

No. 737,007.

PATENTED AUG. 25, 1903.

N. A. NEWTON.
VEHICLE WHEEL.
APPLICATION FILED NOV. 17, 1902.

NO MODEL.

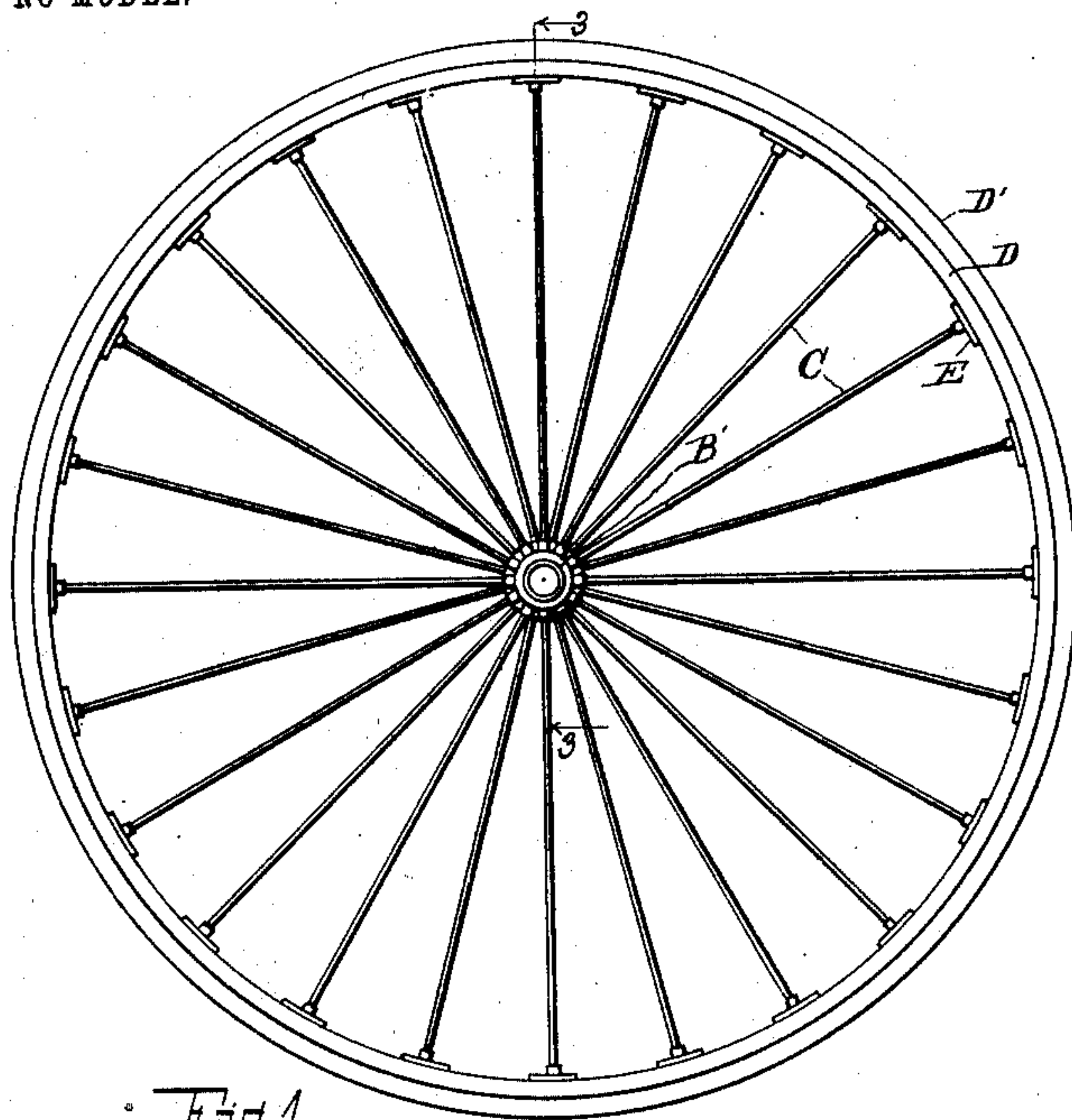


Fig. 1

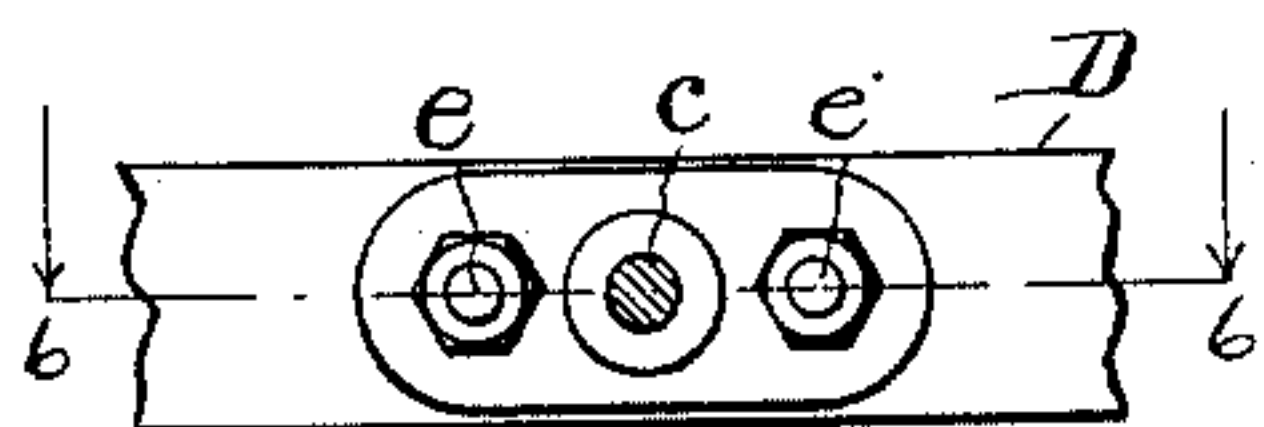
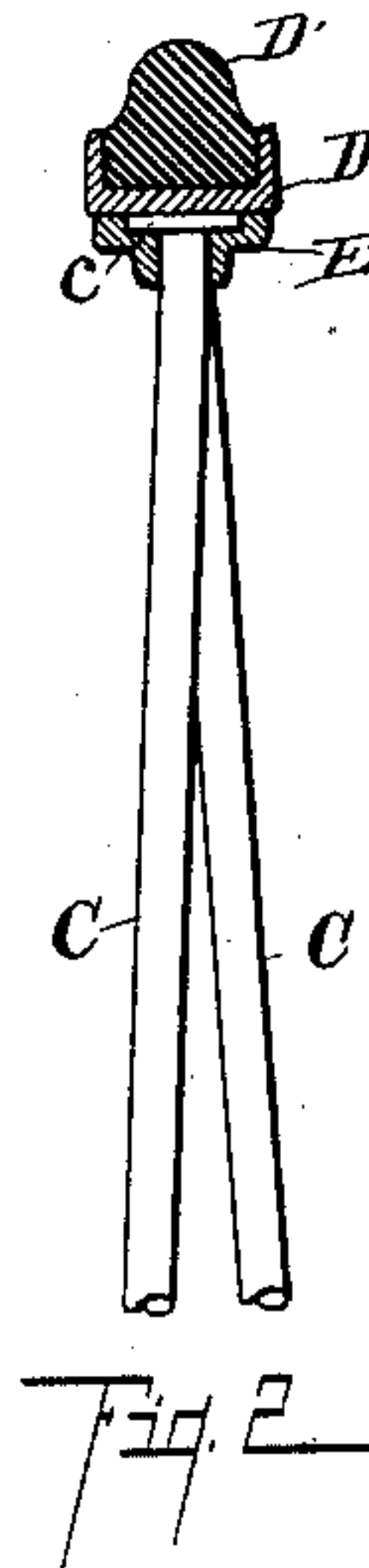


Fig. 5

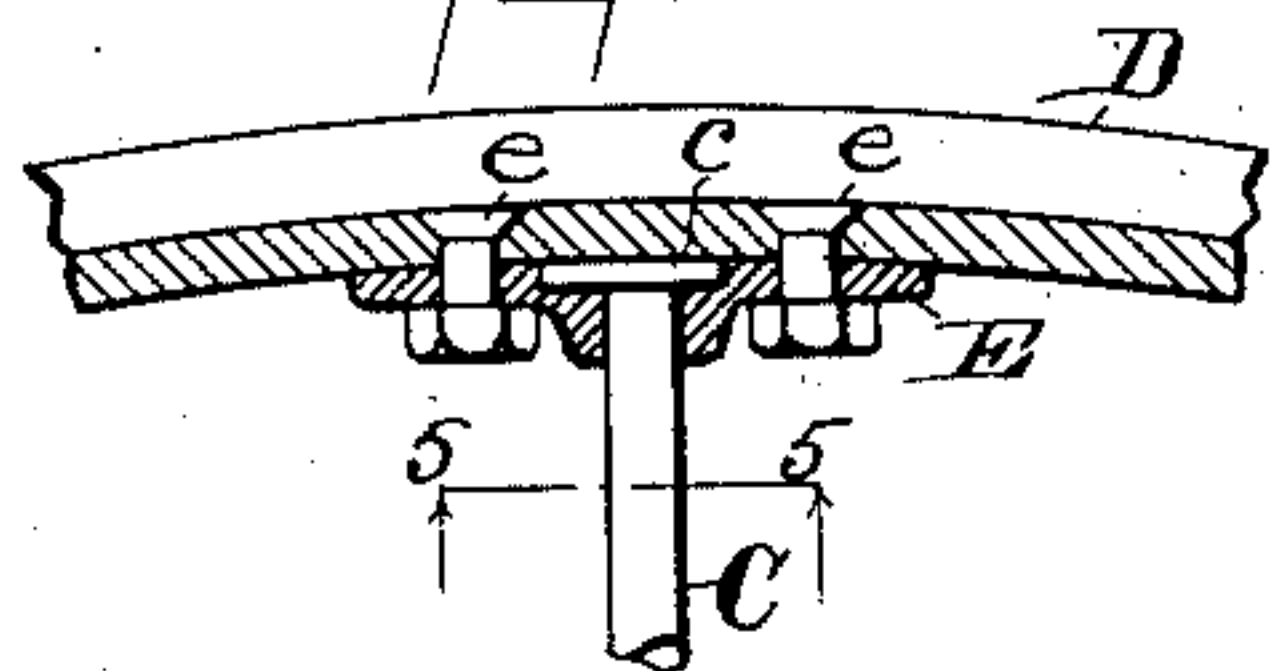
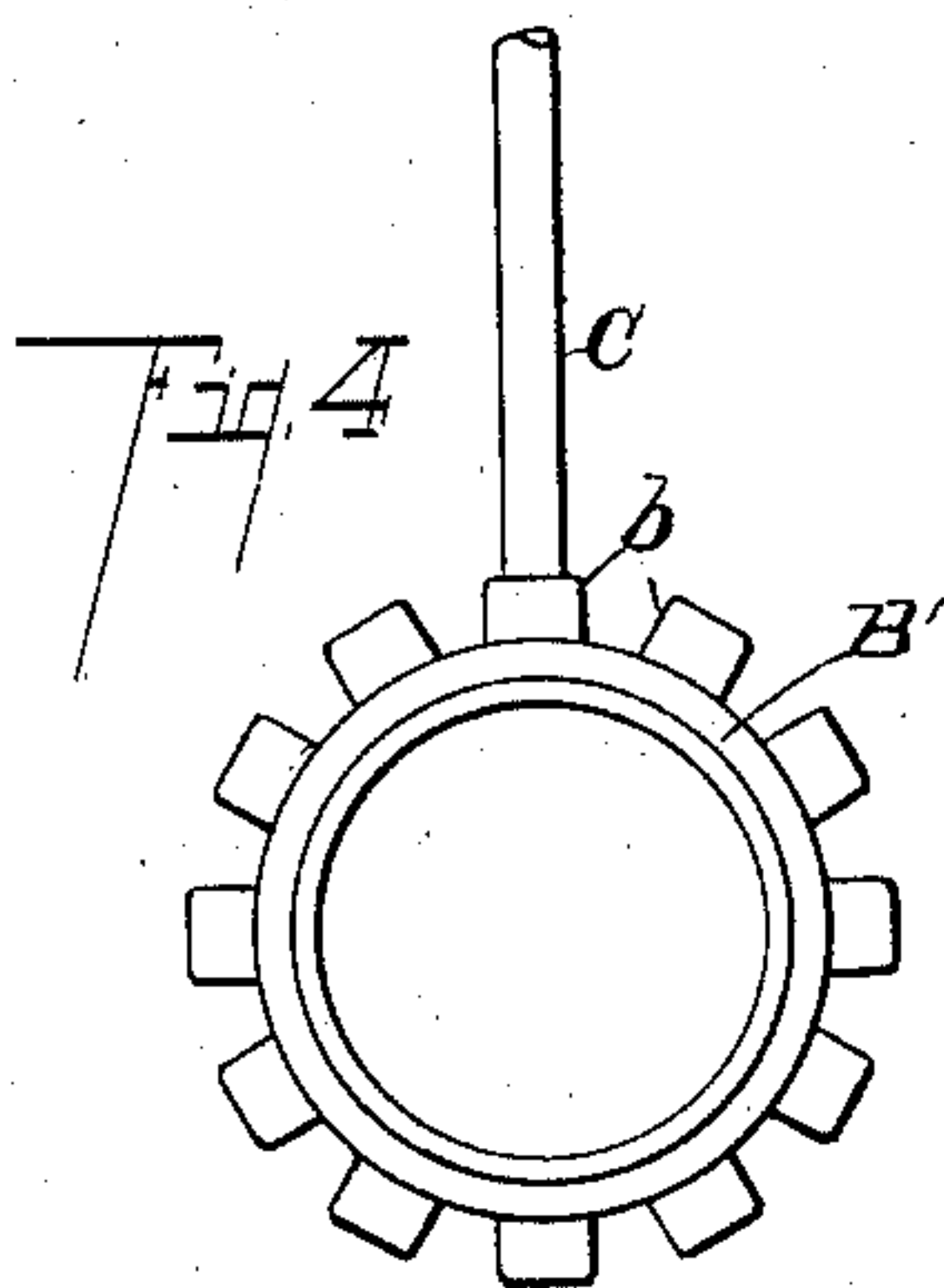


Fig. 6



Witnesses:

Ernest A. Teller
Otis A. Carl

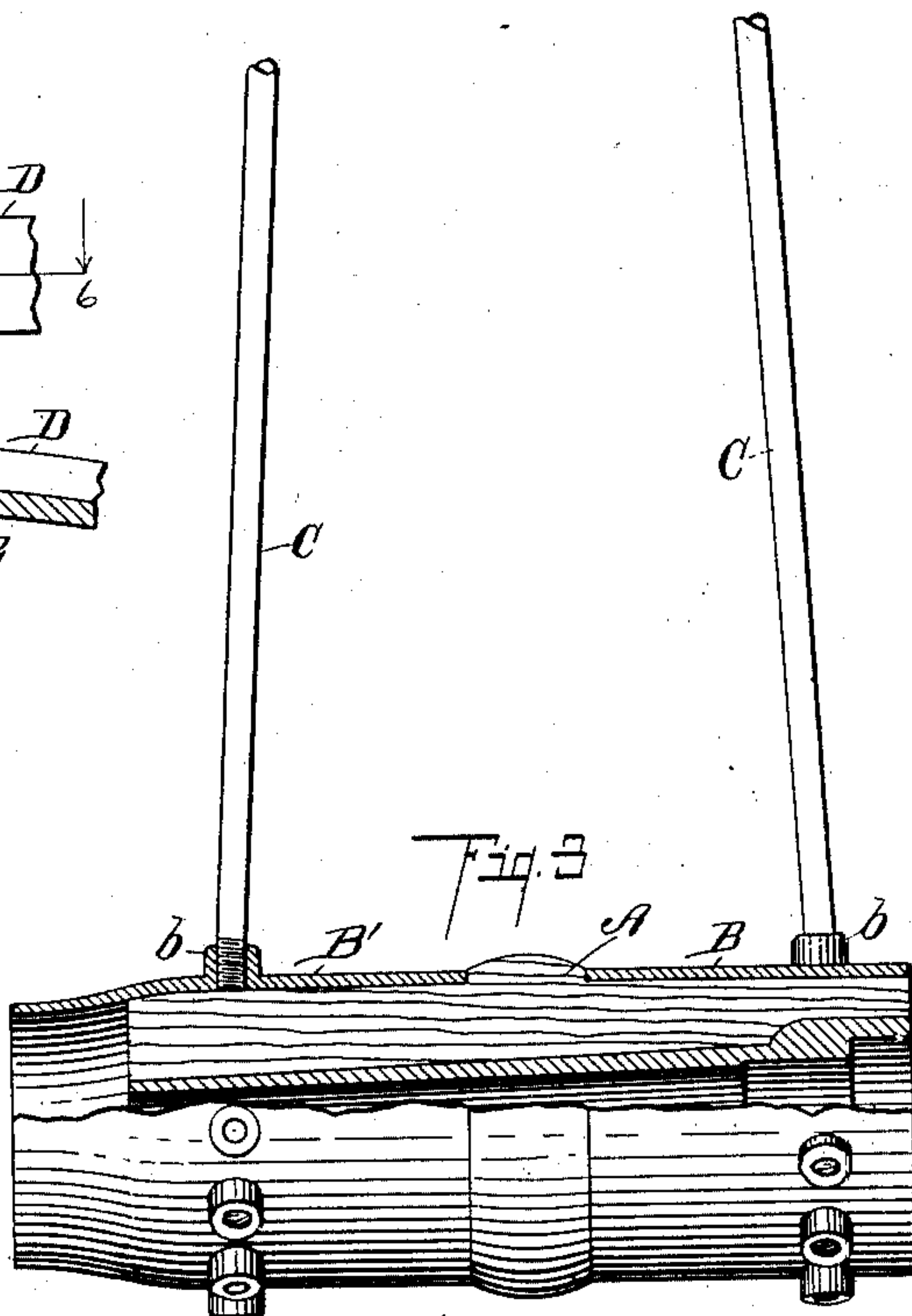


Fig. 3

Inventor,

Nelson A. Newton
By *Fred L. Chappell*
Att'y.

UNITED STATES PATENT OFFICE.

NELSON A. NEWTON, OF KALAMAZOO, MICHIGAN.

VEHICLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 737,007, dated August 25, 1903.

Application filed November 17, 1902. Serial No. 131,689. (No model.)

To all whom it may concern:

Be it known that I, NELSON A. NEWTON, a citizen of the United States, residing at the city of Kalamazoo, in the county of Kalamazoo and 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 with steel or metal spokes and is designed for use on carriages or wagons or in like relations where a strong and light wheel is desired. It is also in some respects an improvement on the structure described in Letters Patent of the United States issued to me on the 22d day of July, 1902, No. 705,121.

The objects of this invention are, first, to provide an improved construction of vehicle-wheel in which the individual spokes can be readily adjusted to secure the desired tension or removed or replaced without disturbing the other parts of the wheel and without the employment of skilled labor; second, to provide an improved vehicle-wheel having metal spokes which is strong and durable and at the same time can be made of comparatively light material and one that is economical to produce.

Further objects 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 this invention is fully illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation view of a vehicle-wheel embodying the features of my invention. Fig. 2 is an enlarged detail cross-sectional view through the rim, showing the details of construction and the manner of securing the spokes to the rim. Fig. 3 is an enlarged detail sectional view taken on a line corresponding to line 3 3 of Fig. 1, showing the details of construction of the hub and the manner of attaching the spokes thereto. Fig. 4 is an end elevation view of the hub, taken from the left of Fig. 3. Fig. 5 is an enlarged

detail view taken on a line corresponding to line 5 5 of Fig. 6. Fig. 6 is a detail longitudinal sectional view taken on a line corresponding to line 6 6 of Fig. 5.

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 lettered parts of the drawings, the hub A is of wood and is bored to receive a suitable boxing. On each end of the hub A are bands B B. The bands B B are provided with outwardly-projecting sockets *b*, which are provided with suitable threaded perforations to receive the threaded ends of the spokes C, whereby the inner ends of the spokes C are detachably secured to the hub. The spokes C are formed with disk-like heads *c* on their outer ends. The outer ends of the spokes C are secured to the channel-rim or tire D by tire-plates E. The tire-plates E are secured in position by bolts *e* through the rim. These tire-plates are provided with suitable seats or recesses to receive the disk-like heads of the spokes, and these seats are of such depth that when the tire-plates are drawn into position against the rim the head of the spoke is drawn firmly against the same and clamped, which prevents its rattling or turning, and thus becoming loosened. The tire-bolts *e* are preferably passed through from the outside and secured by suitable nuts on the inside, so that after a spoke is inserted and adjusted to its proper position in the hub the nuts can be tightened, which will put proper tension on the spoke and draw the head against the rim, thereby clamping the same to prevent the turning of the spoke. By inserting the tire-plate-retaining bolts *e e* from the outside a new spoke may be inserted, if desired, without removing the rubber tread D' from the rim. When it is desired to remove a spoke from a wheel for any purpose, the tire-plates are loosened, when the spoke can be readily swung to one side of the rim and unscrewed from its socket in the hub and a new spoke inserted. If a spoke should become loosened from stretching or from other causes or the tension be too great on the same, the same can be readily and quickly adjusted as de-

sired by first removing the plate. By this arrangement of the parts the whole may be quickly and readily assembled, the preferred manner of assembling being to screw
5 all of the spokes into their hub-sockets, having first placed the tire-plates E upon the same, then placing the rim in position and securing the spokes to the rim and applying tension to the spokes by means of the tire-
10 plates. It is evident that the tension of the entire wheel can thus be quickly and exactly adjusted. If from any cause the tension should become unequal, the same can be, as before remarked, adjusted by loosening the
15 tire-plates of any of the spokes and adjusting the spokes, as required.

I have illustrated and described my improved vehicle-wheel in the form preferred by me on account of its simplicity in construction and adjustment and durability in
20 use. I am aware, however, that it is capable of considerable structural variation without departing from my invention.

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

1. In a vehicle-wheel, the combination of a hub; hub - bands therefor, provided with screw-threaded perforations; spokes, screw-
30 threaded on their inner ends, and having disk-

like heads on their outer ends; tire-plates having suitable seats for said heads; a rim; and means for detachably securing said tire-plates to said rim, whereby the heads of said spokes are drawn against said rim. 35

2. In a vehicle-wheel, the combination of a hub; hub - bands therefor, provided with screw-threaded perforations; spokes, screw-threaded on their inner ends and having disk-like heads on their outer ends; tire-plates
40 having suitable seats for said heads; a rim; and screw-bolts for detachably securing said tire-plates to said rim whereby the heads of said spokes are drawn against said rim.

3. In a vehicle-wheel, the combination of a
45 hub having screw-threaded spoke-sockets therein; spokes screw-threaded on their inner ends and having heads at their outer ends; a rim; tire-plates adapted to engage said heads; and means for detachably securing said tire-
50 plates to said rim, whereby the heads of said spokes are clamped against said rim, for the purpose specified.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses. 55

NELSON A. NEWTON. [L. S.]

Witnesses:

ETHEL A. TELLER,

OTIS A. EARL.