(No Model.)

J. V. ALEXANDER.

FIFTH WHEEL.

No. 343,788. Patented June 15, 1886.

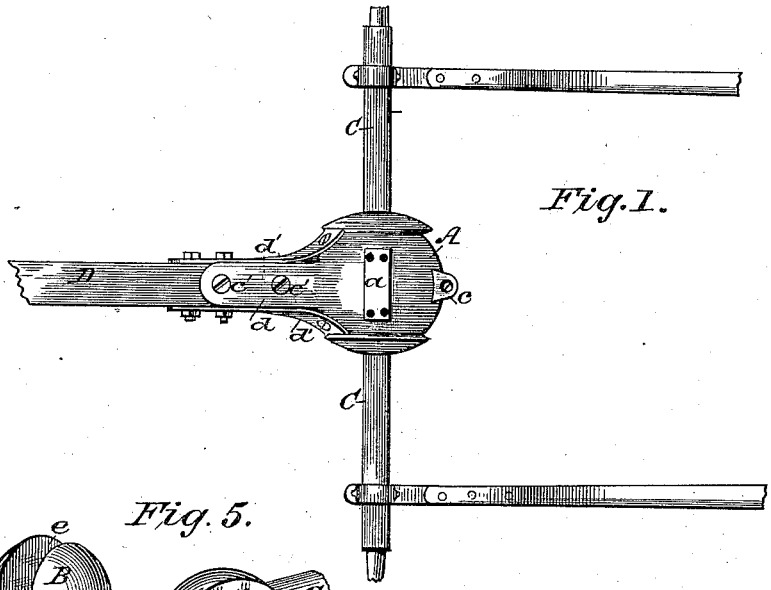


Fig. 1.

Fig. 5.

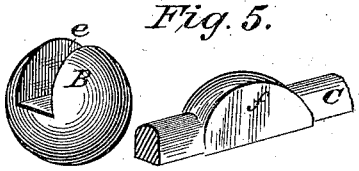


Fig. 2

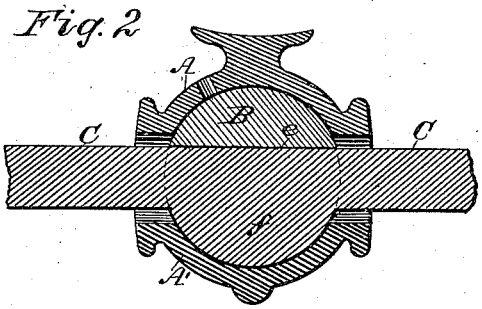


Fig. 3.

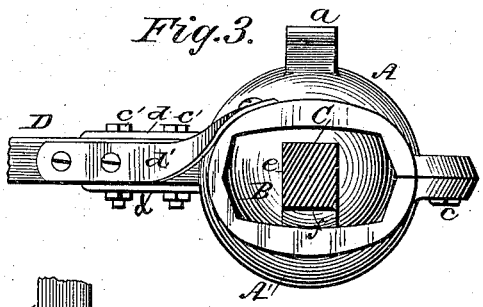


Fig. 4

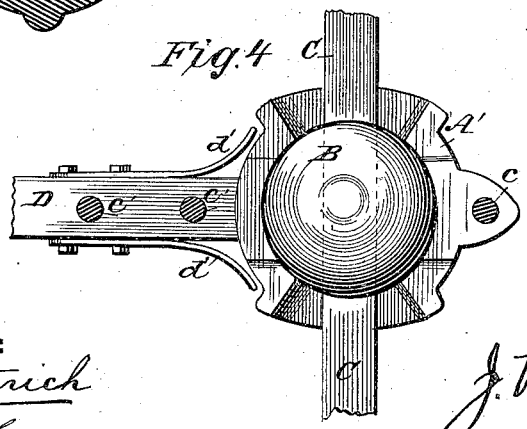
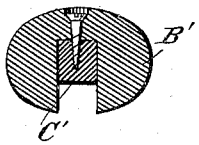


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOSEPH VENABLE ALEXANDER, OF TAYLOR'S CHAPEL, TENNESSEE.

FIFTH-WHEEL.

SPECIFICATION forming part of Letters Patent No. 343,788, dated June 15, 1886.

Application filed February 18, 1886. Serial No. 192,435. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH VENABLE ALEXANDER, a citizen of the United States, residing at Taylor's Chapel, in the county of Fayette and State of Tennessee, have invented certain new and useful Improvements in Fifth-Wheels, of which the following is a full, clear, and exact description.

My invention is an improvement in the class of ball-and-socket couplings employed for connecting the front axles of carriages and wagons to the bolsters or bodies thereof.

The improvement embodies the novel features hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of my improved coupling. Fig. 2 is a section taken longitudinally and centrally of the axle. Fig. 3 is a side view with the axle in cross-section. Fig. 4 is a plan view, the upper half of coupling being detached. Fig. 5 is a perspective detail view. Fig. 6 is a sectional view illustrating a modification.

The coupling is composed of a socket formed of two detachable parts, A A′, and a ball, B, which is applied to the axle C, and has a special construction to adapt it for detachable connection with the latter. Taken as a whole, the socket A A′ presents, approximately, the form of a hollow sphere having truncated ends provided with horizontal slots. The latter are formed by notching or cutting out the ends of the parts A A′, as shown in Fig. 3, and they accommodate the axle C, and allow it due freedom of movement on its center, which is represented by the ball. The upper part or cap, A, of the socket has a head-block, *a*, to which the spring (not shown) for supporting the body of the vehicle is in practice attached by means of screw-bolts. The caps A A′ are secured together by means of a screw-bolt that passes through coincident lugs *c*, formed on their front sides, and by other screw-bolts, *c′*, that pass through parallel rear extensions, *d*, between which the head of the perch or reach D is inserted. The latter may, however, be dispensed with. Detachable lateral braces *d′ d′* also connect the perch with the upper cap, A. The ball B, Fig. 5, has a radial slot, *e*, with parallel sides, which extends from its periphery to a depth beyond its center. This slot receives the axle C and a semicircular piece or block, *f*, which is welded or otherwise permanently attached to the latter. Said block fits somewhat closely in the slot, and its curved ends coincide with and complete the spherical surface of the ball at those points. By removing the lower cap, A′, the ball and axle attached may be inserted in place, and the said cap being then replaced the parts are duly connected for practical use. The ball B and portions of the axle-block *f* coincide with and fit the socket with sufficient accuracy to prevent rattling. The chief function of the block *f* is to prevent the axle from slipping endwise in the socket.

The pole or shafts of the vehicle are attached to the axle by means of clips in the usual way, Fig. 1. In case the axle is crooked or bent, instead of straight, as shown, or in case I apply the coupling to carriages already in use, I make the ball oval, as shown in Fig. 6, wherein B′ and C′ indicate the ball and axle, respectively. The longer diameter of the ball is at right angles to the axle, so that the latter cannot turn independently on its axis. The piece *f* is dispensed with, and the ball attached to the axle by means of a screw or screw-bolt.

What I claim is—

1. The combination, with the socket having end openings or slots, and the ball having a radial slot extending through it and outward from center to periphery, of the axle and its attached block, having a segmental form which adapts it to fit in and fill said slot, as shown and described.

2. The combination, with the ball having a slot or recess, of the axle having a corresponding construction which adapts it for detachable connection with said ball, as shown and described.

3. The combination, with socket and ball having a radial slot, of the axle having a central portion which fits in said slot, and whose ends coincide and are flush with the spherical surface of the ball, as shown and described, for the purpose specified.

JOSEPH VENABLE ALEXANDER.

Witnesses:

SAML. H. MORTON,

J. T. MORTON.