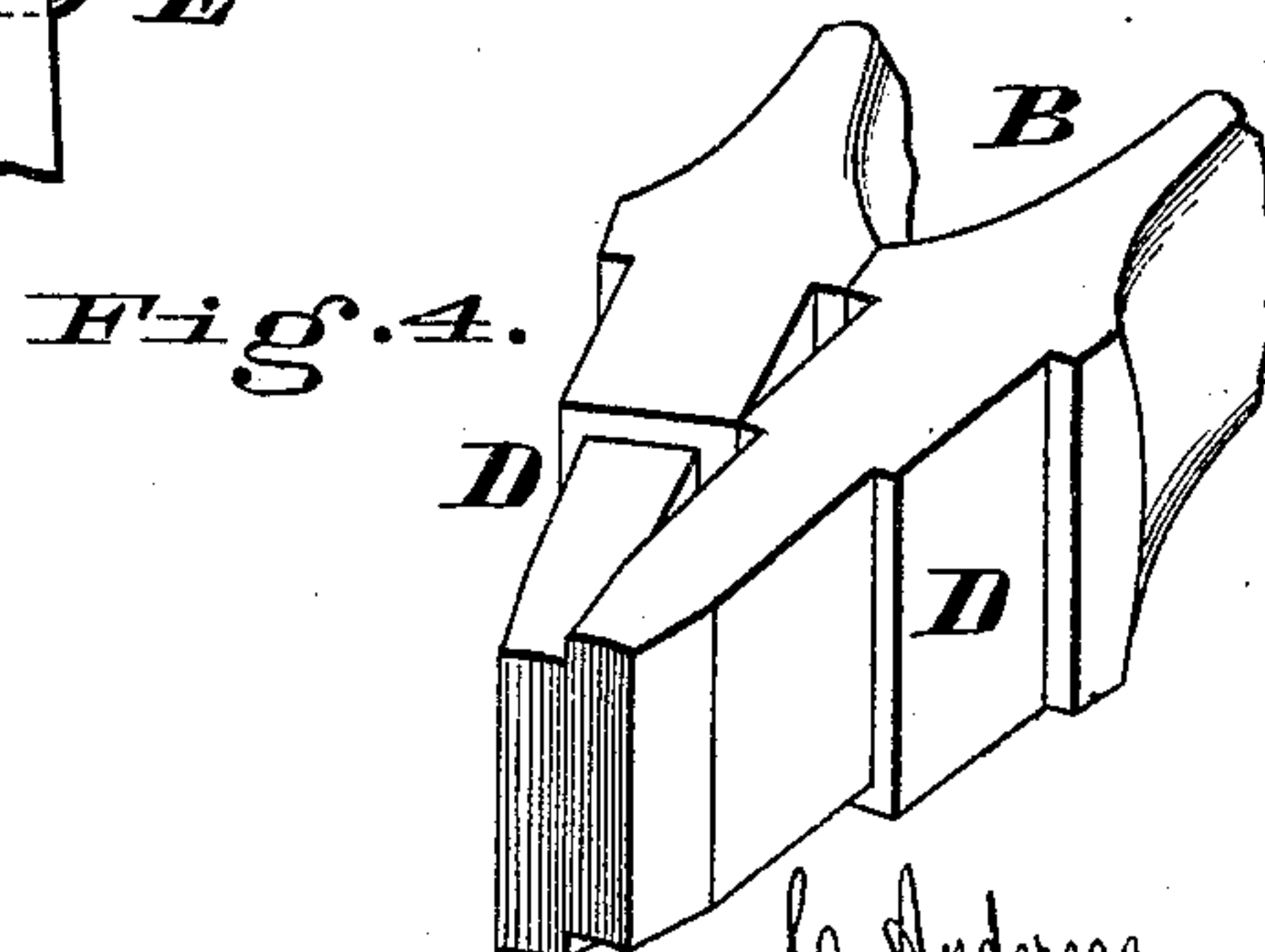
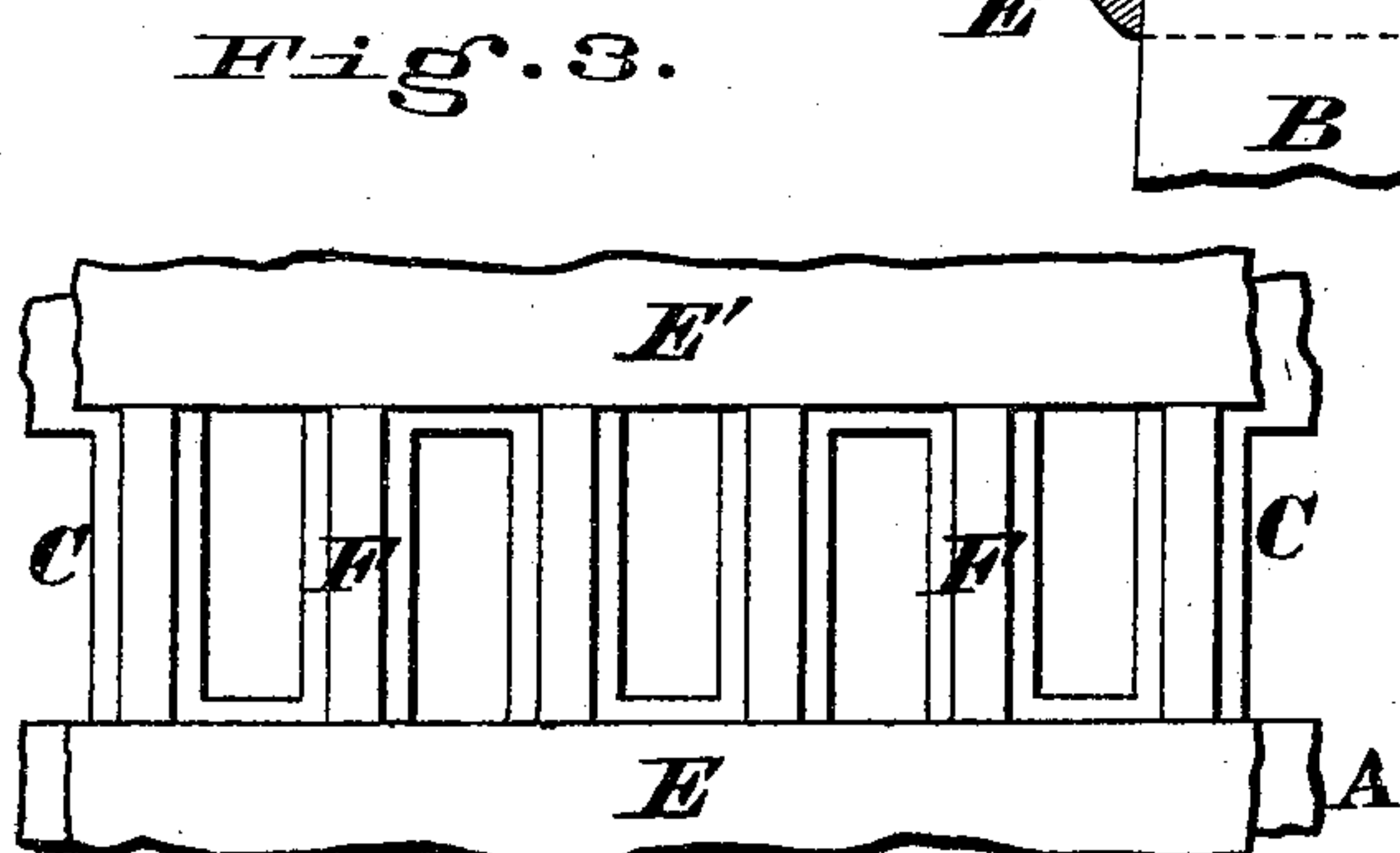
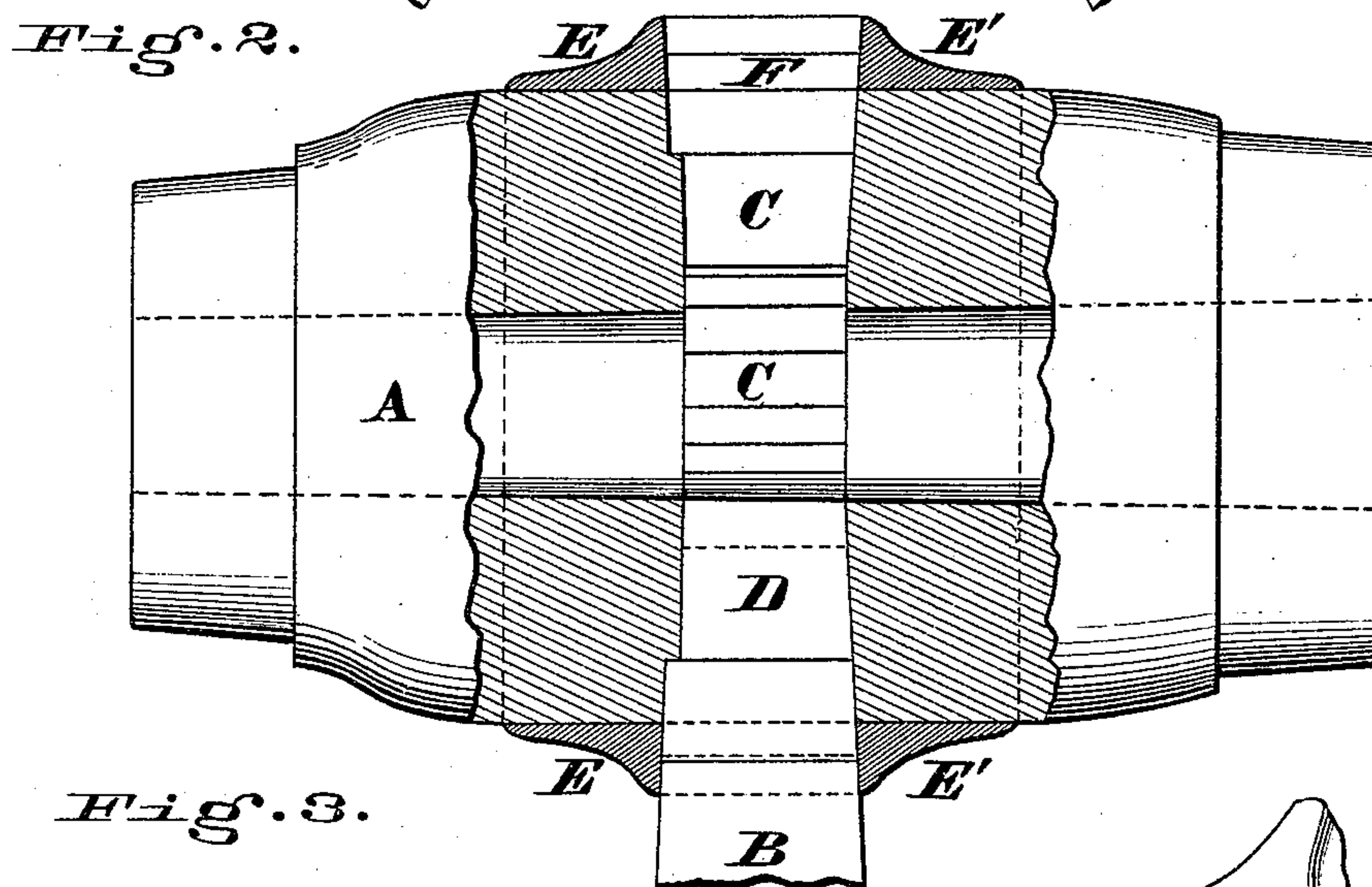
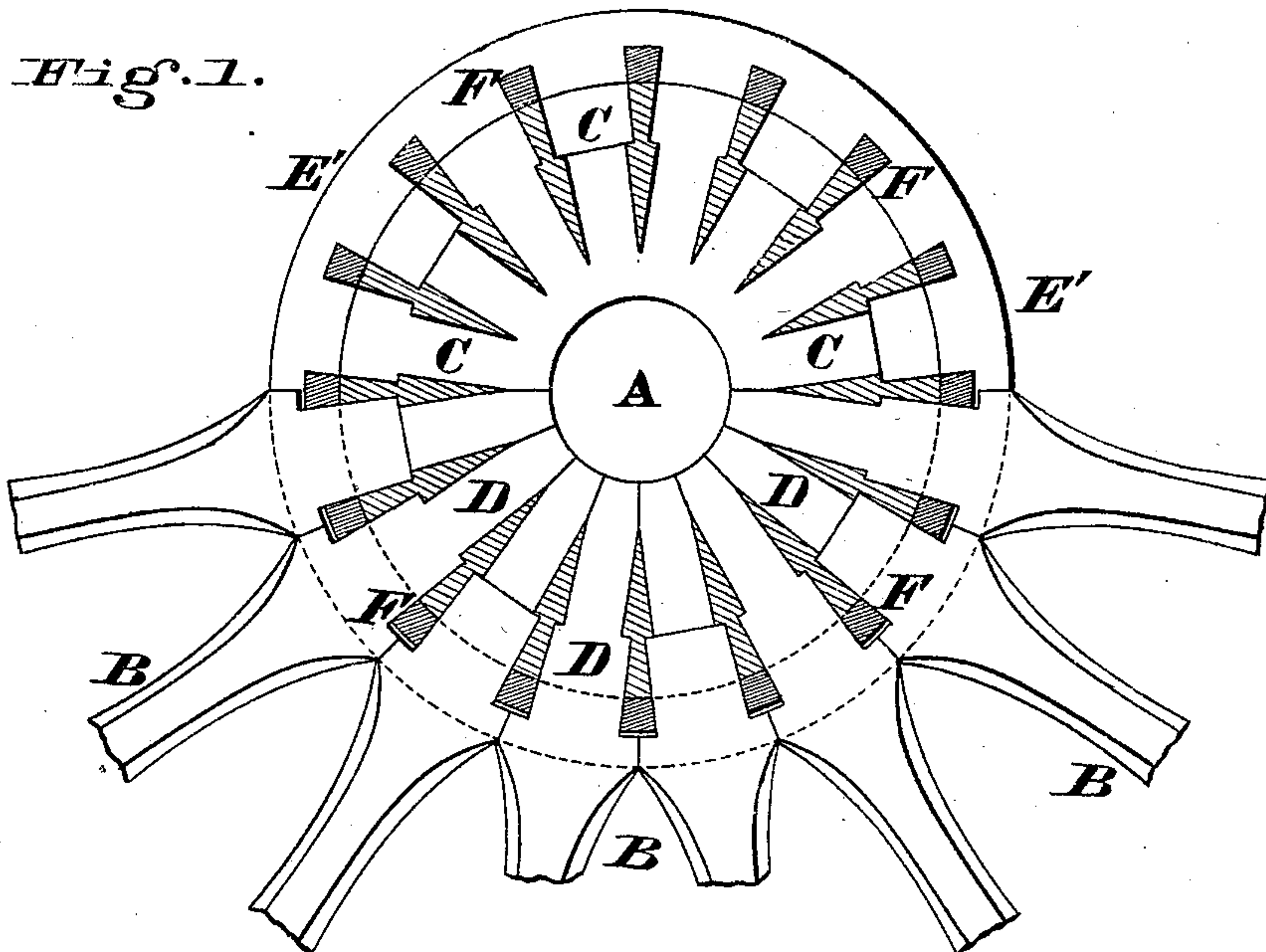


C. ANDEREGG.
Wheels for Vehicles.

No. 141,099.

Patented July 22, 1873.



Attest.
Jas. H. Layman.
John Kolb.

C. Andregg.
By Knight Bros
Att'ys.

UNITED STATES PATENT OFFICE.

CHRISTIAN ANDEREGG, OF LAWRENCEBURG, INDIANA.

IMPROVEMENT IN WHEELS FOR VEHICLES.

Specification forming part of Letters Patent No. **141,099**, dated July 22, 1873; application filed May 14, 1873.

To all whom it may concern:

Be it known that I, CHRISTIAN ANDEREGG, of Lawrenceburg, Dearborn county, Indiana, have invented a new and useful Composite Wheel for Wagons and Carriages, of which the following is a specification:

This is an improvement on the subject-matter of the patent No. 129,449, granted to me on the 16th day of July, 1872; and consists in combining with a wheel thus formed a metallic band or re-enforce, consisting of two hoops or rings, united in a single casting by a series of equidistant bars or webs, of which one bar intervenes between each two consecutive spokes, so as to produce a hub whose spokes are sustained where support is most needed, and of the smallest diameter compatible with the required strength and durability.

Figure 1 is a transverse section in the line *x x*, Fig. 2. Fig. 2 is an axial section in the line *y y*, Fig. 1. Fig. 3 is a diagram of the hub-mortises. Fig. 4 shows two consecutive spoke-tenons detached.

The hub A with its stepped mortises C, and the spokes B with their correspondingly-stepped tenons D, are of any suitable timber, and do not differ in any material respect from those described in said patents. Before insertion of my spokes, however, I now prefer to drive or force onto the hub proper or wooden portion a band or re-enforce, the same being a single casting of brass, iron, or other suitable metal, and being composed of two similar rings or cylindrical portions, E E', united, and at the same time retained at their proper relative distance, by means of bars or webs F, arranged equidistantly from one another, and of thickness exactly corresponding to that of the portions of the hub's periphery which separates the consecutive mortises.

In addition to and in combination with the advantages specially incident to my wooden wheel, as described in said patent, I now include the following advantages: First, the metallic band, by embracing and binding the wheel where most required—that is to say, in the immediate vicinity of the spoke-mortises—so greatly stiffens and strengthens the hub as to permit of a material reduction of its diam-

ter, thus securing a neater and more stylish article of equal strength; second, said band, by grasping the front and the rear edges of the spokes at their place of greatest strain, adds very greatly to the endurance and stability of the wheel, and is especially valuable in maintaining the proper “dish,” which, in most wheels, especially those of the lighter sort, is quite liable to give way; third, it enables the spokes to be driven in the most effectual manner, without the slightest danger of bursting or rending the hub, the inward pressure of the band constantly opposing and compensating the outward or bursting strain of the driven spokes, and enabling the wheelwright to bring the glued surfaces of the spokes into the most intimate contact with their mortises, so as to constitute in effect a solid and jointless structure, as much as if the spokes grew out from the substance of the hub.

This combination of the webbed band with my stepped hub and spokes is believed to constitute a novel assemblage of parts, constituting invention, and one in which all the parts co-operate to produce a useful result: First, because the considerable bearing-surfaces of spoke and mortise, which was a leading object of my stepped forms, as described in my former patent, are, by said webbed metallic band, extended and elaborated; second, because to the mutual support of my stepped spokes and hub, in the plane of the wheel, is added the still more necessary support of the spokes in front and rear; third, because said metallic band co-operates with my stepped tenons to relieve the substance of the hub from a bursting strain; fourth, because said metallic band enables me to drive the tenon-points into the narrow portions of the stepped mortises with impunity; fifth, owing to the external support of hub afforded by the band, I am enabled, by means of the last-driven or “key spoke,” to secure a more solid and tightly-fitting junction of spokes and hub, and consequently produce a more substantial wheel, than would otherwise be possible.

I am aware that metallic bands of form not greatly dissimilar to that herein described have been employed or proposed for wooden

wheel-hubs of different construction from mine, and I therefore disclaim any invention whatever in such a band, separately considered.

I claim—

The combination of stepped wooden hub and spokes A C B D and webbed metallic band E E' F, the metallic band with the socket-webs below the periphery, so as to re-

ceive the upper shoulders of the spokes, all substantially as set forth.

In testimony of which invention I hereunto set my hand.

CHRISTIAN ANDEREGG.

Attest:

GEO. H. KNIGHT,
PETER JOS. SCHWARTZ.