Nov. 23, 1954 G. B. BENANDER 2,695,392

LOW COST CONVENIENCE OUTLET

Filed Oct. 16, 1953

Fig. 1.

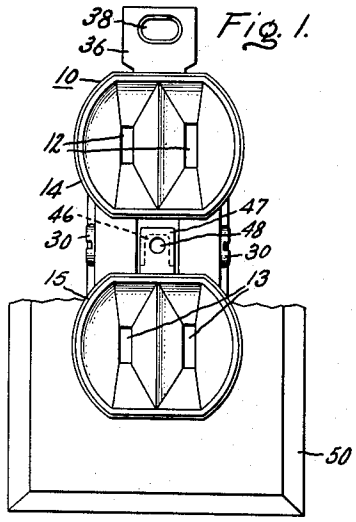


Fig. 2.

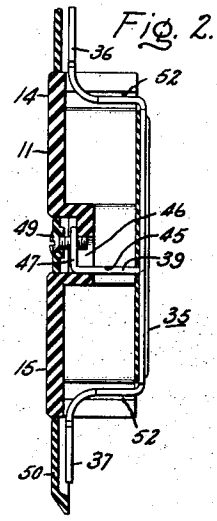
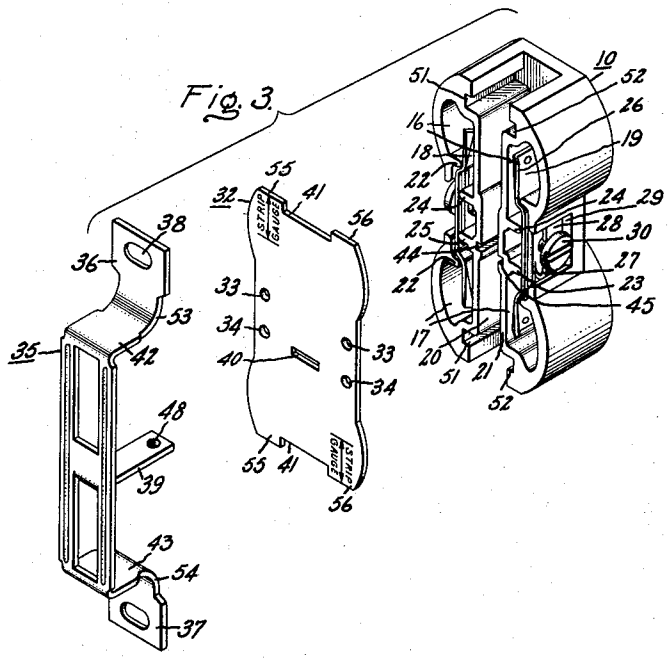


Fig. 3.



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LOW COST CONVENIENCE OUTLET

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Application October 16, 1953, Serial No. 386,557

7 Claims. (Cl. 339—133)

The present invention relates to a convenience outlet for electric wiring systems such as are used for connection with two or more attachment plugs.

The object of my invention is to provide an improved construction of a convenience outlet which is safe in operation and which may be produced at comparatively low cost.

According to my invention no screws are required for holding the parts of the device together. The outlet comprises a main body, or a base member, and a closure plate therefor, both of which are held in assembled relation on a mounting strap, or yoke, by means of a lanced element which is struck out of the back wall of the strap, and which extends through the body and is bent flat against the front wall of the body member. A significant reduction in cost over presently available devices is achieved by the features of my invention, and especially by my arrangement for holding the completed assembly together by means of the lanced member on the mounting strap, thereby eliminating the use of special screws or rivets for this purpose.

My invention will be better understood from the following description taken in connection with the accompanying drawing, and its scope will be pointed out in the appended claims.

In the drawing:

Fig. 1 is a plan view of a duplex outlet embodying the invention, and showing a portion of a face plate.

Fig. 2 is a sectional, side elevational view of the duplex outlet of Fig. 1, taken on the plane at the longitudinal center line of the outlet but showing the mounting strap in full lines.

Fig. 3 is a partially exploded, isometric view of the parts which are included in my outlet.

Referring in detail to the drawing, the outlet embodying the invention comprises a recessed body member **10** which may be made of molded Bakelite or other suitable insulating material. The body member **10** has a front wall **11** provided with two pairs of spaced slots **12** and **13** in outwardly extending bosses **14** and **15** for receiving and guiding the prongs of attachment plugs to be connected to the outlet. The back of the body member **10**, as best shown in Fig. 3, is formed with pairs of spaced recesses **16** and **17** in alignment with the aforementioned slots **12** and **13** respectively.

Spring contacts **18** and **19** are each arranged within the body member to be supported in receses **16** and **17** along opposite outer walls of the body **10**, as is shown in Fig. 3. These spring contacts are separated from each other by a pair of transversely spaced, longitudinally extended partitions **20** and **21**.

On the outer side walls of both recesses **16** and **17** are formed internally projecting buttresses **22** and **23** respectively. In addition, on the outer wall of each longitudinal partition **20** and **21** are formed a pair of buttresses **24** and **25** which are located between the aforementioned buttresses **22** and **23**. The buttresses **22**, **23**, **24** and **25** serve to support the spring contacts in an upright position in the recesses **16** and **17**.

The specific structure of the spring contacts **18** and **19** does not form part of the invention which I am claiming herein, but it does constitute the subject matter of my copending application, Serial No. 386,558, filed October 16, 1953. The spring contacts **18** and **19** are identical, therefore, I will briefly describe only one of them. The spring contact **18** is made from a thin, flat, elongated strip of spring copper which has a deformed center portion as is seen in Fig. 3 and corner portions **26** at each of the four corners of the contact which are slightly bent over to provide an inclined surface to facilitate the easy insertion of the attachment plug (not shown) into good electrical contact with the spaced ends of the spring contact as will be understood by one skilled in the art.

Power supply wires are connected to the spring contacts by inserting the bared ends of the wires into opening in the back of the outlet and under the bent tongues **27** and **28** which are struck out of the central deformed portion of the contact. A clamping connection between the tongues and the wires is provided by the central terminal screw **30** which is arranged to engage the free ends of the tongues **27** and **28** so as to press them firmly down and against the wires. Attention is drawn to the square opening **29** in the side walls of the outlet which exposes to view the said tongues **27** and **28** and the terminal screw **30**. In the event that only one wire is to be connected to each spring contact, the usual loop can be made around the screw **30**, if desired, and the screw tightened in place to hold the wire.

When the parts of my outlet are assembled together, as is shown in Fig. 2, the back of the body of the outlet is closed by the fiber insulating plate **32**. A pair of small apertures **33** and **34** are formed at each longitudinal side of the plate **32** in alignment with the tongues **27** and **28** so that the outlet may be wired from the back or in the conventional manner from the side. This possibility of wiring the outlet from the back eliminates the necessity of looping the conductors around the terminal screws which are usually mounted at the sides of the outlet. This back-wiring feature has heretofore only been found on premium-priced outlets because of the additional cost involved.

A yoke or supporting strap **35** for holding the outlet in an outlet box (not shown) is generally of U-shape with end portions **36** and **37** having openings **38** to facilitate connection with corresponding portions, or ears, of an outlet box. This strap is also used to hold the parts of the outlet in assembled relation. To this end, the central portion of the strap **35** has an arm or member **39** preferably lanced out of the strap by a punching operation and bent forward toward the front of the body **10**. When assembled, the lanced member **39** projects through an elongated slot **40** in the insulating plate **32**. Portions **41** are cut out of the ends of the insulating plate **32** to form spaced projections **55** and **56** which straddle the legs **42** and **43** of the U-shaped portion of the strap **35** to assist in holding the parts in a fixed position. The lanced member **39** is positioned in the body **10** in the close-fitting grooves **44** and **45** which extend to the front wall of the body. Also formed in the front wall of the body member is an elongated slot or aperture **46** which communicates with the said grooves **44** and **45** for a reason which will be explained later. After assembly, the free-end portion **47** of the lanced member **39** is bent at right angles to the main portion of the member so that it covers the aperture **46**, as seen in Fig. 2, and also overlies a portion of the front face of the outlet. This arrangement confines the body **10** and the insulating plate **32** between the bottom wall of the U-shaped portion of the mounting strap **35** and the bent-over end **47** of the lanced member **39** as is clearly seen in Fig. 2.

The free end of the lanced member **39** has also a threaded opening **48** which overlies the aperture **46** in the center of the front face of the outlet. This opening **48** is provided so as to receive screw **49** which supports a face plate **50** on the outer face of the outlet. The purpose of the face plate is to hide from view the outlet box in which is mounted the convenience outlet and also to cover up the unsightly hole in which the box is located, as is well known in the art.

As is seen in Figs. 2 and 3, the legs **42** and **43** of the U-shaped portion of the mounting strap **35** are both located within the spaced grooves **51** and **52** at each end of the body member of the outlet.

There are narrow curved portions **53** and **54** formed as part of the strap **35** which join the elements **36** and **42** and **37** and **43** respectively so that the end portions **36** and **37** of the strap may extend outwardly from the body member.

To assemble my device, it is merely necessary to insert terminal screws **30** in the contact strips **18** and **19** and then place the contact strips into the recesses **16** and **17**. The insulating strip **32** is then positioned on the lanced member **39** of the mounting strap **35** with the projections **55** and **56** straddling the legs **42** and **43** of the strap. The lanced member **39** is then pushed into the grooves **44** and **45** while the legs **42** and **43** of the strap slide into the grooves **51** and **52** of the body until the insulating plate is flush against the back of the body member. With the parts in this position, the free end **47** of the lanced member **39** is then bent at a right angle so that it overlies the front face of the body member. The assembly operation is now complete. The outlet is now ready to be wired and then mounted in an outlet box. Once mounted in the box, a face plate **50** is attached to the outlet by means of a screw **49** threaded into the threaded aperture **48** in the bent-over portion **47** of the lanced member **39**.

I have shown the insulating plate **32** as a covering for the back of the body **10**. It should be well understood by those skilled in this art that the body could, as an alternative, have front opening recesses with the insulating plate having attachment prong-receiving slots and covering the front of said body. An elongated strap could be utilized in a similar manner as shown on the drawing for holding the parts in an assembled relation.

Consequently, having described my invention of an improved convenience outlet, it will be readily apparent to those skilled in the art of manufacturing and installing electrical convenience outlets that I have provided an outlet with a minimum number of parts which is simple in design and easy to manufacture as well as easy to assemble with a minimum amount of hand labor. At the same time, I have provided an outlet with a back-wiring feature which, heretofore, has been found only on premium-priced outlets because of the high cost of providing such a feature.

Modifications of this invention will occur to those skilled in the art, and it is to be understood, therefore, that this invention is not limited to the particular embodiment disclosed, but that it is intended to cover all modifications which are within the true spirit and scope of this invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A convenience outlet for electric wiring systems comprising an insulating recessed body member having a front wall, spaced slots in said front wall for receiving the prongs of an attachment plug, the back of said body having recesses in alignment with the said slots, contact members positioned in said recesses, an insulating back plate for closing the back portion of said body member, and an elongated U-shaped supporting strap positioned against said back plate and end portions of said body member, said strap having near its mid-portion a lanced member which extends through an aperture in said insulating back plate and through a slot in the front face of said body member, said lanced member having an angularly extending end portion formed against the front face of said body member so as to clamp the parts of the outlet in an assembled relation.

2. In a claim as recited in claim 1 in which the said

end portion of said lanced member is provided with a threaded aperture overlying an opening in the front face of the body member for receiving a screw means that is adapted to secure a face plate over said outlet structure.

3. In a claim as recited in claim 1 wherein the said recesses are arranged in a parallel relation and are separated from each other by a centrally arranged passage, the walls of said passage containing opposing grooves in alignment with the said slot in the front face of the body member for confining the said lanced member therein.

4. A convenience outlet for electric wiring systems comprising an insulating body having a front wall with a plurality of pairs of spaced slots for receiving and guiding the prongs of attachment plugs to be attached thereto, and recesses in the rear of said body in alignment with said slots for receiving contact members, an insulating back plate for closing the back of said body, an elongated U-shaped supporting strap with outwardly turned end portions adapted for securement to an outlet box, said strap having at its mid-portion an angularly extending arm which extends through a close-fitting slot in said back plate and into closely fitting spaced grooves within said body, said grooves communicating with an opening in the front wall of said body, the free end of said arm extending out of said last-mentioned opening and being formed to lie flush against a portion of the outer face of said body so as to hold the recited structure in an assembled relation.

5. In a claim as recited in claim 4 wherein the said free end of the arm is provided with a threaded aperture which overlies the said opening in the front portion of said body for receiving a screw means that is adapted to support a face plate over said outlet structure.

6. A convenience outlet for electric wiring systems comprising a recessed body member, a cover member therefor, and an elongated supporting strap having portions positioned against the outer face of one of said members and against portions of the ends of at least one of said members, said strap further having an arm extending angularly from an intermediate portion of said strap through aligned apertures in said members and beyond the opposite outer face of the other of said members, the free end of said arm being formed to lie flush against a portion of said opposite outer face so as to clamp the entire structure in assembled relation.

7. A convenience outlet for electric wiring systems comprising a recessed body member, a cover member therefor, and an elongted U-shaped supporting strap having an integral L-shaped arm located centrally of the base portion of the said U-shaped strap and extending outwardly therefrom, with the said body and cover member clamped in an assembled relation between the base of the U-shaped strap and the base of the L-shaped arm.

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