

R. L. PRUDHOMME.
 AUTOMOBILE TIRE.
 APPLICATION FILED AUG. 9, 1919.

1,342,297.

Patented June 1, 1920.

Fig. 1.

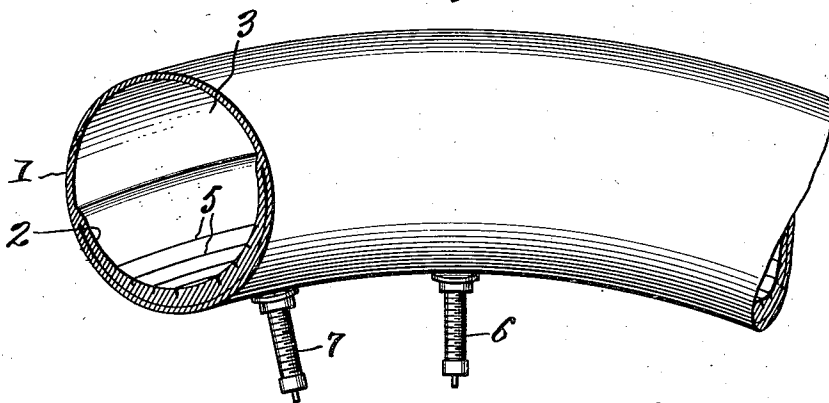


Fig. 2.

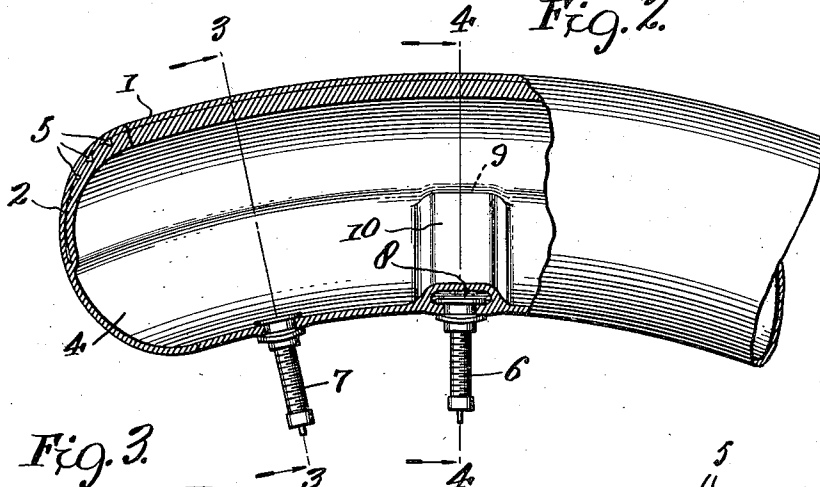


Fig. 3.

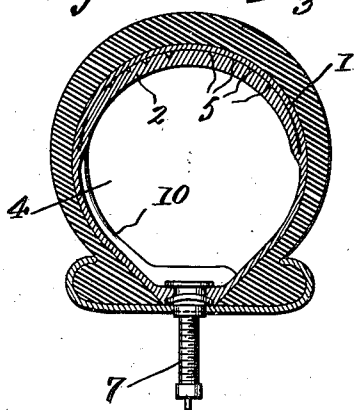
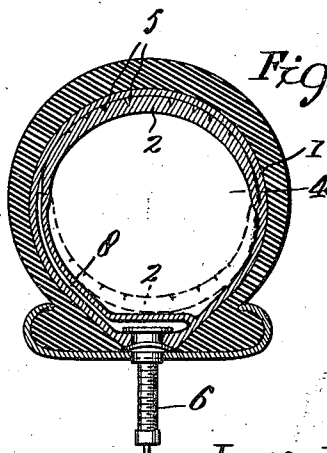


Fig. 4.



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UNITED STATES PATENT OFFICE.

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AUTOMOBILE-TIRE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT L. PRUDHOMME, a citizen of the United States, residing at Natchitoches, in the parish of Natchitoches and State of Louisiana, have invented certain new and useful Improvements in Automobile-Tires; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in pneumatic tires for automobiles, and consists more particularly in an improved inner tube having separate chambers, one of which is inflated to normally support the vehicle, while the other may be collapsed and only inflated in the emergencies where, for instance, the first chamber becomes punctured.

In the accompanying drawings forming a part of this application, and in which similar reference symbols indicate corresponding parts in the several views:

Figure 1 is a perspective view of a section of an inner tube constructed in accordance with the present invention.

Fig. 2 is a similar view shown partly in longitudinal section.

Fig. 3 is a cross sectional view taken on the line 3—3 in Fig. 2; and

Fig. 4 is a similar view taken on the line 4—4 in Fig. 2.

Referring more particularly to the drawings, 1 designates an inner tube, which may be identical in all substantial respects with inner tubes as at the present time constructed and in use, with the exception that, in accordance with the present invention, said inner tube 1 is provided with a partition 2 that is intended to divide same into outer and inner circumferentially extending chambers 3 and 4.

The partition 2 is also made of the same rubber with the inner tube 1, and the edges of the partition merge with the side walls of the inner tube substantially midway between the base and tread of such tube, as clearly shown in the drawings, so that such partition 2 divides the tube as nearly as practicable into two equal compartments. This partition 2 is formed of an increased thickness in the central or tread part thereof, or in other words reinforced with suitable material and harder on the outer

surface, and toward the sides of the partition the same tapers off gradually until, where the partition merges with the sides of the inner tube 1, the same is relatively thin, forming a pliable joint between the partition and inner tube about which the partition may move to an inner position, as shown in Fig. 1, or an outer position, as appears in Fig. 2. The outer side of the partition 2 is provided with longitudinally extending cuts or grooves 5, which may be of various sizes and depths and which are intended to break the stiffness of the partition and avoid strain on the material of which the same is constructed.

The valve stem 6 is furnished for supplying air to the outer chamber 3, and a second valve stem 7 is used to supply air to the inner chamber 4. As shown in Figs. 2 and 3, the valve stem 7 communicates directly with the inner chamber 4 in the manner that valve stems at the present time are connected with inner tubes; but the valve stem 6 must be secured to the base of the inner tube 1 and at the same time supply air to the chamber 3 above the partition 2, so that it becomes necessary to provide a slot 8 and channel 9 within the inner tube 1, the air passing laterally through this channel to chamber 3, the slot and channel being formed by additional thicknesses 10 of the rubber at the places where the slot and channel are wanted, and the slot and channel are formed between the additional thicknesses 10 and the normal wall of the inner tube 1. The channel 9, as indicated in Fig. 2, opens upwardly into the outer chamber 3 and delivers the air thereto necessary for inflation.

In use the valve stem 6 is employed to inflate the outer chamber 3, and the inner tube is in the condition shown in Fig. 1. Here the outer chamber 3 is inflated and the partition 2 collapsed against the base of the inner tube 1. The outer chamber 3, therefore, normally sustains the weight of the shoe and vehicle resting thereon, and this condition continues until the inner tube 1 becomes punctured or develops a leak. In case of such emergencies the inner chamber 4 may be inflated by connecting the valve stem 7 to a pump, and the inflation of this inner chamber 4 causes the partition 2 to move out of the collapsed position shown in Fig. 1 and up against the tread portion of the inner tube 1, as shown in

Figs. 2, 3 and 4. There is thus presented a second chamber which is unaffected by the puncture or leak in the tread of the inner tube 1, and which may sustain the vehicle until a garage or service station is reached, whereupon the punctured tread of the inner tube 1 may be repaired.

It will therefore be seen that the improved tire eliminates the necessity of changing or repairing a tire at the time of puncture or collapse from other causes, but provides for the immediate re-inflation of the tire.

The double thickness in the base of the inner tube 1, which occurs from the presence of the partition 2, tends to eliminate rim cuts, which are quite common occurrences in tubes as used at the present time.

By inflating the inner chamber 4 slightly while the outer chamber 3 is in use, as shown in Fig. 1, the air in this inner chamber 4, although slight, would support the inner tube as soon as the outer chamber 3 became punctured and before the motorist could stop. This eliminates the possibility of injury from running, even though a short distance, on a flat tire.

It is obvious that those skilled in the art may vary the details of construction and arrangements of parts without departing

from the spirit of my invention, and therefore I do not wish to be limited to such features except as may be required by the claim.

I claim:

An inner tube for use in pneumatic tires, comprising a continuous expansible tube, a continuous flexible partition mounted on the inside of said tube and having its opposite edges secured to and forming an air-tight joint with the opposite inner walls of said tube, whereby said tube is divided into two separate concentric annular chambers, the one exterior to the other, and said partition being crescent-shaped in cross section and having its greatest thickness midway between the edges thereof, said partition being also provided with annular grooves in the outer wall thereof to render it more flexible, with means for inserting air under compression into said tube at either side of said partition, as desired, whereby the thickened portion of said partition may be caused to fold inward into the inoperative position, or may be pressed outward into engagement with the inner wall of the tread portion of said tube, substantially as described.

ROBERT L. PRUDHOMME.