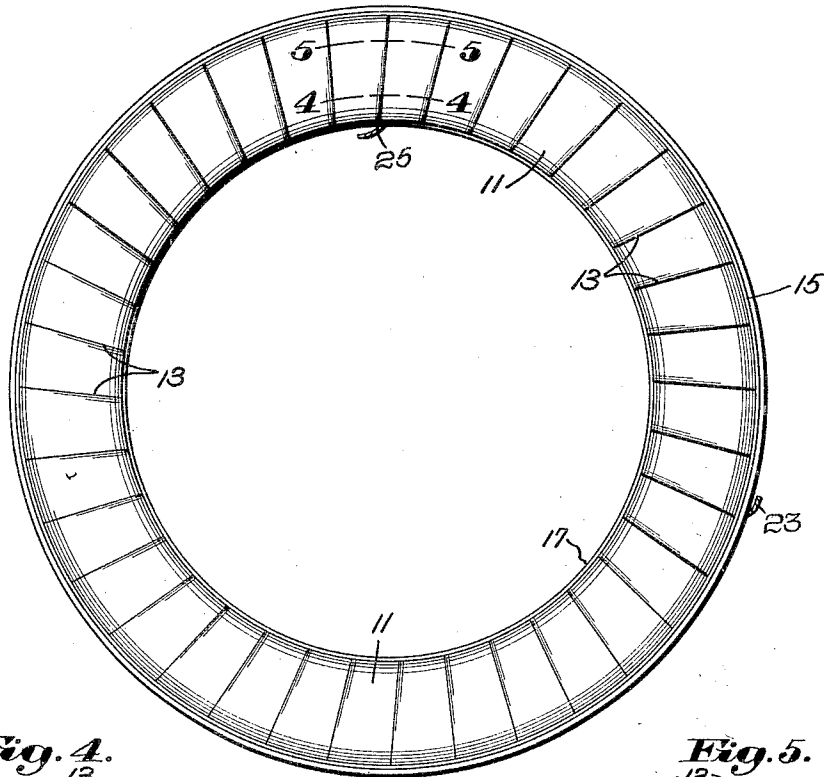
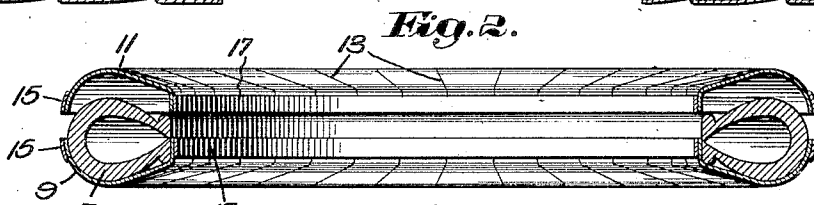
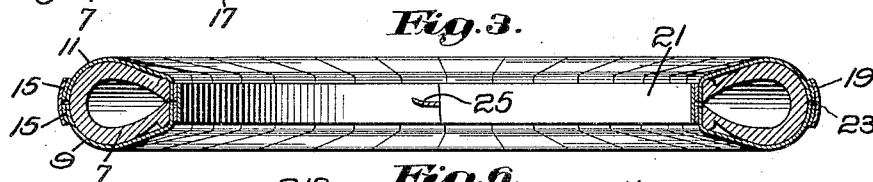
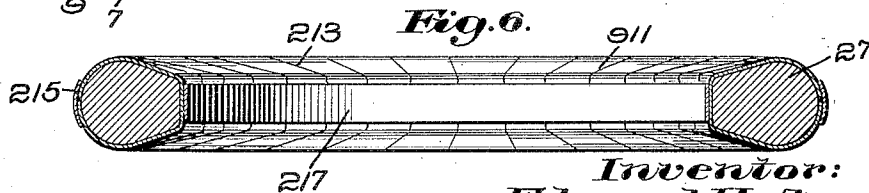


E. H. ANGIER.
ART. OF PACKAGING TORIC ARTICLES.
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1,319,682.

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Fig. 1.



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UNITED STATES PATENT OFFICE.

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ART OF PACKAGING TORIC ARTICLES.

1,319,682.

Specification of Letters Patent.

Patented Oct. 28, 1919.

Application filed December 29, 1916. Serial No. 139,485.

To all whom it may concern:

Be it known that I, EDWARD H. ANGIER, a citizen of the United States, and resident of Framingham, in the county of Middlesex and Commonwealth of Massachusetts, have invented an Improvement in the Art of Packaging Toric Articles, 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 the art of packaging toric articles. By "toric" I refer to that form which may be considered as produced by movement of a plane figure about an exterior axis in its own plane. As an example of such a form I may instance the shoes or outer tubes of pneumatic vehicle tires in which case the revolution about the axis is complete and the article is annular. For convenience I shall hereinafter refer specifically to tires as typical of my invention, particularly as I anticipate for my invention a field of marked usefulness in wrapping tires, both because of the greater convenience of applying and removing the covering and because of the saving of paper or other wrapping material as compared with the usual present method of wrapping with a helical strip.

My invention will best be understood by reference to the following description of an illustrative embodiment thereof taken in connection with the accompanying drawings, wherein,—

Figure 1 is a side elevation of a wrapped or packaged tire illustrating my invention;

Fig. 2 is a central section showing the covering partially applied;

Fig. 3 is a similar section of the completely wrapped tire and is on a diameter of Fig. 1;

Figs. 4 and 5 are sections through the wrapping on the lines 4—4 and 5—5 of Fig. 1 respectively, but on a larger scale; and

Fig. 6 is a section illustrating one practicable method of preparing the wrapping material for carrying out my invention.

Referring now more particularly to Figs. 1, 2 and 3, I have therein shown a tire or shoe 7 completely incased by a wrapping conforming to the cross-section thereof and, in the present instance, forming a sealed

package. This covering is constructed from two sections 9 and 11, each of which may comprise a single strip of paper and which are adapted in coöperation completely to incase the tire. It is apparent that a flexible material like paper can readily be curved about an article in one direction, but since tires and other articles of toric form have a shorter inner and longer outer dimension they are curved in two directions and I therefore shape the sections 9 and 11 to the form of the tire. This may conveniently be done by bending the paper strip transversely about the section of the tire and shaping it to form to fit the longitudinal curvature thereof by suitable plaitings 13, the extent of which will vary locally, as clearly illustrated by Figs. 4 and 5, to provide for the varying dimensions of the tire between the bead portions and the tread. In the present embodiment of the invention I have shown the two sections 9 and 11 as each applied to a side of the tire and presenting their opposed edges at the inner side of the tire which ordinarily comes in contact with the rim and at the tread. In the illustrative embodiment of the invention also I have shown the two sections 9 and 11 as held permanently in the shape of the tire by means of outer and inner edge bindings 15 and 17 respectively, which exemplify suitable means for holding the plaitings 13 permanently in form. Thus two semi-toric shells are provided which may conveniently be fitted to the tire and will have edges opposing each other along circumferential lines which may be joined together in any suitable manner to complete the package. For example, in Fig. 2 I have shown the tire assembled with the section or shell 9 and the section or shell 11 in position to be placed in position to coöperate therewith in the manner shown in Fig. 3.

Any suitable means may be utilized for completing the package, but I preferably apply circumferential sealing strips 19 and 21 over the joints between the two sections or shells 9 and 11. Preferably also pull cords or wires 23 and 25 are associated with these strips and have ends projecting so that by pulling the ends the strips 19 and 21 may be torn apart longitudinally to separate the two sections. It will be noted that

separating the sections in this manner does not in any way impair their form and thus a wrapped tire can be conveniently removed from its covering for inspection or display
5 and expeditiously repackaged by simply replacing the two shells and applying new circumferential sealing strips. But little time is consumed in this operation and no skill is required.

10 In Fig. 6 I have shown one practicable method of constructing the shells 9 and 11. In the method there illustrated, I utilize a tire-shaped mandrel 27 and shape there-
15 about a strip of paper or other wrapping material which may afterward be divided to provide the two shells 9 and 11. Preferably I use a sheet 911 which is preliminarily gathered into plaits or folds 213 which may
20 be held in position by a central longitudinal strip 217. The sheet 911 is applied to the interior circumference of the mandrel corresponding to the bead portions of the tire and the edges are folded outwardly toward
25 the tread, the paper being shaped to the plaits 213 locally in the desired degree. The edges of the strip 911 will be opposed to each other at the tread of the tire and may
30 there be joined by means of a circumferential strip 215. The integument thus formed around the mandrel may then be removed by splitting it along circumferential lines
35 at the outer and inner circumferences, the lines of division being central of the two strips 217 and 215. The sheet 911 will thus be divided into two semi-toric shells 9 and
40 11, and the two halves of the strips 217 and 215 will form the edge bindings 17 and 15 respectively. It will be understood that while the method described is one convenient
45 way of manufacturing the particular embodiment of my covering herein illustrated, other methods could be resorted to and that I refer to this simply by way of
50 example.

Having thus described in great detail one particular embodiment of my invention whereby toric articles having a longer outer
55 and shorter inner dimension may conveniently be incased in a neat and smooth-fitting covering of wrapping material to form an attractive package, I should point out that my invention is not limited to the exact construction shown in the drawings which
60 for clearness I have so fully described.

What I do claim and desire to secure by Letters Patent is:

1. A package comprising an annular article and a covering therefor comprising
60 sheets of wrapping material, each variably gathered to conform them to the shape of the article, said sheets coöperatively substantially encircling the cross-sectional per-
65 imeter of the article and having opposed edges disposed circumferentially, and sealing strips joining said edges along circumferential lines.

2. As a new article of manufacture a semi-toric shell comprising a sheet in longi-
70 tudinally curved form variably gathered to give it a dished transverse section, and means holding the gatherings in form.

3. As a new article of manufacture a semi-toric shell comprising a sheet in longi-
75 tudinally curved form variably plaited to give it a dished transverse section, and circumferential edge bindings holding the plaitings in form.

4. As a new article of manufacture a semi-toric shell comprising a sheet in longi-
80 tudinally curved form, having variable plaitings permanently held in form to give it a dished transverse section.

5. A tire package comprising opposed
85 halves of wrapping material shaped to the form of the tire and coöperatively inclosing the same, and circumferential binding strips sealing together said halves, said strips having pull cords associated therewith to facilitate
90 separation of the halves.

6. A tire package comprising two annular
shells of flexible wrapping material each of a width to extend from the tread of the tire to a point adjacent the inner circumference
95 and being plaited or gathered to shape them to the form of the tire sides, and sealing strips joining the edges of the shells at the tread and at the interior circumference.

7. A package comprising an article hav-
100 ing a longer outer and a shorter inner dimension, and wrapping material applied thereto comprising independent sheets locally plaited or gathered to conform them to the shape of the article and presenting mat-
105 ing edges disposed longitudinally, said edges being joined to complete the package.

In testimony whereof, I have signed my name to this specification.

EDWARD H. ANGIER.