

No. 647,590.

Patented Apr. 17, 1900.

W. J. WARD.  
VEHICLE WHEEL.

(Application filed Sept. 15, 1899.)

(No Model.)

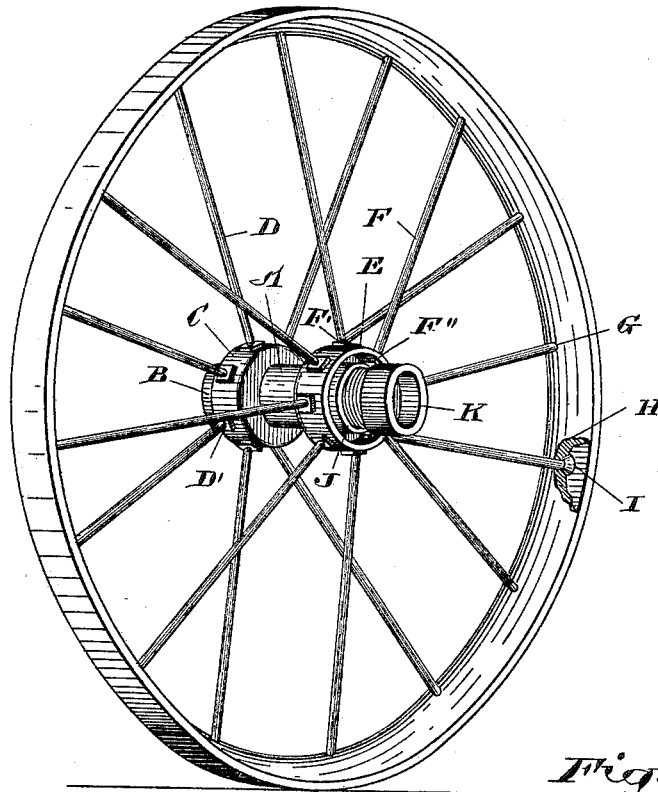


Fig. 1

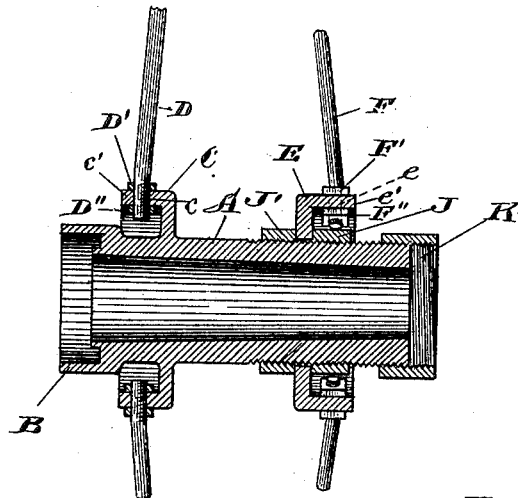


Fig. 2

Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM J. WARD, OF PALMERSTON, CANADA.

## VEHICLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 647,590, dated April 17, 1900.

Application filed September 15, 1899. Serial No. 730,821. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM JAMES WARD, of Palmerston, in the county of Wellington and Province of Ontario, Canada, have invented certain new and useful Improvements in Vehicle-Wheels; and I hereby declare that the following is a full, clear, and exact description of the same, the said invention having been patented to me on the 10th day of June, 1898, in the Dominion of Canada, the patent being numbered 63,237.

This invention relates to certain new and useful improvements in the construction of vehicle-wheels, and it relates more particularly to the manner in which the spokes are tightened and the hub-sections are held in their relative places. On one end of a screw-threaded sleeve or boxing is rigidly fixed a metallic cup to receive the dust-collar of the axle, and contiguous to the cup is the stationary hub-section provided with a series of screw-threaded spoke-sockets to receive the screw-threaded or inner ends of one set of spokes the outer ends of which are connected to the rim. Loosely mounted on the sleeve or boxing between the stationary hub-section and the opposite end is a movable hub-section corresponding in all respects with the stationary hub-section and fitted with spoke-sockets to receive the screw-threaded or inner ends of the other set of spokes, the outer ends of which are connected to the rim intermediate the spokes of the first set. The movable hub-section is locked in any adjusted position by two lock nuts or collars screwed on the sleeve or boxing and located one on each side of the movable hub-section, as hereinafter more fully set forth, and more particularly pointed out in the claim.

In the drawings, Figure 1 is a perspective view of the wheel. Fig. 2 is a transverse section of the same.

Like letters of reference refer to like parts throughout the specification and drawings.

A represents a sleeve or boxing which may be of any suitable length and diameter and the outer surface of which is screw-threaded.

B represents a cap or cup integrally formed with one end of the sleeve or boxing A and arranged to receive the collar of the axle.

C represents the stationary hub-section, integrally formed with the sleeve or boxing A

contiguous to the cup or cap B and provided with an outwardly-directed circumferential flange *c'*, fitted with a series of spoke-sockets *c* to receive the inner ends of one set of spokes D.

E represents the movable hub-section, removably and adjustably mounted on the sleeve A between the stationary hub-section C and that end of the sleeve opposite the cup or cap B. The hub-section E is laterally movable on the sleeve A toward or away from the stationary hub-section C and is provided with an outwardly-directed circumferential flange *e'*, fitted with a series of spoke-sockets *e* to receive the inner ends of the set of spokes F.

Each of the spokes D is provided with two lock-nuts *D' D''*, located on the outer and inner faces of the flange *c'*, respectively, while each of the spokes F is provided with two lock-nuts *F' F''*, located on the outer and inner faces of the flange *e'*, respectively, to prevent the turning of the spokes after being adjusted to their proper relative length. The outer end of each of the spokes D and F passes through a hole G, formed in the rim H, and is provided with an enlarged head I, bearing against the outer face of the rim. The spokes of each hub-section are properly adjusted to their respective tensions, after which the movable hub-section is expanded or moved away from the stationary hub-section to increase the tension of the spokes of both sets, the movable hub-section being then locked in position by two lock nuts or collars *J J'*, the nut or collar J being locked against the inner face of the movable hub-section and the nut or collar *J'* against the outer face.

The bore of each of the nuts or collars *J J'* is screw threaded to engage the screw-threaded surface of the sleeve or boxing A in order that the collars can be readily adjusted on the sleeve or boxing and securely held in their adjusted position.

The outer end of the sleeve or boxing A is provided with a cup or band K to receive the axle nut or cap.

By expanding the movable hub-section from the stationary hub-section the tension of the spokes can be increased, and by contracting or moving the movable hub-section toward the stationary hub-section the tension of the spokes can be diminished.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

5 A vehicle-wheel embracing in its construction a sleeve having its outer surface screw-threaded a cap or cup integrally formed with one end of the sleeve a stationary hub-section integrally formed with the sleeve contiguous to the cap or cup and having an outwardly-  
10 directed circumferential flange provided with a series of spoke-sockets a movable hub-section loosely mounted on that end of the sleeve opposed to the stationary hub-section having an outwardly-directed circumferential flange  
15 provided with a series of spoke-sockets and

capable of being adjusted toward or away from the stationary hub-section two lock-nuts one located on each side of the movable hub-section to hold it in its adjusted position in combination with the rim-spokes connected 20 to the rim and hub-section and two lock-nuts mounted on each spoke located one on each side of its respective outwardly-directed circumferential flange substantially as specified.

Toronto, Canada, August 31, A. D. 1899.

W. J. WARD.

In presence of—

C. H. RICHES,

E. L. COUSENS.