

G. F. GRAVES.
Spoke-Socket.

No. 196,891.

Patented Nov. 6, 1877.

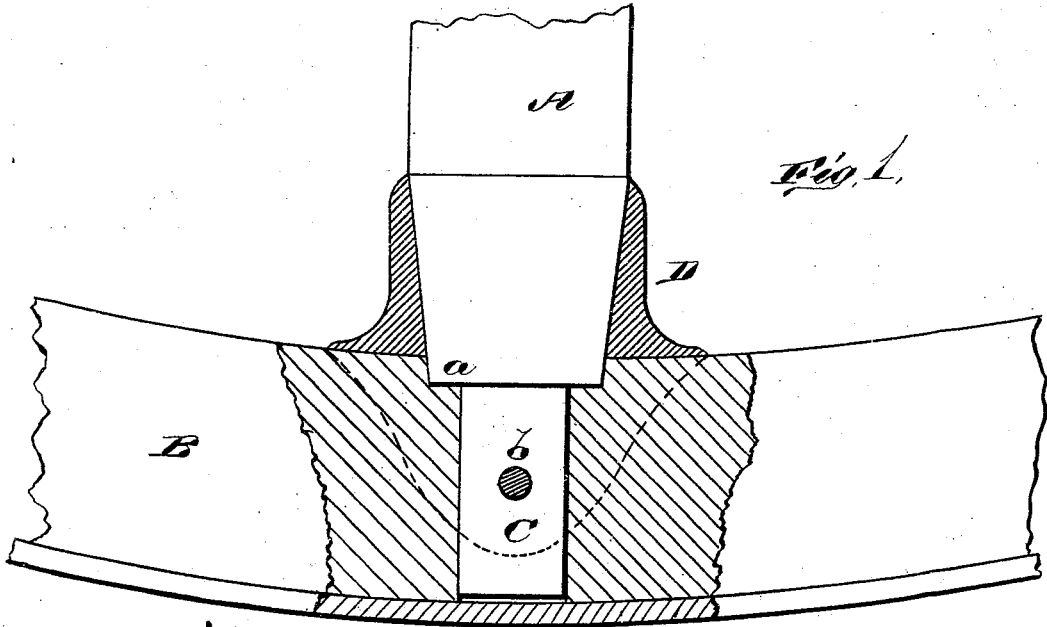


Fig. 1.

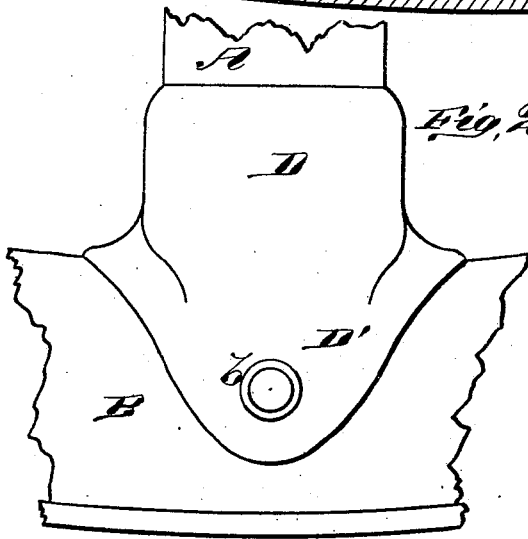


Fig. 2.

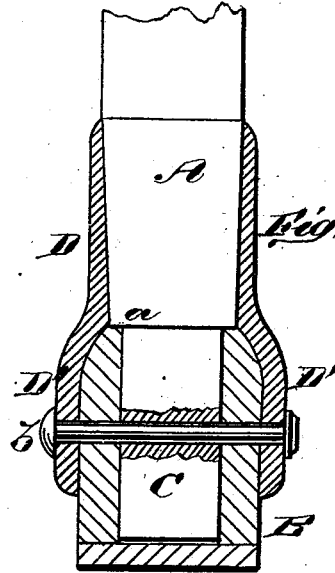


Fig. 3.

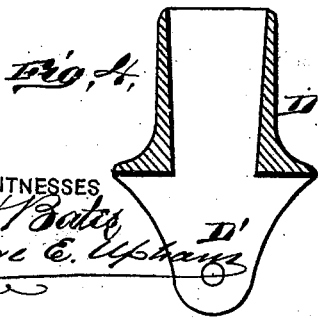


Fig. 4.

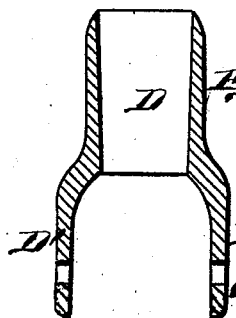


Fig. 5.

WITNESSES
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UNITED STATES PATENT OFFICE.

GEORGE F. GRAVES, OF MOUNT UPTON, NEW YORK.

IMPROVEMENT IN SPOKE-SOCKETS.

Specification forming part of Letters Patent No. **196,891**, dated November 6, 1877; application filed October 13, 1877.

To all whom it may concern:

Be it known that I, GEORGE F. GRAVES, of Mount Upton, in the county of Chenango and State of New York, have invented a new and valuable Improvement in Wagon-Spoke Ferrule and Felly-Clips; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a longitudinal vertical sectional view of my wagon-spoke ferrule and felly-clip. Fig. 2 is a side view. Fig. 3 is a transverse vertical sectional view. and Figs. 4 and 5 are sectional details thereof.

My invention relates to wheels for vehicles; and it consists in a ferrule fitting around the end of the spoke, and provided with lips to embrace the felly, and a pin or rivet passing through said lips, felly, and spoke-tenon, all as hereinafter more fully set forth.

The annexed drawing, to which reference is made, fully illustrates my invention.

A represents a spoke of a vehicle-wheel, and B is a part of the felly. The spoke A is formed with a tenon, C, which is passed through a hole in the felly B, up to a shoulder, *a*, on the spoke at the base of the tenon.

D represents a metal ferrule of suitable dimensions, having its interior tapering, and driven onto the end of the spoke up to the shoulder *a*. This ferrule is provided with two projecting lips, D' D', forming a clip to embrace the felly B, when the same is forced down upon the tenon C against the shoulder *a*. A pin or rivet, *b*, is then passed horizontally through the lips D', felly B, and tenon C, thus riveting the whole firmly together.

The ferrule D, with its lips D', prevents the spoke from breaking at the shoulder, where the tenon enters the felly, and also prevents the felly from splitting where the tenon passes through.

What I claim as new, and desire to secure by Letters Patent, is—

In a wheel for vehicles, the metal ferrule D, formed with the lips D' D', in combination with the spoke A, having tenon C and shoulder *a*, the felly B, and the rivet *b*, substantially as and for the purposes set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

GEORGE F. GRAVES.

Witnesses:

ALEXIS H. WHEELER,
BENJAMIN P. PECK.