N° 10,850 A.D. 1894

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PROVISIONAL SPECIFICATION.

Improvements in Pneumatic Tyres for Wheels of Cycles and other Vehicles.

I, JOHN BOYD DUNLOP, Junior, of Talbot House, Blackrock, County Dublin, Student, do hereby declare the nature of this invention to be as follows :—

My invention relates to improvements in pneumatic tyres whereby the resistance to lateral displacement is increased, and the propulsion of the vehicle is rendered more easy.

According to my invention I provide an improved inexpansible cover for use in pneumatic tyres said cover being so constructed that the threads thereof forming the tread extend diagonally across the cover while the threads forming the sides of the cover between the tread and the rim extend straight across and longitudinally along the tyre.

In one method of carrying out my invention the cloth or fabric used in the construction of the inexpansible cover of the tyre, is woven or constructed on the straight, and over the tread surface of this cover I secure by means of cement, stitching, or otherwise, a band or strip woven diagonally ; or, the band or strip may be formed of parallel threads held together by cement or rubber solution said band being folded or twisted on itself so as to form two layers the threads of one layer diagonally crossing the threads of the other layer.

I may form the inexpansible cover of three pieces of cloth or fabric stitched or otherwise held together, the central or middle piece being formed of threads running diagonally across each other.

This tyre may be secured to the rim by any of the methods now in use. When I secure the tyre to the rim by means of hooks, I preferably stitch or otherwise secure to the edges of the inexpansible cover, strips or bands woven or constructed of threads extending diagonally across each other, for the purpose of holding the tyre more securely on the rim.

I may construct the inexpansible cover in any other simple manner without departing from the nature of my invention provided that the threads forming the tread extend diagonally, and those forming the sides of the cover between the tread and the rim extend straight across the tyre.

Dated this 4th day of June 1894.

HASELTINE, LAKE & Co.,
45, Southampton Buildings, London, W.C., Agents for the Applicant.

COMPLETE SPECIFICATION.

Improvements in Pneumatic Tyres for Wheels of Cycles and other Vehicles.

I, JOHN BOYD DUNLOP, Junior, of Talbot House, Blackrock, County Dublin, Ireland, Student, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained, in and by the following statement :—

This invention relates to pneumatic tyres and has for its chief object the

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prevention of the side rolling or lateral displacement to which such tyres are liable. Other objects of the said invention are to secure that the cloth canvas or fabric shall wear better and the propulsion of the vehicle shall be easier than is the case with tyres made as heretofore.

According to my invention I provide for use in pneumatic tyres an inexpansible cover so constructed that the threads thereof at the tread extend diagonally across the cover, while those at the sides extend straight across and longitudinally along the tyre. According to one method of carrying the invention into practice, the cloth, canvas or fabric forming the cover is woven or otherwise constructed on the straight—that is to say, the threads thereof are at right angles to one another and extend longitudinally and transversely across the tyre—and on the tread surface of the said cover is secured by means of rubber solution or by stitching or otherwise a band or strip of fabric in which the threads are diagonal. The said band or strip may be woven or it may be formed of parallel threads held together by rubber solution and folded or twisted on itself to form two layers the threads of one layer crossing those of the other diagonally. In a modified form of inexpansible cover I form the same of three strips of cloth or fabric secured to each other by stitches, the central strip which forms the tread being composed of threads extending diagonally and crossing each other, and the side strips being composed of threads extending longitudinally and transversely across the tyre.

When the tyre is inflated, the diagonal threads as well as the adjoining threads are in tension and, operating like the members of a lattice girder, impart increased steadiness to the tyre.

This tyre has the good wearing qualities of the straight cloth tyre combined with the speed and steadiness of the bias or diagonal thread tyre.

The tyre is built up in the usual way and secured to the rim by any of the methods now in use.

I sometimes form the cover into a tube by means of lacing through eyelet holes, or by hooks in the edges of the cover; and I sometimes secure the cover to a suitable rim by means of hooks in the edges of the cover in a manner similar to that heretofore in use.

When I use hooks or eyelet holes I strengthen the edges of the cover by the addition thereto of strips or bands composed of diagonal threads, secured in place by stitching or otherwise.

I may construct the inexpansible cover in any other simple manner so that the threads at the tread, extend diagonally across the tyre and those composing the sides of the cover extend directly across and not diagonally.

In the accompanying drawings

Figure 1 is a plan of a small portion of an inexpansible cover, constructed according to my invention.

Figure 2 is a transverse section of a tyre also made according to my invention.

A is the diagonal centre strip or tread portion of the inexpansible cover; B, B are the parts which ultimately form the sides of the tyre and which are composed of straight cloth or fabric; C, C are the edges formed with diagonal threads and provided with eyelet holes C^1. D is the outer rubber cover.

The diagonal threads at A may wholly compose the tread portion of the cover, or they may be applied over the part B as shown in Figure 2.

In Figure 2 which is a section of a tyre secured in place on the rim by means of endless cores contained in the edges of the tyre, the said edges are made of straight fabric similar to the parts B, B.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is :—

1. An inexpansible cover having diagonal threads composing its centre or tread portion, or applied to the tread portion, transverse and longitudinal threads (but

not diagonal threads) at its sides, and with or without diagonal threads at its edges, substantially as, and for the purpose, described.

Dated this 4th day of March 1895.

HASELTINE, LAKE & Co.,
45, Southampton Buildings, London, W.C., Agents for the Applicant.

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DUNLOP'S COMPLETE SPECIFICATION. (1 SHEET)

Fig.1.

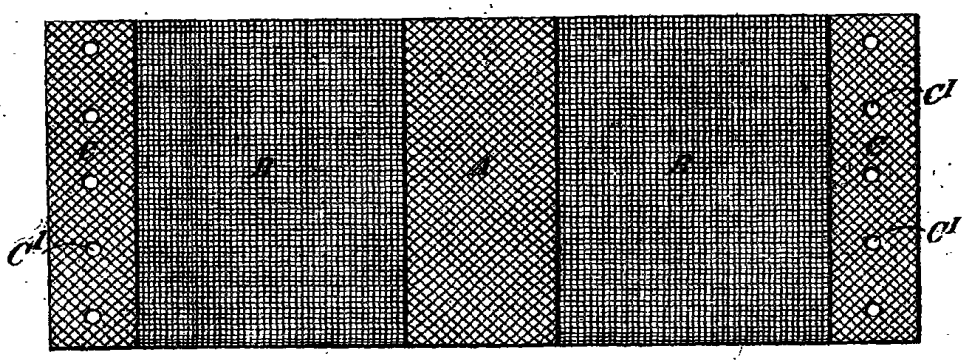
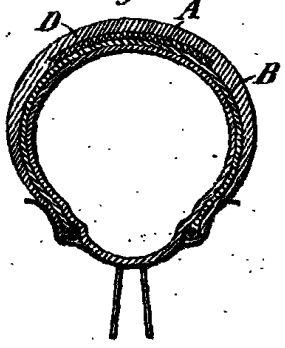


Fig.2.



[This Drawing is a reproduction of the Original on a reduced scale]

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