(No Model.)

H. ROHRER.

VEHICLE WHEEL.

No. 460,183. Patented Sept. 29, 1891.

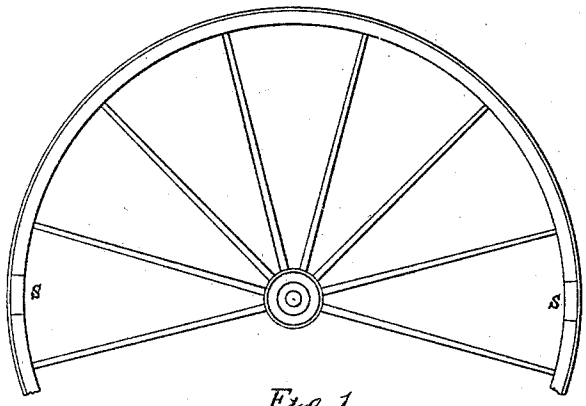

Fig. 1.

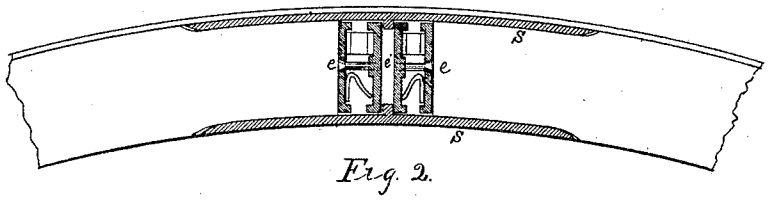

Fig. 2.

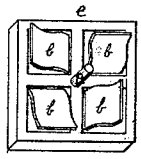

Fig. 3.

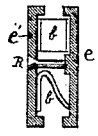

Fig. 4.

Witnesses.

W. E. Reid

H. H. Palmer Jr.

Inventor.

Henry Rohrer

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY ROHRER, OF SAN DIEGO, CALIFORNIA.

VEHICLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 460,183, dated September 29, 1891.

Application filed June 12, 1889. Serial No. 314,070. (No model.)

To all whom it may concern:

Be it known that I, HENRY ROHRER, a citizen and resident of San Diego, in the county of San Diego, State of California, have invented an improvement in Wagon, Carriage, and Buggy Wheel Rims and wheel-rims for all kinds of roadway-vehicles having spoked wheels, of which invention the following is a specification.

The objects of my invention are, first, to counterbalance or counteract automatically the expansion and contraction occurring in wooden rims or fellies caused by heat and cold, damp, drought, or otherwise; second, to allow the expansion and contraction of the rim simultaneously with that of the tire; third, to hold the rim firmly within and against the tire; fourth, to give elasticity to a wheel in case of sudden or excessive strain, and, fifth, to allow the compression at will by a suitable machine of wheel-rims for the purpose of putting on, removing, or replacing tires. I attain these objects by placing upon the ends of the fellies of any spoked wheel an attachment, which is more particularly described as follows, reference being had to the drawings annexed to and made part hereof.

In the drawings, Figure 1 represents a segment of a spoked wheel having the ends of the fellies fitted with my improvement. Fig. 2 represents a section of my invention upon the abutting ends of a pair of wheel-fellies. Fig. 3 represents a portion of my invention hereinafter designated as the "spring-box," with the springs therein, but without its cover. Fig. 4 represents a section of spring-box with springs and cover complete.

I now describe in their order the details of my invention.

1. *The shell.*—This is a metal casing of such size and shape as to fit closely around the meeting or abutting ends of the fellies of a wheel, Figs. 1 and 2. Said felly ends having been previously reduced in size on all sides by an amount equal to the thickness of the sides of the casing and so as to cause the casing and fellies to make a smooth and continuous surface when the felly ends are inserted to the full extent contemplated by my contrivance, Figs. 1 and 2, the outer ends of the sides of this shell or casing are brought to a feather edge on their inner face. The casing is divided into two compartments by a metal transverse partition at or near the center of the shell, and the partition has through the center a circular hole.

2. *The spring-box.*—This second portion of my invention consists of a shallow metal box (*e* in Figs. 2, 3, and 4) of a size to fit snugly when laid within said casing flat upon the partition. (See Fig. 2.) Said box may be divided into two or any number greater than two compartments, Fig. 3. In the drawings and in descriptions herein the same is represented as having four square compartments of equal size, Fig. 3. In each of said compartments a spring, more particularly hereinafter described, is placed, said springs being of a size to fit loosely within said compartment and to project a short distance above and beyond the tops of the boxes *b b b b*, Fig. 3. A flat metal plate or cover of same shape and size as the bottom of the box and with edges slightly raised, placed above the box and upon the tops of the projecting springs, forms the cover to the spring-box *e'* in Figs. 2 and 4. A rivet or screw is fixed in the center of the box-cover, but in such a manner as to allow the cover to work freely up and down, and in placing spring-box in shell it is placed cover inward, so that the rivet-heads are opposite hole in partition *e'* in Fig. 2. Two of these spring-boxes are intended to be placed in the casing, one on each side of and flat against the transverse partition thereof previous to inserting the ends of the fellies in said casing, Fig. 2. One or more additional spring-boxes may be added in the casing should it be desired to increase the amount of possible compression and expansion of rim. The same may be further increased by the addition of a flat piece or pieces of rubber upon said spring-boxes.

3. *The springs.*—These are strips of steel so bent that the transverse section is V-shaped, *b b*, Figs. 3 and 4, their other dimensions being such as to allow the springs to fit loosely in the partitions or compartments of the box *b b b b*, Fig. 3.

I do not claim, taken separately and alone and aside from the combination in said apparatus, the flat rubber pads, the reduced ends of the fellies in metal casing, the metal casing, or the V-shaped springs taken sepa-

rately from their combination in said spring-box or their combination in said apparatus.

I claim as my invention—

In a wagon-wheel, the combination, with the hub, spokes, and the felly-sections having reduced ends, of the flat rubber pads, the metal casings, the spring-boxes, the V-shaped spring incased therein, and the transverse rivets above said springs, whereby the tire can be placed in position while cold and the fellies expanded to retain it in place, substantially as specified.

HENRY ROHRER.

Witnesses:
W. E. REID,
H. H. PALMER, Jr.