(No Model.)

H. C. GALLUP.

SUSPENSION WHEEL.

No. 303,503. Patented Aug. 12, 1884.

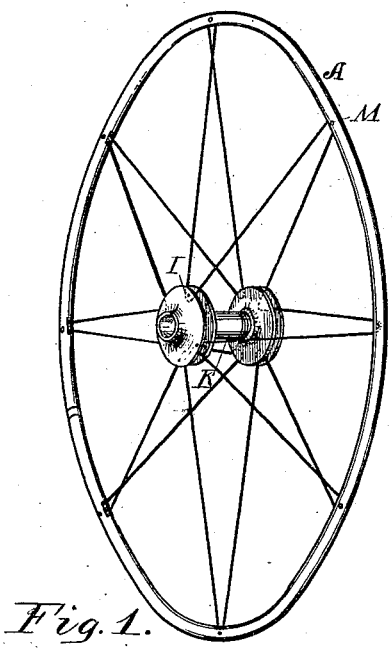

Fig. 1.

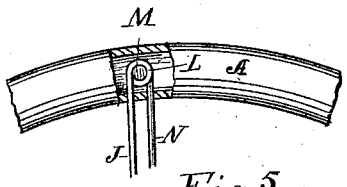

Fig. 5.

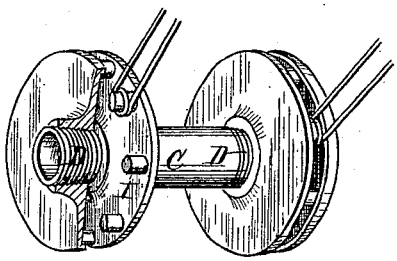

Fig. 2.

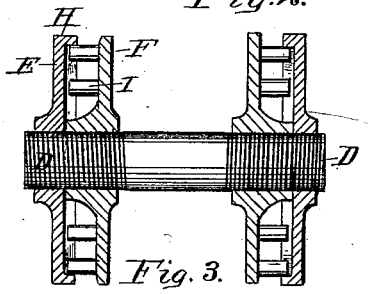

Fig. 3.

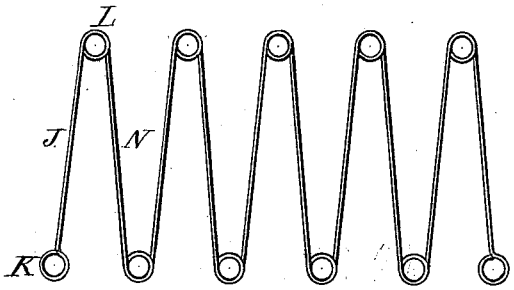

Fig. 6.

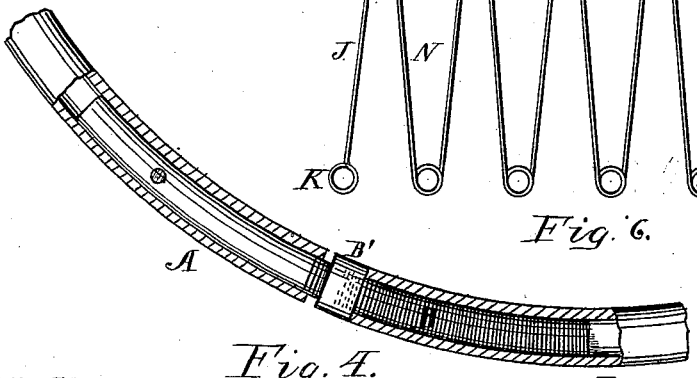

Fig. 4.

WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY C. GALLUP, OF WILMINGTON, OHIO.

SUSPENSION-WHEEL.

SPECIFICATION forming part of Letters Patent No. 303,503, dated August 12, 1884.

Application filed October 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. GALLUP, of Wilmington, in the county of Clinton and State of Ohio, have invented a new and useful Improvement in Suspension-Wheels, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a perspective view of my improved suspension-wheel. Fig. 2 is a perspective view, partly in section, of the hub, showing the retaining disks or plates and method of securing the spokes to the same. Fig. 3 is a central transverse vertical section of Fig. 2. Fig. 4 is a side view, partly in section, of the rim or felly, showing method of securing the spokes to the same. Fig. 5 is a side view, partly in section, of the felly, and Fig. 6 is a side view of the spokes detached.

The present invention relates to an improvement in car or bicycle wheels, which consists in forming the felly of one piece of pipe bent to the required circumference. A bolt is placed within the ends of the one end secured to the felly, and the other end provided with a thread on which a nut works between the ends of the felly. The inner side of the felly is provided with openings, within which are transverse studs, around which the loops of the spokes are placed. For the hub I provide an axle-boxing of suitable length, having at the ends right and left screw-threads, and on each end of this boxing is screwed a pair of retaining-plates provided with studs between them for securing the inner ends of the suspension-wires forming the spokes of the wheel. By means of right and left hand threaded plates on each end of the boxing the said plates can be moved inwardly or outwardly by turning the boxing. All the spokes of a single wheel are formed of one continuous piece of wire, and so arranged that the outward movement of the retaining-plates tightens the spokes in the wheel.

In the drawings, A is a felly or rim formed of piping bent to the required shape. One end of this bolt is provided with a thread, B, extending a little beyond the middle. The opposite end is riveted to the felly, and a nut, B′, placed on the bolt between the ends of the felly, for the purpose hereinafter to be described. A tubular hub, C, is provided, of any required size, designed to fit on the axle. Each end of this tubular hub is provided with a right and left screw-thread, D. A pair of disks, E F, is designed to be screwed on each end of this hub. The outer one, E, of these disks has its inner surface, G, formed plain, with an inwardly-turned flange, H, around the circumference. The inside face of the inner plate is formed plain, and has projecting therefrom a series of lugs or studs, I, which lugs have their ends resting against the plain-faced outer disk, E, within the flange, when the disks are in position. A wire, J, is provided, having at one end an eye, K. At a distance from this eye corresponding to the distance of the disk E from the rim A a similar eye, L, is formed. The wire is then bent back on itself the same distance as the first limb, where another eye is formed. A series of limbs having eyes are thus formed corresponding to the number of spokes desired in the wheel, as shown in Fig. 6. The outer disk, E, of each pair is taken off the tubular hub, and the eye K of the limb then placed on the stud I of the disk. The eye L in the opposite end of the limb is then placed in the opening B′ on the inner side of the rim, and a rivet, M, driven through an opening prepared for the purpose, holds the eye and limb in position. The limb N then extends to and is hooked over the stud of the disk E′, on the opposite end of the tubular hub C, and again returns to the next opening in the rim. The suspension-wires J thus alternate between the rim A and the inner disk on the opposite ends of the tubular hub around the entire wheel. The outer plates, E F′, are then screwed on, which prevents the eyes of the suspension-wire from coming off. Before securing the suspension-wires to the disks and rim the disks are screwed inwardly on the hub a short distance after the wires are secured in position, and the outer disks screw on against the inner disks, the tubular hub is turned within the disks, and thus both pairs of disks move outwardly simultaneously, and the suspension wires or spokes can be brought to any desired tension.

When any part of the wheel becomes disarranged or broken, the tubular hub can be unscrewed, which releases the tension on the sus-

pension-wires, the outer disks can then be removed and the necessary repairs can be effected.

What I claim as new is—

1. The combination of the tubular hub having at opposite ends the right and left screw-threads, in combination with the double disks on each end, one of said disks having at suitable intervals projecting lugs to hold the spokes or suspension-wires, substantially as herein set forth.

2. The combination of the double disks on opposite ends of the screw-threaded hub, one or both of said disks having projecting pins or lugs, with the spokes or suspension-wires, substantially as herein set forth.

3. The combination of the hub having at the ends the right and left screw-threads, the double disks at each end screwed thereon, having projecting lugs, the continuous wire provided with suitable eyes at intervals, and with the tubular rim slotted to receive the suspension-wires, and the cross-pins, substantially as herein set forth.

In testimony that I claim the foregoing, I have hereunto set my hand in the presence of witnesses.

HENRY C. GALLUP.

Witnesses:
JOHN MATTHEWS,
FRANK MARTIN.