

L. S. GUNDERMAN.  
 ATTACHMENT FOR FLEXIBLE REEL COVERS.  
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1,386,617.

Patented Aug. 9, 1921.

FIG. 1.

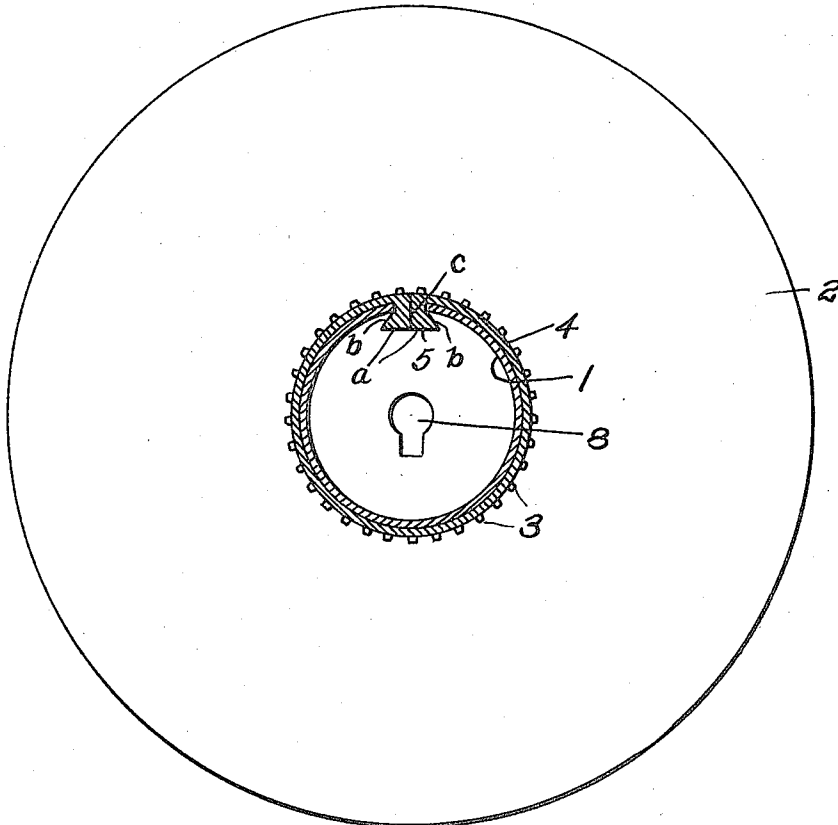


FIG. 2.

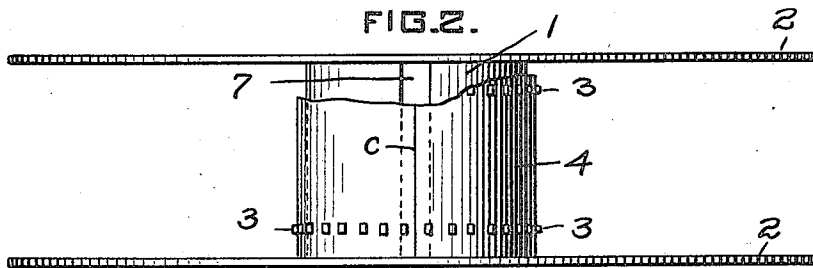
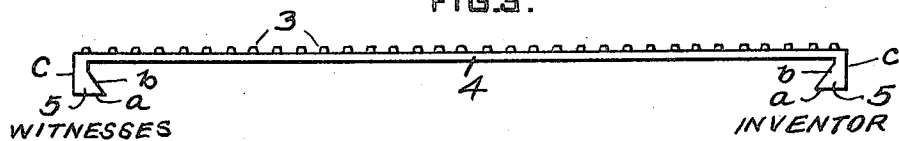


FIG. 3.



WITNESSES  
*J. Herbert Bradley*  
*John Bailey Brown*

INVENTOR  
*Lester S. Gunderman*  
 by *Winter & Brown*  
 his Attorneys

# UNITED STATES PATENT OFFICE.

LESTER S. GUNDERMAN, OF PITTSBURGH, PENNSYLVANIA.

ATTACHMENT FOR FLEXIBLE REEL-COVERS.

1,386,617.

Specification of Letters Patent.

Patented Aug. 9, 1921.

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*To all whom it may concern:*

Be it known that I, LESTER S. GUNDERMAN, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Attachments for Flexible Reel-Covers, of which the following is a specification.

This invention relates to means of attaching flexible covers to reels, pulleys, and the like. More particularly it relates to means for attaching a flexible cover to the winding drum of a moving picture reel.

The objects of the invention are to provide means for attaching a rubber cover to drums, reels, or the like, in such manner that the ends of the cover will lie flat upon the reel, in close contact with each other, and when power is applied through the cover, the ends thereof will not buckle up and form a ridge or other rough space upon the surface of the drum.

Although this invention is adapted to any form of rubber cover for winding drums, it is particularly valuable and applicable to the flexible covers for moving picture reels. These covers are now manufactured and used extensively, but there has been no means yet devised, so far as I am aware, for attaching them to the reels in such manner that they will not buckle out at the ends.

Referring to the drawings Figure 1 is a central section through a moving picture reel at right angles to the axis thereof; Fig. 2 is a plan view of such a reel, a portion of the flexible cover being broken away; and Fig. 3 is a partial view of one of the flexible covers for such reels.

Moving picture reels comprise a central drum member 1, to the ends of which are attached two wide flanges 2, for the purpose of guiding and holding the film when it is wound upon the reel. Formerly it was the custom to fasten the end of a film which was about to be wound upon such a reel to the drum by means of a spring clamp. This required a material amount of time, comparatively speaking, and was of some difficulty since the hand of the operator had to be extended between the flanges, and the central part of the reel, while the other hand was used to hold and carefully position the end of the reel in the spring clamp.

Then someone invented a flexible rubber cover for the drum of such reels, such cover having a series of lugs 3 positioned at the

sides of the flexible cover 4, as illustrated in Figs. 1, 2 and 3. Such a cover proved highly efficient, since when it was used it was only necessary to introduce the end of the film into the reel, without adjustment, at any part of the periphery of the reel, and the lugs 3 would engage in the perforations that are provided along the edges of standard films. The film would then wind upon the reel when the latter was rotated, and no particular adjustment or other holding means was necessary. Furthermore, the small lugs 3 being resilient there was no danger of tearing the film. In short, this invention proved very valuable, and a complete success so far as the use of a flexible cover and flexible lugs are concerned.

However, it has been found very difficult to provide an efficient and cheap fastening means for holding the rubber member upon the drum. To form a cement union between these parts is expensive and troublesome, since if the cemented rubber wears out it is very difficult to remove and renew that part, and there are other objections. Various forms of interior lugs have been provided on the rubber, engaging slots or locking peripheries in the drum, but it has been found that with these after the rubber cover has been used, for a while its ends are disposed to pull out, or turn up, thus forming a rough place, or ridge on the surface of the drum, which is undesirable.

The present invention consists in providing flush with the ends of the rubber cover 4 interior rib members 5, which are fastened to the rubber strip 4, at its ends on their inside faces. The ribs 5 extend entirely across the end of the strip 4, and have their outer edges flush with the end of the strip 4. This is very important. The edge *a* of the fastening member 5, that is the one opposite to the point of engagement with the strip 4 is parallel to the surface of the cover strip, whereas, the interior side *b* of the member 5 is undercut. The outer side *c*, that is the one flush with the end of the cover 4, lies in the same plane as the end of the cover 4, as clearly illustrated in Figs. 1 and 3.

In fastening the rubber cover 4 on the drum, when the ends thereof are equipped with my fastening members 5, one end of the cover is placed in position with its lug 5 projecting into a slot 7 which is provided in the drum. Then the other end of the cover is brought around to the slot and the

other engaging rib 5 is forced through the open portion of the slot not occupied by the first rib 5, until it assumes the position shown in Fig. 1.

5 It will be seen that when the two engaging ribs are in position in the slot, their narrow portions completely fill the slot, while their broader bases extend on the inside of the drum away from the edges of the slot.  
 10 The ends of the cover 4, and of the fastening ribs 5 are thus back-to-back reinforcing each other in such form that any tangential tension on the rubber cover cannot pull the end of the rubber strip away from the drum,  
 15 and so the ends thereof are held in firm contact and closely against the drum at all times. In order to release the cover it is only necessary to pull out the end of the strip in a radial direction, thus overcoming the resiliency of the latter, distorting the fastening ribs 5, until the one being pulled comes out of the slot. Such reels ordinarily have lateral openings 8 for engagement with a winding device, as is well known.

25 I claim:

1. The combination with a winding drum and a flexible cover therefor, of a slot in the periphery of the drum, and transverse rearwardly undercut elastic ribs attached to the inner side of the flexible cover at its  
 30 ends, said ribs being adapted to extend through the slot in the periphery of the drum into the interior thereof, the breadth of the two ribs taken together being greater  
 35 than that of the slot.

2. In a pulley comprising a winding drum and having a flexible cover therefor, fastening means for the flexible cover comprising  
 40 flexible ribs fastened on the underside of the ends of the flexible cover, said ribs being

adapted to extend through the slot in the periphery of the drum, and having rearward undercut faces adapted to engage the edges of said slot, the breadth of the two ribs  
 45 taken together being greater than that of the slot.

3. The combination with a rubber cover adapted to be wound upon a hollow drum having a slot in its periphery, of resilient  
 50 fastening members attached to the ends of the cover, said fastening means comprising transverse members fastened across the inside of the ends of the flexible member and flush therewith, having an undercut rearward  
 55 side opposite the side which is flush with the ends of the flexible member, the breadth of the two sides *a* of the transverse members taken together being greater than that of the slot, said fastening member being  
 60 adapted to extend through the said slot, and to be withdrawable therefrom only by distortion of the said members.

4. A cover for winding drums and the like comprising a flexible cover strip, ribs  
 65 fastened to the inner sides of the ends of said strip and flush therewith, said ribs having a narrow portion fastened to said strip and being enlarged rearwardly from the connected portion to form an undercut rear  
 70 side, the side flush with the ends of the cover strip being in the same plane therewith, whereby when the ends of the strip are brought together the two ribs form a dovetail inner extension adapted to be retained  
 75 by a slot in a winding drum.

In testimony whereof, I have hereunto set my hand.

LESTER S. GUNDERMAN.

Witnesses:

JOS. BAILEY BROWN,  
 EDWIN O. JOHNS.