Nov. 3, 1936. J. C. NICHOLS 2,059,267

ROLL END PROTECTOR

Filed June 13, 1935

Fig. 1.

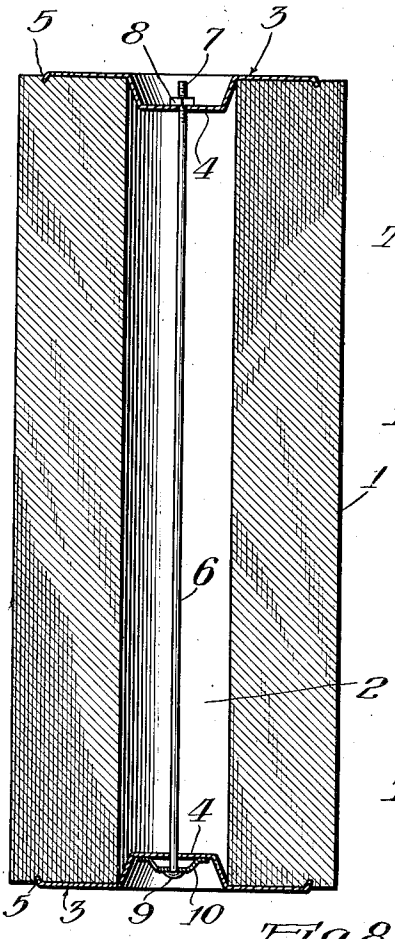


Fig. 2.

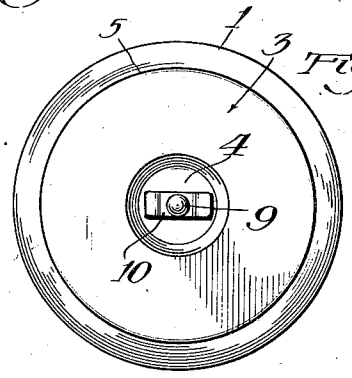


Fig. 3.

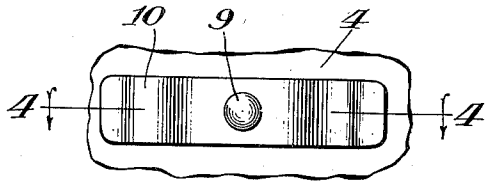


Fig. 4.

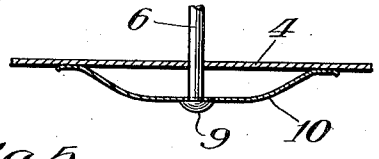


Fig. 5.

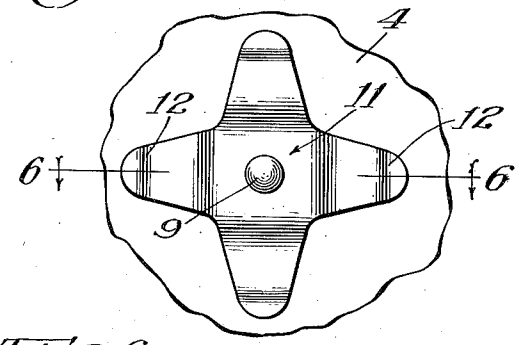


Fig. 6.

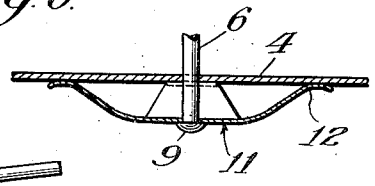


Fig. 8.

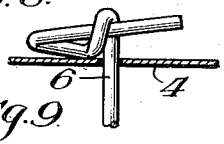


Fig. 9.

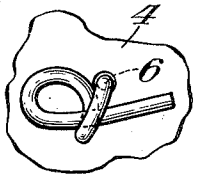
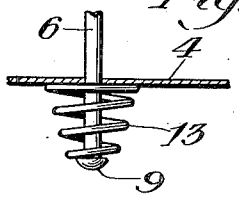


Fig. 7.



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ROLL END PROTECTOR

James C. Nichols, Chicago, Ill.

Application June 13, 1935, Serial No. 26,382

6 Claims. (Cl. 206—59)

This invention relates to improvements in roll end protectors, and relates specifically to end protectors and retaining means therefor for fabric or fibrous rolled material.

The utility, objects and advantages of my invention will be apparent from the accompanying drawing and following detailed description.

In the drawing, Fig. 1 is a vertical sectional view of a roll of web-like material, illustrating particularly the retaining means for the end protectors.

Fig. 2 is a bottom plan view of the roll illustrated in Fig. 1.

Fig. 3 is a fragmentary detail view of the resilient urging means comprising a portion of the end retainers.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3.

Fig. 5 is a fragmentary detail plan view of a modified form of resilient urging means.

Fig. 6 is a sectional view taken on line 6—6 of Fig. 5.

Fig. 7 is a detail side elevational view, partly in section, of another modified form of resilient urging means.

Fig. 8 is a detail side elevational view, partly in section, of a modified means of anchoring the retainer.

Fig. 9 is a plan view of the anchoring knot shown in Fig. 8.

Referring in detail to the drawing, 1 indicates a roll of fabric or fibrous web-like material, so wound as to provide a cylindrical space 2 along its central axis. It is the practice to wind fabric of various descriptions in this manner and also fibrous material, such as newsprint and other type papers and particularly the so-called prepared or ready roofing.

To protect the ends of the wound web of roll 1, plates 3 are positioned at each end of the roll, each of said plates having a central dished portion 4 which is adapted to extend into the cylindrical space 2. The plates 3 are usually circular in shape to conform with the contour of the roll and the outer edge of each plate may or may not be turned inwardly, as at 5, to bite or grasp the end of the roll.

To secure or retain the end protectors in desired position at the ends of the roll 1, a rod or heavy wire 6 is passed through apertures provided in the dished portions 4, said rod being disposed in contact at its ends, by means hereinafter more fully described.

Roll 1 usually comprises a material which if exposed to variations in temperature will expand or contract. This expansion or contraction will, of course, be greatest along the length of the roll. Consequently, if plates 3 are secured in place by rod 6 when the roll is in a relatively warm condition, the rolls if subsequently cooled, will contract and unless some compensation is made for this contraction in conjunction with rod 6, the plates 3 will become loose. On the other hand, if the plates are secured in place while the roll is in a relatively cool condition, subsequent expansion due to warming will cause said plates to crush the edges of the web.

To obviate this situation and provide the compensating means hereinbefore mentioned is a feature of my invention. As has been hereinbefore described, rod 6 is positioned at its ends through the dished portions 4 of plates 3. One end of rod 4 may be provided with threads 7 which are engageable with nut 8 which normally bears upon the outer face of the dished plate. The opposite end of rod 6 may be provided with head 9 and interposed between said head and the outer face of the dished plate a leaf or blade spring 10 may be confined. The spring 10 may be of arched construction and may bear upon the plate at its opposite ends, the central or arched portion bearing upon the head 9.

It can readily be seen that in this manner proper manipulation of nut 8 will initially bring rod 6 into tension flexing spring 10. Obviously, if roll 1 is at a relatively expanded condition when the plates are initially applied, said plates will not become loosened when the roll subsequently contracts because of the unflexing of spring 10. Conversely, if the roll 1 is at a relatively contracted condition when the plates are applied, said plates will not crush the edges of the web when the roll subsequently expands since the spring will compensate for this expansion.

It is to be understood, of course, that substantially any suitable securement is contemplated for the fixed end of rod 6, that is, the end opposite the spring. For instance, as illustrated in Figs. 8 and 9, the rod 6 may have that end which projects through the dished plate knotted or otherwise bent. The particular form of knot shown is particularly suitable since tension in rod 6 tends to tighten the knot and render the same more secure. In utilizing the type of securement, spring 10 is partially flexed before the knot is tied, or the act of tying the knot may flex the spring.

Spring 10 is preferably loosely mounted upon rod 6, but may be a fixed or integral portion of

the rod. This, of course, is conducive to economical manufacture of the retaining means.

The spring utilized in conjunction with rod 6 may take other forms, for instance, those shown in Figs. 5 and 6 or Fig. 7. The type shown in Figs. 5 and 6 comprises an arched spring 11 having cross-like legs or terminations 12. Similar to spring 10, spring 11 is preferably loosely mounted upon rod 6, the arched portion of the spring being adapted to bear upon the head 9 and the legs 12 bearing upon the outer face of the dished plate. The function and cooperation of this type spring is similar in all other respects to spring 10. The type shown in Fig. 7 is a frustro-conical coil type 13, the spring being confined between head 9 and the outer face of plate 4. Similar to springs 10 and 11, spring 13 is preferably loosely mounted upon rods 6 and is removable therefrom at the opposite end of the rod. It is to be understood, however, that it is within the contemplation of my invention to have springs 10, 11 and 13 integrally secured to one end of each of the rods 6.

I claim as my invention:

1. A roll end protector comprising in combination, a pair of plates to be positioned at opposite ends of the roll, and means for maintaining said plates in resilient contact with the ends of said roll comprising, a rod which extends through the center of the roll, the ends of said rod normally projecting through said plates, a head on one end of said rod, a resilient member mounted on said rod and confined between said head and the surface of a plate, and means at the opposite projecting end of said rod for preventing movement of said rod inwardly with respect to the opposite plate.

2. A roll end protector comprising in combination, a pair of plates to be positioned at opposite ends of the roll, and means for maintaining said plates in resilient contact with the ends of said roll comprising, a rod which extends through the center of the roll, the ends of said rod normally projecting through said plates, a head on one end of said rod, a spring loosely mounted on said rod and confined between said head and the surface of a plate, and means at the opposite projecting end of said rod for preventing movement of said rod inwardly with respect to the opposite plate.

3. A roll end protector comprising in combination, a pair of plates to be positioned at opposite ends of the roll, and means for maintaining said plates in resilient contact with the ends of said roll comprising, a rod which extends through the center of the roll, the ends of said rod normally projecting through said plates, a head on one end of said rod, an arched blade spring mounted on said rod and confined between said head and the surface of a plate, and means at the opposite projecting end of said rod for preventing movement of said rod inwardly with respect to the opposite plate.

4. A roll end protector comprising in combination, a pair of plates to be positioned at opposite ends of the roll, and means for maintaining said plates in resilient contact with the ends of said roll comprising, a rod which extends through the center of the roll, the ends of said rod normally projecting through said plates, a head on one end of said rod, a coil spring mounted on said rod and confined between said head and the surface of a plate, and means at the opposite projecting end of said rod for preventing movement of said rod inwardly with respect to the opposite plate.

5. A roll end protector comprising in combination, a pair of plates to be positioned at opposite ends of the roll, and means for maintaining said plates in resilient contact with the ends of said roll comprising, a rod which extends through the center of the roll, said roll being of greater length than the distance between said plates, the ends of said rod normally projecting through said plates, a head on one end of said rod, a resilient member loosely mounted on said rod and confined between said head and the surface of a plate, and means at the opposite projecting end of said rod for preventing movement of said rod inwardly with respect to the opposite plate.

6. A roll end protector comprising in combination, a pair of plates to be positioned at opposite ends of the roll, and means for maintaining said plates in resilient contact with the ends of said roll comprising, a rod which extends through the center of the roll, the ends of said rod normally projecting through said plates, a head on one end of said rod, a coil spring mounted on said rod and confined between said head and the surface of a plate, said spring being frustro-conical in form having the small end positioned for engaging the underside of said head of the rod and the larger end engaging said plate, and means at the opposite projecting end of said rod for preventing movement of said rod inwardly with respect to the opposite plate.

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