

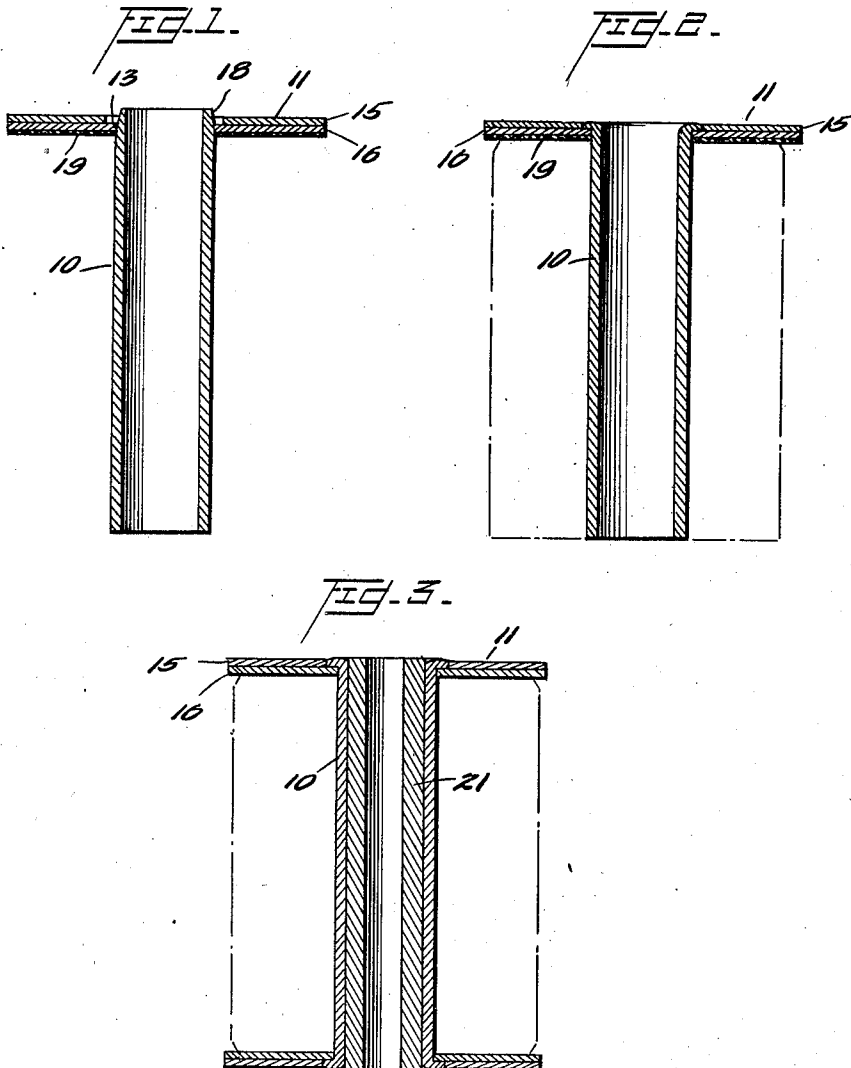
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THREAD CORE

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THREAD CORE

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The present invention relates to cores for thread or yarn packages, particularly to cores such as are used in the textile industry to support thread packages or windings.

It has long been the practice to wind packages of thread or yarn upon cores in such a manner that the packages may be shipped to the point where the thread or yarn is to be used and there placed upon knitting or sewing machines, the thread being fed directly into the machine from the supporting core. The thread is ordinarily unwound from one end of the core, passing substantially axially therefrom so that the package need not be rotated. It is therefore essential that a substantially flat base or head be provided at one end of the core on which the package may rest in the machine, and it is also essential that the thread be so supported on the core as to prevent the thread from passing between the head of the core and the package itself during the unwinding operation in order to avoid catching or binding of the thread and the consequent breaking of the needle or guide to which it is fed. For this reason it is highly desirable to arrange the core head in close engagement with the adjacent end of the thread package so that uniform feeding of the thread may be assured.

The present invention therefore contemplates the provision of a core for thread or yarn packages having a flat head adapted to seat firmly on the supporting base of the machine, this head fitting snugly against the thread package carried by the core.

It is a further object of the invention to provide a core on which the thread may be properly wound by any of the conventional types of winding machines without special adaptation of the machine or the core to insure close relationship of the package and the head.

It is common practice at present to wind thread packages on a substantially tubular body to which a head is subsequently secured, this head comprising a flat annulus having an aperture of substantially the same diameter as the inside diameter of the body. The head and body are then secured together by means

of a fastener, usually of metal. It will be appreciated that such a construction necessarily results in spacing the package slightly from the head, since it is impracticable to wind the thread so that the end of the package is substantially flush with the end of the tubular body. The present invention contemplates the elimination of any space between the package and the head by providing the head with an aperture sufficiently large to pass over the end of the body, so that the head may be pressed firmly against the thread package.

It is a further object of the invention to secure the head rigidly to the body so as to insure against disarrangement in shipping, without the use of extraneous fastening means, by providing for the interlocking of the contiguous portions of the head and body.

A further object of the invention is to provide a novel method for making a thread core having the above mentioned desirable characteristics, and more specifically, to provide a method which involves the formation of interlocking parts on the body and head and the subsequent pressing of these parts into close engagement to form a substantially homogeneous core having a flat base against which the package abuts.

Further objects and features of the invention will be apparent from the following description taken in connection with the accompanying drawings in which,

Figure 1 is a sectional view illustrating one embodiment of the present invention, the head being shown in position on the body before being secured thereto;

Figure 2 is a view similar to Figure 1 showing the completed core, the thread package being shown in dotted lines; and

Figure 3 is a sectional view illustrating the application of the invention to a thread carrier of the spool type.

In Figures 1 and 2 of the drawings, the invention has been shown as applied to a conventional form of thread or yarn core, consisting of the tubular body 10 and the flat annular base or head 11. It will be appreciated, however, from the following description that the invention is applicable to other

types of cores, and that the term "tubular" occurring throughout the specification and claim is used in the broad sense and is intended to include any conventional form of thread core body whether truly cylindrical or tapered from one end to the other.

As shown in Figure 1 of the drawings, the flat head or base 11 is so formed as to provide a shoulder or flange 13 for interlocking engagement with the body 10. The flange 13 may be conveniently formed by constructing the head 11 of two flat annular members 15 and 16, the member 16 having a smaller aperture than the member 15, the diameter thereof being substantially equal to or slightly less than the diameter of body 10 so as to fit tightly thereon. In order to facilitate the assembling of the head on the body, the body may be tapered slightly as at 18, this construction also serving to prevent the head 11 from sliding too far on the body 10 during the assembling and subsequent operation, although it will be understood that the head 11 is normally forced on the body 10 against the end of the thread package. A lining 19 of felt or other suitable material is provided on the inner face of the head for engagement with the thread package.

After the head is assembled on the body, the end 18 of the head is subjected to pressure to deform the same outwardly of the axis of the body and within the member 15, a comparison of Figures 1 and 2 showing the manner in which this deformation takes place. It will be noted that the body and head are now securely interlocked by reason of the cooperation of the deformed end of the body with the annular flange 13 on the head.

The members 15 and 16 of the head as well as the tubular body 10 are preferably made of fibrous material such as cardboard or paper laminations, and the pressure applied to deform the end 18 of the body 10 is sufficient to force the fibers of the body into the fibers of the head to form a substantially homogeneous unit. If desired, however, adhesive may be applied between the engaging portions of the head and the body.

It will be seen that the deformed end of the body forms in effect a continuation of the flat outer face of the head, so that a substantially plane uninterrupted surface is provided on which the core may seat. The inner face of the head is likewise substantially flat and engages the end of the thread package to retain the thread or yarn firmly in position and prevent unwinding in any direction other than axially and outwardly of the core.

The form of the invention disclosed in Figure 3 is identical with that shown in Figures 1 and 2 so far as the mode of securing the head to the body is concerned, and merely serves to illustrate the application of the invention to a conventional type of thread carrier or spool having a head disposed at each

end of the body 10 thereof. In such a construction it is preferable to reinforce the body 10 by a member 21 which is fitted closely within the body and which is ordinarily not deformed during the operation of pressing the body 10 and head 11 into interlocking engagement.

It will be appreciated that the method of forming a thread core outlined above is simple and inexpensive and that the finished cores are extremely durable and serviceable. By reason of the improved method of applying the head of the body, the package may be wound on the conventional machine and will nevertheless be so positioned on the body as to prevent the catching of the thread between the package and head during the unwinding operation. It will also be understood that the invention is not limited to the precise details set forth in the present specification and that the principles of the invention are applicable to various types of thread and yarn cores. Such modifications of the invention are therefore contemplated as fall within the spirit and scope of the appended claim.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

A new article of manufacture comprising a paper spool adapted for use as a thread core, said spool having a tubular paper body and a head also fabricated of paper, said head comprising a pair of flat annuli secured together face to face and concentrically arranged, the inner annulus having a central aperture of less diameter than that of the outer annulus, the edge of the central aperture in the inner annulus fitting closely against the outer surface of the body, and the adjacent end of the body beyond the inner annulus being upset or turned radially outward to form an annular flange, the inner face of which lies closely against the outer face of the inner annulus, the circular outer edge of which is in substantially continuous contact with the edge of the central aperture in the outer annulus, and the outer face of which lies substantially in the plane of the outer surface of the outer annulus, the finished spool having an undeformed head with flat outer surface.

In testimony whereof I hereunto affix my signature.

CHARLES K. DUNLAP.