

No. 682,409.

Patented Sept. 10, 1901.

B. F. GREENE.
THREAD PROTECTOR.

(Application filed Apr. 10, 1901.)

(No Model.)

Fig. 1.

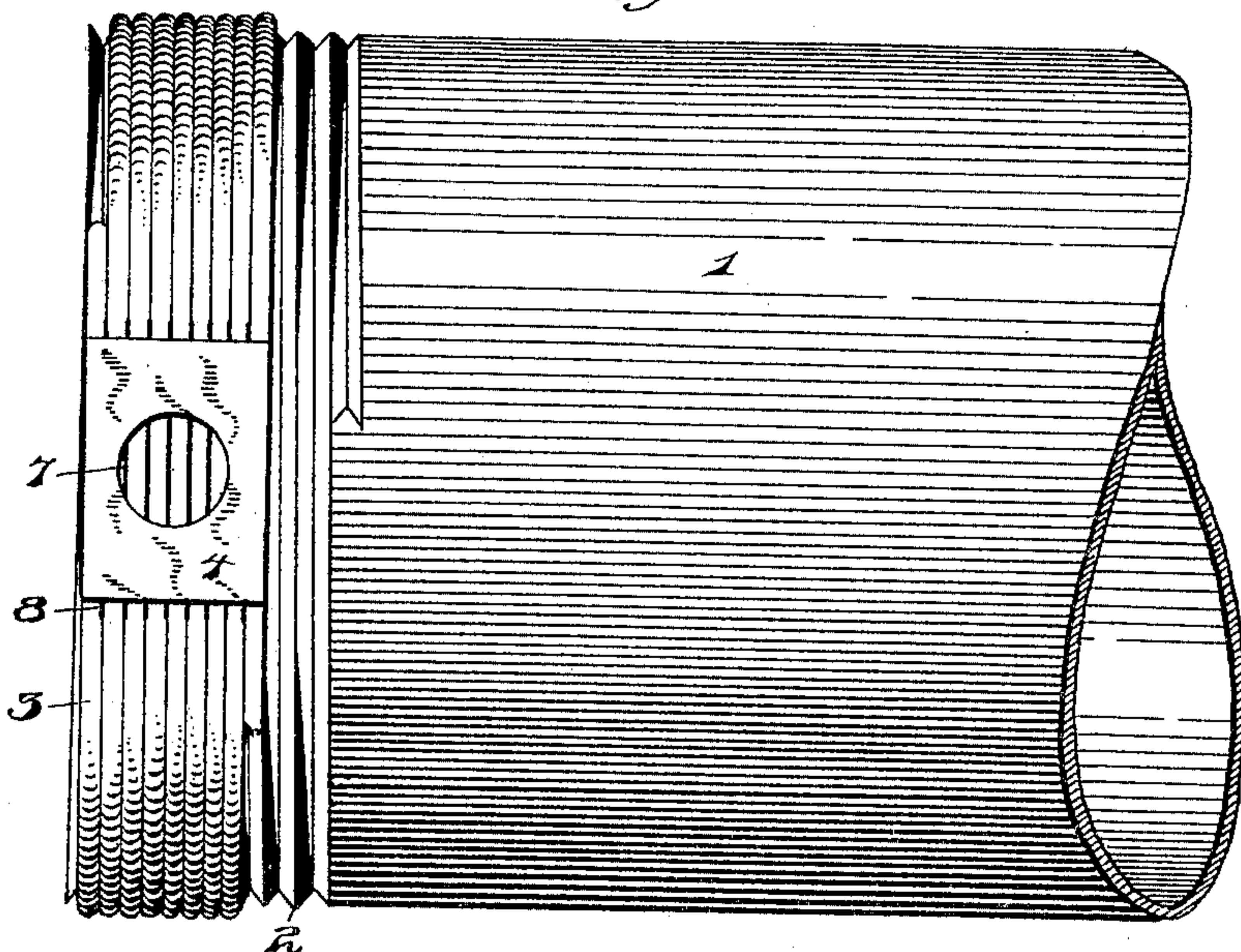


Fig. 2.

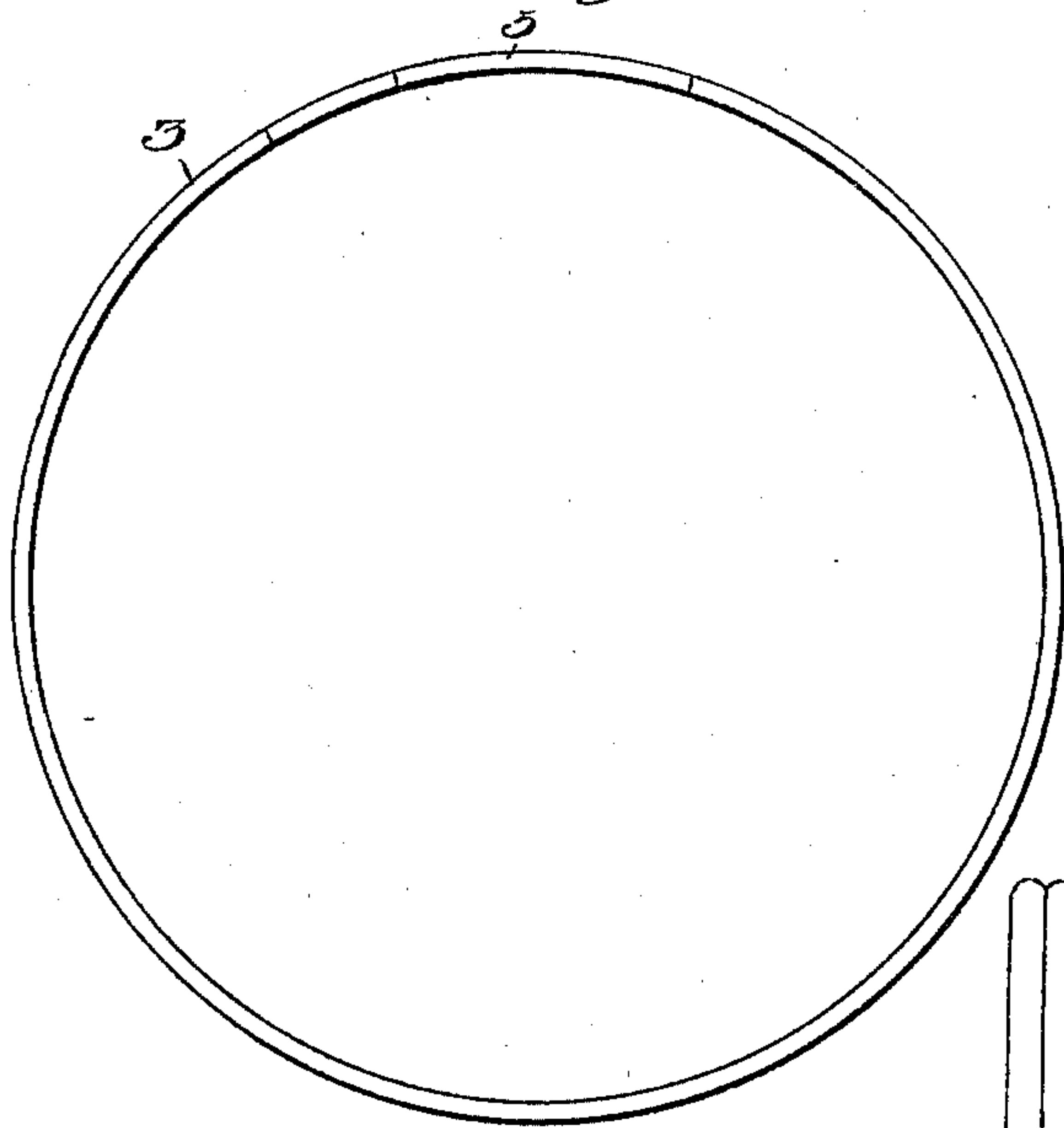


Fig. 3.

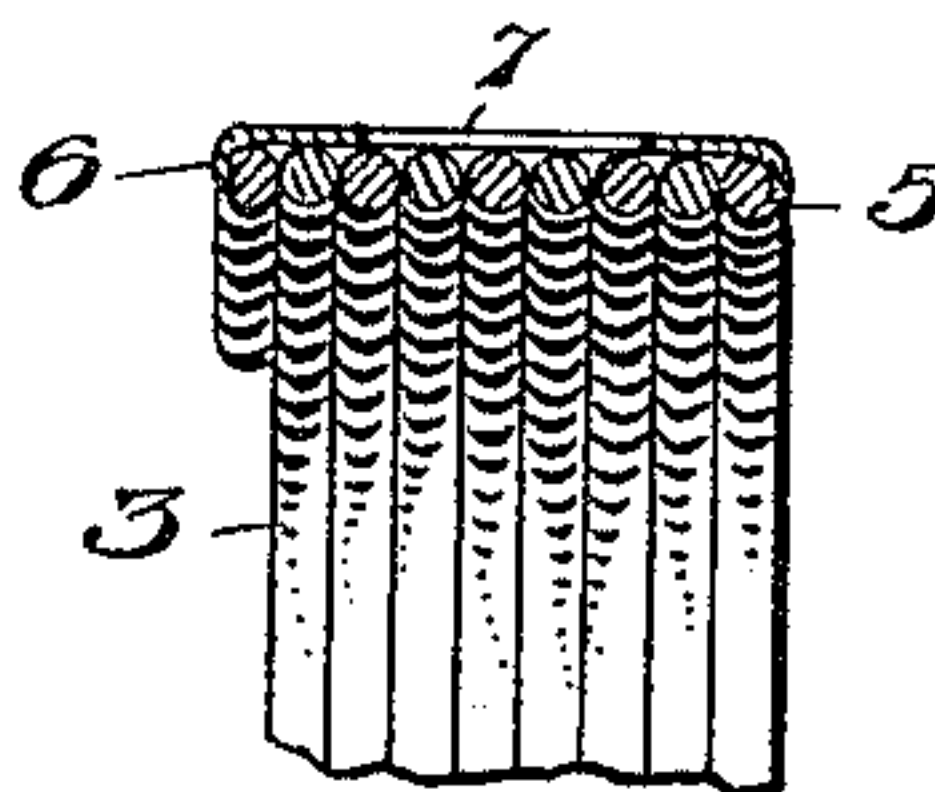


Fig. 4.

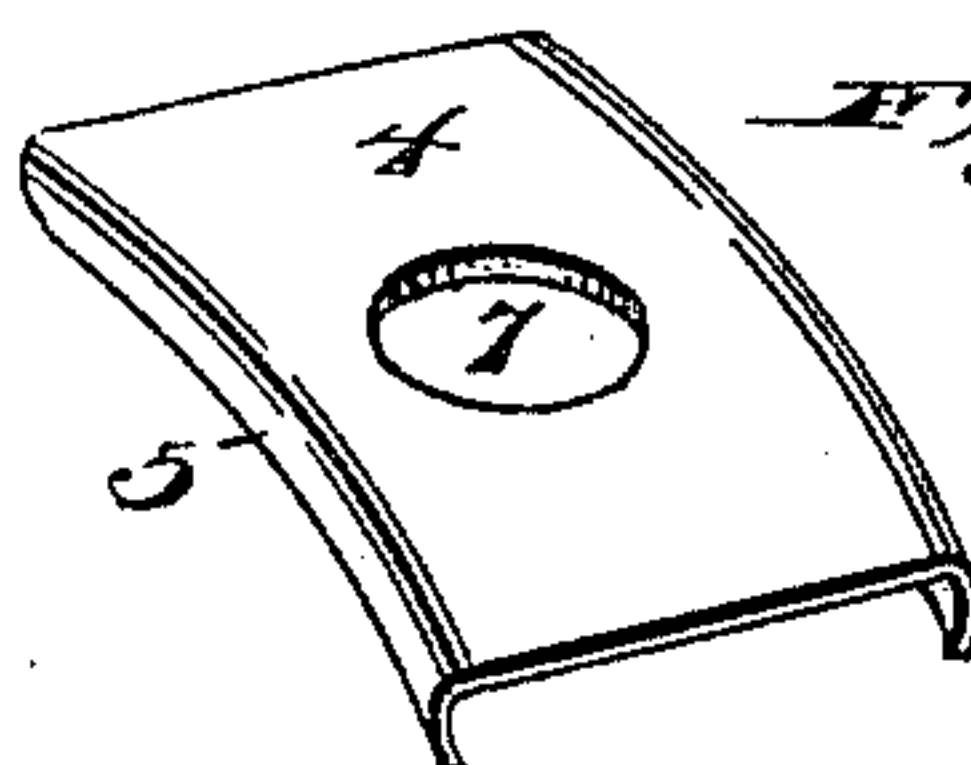


Fig. 5.

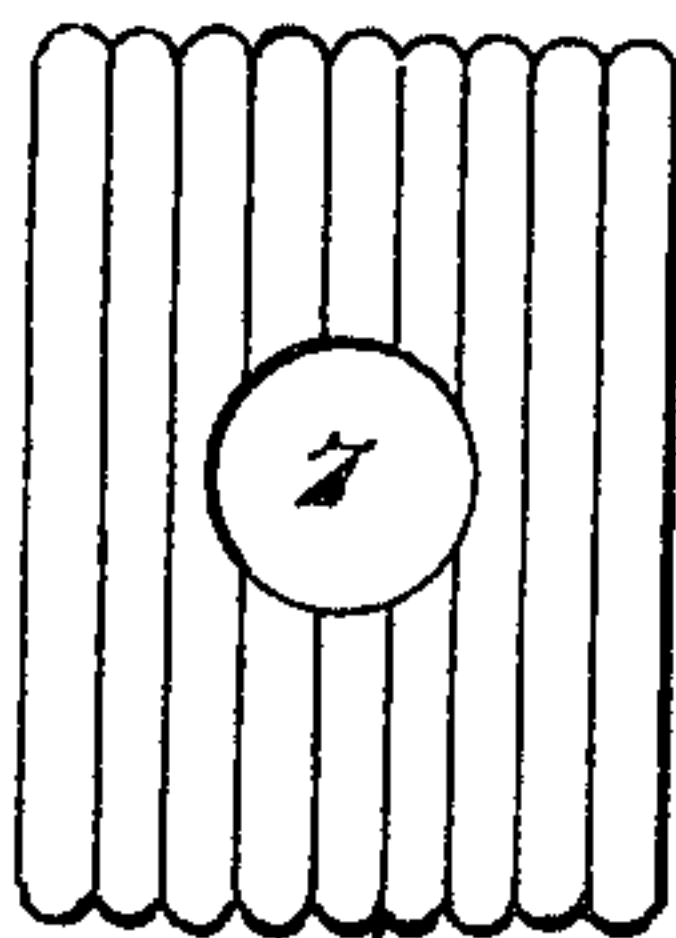
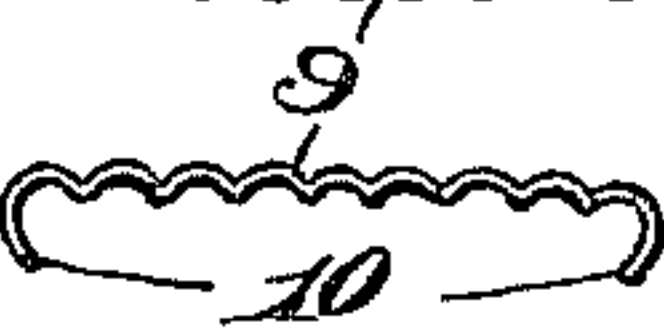


Fig. 6.



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UNITED STATES PATENT OFFICE.

BENJAMIN F. GREENE, OF SHERIDAN, PENNSYLVANIA.

THREAD-PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 682,409, dated September 10, 1901.

Application filed April 10, 1901. Serial No. 55,120. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. GREENE, a citizen of the United States of America, residing at Sheridan, in the county of Allegheny 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 drawings.

10 This invention relates to certain new and useful improvements in thread-protectors, and has for its object to provide novel and effectual means for protecting the thread on pipe or the like during shipment and handling thereof to prevent injury thereto.

15 In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate corresponding parts throughout the several views, in which—

20 Figure 1 is a side elevation of a portion of a pipe, showing my improved thread-protector in position on the threads thereof. Fig. 2 is a front elevation of the thread-protector removed from the pipe. Fig. 3 is a transverse vertical sectional view of a part of the protector. Fig. 4 is a detail perspective view of the clamp or binding-plate employed for 30 binding the convolutions of the wire together. Fig. 5 is a top plan view of a modified form of this clamp or binding-plate. Fig. 6 is an end view of the same.

35 In shipment or handling of iron pipe of any kind or size, especially those of considerable diameter, it is desirable that a covering or protecting be provided for the threads in order that the latter will not be damaged in shipping or handling, so that the pipe may 40 be readily joined together when desired. Various devices have been employed for this purpose, most of which require threading to mesh with the threads of the pipe to retain the protector thereon. In my protector I employ a single strand of wire, preferably circular in cross-section, and coil this wire in circular form, the wire acting as threads to engage with those on the pipe and lying partially in such threads, so as to completely 45 fill the space between one thread and the adjacent thread on the pipe and effectually prevent the threads from injury.

In the accompanying illustration of my invention I have shown a part of the pipe 1 provided with threads 2 at the end thereof. 55

The protector is formed from a single strand of wire 3, preferably circular in cross-section, and which is coiled or wound into a series of circular coils or convolutions, which lie parallel and abut one against the other. These 60 circular coils or convolutions of the wire are bound together at one or more points of the circumference, which may be done by means of a clamp or binding-plate 4, as shown in Fig. 4 of the drawings. This form of fastening consists of a metal plate having a slight 65 curvature to conform to the curvature or circular shape of the protector and is provided with downwardly-turned side edges, forming flanges 5. These flanges are preferably countersunk, partially at least, into the outside coils or convolutions of the wire protector, as shown at 6. The clamp or binding-plate after thus being placed in position on the series of coils or convolutions is fastened thereto by 75 solder or any fusible metal, and for this purpose I preferably provide the plate with an opening 7, into which the solder or other fusible metal may be poured while it is in a liquid state, so it will run along the grooves between 80 the different coils or convolutions of the wire and bind these coils or convolutions together, as shown at 8. The circular coils or convolutions of the wire, if desired, may be fastened together by means of a fusible metal alloy, 85 thus dispensing with the binding-plate, or the binding-plate may be fastened to the coils or convolutions of the wire by other means than by the use of the fusible metal or alloy—as, for instance, by making the flanges 5 of a 90 greater width, so that the same may be clamped in under the two outside coils or convolutions of the wire. If desired, this clamp or binding-plate may be made of corrugated material, as shown at 9 in Figs. 5 and 6. The 95 corrugations or grooves in the plate of this construction would receive the circular coils or convolutions of the wire forming the protector. The side flanges 10 of this clamp or binding-plate are preferably curved inwardly, and this is also true of the side flanges 5 of the clamp or binding-plate 4, as shown in Fig. 3 of the drawings, this being 100 done so as to secure the plate more firmly in

position on the coils or convolutions of the wire.

When making the protector, a piece of wire is employed of the desired size and length and may be wound into parallel coils or convolutions by wrapping upon a mandrel or other desired means. For ordinary-sized pipe the ends of the wire are preferably made to overlap, as shown in Fig. 1 of the drawings, though, if desired, the ends of the wire may be terminated at or nearly opposite to each other, and when this is done the said ends will be inclosed by the clamp or binding-plate. For a large-size pipe the ends may be terminated opposite to each other and two clamps or binding-plates employed on opposite sides of the protector. By countersinking the side flanges of the plate into the wire the outer face of the said flanges is substantially on a plane with the outer face of the two outside coils or convolutions of the wire, thus offering no obstruction to the movement of the protector while threading the same onto or off of the pipe. The size of the wire employed will of course depend upon the cut of the thread upon the pipes, and this wire being substantially circular in cross-section the grooves between the coils or convolutions of the wire will receive the threads on the pipe, while the wires will partially lie in the grooves between the threads, so that in case a blow is delivered on the exterior of the protector the threads on the pipe will be fully and effectually protected.

I desire to call particular attention to the fact that by the construction of a thread-protector as herein set forth each thread of the pipe is fully protected, the engagement of the protector with the threads being entirely throughout the width of the protector. This is made possible for the reason that a taper can be readily placed in the protector to conform to the taper of the threads on the pipe. In forming the thread-protector when the wire has been coiled or wound upon the mandrel the same may be transferred to a mandrel having a slight taper, conforming to the taper of the threads on the pipe upon which it is desired to use the protector. This taper, while being slight, may be readily noticed by the person when placing the protector in position on the pipe, and he will be enabled to tell at a glance which end of the protector should be inserted on the pipe.

As heretofore stated, two or more clamps or binding-plates may be employed, and the coils or convolutions of the wire can be fastened together by electrically welding or other desired means.

While I have herein shown the preferred form of construction of my improved thread-protector, yet it will be observed that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A thread-protector comprising in its entirety a series of parallel circular convolutions or coils of wire the peripheries of which are exposed, and means for binding the convolutions or coils together, substantially as described. 70

2. A thread-protector comprising a series of wire convolutions or coils abutting against each other with their peripheries exposed except at the point where the coils are bound together, substantially as described. 75

3. A thread-protector comprising a series of circular wire convolutions arranged in parallel relation and abutting against each other, a clamp fixed to the wire convolutions at one point for binding the same together, the said wire convolutions being peripherally exposed except at the point where covered by the clamp, substantially as described. 80 85

4. A thread-protector comprising in its entirety a single piece of wire which is circular in cross-section and wound into a series of parallel circular convolutions abutting against each other, the greater portion of said convolutions being peripherally exposed, and means for binding the convolutions together, substantially as described. 90 95

5. A thread-protector comprising a series of coils or convolutions of wire abutting against each other and having a taper conforming to the taper of the pipe-threads, the said coils or convolutions being peripherally exposed except at the point where bound together, substantially as described. 100

6. A thread-protector comprising a series of coils or convolutions of wire abutting against each other with the greater part of their peripheries exposed, combined with a clamping-plate which lies across the peripheries of the coils at one point and has its side edges flanged and countersunk into the two outside coils, substantially as described. 105 110

7. A thread-protector formed of a single piece of wire which is wound into a series of circular convolutions or coils abutting one against the other, combined with means embracing the coils on their outer face at one point only for binding the coils together, substantially as described. 115

8. A thread-protector formed of a single piece of wire substantially circular in cross-section and which is wound into a series of circular convolutions or coils abutting against each other, the greater part or portion of said coils being peripherally exposed, and means for binding the coils in abutting engagement with each other. 120 125

9. A thread-protector formed of a single piece of wire which is wound into a series of substantially parallel circular convolutions or coils having a taper and abutting against each other, the greater part or portion of said 130

coils being peripherally exposed, and means for binding the coils in abutting engagement, substantially as described.

5 10. A thread-protector comprising a series of wire convolutions or coils, the sides of which are in abutting engagement with one another throughout their length, substantially as described.

10 11. A thread-protector comprising a series of convolutions or coils, the sides of which coils are in abutting engagement with one another throughout their length, and means for binding the coils together substantially as described.

15 12. A thread-protector comprising a series of convolutions or coils, the greater part or portion of which are peripherally exposed, and means for connecting the coils together, substantially as described.

20 13. A thread-protector comprising a series of convolutions or coils, the greater part or portion of which are peripherally exposed,

and a clamping-plate embracing the outer face of the coils at one point only for connecting the same together, substantially as 25 described.

14. A thread-protector comprising a series of wire convolutions or coils peripherally exposed and the sides of which are in abutting engagement throughout their length, and a 30 clamping-plate for connecting the coils together, substantially as described.

15. A thread-protector formed of a single piece of wire wound into a series of circular convolutions or coils, combined with means 35 engaging the coils on their outer face at one point only for binding the coils together, substantially as described.

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

BENJAMIN F. GREENE.

Witnesses:

JOHN NOLAND,
A. M. WILSON.