Apr. 17, 1923. 1,452,200

J. L. HECHT

METHOD OF MAKING METAL WHEEL HUBS

Filed Dec. 7, 1921

Fig. 1.

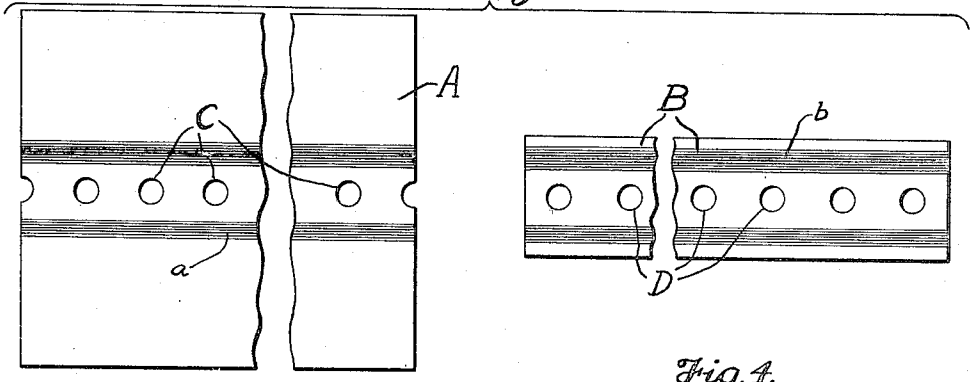


Fig. 2.

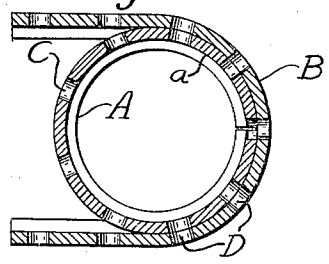


Fig. 3.

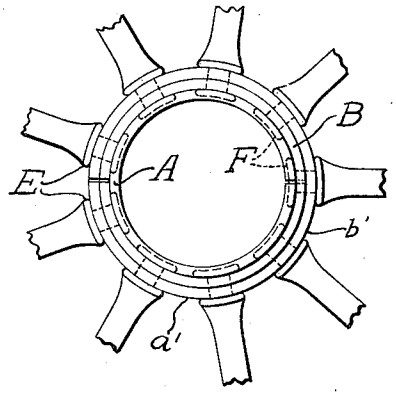


Fig. 4.

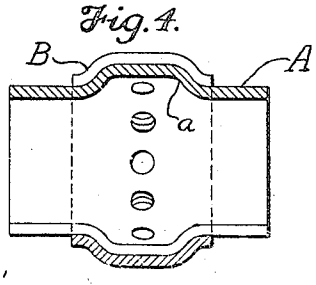


Fig. 5.

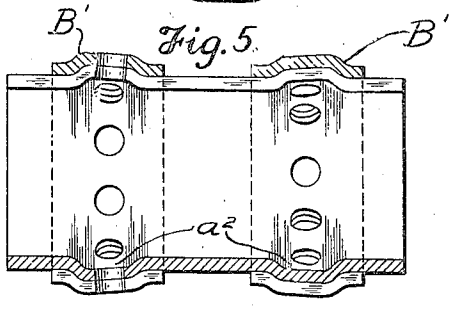
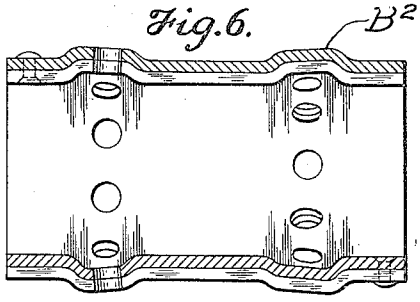


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOSEPH L. HECHT, OF DAVENPORT, IOWA, ASSIGNOR TO G. WATSON FRENCH AND JOSEPH L. HECHT, OF DAVENPORT, IOWA, AND W. H. STACKHOUSE, OF SPRINGFIELD, OHIO, COMPOSING THE FIRM OF FRENCH & HECHT.

METHOD OF MAKING METAL WHEEL HUBS.

Application filed December 7, 1921. Serial No. 520,548.

To all whom it may concern:

Be it known that I, JOSEPH L. HECHT, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Methods of Making Metal Wheel Hubs, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to the production of tubular metal wheel hubs, more particularly of the type in which a circumferential groove is provided on the interior of the hub to form a spoke chamber to receive the heads on the inner ends of the spokes by which the latter are riveted to the hub. The object of the invention is to produce a hub of great strength and durability and in which the spoke chamber or chambers will be reenforced so as to withstand the severe stresses imposed at the points where the spokes are fastened in place. To this end the invention consists in an improved method of forming the hub, in which method two blanks are assembled one within the other to form a hollow cylindrical hub structure composed of two thicknesses or layers of material, which layers are caused to interlock with each other by interfitting protuberances and grooves on the respective layers; whereby there is formed a hub having an internal spoke chamber which is reenforced by an external reenforcing member. The present invention is directed to one method of forming a hub structure of the characteristics and form described and claimed in an application for Letters Patent of the United States filed by me on the 11th day of April 1919, Serial No. 289,371, patented March 14, 1922.

In the accompanying drawings:

Fig. 1 is a plan view of two blanks for forming a hub in accordance with my invention.

Fig. 2 is a cross sectional view showing the two blanks bent and assembled in an intermediate stage of the method.

Fig. 3 is a similar view of the completed hub.

Fig. 4 is a longitudinal sectional elevation of the same.

Figs. 5 and 6 are sectional views showing how the method is applicable to form hubs with two spoke chambers for two rows or ranks of spokes.

Referring to the drawings:

In carrying my improved method into effect, I provide two blanks A and B in the form of metal plates or sheets, the blank A being of a form and size to constitute the hub proper or shell, and the blank B being of a form and size to constitute the reenforcing member thereof, and by suitable means I bend the blank A into cylindrical form, and I bend the blank B into U-shaped or general semi-circular form so that the cylindrical blank may be seated or assembled within the U-shaped blank as shown in Fig. 2. The blanks, either before being thus bent, or during the bending operation, are formed with longitudinal grooves *a* and *b* respectively, which are produced by forcing the material of the blanks outwardly from one side along a longitudinal line, thereby throwing up on the other side longitudinal ribs *a'* and *b'* on the respective blanks. As a result, the blank A will have in one side the cavity or groove *a*, and on its other side the corresponding rib or protuberance *a'*; and the blank B will likewise have in one side the cavity or groove *b*, and on its other side the corresponding rib or protuberance *b'*, the protuberance on the blank A entering and interlocking with the groove in the blank B when the two blanks are assembled one within the other as shown in Fig. 2. By suitable means and devices I next force the legs or free ends of the blank B closely around the cylindrical blank A so that the blank B will closely surround the blank A and will conform to the cylindrical form thereof as shown in Fig. 3, by which action the protuberance on the blank A will seat in and interlock throughout its extent with the groove in the blank B. By these operations a hub shell is produced constituted by the blank A and having on its interior a circumferential groove forming a spoke chamber which is reenforced by a surrounding reenforcing member constituted by the blank B.

The protuberant portions of the two blanks are formed with holes C and D respectively to receive the spokes, which holes in the assembled blanks will register with each other so that the inner ends of the

spokes can be passed therethrough and firmly riveted in place, and the parts secured together by the formation of shoulders E on the spokes bearing against the outer side of the reenforcing member, and heads F on the ends of the spokes seated in the spoke chamber and bearing against the inner side of the hub shell. The holes in the two blanks may be formed either before the blanks are bent, or they may be punched or bored through the blanks after they are bent into their final cylindrical form of Fig. 3.

By assembling the bent blanks one within the other as above described, when the outer blank is finally shaped into cylindrical form, the joints of the two blanks will be disposed out of line with each other and at diametrically opposite points; and the blanks may be maintained in fixed relation to each other and connected together so as to preserve their cylindrical form, either by riveting the spokes thereto as above described, or by spot welding the two blanks together, or by riveting them together by rivets, or by other suitable means.

I have described above my improved method as applicable to the formation of a hub structure provided with a single spoke chamber to receive a single row or rank of spokes, but it will be manifest that the invention is applicable as well in connection with the formation of a hub structure having two spoke chambers a^2—a^2 as shown in Fig. 5 to receive two rows or ranks of spokes, in which event the surrounding reenforcing member may be either applied in the form of separate comparatively narrow members B′—B′ as shown in Fig. 5, or in the form of a single member B^2 extending substantially throughout the length of the hub shell proper as shown in Fig. 6.

It will be understood that such changes in the method of procedure set forth may be made as will suggest themselves to the skilled mechanic, without departing from the limits of the invention; and further it will be understood that the invention is not limited in respect to the steps of the method except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim is:

1. The method of making wheel hubs with circumferential spoke chambers, which method consists in assembling a cylindrical blank within a U-shaped blank, each with a groove in one side and a corresponding protuberance on the other side, and bending the legs of the U-shaped blank around the cylindrical blank to give the U-shaped blank cylindrical form, while causing the protuberance on the inner blank to become interlocked in the groove in the surrounding blank.

2. The method of making wheel hubs with circumferential spoke chambers, which method consists in providing two blanks each with a groove in one side and a corresponding protuberance on the other side, bending one blank into cylindrical form and bending the other blank into U-shaped form, seating the cylindrical blank within the U-shaped blank, and finally acting on the U-shaped blank to cause the same to conform to the cylindrical form of the cylindrical blank, while causing the protuberance on the inner blank to become interlocked in the groove in the surrounding blank.

In testimony whereof, I have affixed my signature hereto.

JOSEPH L. HECHT.