(No Model.)

J. ARNOTT.

VEHICLE WHEEL.

No. 418,434. Patented Dec. 31, 1889.

Fig. 1.

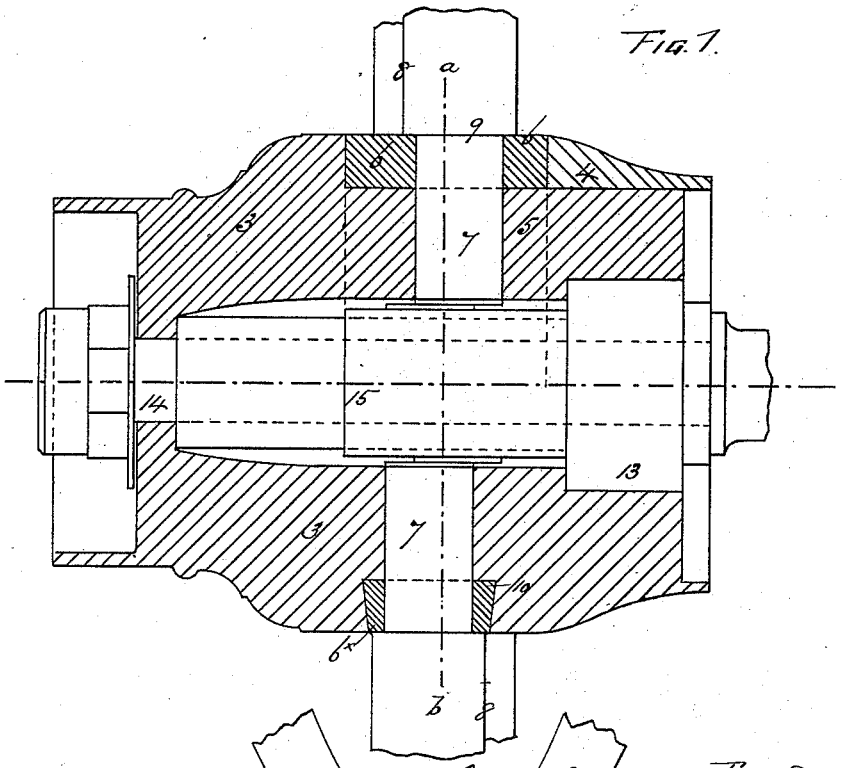
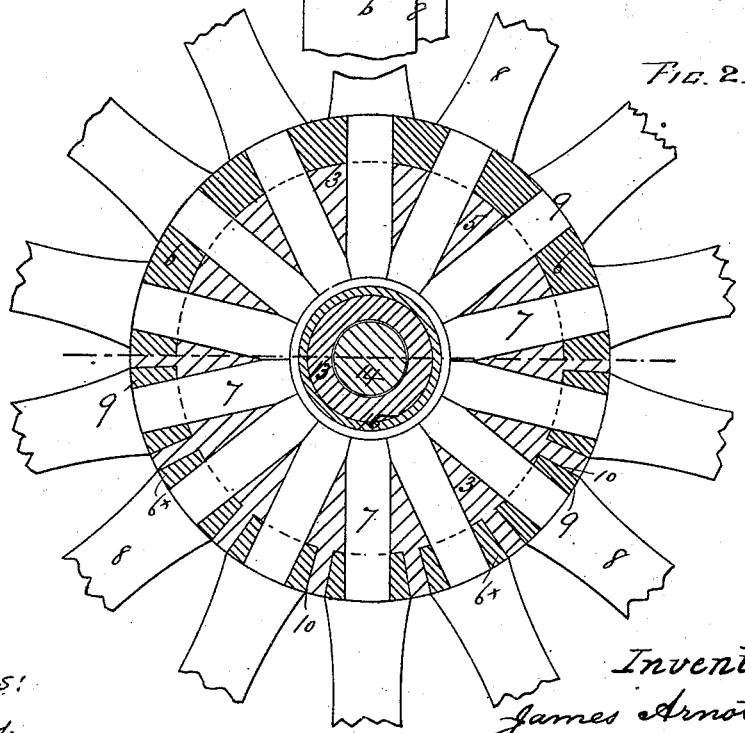


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES ARNOTT, OF LEEDS, COUNTY OF YORK, ENGLAND.

VEHICLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 418,434, dated December 31, 1889.

Application filed June 10, 1889. Serial No. 313,768. (No model.) Patented in England November 26, 1888, No. 17,182.

To all whom it may concern:

Be it known that I, JAMES ARNOTT, gentleman, of Calverley Chambers, Victoria Square, Leeds, Yorkshire, England, have invented certain Improvements in or Applicable to Wheels of Vehicles, (for which I have applied for Letters Patent in Great Britain, No. 17,182, dated November 26, 1888,) of which the following is a specification.

This invention relates to certain improvements in or applicable to wheels of vehicles; and it consists, essentially, in the formation of the nave or hub of the wheel of an elastic construction, substantially in the manner hereinafter described, as distinguished from the present formation thereof of a rigid construction.

In the accompanying drawings, Figure 1 represents a central longitudinal section of the nave of a wheel embodying the present invention, the upper half illustrating the modification thereof hereinafter first described, and the lower half illustrating the modification thereof hereinafter secondly described. Fig. 2 represents a transverse section of the same through about the plane *a b*, the upper and lower halves thereof respectively illustrating the modifications hereinbefore referred to as illustrated by the upper and lower halves of Fig. 1.

According to the modification hereinbefore first referred to, the nave is made in opposite parts 3 4, of wood, metal, or other suitable material, one of such parts being formed with a tubular extension 5, of a less diameter, which projects into or through the other part, and may be screwed or otherwise suitably secured thereto. As thus fitted the parts 3 4 5 form an annular recess adapted to receive, slightly distend, and to internally and laterally support an annular cushion 6, of india-rubber, any suitable compound thereof, or any other suitable analogous material, of a sufficient thickness or substance to be of utility for the purpose of the invention. The part 5 of the nave and the cushion 6 are respectively mortised at opposite parts for the reception of the inner ends 7 of the spokes 8, the shoulders 9 of which abut on the elastic cushion 6.

According to the modification hereinbefore secondly referred to, the nave may be made in one piece in a usual manner and recessed, as at 10, at the parts at which it is mortised for the reception of a series of independent and correspondingly-mortised seatings $6^{\times}$, of elastic material, each of which is adapted to support the shoulders of one of the spokes, as represented in the lower halves of Figs. 1 and 2.

13 represents a box which surrounds the axle 14 and passes centrally into and nearly through the nave of the wheel, and is fitted with a surrounding elastic cushion 15, of rubber or other suitable material, adapted to prevent the inner ends of the spokes from being forced into contact with the box.

By the hereinbefore-described improved means the spokes are well supported and offer a sufficient resistance to properly support the weight of the vehicle, the traveling of which is rendered easier, less noisy, and otherwise more comforable than if fitted with wheels having naves of a rigid construction, jarring and sudden jolting of the axle and springs being avoided and the general wear and tear reduced, besides which the access of water to within the hub is to a great extent prevented.

I claim as my invention—

1. In a wheel-hub, in combination, an annular part 4, an opposite part 3, formed with a tubular mortised extension 5, projecting into the part 4 and forming therewith a surrounding recess, and an annular mortised elastic cushion 6, fitting in such recess and supported by such parts 3 4 5, as set forth.

2. In a wheel-hub, in combination, an annular part 4, an opposite part 3, formed with a tubular mortised extension 5, projecting into the part 4 and forming therewith a surrounding recess, and an annular mortised elastic cushion 6, fitting in such recess and supported by such parts 3 4 5, and spokes fitting into such mortised parts 5 6 and abutting against the cushion 6, as set forth.

3. In a wheel-hub, in combination, a peripherally-recessed mortised wheel-hub 3 and correspondingly-mortised elastic cushion $6^{\times}$, fitting into and retained in such recessed parts of the hub, as set forth.

4. In a wheel-hub, in combination, a peripherally-recessed mortised wheel-hub 3, correspondingly-mortised elastic cushion $6^{\times}$, fitting into and retained in such recessed parts, and spokes fitting into such mortised parts 3 $6^{\times}$ and abutting against the cushion $6^{\times}$, as set forth.

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

JAMES ARNOTT.

Witnesses:

CHARLES AUBRAY DAY,

WALTER MILNER.