

F. FENTON.
 INNER TUBE FOR PNEUMATIC TIRES.
 APPLICATION FILED JAN. 18, 1916.

1,190,744.

Patented July 11, 1916.

Fig. 1.

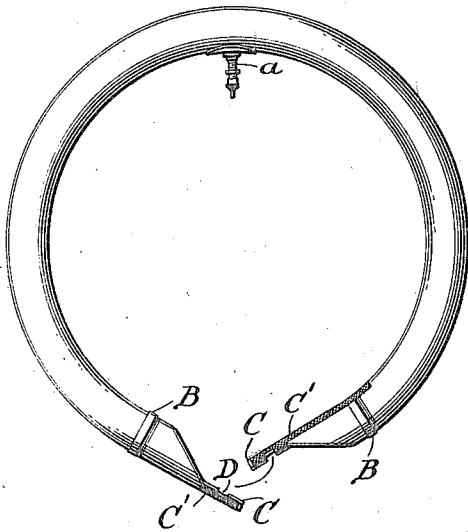


Fig. 2.

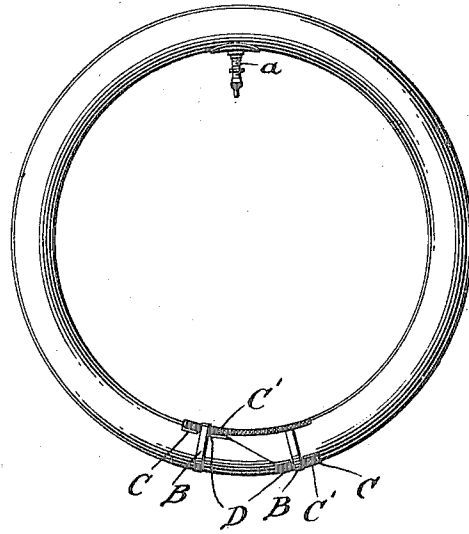


Fig. 3.

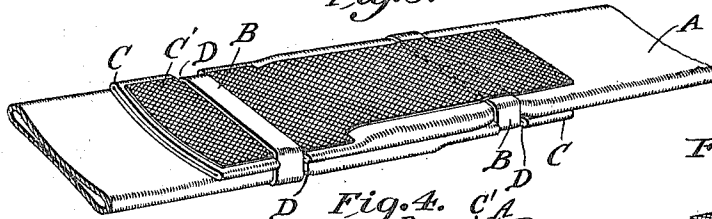


Fig. 4.

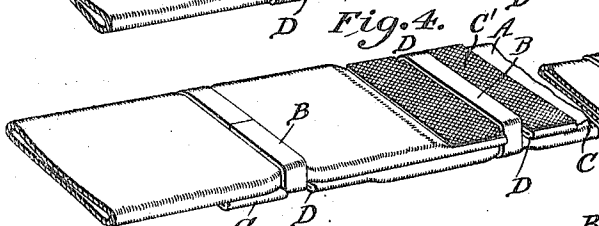


Fig. 6.

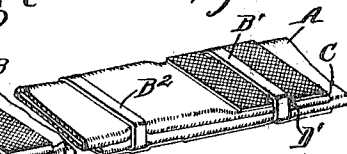
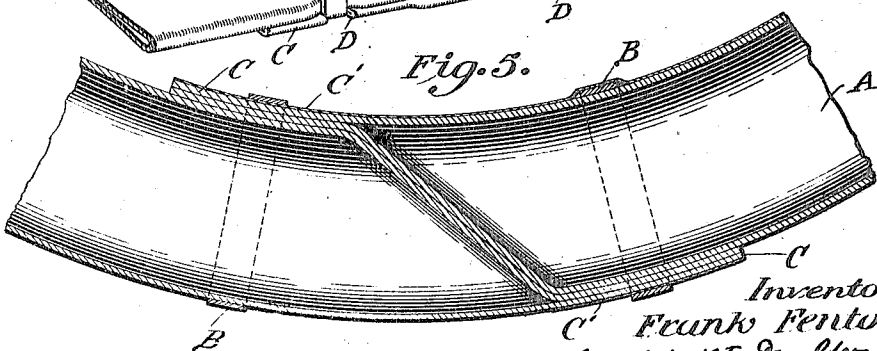


Fig. 5.



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UNITED STATES PATENT OFFICE.

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INNER TUBE FOR PNEUMATIC TIRES.

1,190,744.

Specification of Letters Patent.

Patented July 11, 1916.

Application filed January 16, 1916. Serial No. 72,753.

To all whom it may concern:

Be it known that I, FRANK FENTON, a citizen of the United States, residing at Akron, Ohio, have invented certain new and useful Improvements in Inner Tubes for Pneumatic Tires, of which the following is a specification.

My present invention relates to improvements in inner tubes for pneumatic tires and is designed to provide a tube of divided form as distinguished from the endless tube, such divided form of tube adapting it particularly for use in connection with motorcycles in that it can be removed from and inserted within the outer case or shoe of the wheel without removing such wheel from the motorcycle frame, as is the case where an endless tube is used.

The invention includes the novel features of construction hereinafter described and particularly defined by the following specification and pointed out in the appended claims.

Several embodiments of my invention are shown in the accompanying drawings, in which—

Figure 1 is a side elevation of one form of my invention with the ends separated. Fig. 2 is a similar view with the ends connected. Figs. 3 and 4 are enlarged perspective views of opposite sides of the overlapping ends uninflated. Fig. 5 is a longitudinal sectional view showing said parts as they appear when the tube is inflated. Fig. 6 is a perspective view of a modified form.

Referring by reference characters to these drawings, the letter A designates the inner tube provided with the usual valve stem *a*. In constructing my improved inner tube, I form the divided portion at a point remote or spaced from the valve stem, and these divided or separate ends are flattened or closed in a suitable manner, as by vulcanizing the opposing walls together for a portion of their length, as indicated at C. These ends are brought together and overlapped after the tube has been placed within the outer case or shoe and in order to hold them together, I provide suitable connecting means, such connecting means being such as not to interfere with the resiliency of the tire at the point of overlap, as otherwise a bump or jar would be imparted to the vehicle at each rotation of the wheel. A form of means which I have found desirable for effecting such

connection, is shown in Figs. 1 to 5, in which each end portion of the tube is provided a short distance back from the flattened portion with an annular elastic band, indicated at B, which is adapted to engage with notches D formed in the edges of the flattened portion of the tube end, when such ends are overlapped. These bands are preferably formed of rubber and secured to the inflatable portion of the tube by vulcanizing, though it is not absolutely necessary that they should be secured to this tube, though by having them permanently attached thereto danger of loss or displacement of the bands is prevented. From the construction shown in said Figs. 1, 2, 3, 4 and 5, it will be seen that each flattened and notched end portion of the tube is slipped under and engaged by the band of the opposing end of the tube, which band rests in the notched portion and a double locking connection between the two ends is, therefore, effected, which interferes in nowise with the resiliency or expansibility of the tube as a whole.

I prefer to reinforce the notched portions of the tube with a fabric layer, as indicated at C', and preferably extend the fabric on the inner or rim side of the tube, so as to cause it to overlap the band B of the opposite end portion.

In the construction shown in Fig. 6, I carry both bands by one end of the flap, one of these bands B' being secured to the inflatable portion of the tube and the other B² to the flattened portion. In this construction only one of the flattened ends is notched, as indicated at D' to be engaged by the band B', the other band B² simply encircling the inflatable portion of the tube.

What I claim is:—

1. An inner tube for inflatable tires having flattened overlapping ends, one of said flattened ends being provided with notches in its sides and a band of flexible material engaging said notches and encircling an inflatable portion of the other overlapping end, substantially as described.

2. An inner tube for inflatable tires having flattened overlapping ends with plain exterior surfaces free from projections, one of said ends having a wide flat band of flat rubber vulcanized to the exterior surface thereof and encircling the other end.

3. An inner tube for inflatable tires having end portions with the walls vulcanized together to form flat closed ends, said ends

having smooth exterior surfaces and overlapping each other, with the closed part of each end extending beyond and overlying the inflatable part of the adjoining end, and
5 a pair of flat elastic bands encircling said closed ends and the corresponding inflatable parts.

4. An inner tube for pneumatic tires having overlapping closed ends, one of said
10 ends being flattened and adapted to overlie

an inflatable portion of the other end and being provided with notched edges, and a flat band of flexible material encircling said overlapping ends and engaging said notches.

In testimony whereof, I affix my signature 15
in presence of two witnesses.

FRANK FENTON.

Witnesses:

WILLIAM E. GREER,
T. D. PIERSON.