

(Model.)

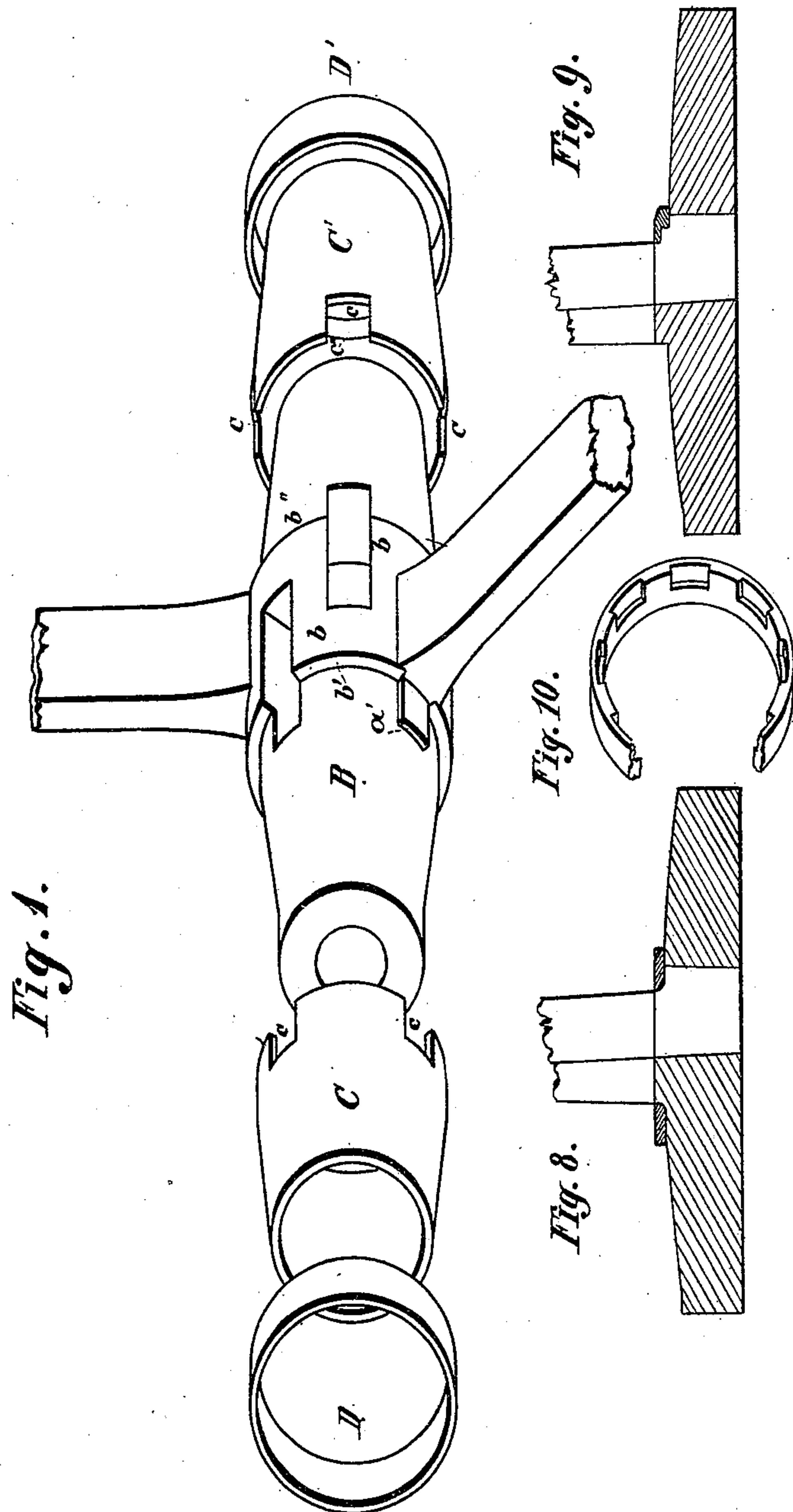
2 Sheets—Sheet 1.

J. A. SCHULER.

VEHICLE WHEEL.

No. 258,610.

Patented May 30, 1882.



Witness:
W. M. Hopkins.
H. E. Knight

Inventor:
John A. Schuler
By Knight Bros
Attys.

(Model.)

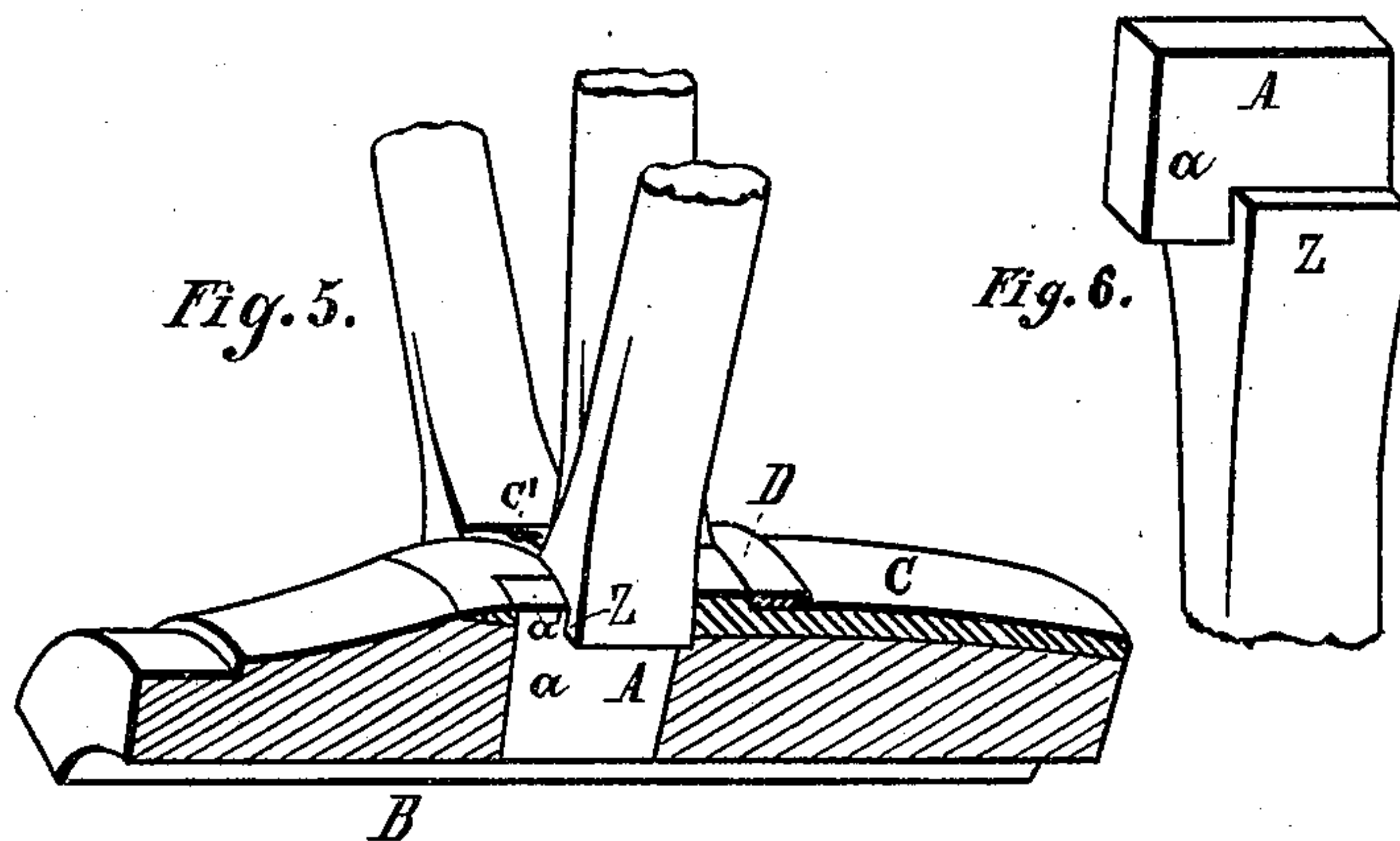
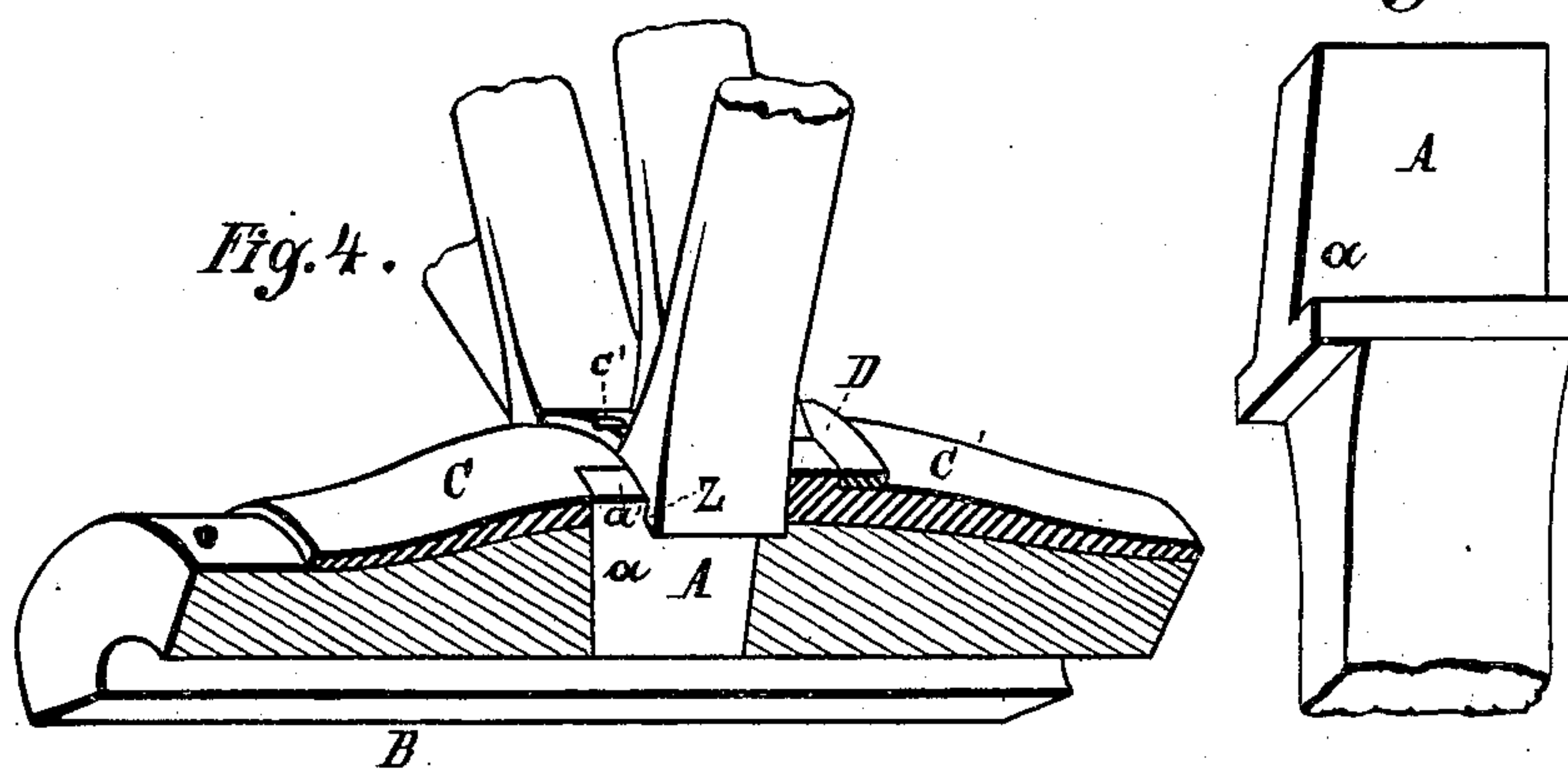
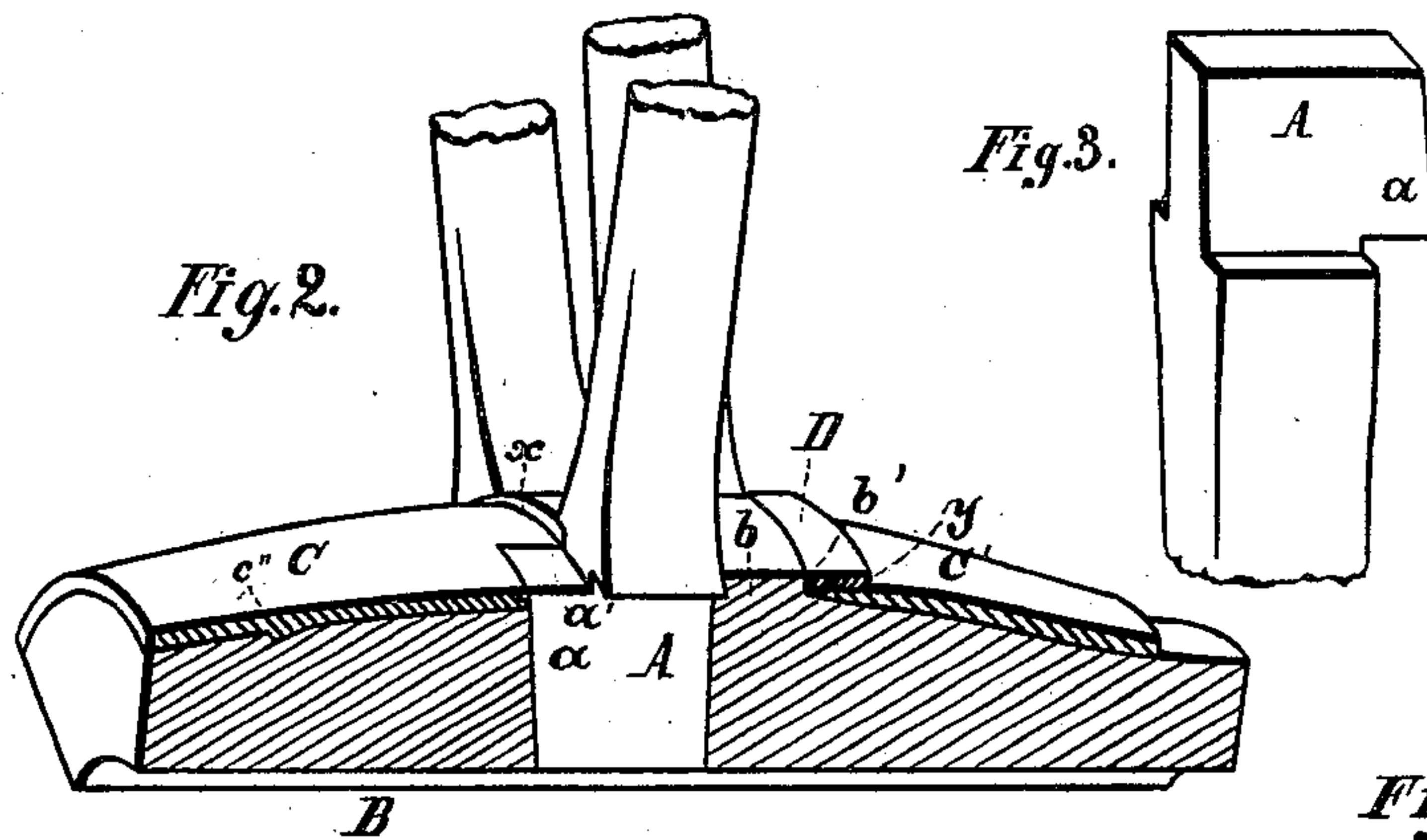
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UNITED STATES PATENT OFFICE.

JOHN A. SCHULER, OF MILLVILLE, OHIO.

VEHICLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 258,610, dated May 30, 1882.

Application filed January 14, 1882. (Model.)

To all whom it may concern:

Be it known that I, JOHN A. SCHULER, of Millville, Butler county, Ohio, have invented a new and useful Improvement in Vehicle-
5 Wheels, of which the following is a specification.

My invention relates to a form of vehicle-wheel which comprises the following features, to wit: a wooden hub mortised to receive the
10 spoke-tenons, which are driven and glued fast within said mortises, the spoke-tenons widened beyond the face of the spoke-body and extending radially outward along such face, so as to project beyond the hub's periphery; a
15 metallic shell indented to receive such tenon-extensions and be flush therewith; lastly, a band or hoop which embraces said tenon-extensions and the notched portion of the shell.

In the accompanying drawings, Figures 1
20 and 2 are fragmentary views of the preferred type of my invention. Fig. 3 represents the butt-end of a spoke therefor. Figs. 4 and 5 are fragmentary views of modifications of my invention. Fig. 6 represents the butt-end of
25 a spoke therefor. Fig. 7 represents the butt-end of another modification of my spoke. Figs. 8, 9, and 10 represent modifications of my tenon-shoulder and corresponding bands.

The tenon A of each spoke-butt has a lateral extension, *a*, of one integral substance
30 with the spoke. The hub proper, B, like the spokes, is of wood, and, being suitably mortised, receives the glue-coated spoke-tenons. The said lateral extensions *a* of the consecutive spokes of the series are alternately presented toward the heel and point of the hub.

In the preferred type of my invention the zone of the hub occupied by the "stagger" is of greater diameter than the balance of the
40 hub's periphery, so as to present a bulge, *b*, having offsets or shoulders *b'* *b''*, and the reduction of diametrical dimensions of the portions beyond said zone on each side is such as to leave a part, *a'*, of the edge of the spoke-
45 extension *a* projecting radially beyond the said reduced portion.

C C' are two shells having the shape of hollow conical frustums, and formed to tightly fit and embrace the said reduced portions of the
50 hub on being driven forcibly thereupon, and

having notches *c*, whereby they closely embrace the protruding portions *a'* of the spoke-tenon extension, while the unnotched portions of their inner edges bind snugly against the offsets *b'* *b''*. The thickness of these shells is sufficiently
55 less than the radial projection of the offsets *b'* *b''* to leave a portion of each offset exposed, as seen at *x*, Fig. 2, even after said shells have been driven home. Finally, two metallic
60 bands, D D', are driven forcibly over the shells, as seen at *y*, Fig. 2, so as to abut firmly against the remaining exposed portions, *x*, of the offsets *b'* *b''*, and at the same time to embrace and clamp the shoulders of the tenon-
65 extensions and the foot of the spoke-face.

The above-described preferred form of my invention is susceptible of numerous modifications. For example, the lateral extension of the spoke-tenon and the shoulder of the spoke may overlap one another, as shown at *z* in
70 Figs. 4, 5, and 6, the hub-periphery proper, if as in Fig. 2, or the inclosing-shells, if as in Figs. 4 or 5, having the entrances of their mortises enlarged or countersunk to receive and embrace the thus overlapping spoke-shoulder.
75 The hub may be entirely incased in metal from heel to point band, as in Fig. 4, or a portion next the point-band may be left naked, as in Fig. 5. The casing, if as in Fig. 4, may be
80 either in one piece or may consist of two pieces separated at any convenient latitude within the spoke-zone. Still another possible modification is shown at Fig. 7, in which the overlapping portion of the spoke-tenon extension
85 is expanded laterally, so as to give the edge the form of the letter T, the mortises being of course correspondingly modified.

In the forms shown at Figs. 4 and 5, in which the spoke-zone is wholly incased in metal, indentations *c'* may be formed in the shells C C'
90 to facilitate their disengagement for repairs.

A fin or burr, *c''*, may be formed on the concave surface of the heel-shell, which, by embedding itself in the substance of the hub, will prevent accidental displacement.
95

Where the metallic shell is in one piece and extends on both sides of the spoke-zone, as in one supposed form of the type, Fig. 5, such shell must of course be of either cylindrical or slightly-flaring interior heelwise. The lateral
100

extension of the spoke-tenons may project on either side or on both sides of the spokes, if desired.

5 The shells C C' may be dispensed with and the hub-periphery be formed flush with the spoke-tenon extension-shoulders, as in Figs. 8 and 9.

10 The re-entrant angle of the spoke-shoulder and hub-offset and the corresponding edge of the confining-band may, as in Fig. 8, be of the represented rounded section.

The summit of the tenon-shoulder may be stepped and the band have corresponding stepped notches, as in Figs. 9 and 10.

15 I claim as new and of my invention—

1. A vehicle-wheel having a wooden hub, B, in combination with wooden spokes whose tenons A are widened beyond the spoke-face and extend radially upward along such face 20 beyond the hub's periphery, as at a', and are

driven and glued fast in the hub-mortises; one or more metallic shells, C C', indented on their inner edges to receive said tenon-extensions and flush therewith; lastly, bands or hoops D D', embracing said tenon-extensions and the 25 notched portions of the shells and supporting the outer faces of the spokes, substantially as set forth.

2. In the described combination with wooden hub B, spokes A, and covering-bands D D', 30 the shells C C', indented on their inner edges and having the interior fin or burr, c'', to prevent their accidental displacement, as set forth.

In testimony of which invention I hereunto set my hand.

JOHN A. SCHULER.

Attest:

GEO. H. KNIGHT,
SAML. S. CARPENTER.