

C. B. WAINWRIGHT.
Wheels for Vehicles.

No. 146,295.

Patented Jan. 6, 1874.

FIG. 1.

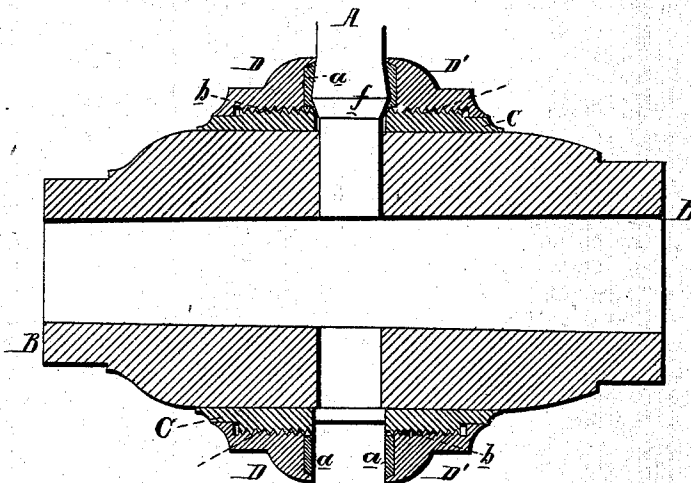


FIG. 2.

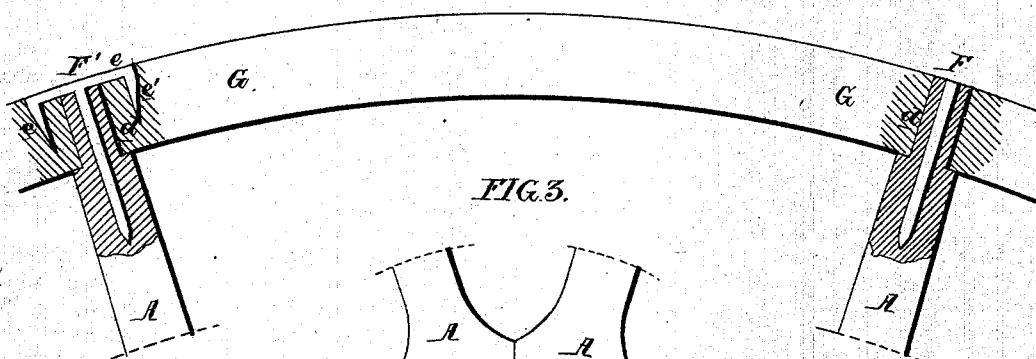


FIG. 3.

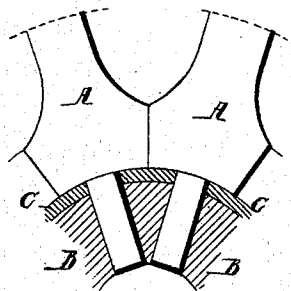
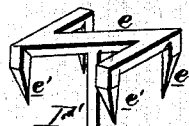


FIG. 4.



Witnesses: *Thomas McHugh*
Harry Smith

Chas. B. Wainwright
by his attys.
Henson & Son

UNITED STATES PATENT OFFICE.

CHARLES B. WAINWRIGHT, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN WHEELS FOR VEHICLES.

Specification forming part of Letters Patent No. **146,295**, dated January 6, 1874; application filed January 8, 1873.

To all whom it may concern:

Be it known that I, CHARLES B. WAINWRIGHT, of Philadelphia, Pennsylvania, have invented Improvements in Wheels for Vehicles, of which the following is a specification:

The object of my invention is to produce a combined wood and metal wheel of great strength, at a cheap rate; and I accomplish this object, first, by adapting the spokes *A* to mortises formed in a wooden hub, *B*, and metal band *C*, shrunk onto the same, and then clamping the said spokes between nuts *D* and *D'*, recessed to receive leather or other elastic washers *a*, and adapted to a screw-thread, *b*, cut upon the metal band, all as shown in the section view, Figure 1, of the accompanying drawing; and, second, by strengthening the tenon *d* at the outer end of each spoke, by driving a metal dowel-pin, *F*, longitudinally through the same, as shown in Fig. 2, the said dowel-pin being formed with an enlarged head or cross-piece, *e*, furnished with points *e'*, which are driven into the felly *G* to prevent the splitting of the same. The transverse section, Fig. 3, shows the arrangement of the spokes in respect to the wooden hub *B* and metal band *C*, shrunk onto the same. Viewed in the opposite direction, as in Fig. 1, it will be observed that the said spokes, at the point *f* opposite the clamping-nuts *D D'*, are enlarged, this enlarged portion compressing the elastic washers *a*, which fit snugly around the spokes, and thus prevent the withdrawal or loosening of the same. The elastic washers also permit the spokes to yield slightly to lateral strains, and thus prevent the fracturing of the same, which is apt to be caused by undue rigidity. As the clamping-nuts *D* and *D'* are both ad-

justable upon the hub in either direction, the spokes can, by means of the same, be set and secured at any angle in respect to the said hub. The plain inner face of an annular rib at the outer end of each nut is adapted to the plain cylindrical portion of the band *C*, and effectually prevents access of water to the screw-threads; and the annular lips at the inner edges of the nuts overhang and inclose the elastic washers, protecting them and imparting a neat finish to the wheel. The tenon *d* of each spoke may be strengthened by a dowel-pin, *F*, which I prefer to construct as shown at the left-hand side of Fig. 2, and in the perspective view, Fig. 4—that is, with an enlarged head or cross-piece, *e*, and projections or points *e'*, to be driven into the felly—as the said dowel-pin will then unite the spoke and felly, strengthening the former, and preventing the splitting of the latter adjacent to the hole formed for the tenon. The cross-piece or head *e* of the dowel-pin may be variously modified in shape.

I claim as my invention—

1. The combination, with the spokes and with elastic packing *a a* at the sides thereof, of nuts *D D'*, having annular lips to conceal the packing and prevent the same from being pressed outward, as set forth.

2. The combination, with the spoke and felly, of a dowel-pin, *F*, having an enlarged head, *e*, and projections *e'*, for the purpose specified.

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

C. B. WAINWRIGHT.

Witnesses:

WM. A. STEEL,
HUBERT HOWSON.