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E. W. KRAUSE

2,378,710

THREAD PROTECTOR

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FIG 1

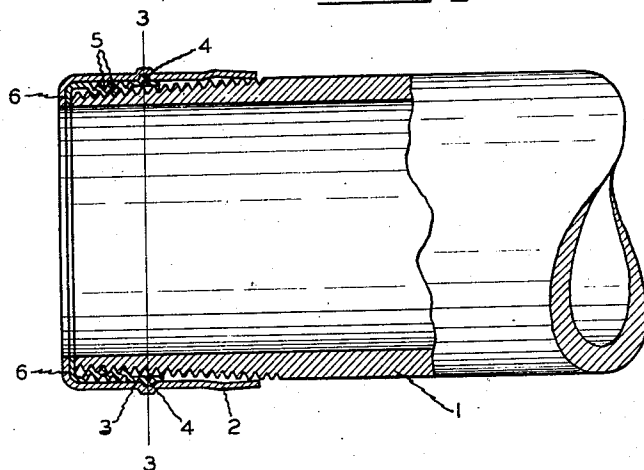


FIG 2

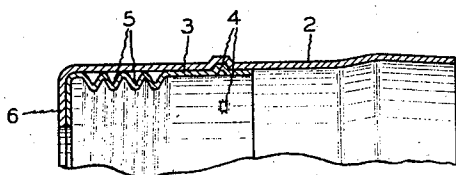


FIG 3

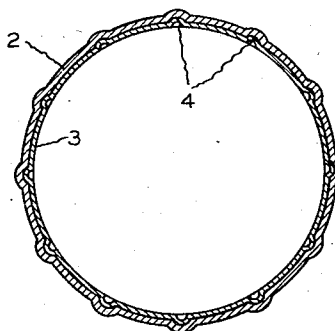
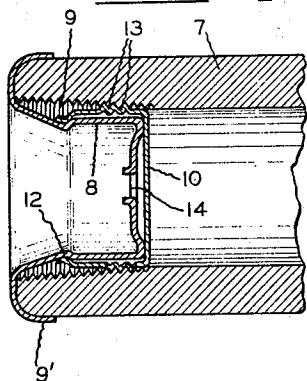


FIG 4



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THREAD PROTECTOR

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1 Claim. (Cl. 138—96)

This invention relates to thread protectors for protecting screw threads from damage during the time the threaded element, such as pipe, is being transported, handled or stored. Not only does the invention afford protection to the threads from injury by chance violent contact with another object likely to harm the threads, but it serves as well to exclude dirt, sand, and other similar foreign substances and thus eliminate chance injury to the threads from this cause.

In describing the invention in detail, reference is herein made to the accompanying drawing, in which—

Figure 1 is a vertical sectional view of the invention applied to the external threads of an end of a pipe;

Figure 2 is an enlarged fragmentary vertical sectional view of the protector designed for application to an externally threaded object;

Figure 3 is a sectional view taken on line 3—3 of Fig. 1 with the pipe removed; and

Figure 4 is a vertical sectional view of a modified form of the invention showing one of its applications for internal threads.

Referring to Fig. 1 of said drawing, the reference numeral 1 designates a section of one end of a pipe, both ends of which are provided with external screw threads.

The reference numeral 2 in said drawing designates a sheet metal shell of a gauge appropriately heavy for the purpose for which the shell is designed, the shell being of slightly larger diameter than the pipe 1.

Provided interiorly of the shell 2 is a bushing-like insert or liner 3, said liner preferably having a length materially less than the exterior shell 2 and being fabricated from sheet metal of substantially lighter gauge than said shell.

The liner 3 may be immovably fixed within the shell by any of a number of available means common in the art. In the drawing, it is shown as being maintained rigidly in position by a plurality of registering nodule-like studs 4 formed simultaneously in the shell and liner by suitable rolls applied to the assembled parts. This means of permanently attaching the two pieces is for purpose of illustration only since other and equally satisfactory means are now well known and common in the art.

The liner 3 has formed in its side wall, as, for instance, by means of rolling, a set of threads 5. As shown in the drawing, the threads are formed in that portion of the liner adjacent its outer end and do not extend throughout the entire length of the liner. Moreover, it may here be pointed out that the threads 5 are rolled into the comparatively light gauge sheet metal wall of the liner 3 so that they will accommodate themselves to substantially any size or type of external screw thread borne by the end of

the pipe 1. In other words, the gauge of sheet metal from which the liner is formed is sufficiently light and flexible that it, together with its rolled threads, will become adapted to and mesh with substantially any size or type of screw thread borne by a pipe of a size for which the protector is designed. Thus, the lighter gauge liner affords means of attachment of the protector to the pipe substantially preventing chance displacement while the heavier smooth wall of the shell 2 serves as a shield to absorb damaging shocks to prevent injury to the threads therefrom.

The outer ends of the shell 2 and liner 3 are turned inward, as shown at 6, to form a flange or seat which forms a stop as well as a seal to prevent access of objectionable foreign substances.

Figure 4 depicts a typical protector for internally threaded elements, as, for example, the end of an oil well sucker rod 7. As illustrated, the device comprises a sheet metal shell having a male member 8 adapted to be received within the tapped bore 9 of the end of the sucker rod. The shell is provided at its outer end with an outwardly and downwardly turned flange 9' adapted to embrace the end of the sucker rod. The inner portion of the male member 8 is encased within a sheet metal cap 10. Said cap is fabricated from sheet metal of a gauge lighter than the metal shell and, as shown in Fig. 4, the side walls of the cap and shell are spaced away from each other to provide a slight intervening space. Said cap may be fixed to the shell by crimping, as shown at 12, but any other appropriate means of attachment may be employed. A series of threads 13 is rolled in the cap 10 to become engaged with the internal screw threads of the bore 9. A rectangularly-shaped slot 14 is provided in the inner end of the shell to accommodate an appropriate tool for attaching and detaching the protector. The lighter gauge cap 10 with its versatile threads affords means of attachment of the protector to the threaded element while the heavier smooth wall of the shell serves as a shield to absorb chance damaging shocks likely to injure the delicate screw threads of the bore 9. Moreover, as will be noted from an examination of Fig. 4 of the drawing, the bore 9 is effectively sealed by the protector to prohibit access of foreign matter therein.

What is claimed is:

A protector for threads on the end of a pipe, comprising a metal shell, a cup-shaped element associated with said shell, said element having a continuous rolled thread for connection to pipe threads of varying pitch, and means for rigidly connecting the shell and element in telescoping relation to each other.

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