March 1, 1938. C. T. WALTER 2,109,601

CONTAINER FERRULE

Filed May 28, 1936

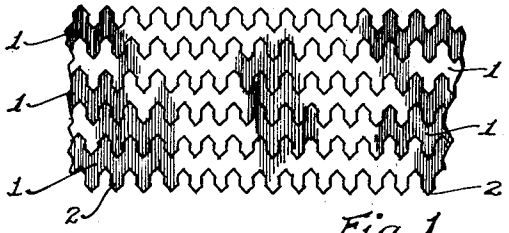


Fig. 1

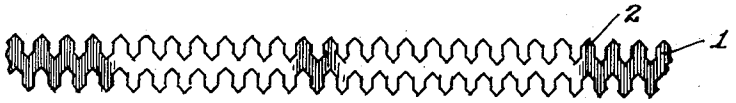


Fig. 2

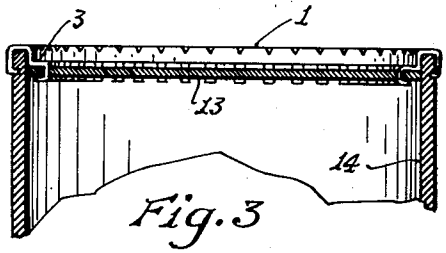


Fig. 3

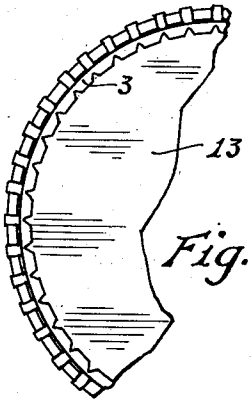


Fig. 4

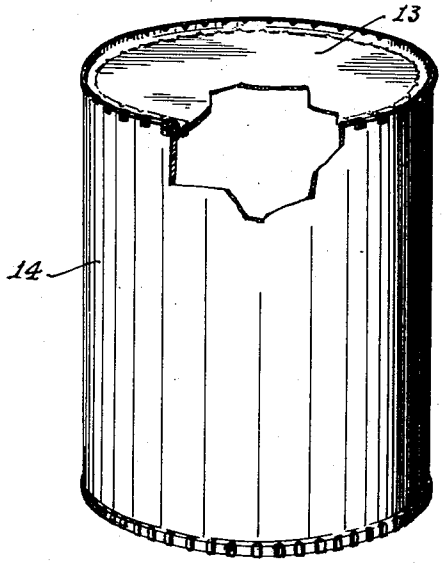


Fig. 5

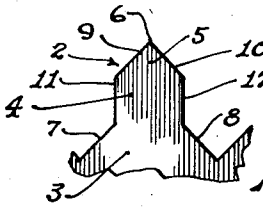


Fig. 6

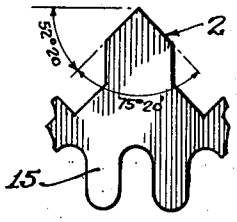


Fig. 7

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CONTAINER FERRULE

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5 Claims. (Cl. 229—5.7)

This invention relates to metal ferrules for joining one fiber member to another. More specifically the invention is directed to a metal ferrule adapted to secure a fiber disc to a fiber walled container.

The present invention is a specific improvement in the metal ferrule disclosed in my copending application entitled "Metal ferrule", Serial No. 668,166, filed April 27, 1933, which issued November 10, 1936 as Patent No. 2,060,542.

One of the objects of the invention is to provide an inexpensive metal ferrule for use in containers of the type described and claimed in my prior United States Patent No. 1,959,971, which issued May 22, 1934. The ferrules disclosed in my prior patents are both ferrules of a toothed or pronged type, having a flange which is swedged over the outer edge of the fiber side walls of the container.

The ferrule of the present invention involves a considerable saving in metal by providing a toothed or pronged flange.

Attention is called to the accompanying drawing in which similar reference characters in the several figures indicate similar parts.

Figure 1 shows a portion of a metal strip which has been cut into a plurality of complementary ferrules.

Figure 2 is a plan view of a single ferrule.

Figure 3 is a fragmentary view, partly in section, showing the end of a container to which the ferrule of the present invention has been applied.

Figure 4 is a fragmentary plan view of the top of a container to which the ferrule of the present invention has been applied.

Figure 5 is a perspective view of a finished container employing the ferrule of the present invention.

Figure 6 is a plan view of a single tooth.

Figure 7 is a plan view of another embodiment of the invention.

As will be seen by reference to Figure 1, a plurality of complementary ferrules may be stamped from a single metal sheet. Each individual ferrule 1 is provided with a plurality of teeth 2 on each side of the ferrule. It is preferred to stagger or alternate the teeth on opposite sides as shown in the drawing in order to secure greater strength. Each tooth 2 may be considered as comprising a base 3, a shaft or median portion 4, and a point 5 terminating in a tip 6. Base 3, shaft 4, and point 5 are equal in length. The longest dimension of base 3 is twice as great as the width of shaft 4 and the sloping sides 7 and 8 of base 3 are parallel respectively with sides 9 and 10, extended, of point 5. An imaginary line drawn through tip 6 at right angles to sides 11 and 12 of shaft 4, extended, forms with each of the sides 9 and 10 of point 5 an angle of 52° 20'. Consequently, sides 9 and 10 of point 5 form at tip 6 an angle of 75° 20'. This angle forms a tip 6 which is sharp enough to readily pierce the fiber disc 13 and yet which is blunt enough to resist distortion when forced into disc 13. The teeth thus shown and described will be seen to be identical in structure to the teeth described and claimed in my said Patent No. 2,060,542.

When the ferrule is in position on the finished container, only the teeth 2 along one side of the ferrule are in contact with the disc 13. The base 3 lies flat upon the outside surface of the disc. The shaft 4 passes through the fiber and the points 5 are clinched back flat against the inside surface of disc 13 such that each point is positioned directly opposite its base.

As will be noted in Figure 5, fiber disc 13 is slightly less in diameter than the inside diameter of container 14. This permits a disc with ferrule 1 attached thereto to slip easily into position. After the disc is thus slipped into position, the teeth 2 on the opposite side of the ferrule are swedged over the edges of the can body. During the swedging operation, the edges of the can body are forced into contact with the edge of disc, thereby forming a substantial seal.

In Figure 7 a modified form of the ferrule of the present invention is shown. In this modification, the teeth 2 are of the structure which has been described, whereas the teeth 15 on the opposite side of the ferrule are of a rounded contour. When this modified form is used, the teeth 2 are affixed to the disc and the teeth 15 are swedged over the edges of the container body. It will be noted that the structure of the modified form of Figure 7 is such that a plurality of ferrules may be stamped from a single sheet of metal.

In both types of the ferrule a saving of metal is effected since the flanged portion of two ferrules may be formed from the metal which would be employed in forming the flange of a single ferrule of the type disclosed in my prior patents. Furthermore, the individual teeth of the flange may be more effectively clinched into the sides of the container body than is the case with a continuous straight edged flange.

I claim:

1. In combination with a container including a fibrous body and end wall, a ferrule blank com-

prising a strip provided along both edges thereof with a plurality of prongs, the strip being bent intermediate its edges to provide the prongs along one edge thereof extending inwardly from the inner fall of the container body for securing the end wall and the prongs along the other edge thereof extending adjacent the inner wall of the container body for securing the end of the container body, the teeth extending inwardly from the inner wall having blunt pointed tips and being bent intermediate their ends and clinched through the end wall, the teeth adjacent the inner wall being bent intermediate their ends over the end edge and against the outer wall of the container body.

2. In combination with a container including a fibrous body and end wall, a ferrule blank comprising a strip provided along both edges thereof with a plurality of teeth, the strip being bent intermediate its edges to provide the teeth along one edge thereof extending inwardly from the inner wall of the container body for securing the end wall and the teeth along the other edge thereof extending adjacent the inner wall of the container body for securing the end of the container body, the teeth adjacent the inner wall being bent over the end edge and against the outer wall of the container body.

3. In combination with a container including a fibrous body and end wall, a ferrule blank comprising a strip provided along both edges thereof with a plurality of teeth, the teeth of opposite edges being arranged in staggered relation, the strip being bent intermediate its edges to provide the teeth along one edge thereof extending inwardly from the inner wall of the container body for securing the end wall and the teeth along the other edge thereof extending adjacent the inner wall of the container body for securing the end of the container body, the teeth adjacent the inner wall being bent over the end edge and against the outer wall of the container body.

4. In combination with a container including a fibrous body and end wall, a ferrule blank comprising a strip provided along both edges thereof with a plurality of teeth having blunt pointed tips, the teeth of opposite edges being arranged in staggered relation, the strip being bent intermediate its edges to provide the teeth along one edge thereof extending inwardly from the inner wall of the container body for securing the end wall and the teeth along the other edge thereof extending adjacent the inner wall of the container body for securing the end of the container body, the teeth adjacent the inner wall being bent over the end edge and against the outer wall of the container body, the pointed tips of the last-mentioned teeth being secured within the outer wall of the container body.

5. In combination with a container including a fibrous body and end wall, a ferrule blank comprising a strip provided along both edges thereof with a plurality of teeth having blunt pointed tips, the teeth of opposite edges being arranged in staggered relation, the strip being bent intermediate its edges to provide the teeth along one edge thereof extending inwardly from the inner wall of the container body and the teeth along the other edge thereof extending adjacent the inner wall of the container body, the teeth extending inwardly from the inner wall being bent intermediate their ends and clinched through the end wall, the teeth adjacent the inner wall being bent intermediate their ends over the end edge and against the outer wall of the container body, the pointed tips of the last-mentioned teeth being clinched within the outer wall of the container body.

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