

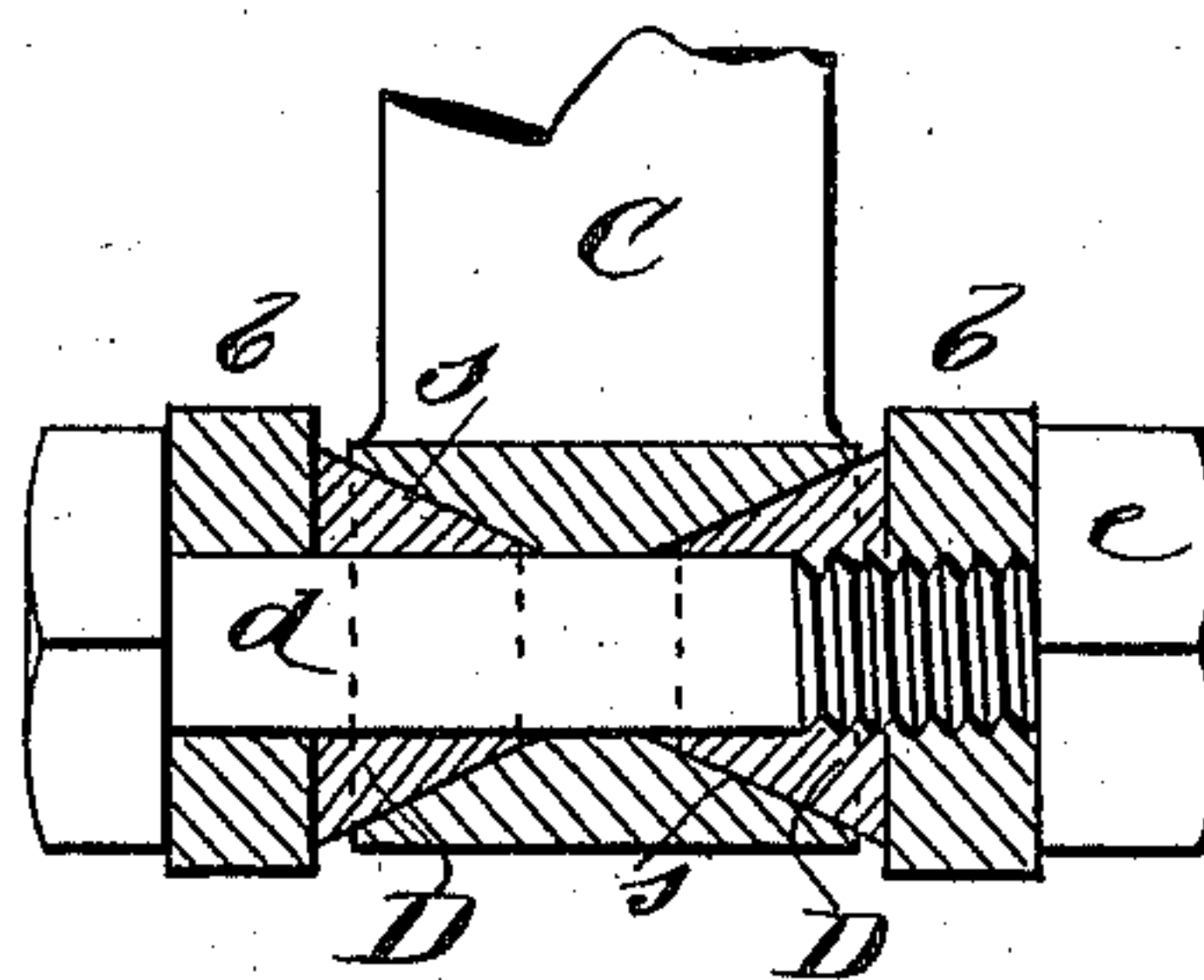
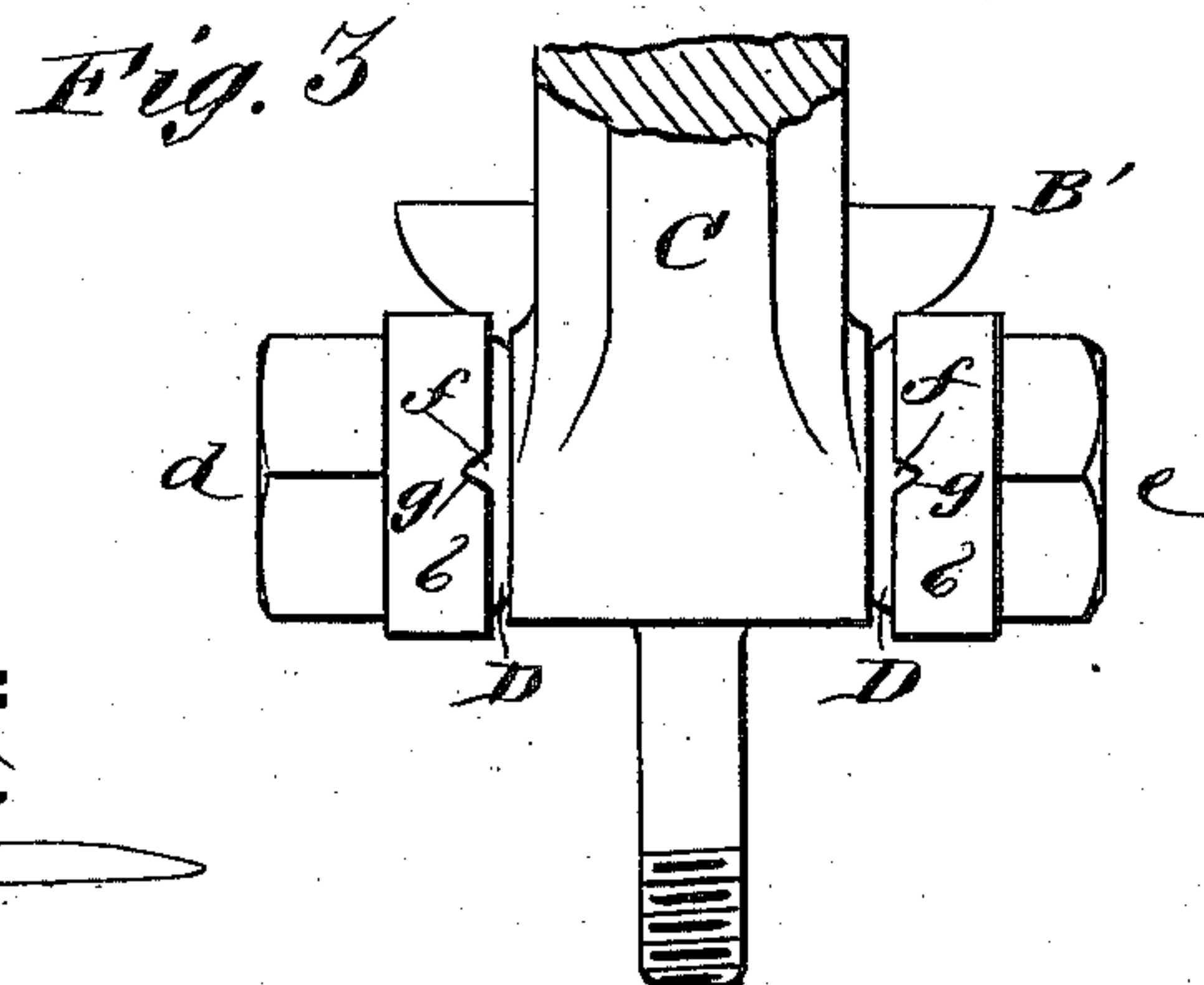
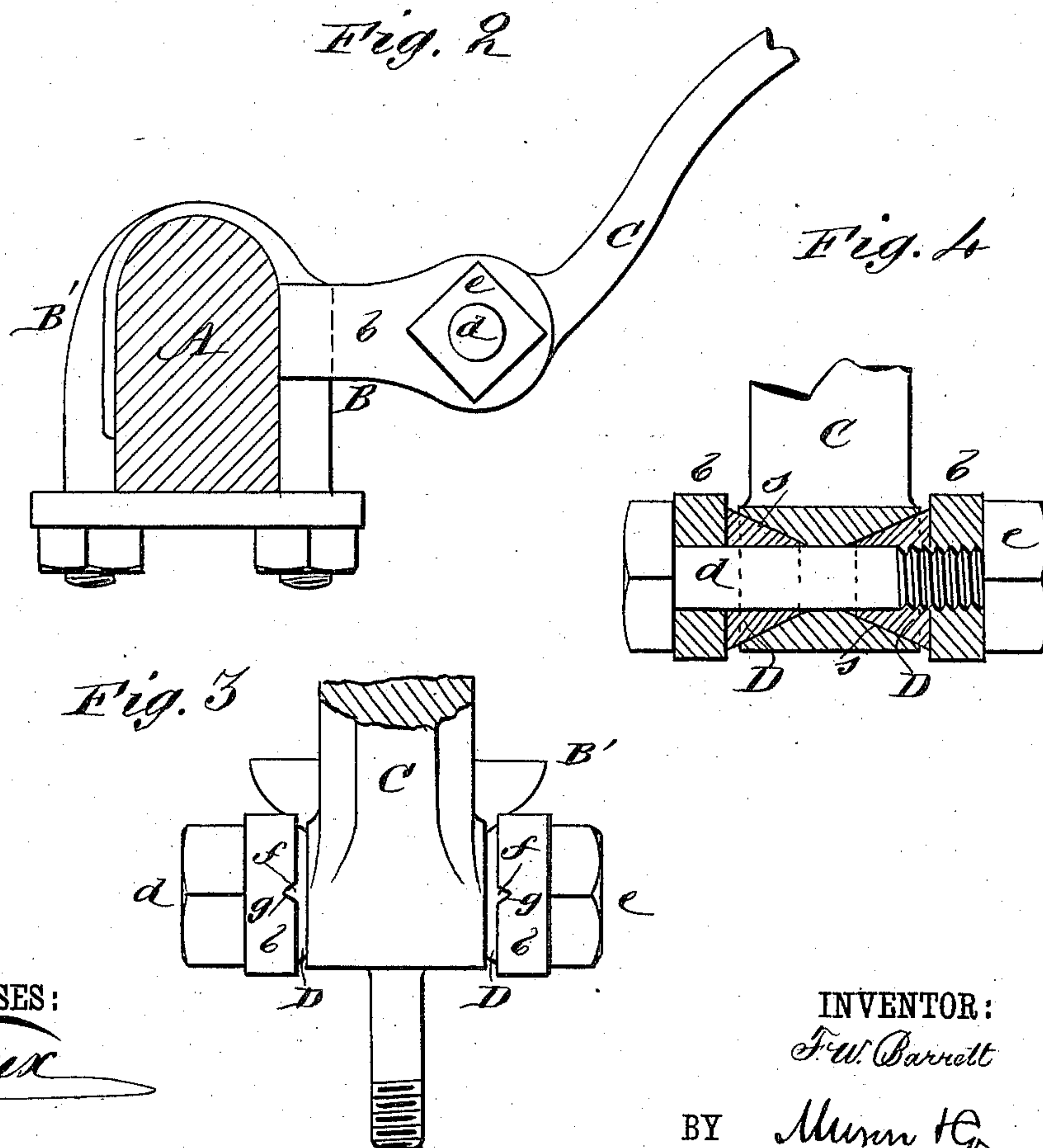
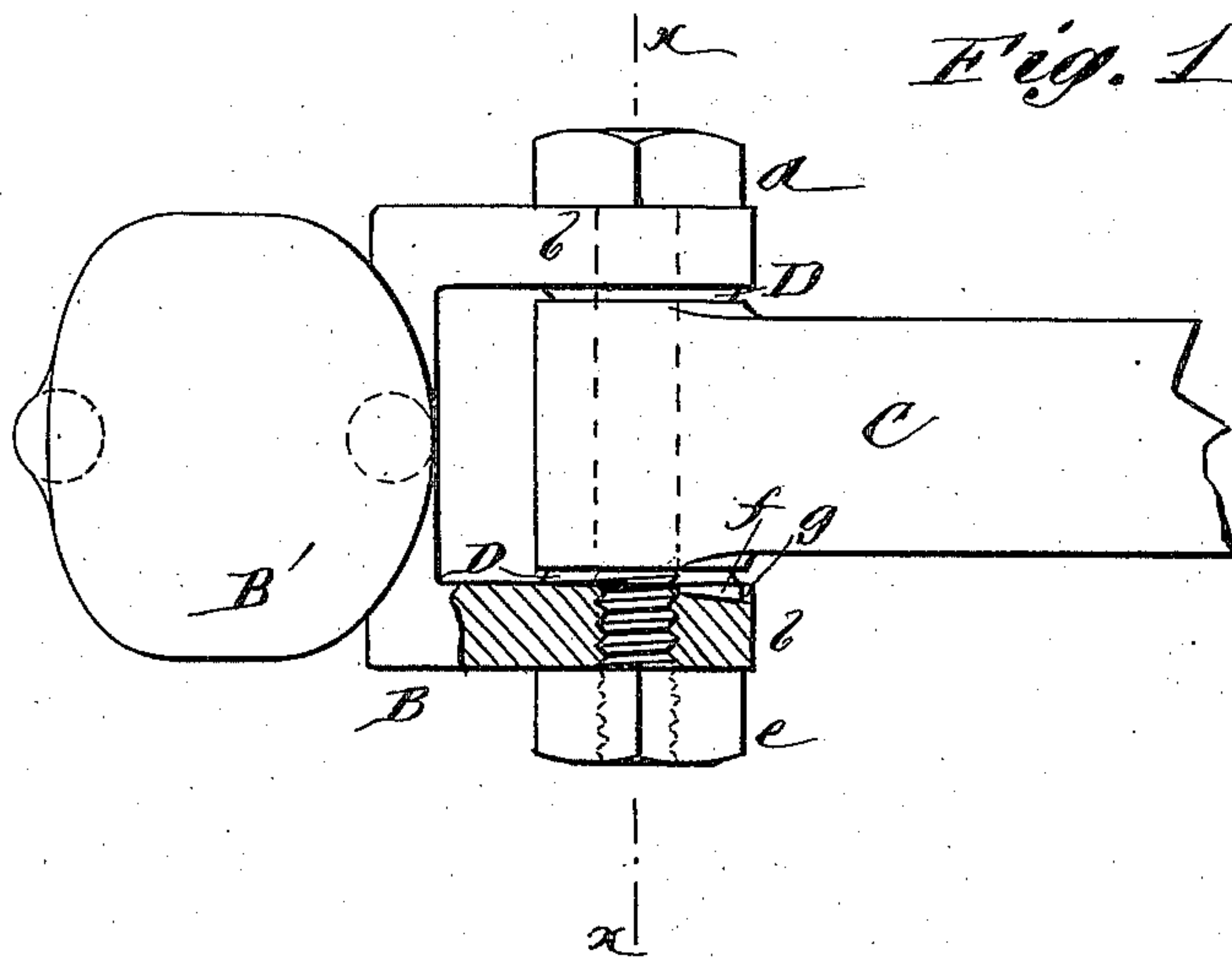
(No Model.)

F. W. BARRETT.

THILL COUPLING.

No. 365,722.

Patented June 28, 1887.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

FRANK W. BARRETT, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF TO F. L. DARROW & CO., OF SAME PLACE.

## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 365,722, dated June 28, 1887.

Application filed August 20, 1886. Serial No. 211,450. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK WALTER BARRETT, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful Improvement in Thill-Couplings, of which the following is a full, clear, and exact description.

This invention relates to anti-rattling thill-couplings in which a thill having an eye for connecting the thill with the shackle is conically recessed at its opposite ends for reception within them of conical bushings or washers, through which and through the eye of the thill and arms with which the shackle is provided and that inclose the thill the bolt that secures the thill to the shackle is passed; and my invention consists in a novel construction of the cones and their engagement with the arms of the shackle, substantially as hereinafter described.

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

Figure 1 represents a partly sectional plan of a buggy or other vehicle shackle with clip forming an integral portion of it for attachment to the axle of the vehicle, and showing the thill in part, with means embodying my invention for securing the thill to the shackle. Fig. 2 is a side view of the same, showing also the axle in section. Fig. 3 is a front view of the coupling, and Fig. 4 a vertical section upon the line *x x* in Fig. 1.

A indicates a vehicle-axle, and B the shackle of the thill-coupling, having the clip B' integral with it for securing the coupling to the axle. Said shackle B has two front side arms, *b b*, between which the inner end of the thill C freely fits. The thill is confined in the shackle by a bolt, *d*, provided with a nut, *e*, and arranged to pass through the side arms of the shackle and through an eye in the end of the thill, as usual.

D D are two single steel or other metal cones, having flat backs to fit against the inner surfaces of the side arms, *b b*, of the shackle. These cones, or rather truncated conical bushes or washers D D, are perforated to receive the bolt *d* through them, and taper toward each

other when in place to snugly fit within conical countersinks or recesses *s s* in the opposite sides or ends of the eye in the thill and form bearings on their exterior surfaces for the thill, relieving the bolt *d* of strain. Said conical bushings D D are restrained from turning when in place by feathers *f* on their backs, arranged to fit correspondingly-shaped grooves *g* in the inner surfaces of the side arms, *b b*, of the shackle, whereby they have no wearing action upon the bolt *a* in the working of the thill up or down. The construction of the conical bushes D D, too, requires no spreading of the shackle-arms apart, in order to fit said bushes to their places and the several parts together. Consequently the thill-coupling may be put together or taken apart outside of the workshop and by an unskilled hand. When the whole is fitted together, however, it is only necessary to tighten up the bolt *a* by its nut *e*, to make the conical bushes, by springing the arms of the shackle, form a close anti-rattling fit with the thill.

The above are special advantages due to the construction of the single conical bushes and their feather or tongue-and-grooved engagement with the side arms of the shackle.

The coupling provides for an easy change from pole to shafts, and vice versa. No shaft-rubbers are necessary, and the alterations and expense in attaching the couplings to any vehicle are very slight. Rattling, too, is effectually avoided without having recourse to other means than those here described; but, if desired, the conical bushes may at any time be removed and anti-rattling rubbers be substituted, thereby providing for interchangeability, and making it practicable for a vehicle either to use the cones or not.

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

1. In thill-couplings having independent conical bearings for the eye of the thill, the single conical bushings D D, in combination with the shackle B, having side arms, *b b*, the thill C, having conical seats or recesses *s s* at opposite ends of its eye, and the screw bolt and nut *d e*, said conical bushes and the inner surfaces of the side arms of the shackle being



constructed on or in their adjacent surfaces with feathers or tongues and grooves *f g*, adapted to hold said bushings stationary and to permit of the ready entry and removal of the bushes and fitting of the parts of the coupling together without forcing apart the arms of the shackle, substantially as specified.

2. In a thill-coupling, the combination, with a thill-iron having conical eyes, of conical bushes fitting therein and having feathers or projections on their bases, and a thill-shackle having recesses in its jaws to receive such feathers or projections, substantially as set forth.

3. In a thill-coupling, in combination with a thill-iron having conical eyes, conical bushes having feathers on their bases and fitting in said eyes, shackles having jaws clasp ing said bushes and provided with recesses to receive said feathers, and a bolt and nut for connecting and adjusting said shackle-jaws to said bushes and thill-iron, substantially as set forth.

FRANK W. BARRETT.

Witnesses:

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