No. 628,823. Patented July 11, 1899.

R. F. A. MacKINNON.

WHEEL HUB.

(Application filed July 26, 1898.)

(No Model.)

Fig. 1.

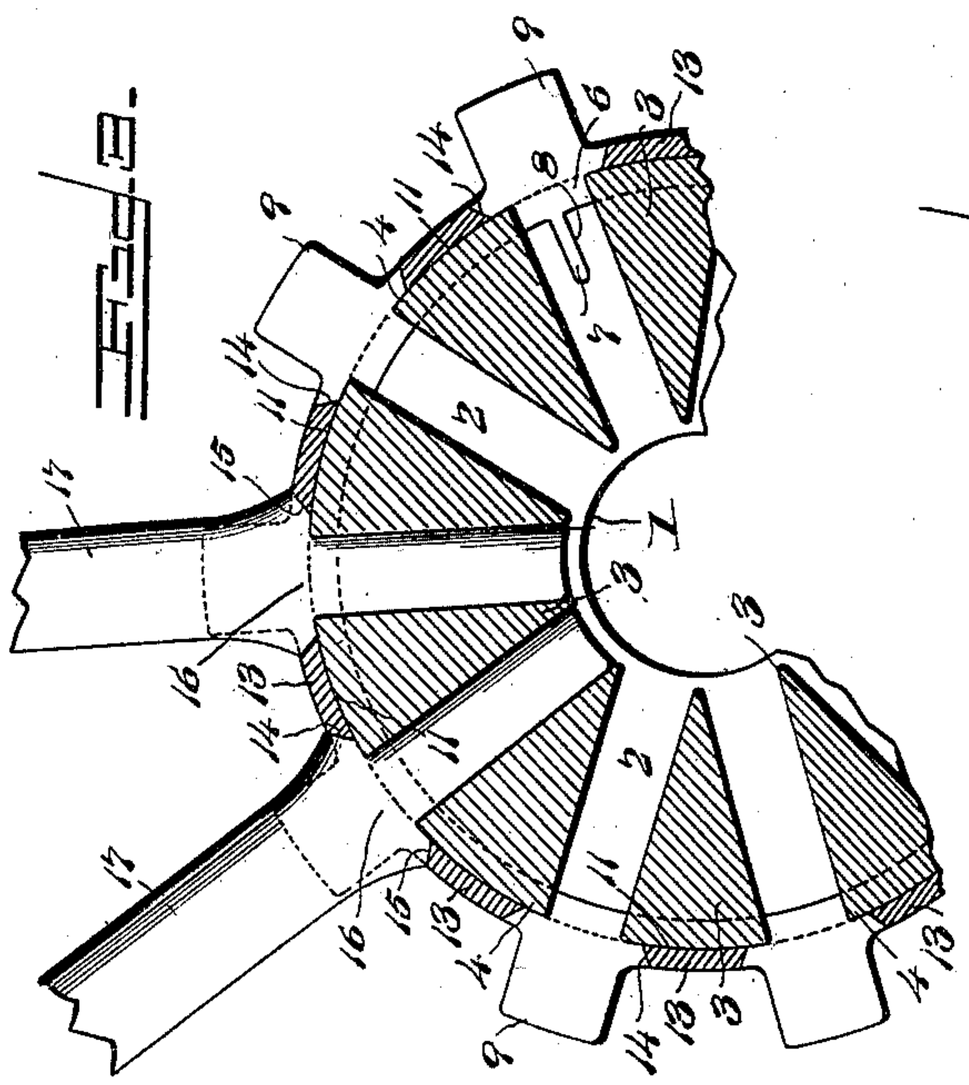


Fig. 3.

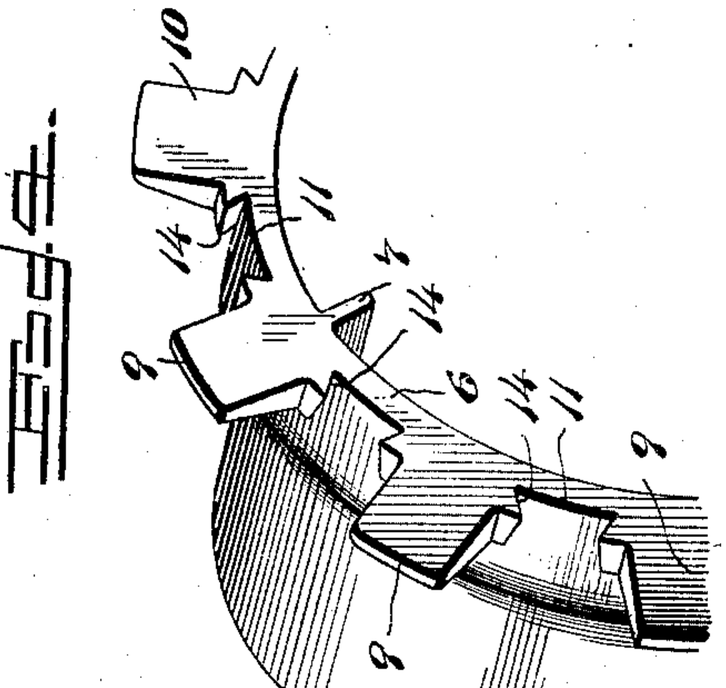
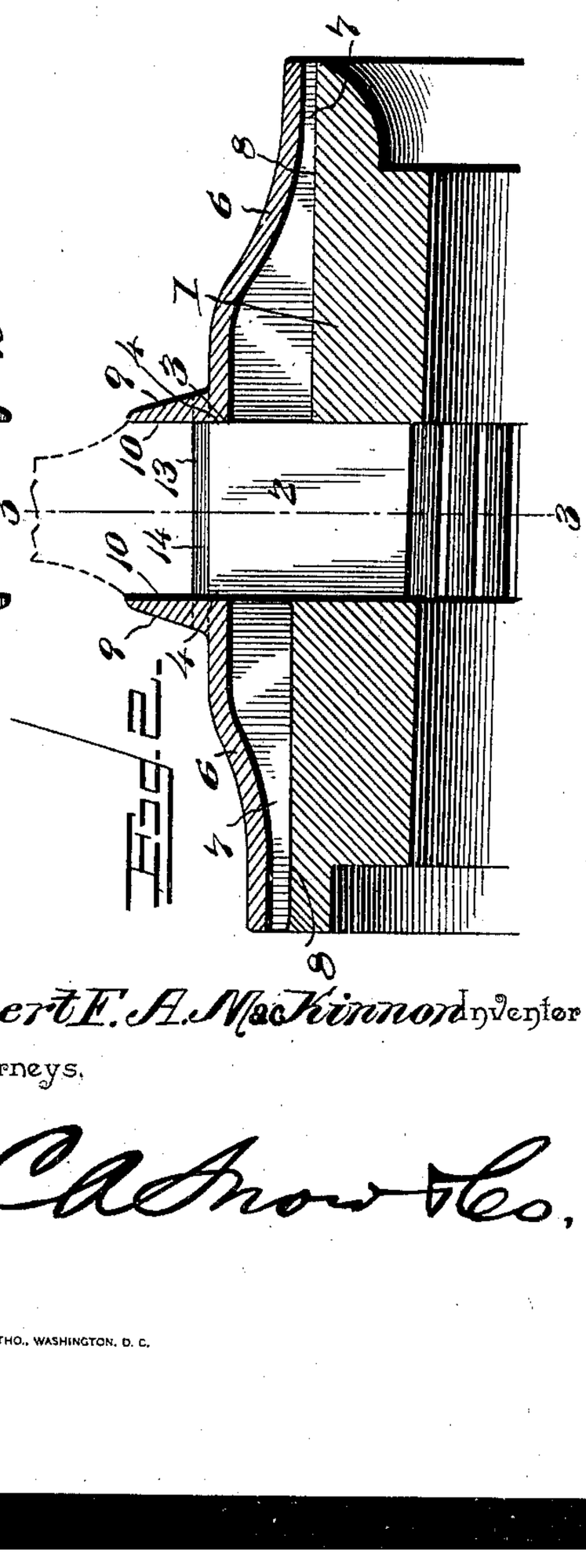


Fig. 4.

Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

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

WHEEL-HUB.

SPECIFICATION forming part of Letters Patent No. 628,823, dated July 11, 1899.

Application filed July 26, 1898. Serial No. 686,946. (No model.)

To all whom it may concern:

Be it known that I, ROBERT F. A. MACKINNON, a subject of the Queen of Great Britain, 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 improved means for banding a wooden hub body or block in such a manner as to strengthen and brace the entire hub, as well as the tenon ends of the spokes fitting in the spoke-mortises, while at the same time providing for completely covering the entire exterior surface of the hub body or block, so as to leave no portions of said body or block exposed to the action of the weather, it being well understood in the art that the action of the sun and rain, especially in hot weather, frequently causes wooden hubs to rot, and thereby become materially weakened.

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 provided with the improvements contemplated by the present invention. Fig. 2 is a vertical longitudinal sectional view thereof on the line 2 2 of Fig. 1. Fig. 3 is a central cross-sectional view on the line 3 3 of Fig. 2, showing one of the spokes fitted in place. Fig. 4 is a detail in perspective of one of the metallic strengthening-bands for the hub body or block.

Referring to the accompanying drawings, the numeral 1 designates a cylindrical hub-body of the usual configuration, and which hub-body may be either of a solid or sectional construction, either of which constructions can be readily fitted with the improvements forming the subject-matter of the present application. The cylindrical hub body or block 1 is provided intermediate its ends with a circular series of spoke-mortises 2, separated by the triangular mortise-partitions 3, having inwardly-convergent sides with their flat bases disposed at the outer side of the hub-body. The outer ends of the mortise-partitions 3 project beyond the periphery of the hub-body, so as to produce at opposite sides of the series of mortises the exterior annular rest-shoulders 4, which are disposed in circular planes coincident with the ends of the mortises, as plainly shown in Fig. 2 of the drawings.

In the present invention the hub body or block 1 is designed to have fitted thereon at opposite sides of the series of spoke-mortises the metallic strengthening-bands 6, preferably formed of castings of a slightly-less diameter than the normal exterior diameter of the hub body or block, to provide for a tight wedging fit of the bands on the hub-body when forced thereon. The metallic strengthening-bands 6 conform in shape to the exterior curvature of the hub-body and are of a length equaling the distance from the annular rest-shoulders 4 at the ends of the mortises to the outer ends of the body, so as to completely cover the exterior surface of said body, and thereby leave no portion thereof exposed to the action of the weather.

The elongated strengthening-bands 6, which fit over the entire exterior surface of the hub-body at each side of the series or row of mortises, are placed on the hub-body by heavy pressure, so that as the same are forced in place up to the shoulders 4 the wooden body of the hub will be necessarily compressed, thereby insuring a tight wedging fit of the band on the body. To insure a proper positioning of the bands 6, the latter are provided on their inner sides with inwardly-projecting longitudinally-disposed guiding and bracing ribs 7, which slide into the longitudinally-disposed retaining-grooves 8, formed in the exterior surface of the hub body or block, so it will be seen that the ribs 7 and grooves 8 perform a double function—namely, to properly guide the bands into position on the hub-body and to brace the said bands against axial slipping under undue strain.

In the practical use of the invention it is preferable to employ only a pair of the ribs and grooves 7 and 8, and in order to insure a proper guiding of the strengthening-bands into position and also a uniform bracing thereof the said ribs, as well as the grooves

in which they fit, are of a length equaling the length of such bands, as plainly shown in Fig. 2 of the drawings.

When the bands 6 are fitted on the hub-body, the same are forced to a position so as to bring their inner edges against the annular rest-shoulders 4 at the ends of the spoke-mortises, and at said inner edges the said bands are provided with a peripheral series of radially-disposed offstanding brace-lugs 9. The brace-lugs 9 are provided with flat inner faces 10, and are spaced at regular distances apart, equaling the distance between the spoke-mortises, and said brace-lugs 9 are arranged directly at the ends of the spoke-mortises, so as to form outward continuations thereof and rest flat against opposite sides of the spokes, thereby providing for an extra long tenoning of the spokes and the hubs. The brace-lugs 9 of the opposite strengthening-bands 6 are arranged diametrically opposite each other in the same arrangement as disclosed in my former patent, No. 583,651, and between the brace-lugs the strengthening-bands are further provided with dovetailed seats or notches 11, in which are rigidly secured the dovetailed tongues 12 at the opposite ends of the flat metallic tie-plates 13. The tie-plates 13 are arranged flat on the outer ends or bases of the mortise-partitions, and by reason of their rigid connection with the bands between the brace-lugs thereof provide means for permanently securing said bands against the rest-shoulders 4 and preventing longitudinal displacement thereof. The said tie-plates 13 are narrower in width than the flat outer ends of the mortise-partitions, on which they rest, and are provided with beveled longitudinal side edges 14, with which beveled edges register the shoulders 15, formed at opposite side edges of the tenons 16 of the spokes 17, said shoulders of the spokes also resting on the projecting edges of the mortise-partitions, at the outer ends thereof, thereby completing a structure in which every portion of the wooden hub body or block is completely covered and protected from exposure to the weather.

While the tie-plates 13 have been described as being formed in one piece, it will be understood that I do not confine my invention to such construction of the tie-plates, as the same may obviously be formed of sections providing the same register and entirely cover up the portions of the mortise-partitions upon which they rest, this being the essential feature of the construction, to insure a covering up of every portion of the wooden hub-body when the spokes are assembled in place, as shown in Fig. 3.

While the essential features of the invention have been specifically pointed out, 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 as new, and desired to be secured by Letters Patent, is—

In a wheel-hub, the hub-body provided with a series of spoke-mortises, and annular rest-shoulders at opposite sides of the series of mortises, metallic strengthening-bands fitting the entire exterior surface of the hub-body at opposite sides of the series of mortises and bearing against said rest-shoulders, said bands being provided at their inner edges with offset brace-lugs lying at the ends of the mortises, tie-plates connected at their ends with the opposite bands between the lugs thereof and resting flat on the mortise-partitions and of a less width than the latter, said tie-plates having beveled side edges, and the spokes whose tenon ends are provided with side shoulders registering with the beveled edges of the tie-plates and the adjacent edges of the mortise-partitions, 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:
F. H. JACKSON,
W. G. SCHROEDEL.