Dec. 7, 1937. L. R. SCHMAUS 2,101,514

PIPE THREAD PROTECTOR

Filed April 17, 1935

Fig. 1.

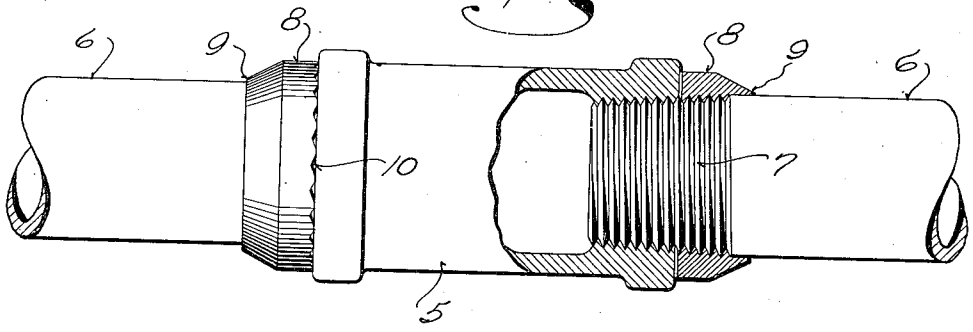
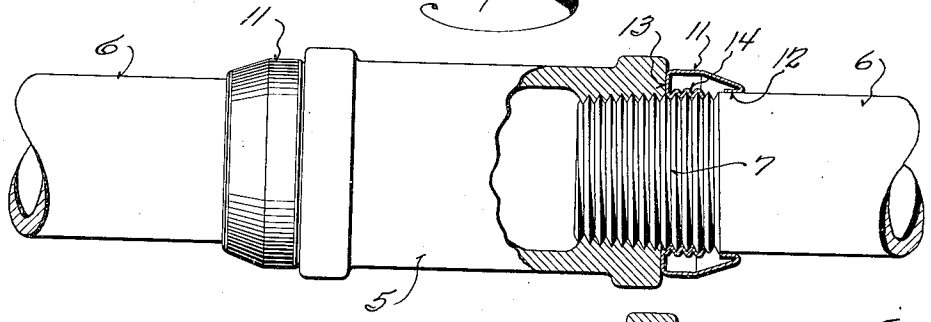


Fig. 3.



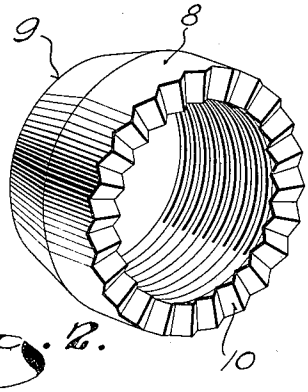


Fig. 2.

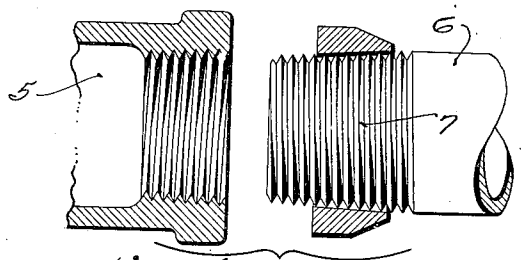


Fig. 4.

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PIPE THREAD PROTECTOR

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Application April 17, 1935, Serial No. 16,737

4 Claims. (Cl. 285—146)

This invention relates to improvements in pipe fittings and has as an object to provide a novel protective covering for pipe threads which would otherwise be exposed.

As is well known, it is a practical impossibility to cut threads on a pipe so that no portion thereof will be exposed when the pipe is secured in a fitting. Invariably a substantial portion of the cut thread is exposed. Exposing the threads in this manner obviously is objectionable from the standpoint of appearance especially where the fittings are mounted in plain view and are neatly finished, as in bathroom fixtures.

Besides causing an unsightly appearance, exposed threads are also subject to corrosion, as in cutting the threads the outer protective shell, generally provided by galvanizing the pipe, is cut away.

The present invention overcomes these objections through the provision of a novel non-corrosive protector mounted on the threaded end of the pipe and readily movable along the pipe as it is threaded into a fitting. In this manner, the protector is automatically moved to its proper position without interfering with the making of the connection between the pipe and fitting.

To further insure that the presence of the protector will not interfere in any way with the securement of the pipe into its fitting, it is another object of the invention to make the protector of a ductile, yielding or soft metal.

A further object of this invention is to provide means on the protector to facilitate the application of turning force thereon during the securement of the pipe in its fitting so as to assist in moving the same along the thread.

With the above and other objects in view which will appear as the description proceeds, this invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

The accompanying drawing illustrates several complete examples of the physical embodiment of the invention constructed according to the best modes so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a view partially in section and partially in elevation illustrating the protector of this invention applied to a conventional pipe coupling;

Figure 2 is a perspective view of the protector per se;

Figure 3 is a view similar to Figure 1 showing a modified embodiment of the invention; and

Figure 4 is a view showing a portion of a fitting in section and an adjacent threaded end of a pipe provided with another modified form of protector.

Referring now more particularly to the accompanying drawing in which like numerals indicate like parts throughout the several views, the numeral 5 designates a pipe coupling of conventional construction to the opposite ends of which pipe sections 6 are threaded. As is customary, the ends of the pipe sections are provided with pipe threads 7 by which the pipes are secured in the tapped ends of the coupling. Ordinarily, a portion of the pipe threads 7 are exposed beyond the ends of the coupling as it is well nigh impossible to cut the threads so that the length of the thread is just sufficient to insure a tight connection. Such exposed threads are objectionable as noted hereinbefore, and to overcome this objection, the present invention provides protectors 8.

These protectors are in the form of rings and preferably have a cross sectional shape like that shown in the drawing, wide at one end so as to have substantial thickness and taperingly reduced at the other end to a feather edge 9. The protector ring may be tapped to fit the pipe thread 7.

Prior to the application of the pipe to the coupling, the protector ring is located medially of the ends of the threaded portion of the pipe. As the pipe is threaded into the coupling, the large end of the protector ring abuts the adjacent end of the coupling and as the pipe enters the coupling, the protector ring is forced back along the pipe until its end having the feather edge 9 projects well beyond the terminus of the threaded portion 7.

Movement of the protector ring along the threaded section 7 is facilitated by serrations 10 on the thick end of the ring. These serrations firmly engage the adjacent face of the coupling and hold the ring against turning with respect to the coupling. The ring being formed of a soft yielding or ductile metal, expands and flows readily to accommodate the slightly increasing diameter of the pipe thread thus insuring a snug fit on the pipe without hindering its application to the fitting.

Obviously, the coupling 5 may be any other form of fitting.

While it is desirable that the ring be tapped

to have a threaded engagement with the pipe, tapping may be dispensed with and a construction such as disclosed in Figure 4 may be employed. In this instance the protector ring is merely forced along the threaded portion of the pipe, although during the application of the pipe to the coupling or other fitting, the threads of the pipe may cut into the soft metal of the protector. In any event, the protector ring will be easily forced along the pipe until the pipe is securely threaded into the fitting.

If desired, the protector ring may be constructed in the form of a stamping as illustrated in Figure 3. When so constructed, the ring instead of being solid and formed of a yieldable metal is formed of comparatively thin sheet metal having sufficient resiliency to allow the same to yield during the application of the pipe to its fitting. Specifically, this form of the invention comprises an outer shell 11 so constructed as to give the ring a tapered shape. At one end of the outer shell 11 there is an inturned cylindrical flange 12 which snugly engages the pipe, and at its other end an inturned flange 13 provides the face for engagement with the adjacent end of the fitting. The flange 13 lies in a plane normal to the axis of the ring, and projecting inwardly therefrom is an inner threaded sleeve 14 which engages the threaded portion 7 of the pipe.

As noted hereinbefore, the sheet metal of which the protector is made is comparatively light and has sufficient resiliency to yield as the connection is made between the pipe and coupling. The metal used is also non-corrosive.

From the foregoing description taken in connection with the accompanying drawing, it will be readily apparent to those skilled in the art to which this invention appertains, that this invention provides simple but effective means for completely covering and concealing pipe threads which otherwise are exposed beyond the ends of the fittings in which the pipes are secured, and that the presence of this protective device in no wise interferes with the securement of the pipes in their fittings, but is automatically moved to its proper position during making of the connection between the pipe and fitting.

What I claim as my invention is:

1. In combination with a pipe fitting and a pipe threaded into the fitting, said pipe having a threaded portion extending beyond the fitting, a protector ring covering said threaded portion of the pipe and having a snug face to face contact with the adjacent end of the fitting and a firm close fitting contact with the outer wall of the unthreaded portion of the pipe, said protector ring being formed of a ductile metal so as to be capable of stretching as it is moved along the increasing diameter of the pipe thread during threading of the pipe into the fitting without interfering with the proper securement of the pipe to the fitting.

2. A pipe thread protector comprising a metallic ring adapted to be mounted on the threaded portion of a pipe, said ring being made of a ductile non-corrosive metal so as to expand easily to permit the same to be moved along the increasing diameter of the pipe thread during the threading of the pipe into a fitting, one end of the ring having a thick wall section with a wide end face adapted to abut the fitting so that the ring is caused to travel along the pipe thread during the application of the pipe to the fitting.

3. A pipe thread protector of the character described comprising a ring formed entirely of sheet metal and having an outer shell generally conical in shape with its small diameter end adapted to slide along a pipe on which the protector is mounted, an inturned flange on the large diameter end of the shell lying in a plane substantially normal to the axis of the ring, and an inner sleeve carried by said inturned flange, said inner sleeve being threaded and having a mean diameter substantially equal to that of the small diameter end of the outer shell.

4. A pipe thread protector of the character described comprising a ring of metal formed entirely of sheet metal and having an outer shell, a portion of which is cylindrical and another portion of which is substantially conical, an inturned flange lying in a plane substantially normal to the axis of the ring on the cylindrical portion of the outer shell, an inner sleeve carried by said inturned flange, said inner sleeve being threaded and having a mean diameter substantially equal to the small diameter of the conical portion of the outer shell, and a cylindrical flange on the small diameter end of the conical portion snugly engageable with the unthreaded surface of a pipe on which the ring is mounted.

LOUIS R. SCHMAUS.