

E. L. A. OLIVIER.
RESILIENT TIRE FOR WHEELS.
APPLICATION FILED JAN. 3, 1907.

1,054,444.

Patented Feb. 25, 1913.

Fig. 1.

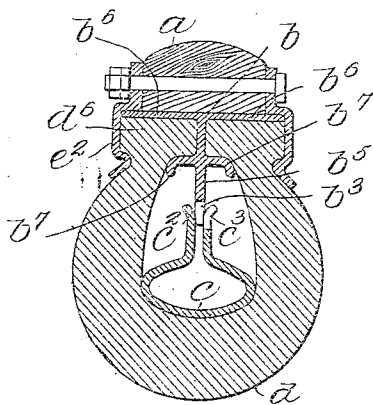


Fig. 2.

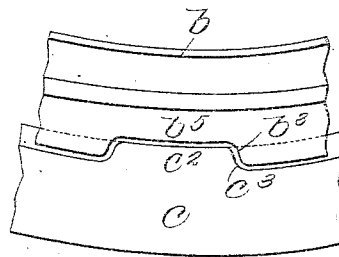


Fig. 3.

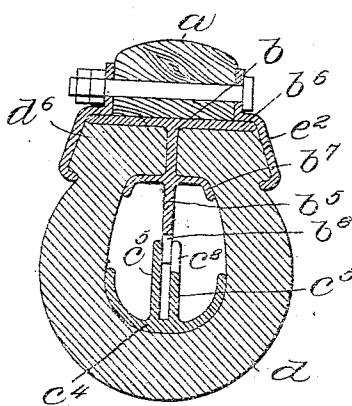
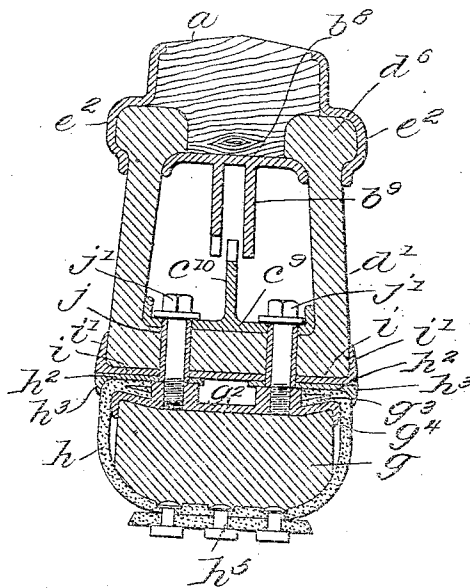


Fig. 4.



WITNESSES

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RESILIENT TIRE FOR WHEELS.

1,054,444.

Specification of Letters Patent.

BEST AVAILABLE COPY
Patented Feb. 25, 1918.

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To all whom it may concern:

Be it known that I, ETIENNE LOUIS AUGUSTE OLIVIER, a citizen of the Republic of France, residing at 17 Place de la Madeleine, Paris, in the Republic of France, barrister, have invented certain new and useful Improvements in Resilient Tires for Wheels, of which the following is a specification.

This invention relates to an improved resilient tire for vehicle wheels of all kinds, which comprises two circular bands or rings placed the one around the other, and connected together by a cover of rubber or other similar resilient material under tension.

My improved tire differs from a pneumatic tire, in that the lateral walls of the cover are extensible and that the usual air chamber is replaced by a rigid ring capable of moving freely with respect to the felly, the said rigid ring maintaining the cover constantly under tension.

In the accompanying drawings which show several ways in which this invention may be carried out, Figure 1 is a transverse section of the improvement. Fig. 2 is a partial elevation of the rigid circular bands or rings of the tire shown in Fig. 1. Figs. 3 and 4 are transverse sections of modifications.

Referring to Fig. 1 of the drawings, *a* designates a wooden felly similar to that of a wheel as now used for motor-cars; *b* is a steel band or ring inclosing tightly the wooden felly. The said band or ring comprises a web *b^s* and lateral flanges *b^a*, and also two lateral ribs *b^r*. On the web of the band or ring *b* is slidable an outer band or ring in the shape of a split tube *c*, the edges *c^a* of which are outwardly bent and have between them a space in which the web *b^s* of the ring *b* slides. To allow of the insertion of the web *b^s* of the ring *b* into the ring *c*, one of the edges of the latter and the web of the ring *b* are provided, as shown in Figs. 1 and 2, with a number of suitable slots *b^s* and *c^a*. After the insertion of the ring *b* into the ring *c*, the one is turned with respect to the other in such a manner as to bring the solid portions in front of each other.

d designates a resilient cover, stretched on to the band or rings *b* and *c*; the said cover is provided with heels or shoes *d^a*, which fit between the flanges *b^a* and the ribs *b^r* of the band or ring *b*, and are held therein by annular side flanges *e^a*, bolted to the felly. When free the cover *d* has an inner diameter

smaller than the outer diameter of the annular band or ring *c*. In Fig. 3 a ring *b* similar to that shown in Fig. 1 is employed, but the outer ring *c^a* has projecting centrally therefrom parallel flanges *c^b*, between which the web *b^s* of the ring *b* slides. The web *b^s* of the ring *b* and one of the parallel flanges *c^b* of the ring *c^a* are provided with slots *b^s* and *c^a* to allow of their becoming engaged the one with or in the other, as hereinbefore described with reference to Figs. 1 and 2. In the form shown in Fig. 4 the rigid ring *c^a* holds stretched a U-shaped rubber cover *d'*, the lower edges of which are secured on the sides of the rim or felly *a* by lateral annular flanges *e^a*. The periphery of the cover *d'* is surrounded by a flanged ring *i*, having its flanges *i^a* directed toward the center of the wheel. The cover also comprises a rubber ring *g*, set in a ring *g^a*, of a larger diameter than that of the ring *i* and having inclined faces *g^a* and flanges *gⁱ*. A leather cover *h* surrounds the ring *g* and has its ends extending between ring *g^a* and the rings *h^a* having flanges *h^a*, and arranged between the ends of the leather cover *h* and the ring *i*. If desired the rings *h^a* and *g^a* may be secured together by screws or bolts. The parts *g^a*, *h*, *h^a* are adjustable on the ring *i* and are firmly secured on the latter by means of sleeves *j* and bolts *j'*, the said sleeves also serving to limit the degree to which the portion of the cover *d'*, between the rings *c^a* and *i* is clamped under the action of the bolts *j'*. The flanges *h^a* of the rings *h^a* project in an opposite direction to the flanges *i^a* of the ring *i*, and the said flanges together form waddings or fillets which afford efficient protection for the sides of the cover against lateral jarring. The tread cover *h*, is provided with any suitable means as shown at *h^a* for preventing skidding, and is independent of the rim or felly and of the rubber cover or crown *d'*; hence it does not interfere in any way with the operation of the said rubber crown, it can neither heat nor injure the same through friction. In this case the ring *b^s* is provided with spaced flanges *b^a* integral therewith and the ring *c^a* with the web *c^b* projecting between the said flanges.

The number of the different embodiments of the invention may be increased in several ways by combining the features of each of those hereinbefore described.

In all of the modifications, the cover is

made of rubber or other very resilient material, and its resiliency, and particularly the lateral portions thereof is not affected by the cloth or other similar materials now
5 used in pneumatic tires. It is essential that the said cover shall act substantially in the manner of a spring or, better still, of a continuous series of springs, constantly kept under tension between the rigid rings *b* and *c*.

10 I claim—

A resilient tire for vehicle wheels, comprising a rigid ring having a web the edge of which is provided with slots, a rigid
15 ring having a U-shaped web, one of the sides of the said web being provided with corre-

sponding slots for the passage of the solid portions of the other ring, and a U-shaped rubber cover the bight of which passes on the outer ring and the edges of which are secured to the inner ring, the sides of the said
20 cover being radially stretched in all its parts at one and the same time.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

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Witnesses:

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