Aug. 26, 1941. H. W. SCHUETZ 2,253,729

THREAD PROTECTOR FOR PIPE

Filed Oct. 31, 1940

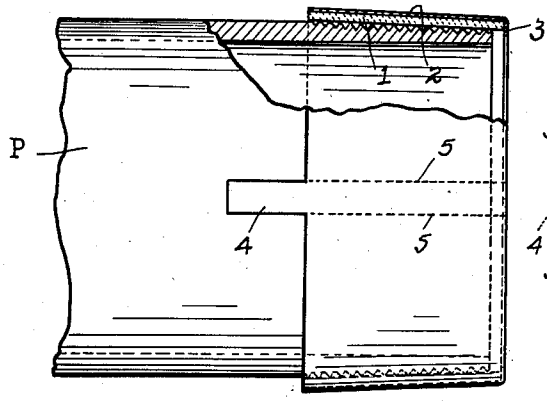


FIG. I.

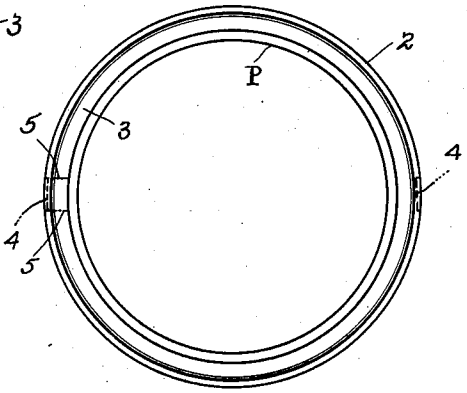


FIG. II.

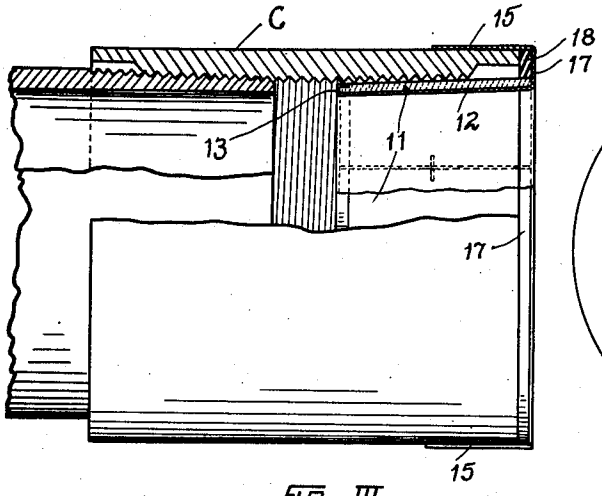


FIG. III.

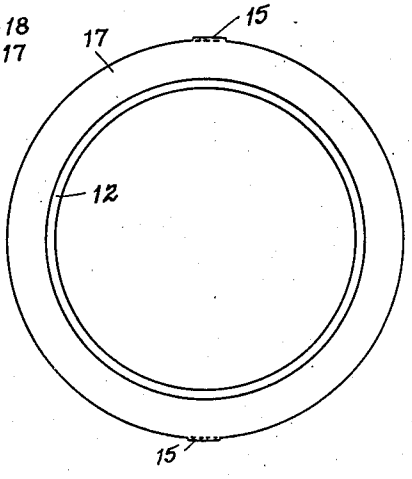


FIG. IV.

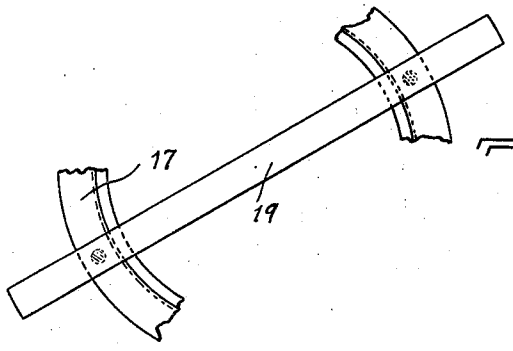


FIG. V.

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Patented Aug. 26, 1941 2,253,729

UNITED STATES PATENT OFFICE

2,253,729

THREAD PROTECTOR FOR PIPE

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Application October 31, 1940, Serial No. 363,694

2 Claims. (Cl. 138—96)

This invention relates to thread-protectors for pipe, and consists in simplification of structure, in an article of highest efficiency.

In the accompanying drawing Fig. I is a view partly in elevation, partly in axial section, of the thread-protector of the invention adapted to application to an exteriorly threaded pipe-end, and, fragmentarily, of a pipe length with the protector in place upon it; Fig. II is a view in end elevation of the assembly of Fig. I; Figs. III and IV are views that correspond to Figs. I and II, showing the protector of the invention adapted to application to an interiorly threaded pipe-end, and, in this instance, to the coupling employed for uniting two pipe lengths whose adjacent ends are both externally threaded; Fig. V is a fragmentary view in elevation of a variation in detail from the showing of Fig. IV. The threaded surfaces to which in the drawing the protector is shown to be applied are tapering threaded surfaces; but it will be apparent that the protector is equally applicable to threaded surfaces that are cylindrical.

The protector consists of a sleeve of relatively soft, resilient, and cushioning material, conveniently paper-board, encased in a sheet metal shell. The shell covers the sleeve, protecting it from injury and deterioration, holds the sleeve in position, and affords it re-enforcement for its service. The shell is secured to the pipe-end and the securing is such as to hold the sleeve immovably in position.

As shown in Figs. I and II, the outwardly tapered externally screw-threaded pipe-end is overlain immediately with a sleeve 1 of material of the nature indicated—typically a correspondingly cone-shaped sleeve of paper-board. The sleeve 1 is encased in a closely fitting, correspondingly shaped shell 2 of thin sheet metal. The shell covers the sleeve in continuity, from end to end. The shell at its outer end is shaped with an inturned flange 3 that overlies the outer end of the sleeve. At its inner end the shell is provided with a tongue-like extension 4 that, prolonged beyond the end of the sleeve, is depressed to contact with the outer surface of the pipe-length, and is spot-welded to such contact.

Ordinarily the shell is formed and the sleeve is assembled within it, and these assembled parts are applied as a unit to the pipe-end. The proportions are such that in making assembly the threads upon the pipe-end are sunk somewhat into the substance of the sleeve; and, when the protector is thus pressed home, its outer end still extends beyond the pipe-end. The extension 4 is then laid taut upon the exterior surface of the pipe and spot-welded to place. Manifestly this welding secures the sleeve within the shell against any possible displacement, and the whole immovably in place.

The protector serves its familiar purpose, of protecting the threaded pipe-end from lateral blows; and the extension of the protector beyond the end of the pipe affords protection against end thrust.

When the protector is to be removed the spot-welding is broken and the whole is drawn away.

An added feature, for facility in removal, is indicated. Lines 5, 5 of weakening (conveniently, lines of perforations) extend from the base of extension 4 to the outer end of the shell 2. When at the time of removal, the weld union has been broken, tension upon the freed extension 4 will effect the tearing away of the strip defined by the lines 5, 5, the breaking of the circumferential continuity of the shell, and the loosening of the enclosed sleeve, so that it comes away without difficulty. In this case, the shell is destroyed. Otherwise, the protector may be applied in repeated use.

The extension 4 manifestly may be repeated, in two or more such extensions, properly spaced circumferentially of the structure. One double line of perforations 5 (or the equivalent), however, suffices.

Figs. III and IV show a protector for an interiorly screw-threaded pipe-end, or (as here specifically shown) coupler end. This protector consists of a tapered sleeve 11 mounted exteriorly upon a metal shell 12. The shell at the inner end 13 is turned over the inner end of the sleeve; and at its outer end 17 is flanged to extend outwardly across the wall of the pipe end (or, as here specifically shown, the end of coupling C). Beyond flange 17 the shell is prolonged in one or more extensions 15 (two are shown).

As in the form first described, sleeve and shell are assembled, the end of the shell is turned over the end of the sleeve, as at 13. The assembly is then applied to the article to be protected. Between the pipe (or coupler) end and flange 17 a gasket 18 may be interposed. The protector is pressed firmly home, with some crushing of the paper beneath the screw-threads upon which abutment is made. The extensions 15 are then bent over and laid taut upon the exterior surface of the pipe (or coupler) and are spot-welded to place.

As before, the threads are shielded beneath a resilient, steel-clad blanket; the sleeve is secure

against displacement within its shell; the gasket 18 serves to relieve the stress of end blows. When the protector is to be removed the spot-welding is broken and the whole is drawn away.

The extensions 15 may be made as separate strips of metal, welded externally upon the flange 17; and, as particularly shown in Fig. V, opposite extensions so applied may be formed of a single strap 19, that lies diametrically across the end of the structure, its ends constituting extensions having the utility described. When the protector is to be removed, this strap affords a handle or gripping-place.

I claim as my invention:

1. A thread-protector for pipe consisting of a sleeve of resilient material and a shell of sheet metal overlying said sleeve, turned at one end over the end of the sleeve, and a metal strap applied diametrically across the shell at its other end and secured to the shell, the ends of the strap adapted in the assembly to be bent to contact upon and to be united with the exterior surface of the pipe, and by such union securing the assembled parts immovably in place.

2. The assembly, with a threaded pipe-end, of a thread-protector consisting of a sleeve of resilient material compressed upon the threaded surface of the pipe-end and a shell of sheet metal overlying said sleeve, turned at one end over the end of the sleeve and at the other end provided with a tongue-like extension in union with the exterior surface of the pipe and by such union securing the whole immovably in place, the shell being weakened along parallel longitudinally extending lines, whereby a strip in continuity with said extension, severed from union with the pipe, may be torn from the shell, the circumferential continuity of the shell broken, and the protector released from the pipe-end.

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