J. B. DUHRING.

TIRE MAIL.

APPLICATION FILED DEC. 15, 1911.

1,046,451. Patented Dec. 10, 1912.

Fig. 1.

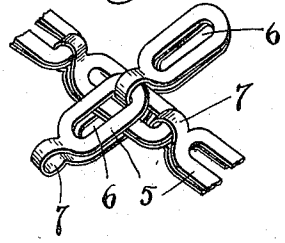


Fig. 3.

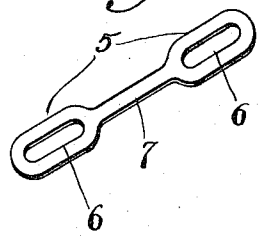
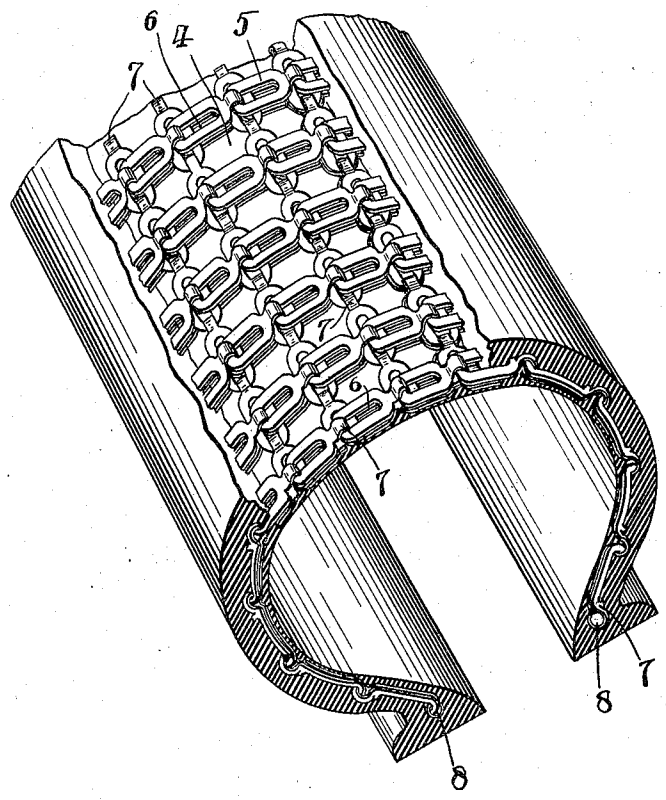


Fig. 2.



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TIRE-MAIL.

1,046,451. Specification of Letters Patent. Patented Dec. 10, 1912.

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To all whom it may concern:

Be it known that I, JOSEPH B. DUHRING, a citizen of the United States, residing at Chestnut Hill, in the county of Montgomery, State of Pennsylvania, have invented a new and useful Tire-Mail, of which the following is a specification.

My invention relates to improvements in pneumatic tires.

My object is to provide an improved reinforcement or armor for said tire.

Referring to the drawings which illustrate, by way of example, a preferred form or embodiment of my invention, Figure 1 is a perspective view of a portion of an armor or mail of cross chains with the links of one chain interlocking with the links of another. Fig. 2 is a perspective view of a portion of a tire with part of the outer tread removed showing one method of applying the armor thereto. Fig. 3 is a plan view of a link member or blank as it is struck from the sheet metal.

Similar numerals refer to similar parts throughout the several views.

The peculiar feature of the present invention is that the metallic armor 4 is made up of strands or chains formed of links 5 which are made of blanks stamped out of sheet metal in the form indicated in Fig. 3, consisting of two loops 6 and a connecting neck 7. Each succeeding link member 5 passes through the two superimposing loops 6, of the preceding link, which are bent together, and locked in the loop formed by the bent neck portion 7. This form of chain is well known, but the feature of this invention is that, in weaving the armor, each link of one chain in passing through the loops 6 of the preceding link, passes at the same time through the loops 6 of a similar link of a chain or strand running at right angles therewith; the latter link being embraced by the loops of said preceding link, so that said strands are all locked together, and yet permitting a limited play between adjacent parts. By such construction it will be noted that there is no danger or possibility of a link splitting or opening, and thus allowing the structure to break up, nor is there any necessity for soldering or welding, as would be necessary with the ordinary wire or round bar link, to prevent such danger of splitting or opening.

As applied to a pneumatic tire as indicated in Fig. 2, the terminals of the cross strands, or margins of the armor are strung on retaining wires 8, running longitudinally in the clencher portion of the tires, said wires serving to retain the margins of the armor in position. This armor serves to reinforce the outer shoe or casing of the pneumatic tire and whether embedded therein or surrounding the same, takes the strain imposed thereon.

What I claim is:—

1. Tire mail comprising crossed strands of chain links, the links of one strand inclosing in a single loop the adjacent link of said strand, and the superimposed link of a crossing strand.

2. Armor for pneumatic tires comprising crossed strands of chain links, said links formed by striking from sheet metal blanks having a pair of loop extensions and an intermediate connecting neck, said blanks being threaded through a preceding link, and through the link of a transverse strand and bent so that the two links will be superimposed, and the connecting neck will form a loop embracing said preceding link and the link of the transversely extending strand.

3. An armor for pneumatic tires comprising transverse or crossed strands of chain links, said links composed of blanks struck from sheet metal, said blanks having two loops and an intermediate connecting neck, each link member of the strands extending in one direction being threaded through the adjacent link member of said strand and also through a corresponding link member of a transverse strand so that when the said first member is bent into position the loop formed by the bent connecting portion 7 will embrace the two loops of its adjacent link member and will also embrace the two loops of a link of the transverse strand.

4. An armor for pneumatic tires comprising transverse or crossed strands of chain links, said links composed of blanks struck from sheet metal, said blanks having two loops and an intermediate connecting neck, each link member of the strands extending in one direction being threaded through the adjacent link member of said strand and also through a corresponding link member of a transversely extending strand so that when the said first member is bent into position the loop formed by the bent connecting portion 7 will embrace the two loops of its adjacent link member and will also embrace the two loops of a link of a transversely ex-

tending strand, the two loops of one strand also embracing the two loops of the transverse strand.

5. Tire mail composed of a plurality of angularly disposed strands of coöperating link elements, the link elements of one set of strands comprising parallel loops interlocked with the link elements of an angularly disposed set of strands.

6. Tire mail composed of a plurality of angularly disposed strands of coöperating link elements, the link elements of one set of strands comprising parallel loops connected together end to end intermediate the ends of the openings in the link elements of an angularly disposed set of strands.

7. Tire mail composed of a plurality of angularly disposed strands of coöperating link elements, the link elements of one set of strands comprising coöperating loop members embracing the link elements of an angularly disposed set of strands and threaded through the same.

8. Tire mail composed of a plurality of angularly disposed strands of coöperating link elements, the link elements of one set of strands movably interlocked with the link elements of a set of strands angularly disposed with respect thereto, and the exterior faces of adjacent link elements in the same sets being similarly disposed with respect to each other.

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Witnesses:
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HOWARD S. OKIE.