April 3, 1951 J. ROGOFF 2,547,663

EMBOSSED SHEET METAL SERVICE CONNECTOR

Filed Sept. 21, 1946

FIG. 1.

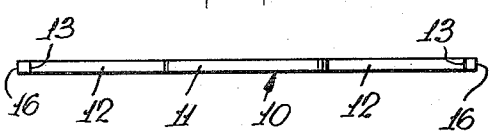


FIG. 3.

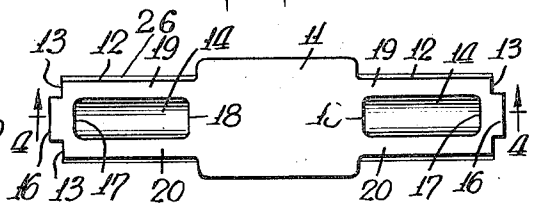


FIG. 2.

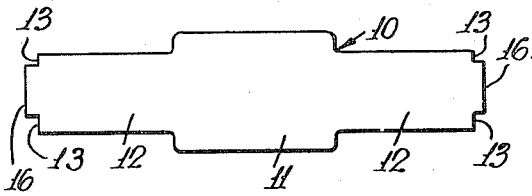


FIG. 4.

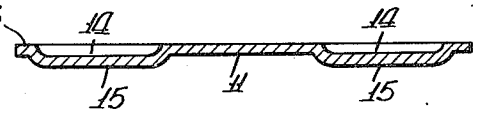


FIG. 5.

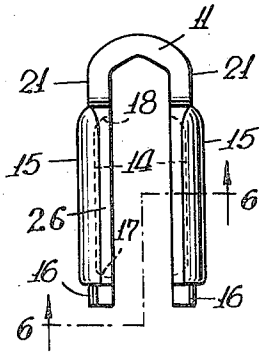


FIG. 6.

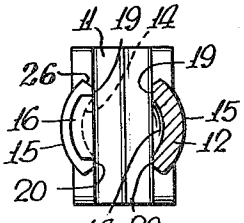


FIG. 7.

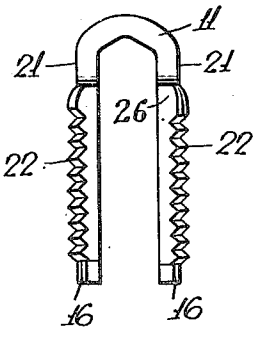
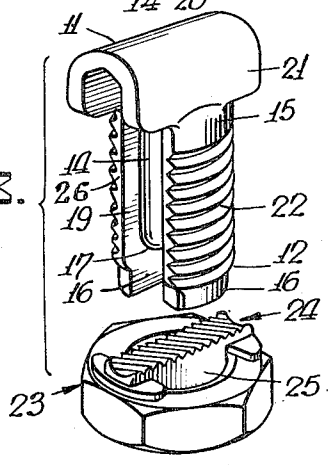


FIG. 8.



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EMBOSSED SHEET METAL SERVICE CONNECTOR

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Application September 21, 1946, Serial No. 698,520

2 Claims. (Cl. 24—126)

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My invention relates to the split-bolt type of electrical wire or cable connector which consists of a slotted bolt, a nut threaded on the slotted bolt, and a follower which rides on the face of the nut and fits in the slot in the bolt.

In Patent No. 2,164,006 granted to Bern Dibner and me, there is described a split-bolt connector made of sheet metal. The sides of the head of the split-bolt are flat and the threaded legs are arched. The reinforcing follower is made with curved sides to fit the inside arches of the legs, and the ends of the legs are open to permit insertion or removal of the reinforcing follower. This construction has many advantages as described in the patent but it has one disadvantage. The follower with curved sides is comparatively expensive because it must be made to very close tolerances in order to fit properly and to support the inside curve of the legs of the split-bolt. It is therefore desirable to devise a sheet metal split-bolt connector so constructed that a follower having straight sides may be employed without substantially weaking the connector.

Accordingly, an object of my invention is to provide a split-bolt made of sheet metal which is stronger than those heretofore made in this manner.

Another object of my invention is to provide a split bolt made with legs having inner and outer curved surfaces which can be supported by a follower with flat sides.

Still another object of my invention is to provide a sheet metal split-bolt having embossed legs to prevent twisting and collapse when tightening the nut thereon.

Another object of my invention is to provide a split-bolt connector capable of being manufactured at low cost by mass production methods.

I accomplish these and other objects and obtain my new results as will be apparent from the device and method of making the same described in the following specification, particularly pointed out in the claims, and illustrated in the accompanying drawing, in which:

Fig. 1 is a side elevation of a blank from which my split-bolt is made.

Fig. 2 is a plan view of the same.

Fig. 3 is a plan view after the embossing operation.

Fig. 4 is a cross-sectional view of the blank illustrated in Fig. 3 taken in the plane 4—4.

Fig. 5 is an end view of my split-bolt before threading the embossed legs.

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Fig. 6 is a bottom view of the split-bolt illustrated in Fig. 5 with one-half in section taken in the plane 6—6.

Fig. 7 is an end view of my split-bolt after the threading operation.

Fig. 8 is an exploded perspective view of my split-bolt and follower.

In making my split-bolt, I first stamp the sheet metal to the proper shape as illustrated in Fig. 2, wherein there is provided a blank 10 of uniform thickness having a central head section 11 with two laterally extending leg sections 12. Notches 13 are provided at the ends of the leg sections, during the blanking operation for a purpose hereinafter explained.

The leg sections are further formed, as shown in Figs. 3 and 4. This is accomplished by employing suitable dies and embossing a portion of each leg to form hollow portions 14 on one side of the blank and causing the other side to be embossed into the curved surface 15 suitable for threading purposes. During this operation the notched ends of each leg section are shaped to form pilots or guides 16 so that they will permit a nut to be positioned thereon and facilitate engagement with the threads formed on the legs.

Characteristic of each leg section is that it is hollow, with both ends of each hollow portion reinforced by walls of solid metal retained from the original surfaces of the blank, namely wall 17 of the ends of the leg adjacent the pilot 16, and wall 18 adjacent the head section 11. Additionally on each side of the hollow section 14, are the marginal surfaces 19 and 20 of the original metal surface which together with the end walls 17 and 18 form a frame of support for the embossed section, reinforcing the legs considerably as structural members, and enabling the side walls of the follower to slidably engage the surfaces 19 and 20.

In the next operation the head section is bent so that the legs extend at right angles therefrom, and are in spaced parallel relationship with the hollowed portions opposite each other, as shown in Figs. 5, 6 and 7.

The shape of the head section may be semicylindrically formed or V-shaped during the bending operation for supporting a wire or cable therein, and that wrench-engaging surfaces 21 are provided on each side of the head section 11 during the bending operation.

The legs are preferably then threaded as at 22 by suitable threading dies so that the conventional nut 23 and follower 24, having flat

side engaging walls **25** may be applied thereto. After the threads are formed the edge surfaces **26** are cleaned to remove the projecting burrs or other metal that may remain after the threading operation to enable the threads of the nut to enter the threads on the leg without interference.

My new device as has been shown, has the legs of the split-bolt made not merely as open arches, but each as a closed shallow trough. The ends of the trough are closed by solid walls of metal which support the arch of the leg, and the sides of the trough retain a portion of the original metal surface, thus strengthening the leg and preventing twisting or collapse of the arched section. The result is that it is possible to use the follower with flat sides to support the legs of the split-bolt. Actually I have found that my new construction with reinforced hollow legs as aforesaid and employing a flat-sided follower is stronger than the old construction with the arched legs and curved follower. In addition, it is cheaper because the flat-sided follower is easier to make and tolerances between the follower and the legs of the split-bolt are less critical.

I have thus described my nvention, but I desire it understood that it is not confined to the particular forms or uses shown and described, the same being merely illustrative, and that the invention may be carried out in other ways without departing from the spirit of my invention, and, therefore, I claim broadly the right to employ all equivalent instrumentalities coming within the scope of the appended claims, and by means of which, objects of my invention are attained, and new results accomplished, as it is obvious that the particular embodiments herein shown and described are only some of the many that can be employed to attain these objects and accomplish these results.

What I claim and desire to secure by Letters Patent is as follows:

1. In a service connector having a split-bolt, a nut and a follower: said split-bolt comprising a single piece of sheet metal having a head section and a pair of extending legs having free ends, the inside surface of each of said legs having an embossed area in the shape of a trough, and a flat unembossed area extending laterally on each side of the trough and across the trough at the free end, said flat unembossed area constituting supporting surfaces and reinforcing the trough, and said embossed area having threads on the outer surface thereof adapted to receive the nut.

2. In a service connector having a split-bolt, a nut and a follower: said split-bolt comprising a single piece of sheet metal having a head section and a pair of extending legs, the inside surface of each of said legs having an embossed area in the shape of a trough, and a flat unembossed area extending peripherally around the trough to provide a frame of flat unembossed metal for reinforcing the trough and providing supporting surfaces, and said embossed area having threads on the outer surface thereof adapted to receive the nut.

JULIAN ROGOFF.

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