H. A. SCHNITTKER.

RESILIENT WHEEL.

APPLICATION FILED FEB. 23, 1918.

1,284,472.

Patented Nov. 12, 1918.

2 SHEETS—SHEET 1.

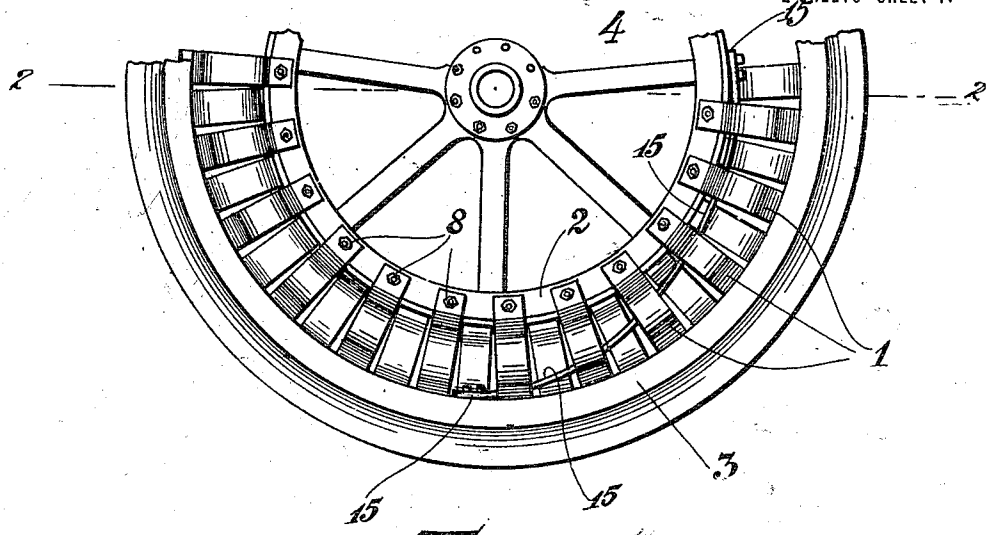


Fig. 1.

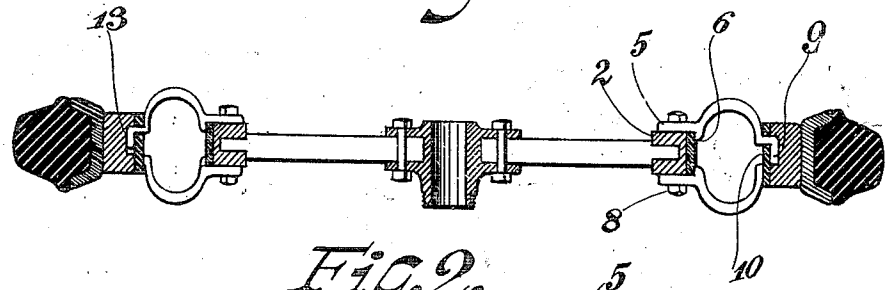


Fig. 2.

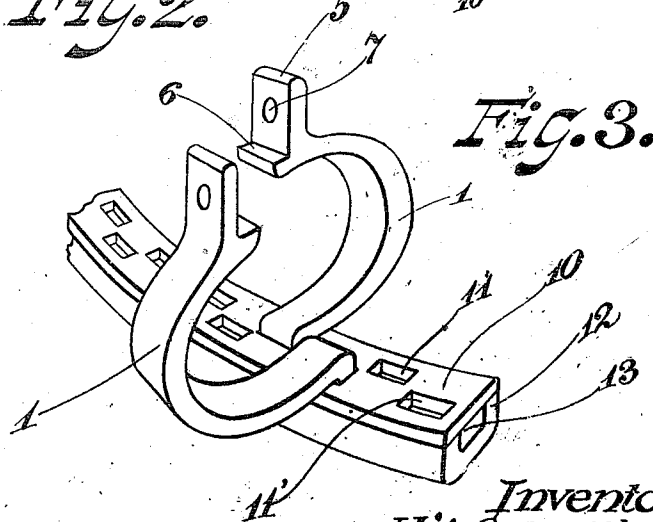


Fig. 3.

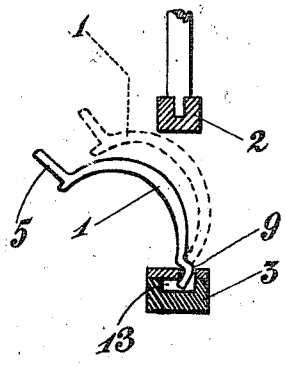


Fig. 4.

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2 SHEETS—SHEET 2.

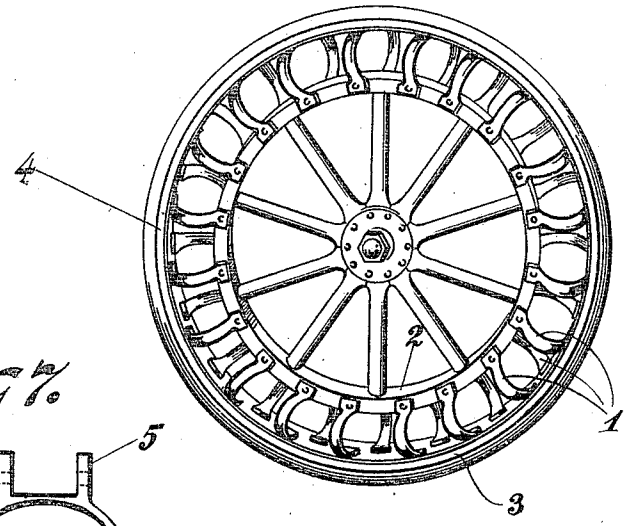
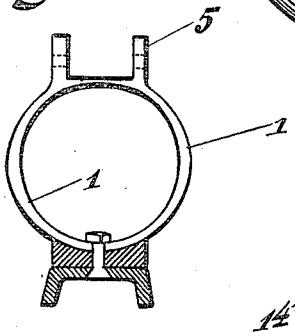


Fig. 5

Fig. 7.



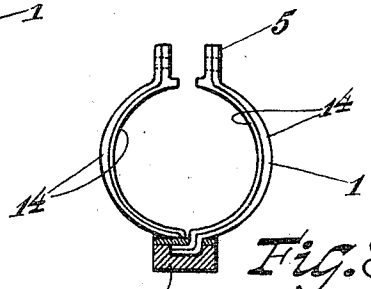


Fig. 8.

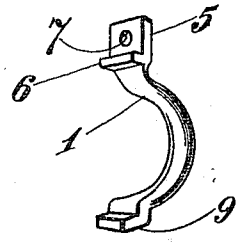


Fig. 6.

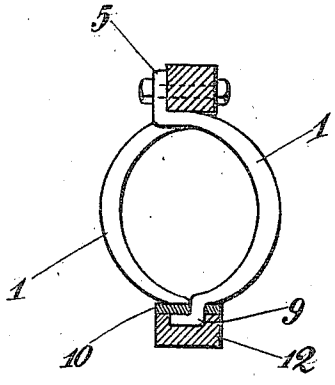


Fig. 9.

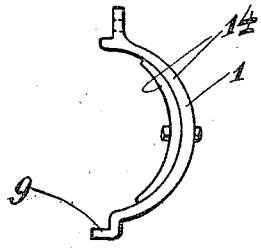


Fig. 10.

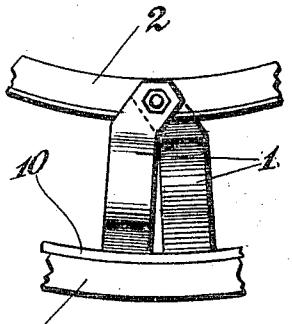


Fig. 11.

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UNITED STATES PATENT OFFICE.

HENRY A. SCHNITTKER, OF ST. LOUIS, MISSOURI.

RESILIENT WHEEL.

1,284,472. Specification of Letters Patent. Patented Nov. 12, 1918.

Application filed February 23, 1918. Serial No. 218,674.

To all whom it may concern:

Be it known that I, HENRY A. SCHNITTKER, a citizen of the United States, residing in the city of St. Louis, State of Missouri, have invented new and useful Improvements in Resilient Wheels, of which the following is a specification, reference being had to the accompanying drawing.

This invention relates to resilient wheels, especially to automobile wheels, and the purpose is to provide a wheel of this character in a practical and economical form; one which may be produced at a low cost, and having its parts interchangeable so as to be readily repaired in case of breakage.

A further object is to produce such a wheel in a metallic spring, and wood or metal construction obviating the use of inner tubes and casings.

With these and other objects in view as will appear in the course of this specification, attention is called to the accompanying drawings; wherein—

Figure 1 shows a side elevation of a wheel constructed on the principle of my invention;

Fig. 2 shows a transverse section taken on the line 2—2 in Fig. 1;

Fig. 3 shows a detail of my improvement illustrating the method of assembling the spring forks in connection with the tread of the wheel;

Fig. 4 is a further detail showing one of the spring forks, and method of inserting same into the tread;

Fig. 5 is a perspective of a wheel assembly complete, employing a round form of fork as shown in Fig. 6;

Fig. 6 is a detail showing a round form or modification of a spring fork;

Fig. 7 is a detail showing another modification of the spring fork construction, wherein two of the forks are joined integrally to form a complete circle;

Figs. 8 and 10 are details showing a method of building up the spring forks by means of leaves for the purpose of giving greater resiliency;

Fig. 9 illustrates a method of mounting the forks in reversed order as distinguished from the mountings shown in other figures;

Fig. 11 is a detail showing how the arms of the forks engaging the inner rim may be bent toward one another so that one bolt will suffice to secure two oppositely disposed forks.

Referring more particularly to the drawings, my invention resides in the combination of a plurality of spring forks 1 alternately disposed between the inner rim 2 and the outer tread 3 of any automobile or other vehicle wheel represented as a whole by 4. The spring fork 1 is formed substantially U-shaped in cross section, and one arm of each fork is turned outwardly substantially at right angles so as to form the shank 5 adapted to engage the side of the rim 2; while a flange 6 extends forwardly beyond the shank 5 and is adapted to engage the bottom of the rim 2. A bolt hole 7 pierces the shank 5 and receives the bolt 8 which passes horizontally through the rim 2, and secures the spring fork 1 rigidly in place upon the rim 2. The other arm of the spring fork 1 is likewise turned outwardly and again forwardly so as to form a locking knuckle 9 adapted to be inserted into and held firmly in place by the tread plate 10. This tread plate 10 is pierced with a plurality of alternating slots 11 and 11', said slots being arranged in an alternate position along the opposite edges of said tread plate 10. Upon the outer surface of the tread plate 10 is permanently attached the tire plate 12, same being formed with the interiorly disposed longitudinal groove 13, said groove being adapted to coöperate with said slots 11 and 11' which open into said groove 13, for the purpose of holding said spring forks 1 in place by means of the knuckle 9 interlocking through said tread plate 10, as aforesaid. Upon the outer surface of said tire plate 12 may be mounted any preferred form of tire as ordinarily used, as for instance, a solid rubber or steel tire, and this tire may be secured to the tread plate 12 by any suitable means.

It will be noted that the spring forks 1 are duplicates of one another, and that they are arranged alternately upon opposite sides of the rim 2, and extend in this alternate arrangement entirely around said rim, and are so bolted securely into place. It will likewise be noted that the knuckles 9 are in turn locked into and through the tread plate 10 in a similar alternate position extending entirely around the wheel. The knuckles 9 may be bent at such an angle that when they are inserted through the slots 11, the shanks 5 will tend to spread away from the rim 2, so that when they are bolted into place against the rim 2, the knuckles 9 will

be braced between the tread plate 10 and the tire plate 12, which will prevent rattling or the working loose of the parts. The spring forks 1 may be set in the rims so as to belly either outwardly or inwardly as may be desired, and as shown in the drawings.

It will be noted that instead of constructing the spring forks 1 in integral formation as shown in Fig. 2, same may be built up of a series of leaf springs 14, as shown in Fig. 8. This latter construction will give greater resiliency and life to the spring forks 1. The spring forks may be of sufficient width to correspondingly widen the bearings of the shanks 5 and the flanges 6 against the rim 2 to guard against longitudinal displacement of said spring forks under the stress of the forward or backward motion of the vehicle. To further guard against this longitudinal stress, longitudinally disposed, torque straps 15 may be provided to connect the inner and outer rims at spaced points, so that said torque straps will transmit the longitudinal strain of the revolving inner rim to the outer rim.

If desired, the semi-circular forks may be joined integrally in sets of two so as to form complete circles as shown in Fig. 7. Also, where the semi-circular or U-shaped forks are used the arms thereof designed for engagement with the inner rim may be inclined sidewise so that any two oppositely disposed forks may be bolted to the inner rim by means of one bolt, as shown in Fig. 11.

It will be noted that I have herein provided a resilient wheel well adapted for the purposes intended and as enumerated in this specification, and it is understood that I may vary from the exact method of construction here laid down, in minor details, so as best to produce my improvement in a practical and commercial form, as defined in the appended claims.

What I claim to be new and patentable is:

1. A resilient wheel comprising a hub; an inner rim; an outer rim having a lock plate on its inner surface; means for connecting the hub and inner rim; a plurality of U-shaped spring forks each having one extremity bent, widened and bored to form a shoulder adapted to be bolted to the inner rim and having the other extremity bent to form a knuckle adapted for locking engagement with the lock plate of the outer rim; said spring forks being set in alternately reversed relation to one another; and a plurality of torque straps connecting the inner and outer rims.

2. A resilient wheel comprising a hub; an inner rim connected to said hub; a plurality of spring forks having one end recessed to form a bottom and side bearing against said rim, the side bearing ends being also deflected sidewise so that the ends of forks alternately arranged on opposite sides of the rim will be alined across said rim; and an outer rim connected to said inner rim by said spring forks.

3. A resilient wheel comprising a hub; an inner rim and an outer rim; means for connecting the hub and inner rim; a plurality of semi-circular spring forks connecting the inner and outer rims, said forks having their arms designed for engagement with the inner rim deflected sidewise, so that assembled in alternate and reversed relation transversely across the wheel, one bolt will suffice to secure two forks to said inner rim.

HENRY A. SCHNITTKER.

Witnesses:
A. M. DOWD,
JEANNETTE YOUNG.