F. E. JONES.

METAL REFLECTOR AND METHOD OF MAKING THE SAME.

APPLICATION FILED APR. 19, 1918.

1,347,335. **Patented July 20, 1920.**

Fig. 1

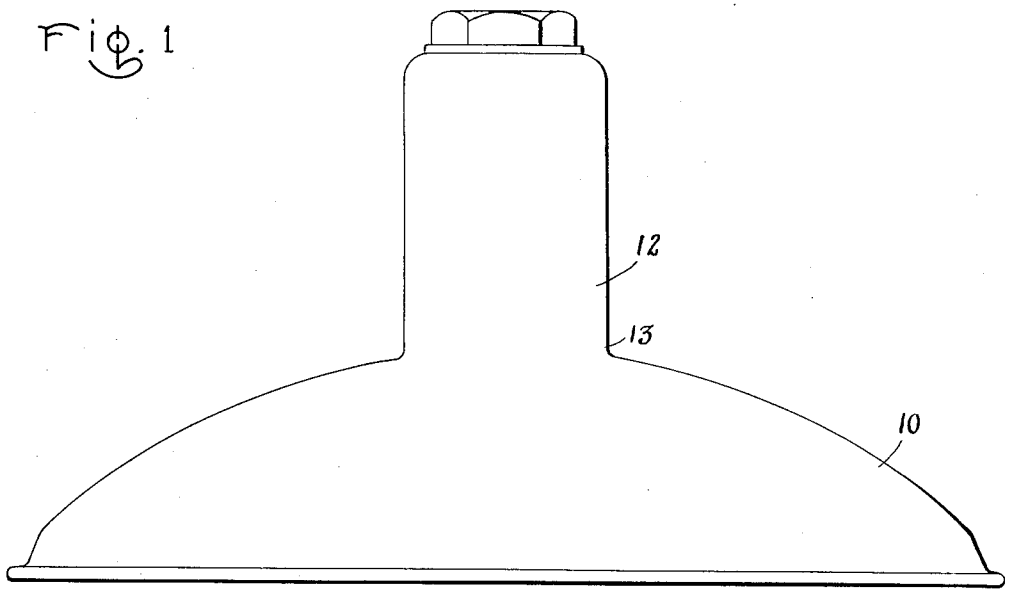
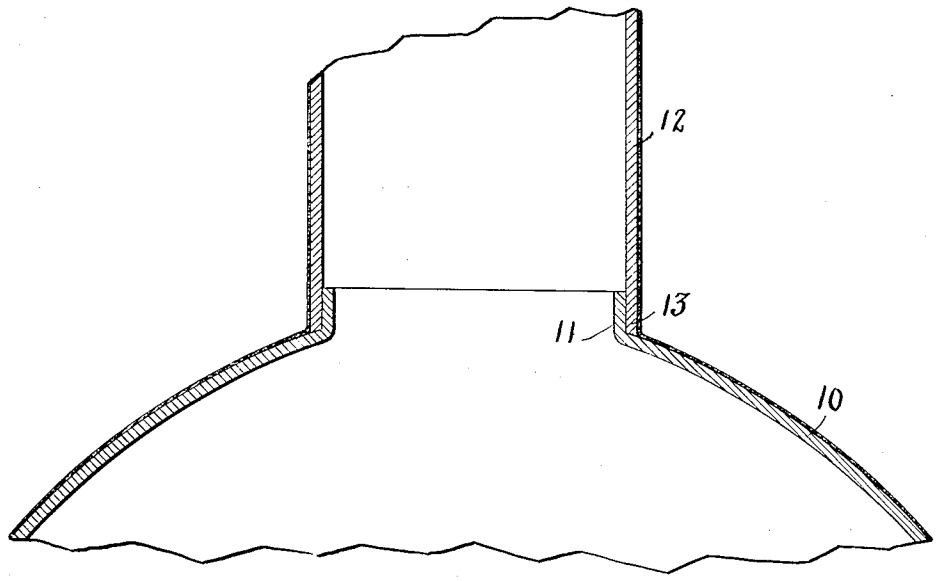


Fig. 2



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UNITED STATES PATENT OFFICE.

FRANK E. JONES, OF SEBRING, OHIO, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

METAL REFLECTOR AND METHOD OF MAKING THE SAME.

1,347,335. Specification of Letters Patent. Patented July 20, 1920.

Application filed April 19, 1918. Serial No. 229,541.

To all whom it may concern:

Be it known that I, FRANK E. JONES, a citizen of the United States, residing at Sebring, in the county of Mahoning, State of Ohio, have invented certain new and useful Improvements in Metal Reflectors and Methods of Making the Same, of which the following is a specification.

My invention relates to metal reflectors and their manufacture and more particularly to metal reflectors comprising heel portions for receiving lamp sockets. The object of my invention is to improve the method of manufacturing such reflectors so as to reduce the difficulty and expense of producing the same.

It has been the prevalent practice to make metal reflectors in one piece by drawing the same from a sheet of metal. In the case of the larger sized reflectors and especially reflectors having a long heel portion, this has been quite a difficult method, requiring a great many operations. Metal reflectors having an angularly disposed heel portion could not be made according to this method. It was also necessary to have a separate set of dies for each shape of reflector and a variation in the shape or size of the heel necessitated a new set of dies for the whole reflector.

Another method which has been used to a considerable extent is to make the bowl portion and the heel portion separately and to unite the two by crimping the edges of these parts together. Such a reflector is disclosed in D'Olier Patent No. 957,148. The principal disadvantage of reflectors made according to this method is that they are not so strong as the reflectors made with the integral bowl and heel portions. This disadvantage appears most strongly in reflectors which are used outdoors where the wind pressure will cause the bending of the reflector at the joint and cause the same to work loose. Moreover, a tight joint cannot be obtained by crimping and a loose joint allows moisture and dust to work through. It is also a fact that two piece reflectors of this kind do not present as attractive an appearance as the smooth surfaced integral type.

By my invention are secured the advantages in appearance and strength of the one piece method and at the same time the advantages of reduced expense and greater convenience of the two piece method. According to my invention, the bowl and heel portions of the reflector are made separately. It has been found, for example, in one case where it took sixteen operations to make the reflector by the one piece method, only five operations were required by the use of my invention, the bowl portion requiring two and the heel three operations. The bowl portion is preferably formed with a flange surrounding the opening in the top thereof so that a shoulder or sharp bend is formed approximately in line with the lower edge of the heel portion which is placed over the flange and fits closely therewith. It will be understood that this shoulder may be formed at any suitable portion of the flange extending from the bowl portion. The heel portion is then united with the bowl portion by welding the lower edge of the heel portion to the bowl portion.

In the drawing, I have shown a reflector made according to my invention which will serve as a specific example of the application thereof. Figure 1 is an elevation of the said reflector and Fig. 2 is a partial vertical section thereof.

The bowl portion 10 is drawn in the usual manner and is provided with an aperture in the top, having a flange 11 around the same. The heel portion 12 is preferably made from a single sheet of metal and is of such diameter that it will fit snugly over the flange 11. The lower edge portion 13 of the heel 12 is then welded to the bowl portion 10. A convenient method of accomplishing this is by utilizing the well known spot-welding process. One electrode is placed in contact with the inner surface of flange 11. The other electrode is located opposite thereto but contacting with the portion 13 of the heel. The pair of electrodes is run around the shoulder and as many welds are made as will serve to unite the two pieces securely and render the joint smooth, giving the reflector the appearance of having integral bowl and heel portions.

The advantages of my invention will be more clearly apparent from an inspection of the reflector shown in the drawing. It is customary to enamel the metal reflectors on the inside and outside. A vitrifiable enamel is applied by spraying or dipping and

afterward the reflector is placed in an oven and the enamel baked thereto. Any unevenness of the enamel surface produces peeling and blow holes due to the air which is held in the spaces between the parts and cracking is also caused by unevenness of expansion. This is a serious disadvantage not only on account of the unsightly appearance which it gives but also because it allows moisture to reach the metal and corrode it. It will be apparent from the drawing that the outside of the reflector made according to my invention is practically as smooth as that of a reflector made from a single piece of metal. The outer surface is naturally the most important, not only from the standpoint of appearance, but also because it is more exposed to the weather and, therefore, its enamel must be substantially free from cracks or holes. It will also be apparent that the only irregularity of the inner surface comes at a point which is above the effective reflecting surface thereof.

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

1. The method of making metal reflectors which consists in separately forming a bowl portion with a shoulder surrounding an aperture therein and a heel portion with an end to fit against said shoulder and then welding said end to said shoulder.

2. The method of making metal reflectors which consists in separately forming a bowl portion with a flange surrounding an aperture therein and a heel portion with an end to fit over said flange and then welding said end to said flange.

3. The method of making metal reflectors which consists in separately forming a bowl portion with a shoulder surrounding an aperture therein and a heel portion with an end adapted to engage said shoulder, then assembling said parts with said heel engaging the said shoulder and finally welding said end to said shoulder so as to produce an integral reflector having a smooth outer surface.

4. A metal reflector comprising a bowl portion and a comparatively long heel portion, said bowl portion having an aperture in its top surrounded by a shoulder and said heel portion being welded at its lower end to the outside of said shoulder and to the adjacent part of the bowl portion so as to form a smooth junction therewith.

In witness whereof I have hereunto set my hand this 30th day of March, 1918.

FRANK E. JONES.