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J. SIMPSON ET AL

2,840,113

END CAPS OR CLOSURES FOR TUBULAR MEMBERS

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FIG. 1.

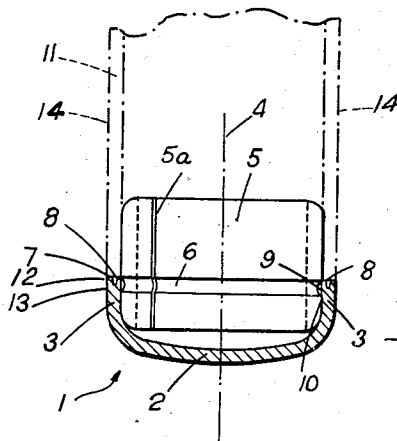


FIG. 3

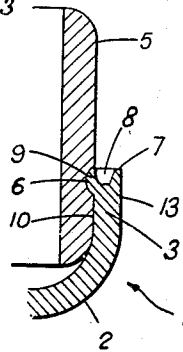
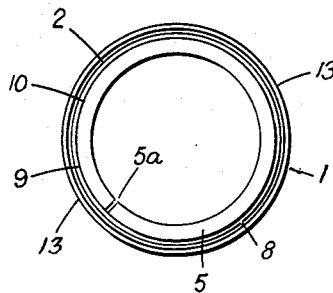


FIG. 2.



INVENTORS:
JOHN SIMPSON
LESLIE PARKIN,
BY *Philip E. Parker*
ATTORNEY.

1

2,840,113

END CAPS OR CLOSURES FOR TUBULAR MEMBERS

John Simpson, Old Basford, and Leslie Parkin, Bobbers Mill, England, assignors to United-Carr Fastener Corporation, Cambridge, Mass.

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Claims priority, application Great Britain May 6, 1954

1 Claim. (Cl. 138—89)

This invention relates to end caps or closures for tubular members and it is an object of the invention to provide a cap or closure which may be readily inserted into the open end of a tube.

According to the present invention an end cap or closure for a tubular member comprises an end member and a resilient member secured therein and projecting therefrom, the external dimensions of the portions of the resilient member projecting from the end member being such that the resilient member may be inserted into the end of the tubular member and held therein by the frictional grip exerted by the resiliency of the resilient member on the inner wall of the tubular member, the resilient member being provided with a circumferential recess into which a portion of the end member is swaged or upset in order to secure the end and resilient members together.

One embodiment of the invention will now be described in greater detail with reference to the accompanying drawings, of which:

Fig. 1 shows the end cap partly in cross section;

Fig. 2 shows a plan view of the end cap of Fig. 1;

Fig. 3 shows an enlarged view of the means of securing the cap to the sleeve.

As shown in the drawings an end cap or closure 1 comprises a dome shaped metal end member 2 provided with side wall 3 extending parallel with the axis 4 of the end cap and a substantially cylindrical metal sleeve 5 having a longitudinally extending slot 5a secured in the end member 2 such that it projects outwardly therefrom.

The sleeve 5 is provided with a circumferential recess 6 extending completely round the sleeve, the recess being positioned with respect to the length of the sleeve such that when the sleeve is positioned within the end member 2, the groove 6 lies adjacent the free end of the member. The end member 2 is provided, in the annular face 7 of its free end, with an annular groove 8 concentric with the face 7. The sleeve 5 is secured to the end member 2 by swaging or upsetting that portion 9 which lies between the annular groove 8 and the internal face 10 of the end member 2 as shown in Fig. 3.

The end cap is positioned on a tubular member 11 by forcing the free end of the sleeve into the open end of the tubular member until the annular face 7 of the cylindrical wall of the domed end portion abuts the end 12 of the tubular member 11. It will be noted that the axial slot 5a in the sleeve will ensure sufficient resilience to permit the insertion of the sleeve and provide an efficient frictional grip with the inner wall of the tubular member.

When assembled with the tubular member, the external

2

face 13 of the cylindrical side wall 3 of the dome shaped end member will lie substantially flush with the external face 14 of the adjacent end of the tube and form in effect a continuation thereof, thereby providing a neat closure.

The resilience of the sleeve afforded by the longitudinal slot 5a also ensures a sufficient frictional engagement with the dome shaped end portion enabling the parts to be held during assembly without the necessity of welding or like operation.

It will be appreciated that although in the embodiment described the portion 9 is upset into the recess, any portion of the end member adjacent the sleeve, when the cap is assembled, may be so upset.

Again the end portion has been described as being of dome shape but any desired shape may be employed.

Although the cap has been described as being circular in cross section it may, if it is desired, have some other cross sectional shape.

Material other than metal may be used to form one or both of the members.

The member 5 has been described as a sleeve to which resiliency is given by the longitudinal slot 5a but it will be understood that other means may be used to give the sleeve resiliency. Further the member 5 need not be in the form of a hollow sleeve but may be solid, the material employed itself having resiliency.

The end cap may be used to provide an end cap or closure for the end of any tubular member, or tubular portion of a structure. It may be used to provide the end cap of the tubular members of a chair or the like, for example, the end of a tubular chair leg. In this case the dome end portion of the cap may be adapted to serve as a glider for supporting the chair or the like in moving over the floor surface.

The dome shaped portion and the sleeve are preferably both formed of metal.

We claim:

An end cap or closure for a tubular member comprising a cap member and a resilient attaching member secured therein and projecting therefrom, the cap member having a cup-shaped body with a closed end and an upstanding peripheral wall extending axially therefrom providing an annular face, the peripheral wall including adjacent said annular face inner and outer concentric annular ring portions defining therebetween an annular recess in said annular face, said resilient member having one end adapted resiliently to engage the interior surfaces of such a tubular member and an opposite end in resilient engagement in said end cap member, said resilient member having a circumferential groove intermediate said ends, and said inner ring portion being swedged into said circumferential groove to secure said end cap member to said resilient member.

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