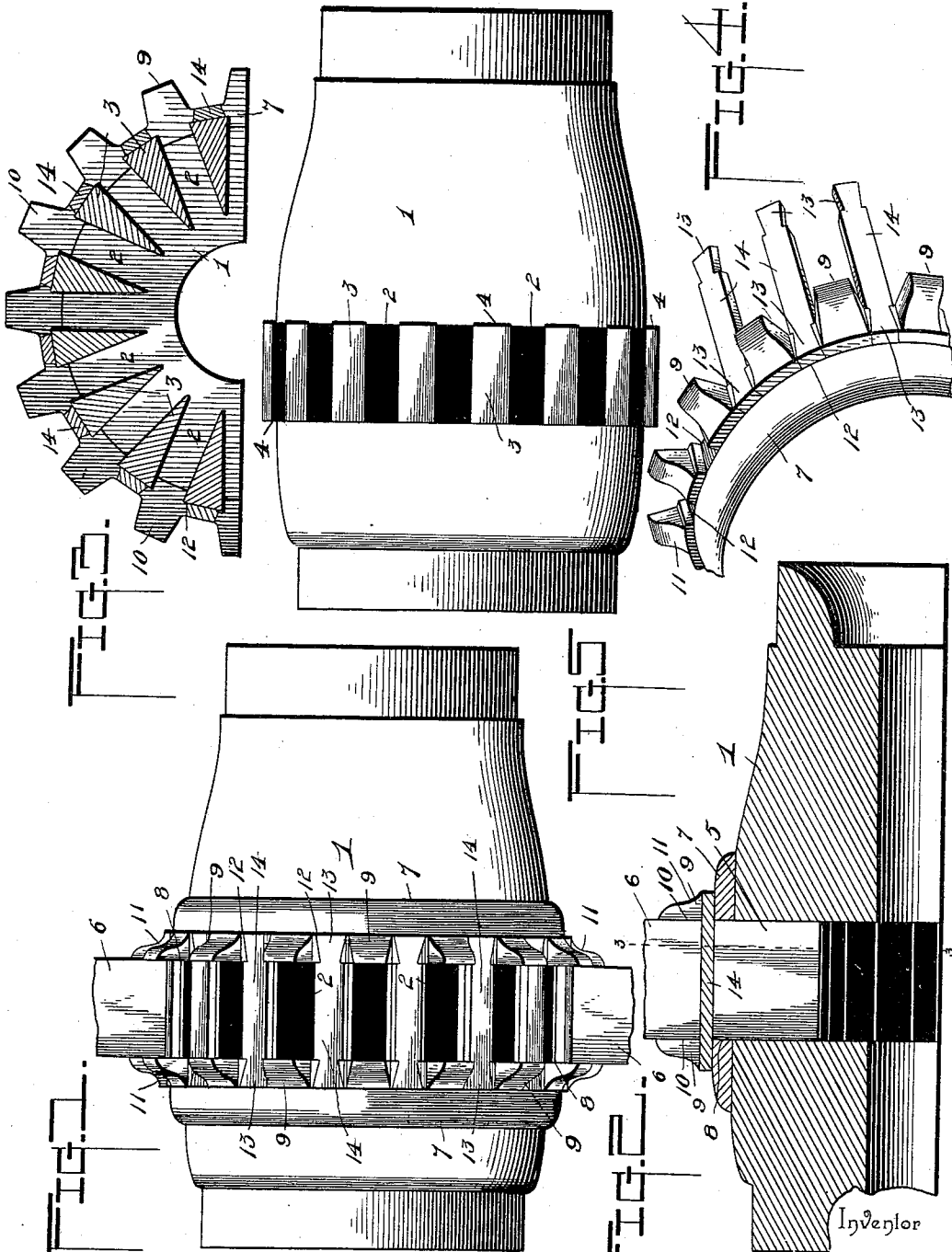


(No Model.)

R. F. A. MACKINNON.
WHEEL HUB.

No. 583,651.

Patented June 1, 1897.



Witnesses

H. J. [Signature]
S. D. [Signature]

By *his* Attorneys,

Robert F. A. McKinnon

Chas. [Signature]

UNITED STATES PATENT OFFICE.

ROBERT F. A. MACKINNON, OF CENTRALIA, WISCONSIN.

WHEEL-HUB.

SPECIFICATION forming part of Letters Patent No. 583,651, dated June 1, 1897.

Application filed December 21, 1896. Serial No. 616,510. (No model.)

To all whom it may concern:

Be it known that I, ROBERT F. A. MACKINNON, a subject of the Queen of England, residing at Centralia, in the county of Wood and State of Wisconsin, have invented a new and useful Wheel-Hub, of which the following is a specification.

This invention relates to wheel-hubs; and it has for its object to provide a hub of this character having exceptional strength and adapted especially for use in connection with heavy vehicles.

The main and primary object contemplated by the invention is to provide an extra support for the spokes by practically extending the tenon thereof, while at the same time providing a construction which strengthens and braces the entire hub and obviates the standing of water between the spokes of the wheel, as is quite common in connection with wheel-hubs banded in the usual manner.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a plan view of a wheel-hub embodying the improvements contemplated by the present invention. Fig. 2 is a vertical longitudinal sectional view of a portion of the hub on an enlarged scale. Fig. 3 is a detail sectional view on the line 3 3 of Fig. 2. Fig. 4 is a detail in perspective of one of the metal strengthening-bands, showing the connection of the tie-plates therewith. Fig. 5 is a detail plan view of the hub constructed to receive the strengthening-bands and tie-plates.

Referring to the accompanying drawings, 1 designates a cylindrical hub-body of ordinary outward form and which may be either a solid or sectional body, according to preference, either form of hub-body being readily fitted with the improvements contemplated.

In the present invention the hub-body 1 is provided intermediate of its ends with a circular series of rectangular spoke-mortises 2, which mortises are separated by the usual triangular mortise-partitions 3, having inwardly-convergent sides, so as to dispose their flat bases at the outer side of the hub-body,

and in the present invention the mortise-partitions 3 project at their outer sides beyond the periphery of the hub-body, such projection of said partitions being necessarily formed by a reduction of the hub-body at each side of the circular series of mortises 2, thereby producing at each side of the series of mortises the annular rest-shoulders 4, which shoulders are disposed in planes coincident with the ends of the mortises.

The spoke-mortises 2 receive therein in the usual manner the squared tenons 5 at the inner ends of the wheel-spokes 6, and said inner tenon ends of the spokes which are fitted in the mortises 2 are designed to be strengthened and braced by the metallic strengthening-bands 7, which are arranged, respectively, at opposite sides of the series of mortises 3 and therefore at opposite sides of the series of spokes fitted in said mortises. The oppositely-located strengthening-bands 7 may be made of either iron or steel, or of any metal, and are tightly fitted on the hub-body 1, so as to rest at their inner flat edges 8 directly against the flat annular rest-shoulders 4 of the hub-body, and said strengthening-bands 7 are provided with a peripheral series of regularly-spaced brace-lugs 9, having flat inner faces 10 and inclined outer faces or sides 11. The brace-lugs 9 of the strengthening-bands are spaced a distance apart equaling the distance between the spokes of the wheel, and the flat inner faces 10 of the lugs form continuations of the flat inner edges of the bands disposed directly at the ends of the mortises 2, so that the said lugs will rest flat against opposite sides of the spokes and extend a distance along said sides of the spokes to provide an extra long tenoning of the spokes in the hubs. To secure the result noted, the metal strengthening-bands 7 are fitted on the hub-body, so that their brace-lugs 9 will be located diametrically opposite each other and respectively at opposite ends of the spoke-mortises 2, so as to rest flat against the opposite sides of the spokes tenoned in the mortises.

Between the brace-lugs 9 thereof the metallic strengthening-bands 7 are provided with dovetailed seats or notches 12, which receive therein the dovetailed tongues 13, formed at opposite ends, respectively, of the flat metal-

lic tie-plates 14, which are arranged flat on the outer sides or bases of the mortise-partitions 3 between the inner tenon end of the spokes extending into the mortises. The dovetailed tongues 13 of the flat metallic tie-plates 14 are permanently swaged or otherwise rigidly secured in the seats 12 to provide means for holding the bands 7 firmly against the shoulders 4 of the hub-body, whereby the brace-lugs 9 will be permanently held in tight contact with the inner end portions of the spokes at opposite sides thereof, so as to firmly brace the spokes and strengthen the connection thereof with the hub.

While the metallic tie-plates 14 are described as having a dovetailed connection with the metallic strengthening-bands 7, other suitable means may be substituted for securing the fastening of the bands against the shoulders 4 and against the wheel-spokes, and at this point it will be observed that by providing the shoulders 4 the bands 7 can be fitted on a perfectly level surface, and when connected by the tie-plates obviate the possibility of water standing between the spokes, as is the case in connection with wheel-hubs band- ed in the common way.

From the foregoing it is thought that the construction and many advantages of the herein-described wheel-hub will be apparent to those skilled in the art without further description, and it will be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a wheel-hub, the hub-body provided with a circular series of spoke-mortises and with annular rest-shoulders at opposite sides of the series of mortises, metallic strengthen-

ing-bands fitted on the hub-body against said opposite rest-shoulders and provided with a peripheral series of radial lugs lying at the ends of the spoke-mortises, and tie-plates arranged flat on the mortise-partitions between the spokes and connected at their ends with the opposite strengthening-bands between the lugs thereof, substantially as set forth.

2. In a wheel-hub, the hub-body provided with a circular series of spoke-mortises and having the outer sides of the mortise-partitions projecting beyond the periphery of the body to produce annular rest-shoulders disposed in planes coincident with the ends of the mortises, metallic strengthening-bands fitted on the hub-body against said shoulders and provided with a peripheral series of radial lugs lying at the ends of the spoke-mortises, and a fastening connection between the two bands to secure the brace-lugs thereof against the inner end portions of the spokes and to hold the bands against said shoulders, substantially as set forth.

3. In a wheel-hub, the hub-body provided with a circular series of spoke-mortises and at opposite sides of the series of mortises with annular rest-shoulders, metallic strengthening-bands fitted on the hub-body against the shoulders and provided with a peripheral series of radial lugs lying at the ends of the spoke-mortises and with dovetailed seats or notches between the lugs, and tie-plates arranged flat on the mortise-partitions between the spokes and provided at their ends with dovetailed tongues fitting in the seats or notches of the bands, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT F. A. MACKINNON.

Witnesses:

I. E. PHILLEO,
LAURA CANNING.