Feb. 11, 1958 T. S. KULKA 2,822,919

PROTECTIVE REEL BAND

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Fig. 1.

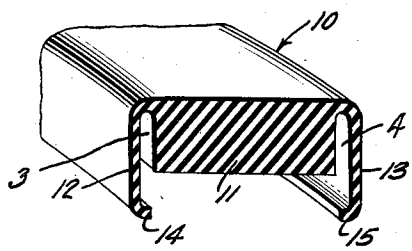


Fig. 2.

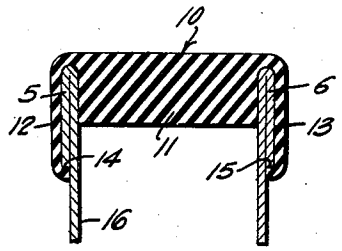


Fig. 3.

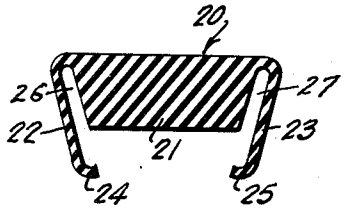


Fig. 5.

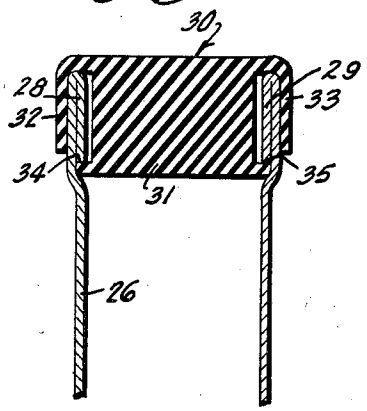
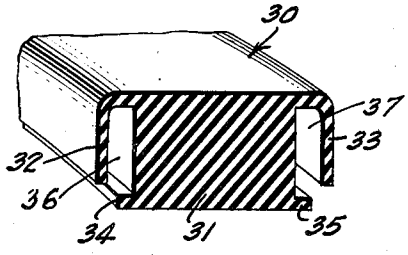


Fig. 4.



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Fig. 6.

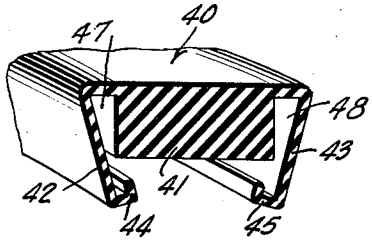


Fig. 7.

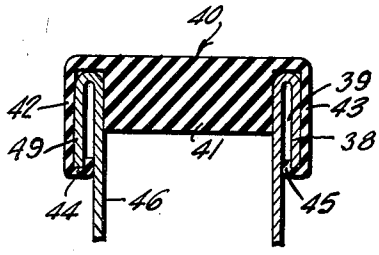


Fig. 8.

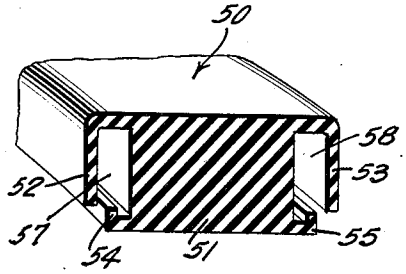


Fig. 9.

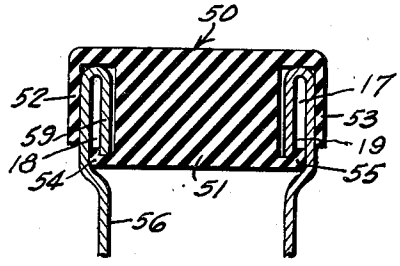


Fig. 10.

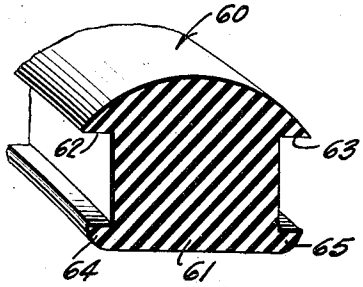
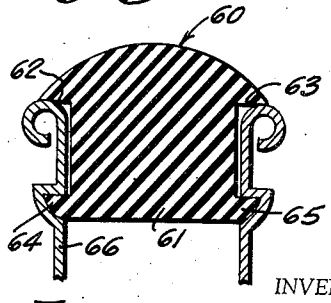


Fig. 11.



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Fig. 12.

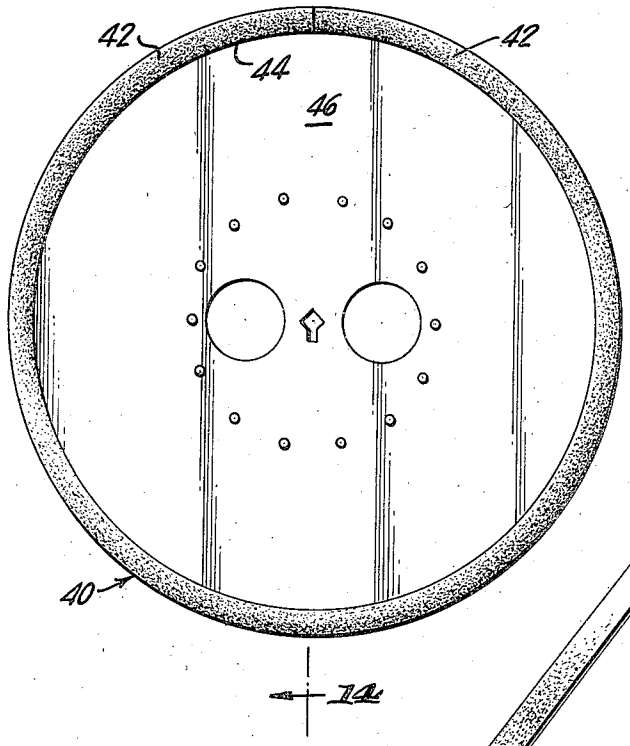


Fig. 13.

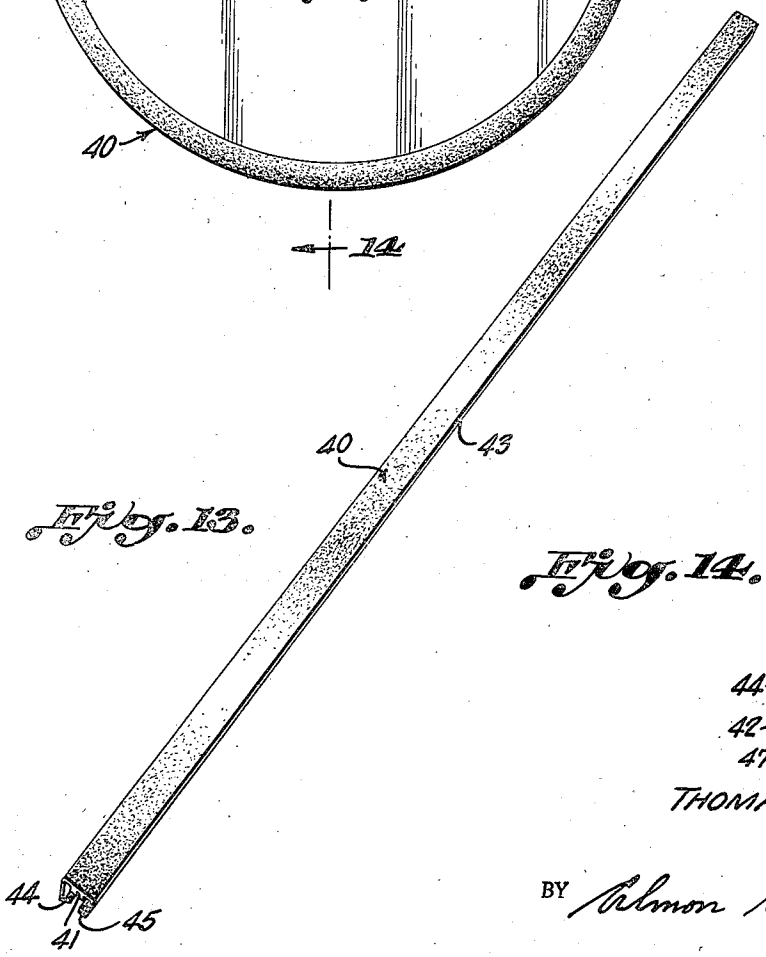
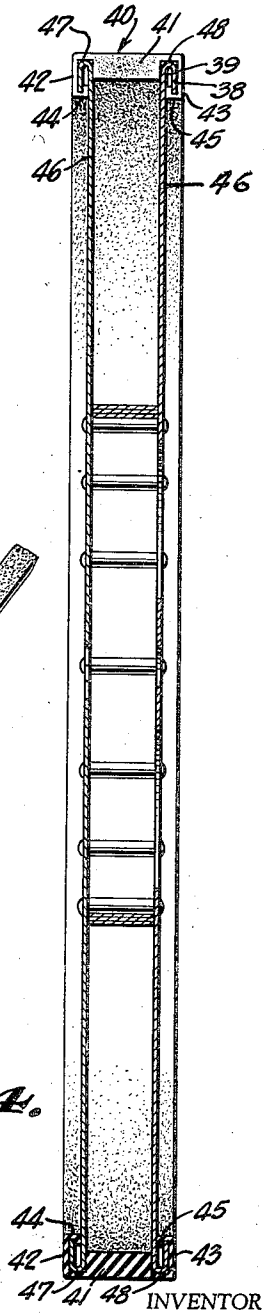


Fig. 14.



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PROTECTIVE REEL BAND

Thomas S. Kulka, Cleveland, Ohio

Application March 5, 1951, Serial No. 213,819

7 Claims. (Cl. 206—52)

This invention relating as indicated to a protective reel band is more particularly directed to a band or strip of resilient material which can be placed around the peripheral edges of a reel, the band being provided with means interlocking the same with the peripheral edges normally found on a reel adapted to contain motion picture film and the like.

The invention will be described with respect to a conventional motion picture film reel but obviously it is applicable to all forms of reels and therefore is capable of many adaptations.

One object of the invention is to provide a resilient band or tape which will surround the peripheral edges of a reel, the tape being provided with grooves to engage such peripheral edges and also being provided with means to interlock the tape to the reel.

Another object of the invention is to provide a means for eliminating the can or container in which motion picture film or the like is normally transported.

A further object of the invention is to provide a sealed reel which will cost less than the conventional reel and can, and which will also be less expensive to ship than the normal reel and can.

The protective band of my invention is self-locking, thus eliminating the necessity for locking means and when once placed in position seals the film within the reel, thus protecting the film from dust, light and moisture.

The protective band has further advantages in that it maintains the reel edges in parallelism, thus keeping such edges straight during shipment and due to its resilient construction absorbs shock during shipment and handling and additionally prevents damage to the film edge.

It is a detailed object of the invention to provide a protective band which is practically indestructible and one which is easily marked with pencil, crayon, or ink for reel identification and also which may be quickly attached to or detached from the reel.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawings and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawings:

Fig. 1 is a fragmentary perspective view showing the band in section.

Fig. 2 is a vertical section of the band applied to a reel.

Fig. 3 is a vertical section of a modification.

Fig. 4 is a fragmentary perspective view, showing the band in section, of a further modification.

Fig. 5 is a sectional view showing the modification of Fig. 4 applied to a reel.

Fig. 6 is a fragmentary perspective view showing the band in section, of a still further modification.

Fig. 7 is a vertical section showing the modification of Fig. 6 applied to a reel.

Fig. 8 is a fragmentary perspective view, showing the band in section, of another modification.

Fig. 9 is a vertical section showing the modification of Fig. 8 applied to a reel.

Fig. 10 is a fragmentary perspective view, showing the band in section, of another modification, and

Fig. 11 is a vertical section showing the modification of Fig. 10 applied to a reel.

Fig. 12 is a front elevation showing the band attached to a reel.

Fig. 13 is a perspective view of a complete band as shown in Fig. 6.

Fig. 14 is a section on line 14—14 of Fig. 12.

Referring now to the drawings and more particularly Figures 1 and 2, it will be seen that I have provided a protective band adapted to encircle the peripheral edges of a reel generally indicated at 16. The band in this form is provided with parallel flanges 12 and 13 which form parallel grooves 3 and 4 between such flanges and the body portion 11 of the band. The flanges 12 and 13 are inturned to provide lips 14 and 15 which snugly grip the radially inward edges of the exterior flanges 5 and 6 of the reel 16.

It is to be noted that in some instances the reels are formed with outwardly folded flanges 5 and 6 which are pressed into abutting relationship with the side walls or discs of the reel 16, this construction being shown in Fig. 2.

In this case the film is sealed within the reel due to the engagement of the reel edges in the grooves 3 and 4 of the band 10 and the band itself is held in interlocked relationship with the discs of the reel due to the inturned edges 14 and 15 on the terminal portions of the flanges 12 and 13, which project under the edges of the flanges 5 and 6.

In the modification shown in Fig. 3, the protective band 20 is formed of resilient material as indicated and is provided with an internal body portion 21, this portion having tapering walls which extend parallel to the flanges 22 and 23. The flanges are provided with inturned edges 24 and 25 adapted to interlock under the radially inward reel flanges 5 and 6 as shown on the reel 16 of Fig. 2. The peripheral edges of the reel 16 are received in the grooves 26 and 27 similar to the construction in Fig. 1.

In this form of the invention the tapering walls of the body portion 21 which form parts of the grooves 26 and 27 render the band somewhat easier to attach to the reel without losing any of the sealing properties. The flanges 22 and 23 on the band 20 are so formed that they converge radially inward with respect to the reel thus affording a more positive seal since they grip the exterior surfaces of flanges 5 and 6 over a relatively extensive surface.

In the event that it is desired to seal a reel having inturned peripheral flanges such as the reel 26 shown in Fig. 5, I have provided a slightly different form as shown in Figs. 4 and 5. In the modification shown in these figures the band 30 is provided with a body portion 31 and flanges 32 and 33 but the supplemental interlocking edges 34 and 35 are integral with or attached to the body portion 31 instead of being integral with or attached to the outer flanges 32 and 33. Thus, it will be seen that in this form, similar to the other two forms, parallel relatively deep grooves 36 and 37 are provided between the flanges 32 and 33 and the body portion 31 and that these are sufficient to embrace the outer marginal edges of the reel 26 for a considerable extent.

The protective band of this type is prevented from becoming detached from the reel by means of the interlock provided between the extensions 34 and 35 on the band 30 and the radially inward edges of the inturned peripheral flanges 28 and 29 of the reel 26.

This form of the invention provides a band which is quickly attached to a reel and one which may be easily detached when desired, due to the resilience of the material forming the band. On the other hand, the interlocking provision maintains the contents of the reel in sealed condition at all other times.

The modification shown in Fig. 6 is adapted to engage a somewhat different form of reel since in this embodiment the reel is provided with spaced outwardly turned flanges as distinguished from flattened or abutting flanges.

The band 40 has a body portion 41 adapted to extend well down into the reel 46 as shown in Fig. 7, and is provided with flanges 42 and 43 which initially extend in converging planes so that when the band is applied to the reel 46 the flanges 42 and 43 will snugly engage the flanges 49 and 38 of the reel.

In order to prevent undesired detachment of the band with respect to the reel, I have provided interlocking edges 44 and 45, the terminal portions of which extend up into the recesses 39 formed between the peripheral flanges 49 and 38 of the reel and the body portion or discs thereof.

The modification shown in Fig. 8 is adapted for attachment to a reel having inwardly turned flanges 59 and 19 which are spaced, as distinguished from being flattened, against the reel disc or body portion.

The band 50 comprises a body portion 51 which as shown in Fig. 9 extends well down into the reel when applied and is provided with interlocking edges 54 and 55. In this case the flanges 52 and 53 on the band 50 snugly embrace the outer surfaces of the reel while the lips or projections 54 and 55 extend up into the recesses 18 and 17.

In each of the embodiments of Figs. 2, 5, 7, and 9 each disc has a return bend which forms a shoulder spaced inwardly from the peripheral edge of the flange. In Figs. 2 and 7 this shoulder is located on the outer surface of each disc whereas in Figs. 5 and 9 the shoulder is located upon the interior surface of such disc.

The modification of my invention shown in Fig. 10 is somewhat different from the previous embodiments of my invention in that no external overlapping flanges are necessary. In this case the band 60 is provided with shoulders 62 and 63 adapted to seat upon the outermost circumferential portion of the reel 66. The body portion 61 extends well down into the reel, as in the previously described forms, and is provided with transversely extending projections or abutments 64 and 65 which are seated in circumferential grooves or recesses of complementary cross section in the discs forming the reel. These projections each have an upper wall which extends transversely to form a right angle with the inner wall of the body portion. An arcuate wall joins the transverse wall and the lower wall of the body portion so that the strip may be readily pushed into interlocking position. The resiliency of the strip is of such character as to permit easy detachment when desired.

The contents of the reel are effectively sealed by the interlocking of the projection 64 and 65 and further due to the relatively deep penetration of the body portion 61 into the reel proper. It should be noted in this connection and also in connection with Figs. 9 and 5, that the spacing between the protective band and the interior walls or flanges of the reel has been somewhat exaggerated for purposes of illustration.

The material of which my protective reel band is formed may vary within wide limits since the precise composition is not part of the invention. Suffice it to say that this material should be highly flexible and durable. The exterior portion of the band should be capable of receiving inscriptions in pencil, pen or crayon so that the film may be easily identified. The material of course should be highly flexible so that it can be readily attached to the reel and also easily removed therefrom.

The band is applied by inserting the body portion 41 thereof between the discs 46—46 forming a reel and pushing the same inwardly. At the same time the flanges 42—43 should be flexed outwardly so as to slide over the outer marginal surfaces of the discs 46—46. Of course it is merely necessary to push the modification shown in Fig. 10 radially inward to such an extent that the projections are received within the interlocking recesses formed on the disc. In order to remove the band it is merely necessary to grip the same and pull outwardly since the resiliency of the material permits the interlocking projections to become readily disengaged.

The meeting edges of the strip forming the protective band, which are not shown, may be brought into close sealing contact due to the fact that the band is elastic and may be stretched around the edges of the reel to any desired extent within the limits of elasticity of the band. It is therefore possible to closely abut the meeting edges and consequently seal the film within the reel.

There are a number of advantages inherent in my improved protective band, the most outstanding of which is the expense, since the band costs considerably less than a can or container and then, too, the constant expense of shipping is greatly reduced since the reel and band combined weigh approximately one-half of the weight of a reel and can or container.

Another outstanding advantage is the fact that damage to the reel and the contents is greatly eliminated because the contents are effectively sealed and the shocks incident to handling and shipment are absorbed by the protective band instead of being transmitted to the reel. Once the protective band is applied, the reel may be dropped and in almost every instance the protective band will strike the floor or other surface upon which it is dropped instead of the reel itself striking the floor.

A further advantage is that the band is practically indestructible and will last as long as the reel. In the meantime, the band provides a support for the reel edges and keeps the edges and the discs in straight parallel relationship. Furthermore, the band is remarkably easy to attach and detach from a reel.

Other forms may be employed embodying the features of my invention instead of the one here explained, change being made in the form or construction, provided the elements stated by any of the following claims or the equivalent of such stated elements be employed, whether produced by my preferred method or by others embodying steps equivalent to those stated in the following claims.

I claim:

1. The combination of a reel and a snap-on, peel off protective cover; said reel having parallel discs and said discs having flanges bent backwardly from the peripheral edges of the discs to form shoulders, said cover comprising a strip of resilient material having projections thereon, said projections being interlocked with said shoulders, said strip directly engaging and completely overlying the peripheral edges of said discs and having radially inwardly directed parallel flanges extending from such portions overlying the peripheral edges and abutting the outer surfaces of said discs.

2. The combination of a reel and a snap-on peel off protective cover; said reel having parallel discs and said discs having flanges bent backwardly from the peripheral edges of the discs to form shoulders, said cover comprising a strip of resilient material having projections thereon, said projections being interlocked with said shoulders, and said shoulders extending circumferentially around said disc, the cover having a body part thereof bridging the space between said parallel discs, said strip directly engaging and completely overlying the peripheral edges of

said discs and having radially inwardly directed parallel flanges extending from such portions overlying the peripheral edges and abutting the outer surfaces of said discs.

3. The combination of a reel and a snap-on, peel off protective cover, said reel having spaced parallel discs and said cover comprising a strip of resilient material, said strip having projections thereon and means on said discs interlocking said projections with said reel, said strip directly engaging and completely overlying the peripheral edges of said discs and having radially inwardly directed parallel flanges extending from such portions overlying the peripheral edges and abutting the outer surfaces of said discs.

4. The combination of a reel and a snap-on, peel off protective cover, said reel having spaced parallel discs and said cover comprising a strip of resilient material, said strip having projections thereon and shoulders on said discs interlocking said projections with said reel, said discs having outer peripheral flanges bent backwardly from the peripheral edges of the discs to form said shoulders, said strip directly engaging and completely overlying the peripheral edges of said discs and having radially inwardly directed parallel flanges extending from such portions overlying the peripheral edges and abutting the outer surfaces of said discs.

5. The combination of a reel and a protective cover, said reel having spaced parallel discs and said cover comprising a strip of resilient material, said strip having projections thereon and means on said discs interlocking said projections with said reel, said discs having inner peripheral flanges with radially inward edges forming said means, said strip directly engaging and completely overlying the peripheral edges of said discs and having radially inwardly directed parallel flanges extending from such portions overlying the peripheral edges and abutting the outer surfaces of said discs.

6. The combination of a reel and a snap-on, peel off protective cover, said reel having spaced parallel discs and said cover comprising a strip of resilient material, said strip having projections thereon and means on said discs interlocking said projections with said reel, said discs having outer peripheral flanges bent backwardly from the peripheral edges of the discs to form shoulders, said shoulders being spaced from said discs to form recesses the recesses forming said means, said strip directly engaging and completely overlying the peripheral edges of said discs and having radially inwardly directed parallel flanges extending from such portions overlying the peripheral edges and abutting the outer surfaces of said discs.

7. The combination of a reel and a protective cover, said reel having spaced parallel discs and said cover comprising a strip of resilient material, said strip having a body portion snugly received between the outer portions of said discs and with projections thereon, said discs having inner peripheral flanges spaced from said discs to form recesses, said projections being received in the recesses, said strip directly engaging and completely overlying the peripheral edges of said discs and having radially inwardly directed parallel flanges extending from such portions overlying the peripheral edges and abutting the outer surfaces of said discs.

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