May 27, 1924. 1,495,145

E. H. ANGIER

PACKAGE

Filed March 29, 1919

Fig. 1.

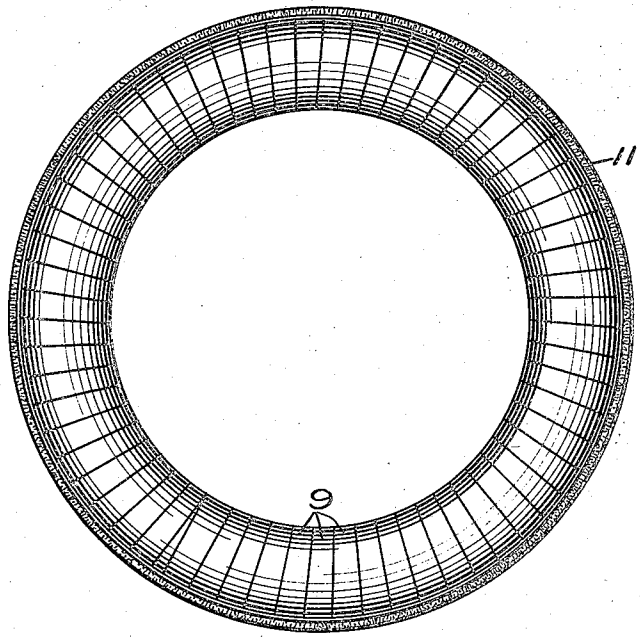


Fig. 2.

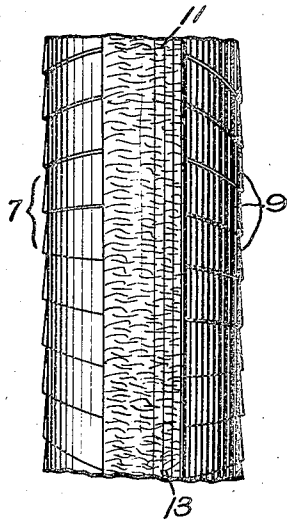
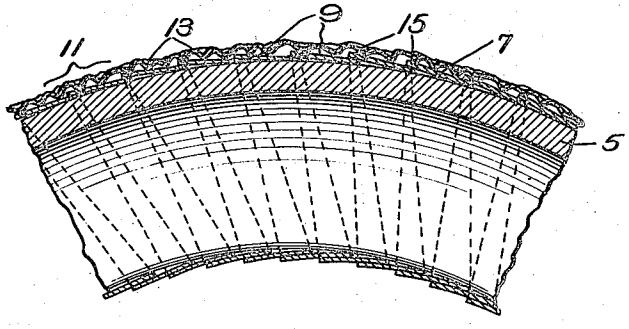


Fig. 3.



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UNITED STATES PATENT OFFICE.

EDWARD H. ANGIER, OF FRAMINGHAM, MASSACHUSETTS.

PACKAGE.

Application filed March 29, 1919. Serial No. 286,194.

To all whom it may concern:

Be it known that I, EDWARD H. ANGIER, a citizen of the United States, and a resident of Framingham, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Packages, 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 packages and more particularly to packages wherein an article is enclosed by a wrapper or covering which presents a plurality of joints. An example is a package formed by wrapping an article with a comparatively narrow strip of paper applied helically in a number of overlapping turns or spires. This method of wrapping is well-known, being more particularly used for the packaging of articles which are annular in form as, for example, wire coils and vehicle tires. For convenience I have herein shown the article packaged as a vehicle tire and shall in the following specification refer to it as such, using the word in an exemplary sense.

My invention will best be understood by reference to the following description taken in connection with the accompanying drawings wherein:—

Figure 1 is a side elevation of the packaged tire;

Fig. 2 is a fragmentary edge view thereof on an enlarged scale; and

Fig. 3 is a central vertical section of Fig. 2.

Referring to the drawings, the tire 5 is wrapped with a strip 7 of paper or other material applied helically in a series of overlapping turns or spires 9. This method of wrapping tires is well-known and may be effected by known types of machines wherein an annular shuttle is utilized to apply the strip. In the present embodiment of the invention I have shown the strip 7 as a plain strip, although if desired I may use a gathered strip as disclosed in my Patent No. 1,282,167, dated Oct. 22, 1918.

My invention more particularly relates to a secondary or auxiliary wrapping used in connection with the wrapping formed by the strip 7 and conveniently cooperating therewith in a manner presently to be described. I have herein disclosed this secondary wrapping as in the form of a band 11 applied peripherally or circumferentially of the tire at the exterior of the wrapping formed by the strip 7 and so providing a tread strip which will take the wear if the packaged tire is rolled. When a tire is wrapped with a strip which is applied helically so as to provide a series of overlapping turns or spires, it is not easy to apply thereto trade marks or other distinguishing marks. One of the advantages of the present invention is the provision of a package of the character described to which distinguishing markings can be readily applied with practical certainty that there will be no accidental removal of such markings.

The band 11 is made elastic by transverse crinkling, rumpling, wrinkling, folding, creasing, corrugating, crimping or some other suitable process whereby its flexibility is increased and it is rendered somewhat expansible. Preferably the band is provided with fine irregular crapings 13 extending transversely thereof. A craped or gathered strip 11, as described, when applied about the circumference of the tire can stretch differentially in longitudinal zones and thus adapt itself to the curved form of the tire beneath, the edges of the strip 11 automatically hugging the surface of the turns of the strip 7 without requiring any adhesive to hold said edges in such position. Thus, when applied about the tread of the tire, as herein shown, the central portion may stretch relatively to the edges and whether the band be narrow or quite wide it may be drawn down and fitted closely to the cross-sectional contour of the tire, regardless of the size of the tire. This makes a neater package, minimizes the possibility of the band's being torn up from one of the edges and serves to protect and also to position the turns 9 of the wrapping strip 7. The transverse crinkling described results in providing ridges or irregularities which coact with the edges of the turns or spires in preventing any such relative movement of said turns as would expose the surface of the article wrapped.

Since the band 11 may be stretched to

cupped form, fitting over the tire in the manner already described, it tends to maintain itself in position, but it may be adhesively secured to the primary wrapping 7 and certain advantages are obtained by securing it in the manner which I shall next describe. As herein shown, the band 11 is secured, conveniently by adhesive, at spaced points 15 to the several turns or spires 9 of the wrapping strip, there being unattached portions of the band intervening between the points of connection which may serve to bridge the joints between adjacent spires. The band 11 because of its gathered nature is elastic and if the tire is deformed, a sort of expansion joint is provided between the turns of the wrapping, normally holding them in initial position but permitting them to give to accommodate themselves to the deformation of the tire, although preventing marked displacement thereof, and tending to return them to initial position. I have found that by positioning the turns of the wrapping strip 7 in this manner the tire will withstand the shocks of handling and the integrity of the package will be maintained without danger of breakage or displacement of the enclosing cover formed by the strip 7.

The adaptation of the expansible, crinkled, rumpled or otherwise prepared strip to the form of the tire as already described permits the adhesive joints 15 to extend completely across the width of the band in close engagement with the underlying strip 7.

The band 11 of the kind described is automatically self-fitting whether wide or narrow and regardless of the size of the tire because of the extensible character thereof throughout its entire area. Its margins hug the surface of the turns of strip 7 without requiring any special treatment or the addition of anything to make them do so. A flat band could be applied only very ineffectively to the curved surface of the tire and the exposed edges would have a tendency to stand out from the tire and would be caught and torn when the package was handled. The expansible band, however, is cup-shaped in ferm and the edges fit the tire and are not caught and pulled in this manner. Furthermore, if they are so caught, because of the expansible nature of the band, instead of the band breaking and tearing, the edge will stretch and roll to form a sort of a bead. This action is particularly facilitated in the case of a band attached at intervals as shown. Therefore, the expansible band binds down the turns of the wrapping and among other things serves to protect them against exterior strains but, on the other hand, strains which do effectively tend to displace the band are not objectionably transmitted to the underlying strip 7. If the edge of a tread band is exposed, it is likely to be caught and either to tear or, if it holds, to pull and displace the turns of the wrapping to which it is secured. The expansible band is not only less likely to tear but if it is subjected to an undue strain it will take up and neutralize this strain without causing displacement of the helical wrapping to which it is attached.

When the band 11 is drawn tightly to effect a snug fit, its mid-width is stretched and is in a comparatively smooth condition capable of taking and permanently exhibiting any coloring matter or printed markings which may be desired.

It will be understood that the band 11 may be applied either after the wrapping strip 7 is applied or at the same time.

I have herein shown the band 11 as a plain strip but it might be formed of suitable duplex or duplex reinforced material similar to that disclosed in my Patent No. 1,282,167 above referred to.

Having thus described a preferred embodiment of my invention, the principles illustrated thereby which I consider new and desire to secure by Letters Patent I shall express in the following claims:—

1. A package comprising an article having a curved section, a wrapping of helically applied strip thereabout and a band of less width than the transverse circumference of the article applied transversely to said strip having provision permitting localized expansion thereof, said band being drawn down and fitted transversely to the curvature of the article.

2. A package comprising an article having a curved section, a wrapping of helically applied strip thereabout and a band applied transversely of the turns of strip and having transverse gatherings locally expanded to conform to the curvature of the article and providing rugosities engaging the edges of said strips.

3. A package comprising an article having an enclosing covering of helically applied strip and a band which is longitudinally expansible throughout its width extending across the spires and secured at intervals thereto.

4. A package comprising an article having an enclosing covering of helically applied strip and a band of paper having transverse gatherings extending across the spires and secured at intervals therealong to the individual spires, thereby providing expansible connections therebetween.

5. A package comprising an annular article, a wrapping of helically applied strip and a peripheral band secured to the spires of the wrapping at intervals and having intermediate gathered portions.

6. A package comprising an annular article, a wrapping of helically applied strip

and elastic means for relatively positioning the spires of the wrapping and interengaging the edges of said spires.

7. A package comprising an article and a covering presenting a plurality of joints and means for positioning the parts of the covering comprising a band having transverse gatherings extending across said joints and adhesively secured to the parts at opposite sides thereof.

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

EDWARD H. ANGIER.