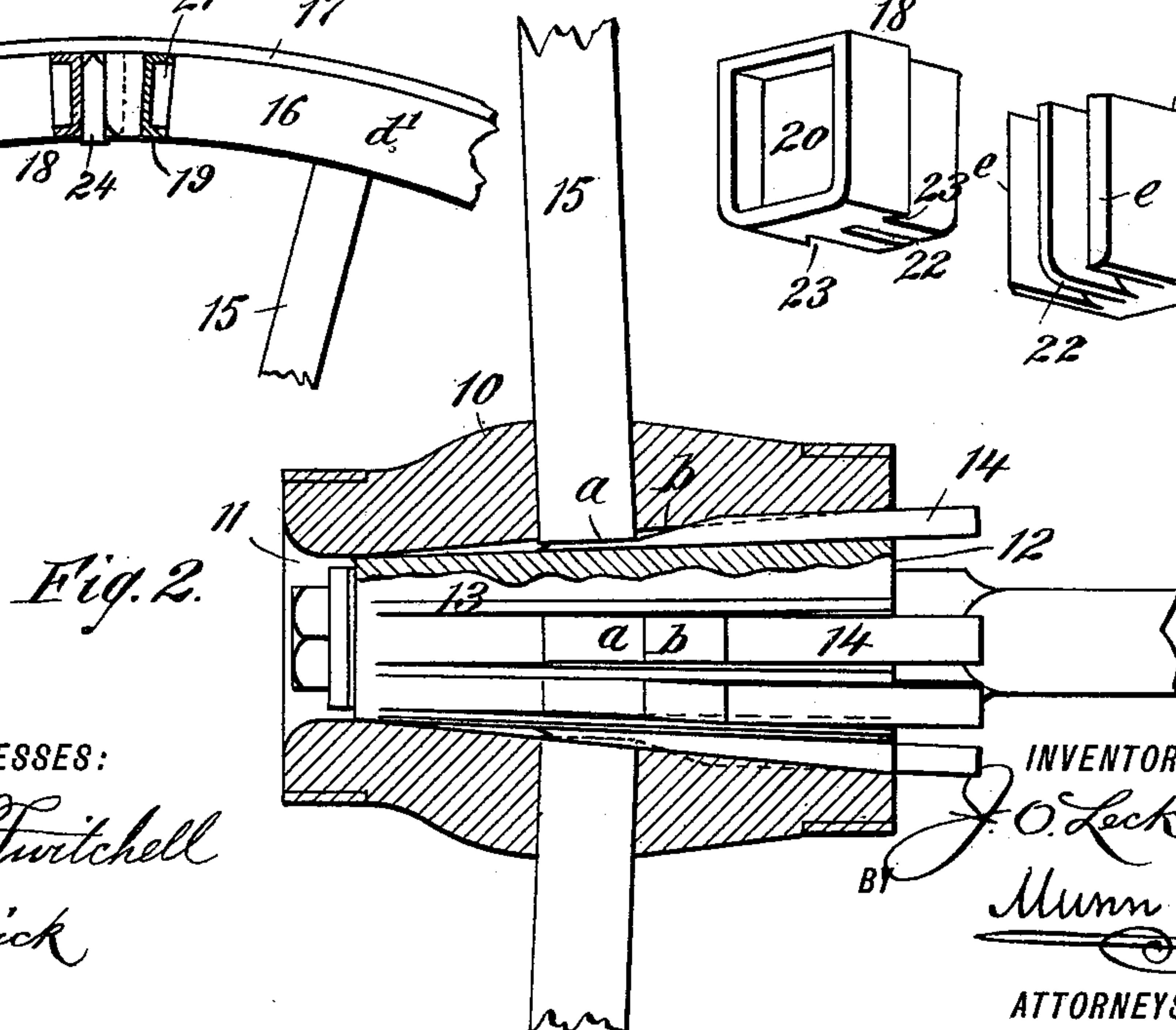
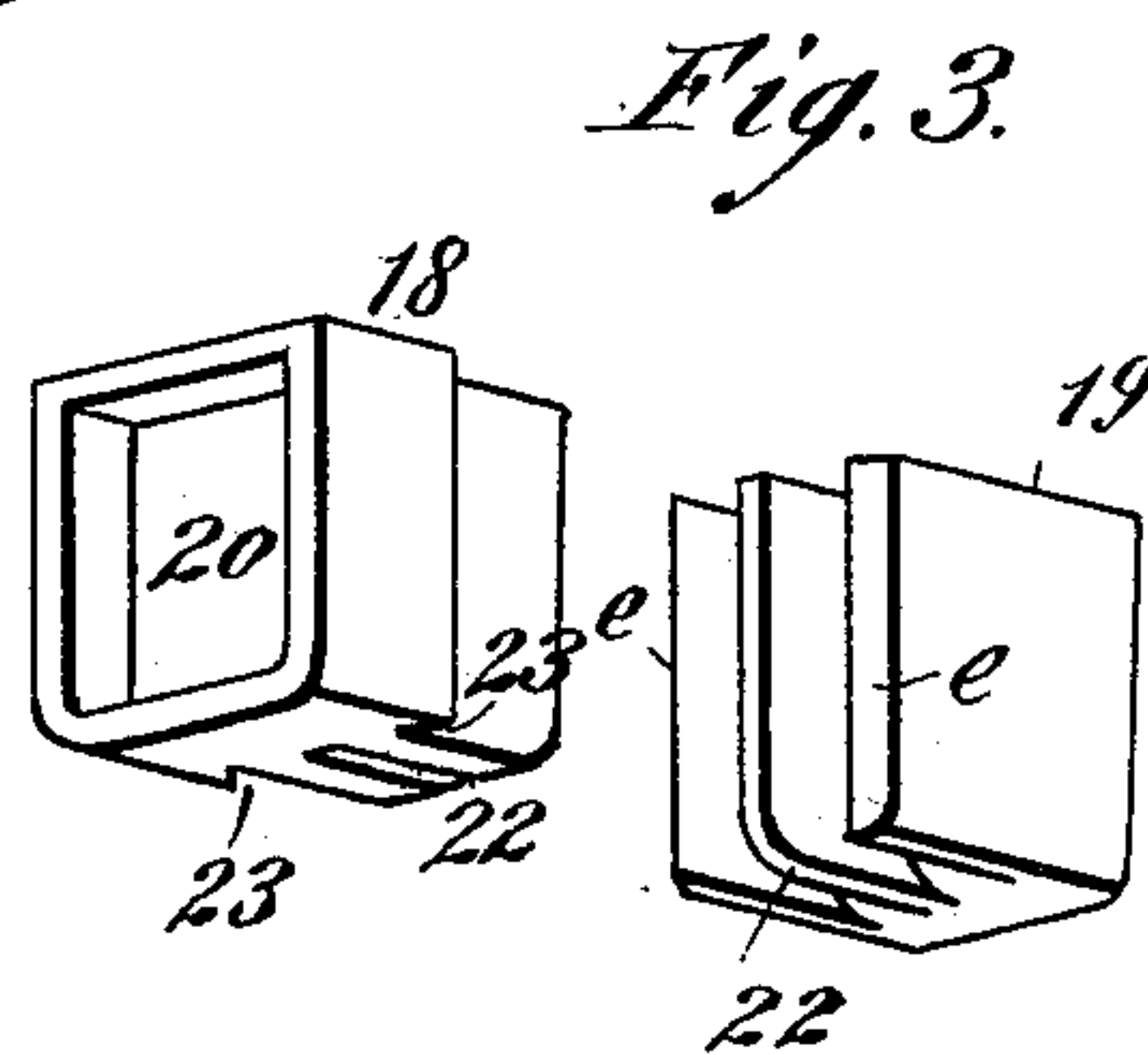
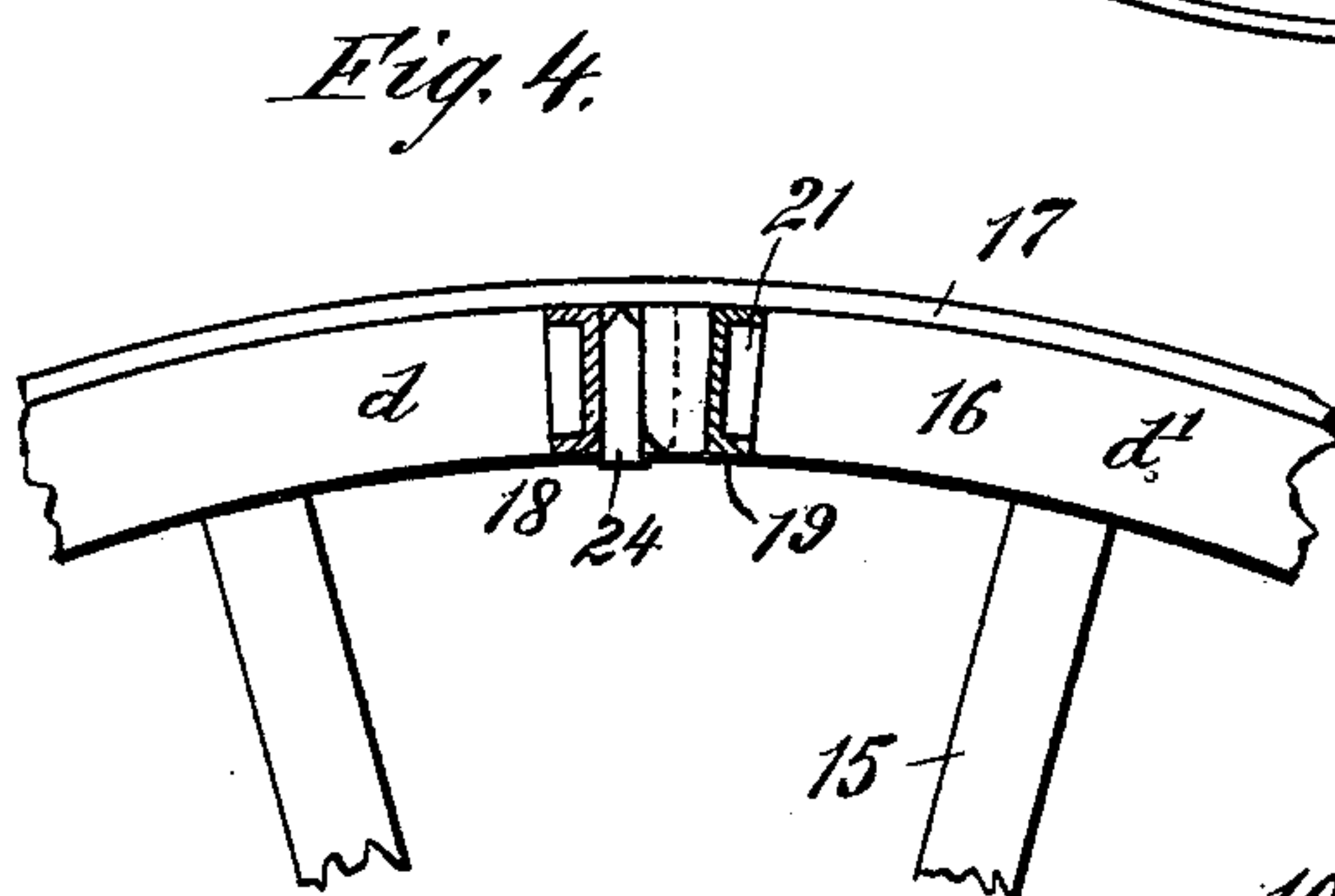
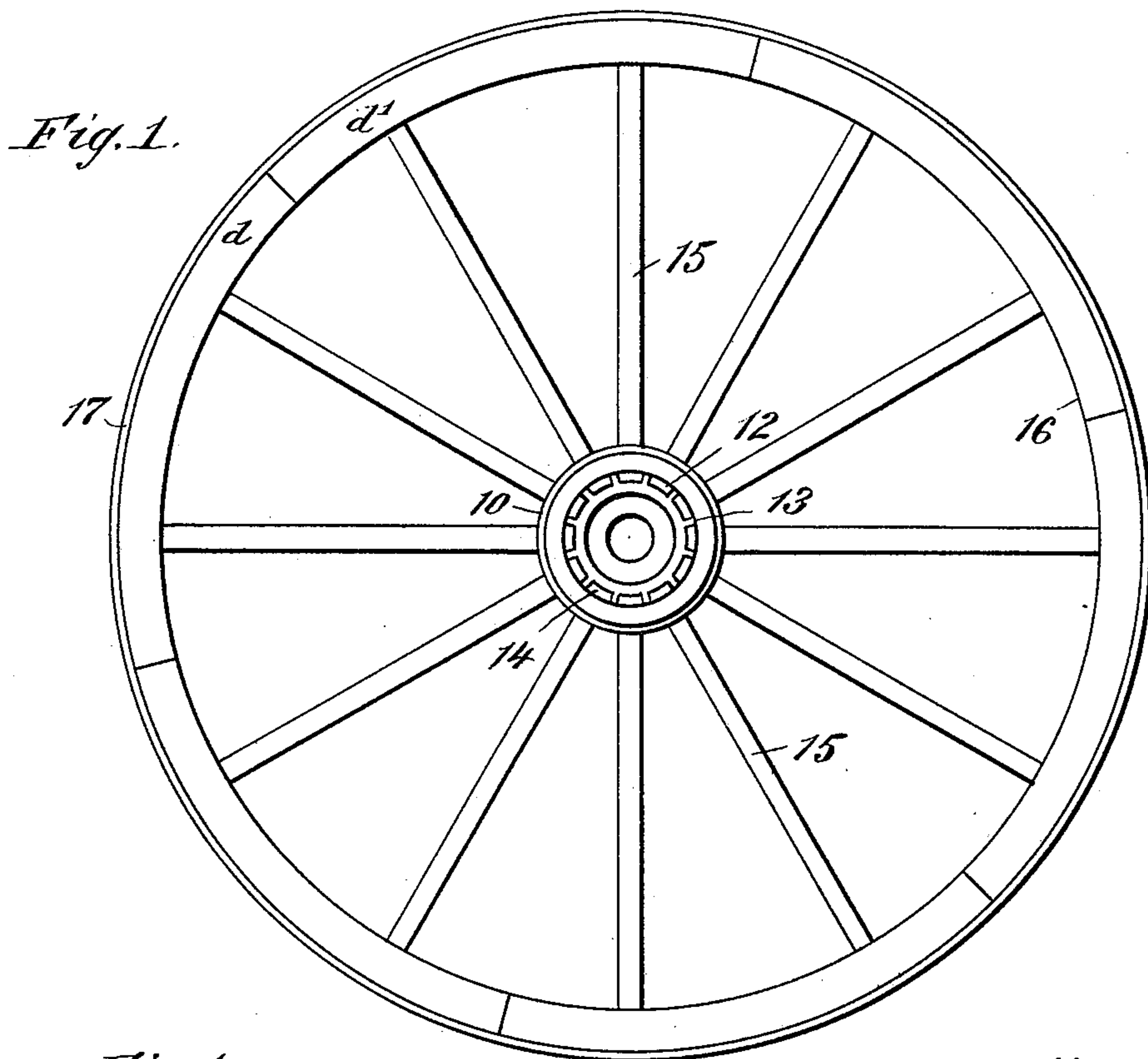


(No Model.)

J. O. LECK.
VEHICLE WHEEL.

No. 403,763.

Patented May 21 1889.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN OLIVER LECK, OF GLEN ELDER, KANSAS.

VEHICLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 403,763, dated May 21, 1889.

Application filed January 3, 1889. Serial No. 295,273. (No model.)

To all whom it may concern:

Be it known that I, JOHN OLIVER LECK, of Glen Elder, in the county of Mitchell and State of Kansas, have invented a new and Improved Vehicle-Wheel, of which the following is a full, clear, and exact description.

My invention relates to a vehicle-wheel, and has for its object to provide means whereby the tire of a wheel, should the same become loosened, can be set without heating or shrinking it and without removing the tire from the wheel or necessitating the removal of the wheel from the vehicle.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the views.

Figure 1 is an elevation of the inner side of the wheel. Fig. 2 is a central vertical section through the wheel-hub, illustrating the thimble in position. Fig. 3 is a detail perspective view of the felly-clamps; and Fig. 4 illustrates a portion of the felly and attached tire, the felly being in section to illustrate the connection thereto of the clamps.

The wheel-hub 10 is provided with a tapering bore, 11, smallest at the outer end and adapted to receive a metal thimble, 12. The exterior surface of the thimble is conical or tapering, and upon the said outer surface a series of ribs, 13, are cast or otherwise produced, the said ribs being most prominent at the larger or inner end of the thimble, disappearing at or near the outer or smaller end, as best illustrated in Figs. 1 and 2, whereby the space between the ribs is made to constitute a groove, which grooves are adapted to receive a metal wedge, 14, of sufficient thickness to respectively fill the grooves and cause the outer longitudinal surface of the thimble to appear even or smooth.

The inner or entering edge of the wedge is flat, as shown at *a* in Fig. 2, and the upper surface is made to taper in the direction of the rear or inner face of the hub, as best illustrated at *b* in the same figure.

The number of the wedges employed is

equal to the number of spokes 15 in the wheel, the inner ends of which spokes are projected through the hub and rest upon the flat or thin edge *a* of the wedge immediately below it, as illustrated in Fig. 2. The diameter of the bore of the hub at each side of the spoke-line is such that the ribs will be forced into the wood when the thimble is driven into the hub, thus securing the thimble from turning. When the wedges are driven past the spokes, they displace the wood from the grooves and retighten the thimble, and at the same time the displaced fibers serve to hold the wedge from slipping.

It is evident that when the wedges are driven in the spokes will be forced outward and expand the felly 16, to which the outer end of the former is secured, and thereby drive the felly to a close and secure contact with the tire 17.

Each approaching end of the felly-sections *d d'* is provided with a clip, the opposing clips being illustrated in detail in Fig. 3. Both the clip-sections 18 and 19 consist of a piece of metal provided with a cavity, 20, in the inner end, in which the reduced extremities 21 of the felly-sections are introduced. The other end of both clip-sections 18 and 19 is provided with a series of spaced teeth, 22, and the said teeth are adapted to interlock when the ends of the fellies are brought together.

In the outer side faces of the clip-section 18 an inwardly-beveled recess, 23, is produced, which recess is adapted to receive the beveled face of the outer teeth of the clip-section 19, the said beveling of the outer teeth being clearly illustrated at *e* at the left in Fig. 3. The opposite corners of the teeth 22, and likewise the corners of the ends of the spaces intervening the said teeth, are rounded or beveled off.

In forming the felly-section of the wheel the several sections of the felly are united by interlocking the teeth of the opposing clips, as illustrated in Fig. 4, and when it is necessary, in tightening the tire, to lengthen the felly-circle the wedge 24 is driven from the inner face of the felly upward between the outer face of the central tooth of the clip-section 19 and the wall of the recess into which the tooth is introduced.

The clips not only serve to expand the felly-

circle, but also serve to prevent the ends of the felly-sections from splitting or slipping out of position.

To apply and operate the improvement, the
5 wedges are first placed in the grooves of the thimble and the thimble is driven home. The spokes are then driven firmly down upon the thin ends of the wedges, the felly-sections are now united, and the tire is shrunk on in the
10 usual manner.

At such time as the tire may become loosened the wedges 14 may be tapped with a hammer, and when necessary to spread the circle the wedges 24 may be in like manner
15 driven outward. The spread wedges 24 may be removed by driving a third one at the end of the metal tooth of the clip, and the thimble-wedges may be removed by tapping the felly from under the tire.

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

1. In a wheel, the combination, with the felly-sections forming the felly-circle of the
25 tire, of clips secured on the approaching ends of the fellies, provided with spaced teeth adapted to interlock when brought together, and a wedge driven upward between one or more of the teeth and the wall of the recess
30 receiving the same, substantially as shown and described.

2. In a wheel, the combination, with the felly-sections *d d*, of the metal clips secured on the meeting ends thereof, said clips consisting each of a body portion formed with a
35 cavity, 20, adapted to receive the ends of the fellies, projecting teeth 22, and spaces 23, said teeth adapted to interlock when brought to-

gether, and wedges adapted to be driven up between one or more of the teeth 22 and the
40 wall of the recess receiving the same, substantially as shown and described.

3. The combination, with the hub of a wheel having a tapering bore, spokes passing through the hub into the said bore, and the
45 felly and the tire, of a conical or tapering thimble provided with longitudinal exterior ribs vanishing at the smaller end of the thimble, and wedges driven upon the thimble between the ribs and beneath the spokes, said
50 wedges provided with a flat edge resting normally under the spokes and a tapering edge adapted to engage the spokes when the wedges are driven in, substantially as and for the
55 purpose described.

4. The hereinbefore-described improvement in wheels, consisting of a hub having a tapering bore, a conical thimble inserted in said bore, provided with exterior longitudinal inclined ribs, wedges inserted between the ribs,
60 spokes projected from the hub and bearing on the inner ends of said wedges, felly-sections attached to the outer ends of the spokes, forming a felly-circle, metal clips secured on the approaching ends of the felly-sections, provided
65 with outer spaced integral teeth, the teeth of the sections interlocking when brought together, a tire surrounding said felly-sections, and wedges inserted between one or more of the teeth and the walls of the opposing re-
70 cesses, all arranged substantially as and for the purpose described.

JOHN OLIVER LECK.

Witnesses:

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