J. H. HAMLIN.
INNER TUBE FOR AUTOMOBILE TIRES.
APPLICATION FILED FEB. 25, 1918.

1,282,690. Patented Oct. 22, 1918.
2 SHEETS—SHEET 2.
To all whom it may concern:

Be it known that I, JOSEPH H. HAMLIN, a citizen of the United States, and a resident of Winston-Salem, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Inner Tubes for Automobile-Tires, of which the following is a specification.

My invention is an improvement in inner tubes for automobile tires, and has for its object to provide a tube composed of strips of tempered steel arranged circumferentially of the tire and secured to rings that fit within the tire, the strips being connected at spaced intervals by cross coil springs to insure the fit of the casing to the wheel.

In the drawings:

Figure 1 is a side view of a wheel having the improved inner tube, with parts broken away;

Fig. 2 is a transverse section of the tire and tube;

Fig. 3 is a side view of the tube removed;

Fig. 4 is a transverse section of a modified form of tube.

The embodiment of the invention shown in Fig. 1 is shown in connection with a shoe or casing 1, mounted upon the wheel 2 of an automobile 3, the casing being of the clencher type and supported by the rim 4 in the usual manner. The inner tube comprises a series of arched strips 5 of tempered steel, shaped to fit the inner surface of the shoe or casing, and these strips are secured to rings 6 at their ends, and to a band 7 intermediate their ends.

The rings 6 and the band 7 are riveted to the strips, as indicated at 8 and 9, the heads of the rivets 9 being countersunk, as shown in Fig. 2. At suitable intervals the ends of certain strips are connected by cross coil springs 10, the ends of each spring being connected with the strips or with the rings 6.

The band 7 is at the tread of the tire, and it will be evident that when the tube is in place in the shoe or casing the said shoe or casing will be practically puncture-proof, the strips and band forming a resilient armor for the casing.

When the improved tube is used for heavy trucks, it is preferable to use the form shown in Fig. 4. In this construction the strips 11 are connected intermediate their ends by a series of bands 13, three bands being used in the present instance, and the said bands as well as the rings are riveted to the strips. The coil springs 10 may be used in this construction as well as in that shown in Figs. 1, 2 and 3. The strips and the rings and bands will be of suitable weight for the purpose intended, lighter strips, rings and bands being used for lighter vehicles.

In practice, several rivets will be used to connect each strip to the rings and bands, instead of one as shown.

It will be noticed from an inspection of Fig. 2 that the cross springs 10 are between the flanges of the rim 4, and these springs hold the clencher or holding ribs of the shoe or casing tang against the rim flanges, to keep the casing from jumping off the rim. They also prevent the casing from slipping.

In both constructions, in addition to the cross springs 6, other springs 15 are used, arranged between the centers of the strips 5 and the rim. The cross springs 6 assist in holding the holding ribs of the shoe or casing in engagement with the flanges of the rim 4, and the springs 15 assist in imparting resiliency to the tire tube.

I claim:

In combination with a shoe or casing, an inner tube consisting of a series of tempered strips arched to fit the transverse curve of the shoe and to engage the outer face of the rim at their ends, rings connecting the said ends, coil springs arranged between the ends of the strips, a connection between the strips at their centers, and coil springs arranged between the centers of the strips and the rim.

JOSEPH H. HAMLIN.

Witnesses:

THOS. E. KAPP
J. CLAUDE NICHOLSON.