Dec. 8, 1959 G. P. McGRAW, JR 2,916,226

WINDING ARBOR

Filed Sept. 19, 1955

FIG. 1

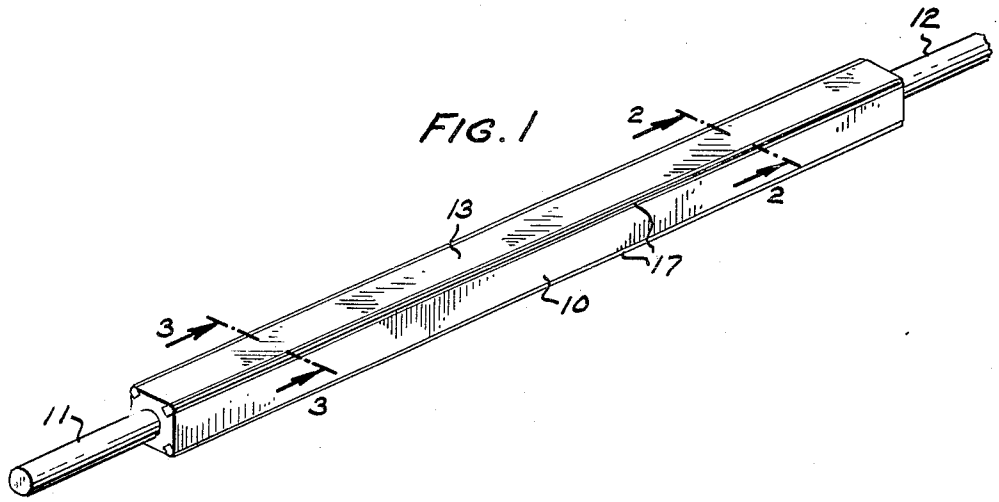


FIG. 2

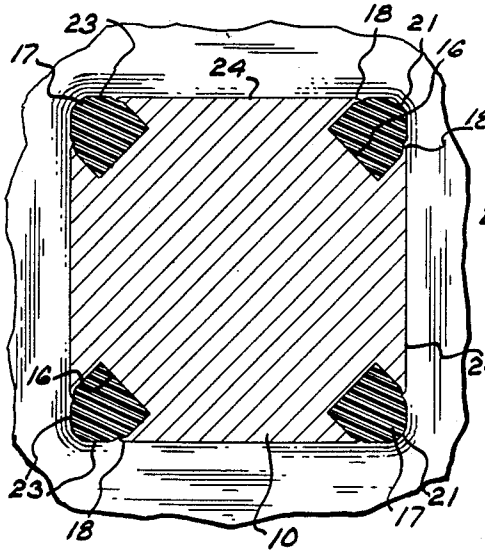
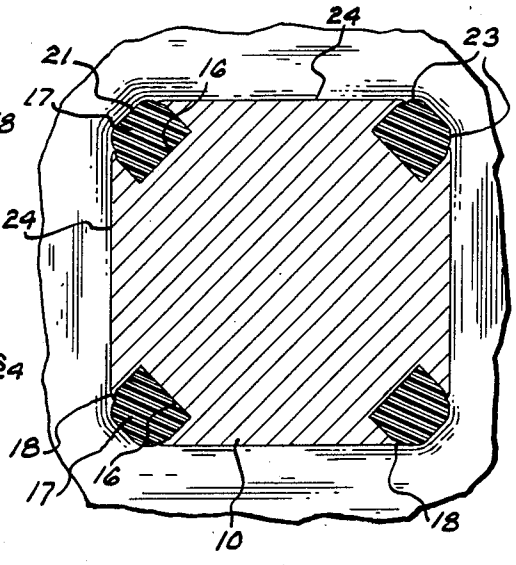


FIG. 3



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WINDING ARBOR

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4 Claims. (Cl. 242—68.5)

This invention relates to winding arbors, and more particularly to arbors for winding metallized plastic strips to form capacitors.

An object of the invention is to provide new and improved winding arbors.

Another object of the invention is to provide new and improved arbors for winding metallized plastic strips to form capacitors.

A further object of the invention is to provide winding arbors having peripheral edge portions composed of low friction material so that capacitors wound thereon may be easily stripped therefrom.

A winding arbor illustrating certain features of the invention may include an elongated metallic body member having ribs extending therealong with at least the outer edges of the ribs being composed of low friction material.

A complete understanding of the invention may be obtained from the following detailed description of a winding arbor forming a specific embodiment thereof, when read in conjunction with the appended drawings, in which

Fig. 1 is a perspective view of a winding arbor forming one embodiment of the invention;

Fig. 2 is an enlarged vertical section taken along line 2—2 of Fig. 1, and

Fig. 3 is an enlarged vertical section taken along line 3—3 of Fig. 1 showing the variation in cross sectional area of the low friction ribs from that of Fig. 2 to indicate the taper of such ribs.

Referring now in detail to the drawings, there is shown therein an arbor for winding tightly wound elongated capacitor rolls composed of strips, which may be easily stripped therefrom even though the strips are formed of a clinging or high friction material such as metallized Mylar (polyethylene terephthalate polyester), or the like and are tightly wound on the arbor. The arbor includes a body portion **10** of high strength material, such as, for example, steel, which has driving and supporting end portions **11** and **12** and a winding portion **13** larger in cross section than the end portions. The winding portion is square or rectangular in cross section, uniform throughout its length and has diagonally facing grooves **16** at all the corners thereof, which receive hard relatively-incompressible ribs or bars **17** composed of low friction material, such as, for example, a compound formed essentially of polytetrafluoroethylene or polytrifluorochloroethylene. Edge portions **18** of the body **10** are peened into the bars or ribs along the entire length of the grooves **16**. This secures the ribs securely to the body member **10**.

Corners **21** of the ribs **17** are slightly rounded at the right-hand ends thereof, as viewed in Fig. 1, and are tapered down from right to left and also are smooth-surfaced to facilitate slipping a wound capacitor roll off the arbor, moving the roll off the left-hand end of the arbor in so doing. Faces **23** of the bars form continuations of sides **24** of the body member. Thus, the corners or edges **21** of the bars receive much greater pressure from strips wound under tension thereon than the

faces **24** of the member **10**, and, since the bars **17** are very non-adherent, rolls wound on the arbor are slipped off very easily.

The above-described arbor is simple, strong and durable, and may be withdrawn easily from capacitor or other type rolls wound thereon even though the rolls may be tightly wound thereon.

It is to be understood that the above-described arrangements are simply illustrative of the application of the principles of the invention. Numerous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

What is claimed is:

1. A winding arbor, which comprises a plurality of ribs composed of a composition having as the essential element thereof a compound selected from the group consisting of polytrifluorochloroethylene and polytetrafluoroethylene, and an elongated metallic body member mounting the ribs in spaced relation to one another about the longitudinal axis of the body member and in substantially parallel relation to said axis and with portions of the ribs projecting laterally beyond the body member.

2. A winding arbor, which comprises an elongated body member, and a plurality of ribs mounted on said body member about the longitudinal axis thereof in substantially parallel relation to said axis and composed at least on the surface thereof essentially of polytetrafluoroethylene and disposed beyond said body member in a direction radially from said axis.

3. A winding arbor, which comprises an elongated metallic body member polygonal in cross section throughout the length of a winding portion thereof, said member having grooves extending along the corners thereof, and a plurality of bars of plastic secured in the grooves, said plastic being characterized by a frictional coefficient that is substantially less than the frictional coefficient of the metallic body member, the outer edges of the bars tapering substantially from one end to the other.

4. A winding arbor, which comprises an elongated metallic body member polygonal in cross section throughout the length of a winding portion thereof, said member having grooves of uniform depth extending along the corners thereof, and a plurality of bars of polytetrafluoroethylene secured in the grooves, said bars being shaped to provide sides that are the continuation of the sides of the polygon member, the outer edges of the bars tapering from one end to the other to provide increasing areas of engaging surface from one end to the other.

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