(No Model.)

T. M. WORCESTER.

WIRE BALL.

No. 302,461. Patented July 22, 1884.

FIG. 1.

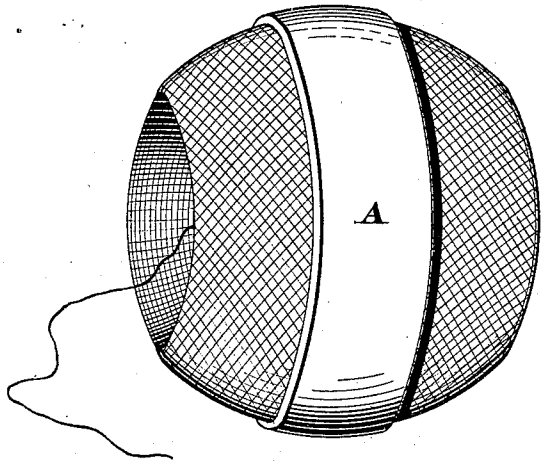


FIG. 2.

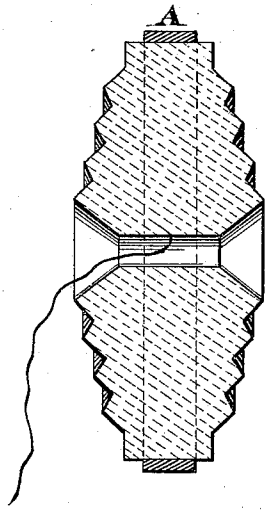


FIG. 3.

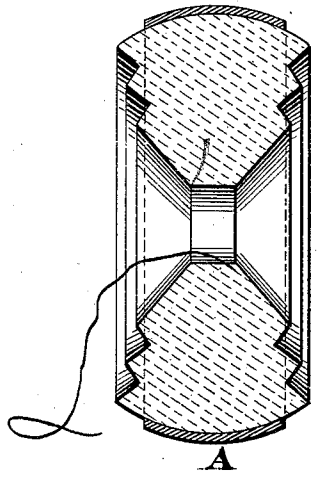
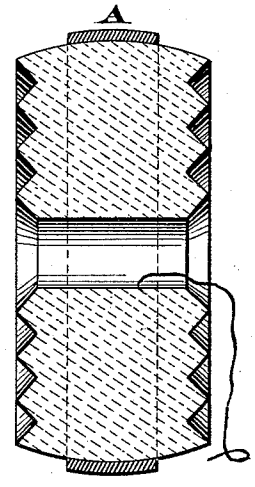


FIG. 4.



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UNITED STATES PATENT OFFICE.

THOMAS M. WORCESTER, OF CINCINNATI, OHIO, ASSIGNOR TO THE BROMWELL BRUSH AND WIRE GOODS COMPANY, OF SAME PLACE.

WIRE BALL.

SPECIFICATION forming part of Letters Patent No. 302,461, dated July 22, 1884.

Application filed December 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS M. WORCESTER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Wire Balls, of which the following is a specification.

My improvement relates to a form of wire ball as an article of manufacture, in which the wire is wound in the shape of a ball, or in fancy shapes, by a machine, in such a manner as to unwind from the center without entangling or kinking as it unwinds.

Reference is made to the illustrations in the accompanying drawings, in which Figure 1 is a view in perspective of a round ball as put up for sale. Figs. 2, 3, 4 show sectional views of various shapes in which the ball may be wound.

The wire is wound on a spindle somewhat similar to the device used for winding cotton twine for shop-keepers' use. The wire is wound from the center to the circumference and unwound in the same manner. To keep the outside courses of wire from being displaced by handling or in shipment, and to resist the tendency to spring from position observed in most kinds of wire, particularly brass or spring wire, I place exteriorly around the ball the band A, as shown in Fig. 1, said band being a gummed paper band, preferably under the last course around the ball in winding; but it may be exterior to the last course. The gum being moistened, the wires are secured to position as they cross in winding to the band, thus securing the integrity of the ball until the wire is entirely unwound, which by the use of the band may be done, the natural spring of even annealed wire being sufficient to press outwardly against the band, preserving the shape of the ball while being fed out from the center until the last course is fed out, and that generally will be found to be so slightly attached that it will unwind from the band.

In lieu of gummed paper, india-rubber, or any other substance that will permit the wires to lie embedded therein, and will hold them with sufficient tenacity to prevent displacement of the courses of wire, will answer; but I find by experiment stiff paper gummed on the inner side is the best, and has the further advantage of allowing the outer surface to be used as a label, and to have printed any special or fanciful design thereupon. By an adjustment of the winding-machine the wire may be put up in the same way in various-shaped balls, as shown in Figs. 2, 3, 4, which make attractive packages for use by hair-workers, milliners, hardware-merchants, and the trade generally. Besides this commercial advantage, it will be found that the manner of putting up wire in balls will be found very useful in weaving wire cloth and netting, because in the process of winding these balls a twist is put in the wire at each turn, and when the wire is wound from the center the twist is reversed and the wire feeds out straight. This has been found to be peculiarly advantageous in balls used for weaving, as the wire comes out of the ball straight and even, and it requires less tension on the straightening devices in the shuttles or equivalent devices usually employed in weaving or netting wire. Moreover, a larger amount of wire can be placed in the shuttle than when a bobbin is used on which the wire is to be wound, and the shuttle itself will be so much lighter by the absence of the weight of the bobbin usually employed therein.

I am aware that cord and similar soft fibrous materials have been put up in balls, and make no claim thereto.

Having thus described my invention, what I desire to claim is—

1. As a new article of manufacture, the ball of wire wound as specified, with the band A, of suitable material, exterior thereto, substantially as shown and described, and for the purposes mentioned.

2. As a new article of manufacture, a ball of wire wound with a central opening, whereby it can be unwound from the center, substantially as and for the purpose specified.

THOS. M. WORCESTER.

Attest:

J. KING CLARK,

W. B. MELISH.