

J. BROPSON.
TIRE.

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1,027,983.

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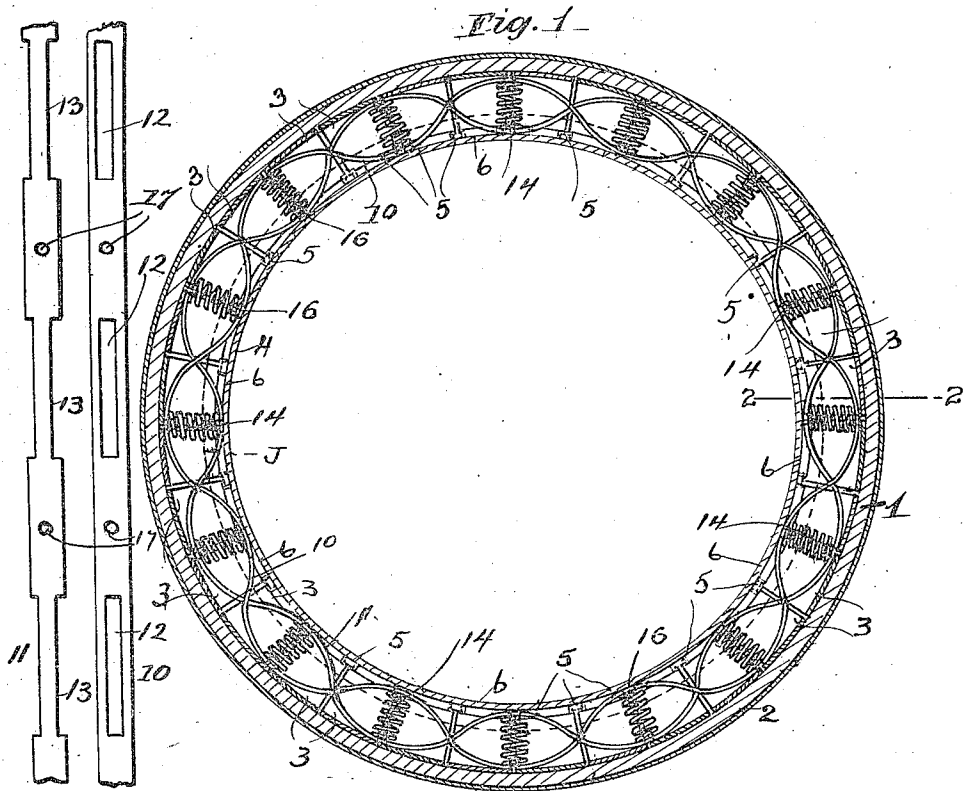
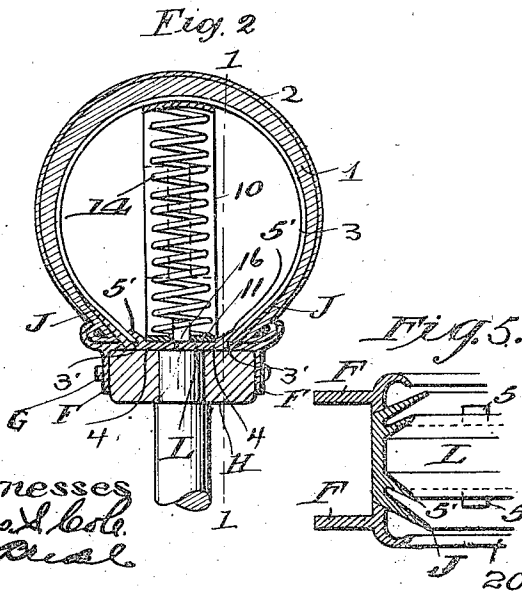


Fig. 3 Fig. 4



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TIRE.

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Patented May 28, 1912.

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To all whom it may concern:

Be it known that I, JAMES BROPSON, a citizen of the United States, and resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Tires, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to resilient tires and the object is to provide improved mechanical means for supporting a tire upon a rim in such manner that a maximum degree of resiliency will be afforded without danger to the tire by reason of puncture, which ordinarily destroys for the time being the usefulness of a pneumatic tire.

In the accompanying drawings forming part of the application, Figure 1 is a view of my device partly in vertical section and partly in elevation, the section being on the line 1—1 of Fig. 2. Fig. 2 is a transverse section on the line 2—2 of Fig. 1. Fig. 3 is a detail view of one of the resilient bands. Fig. 4 is a view of the complementary resilient band, and Fig. 5 is a detail showing the arrangement of the flanges on the rim.

In carrying out my invention, I make use of a rim 4 provided with flanges F arranged to overlap the edges of the felly H of the wheel, these flanges being secured by means of bolts G. The flanges F are separate from the body portion of rim 4 but coact therewith as hereinafter set forth. Upon the rim I mount a series of arched springs 3, these springs supporting the tire proper, indicated by the numeral 1, which is shown as being provided with an outer covering 2 of leather or other suitable material.

The body portion of rim 4 is provided with a plurality of flanges extending outwardly therefrom on the side opposite to the aforesaid flanges F. These outwardly extending flanges are indicated by the characters 5' and J and are spaced from the extreme outer flanges 20, intended to receive the edges of the tire, and are also spaced from an imaginary line running centrally of the rim and circumferentially thereof in order to form a central channel L in which the resilient bands mentioned below are disposed. These resilient bands are indicated respectively by numerals 10 and 11, the former being provided with slots 12 and the

latter with narrowed portions 13, such narrowed portions entering the slots. The resilient bands are of wave-like formation and are curved in opposite directions as shown in Fig. 1 in order to form loops at intervals about the circumference of the rim. Between the intermediate flanges 5' and J the respective edges of the arched springs 3 are disposed, and the resilient bands pass between the rim and the central portion of the arched springs 3.

Arranged centrally of each of the loops formed by the spring bands are coil springs 14 which encircle at their lower ends lugs 16 projecting outwardly from the rim. These lugs also pass through apertures 17 in bands 10 and 11, and serve to hold the said bands in proper position, but do not affect the resiliency thereof. The arched spring members are spaced apart as shown in the drawings and are prevented from movement about the rim by means of lugs 5 located at suitable intervals, forming sockets 6.

I claim:

1. In a device of the character described the combination with a felly of a rim structure comprising a body portion having adjacent each edge upon its outer peripheral face a pair of outwardly inclined flanges, and a pair of casing retaining flanges co-operating with said body portion, a series of spaced, arched springs disposed transversely with relation to the rim and having their terminal ends disposed between the outwardly inclined flanges of said pairs of flanges, a plurality of bands of resilient material extending circumferentially of the rim and within said arched springs, said bands being alternately bowed in opposite directions and bearing at intervals against the rim and the arched springs, and an inclosing tire casing held in place by said casing retaining flanges.

2. In a device of the character described the combination with a felly of a rim structure comprising a body portion having adjacent each edge upon its outer peripheral face a pair of outwardly inclined flanges, and a pair of casing retaining flanges co-operating with said body portion, a series of spaced, arched springs disposed transversely with relation to the rim and having their terminal ends disposed between the outwardly inclined flanges of said pairs of

flanges, a plurality of bands of resilient material extending circumferentially of the rim and within said arched springs, said bands being alternately bowed in opposite
 5 directions and bearing at intervals against the rim and the arched springs, an inclosing tire casing held in place by said casing retaining flanges, and resilient devices bearing between the bowed bands at spaced points
 10 and tending to keep said bands separated.

3. In a device of the character described the combination with a felly of a rim, casing retaining flanges located at the opposite edges of said felly, a rim body portion
 15 disposed between said flanges and having upon its outer face annular spring retaining flanges, a series of spaced arched springs, having their terminal portions en-

gaged by the last named flanges, a tire casing surrounding said springs, a plurality
 20 of bands of resilient material and of sinuous formation, lugs projecting outwardly from the rim body portion, said bands being provided with apertures in which said lugs engage, springs disposed at intervals between
 25 said bands, one end of each of the last named springs engaging with one of the said lugs and means for spacing the arched springs apart.

In testimony whereof, I hereunto set my
 30 hand this 27th day of April 1910.

JAMES BROPSON.

In presence of—

GEO. S. COLE,

WM. M. MONROE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."