United States Patent

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[54] **LATCH BAR ASSEMBLY FOR REPLACEABLE COVER**
8 Claims, 6 Drawing Figs.

[52] **U.S. Cl.** **29/118,** 29/129
[51] **Int. Cl.** **B60b 7/00**
[50] **Field of Search** 29/118, 129; 83/659, 346

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ABSTRACT: The proximate ends of a plastic roll sheathing are formed with offset shouldered flanges in opposition. These flanges extend into a rectangular groove in the surface of the roll body and together provide a mortise cavity into which a T-shaped tenon is fitted and secured to the body with fasteners. At least one of the ends of the sheathing is further extended so as to overlay the clamp joint so formed and abut the other end.

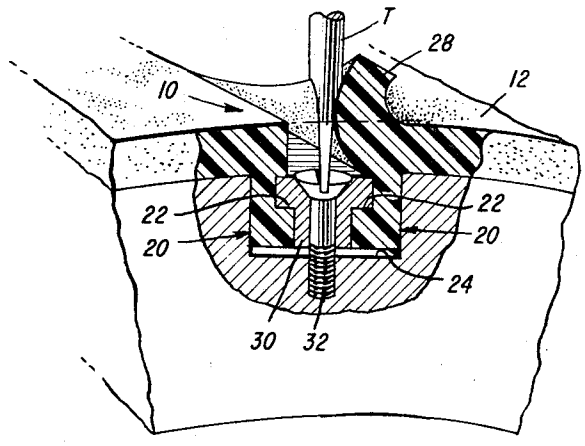


FIG. 1

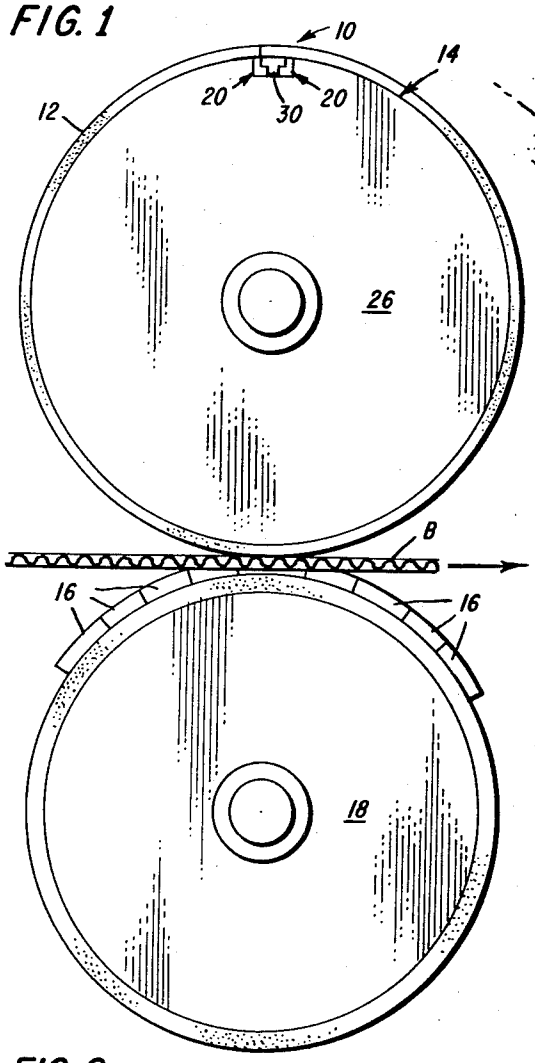


FIG. 2

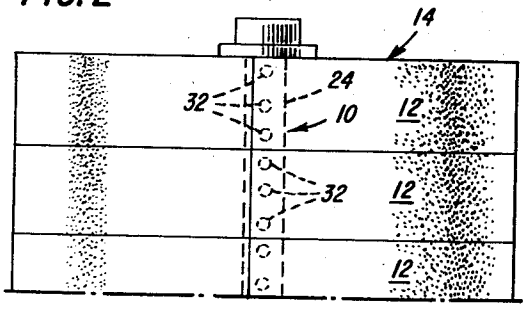


FIG. 3

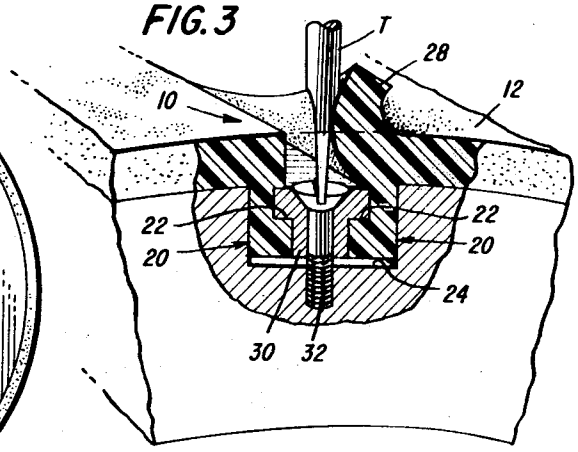


FIG. 4

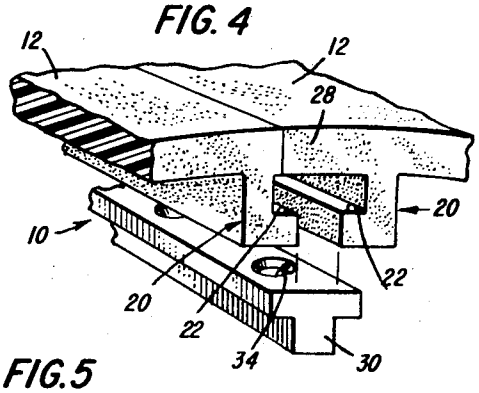


FIG. 5

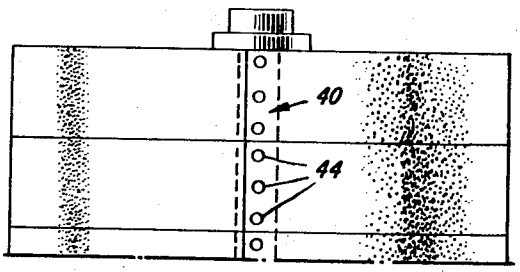
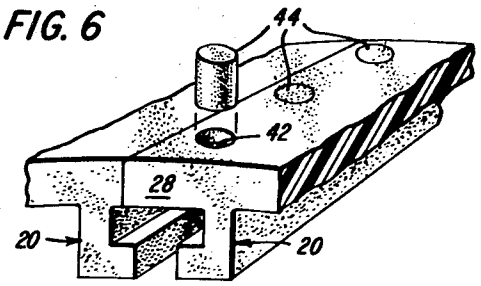


FIG. 6



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LATCH BAR ASSEMBLY FOR REPLACEABLE COVER

This invention relates generally to rolls, and more particularly it pertains to an anchoring arrangement for an annular resilient cover for a roll. Plastic covered rolls are used in the packaging industry as backup drums against which the cutting blades work. Generally those blades have a saw-toothed cutting edge which drives down through the corrugated board and into the resilient cover.

Such service produces severe wear and so odd peripheral speed relationship and lateral translation of the roll is used to distribute the contact as widely as possible. Since the knives may then cut against any peripheral portion of the drum surface, it is important that no irregularity exists thereover.

Accordingly, it is an object of this invention to provide a latch bar arrangement for roll covers which secures the sheathing ends with minimum discontinuity therebetween and thus approaches a continuous cover.

Another object of this invention is to provide a wraparound piece cover for a roll which is easily replaced without dismantling the roll from the machine.

Yet another object of this invention is to provide a latch bar arrangement for roll covers in which the fastener tool access aperture is simply and effectively filled.

Other objects and attendant advantages of this invention will become more readily apparent and understood from the following detailed specification and accompanying drawings in which:

FIG. 1 is an end view of the rolls of a sheet fed rotary die cutter for corrugated board in which the backup drum incorporates features of this invention;

FIG. 2 is a top view of the die cutter of FIG. 1;

FIG. 3 is a detail drawing, partially broken away, showing the method of securing the improved latch bar arrangement to the backup drum;

FIG. 4 shows the elements of the joint itself in exploded view;

FIG. 5 is a drawing similar to FIG. 2 but showing a second embodiment of the invention; and

FIG. 6 is a fragmentary detail view of the elements of the joint for the embodiment of FIG. 5.

Referring now to the details of the invention as shown in FIGS. 1 and 2, reference numeral 10 indicates generally the improved latch bar arrangement for wraparound roll covers 12. These covers 12 are made of a resilient sheet material, such as polyurethane, rubber, or other elastomer and are used singly or side-by-side in plurality to surface a backup roll 14.

The knives 16 of the main cutting die roll 18 penetrate the blank B as it passes through the process of cutting and must at all times be backed-up or a poor cut will result. A tubular sleeve cover with no joints could be used, but would require the dismantling of the machine in order to replace the cover over the drum axle. With the present cover 12, this is unnecessary and in addition, the joint is practically continuous.

This joint 10, as best shown in FIGS. 3 and 4, consists of forming both ends of the cover 12 with an offset flange 20. EAch flange 20 is provided with a shoulder 22 and these oppose each other when installed within a rectangular recess 24 cut longitudinally in the surface of the drum body 26 of the backup roll 14.

One of the ends of the cover 12 is lengthened further a short distance to form a flap 28. A latch bar 30 made of T-shaped stock is installed so as to engage the shoulders 22 of both flanges 20. The flap 28 is lifted as shown in FIG. 3 to allow screws 32 to be installed in vertical countersunk holes 34 in

the latch bar 30. These screws 32 are tapped into the drum body 26 and when the screwdriver T is removed, the flap 28 falls back on top of the latch bar 30 and the screws 32 to abut the other end of the cover 12 forming a joint 10 devoid of discontinuities and perfectly continuous in radius.

If the material from which the cover 12 is made is not capable of providing a flap 28 flexible enough to turn back, it is possible to provide the modification 40 as shown in FIGS. 5. Here, the flap 28 is provided with a drilled clearance hole 42 for access to each latch bar screw. After the latter is fastened through the latch bar 30 and the screw driver is removed, the holes 42 are filled flush with short cylindrical plugs 44 of the same material as used for the cover 12.

It should be understood that the knives 16 need not be in a single radial plane on drum 18, but may be otherwise arranged in plurality at angular relationship with each other and transversely of the web so as to completely sever an area from the blank stock B. In such circumstances it is of advantage to interchange the rolls 18 and 26 so that the knives 16 enter from above and the resulting severed area will thus be aided in falling free from the stock.

Obviously many modifications and variations of the present invention are possible in light of the above teachings. It is, therefore, to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

I claim:

1. In combination, a cylindrical roll having a transverse recess in the surface of said roll and extending in the longitudinal direction thereof, and a resilient cover sheet for said roll, said cover sheet having proximate ends positioned over said transverse recess, an offset flange on the undersurface of said cover sheet adjacent each said proximate end and projecting inwardly into said transverse recess, a shoulder on each said flange and arranged to oppose each other, with all said flanges and shoulders forming a mortise joint, a T-shaped tenon engaging all said shoulders of said sheet at said mortise joint, means for fastening said T-shaped tenon to said roll, one of the proximate ends of said cover sheet forming a flap over said T-shaped tenon and extending to abut with the other proximate end of said cover sheet, with the outer surface of said cover sheet forming a smooth continuation across said mortise joint.

2. In the combination as recited in claim 1, wherein said tenon is a T-section bar having at least one perforation, with said transverse recess having a tapped hole, with said fastening means comprising a screw passing through said perforation and engaging in said tapped hole.

3. In the combination as recited in claim 2, with said extending flap proximate end of said cover sheet covering said screw.

4. In the combination as recited in claim 3, with said extending flap proximate end of said cover sheet having an access hole therethrough at said screw, and a resilient plug for filling said access hole.

5. In the combination as recited in claim 1, wherein the abutment of said cover sheet are parallel with said T-shaped tenon.

6. In the combination as recited in claim 5, wherein the abutment of said proximate ends is adjacent said T-shaped tenon, in spaced relationship with said perforation.

7. In the combination as recited in claim 2, wherein said screw has a head countersunk in said perforation, with said T-shaped tenon lying wholly with said transverse recess.

8. In the combination as recited in claim 1, with all said flanges and T-shaped tenon transversely filling said transverse recess.