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SELF LOCKING ROLLER, TIRE AND TREAD FOUNDATION

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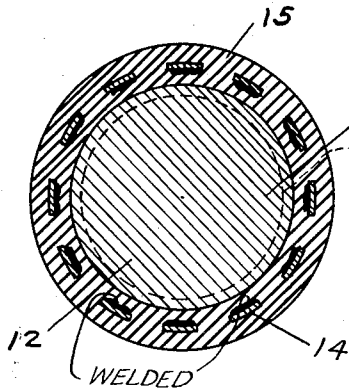


FIG. 2

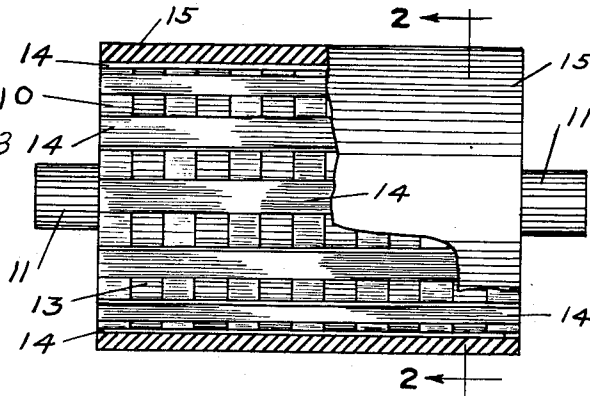


FIG. 1

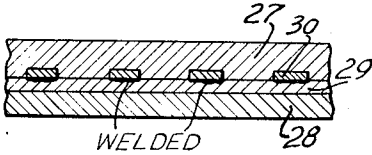


FIG. 6

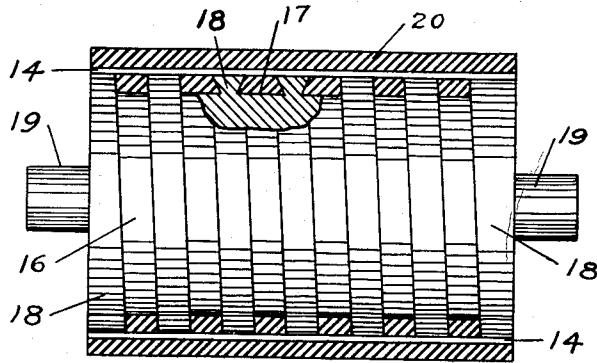


FIG. 3

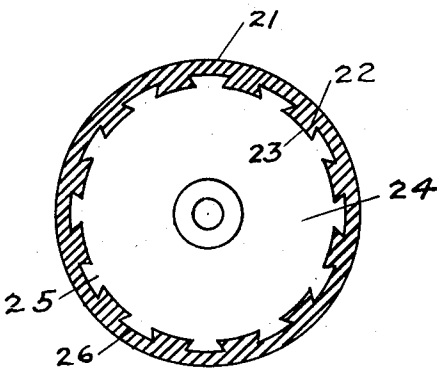


FIG. 4

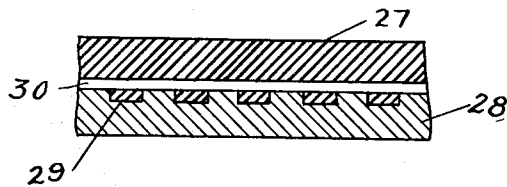


FIG. 5

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1

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SELF LOCKING ROLLER, TIRE, AND TREAD FOUNDATION

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3 Claims. (Cl. 29—129)

This invention refers to resilient rollers and treads and more particularly to those mounted on a metal foundation for use as vehicle wheels, tractor treads and for conveying sheets of material and the like through coating tanks subject to various temperatures and for use in distributing systems which feed ink from a supply, break it up into a film of uniform thickness and consistency, and transfer this ink to a printing surface.

Resilient faced rolls or tires and treads have been mounted on cores and foundations for the above mentioned purposes, but much difficulty has been experienced in securing and holding the facing to the foundation or core and the joint usually breaks down and allows the resilient material to separate from the foundation or core due to the stresses of contact and heat under which it operates.

It is therefore an object of this invention to provide a new and improved resilient faced roller or tread mounted on a metal foundation having helical undercuts of thread form in its contacting face to mechanically lock the resilient facing to the foundation.

It is an additional object of this invention to provide a new and improved foundation with under-cuts positioned in its face and spaced metal strips positioned longitudinally on the face of the foundation to form a mechanical lock to hold a resilient casing thereto, and prevent breaking the bond between the casing and foundation.

An additional object of this invention is to provide a new and improved article of manufacture comprising a metal foundation provided with grooves positioned in its face, straps longitudinally positioned on the surface of the foundation and permanently affixed thereto in spaced relation to each other.

It is an additional object of this invention to provide a new and improved foundation support for resilient rollers comprising placing a series of under-cuts in the face of the foundation, and slats positioned longitudinally along the surface of the foundation in spaced relation to each other.

Other objects will become apparent as the invention is more fully set forth.

For a clearer understanding of the invention and the objects thereof, reference is made to the accompanying drawings, wherein a particular form of the invention is indicated. These drawings when used in conjunction with the following description serve to illustrate the invention, its principles and the operation thereof, while the claims indicate the scope thereof.

In the drawings:

Figure 1 is a side elevation of a roller provided with the mechanical locking means embodying this invention for holding the resilient casing to the foundation, with parts broken away to show its inner construction;

Figure 2, is a sectional view taken along line 2—2 of Figure 1;

2

Figure 3 is a side elevation of a modified locking means for holding the resilient casing to the foundation, with parts broken away to show its inner construction;

Figure 4 shows the mechanical locking means applied to the wheel of a motor vehicle for holding the resilient tire thereon;

Figure 5 shows another application of the mechanical lock for holding the resilient treads on tractor belts; and

Figure 6 is a side view of Figure 5.

Similar reference characters refer to similar parts throughout the drawings.

In the construction shown in the drawings a foundation 10 is provided with journals 11. The enlarged portion 12 of the foundation is provided with longitudinally spaced annular grooves 13 to provide longitudinal anchor means to prevent the longitudinal movement of the resilient materials. Straps 14 are secured to the outer face of the foundation by welding to prevent the resilient material or facing 15 from pulling out of the grooves and causing a mechanical failure to the resilient roller, tire or tread.

Figure 3 shows a modified foundation 18 provided with journals 19 at its ends and grooves or slots 16 having dovetail portions 17 to form a key to hold the resilient material 20 against longitudinal and transverse movement on the foundation 18 and prevent failure of the device the mechanical locking means is used with. The flared groove or under-cut eliminates the use of the longitudinally placed straps 14 in many installations and also prevents longitudinal and transverse movement of the resilient material along the foundation.

Figure 4 shows a method for holding a resilient tire to an automobile truck wheel wherein the tire 21 is provided with dovetails 22 that fit into similarly shaped dovetailed slots 23 in the wheel 24, and dove tail keys 25 project into and fit into dove-tailed slots 26 in the tire 21.

Figure 5 shows a method for holding resilient treads 27 to a tractor belt 28 through the use of slots 29 placed in the tractor belt 28 to anchor the belt against longitudinal movement and straps 30 fastened to the face of the tractor belt or foundation prevent the treads 27 from mechanically separating from the foundation or tractor belt.

While several forms of the invention are shown in the drawings and described in the specification, it is not desired to limit this application for patent to these particular forms as it is appreciated that other forms of construction could be made that would use the same principles and come within the scope of the appended claims.

Having thus described the invention, what is claimed is:

1. In a device of the kind described, a foundation having a longitudinal axis and a circular cross-section normal to said axis, said foundation having slots on the periphery thereof, a resilient tread peripherally secured to said foundation, and straps separate and independent from the foundation and extending longitudinally and internally of said tread and longitudinally and externally of said foundation, said straps being attached to the outer face of the foundation and directly abutting the foundation of said straps preventing the disengagement of the tread from the slots.

2. A device of the kind set forth in claim 1 wherein the slots are helically arranged around the periphery of the foundation.

3. A device as set forth in claim 1 wherein the slots are spaced annularly around the periphery of the foundation.

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