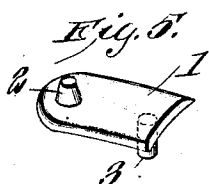
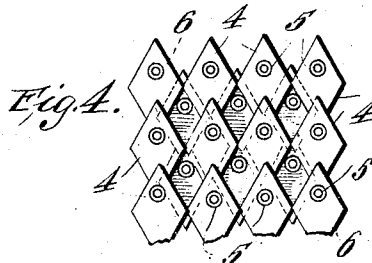
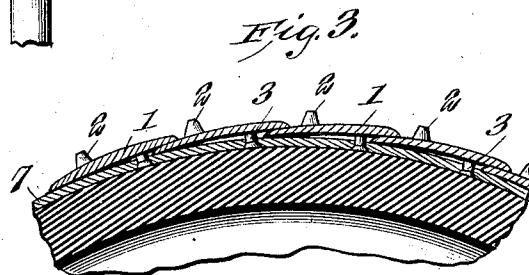
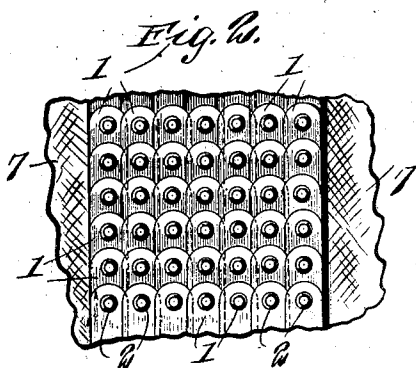
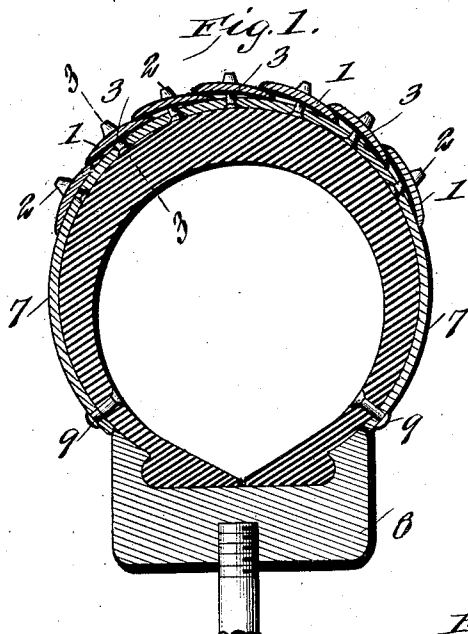


R. E. JOHNSON.
TIRE ARMOR.
APPLICATION FILED AUG. 20, 1908

937,812.

Patented Oct. 26, 1909.



Witnesses
E. M. Callaghan
H. Martin

Inventor
RUSSELLE JOHNSON
William S. Jones.
Attorney

UNITED STATES PATENT OFFICE.

RUSSELL E. JOHNSON, OF CALEDONIA, MINNESOTA.

TIRE-ARMOR.

937,812.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed August 20, 1908. Serial No. 449,476.

To all whom it may concern:

Be it known that I, RUSSELL E. JOHNSON, a citizen of the United States, residing at Caledonia, in the county of Houston and State of Minnesota, have invented certain new and useful Improvements in Tire-Armors, of which the following is a specification.

My invention relates to improvements in "armors for pneumatic tires", and the object thereof is to provide a device of the class set forth which may be attached to any type of tire to prevent puncturing and skidding of the latter.

To the accomplishment of the recited objects and others coördinate therewith, the preferred embodiment of the invention resides in that construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings and embraced within the scope of the appended claims.

In said drawings:—Figure 1 is a transverse sectional elevation of a pneumatic tire and appurtenances, embodying the application of one form of my invention. Fig. 2 is a top plan view of a portion of the armor. Fig. 3 is a fragmentary longitudinal section taken along lines 3—3 of Fig. 1. Fig. 4 is a top plan view of a modified form of armor, and Figs. 5 and 6 are perspective views of two forms of metallic elements.

Similar reference characters designate corresponding parts throughout the several views.

In carrying out my invention, I have devised an armor comprising a plurality of metallic elements, which in their organization present an arrangement that is analogous to the relatively positioned scales of a fish, and while I may vary the shape of these elements or scales at will, for the sake of illustration, I have in the present instance shown only two distinct forms, which are of suggestive scope sufficient to afford full exemplification of the principle.

Referring more particularly to the drawings, the numeral 1 designates the scales. These elements are substantially U-shaped, and are provided at their proximal ends with an upwardly extending, conoidal, anti-slipping projection (2), the other end having a depending fastening projection (3), both of said projections being constructed as integral portions of the scale. The scales (4) exhibited in Figs. 4 and 6, involve the same general features, the only deviation be-

ing that the said scales have a diamond-shaped contour. These scales are also provided with anti-slipping projections 5 and fastening projections 6.

Considering the scales as an entirety, they are comparatively thick at the center and taper from this point to each side. I also prefer to curve each element to conform to the periphery of the tire. Thus the scales are segmental in longitudinal section and arcuate in transverse section.

In use the members are arranged in overlapping series, transversely of a suitable piece of canvas, as (7), which is adapted to partially encircle the tire and be secured thereto, adjacent the junction of the canvas with the felly (8), at intervals by rivets (9). Or if desired, the armor may be applied directly to the entire exposed portion of the tire. The depending projections (3) are subsequently up-set and in this manner each scale is clenched to the canvas or the tire, as the case may be. Ample protection is afforded if the scales are arranged on the tread portion of the tire, although they may be continued until they are in proximity to the felly, when the occasion requires. In fact the anti-slipping projections may be confined to just a few rows of the scales, and eliminated from the remainder.

As contemplated by this invention it is of the utmost importance to position the scales independently of one another, in contradistinction to interlocking parts, so that the tire will not be subjected to any concentrated strain.

Another salient feature of my armor, is the adoption of integrally formed projections as a fastening medium, whereby the accumulation of dirt, mud, or the like is prevented.

This tire armor is cheap to manufacture, applied with facility, and thoroughly effective as a preventive of punctures, rupture and skidding of the tire. Furthermore, it is free to give correspondingly to the fluctuations in the size of the tire due to the variation of impending weight, and undulatory courses.

It should be understood that in its broader aspect the invention comprehends the employment not only of the various means described, but of equivalent means for performing the recited functions. While the arrangement shown is thought, at the present time, to be preferable, it is desired to reserve

the right to effect such modifications and variations thereof as may come fairly within the scope of the appended claims.

Having thus described the invention, what is claimed, is:

- 5 1. The combination with a pneumatic tire, of an armor comprising a series of non-locking elements arranged in fish scale formation, each of said elements being segmental in
10 longitudinal section and arcuate in transverse section, oppositely disposed projections arranged on the proximal ends of each element, one of said projections extending
15 downwardly and serving as a fastening means, and the other projection extending upwardly and serving as anti-slipping means.

2. The combination with a pneumatic tire, of an armor comprising a series of elements arranged in fish scale formation, oppositely disposed projections disposed on the proximal ends of each element, one of said projections extending downwardly and serving as a fastening means, and the other projection extending upwardly and serving as anti-slipping means.

In testimony whereof I hereunto affix my signature, in presence of two witnesses.

RUSSELL E. JOHNSON.

Witnesses:

FRANK STEELE,
VICTOR JOHNSON.