

No. 804,617.

PATENTED NOV. 14, 1905.

N. A. NEWTON.
VEHICLE WHEEL.

APPLICATION FILED JUNE 19, 1905.

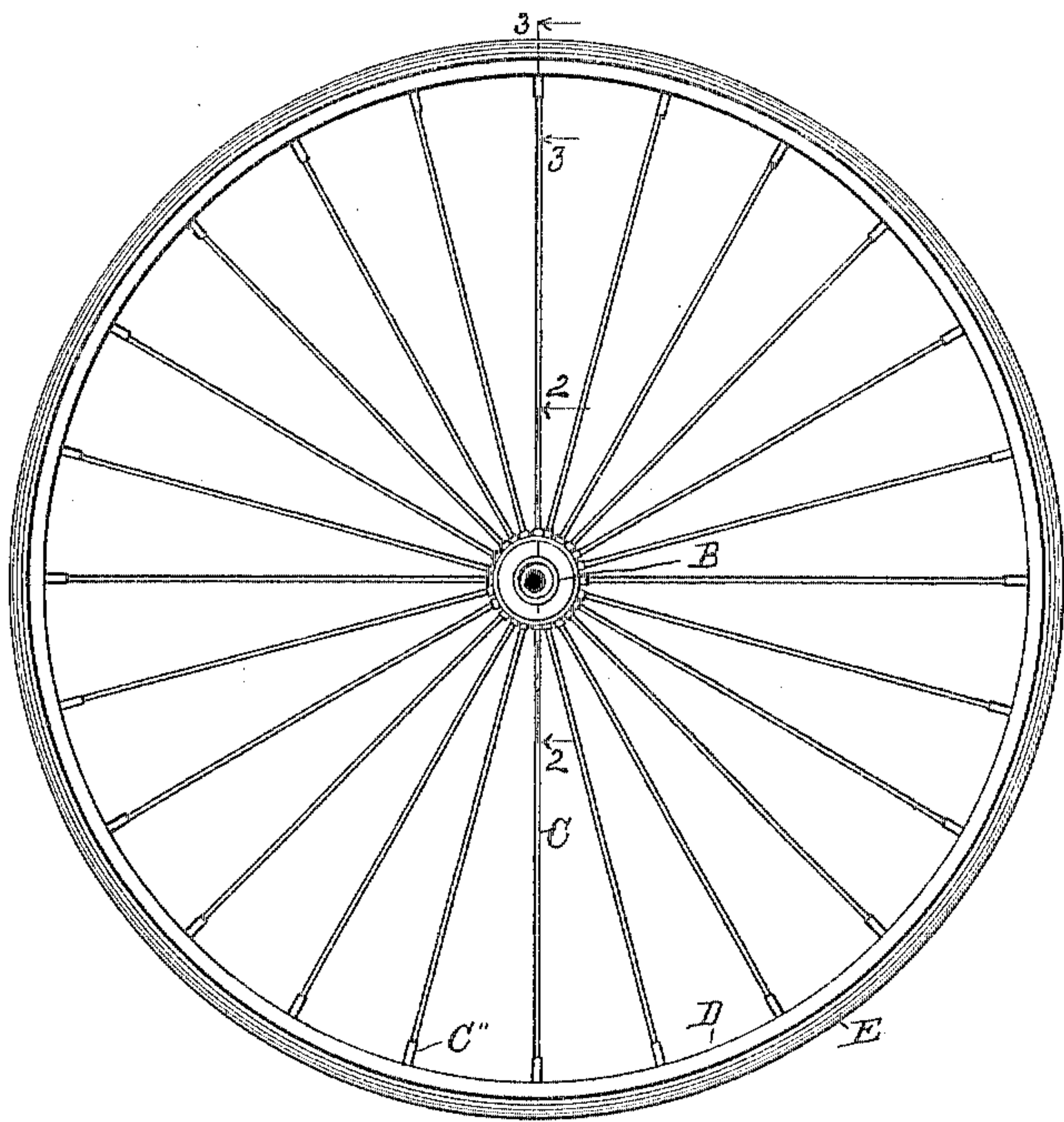


Fig. 1

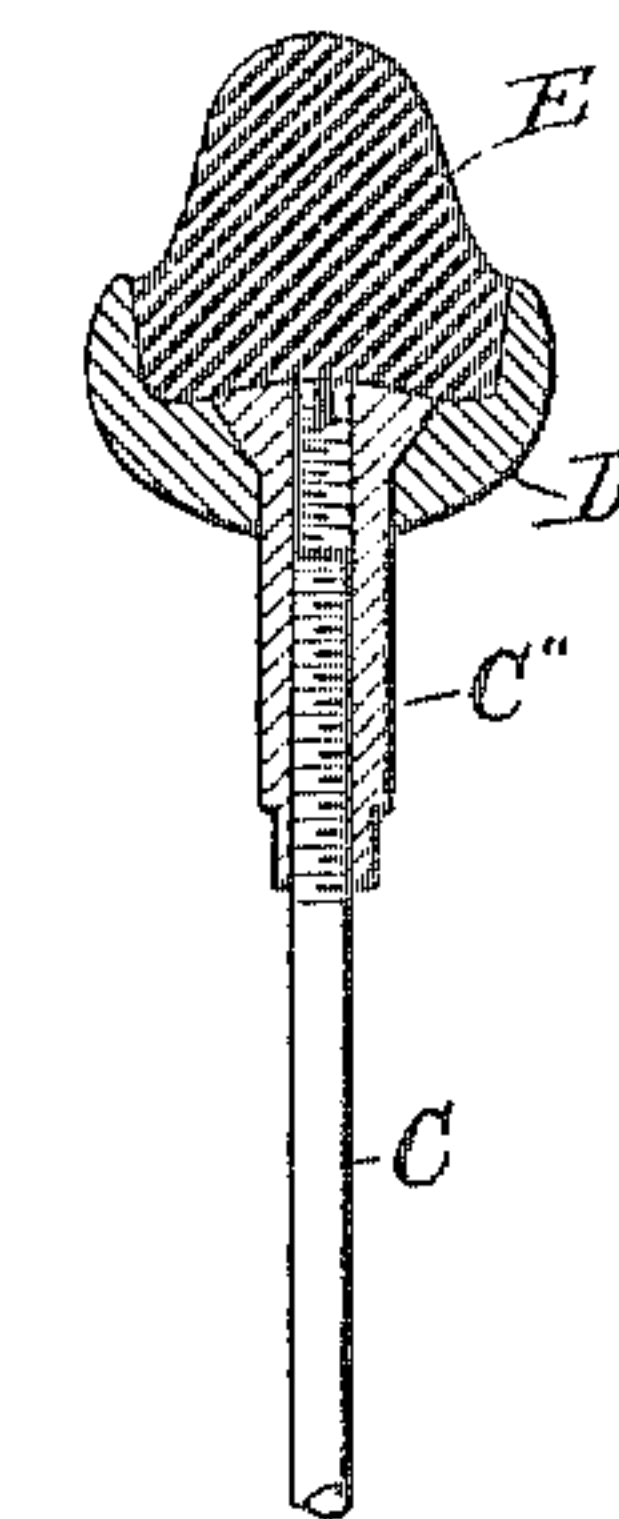


Fig. 3

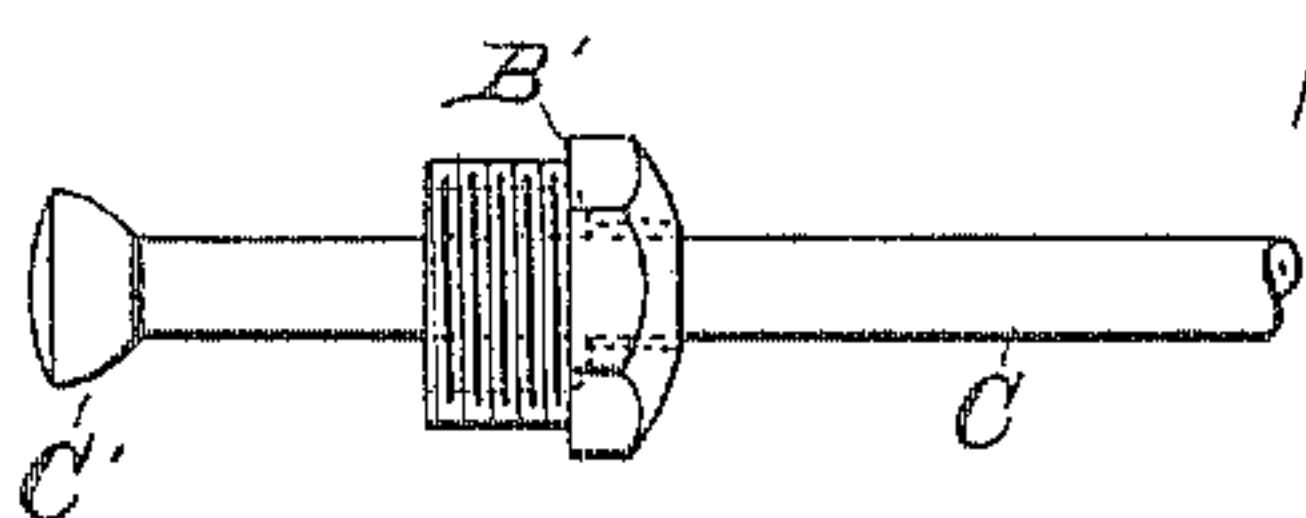


Fig. 4

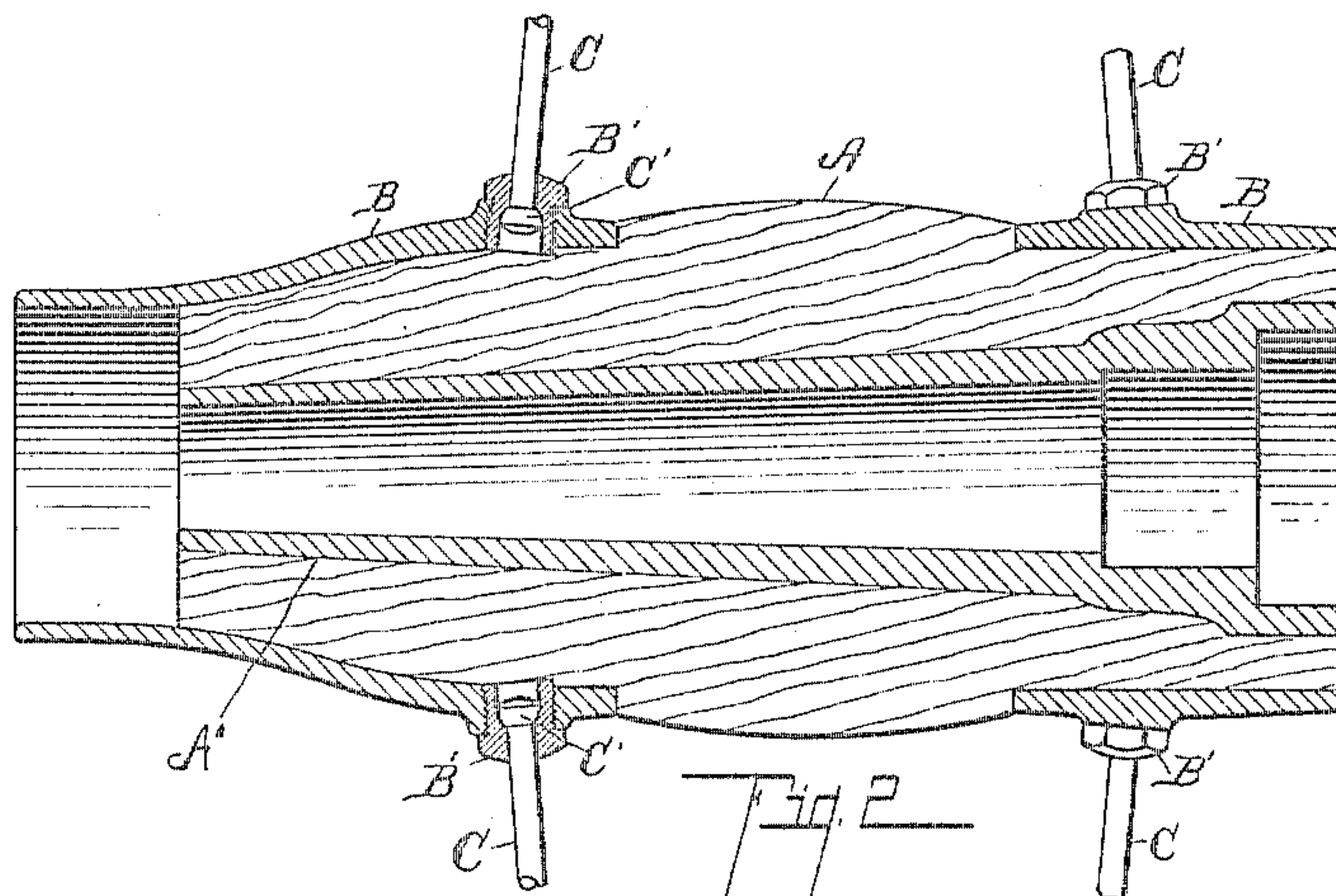


Fig. 2

Witnesses:

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UNITED STATES PATENT OFFICE.

NELSON A. NEWTON, OF KALAMAZOO, MICHIGAN.

VEHICLE-WHEEL.

No. 804,617.

Specification of Letters Patent

Patented Nov. 14, 1905.

Application filed June 19, 1905. Serial No. 265,939.

To all whom it may concern:

Be it known that I, NELSON A. NEWTON, a citizen of the United States, residing at Kalamazoo, in the county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Vehicle-Wheels, of which the following is a specification.

This invention relates to improvements in vehicle-wheels.

It relates particularly to vehicle-wheels in which metal spokes are used, such as are illustrated and described in United States Letters Patent issued to me on January 24, 1905, No. 780,615, and is in some respects a modification and improvement thereon.

The objects of this invention are, first, to provide an improved vehicle-wheel having metal spokes in which the vibration of the spokes is reduced to a minimum; second, to provide an improved vehicle-wheel having metal spokes which are secured to the hub and felly, so that the liability of a spoke being broken off should it become bent or displaced or receive a shock is reduced to a minimum; third, to provide an improved vehicle-wheel having metal spokes the tension of which can be readily adjusted.

Further objects and objects relating to structural details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation view of my improved vehicle-wheel. Fig. 2 is a detail cross-sectional view through the hub of my improved vehicle-wheel, taken on the line 2 2 of Fig. 1. Fig. 3 is a detail sectional view through the felly and tire of my improved vehicle-wheel, taken on line 3 3 of Fig. 1. Fig. 4 is a side elevation view of the inner end of a spoke of my improved vehicle-wheel, showing the head of the spoke and securing-nipple therefor.

In the drawings the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the drawings, the wood hub-

center A is bored to receive a suitable boxing, as A'. I provide the wood hub-center A with the hub-bands B B. These hub-bands are provided at regular intervals with threaded sockets to receive the nipples B', by means of which the spokes C are secured to the hub. The spokes C are provided with cone-shaped heads C' at their inner ends and are threaded at their outer ends. The nipples are provided with conical seats for the heads C' of the spokes. The spoke-openings through the nipples are of sufficient size so that the spokes are loosely embraced thereby and have considerable freedom of movement in the seats of the nipples. The outer ends of the spokes are secured to the felly D by nipples C'', which are arranged through the felly from the outside. The nipples C'' are internally threaded to receive the threaded ends of the spokes. The tension of the spoke may be adjusted by means of the nipples C''. The tire E is put in place after the spokes are assembled in the wheel.

By thus connecting the spokes to the hub the vibration on the spokes is reduced to a minimum, which is of very great advantage, as it is the vibration in the metal wheels which crystallizes the metal and causes the spokes to break very easily. The spokes have considerable freedom of movement, so that the liability of their being broken by sudden shock or by being bent is reduced to a minimum. In case of a blow on the rim, such as is caused by the wheel meeting an obstruction, the spokes may move longitudinally in the sockets, thereby preventing any liability of their buckling. This is also a very desirable feature.

My improved wheel is very easily assembled, and the parts are simple and economical to produce. I have illustrated and described the same in the form preferred by me on account of its structural simplicity and economy, although I am aware that it is capable of considerable modification in structural details without departing from my invention.

I am aware that structures in the prior art have been shown in which a nipple screw-threaded into a socket in the hub has been made use of in connection with a similar nipple at the outer end of the hub; but such structure is exceedingly awkward, because it is not possible to remove a spoke without removing both of the nipples. No one prior to my invention seems to have provided a practical combination in a wheel construction

in which the spoke can be readily and easily inserted by means of the externally-screw-threaded nipple on the hub turning freely on the spoke with the spoke suitably and properly seated for the adjustment of the tension by the nipple at the outer end. I make this statement so that it will clearly appear what my claims are intended to embrace—that is, that the outer end of the spoke be screw-threaded in a suitable nipple or connection for adjustment in combination with the screw-threaded nipple turning freely on the spoke at its inner end, so that the spoke has free action to oscillate and reciprocate in the said nipple, a space being left for that purpose.

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

1. In a vehicle-wheel, the combination of a rim or felly; metal spokes having screw-threads at their outer ends and conical-shaped heads at their inner ends; internally-threaded nipples arranged through said rim for secur-

ing the outer ends of said spokes thereto; a hub having threaded sockets therein; and nipples having spoke-openings through which said spokes are loosely arranged, and having concave seats for said spoke-heads threaded into said sockets, for the purpose specified.

2. In a vehicle-wheel, the combination of a rim or felly; metal spokes having screw-threads at their outer ends and heads at their inner ends; internally-threaded nipples arranged through said rim for securing the outer ends of said spokes thereto; a hub having threaded sockets therein; and nipples having spoke-openings through which said spokes are loosely arranged, and having seats for said spoke-heads threaded into said sockets, for the purpose specified.

In witness whereof I have hereunto set my hand and seal in presence of two witnesses.

NELSON A. NEWTON. [L. s.]

Witnesses:

AMELIA J. ALBER,
OTIS A. EARL.