A. N. CHARTIER.

THREAD COP.

APPLICATION FILED FEB. 28, 1908.

939,667

Patented Nov. 9, 1909.

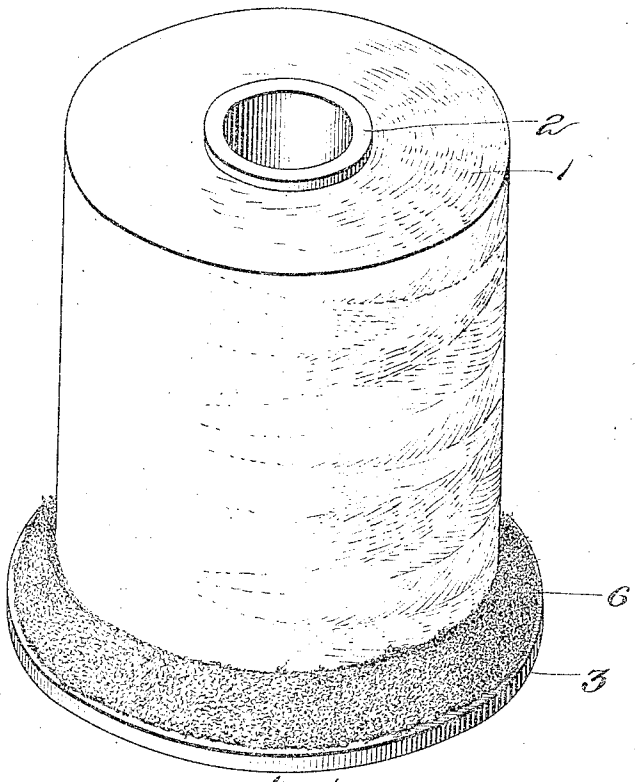

Fig. 1.

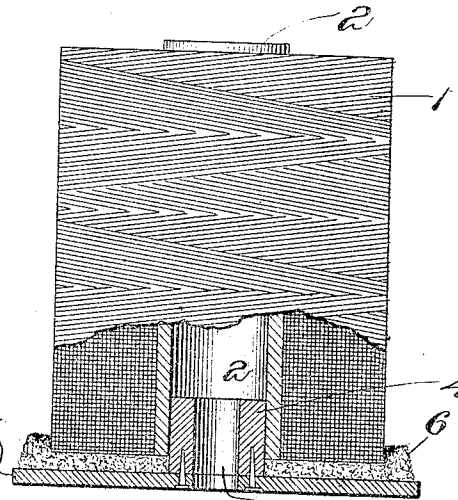

Fig. 2.

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UNITED STATES PATENT OFFICE.

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THREAD-COP.

939,667. Specification of Letters Patent. Patented Nov. 9, 1909.

Application filed February 28, 1908. Serial No. 418,202.

To all whom it may concern:

Be it known that I, ARTHUR N. CHARTIER, citizen of the United States, residing at Brookline, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Thread-Cops; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to thread cops, and more especially to that type of cop known as the Wardwell or Universal cop. This type of cop comprises a cylindrical cop tube or core upon which the thread is wound in the form of a cylindrical cop body, the ends of which are substantially flush with the ends of the cop tube.

These cops are extensively used in supplying thread to high speed sewing machines, and when so used, are commonly placed upon a receiving stand, and the thread is led through a guide arranged over the cop, the cop remaining stationary as the thread uncoils from the periphery of the cop body. It is customary for the operator to have a number of cops of different sizes or colors of thread within convenient reach so that she may readily remove a cop from the machine and replace it with a cop of the desired size or color of thread as occasion requires. During the feeding of the thread from this style of cop, coils of thread frequently become loosened and drop down to the bottom of the cop, where they are apt to pass under the lower end of the cop and become entangled. This not only causes delay, but also results in a waste of thread. The same thing occurs when the cop is removed from the machine and placed upon the table. The loose coils which then fall to the bottom of the cop become entangled, with a resulting waste in the thread and inconvenience in placing the cop on the stand of the machine. As the thread is removed from the cop, the bottom of the cop gradually decreases in size, so that the end of the cop is not of sufficient area to properly support the cop when removed from the machine, and the cop is liable to fall over and entangle the thread.

It is the object of the present invention to provide a cop of this type with which there is no danger of the thread becoming caught or entangled about the lower end of the cop, either during the feeding of the thread or when removing it from and replacing it in the machine, or during the periods when it is out of use.

It is also the object of the invention to provide a cop with a base which will afford an adequate support for the cop when in or out of the machine and until all the thread is unwound from the core.

To these ends the invention contemplates providing a cop in which the cop body is wound in the form of a cylinder upon an inner core or cop tube, with a base plate secured to move with the core and body and provided on its upper surface with yielding compressible material which is held under compression against the lower end of the cop body and overlaps the outer edge of the cop body. The plate and interposed material thus form a part of the cop, which during the handling and use of the cop, acts to support any loose coils of thread which may collect at the bottom of the cop body, and retain them upon the outer periphery of the cop body, where they will not become entangled and will readily uncoil when the cop is placed in the machine. The plate also forms a supporting base of adequate area to maintain the cop in upright position during the gradual reduction in the diameter of the cop body and until the supply of thread in the cop body is entirely exhausted.

The plate and interposed yielding material may be permanently attached to the end of the cop tube so that it cannot be accidentally or prematurely removed, or may be frictionally or otherwise secured. In either case it is of such a character, and the connection is such that the yielding material closely hugs the end of the cop body, whatever its size, and may remain attached to the core and form a part of the cop both when the cop is in use and when it is removed from the machine.

The invention will be readily understood from an inspection of the accompanying drawings, in which—

Figure 1 is a perspective view of a cop embodying the invention in its preferred form, and Fig. 2 is a longitudinal sectional view through the cop.

As shown in the drawings, the thread forming the cop body 1 is wound in the form of a cylinder upon a central core or cop tube 2. The cop is provided at its lower end with

a plate in the form of a disk 3 which is secured to the lower end of the core 2 by a bushing 4 fitting within the lower end of the core. The disk 3 and bushing 4 are provided with a central opening 5 through which a positioning pin on the machine stand may pass. A layer of yielding compressible material such as soft felt 6 is interposed between the upper surface of the disk 3 and the lower end of the cop body 1, and is held under compression between the end of the cop body and the disk. The felt 6 extends beyond the periphery of the thread body so that it overlaps the outer edge of the thread body, the lower end of which is embedded somewhat in the felt.

Any coils of thread which may fall down, collect at the bottom of the cop body upon the overlapping portion of the felt, and are retained upon the outer periphery of the thread body. As the diameter of the thread body decreases, by reason of the unwinding of the thread, the felt continues to overlap and closely hug the end of the thread body and to form a support for retaining the loose coils of thread upon the outer periphery of the thread body. The disk and felt remaining at the end of the cop when it is removed from the machine and during any handling of the cop, act to retain the thread upon the periphery of the thread body during such handling of the cop and while it is out of use. The disk 3 also acts to give to the cop a supporting base of adequate size to maintain it in upright position even when the thread body is nearly exhausted.

The plate and yielding material may be formed of any suitable material, and the disk may be secured to the lower end of the core by any suitable means. The disk may be cheaply and conveniently formed of pasteboard, and a soft felt disk fastened upon the upper face of the disk acts efficiently and is the material which I prefer to use as the yielding material interposed between the disk and end of the cop body. I also prefer to form the bushing 4 from wood, and to make it of a size to fit snugly within the core and to be held therein by friction. I also prefer to glue the bushing within the core, so as to insure the proper connection between the disk and core until the cop body is exhausted.

Having explained the nature and object of the invention, and specifically described one form of cop in which it may be embodied, what I claim is:—

1. A thread cop comprising a core, a cylindrical thread body wound thereon, a base plate secured to move with the core and body, and yielding material held under compression between the plate and lower end of the thread body and overlapping the edge of the body, substantially as described.

2. A thread cop consisting of a core, a cylindrical thread body wound thereon, a base plate secured to move with the core and body by a bushing fitting within the lower end of the core, and felt held under compression between the plate and end of the thread body and overlapping the edges thereof, substantially as described.

3. A thread cop consisting of a core, a cylindrical thread body wound thereon, a base plate permanently secured to the end of the core, and felt held under compression between the plate and the end of the thread body and overlapping the edges of the thread body, substantially as described.

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

ARTHUR N. CHARTIER.

Witnesses:
IRA L. FISH,
ANNIE C. RICHARDSON.