

P. J. SHRUM.
 THREAD PROTECTOR.
 APPLICATION FILED DEC. 24, 1909.

985,946.

Patented Mar. 7, 1911.

2 SHEETS—SHEET 1.

Fig. 2.

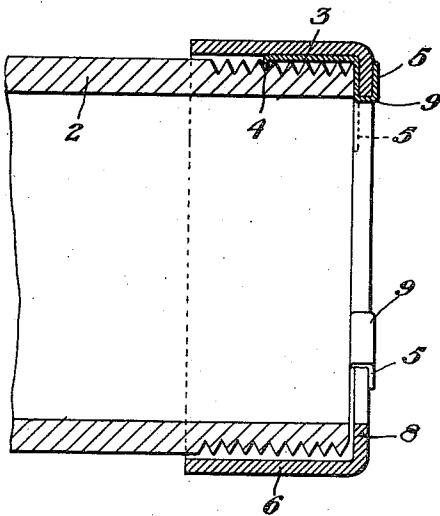


Fig. 1.

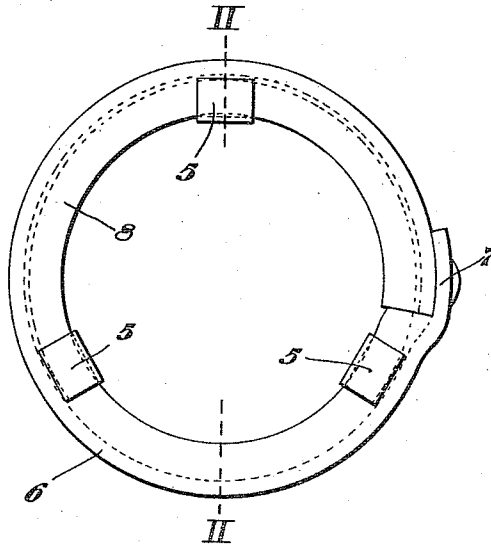


Fig. 3.

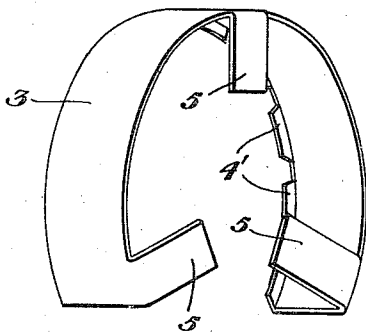


Fig. 5.

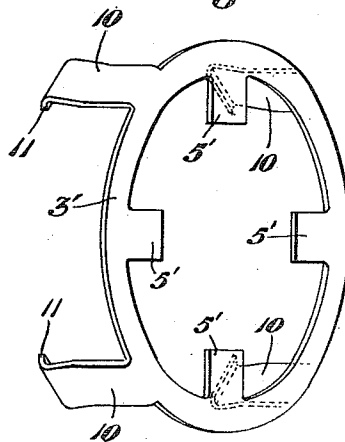
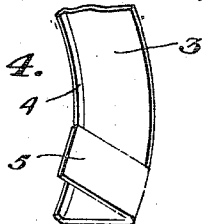


Fig. 4.



Witnesses:

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 Fred. S. Lamb

Inventor:

Peter J. Shrum
 by C. M. Clarke
 his attorney

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2 SHEETS—SHEET 2.

Fig. 6.

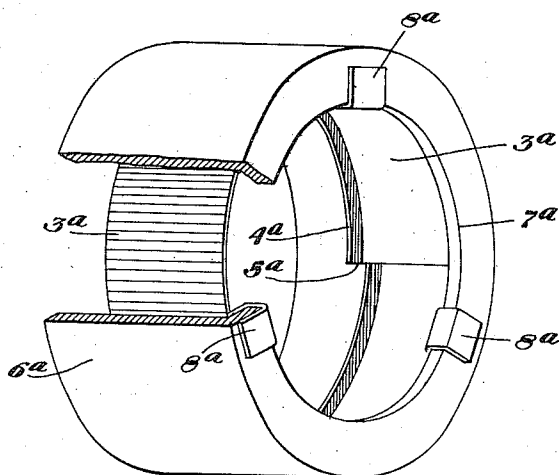
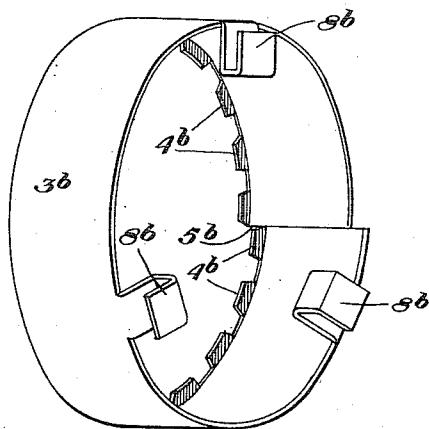


Fig. 7.



Witnesses:
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UNITED STATES PATENT OFFICE.

PETER J. SHRUM, OF MONACA, PENNSYLVANIA, ASSIGNOR TO COLONA MANUFACTURING COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

THREAD-PROTECTOR.

985,946.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed December 24, 1909. Serial No. 534,861.

To all whom it may concern:

Be it known that I, PETER J. SHRUM, a citizen of the United States, residing at Monaca, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Thread-Protectors, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention consists in improvements in thread protectors for the threaded ends of pipe, tubing, rods, etc., and has for its object to provide a simple, cheap and easily adjusted device which may be applied by insertion over the end of the pipe or other article without screwing.

The invention consists of two parts, an inner thread-engaging element having a thread-engaging flange and projecting locking tongues, and an outer main protecting ring adapted to be inserted over and to embrace said element and all of the thread of the pipe, and to be held thereon by the said tongues, as more fully hereinafter described.

The invention is illustrated in the accompanying drawing in which—

Figure 1 is an end view of the protector as applied to the threaded end of a pipe. Fig. 2 is a vertical section view on the line II, II, of Fig. 1. Fig. 3 is a perspective view of the thread-engaging and ring-holding element. Fig. 4 is a similar view illustrating a modified construction of the thread-engaging flange. Fig. 5 is a similar view showing a modified construction, employing resilient thread-engaging tongues. Fig. 6 is a perspective view, partly broken away, showing a modified construction of the invention, assembled. Fig. 7 is a similar view of the inner thread-engaging ring, showing a modified construction of the spirally arranged thread-engaging element.

In the drawings, 2 represents the threaded pipe or other threaded article to be protected having the usual spiral threads extending backwardly along its end, over which the protector is to be inserted sufficiently far to completely protect the threads.

3 is a ring-like locking element which may be completely circular or of any desired circular continuity but having separated ends as shown, so as to provide for resiliency and adjustment. Said ring is turned inwardly at one end providing a thread-engaging flange 4, as indicated in Fig. 4, or

sectional flanges 4', as in Fig. 3, the function of which is to engage the threads when the ring is inserted over the article to be protected and operating to hold it fixedly in place. The ring 3 is provided with any desired number of inwardly bent locking or holding tongues 5 operating, when the ring is inserted upon the pipe, to limit its movement endwise and locate it in position.

6 represents the outer protecting ring which may be integral, or jointed as indicated at 7, and which is provided with an outer inwardly turned peripheral flange 8.

The ring 3 having been inserted over the end of the pipe and its flange element 4 or 4' engaging the thread, the ring 6 is then inserted over the ring, operating to press it or its flange 4 or 4' inwardly into locking engagement with the thread, after which the tongues 5 are then bent outwardly as indicated at 9, positively engaging the flange 8 as shown. As thus applied and connected the ring 3 is in firm locking engagement with the thread and by its tongues 5 positively holds the main protecting ring 6 in position against accidental removal.

It will be understood that the flange elements 4' or flange 4 will readily conform to the spiral arrangement of the thread in applying the device, in case the flange elements are not originally so arranged.

In Fig. 5, the ring 3' is shown as continuous and integral and provided with a plurality of inwardly extending resilient thread-engaging tongues 10, having inwardly extending flanges 11, which tongues, however, are preferably deflected outwardly sufficiently far to permit the thread engaging elements to be inserted longitudinally over the threads for the desired distance. The ring 3' is also provided with a plurality of inwardly extending locking-tongues 5' which operate in the same manner as tongues 5 to engage and hold the flange 8 of the ring 6. In using this form of ring it is inserted over the pipe as stated, after which the ring 6 is applied and will press the terminal flanges 11 into binding engagement with the threads, the ring 6 then being engaged by bending the holding tongues 5' outwardly around its flange 8.

With either construction, it will be observed that the inner locking ring, being preferably of comparatively thin, light sheet metal, occupies a minimum of space and

provides for the thread engaging flanges of sufficiently thin gage to be inserted between the coarse threads of heavy pipe. I thus secure a positive locking engagement without necessitating any special taper finishing of the flanges to conform to the thread cavities. Also, that the locking tongues 5 and 5' being comparatively light are easily bent outwardly around the flanges of the main protecting ring 6.

The invention is particularly designed for use with pipes of large sizes having comparatively coarse threads and requiring heavy protecting rings. It thus provides in a simple and cheap construction, comparatively light, thin thread-engaging portions and locking tongues, with a main protecting ring of the desired or necessary strength and weight. When desired, the parts may be assembled together before application, and secured upon the threaded article as a single connected structure.

In Fig. 6 I have illustrated the device in such condition for application, in which the parts are generally similar to those just described. In such construction, the inner ring 3^a of thin sheet metal having its inner end portion bent inwardly to provide a thread-engaging flange 4^a, extends annularly around and forms the terminal thread-engaging portion of the outer ring 6^a and is off-set as indicated at 5^a to correspond to the spiral arrangement of the threads. 6^a is the outer protecting ring which may be integral or joined at one side and which is provided with an inwardly turned peripheral flange 7^a adapted to extend inwardly from the end of the threaded article. The inner ring 3^a is fixedly secured to the main protecting ring 6^a by means of projecting tongues 8^a which are bent outwardly around the flange 7^a at intervals tightly grasping it and positively holding the ring 3^a in rotative engagement therewith. Instead of making the thread-engaging flange 4^a continuous as indicated in Fig. 6, it may be cut out at intervals providing separate flange sections 4^b as in Fig. 7, such flange sections being arranged spirally in the same manner and off-set as at 5^a. When thus constructed, the device is inserted upon the threaded article by screwing in the manner of an ordinary threaded ring, and it will be observed that the inner end of the ring 6^a projects beyond the flange elements 4^a or 4^b sufficiently far to centralize the ring, insuring proper engagement and completely covering the threads. The particular advantage of the heavy outer ring and the light inner ring is in providing thread-engaging portions of thin metal which may be made at low cost and have the facility of engaging the threads without any especial finishing, while the means for securing the inner ring to the outer protecting ring obviates the necessity or expense of

riveting or otherwise securing the parts together.

The device is comparatively simple and cheap in construction and operation; it is readily removed after use, in either manner of application, by bending the retaining tongues back to release the outer ring, and may be used over again in the same way as described, or by merely unscrewing the connected parts as a whole and discarding.

The specific construction, form or design of the parts may be changed or varied to suit different conditions of use by the skilled mechanic, but all such changes are to be considered as within the scope of the following claims:

What I claim is—

1. A thread protector consisting of an inner ring having a thread-engaging element, an outer ring, and means forming an integral part of one of the rings and bent around the exterior of the other for locking one of said rings with the other.
2. A thread protector consisting of an inner ring having a thread-engaging flange, an outer ring adapted to compress said flange into engagement with the threads, and means forming an integral part of one of the rings and bent around the exterior of the other for locking one of said rings with the other.
3. A thread protector consisting of an inner ring having a thread-engaging flange and a locking tongue, and an outer ring adapted to embrace said inner ring and to be fixedly engaged by said locking tongue.
4. The combination of an inner ring having compressible thread-engaging portions and locking tongues, and an outer ring adapted to embrace said inner ring and to be fixedly engaged by said locking tongues.
5. The combination of an inner divided ring, having a thread-engaging flange and locking tongues, and an outer ring adapted to embrace said inner ring and to be fixedly engaged by said tongues.
6. A thread protector comprising a ring having depressible thread-engaging portions and locking tongues, and an outer flanged ring adapted to embrace said inner ring and to be fixedly engaged by bending said tongues outwardly over its flange, substantially as described.
7. The combination with a threaded article, of an inner ring having depressible thread-engaging portions and locking tongues, and an outer flanged ring embracing said inner ring and depressing said thread-engaging portions into engagement with the thread of the pipe and fixedly connected with said inner ring by said locking tongues, substantially as set forth.
8. In a thread protector, the combination of an inner ring having a spirally arranged thread engaging flange and securing

tongues, and an outer protecting ring fixedly engaged by said tongues and thereby holding the thread-engaging flange in operative position, substantially as set forth.

5 9. In a thread protector, the combination of an inner ring of thin sheet metal having an inwardly extending spirally arranged flange, an outer protecting ring, and integral tongues fixedly bent over into holding

engagement with the end of said outer ring, 10 substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

PETER J. SHRUM.

Witnesses:

H. L. GRIMMELL,
J. T. WALSH.