

No. 864,468.

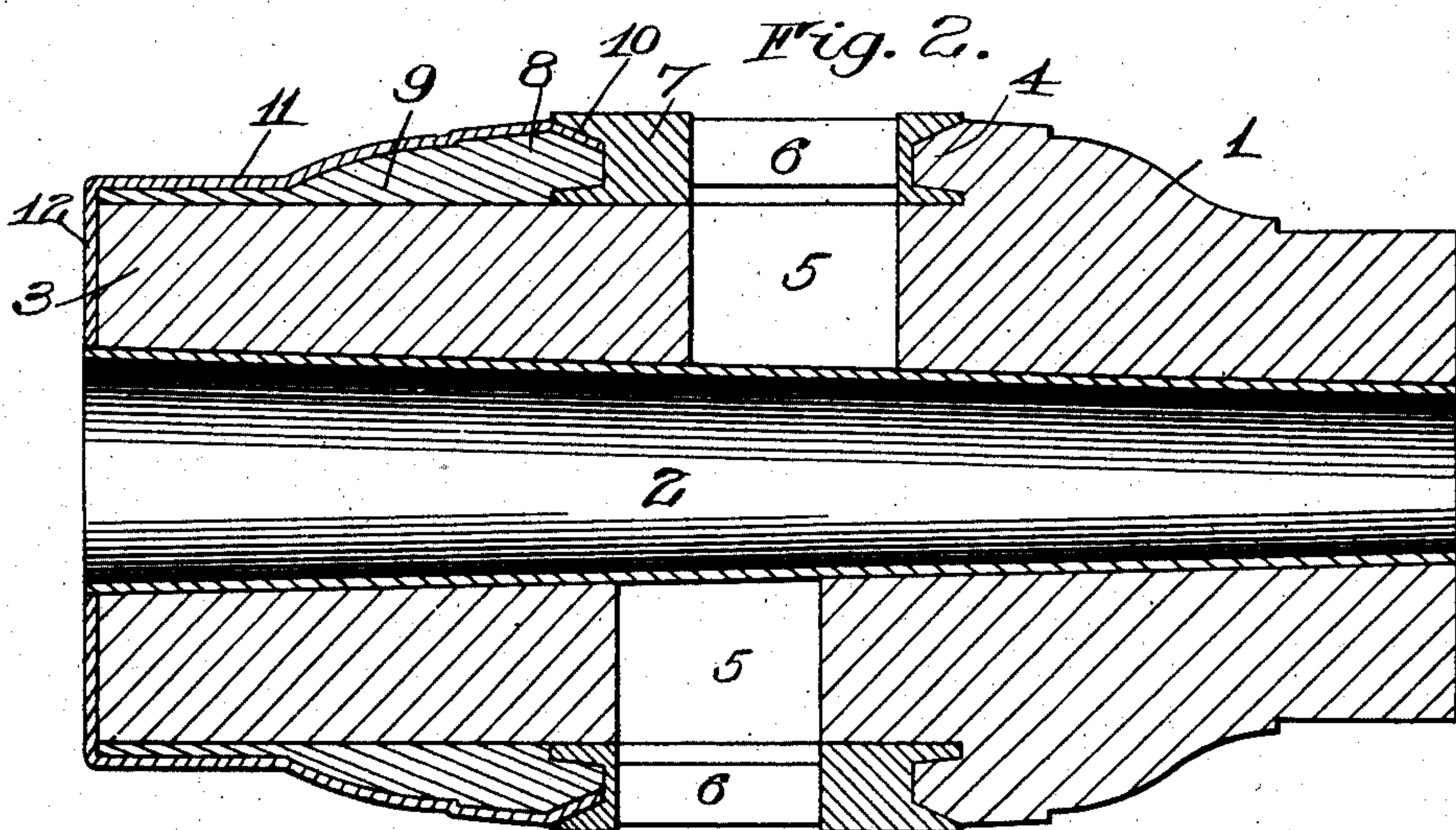
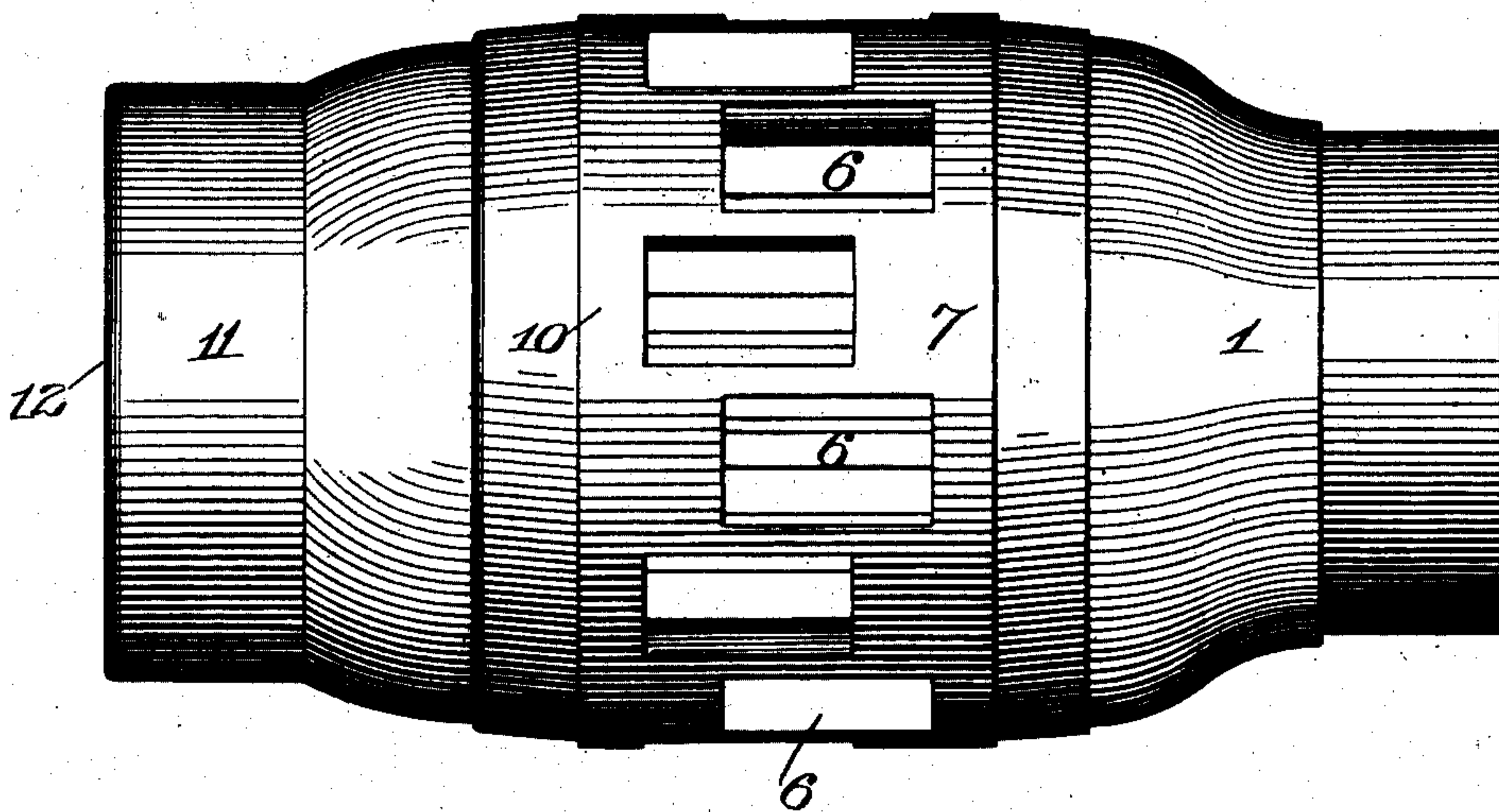
PATENTED AUG. 27, 1907.

W. F. JESSUP.

WHEEL HUB.

APPLICATION FILED APR. 20, 1907.

Fig. 1.



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## WHEEL-HUB.

No. 864,468.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed April 20, 1907. Serial No. 369,232.

*To all whom it may concern:*

Be it known that I, WILLIAM F. JESSUP, of Newark, in the county of Wayne and State of New York, have invented certain new and useful Improvements in Wheel-Hubs; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of the specification, and to the reference numerals marked thereon.

My present invention relates to vehicle wheels and particularly to the hubs thereof and it has for its object to provide a construction of hub wherein the spokes will be reinforced at the points adjacent to the tenons in a manner which will offer permanent support to their connection therewith and prevent the parts from becoming loosened and being rendered unserviceable by the varying strains imposed at these points through constant usage.

A further object of my invention is to protect and strengthen the hub in such a manner that when constructed in sections or several parts, its integrity will be preserved under all conditions.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings, Figure 1 is a side elevation of a wheel hub embodying my invention. Fig. 2 is a longitudinal central section therethrough.

In the ordinary construction of wheel hub, that is, where the plain wooden spokes are simply mortised into the wooden hub, barrel or nave, changes of temperature and the effects of moisture tend to loosen them after a time and destroy the rigidity of the wheel. Lengthening of the tenons on the spokes to overcome this objection necessarily requires an increase in the diameter of the hub which is objectionable and there is, furthermore, still a tendency for the tenons to break at their junctions with the larger portions of the spokes which are probably the weakest points thereof. I therefore find it desirable to construct the hub and spoke sockets as shown in the accompanying drawings wherein 1 indicates the body portion of the hub provided with a longitudinal bore in which is inserted the bushing 2 forming the axle box. The body or nave is turned down throughout a portion of its length forming a reduced portion 3 extending preferably beyond the longitudinal center and terminating in a shoulder or abutment 4 beyond which the nave may be again reduced or turned into any symmetrical or desired form.

The reduced portion 3 is provided adjacent to the abutment, with the required number of radial mortises 5 which register with corresponding slots or sockets 6 in a band 7, of steel or other relatively strong and rigid material, of the same internal diameter as the reduced por-

tion which is slipped over the latter to a tight fit and driven home against the shoulder 4. The band is held in place by being clamped between the said shoulder and the end 8 of a similarly fitted sleeve 9 preferably of the same material as the nave, to which it is cemented or glued and extending throughout the remainder of the length of the reduced portion. The band is provided laterally, and preferably upon each side, with an annular groove or channel forming flanges 10 and the shoulder 4 and sleeve 9 are undercut to fit within the same.

The spokes are inserted in the hub by driving the tenons on the inner ends thereof within the mortises 5 until the shoulders formed at their junctions with the bodies of the spokes abut against the nave and the adjacent heavier base portions of the spokes are wedged firmly within the slots 6 of the ring or band 7, by which they are strengthened and held firmly in place. There is a disadvantage present, however, in the construction so far described and that is that the tremendous leverage with which the strains of usage exert their pressure on the spoke sockets still tend after a time to loosen the band 7 and particularly to split or damage the sleeve 9 which it is desirable to make very thin in view of the consideration of general proportions before pointed out. This is particularly true if the hub and sleeve are composed of wood as is usual and most convenient. To obviate this difficulty I provide a preferably sheet metal cap or shell 11 of an inside configuration similar in form to the exterior of the sleeve, over which latter it is fitted, the end being perforated to correspond with the bore of the axle box and constituting in effect a flange 12 which protects the thin end or edge of the sleeve and also serves as a wearing surface when on the inner end of the hub for engagement with the collar of the axle arm. The upper or outer flange 10 on the side of the band adjacent to the sleeve is tapered or provided with an inclined inner face and a space slightly less than the thickness of the material of the shell is left between this annular face and the correspondingly beveled end 8 of the sleeve. After the latter has been secured in place the shell (which is finished to the proper length axially of the hub) is forced down with sufficient pressure to cause its inner edge when brought in contact with the inclined face of the flange 10 to be bent inwardly and be pressed between the flange and the end of the sleeve which locks or jams it in a position to entirely cover and protect the latter, at the same time tightening the connection between the band and other parts.

A hub constructed in accordance with my invention will be strong and durable and yet may be made light and of a size considerably smaller than those constructed of one piece while exceeding the latter in strength.

I claim as my invention.

1. The combination with a wheel hub and a band thereon having a flange extending axially of the hub, said band being provided with spoke sockets, of a sleeve secured to



the hub on one side of and adjacent to the band and a metallic shell extending over and encircling the sleeve and having its inner edge extending beneath the flange of the band.

5     2. The combination with a wheel hub and a band there-  
on provided with spoke sockets and with a flange extending  
axially of the hub, said flange having an inclined lower  
face, of a sleeve secured to the hub adjacent to the band  
and having its inner end arranged beneath the flange of  
10 the latter and a metallic shell encircling the sleeve and  
having its inner edge extending beneath the flange and  
between the latter and the sleeve.

15     3. The combination with a wheel hub and a band there-  
on having a flange extending axially of the hub, said band  
being provided with spoke sockets, of a sleeve secured to  
the hub adjacent to the band and a metallic shell encir-  
cling the sleeve and having its inner edge extending be-

neath the flange of the band and its outer end extending  
angularly against the end face of the hub.

4. The combination with a wheel hub and a band there- 20  
on provided with spoke sockets and with a flange extending  
axially of the hub, said flange having an inclined lower  
face, of a sleeve secured to the hub adjacent to the band  
and having its inner end beveled and arranged beneath  
the flange of the latter and a protective covering for said 25  
sleeve comprising a metallic shell encircling the latter and  
having its inner edge forced against the inclined face  
of the flange until deflected to extend angularly between  
the latter and the beveled end of the sleeve.

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Witnesses:

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