

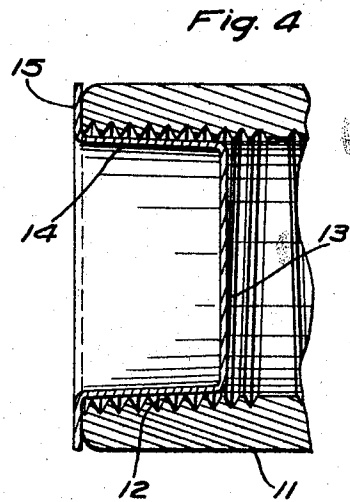
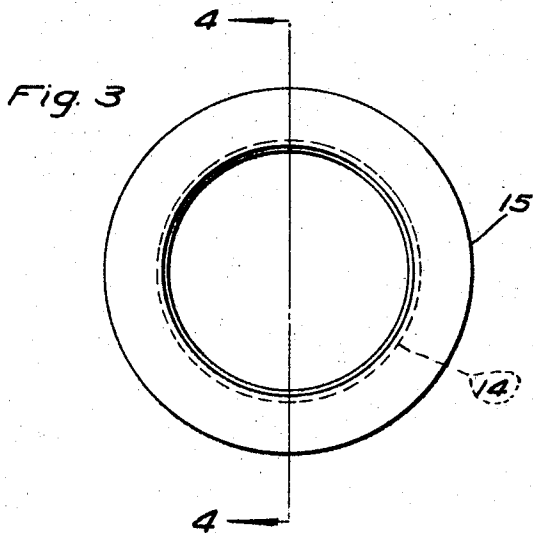
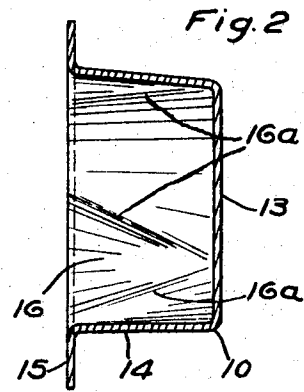
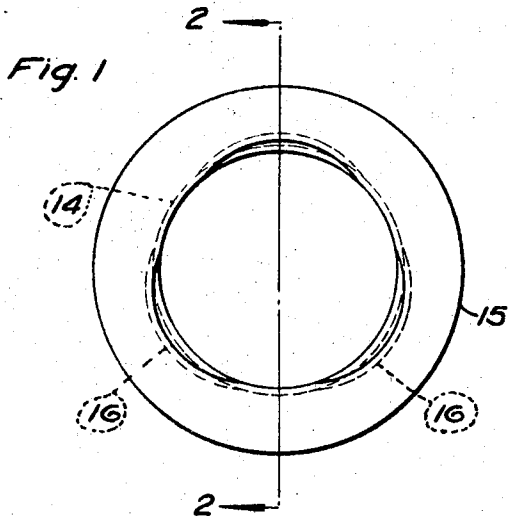
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PROTECTOR

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This invention relates to devices for protecting the internal threads of pipe couplings and other internally threaded parts during shipment and handling.

It is one of the objects of the invention to provide an improved form of thread protector or plug that can be manufactured at low cost and adapted to be readily placed in position over the threads and is not likely to become displaced while the coupling or other threaded part is being handled.

Other objects and advantages of the invention will be apparent from the following description taken in connection with the accompanying drawings, wherein

Fig. 1 is an end view of a protector embodying my invention; Fig. 2 is an axial section through the protector, taken on the line 2—2 of Fig. 1;

Fig. 3 is an end elevation of the thread protector as it appears when in position in the end of a coupling, and

Fig. 4 is an axial section through the coupling and the thread protector in position therein, taken on the line 4—4 of Fig. 3.

Referring now to the drawings in detail, Figs. 1 and 2 show a protector 10, which is intended for use as a protective covering for the internal threads of a coupling or other internally threaded parts. The protector is preferably formed from sheet metal by stamping or drawing dies and, as shown in the drawings, comprises a cup-shaped shell which fits into the end of the coupling 11, having internal threads 12, which are to be protected during shipment and handling.

In the forming or drawing operation, the central portion of the blank forms the end or web 13 of the cup, while other portions of the blank are turned over and flanged to form the sleeve 14 and the annular flange 15. In constructing the protector of my invention the web 13 may, if desired, be made as an imperforate wall as herein illustrated.

In order to properly center the protector in the coupling, the web 13 is made circular with its diameter slightly smaller than the internal diameter of the coupling in which the protector is to be used.

For the purpose of holding the protector

in the coupling, I prefer to make the sleeve 14 of non-circular or non-cylindrical form, as shown in Fig. 1, so as to frictionally engage the threads of the coupling at spaced points when the protector is inserted therein. I accomplish this result by bulging the wall of sleeve 14 outwardly at spaced points to form the triangular shaped lobes 16, the diverging sides 16a of which extend from the web 13 to the flange 15 of the protector. While I have shown a protector having three such lobes, it will be understood that the protector may be formed with any desired number of lobes. By making the sleeve 14 of non-circular form, it becomes more resilient or flexible so that when the protector is forced into the coupling, the coupling tends to spring the sleeve back into circular or cylindrical form as shown in Fig. 3. In thus springing the sleeve 14 into circular form, the portions of the sleeve intermediate the lobes 16 are caused to move outwardly to a slight extent and into frictional engagement with the threads of the coupling. With the lobes 16 thus under considerable radial compression, the sleeve most firmly engages the threads of the coupling at the centers of the lobes and less firmly at points intermediate the lobes.

The protector is driven or pressed in the end of the coupling and the frictional engagement therebetween is sufficient to hold the protector in place without danger of it being jarred loose, and yet, permits the protector to be easily removed when desired without injury to the coupling. The flange 15 of the protector abuts the end of the pipe coupling and thereby prevents the protector from being driven or pressed too deeply into the coupling. This flange also serves to prevent injury to the end of the coupling during shipment and handling.

Protectors of this type are usually supplied in standard sizes corresponding to standard sizes of couplings and other internally threaded parts. Owing to inaccuracies in manufacture, however, the diameter of the threads of couplings and other internally threaded parts of a standard size varies to some extent, so that a protector having a truly circular sleeve and made for said cou-

plings is often applied to the coupling and removed therefrom only with difficulty. The improved form and resilient nature of the protector of my invention, however, permits the protector to be readily applied to and removed from such couplings and other internally threaded parts. The protector of my invention may also be employed as a plug to close the openings of unthreaded parts to prevent access of dust, dirt, water vapor, etc.

While I have shown and described the preferred form of my device, it will be understood that I do not limit my invention to this particular embodiment, but regard as my invention such modifications thereof as fall within the scope of the appended claims.

Claims:

1. A protector for the internal threads of a coupling and the like, comprising a continuous sleeve formed from sheet metal and provided with radially compressible lobes at circumferentially spaced points, and an outwardly extending flange at one end of said sleeve.

2. A protector for the internal threads of a coupling and the like, comprising a cup-shaped sheet metal member having a continuous sleeve provided with radially compressible lobes at circumferentially spaced points, and an outwardly extending flange at one end of said sleeve.

3. A protector for the internal threads of a coupling and the like, comprising a cup-shaped sheet metal member having a web at one end thereof, a continuous sleeve extending from said web and provided with radially compressible lobes at circumferentially spaced points, and an outwardly extending flange at one end of said sleeve.

4. A protector for the internal threads of a coupling and the like, comprising a continuous sleeve formed from sheet metal and provided with radially compressible lobes formed by outwardly bulged portions of the sleeve at circumferentially spaced points, and an outwardly extending flange at one end of said sleeve.

5. A protector for the internal threads of a coupling and the like, comprising a cup-shaped sheet metal member having a continuous sleeve provided with radially compressible lobes formed by outwardly bulged portions of the sleeve at circumferentially spaced points, and an outwardly extending flange at one end of said sleeve.

6. A protector for the internal threads of a coupling and the like, comprising a cup-shaped sheet metal member having a web at one end thereof, a continuous sleeve extending from said web and provided with radially compressible lobes formed by outwardly bulged portions of the sleeve at circumferentially spaced points, and an outwardly extending flange at one end of said sleeve.

7. The combination with an internally threaded pipe coupling or the like, of a protector for the threads thereof, comprising a continuous sheet metal sleeve having circumferentially spaced outwardly bulged portions in frictional engagement with said threads, and an outwardly extending flange at one end of said sleeve in engagement with one end of the coupling.

8. The combination with an internally threaded pipe coupling or the like, of a protector for the threads thereof, comprising a continuous sheet metal sleeve in frictional engagement with said threads, the frictional engagement of said sleeve being greater at certain circumferentially spaced points in the sleeve than at other points therein, and an outwardly extending flange at one end of said sleeve in engagement with one end of the coupling.

In testimony whereof I affix my signature.
HERMAN A. UNKE.