

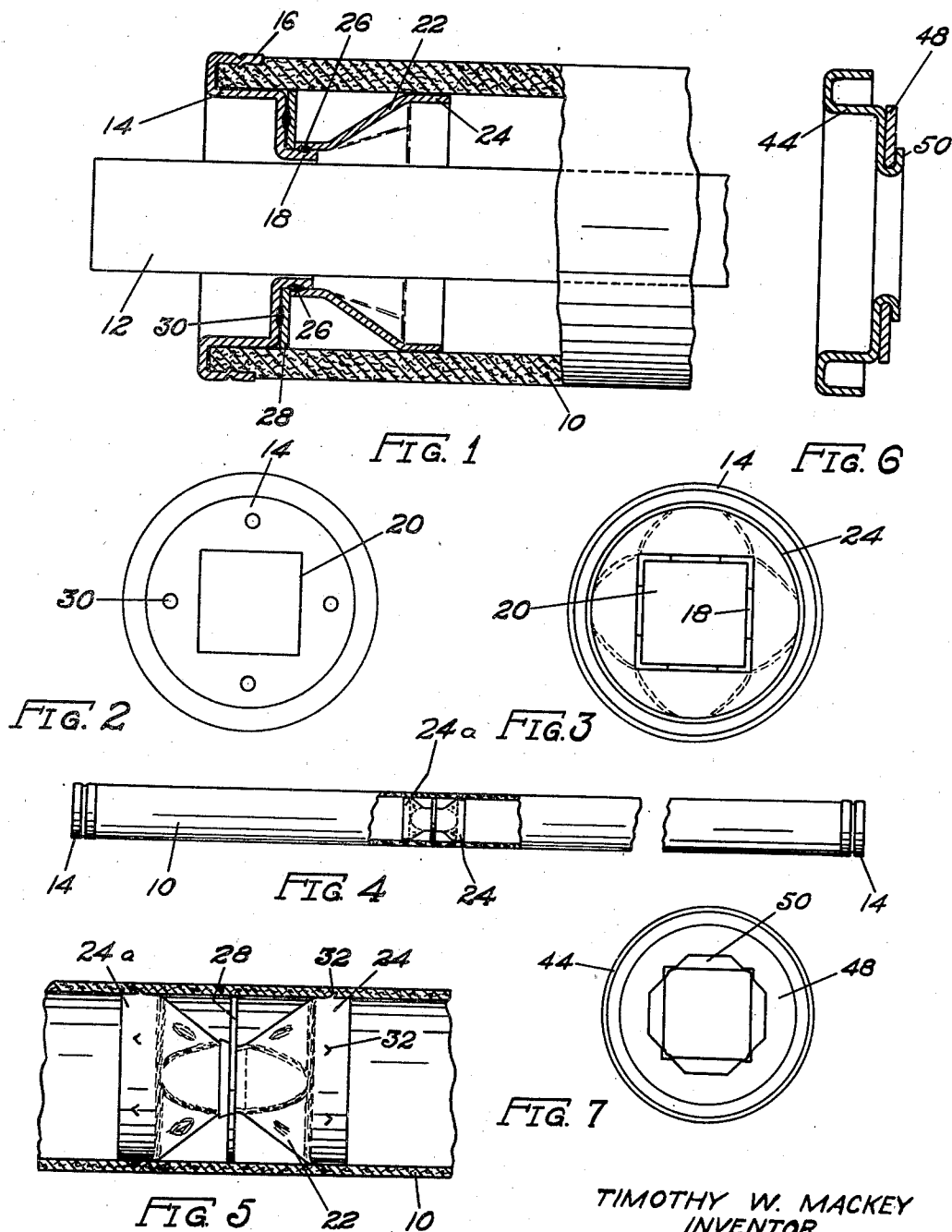
July 16, 1940.

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2,208,545

ROLLER FOR FABRICS

Filed Feb. 10, 1939



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2,208,545

ROLLER FOR FABRICS

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Application February 10, 1939, Serial No. 255,679

1 Claim. (Cl. 242—68)

This invention relates to an improved roller for fabrics, and the present application discloses improvements over my prior application for patent on "Supporting roller," filed February 4, 1938, Serial Number 18,803.

One of the important objects of this invention is to provide a roller for fabrics, sheet rubber or the like which has a reinforced end whereby the same will be more durable than those heretofore used and which enables the use of a fibrous tube or core instead of the metal or wooden construction ordinarily employed.

Another object of the invention is to provide a metal end or reinforcing member for such fiber cores which is so constructed that a square supporting and operating shaft may be readily inserted therein with a minimum expenditure of time and difficulty. A still further object of the invention is the provision of a reinforced metal cap which, with a slight modification, can also be used as an intermediate support for cores which are longer than usual.

Another and still further important object of the invention resides in the provision of a modified form of reinforcement for a core or shell of the class described which shall be of a slightly more simple construction yet provide practically all of the advantages of the first type.

Other and further important objects of the invention will be apparent from the disclosures in the accompanying drawing and following specification.

The invention, in a preferred form, is shown in the drawing and hereinafter more fully described.

In the drawing:

Figure 1 is a sectional view of one end of a fiber or paper core or tube upon which sheets of fabric or the like may be wound, and a part of the drawing is shown as broken away to illustrate the metallic reinforcing structure in section.

Figure 2 is an end view of the structure of Figure 1.

Figure 3 is an inside view of the reinforcing cap.

Figure 4 is a greatly reduced view, parts being broken away, to show interior construction and illustrating a comparatively long tube reinforced by intermediate elements similar to the end caps.

Figure 5 is an enlarged view of the central structure of Figure 4, showing the actual construction.

Figure 6 is a sectional view of a slight modification of the invention.

Figure 7 is an end view of the structure of Figure 6.

As shown in the drawing:

The reference numeral 10 indicates generally a fibrous or other similar tube which constitutes a core upon which fabrics, rubber sheets or the like may be wound during the process of manufacture and also for shipping purposes.

Ordinarily, these inner cores or spindles have been composed of wood formed into a hollow tube or perhaps a metal tube or rod. These were unwieldy and not exactly suitable for the purpose, and it has been found by experience that the fibrous core or tube is more satisfactory.

It is essential, however, that the core or tube be reinforced with a metal cap and that this metal cap be provided with a square opening for the reception of a correspondingly squared driving shaft such as that shown at 12 in Figure 1. The reinforcing cap provides both a driving element and means for preventing undue wear or damage to the ends of the tube 10.

As best illustrated in Figure 1, the reinforcing cap comprises essentially a cup-shaped metal shell 14 having an outer rearwardly bent flange 16 adapted to grippingly contact the material which forms the end of the tube or core 10. The metal shell is thence turned inwardly at right angles to the longitudinal access of the tube 10 and again rearwardly as illustrated at 18 to provide a flange about the square opening 20 in the cap (Figure 2), and the supporting and operating rod 12 is adapted to be positioned in this square opening so that the roll with its fabric or paper winding thereon can be readily manipulated.

In order that the square shaft can be readily inserted into the corresponding opening 20 in the cap 14, a rearwardly extending somewhat conically shaped element 22 is provided which has at its inner end a circular portion 24 of a diameter to snugly fit the inside of the tube 10, and this is then reduced by corresponding shaping to a square opening as best shown in Figure 3, the edges of the element about this opening being parallel to the longitudinal axis of the tube 10 and adapted to closely fit into the inturned edges 18 of the cap element 14 and which extend about the square opening 20. These squared shouldered portions and flanges are then spot-welded together as best shown at 26 in Figure 1, and in order to further reinforce the cap element 14, a circular washer 28 corresponding in outside diameter to the internal diameter of the tube 10 is likewise spot-welded to the end cap 14 at the points 30.

As best shown in Figure 4, one of these end caps 14 can be readily applied to the respective ends of the tube 10, and if the tube is of excessive length, the intermediate portions thereof may be reinforced by the introduction of one of these same elements 14—22, the only difference being that the outer flange of the cap 14 is not bent rearwardly as shown in Figure 1, but is supported by a duplicate of the element 24 of proper dimensions as shown at 24a in Figure 5. Also, the cup-shaped element 22—24 is more definitely fitted into the material of the tube 10 by introducing a tool into the cup after the same has been fitted in position in the tube 10 and extruding small projections or protuberances 32 which penetrate the material of the tube 10, thereby securely gripping the same and definitely fixing the element 14—22 in desired position.

In Figures 6 and 7, there is shown a slight modification of the reinforcing cap hereinabove described, there being provided the usual outer element 44 shaped substantially the same as the element 14, and a reinforcing circular washer 48 is provided at the rear face thereof, this being held in position by in-turned flanges 50 of the shell 44 as distinguished from the flanges 18 of the shell 14, and in this instance, no cup or guide for the bar 12 is provided. However, the fact that the reinforcing washer 48 extends to the inner periphery of the cap element 44 provides a further reinforcement and support for the end of the tube in which the device is inserted and also reinforcing the cap structure itself, both with

regard to its point of attachment to the tube and its relationship with the interfitted shaft.

It will be evident that I have herein provided an end cap for paper cores or the like which is simple and economical of construction, light in weight, but which, however, will have ample strength as a driving connection for the core without danger of twisting or tearing, and which, furthermore, will effectively reinforce the ends of the core so far as undue wear is concerned.

I am aware that many changes may be made and numerous details of construction varied throughout a wide range without departing from the principles of this invention.

I claim as my invention:

A reinforcing cap for tubular rollers, comprising a cup-shaped shell, flanges on the shell adapted to embrace the end of the roller, the bottom of the shell having a square opening therein for the reception of a square driving shaft, in-turned flanges about the opening integral with the cap, and a cup-shaped guide extending rearwardly of the cap and mounted on the in-turned flanges, said cup-shaped guide flaring rearwardly and terminating in a ring-like periphery substantially equal in diameter to the inside diameter of the roller to which the cap is adapted to be applied, and a reinforcing element mounted on the rear face of the cap about the square opening and in juxtaposed relation to the joint between the cap flanges and the cup-like guide.

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