H. L. TIFFANY.

PROTECTOR FOR WOUND YARN MASS SUPPORTS, &c.

APPLICATION FILED MAR. 25, 1915.

1,240,104.

Patented Sept. 11, 1917.

Fig. 1.

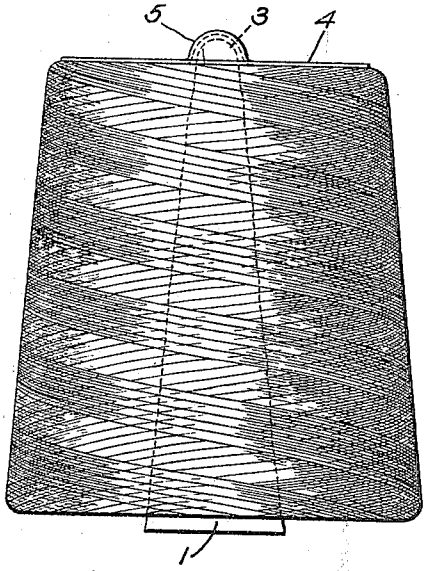


Fig. 2.

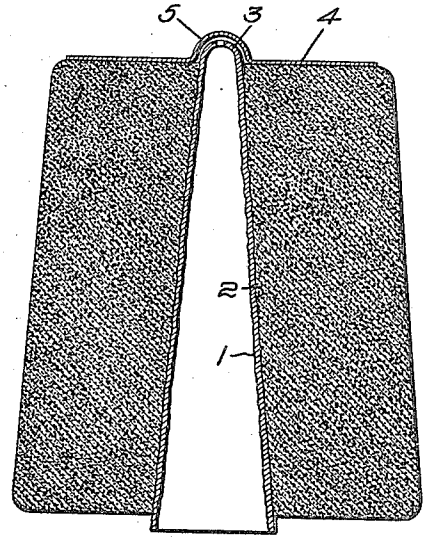
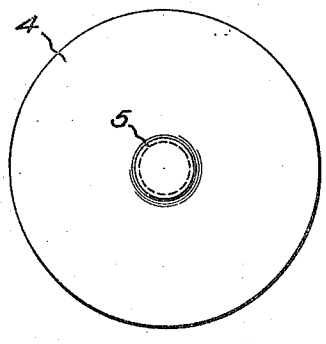


Fig. 3.



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UNITED STATES PATENT OFFICE.

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PROTECTOR FOR WOUND-YARN-MASS SUPPORTS, &c.

1,240,104. Specification of Letters Patent. Patented Sept. 11, 1917.

Application filed March 25, 1915. Serial No. 17,087.

To all whom it may concern:

Be it known that I, HENRY L. TIFFANY, a citizen of the United States, and a resident of South Dartmouth, in the county of Bristol and State of Massachusetts, have invented an Improvement in Protectors for Wound-Yarn-Mass Supports, &c., of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to protectors for yarn mass supports and to such protected yarn mass as an article of manufacture and sale.

The preferred embodiment of my invention is intended mainly for use with a heavy mass of yarn or thread wound in tapering form upon a markedly tapering, conical support in such manner that the yarn or thread may be drawn off axially or substantially so.

Preferably, though not necessarily, the protector of my invention is employed with yarn supports of the general character shown in the patent to Charles Gess, No. 986,379, dated March 7, 1911.

In order that the principle of the invention may be readily understood, I have disclosed a single embodiment thereof in the accompanying drawing, wherein—

Figure 1 is a side elevation of a yarn mass wound upon a conical support, the protruding tip end of which is protected in accordance with my invention;

Fig. 2 is a vertical, central section of the structure shown in Fig. 1; and

Fig. 3 is a plan view thereof.

Cone tubes adapted to receive or have yarn or thread wound thereon and from which said yarn or thread is drawn off axially when in upright position are customarily formed of paper rolled in one or more layers or coils into conical form. These tubes are adapted to be mounted for winding upon tapering arbors of the general shape of the tubes and extending through said tube to within an inch or two of the tip end thereof. The ends of these conical tubes generally protrude somewhat from the completed yarn or thread mass. A cone tube of this general character but having an inturned apex end is disclosed in said Gess Patent No. 986,379, and I have represented the disclosed embodiment of my invention as applied thereto.

The conical tube or axial support is indicated at 1, it being formed in any suitable manner and preferably from a segmentally shaped blank of paper pulp, papier mâché or other fibrous material coiled upon itself into a suitable number of contacting layers.

The outer surface of the conical tube is preferably superficially roughened as indicated at 2, in order to prevent the slipping or displacement of the yarn or thread as the first series of layers thereof are wound upon the tube.

In order to prevent the first laid coils or layers of the yarn or thread from contacting with the tip end of the cone tube as they are unwound therefrom, the tip end 3 is inturned or upset in any suitable manner, as clearly represented in Figs. 1 and 2. Such tip end should, for effecting the best results, be very materially inturned, and preferably so as substantially if not wholly to close said tip end, and said inturned end may be turned into the cone tube to any desired extent, so as to provide a downwardly extending edge portion. The tip end of the cone or tube 1 is not only inturned, but is preferably smooth, the roughened surface of the body of the cone blending into the smooth, inturned surface of the tip.

When the cone tube is in its normal condition,—that is, before the tip end thereof has been inturned, such tip end is substantially unyielding to inward pressure. When, however, the material of the tube has been circumferentially displaced in the inturning action, then the arch effect existing prior to inturning is materially lost and the twisted portions of the edge, because of their displacement, will more readily yield inwardly. The inturning action, particularly if effected by a die having a movement of relative rotation with respect to the cone tube, as described in the patent above identified, coincidently softens the material of the tip end portion, thus enabling it to be turned inwardly and to lay snugly in the die and to receive the smooth, highly desirable, polished surface. Such softening of the tip end renders such tip end less stiff and lacking in rigidity than the body of the tube, it being therefore more pliable and yielding than the body thereof. This, however, renders the tip end liable to be crushed or damaged in transportation, inasmuch as such tip end customarily protrudes from the yarn mass, as clearly indicated in Figs. 1 and 2. The object of my invention is to protect such

protruding tip end. Accordingly I provide a protector for such protruding end, said protector having a portion adapted to rest upon the adjacent end of the yarn mass and having a portion to receive and thus to protect said protruding end. Said protector may be variously constructed to accomplish my purpose, but preferably it is formed as a thin sheet of metal 4 or of any other suitable material artificially stiffened. The said sheet or disk-like member 4 has a flat portion resting upon the end of the yarn mass, and a protruding portion 5 shaped to conform substantially to the shape of the protruding tip end. Such protruding portion 5 may bear lightly upon the protruding end 3 of the conical support when the flat portion of the protector is in contact with the adjacent end of the yarn mass, but preferably I so form the protector that the protruding portion 5 thereof is slightly spaced from the inturned tip end 3 of the conical support 2.

It will be evident that in storage and transportation, the pressure to which the protruding end 5 of the protector is subjected is transmitted along radiating lines to the flat, disk-like portion of the protector, and thence is conveyed to the yarn mass itself. Thus, the protecting tip end of the support is itself without pressure or without a harmful degree of pressure, and therefore all danger of the crushing of such tip end during transportation or in storage is avoided.

The protector 4 may be made of any suitable thickness and may within the broad scope and purpose of my invention be formed throughout of a thickness equal to the extent to which the tip end 3 protrudes from the yarn mass, said protector having an axial opening or passage to receive and protect the protruding tip end, but inasmuch as this would add to the weight and consequently to the cost of transportation, I preferably form said protector as a thin sheet having the protruding, central portion 5.

Such sheet may be reinforced in any suitable manner, as by ridges or corrugations, and similarly the protruding portion 5 thereof may be itself reinforced.

Having thus described one illustrative embodiment of my invention, I desire it to be understood that although specific terms are employed, they are used in a generic and descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

Claims:

1. As an article of manufacture, a protector for the protruding end of the axial support of a wound yarn mass, having a portion adapted to rest upon said yarn mass, and a portion to receive said protruding end.

2. As an article of manufacture, a protector for the protruding end of the axial support of a wound yarn mass, having a substantially flat portion adapted to rest upon the end of the yarn mass, and a recessed portion to inclose said protruding end.

3. In combination as an article for transportation in commerce, a wound yarn mass, an axial support therefor having a protruding end, and a protector applied to the end of said yarn mass and shaped to receive said protruding end.

4. In combination as an article for transportation in commerce, a wound yarn mass, an axial support therefor having a protruding end, and a protector applied to the end of said yarn mass and having a central, protruding, recessed portion to inclose the protruding end of said support and adapted loosely to incase the same in spaced relation thereto.

5. In combination as an article for transportation in commerce, a wound yarn mass, a markedly conical, axial support therefor having an inturned tip end protruding from the yarn mass and a protector applied to the end of said yarn mass and having a central portion to receive said protruding end.

6. In combination as an article for transportation in commerce, a wound yarn mass, a markedly tapering axial support therefor having a protruding, inturned, yielding end, and a protector for said protruding end having a substantially flat, circular portion adapted to rest flatwise upon the end of the yarn mass and having a central protruding portion, the inner surface of which is shaped to conform substantially to the shape of said inturned, yielding, tip end and adapted loosely to incase the same in spaced relation thereto.

7. As an article of manufacture, a yarn mass 1, an axial support 2 therefor having a protruding tip end 3 and a protector 4 having a tip receiving portion 5.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

HENRY L. TIFFANY.

Witnesses:
ROBERT H. KAMMLER,
MAY H. LOWRY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."