

July 11, 1933.

L. W. JOYCE

1,918,109

REEL PACKAGE

Filed Sept. 9, 1931

2 Sheets-Sheet 1

Fig. 1.

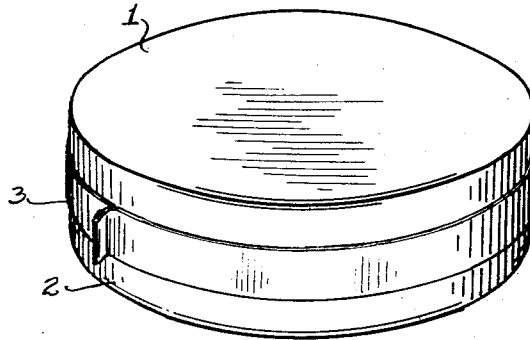


Fig. 2.

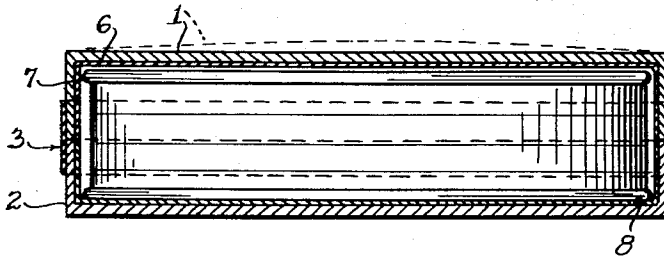
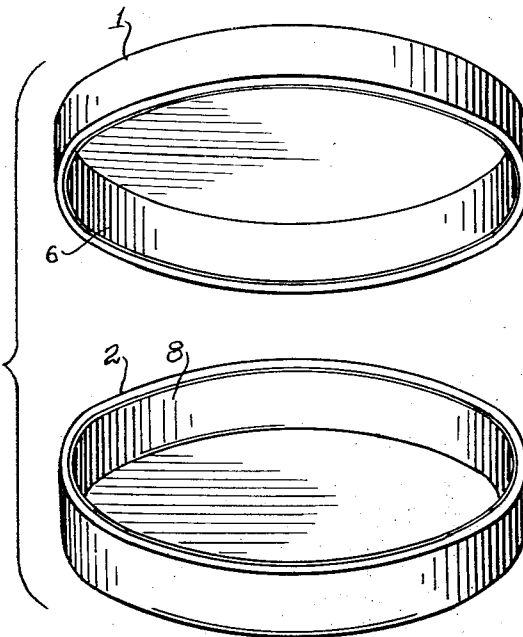


Fig. 3.



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Fig. 4.

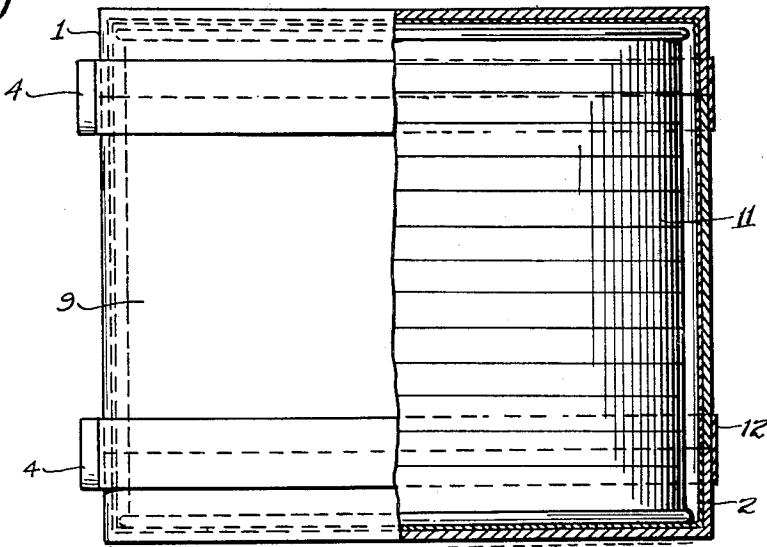


Fig. 6.

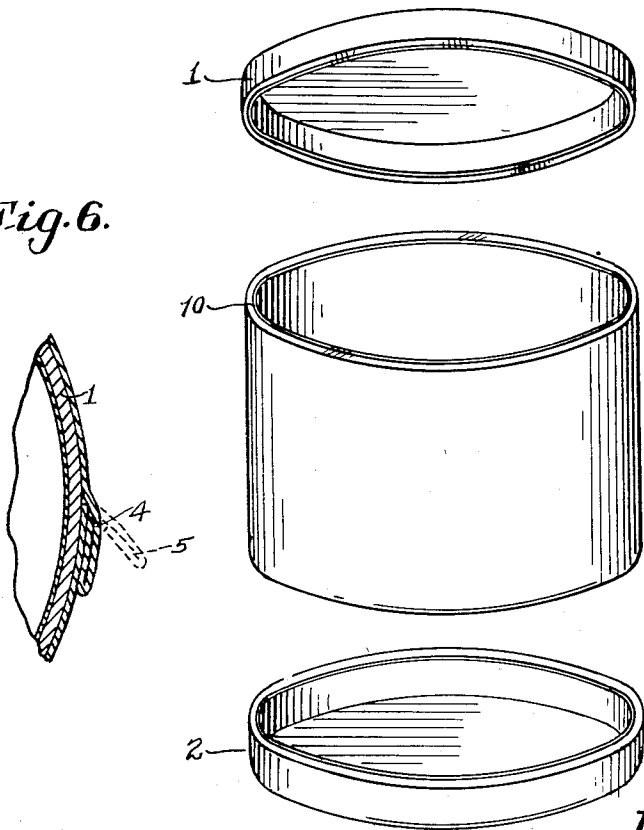


Fig. 5.

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REEL PACKAGE

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This invention relates to the packaging of strip fabric on reels, and particularly elastic fabric constituted at least in part by rubber strands.

5 It is known that rubber rapidly loses its life or elasticity when exposed to the drying out effect of the atmosphere and that a great deal of elastic sold as new and fresh goods, is already old and practically worthless, in
10 point of quality, although unused, solely through the deterioration produced by contact with the atmosphere, from the date of its manufacture to the time of its ultimate use.

One of the objects of the invention is the
15 provision of a paper or fibre board package for the reel of elastic, constructed so as absolutely to isolate the elastic from the atmosphere. It would be comparatively easy to seal the elastic hermetically in a metallic container, but the substitution of an inherently
20 pervious material, such as fibre board, gives rise to problems to which the present invention offers a practical solution. The more specific objects of the invention, therefore,
25 relate to features employed in the solutions of these problems.

One of the more specific objects of the invention is to provide a container of the class described, including pressed flanged heads
30 of fibre board or the like, sealed by a circumferential strip of impervious non-hydroscopic material.

Another object of the invention is to provide the sealing strip as above described having
35 an end left free whereby it may be easily grasped for the purpose of peeling the strip from the container to release the head in opening the container.

Still another object of the invention is a
40 provision of the container of fibrous material, having component head and body parts lined with impervious parchment or its equivalent, whereby in conjunction with the sealing strip the contents of the package are her-
45 metically sealed.

A further object of the invention is to construct the parchment lined heads of material sufficiently flexible to function as diaphragms,
50 so that the expansion and contraction incident to the diurnal and other pressure

changes incident to temperature variations will be compensated by the movements of the diaphragms, thus relieving the sealing strip from the concentrated effect of the expansive
55 and contractile stresses incident to changes in pressure of the confined air, which stresses tend to cause the sealing strip to crack, disintegrate, or become detached from the parts to which it is normally adhered.

Other objects of the invention will appear
60 as the following description of preferred and practical embodiments thereof proceed.

In the drawings throughout the several figures of which the same characters of reference have been employed to designate identical
65 parts, Fig. 1 is a perspective view of one embodiment of my invention designed for a reel of narrow width, in which the top and bottom heads are directly united by the sealing
70 strip without the intermediary of a body portion.

Figure 2 is a vertical diametrical section through the container illustrated in Figure 1.

Figure 3 is an exploded view in perspective
75 showing the top and bottom headers.

Figure 4 is a vertical diametrical section through a modified form of the container designed to receive a wider reel, necessitating
80 the interposition of a body portion between the upper and lower headers.

Figure 5 is an exploded view in perspective showing the component parts of that
form of the invention shown in Figure 4 omitting the sealing strip.

Figure 6 is a horizontal section in detail,
85 showing the tab formed at the end of the sealing strip for convenience in breaking the seal.

Referring now in detail to the several figures, and first adverting to that form of the
90 invention shown in Figures 1, 2 and 3, the numerals 1 and 2 represent top and bottom headers, which for convenience and economy in manufacture may be similar in size and
95 shape, consisting of blocked out flange members formed of cardboard or any grade of fibrous material suitable for the manufacture of a container. A sealing strip (3) which
100 may be of "Cellophane" or any other impervious non-hydroscopic material, is applied

adhesively, circumferentially, with the meeting edges of the top and bottom heads, the sealing strip being provided on one side with a suitable adhesive. For the purpose of readily unsealing the package, the sealing strip is folded up itself for a short distance at one end as shown at 4 in Figure 6, providing a tab which normally lies flat but in non-adhered relation to the container, but which may be grasped and pulled out as indicated by broken lines at 5 in Figure 6, for the purpose of peeling the sealing strip from the package in order to open the latter.

It is obvious to one skilled in the art that while the sealing strip may in part isolate the contents of the package from contact with the outside atmosphere, yet the inherent pervious nature of the card or fibre board permits a certain diffusion between the inside and outside air due to diurnal temperature changes which in the heat of the day cause the air within the container to expand, forcing its way through the pores of the fibre board and being replaced at night when the air within the package cools and contracts, by air from the outer atmosphere. In the course of time this interchange of air due to "breathing" produces quite as disastrous an effect upon the rubber as would complete exposure to the air.

It is, therefore, essential that provision be made to inhibit diffusion of the atmosphere through the pores of the material of the container, and this is accomplished by lining the upper and lower heads with an impervious parchment indicated in Figure 2 by the reference character 6.

Under normal conditions, if the air within the package cannot escape it creates a pressure which would tend to separate the top and bottom heads, this stress being resisted by the sealing strip, which is subjected to repeated slight buckling at the joint as the inside pressure becomes alternately greater and less than that of atmosphere. This buckling of the sealing strip would eventually cause it to crack and disintegrate at the joint permitting air leakage or to come loose from either of the adjacent parts to which it is united.

In order, therefore, to prevent the concentration of the stresses incident to the expansion and contraction of the enclosed air, upon the sealing strip, the heads (1) and (2) are made of a stock of such slight thickness as to be flexible so that they act as diaphragms, bulging with the expansion of the confined air and returning to normal flat shape, as the enclosed air contracts. By thus accommodating the capacity of the container to the volume of the air the stress of its expansion and contraction is distributed, relieving the strain on the sealing strip which in consequence retains its sealing integrity.

The container is preferably made of such

size as snugly to fit the reel, the latter being constructed with disc shaped ends (7) and (8), preferably of metal, and having sufficient stiffness to reinforce the upper and lower heads preventing deformation of the diaphragms with consequent possible impairment of the seal.

In that form of the invention shown in Figures 4 and 5, a body portion (9) is provided over which the upper and lower headers (1) and (2) preferably telescope. The body portion may be formed of card or fibre board and is lined with the impervious parchment, which is indicated at 10 in Figure 5. The joints between the upper and lower headers (1) and (2) are covered and sealed by circumferential strips (11) and (12) of cellophane or its functional equivalent.

Tabs (4) are provided the same as have been described in connection with the first form of the invention. In all other features of construction the container shown in Figures 4 and 5 follows the principles of that shown in Figures 1, 2 and 3.

It is to be understood that while I have in the above specification described what I believe to be preferred embodiments of the invention, the specific details of construction as shown are merely by way of example and are not to be considered as limiting the scope of the invention.

What I claim as my invention is:

1. Package for a reel of elastic comprising a cylindrical container constituted by impervious flexible heads including impervious peripheral cylindrical flanges meeting to form an intermediate circumferential joint, and a sealing strip of flexible material, frangible under repeated slight bucklings at said joint, adhesively applied to said flanges and bridging said joint, said heads being sufficiently flexible to yield compensatingly to pressure variations within said container, so as to avoid repeated slight bucklings at the joint due to successive tension and contraction incident to said pressure variations.

2. Package for a reel of elastic, comprising a cylindrical container of fibrous stock having flexible heads including peripheral cylindrical flanges meeting to form an intermediate circumferential joint, said heads and flanges being lined with impervious material, a sealing strip of flexible material, frangible under repeated slight bucklings at said joint, adhesively applied to said flanges and bridging said joint, said heads being sufficiently flexible to yield compensatingly to pressure variations within said container, so as to avoid repeated slight bucklings at said joint, due to successive tension and contraction incident to said pressure variations.

In testimony whereof I affix my signature.
LYNDON W. JOYCE.