

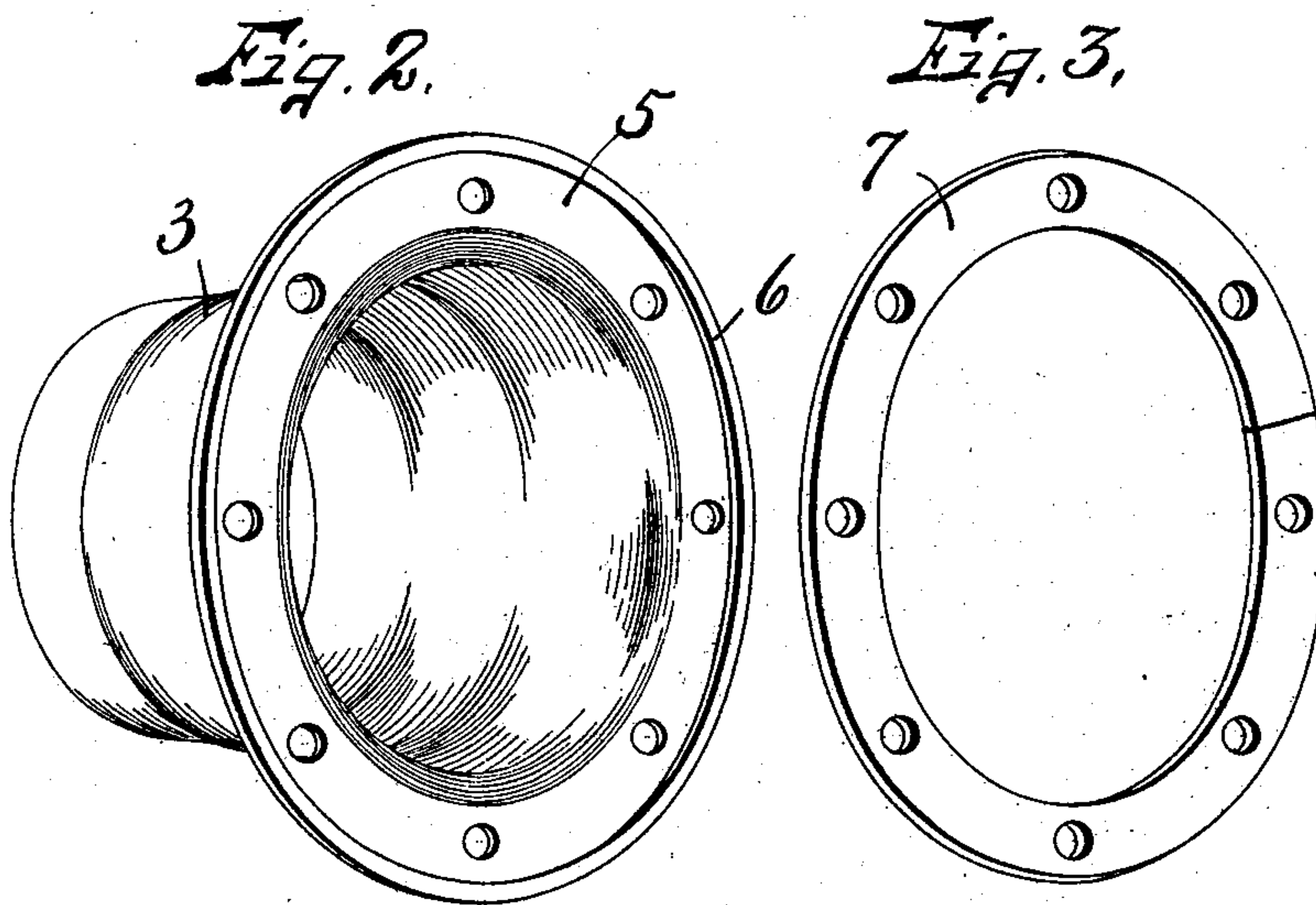
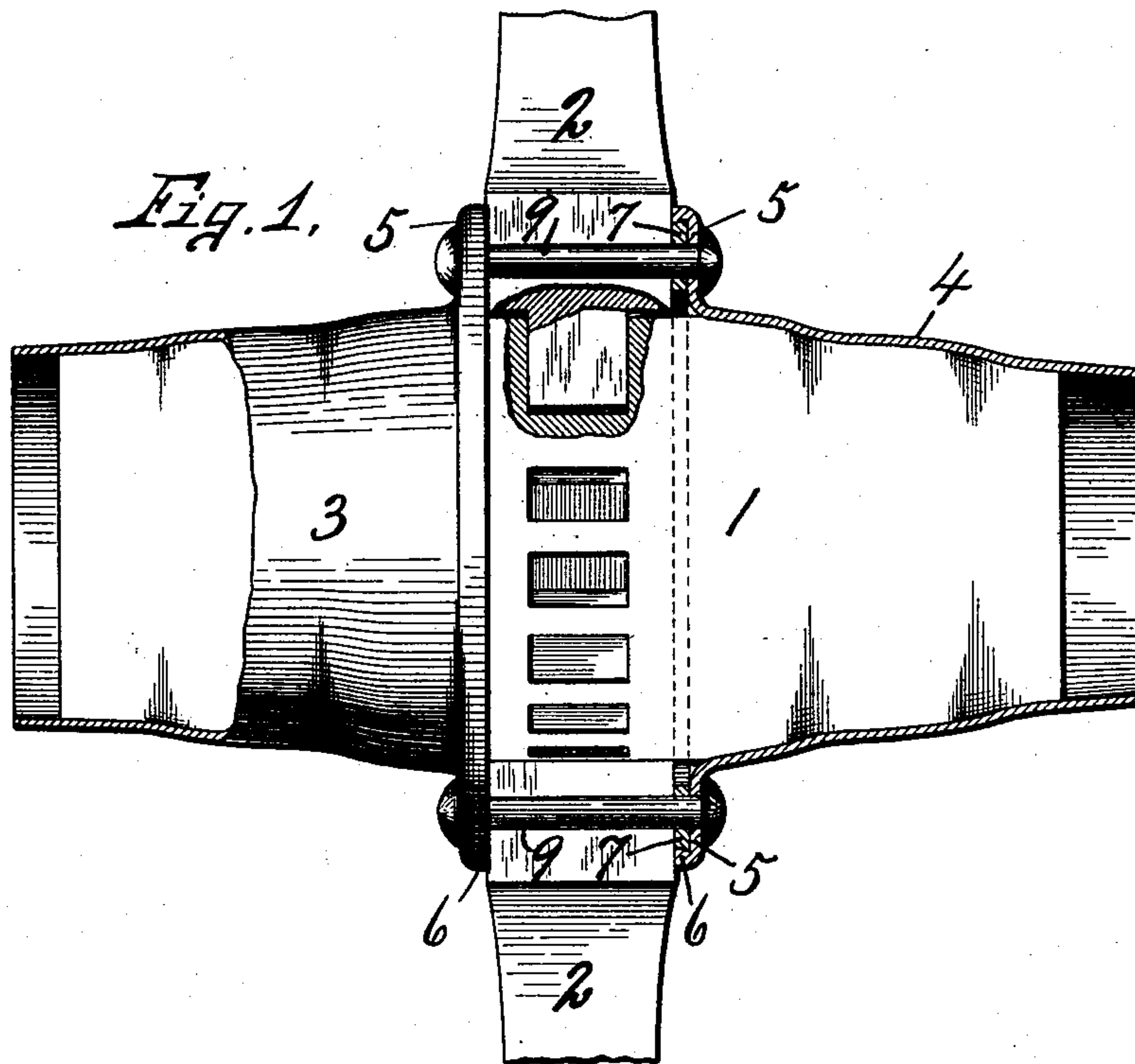
No. 754,490.

PATENTED MAR. 15, 1904.

G. A. McKEEL.  
METAL COVERED VEHICLE HUB.

APPLICATION FILED DEC. 12, 1903.

NO MODEL.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## METAL-COVERED VEHICLE-HUB.

SPECIFICATION forming part of Letters Patent No. 754,490, dated March 15, 1904.

Application filed December 12, 1903. Serial No. 184,900. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. McKEEL, of Jackson, in the county of Jackson, in the State of Michigan, have invented new and useful  
 5 Improvements in Metal - Covered Vehicle-Hubs, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in  
 10 metal-covered vehicle-hubs, in which the main hub or body is formed of wood and is suitably mortised to receive the wood spokes. In this class of hubs the metal sleeves or collars are closely fitted upon the periphery of the  
 15 wood hub at opposite sides of the spokes and are drawn firmly into engagement with the opposite faces of said spokes to protect the hub from the elements and to stiffen the joints of the spokes with the hub and also to give  
 20 the hub a neat and pleasing appearance. Although this gives additional strength and durability to the wheel of which the hub forms a part, it is important that it be accomplished without materially increasing the weight and  
 25 expense of the completed article, and my object, therefore, is to press each collar or sleeve from a single piece of thin sheet metal and to reinforce its inner end adjacent to the spokes with a metal annulus which is inserted in the  
 30 end of the collar and is held in place by overturning or crimping the edge of the collar on the periphery of the annulus.

In the drawings, Figure 1 is a face view of my improved metal-covered hub, showing one  
 35 collar in section and also showing the adjacent ends of the spokes. Figs. 2 and 3 are perspective views of one of the detached collars or sleeves and its reinforcing-ring.

Similar reference characters indicate corresponding parts in all the views.

The main body of the hub, as 1, is formed of wood, and its periphery is mortised to receive the tenons of suitable wood spokes 2, the adjacent faces of which next to the hub  
 45 abut against each other, and therefore form a practically solid annular body around the hub. The opposite ends of the hub are turned to the desired form, usually tapering, so that

the ends are of less diameter than the center to receive similarly-formed metal sleeves or  
 50 collars 3 and 4, which are fitted snugly upon the ends of the hub. The inner end of the inner collar 3 is usually larger in diameter than the outer end of the outer collar 4; but each of these collars is pressed or drawn from  
 55 a single piece of thin sheet metal, so as to be free from seams or joints, which enables the use of very thin metal and at the same time affords great strength and permits the sleeves or collars to be easily and quickly formed at  
 60 a minimum cost. The end of the sleeve or collar adjacent to the spoke is pressed or expanded laterally or radially in a plane at substantially right angles to its axis, thus forming an annular flange 5, the edge of which is  
 65 turned axially to form an annular shoulder 6. This forms a slight recess in the inner face of the sleeve or collar, which recess is surrounded by the annular shoulder 6, and into this recess is fitted an annulus or flat metal ring 7,  
 70 which also encircles the hub adjacent to the spokes and serves to reinforce or strengthen the collar or sleeve. After the annulus or ring 7 is placed in position against the inner face of the flange 5 and within the shoulder  
 75 6 the free edge of said shoulder is compressed or crimped inwardly upon the periphery of the ring or annulus 7 to hold the latter firmly in place, the periphery of the ring 7 being tapered or beveled axially to insure a positive  
 80 locking engagement of the shoulder 6 therewith. After these collars or sleeves 3 and 4 are formed and the rings 7 secured in place, as just described, they are placed upon their  
 85 respective ends of the hub with the inner faces abutting against the sides of the spokes and are then clamped or drawn together into closer engagement with the spokes by rivets  
 90 9 or equivalent fastening means, which are passed through apertures in the flanges 5 and rings 7 and between the meeting faces of the spokes, thereby firmly clamping the collars, hub, and spokes together. In order to avoid  
 95 waste of material, the annulus or ring 7 is formed from a straight narrow strip of metal, which is bent into circular form, as shown,



with its ends abutting against each other. It is now apparent that the cost and labor of manufacturing and assembling these collars upon the hub are comparatively slight, and  
5 aside from the fact that these sheet-metal collars are lighter and stronger than cast-metal collars for the same purpose they are capable of being fitted more tightly on the hub and against the spokes than cast-iron and produce  
10 a neater and more finished appearance to the hub.

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

15 1. A seamless sheet-metal collar for wood hubs, said collar being formed with an annular flange, in combination with a metal ring placed against the flange, the periphery of said flange being turned or crimped over upon  
20 the periphery of the ring to lock the parts together.

2. The combination with a wood vehicle-hub and spokes mortised therein, of sheet-metal collars fitted upon the ends of the hub  
25 and having their adjacent ends expanded along the sides of the spokes forming annular flanges and metal rings between the flanges and adja-

cent sides of the spokes, the outer edges of the flanges being crimped or overturned against the periphery of their rings to secure the  
30 rings in place.

3. The combination with a wood hub and spokes, of seamless sheet-metal collars or sleeves fitted upon the ends of the hub, metal rings inserted in the inner ends of the collars,  
35 the inner ends of the collars being crimped or turned over upon the periphery of the ring to hold it in place and rivets passed through the rings to tie the collars together on the  
40 hub.

4. A seamless sheet-metal collar for wood hubs having one end expanded radially to form a flange, the edge of the flange being turned axially to form an annular shoulder,  
45 and a metal ring fitted within the annular shoulder, the latter being overturned upon the periphery of the ring to lock the parts together.

In witness whereof I have hereunto set my hand this 8th day of December, 1903.

GEORGE A. McKEEL.

Witnesses:

P. H. WITHINGTON,  
W. WITHINGTON.