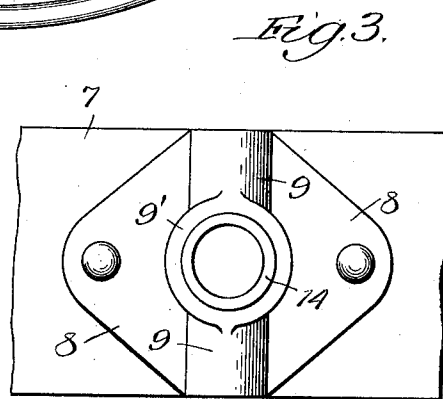
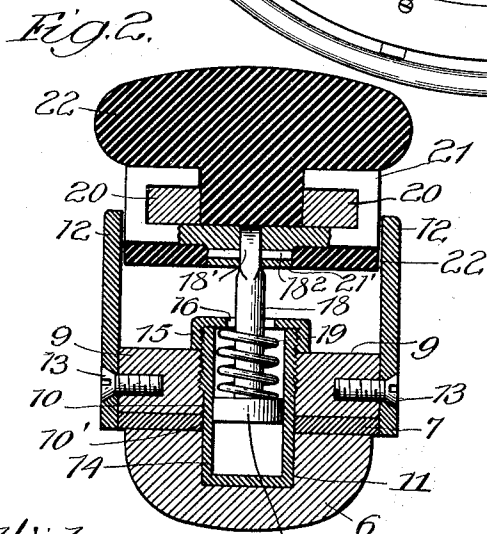
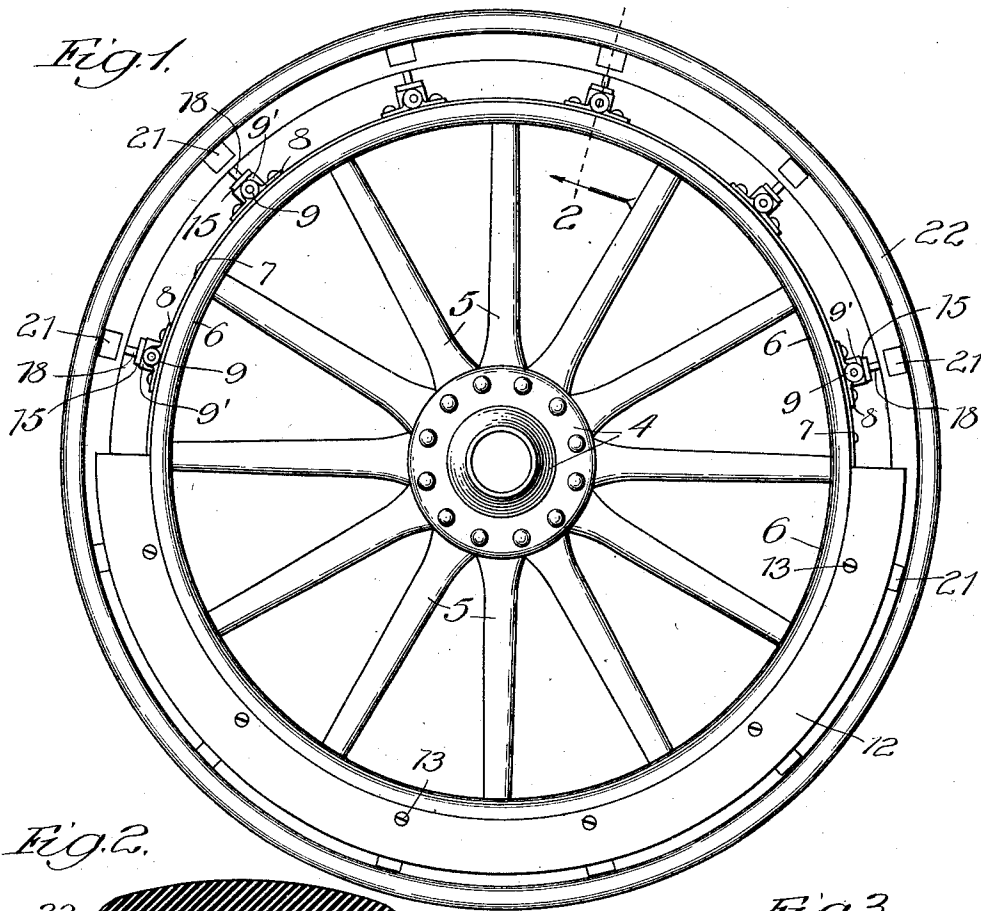


W. H. FAHRNEY.
 SPRING VEHICLE WHEEL.
 APPLICATION FILED JULY 16, 1912.

1,056,521.

Patented Mar. 18, 1913.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM H. FAHRNEY, OF CHICAGO, ILLINOIS.

SPRING VEHICLE-WHEEL.

1,056,521.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed July 16, 1912. Serial No. 709,728.

To all whom it may concern:

Be it known that I, WILLIAM H. FAHRNEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Spring Vehicle-Wheels, of which the following is a specification.

My invention relates to an improvement in the class of spring vehicle-wheels in which the wheel-rim has secured to it near its edges annular plates surrounded by a flexible or resilient tire, between which and the rim, in spaced relation to the latter, are confined annular band-springs carrying at intervals clips which are indirectly connected with the rim to work between the edge-plates thereon with the flexure of the spring under the stresses of the load.

The object of my invention is to provide a construction of connection between the clips on the spring and the rim which shall serve, as a species of offset elastic spoke-extension, to permit a high degree of flexure to the spring and, in the running of the wheel, to flex the spring throughout elliptically without obstruction.

In the accompanying drawing, Figure 1 shows my improved wheel by a view in side elevation, with a portion of one of the two annular plates removed to disclose parts covered by it; Fig. 2 is an enlarged section on line 2, Fig. 1, and Fig. 3 is a broken plan view of the rim showing one of the cylinder-carrying plates which are secured at intervals thereon.

The wheel-center shown comprises a hub 4 with spokes 5 radiating from it to a felly 6 provided with a rim 7. At intervals about the rim, preferably midway between the spoke-ends, are secured to its outer surface, as by riveting, metal plates 8 of the preferred generally-rectangular shape shown. Each of these plates has a boss 9 extending diagonally across its outer face with threaded sockets in its ends; and centrally and transversely of an enlarged section 9¹ of this boss extends an opening 10 internally threaded and registering with an opening 10¹ through the rim and a socket 11 formed, to desired depth, in the outer face of the felly. Annular side-plates 12, 12 are rigidly and securely fastened to the opposite edges of the rim by screws 13 passing through them into the threaded sockets in the boss-ends. Into the opening 10 of each plate 8 is screwed a cylinder 14, shown

closed at its inner end, which fits a felly-socket 11. The cylinder is externally threaded about its outer-end portion to engage the thread in the opening 10, the threaded end projecting beyond the outer end of the boss-section 9¹ for permitting to be screwed thereon a cap 15 having a central opening 16. In each cylinder is a piston 17 having a spring 19 confined between it and the cap about its stem 18, which works through the cap-opening and has an eye 18¹ formed on its outer end. A pair of annular band-springs 20, 20 surround the rim 7 in spaced relation thereto. At intervals corresponding with those of the cylinders 14 these springs carry transversely-extending yoke-like clips 21 provided with bosses 21¹ on their inner faces, into which the stem-eyes 18¹ extend and are pivotally fastened by pins 18². The tire 22 is preferably of rubber molded about and thus embedding the springs 20 and all but the end-portions of the clips.

In the running of a wheel of the described construction, it rides easily over obstructions, the tendency of the load being to flex the springs 20 into elliptical shape, and they are assisted in this tendency by the yielding action of the stems 18 which, as will be seen, are of the nature of offset longitudinally-yielding extensions of the spokes 5, and, by means of the springs 19, resiliently supplement the flexure of the springs 20 and resist undue flexure thereof.

The theory or principle of operation of my improvement is that, assuming the load to be, say, 1000 lbs., on the five springs 19 that are uppermost about the rim and over which the load is distributed, the pressure on the springs 19 at diametrically opposite points in the running of the wheel will be 500 lbs. on each, or equal, on both, to that on all of the said five springs, thereby permitting the springs 20 to assume the desired complete elliptical shape, wherein the stems 18 of the pistons 17 controlled by such diametrically-opposite springs 19 are protruded to the greatest extent.

I realize that considerable variation is possible in the details of construction of my present improvement thus specifically shown and described, and I do not intend by illustrating a single, specific or preferred form, to limit my invention thereto; my intention being in the following claim to claim protection upon all the novelty there

may be in the device as broadly as the state of the art will permit.

What I claim as new and desire to secure by Letters Patent is—

5 In a spring vehicle-wheel having band-springs about the rim in spaced relation thereto and clips at intervals on the springs, plates secured on the rim having bosses extending transversely thereof and provided
10 between their ends with openings, annular

plates about the rim near its edges, secured to the boss-ends, cylinders secured in said openings, pistons in the cylinders having stems connected with said clips, and springs confined in the cylinders between their heads and the pistons. 15

WILLIAM H. FAHRNEY.

In presence of—

O. C. AVISUS,

R. A. SCHAEFER.

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