wire terminal plates 39, which is equipped with a binding screw 40. The opposite polarity wire terminal plate 41 is fitted to the base member 34, carries a binding screw 42, and also has a nut element 43 engaged by the combined assembling and conducting screw 44 which passes centrally through the bottom of the cap member 35 and holds in place the center plug contact plate 45.

Fig. 10 illustrates the use of three equally spaced side-crimped contact strips 8^a arranged within a receptacle body 46, said several strips preserving a screw-thread relation and being in metallic connection with one of the wire terminal plates 47, the other wire terminal plate 48 being illustrated as the outer end part of the center plug contact 49.

Various other embodiments of the invention will suggest themselves to those skilled in the art.

I claim,—

1. In an electrical receptacle, a side plug contact therefor consisting of spaced crimped metal strips arranged parallel to the axis of the receptacle body, the crimps of the separate strips being in complementary screw-thread relation to form a receiving thread for the electrical plug.

2. In an electrical receptacle, the combination with the receptacle body and the center plug contact, of a side plug contact consisting of separated crimped strips having their crimps in complementary screw-thread relation.

3. In an electrical receptacle, the combination with the receptacle body and the center plug contact, of a side plug contact consisting of separated longitudinally arranged crimped metal strips, the crimps of the separate strips being disposed in complementary screw-thread relation.

4. In an electrical receptacle, the combination with the receptacle body and the center plug contact, of a side plug contact consisting of separate crimped strips of the

same length and set out of transverse alignment to bring the crimps into complemental screw-forming relation.

5 5. In an electrical receptacle, the combination with the receptacle body and the center plug contact, of separate side contact strips extending through the bottom of the receptacle body and having crimps arranged in screw-forming relation.

10 6. In an electrical receptacle, the combination with the receptacle body, of a center plug contact, means for holding the center plug contact in position, crimped side contact strips, and means for holding said strips
15 in position, said holding means respectively for said center plug contact and said strips being so arranged as to be separated by the insulated bottom of the receptacle body.

20 7. In an electrical receptacle, the combination with the receptacle body and the

center plug contact, of separate side crimped contact strips arranged in screw-forming relation and having supporting flanges at their inner ends, and a plate arranged to clampingly engage said supporting flanges
25 to hold the strips in position.

8. In an electrical receptacle, the combination with the receptacle body and the center plug contact, of separate side contact strips extending through the bottom of the
30 receptacle and having inner end portions overlapping each other on the outer side of the body, and a plate clampingly engaging said overlapped end portion.

In testimony whereof I hereunto affix my
35 signature in the presence of two witnesses.

FRANK J. RUSSELL.

Witnesses:

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