

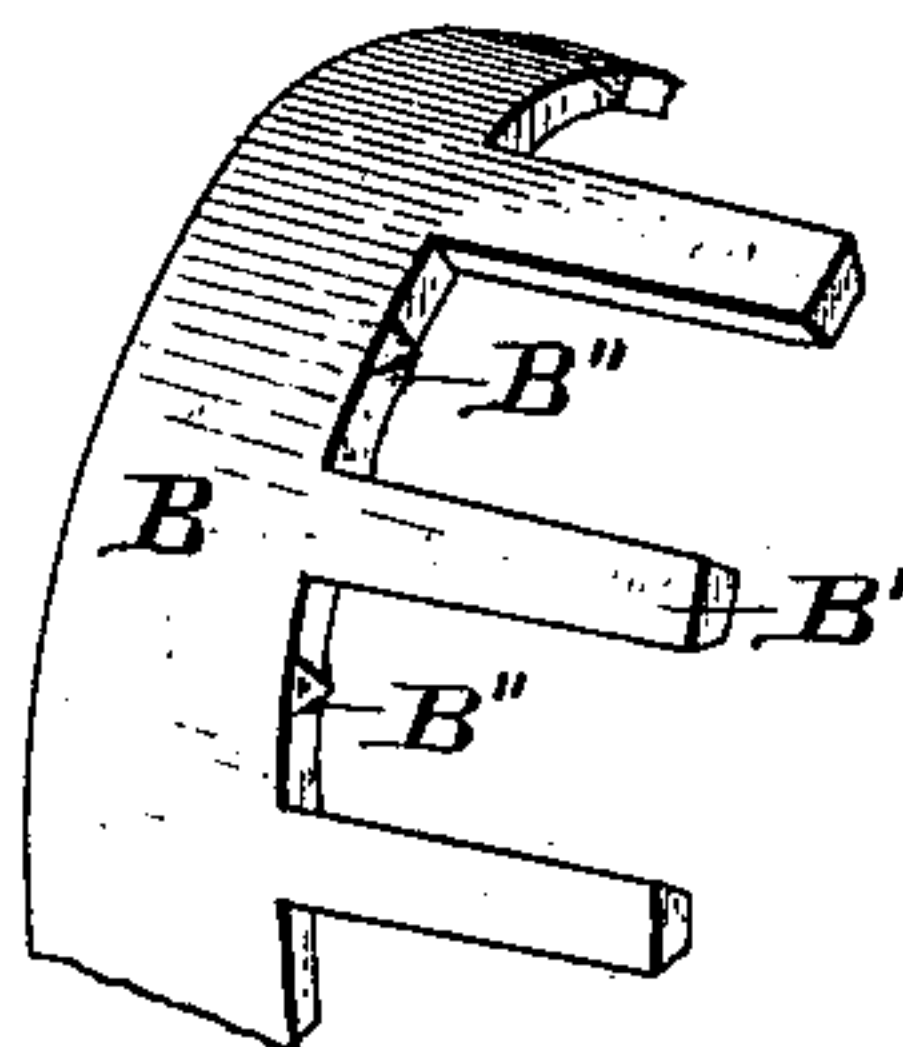
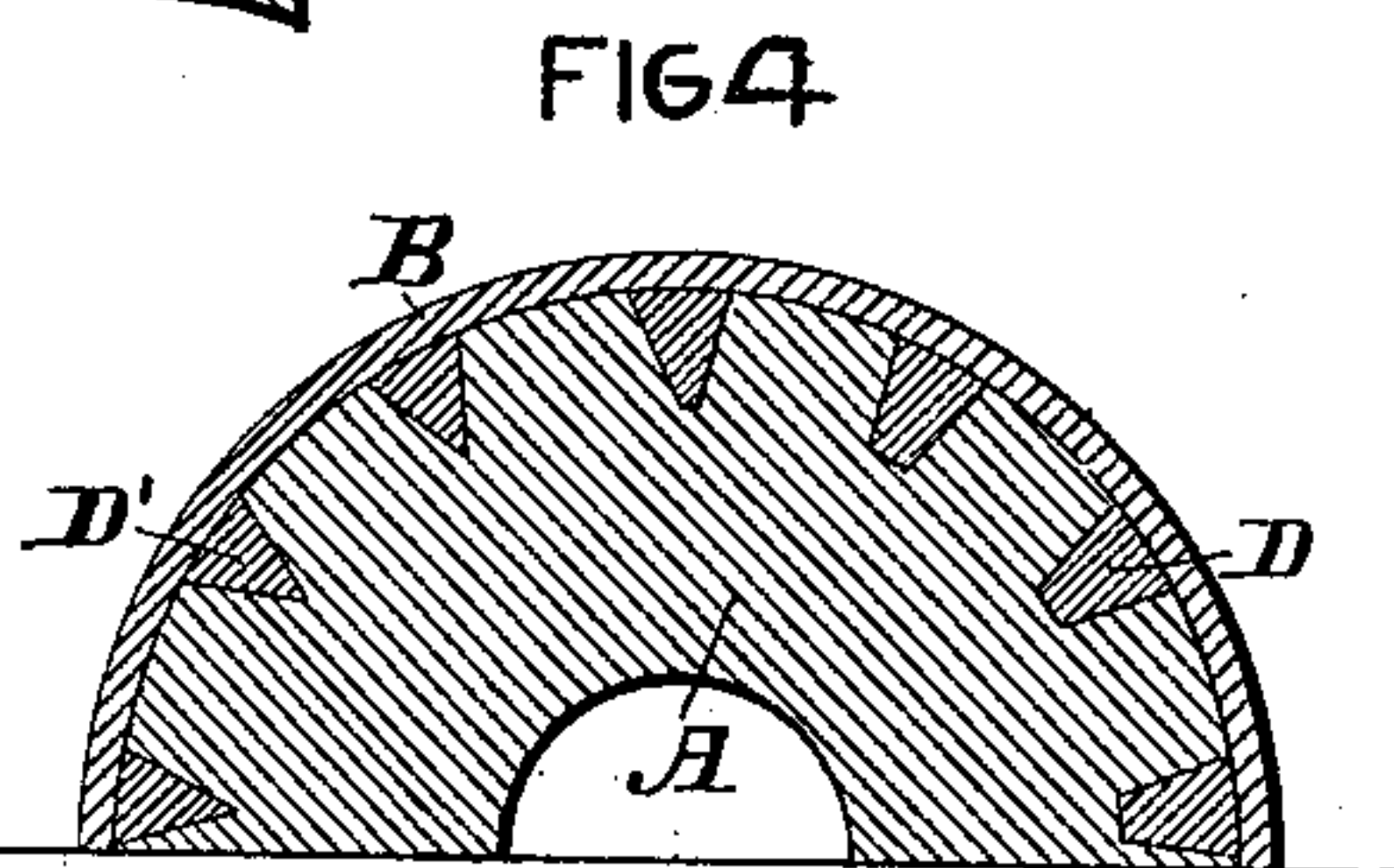
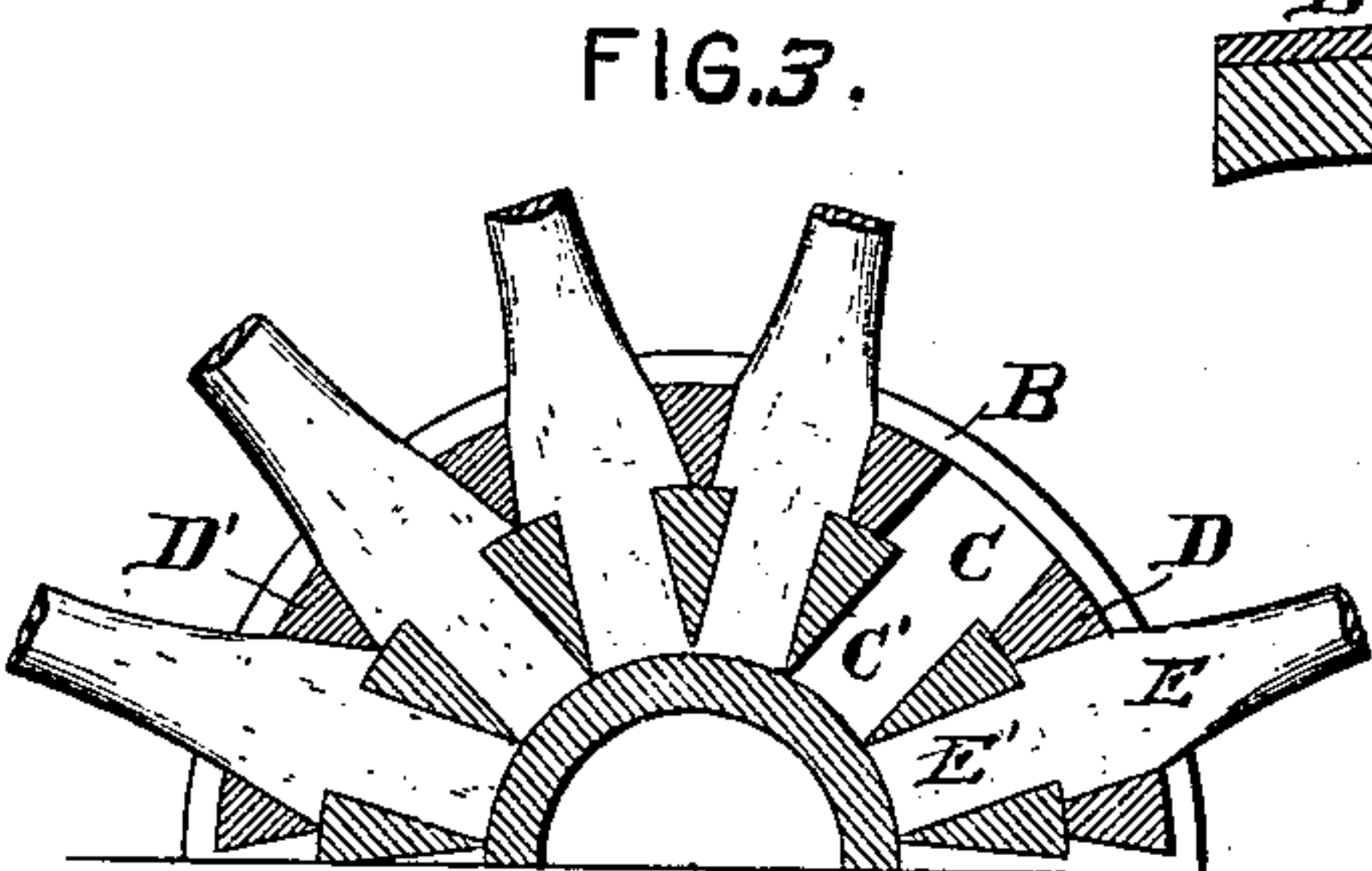
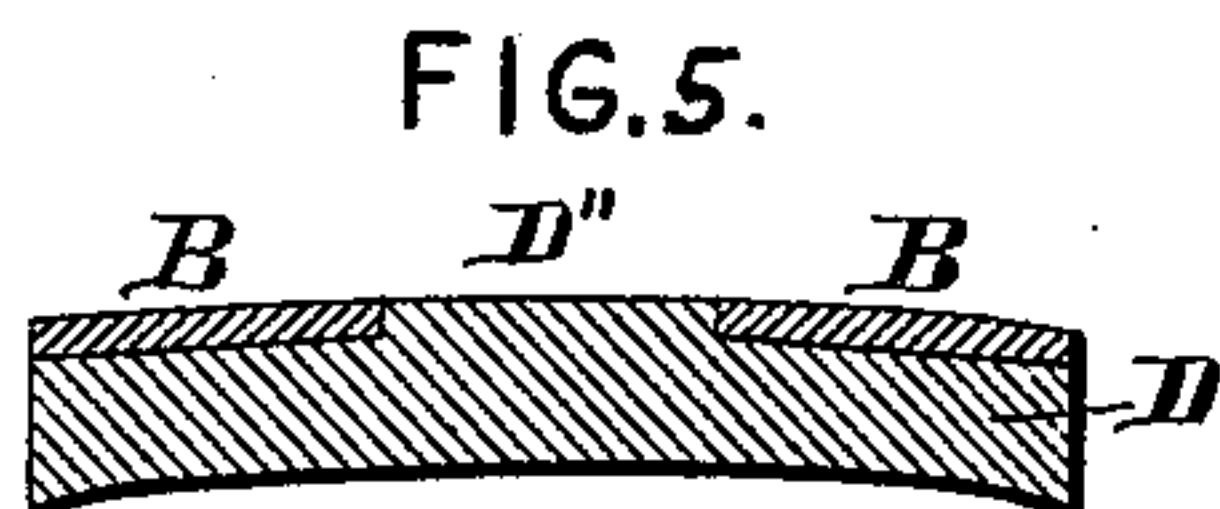
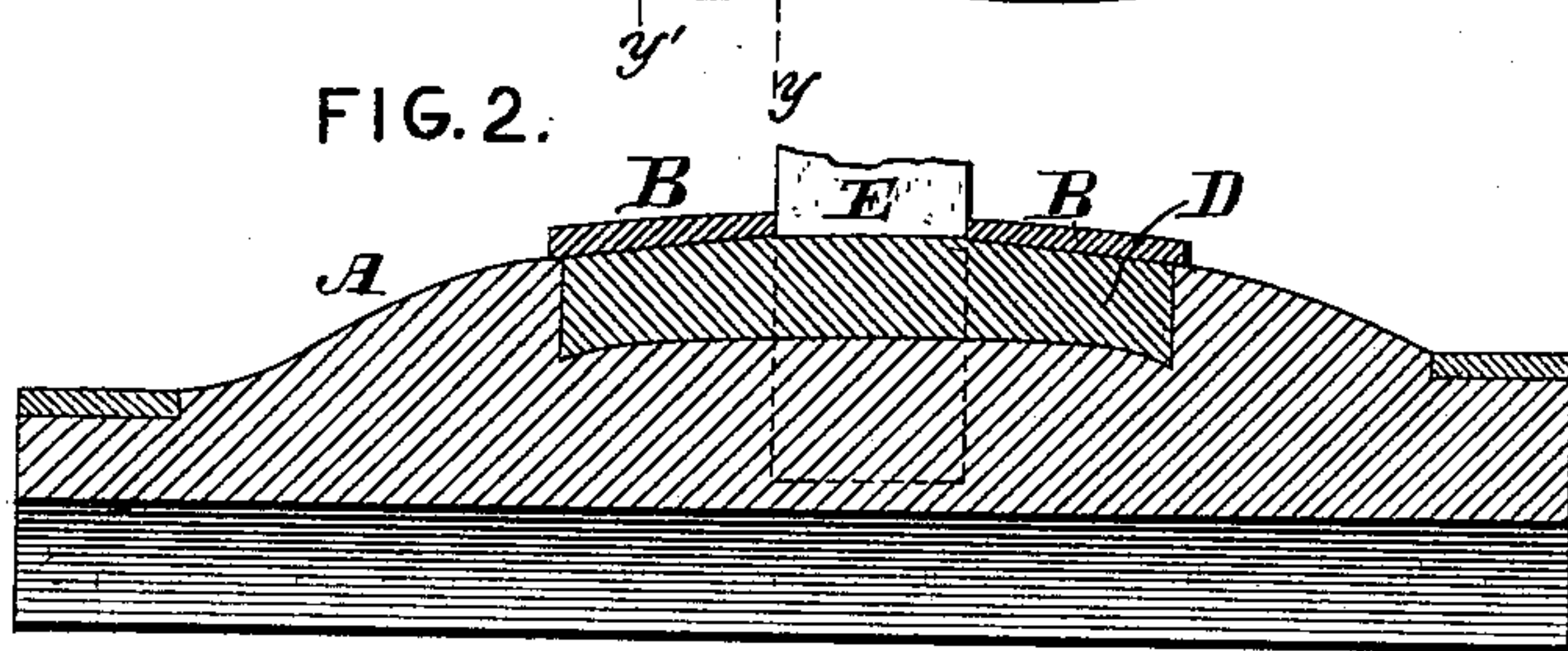
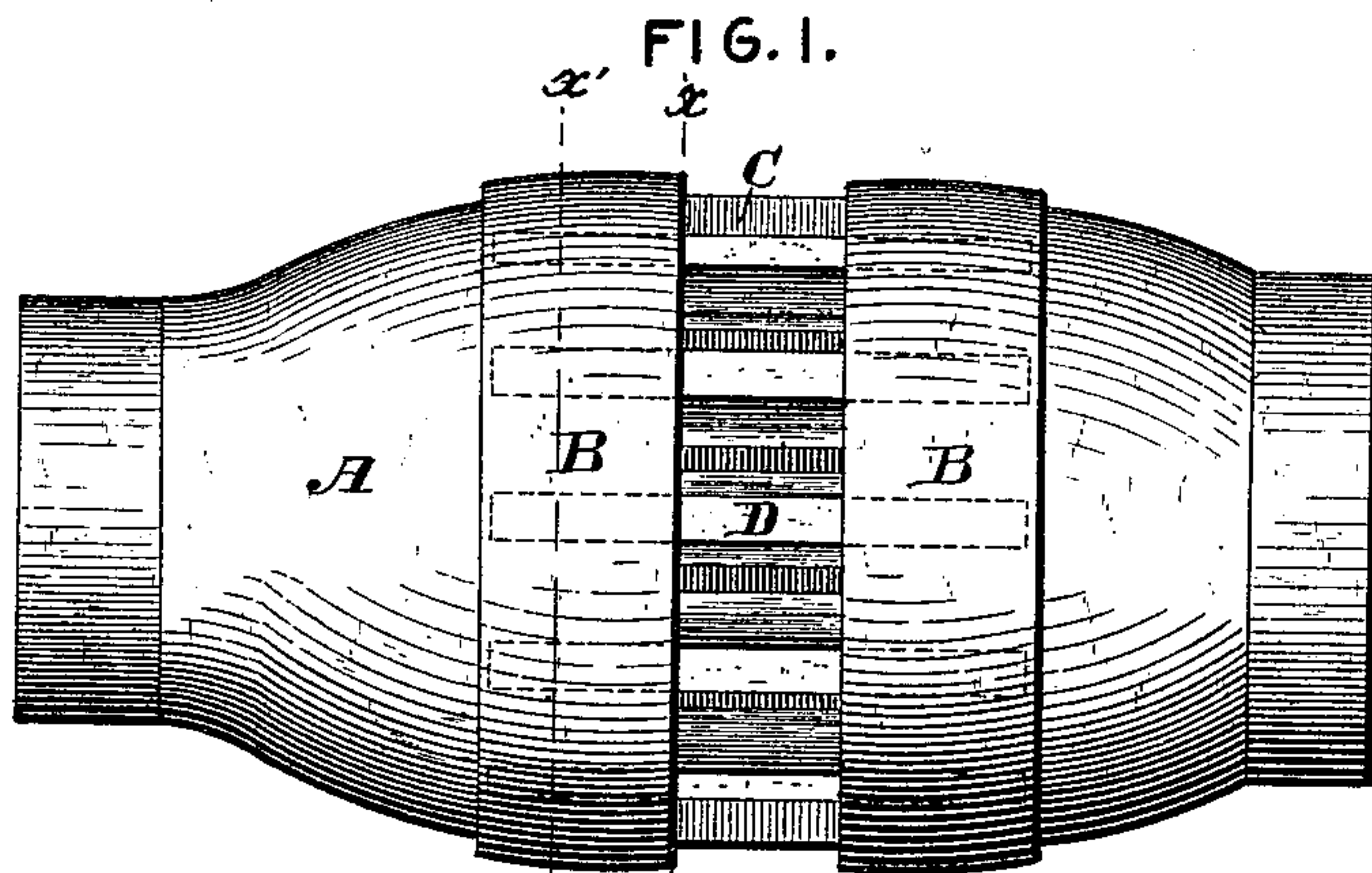
(No Model.)

C. W. FILLMORE.

VEHICLE HUB.

No. 335,442.

Patented Feb. 2, 1886.



ATTEST.
J. Henry Kaiser.
Frank M. Green

INVENTOR
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UNITED STATES PATENT OFFICE.

CHARLES W. FILLMORE, OF MARENGO, ILLINOIS.

VEHICLE-HUB.

SPECIFICATION forming part of Letters Patent No. 335,442, dated February 2, 1886.

Application filed October 19, 1885. Serial No. 180,311. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. FILLMORE, a resident of Marengo, in the county of Mc-Henry and State of Illinois, have invented certain new and useful Improvements in Vehicle-Hubs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in vehicle-hubs, and is fully set forth and described in this specification, and shown in the accompanying drawings, in which—

Figure 1 is a plan of a hub embodying my invention; Fig. 2, a longitudinal central section of one-half of the hub; Fig. 3, a transverse section of one-half of the hub through the line xy , Fig. 1; Fig. 4, a similar section through the line $x'y'$, Fig. 1; Fig. 5, a longitudinal central section of a modified form of the retaining-bar, together with the encircling bands in operative connection therewith; Fig. 6, an elevation of part of an encircling band of modified form.

In Figs. 1, 2, 3, 4, A is a wooden hub of ordinary form, having in its middle portion a series of spoke-mortises, C, and a corresponding series of tenon-mortises, C', each of the spoke-mortises being adapted to receive the approximately full-sized end E of a spoke, and each tenon-mortise to receive the corresponding tenon, E'.

Between the spoke-mortises, and forming the side walls thereof, are a series of metal retaining-bars, D D', whose ends extend beyond the spoke-mortises toward both ends of the hub, the ends being embedded in the wooden hub, and their exposed faces being flush with the surface thereof. These bars are held in place and firmly united with the wooden hub by two bands, B B, which encircle the hub on opposite sides of the line of spoke-mortises, and cover the embedded ends of the retaining-bars, the inner edges of the bands being in the planes of the end walls of the spoke-mortises, and consequently in contact with the edges of the spokes when the latter are in place in the hub. The retaining-bars may have any desired cross-section between the spokes; but I prefer to give them one of the forms D D'. (Shown in Figs. 3, 4.) The

form D is a truncated wedge, its sides being at such an angle that the side walls of the spoke-mortise are parallel, while the form D' is a wedge of such angle as to make each spoke-mortise narrowest at the surface of the hub. It is evident that when bars of the form D' are used the spokes can only be drawn from the hub by first displacing the bars, each spoke being thickest at the tenon-shoulder, and gradually decreasing in thickness from that point outward to the surface of the hub. In the use of either form D D' the side faces of each retaining-bar are in close contact with the two spokes between which the bar lies, so that there is no space between the bar and either of the spokes for the admission of moisture or the lodgment of matter, which might tend to rot the spoke. There is, however, between each pair of contiguous spokes a rectangular depression equal in depth to the thickness of the bands B, and to fill this depression and give the bands B and the retaining-metal between the spokes a uniform surface I have adopted two expedients, which are illustrated in Figs. 5 and 6, respectively.

Fig. 5 shows a retaining-bar having any desired cross-section, and provided with an integrally-formed central plate, D'', having a length equal to the length of the spoke-mortise, and a thickness equal to that of the bands B. In use the side faces of the plate D'' (like the remainder of the side faces of the bar) lie in close contact with the spokes on either side of the bar, while the end faces of the plate are in contact with the inner edges of the bands B, and make close joints therewith.

Fig. 6 shows a band B provided with integrally-formed plates B', of the same thickness as the ring, and adapted to lie between the spokes and cover the retaining-bars, the two rings B B and the plate B' B' being of uniform surface. It is evident that either all the plates may be formed on one of the rings B, or half of the plates may be formed on each ring.

Fig. 6 also shows on the margin of the band a series of lugs or points, B'', adapted to enter the edges of the spokes and lock them against longitudinal movement. It is evident that these may be used with any of the forms of retaining-bars shown, and either with or without the plates B', and I do not limit the use of

this device to its combination with the special forms of retaining-bars shown.

The Patent No. 324,928, of C. W. Fillmore, shows a hub provided with a series of retaining-bars, lying between the spoke-mortises, and held in rigid connection with the hub by means of two retaining and encircling bands, separated by a considerable space from the ends of the spoke-mortises. The construction shown in that patent provided the edges of each spoke with a bearing wholly of wood, thus insuring an elasticity which a metal bearing against the edge of the spoke cannot give. In wheels of a certain class and grade the elasticity thus secured is valuable and almost essential; but there are on the other hand a large class of wheels in which elasticity is not desirable, but strength, stiffness, and rigidity are the principal requirements. For wheels of the last-named class, the construction shown herein (so far as the same consists in placing the encircling bands B in contact with the edges of the spokes) is preferable to that shown in the patent referred to.

Patent No. 324,927, of Charles W. Fillmore, shows a hub provided with a series of retaining-bars similar to those shown herein, though not having the same cross-section, said retaining-bars being encircled and held in place by a single band formed with suitable spoke-openings. While the construction shown in that patent is perfectly practical and has various advantages which make it valuable, it is different from the one shown herein, not only in various minor features which are set out in the claims of this application, but also in the important particular that where two separate bands are used the ends of the hub may be slightly coned or tapered, and the bands forced on, and thus made much tighter than a single band can possibly be.

In C. W. Fillmore's Patent No. 126,278 a hub is shown in which a series of retaining-bars lie between the spokes, and are held in place by flanged bands which encircle the hub and the ends of the retaining-bars, the flanges of the bands being in contact with the edges of the spokes. The construction shown in that patent differs from that shown herein in many particulars, but especially in the fact that those parts of the retaining-bars which lie between the spokes are not in close contact therewith, but are separated therefrom by

spaces sufficient for the admission of moisture and the lodgment of extraneous matter. In this respect the construction shown herein is stronger, neater, and better adapted to withstand decay.

Having now described and explained my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a wooden hub, of a series of spokes set therein, a series of metal retaining-bars lying between and in close contact with said spokes, and having their ends embedded in the hub on opposite sides of the series of spokes, and two metal bands encircling the hub and the ends of the retaining-bars and in contact with the edges of the spokes.

2. The combination, with a wooden hub, of a series of spokes set therein, a series of metal retaining-bars between and in close contact with said spokes, and having their ends embedded in the hub on opposite sides of the series of spokes, two metal bands encircling the hub and the ends of the retaining-bars, and in contact with the edges of the spokes, and metal plates lying between the spokes and superposed upon the bars, and having a thickness approximately the same as that of the bands.

3. The combination, with the wooden hub A, the series of spokes set therein, and the bands B, encircling the hub and in contact with the edges of the spokes, of the series of retaining-bars between and in close contact therewith, and having their ends embedded in the hub within the bands B, each of said bars having an integrally-formed central plate, D', of the approximate thickness of the bands B, substantially as shown and described, and for the purpose set forth.

4. The combination, with the hub A and the spokes set therein and widest at the tenon-shoulder, of the retaining-bars D' between said spokes, and adapted to prevent the withdrawal thereof from the hub, and means, substantially as shown and described, for holding said bars in connection with the hub.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES W. FILLMORE.

Witnesses:

N. V. WOLEBEN,
P. W. PETUCY.