

E. SOPER.
Thill-Coupling.

No. 159,615

Patented Feb. 9, 1875.

Fig. 4.

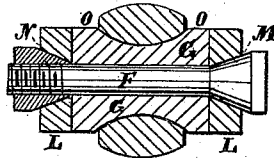


Fig. 1.

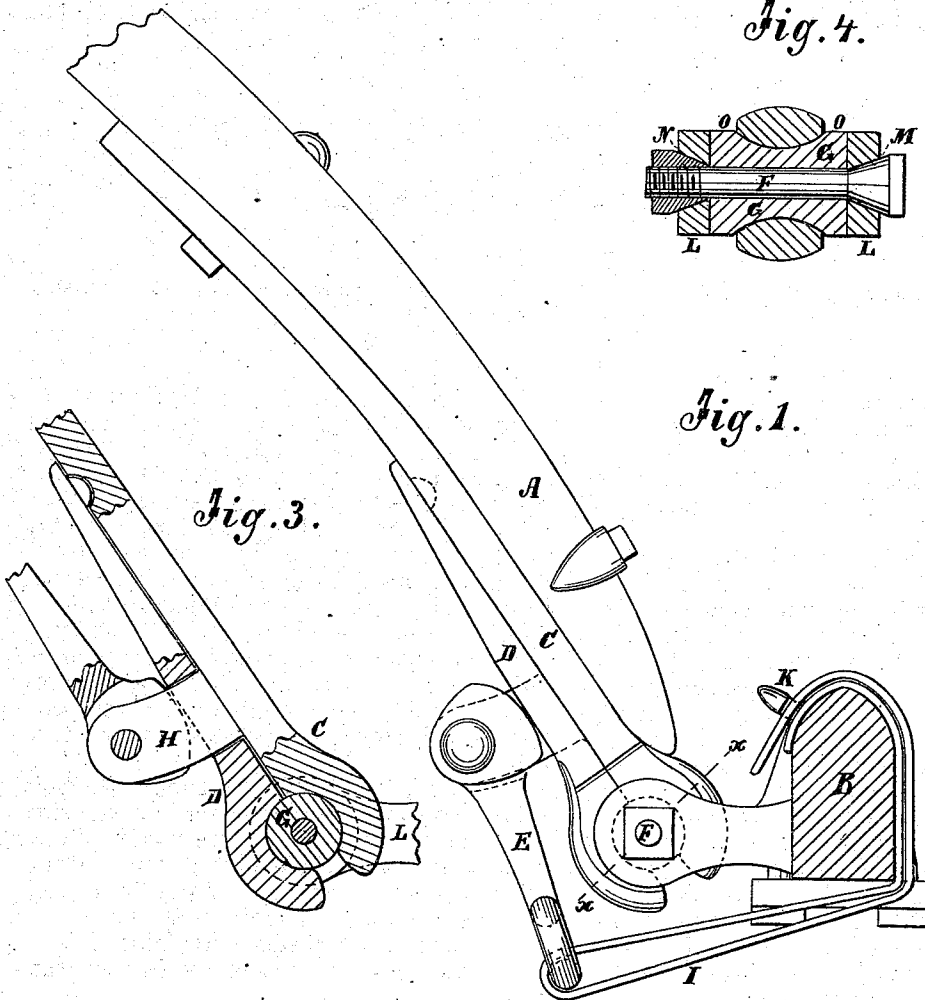
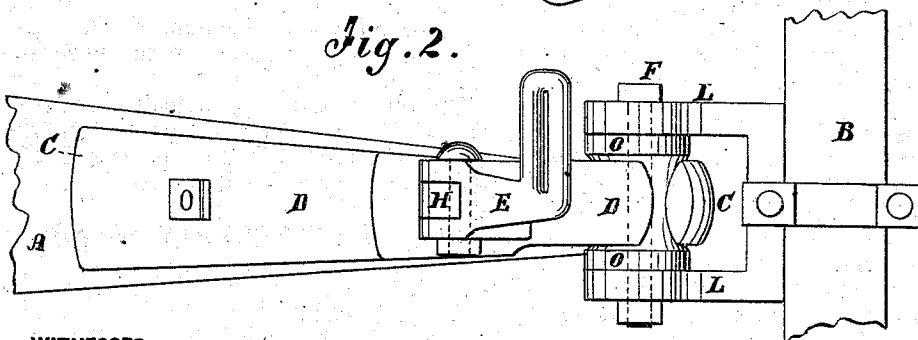


Fig. 2.



WITNESSES:

A. Benneken & Co.
A. F. Terry

INVENTOR:

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E. Joper
BY *Munnell*
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UNITED STATES PATENT OFFICE.

EPHRAIM SOPER, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN THILL-COUPPLINGS.

Specification forming part of Letters Patent No. **159,615**, dated February 9, 1875; application filed December 28, 1874.

To all whom it may concern:

Be it known that I, EPHRAIM SOPER, of Brooklyn, Kings county, New York, have invented a new Improved Shaft-Coupling for Carriages, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claims.

Figure 1 is a side elevation of the shaft and clip, and a section of the axle. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a view of the clamping apparatus, cushion, and jack-bolt in section. Fig. 4 is a section through the clamp, cushion, and jack on the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the shaft, to be coupled to the axle B. C is one of the eye-strap pieces. D is the other; and E is the cam-lever for fastening them to the jack-bolt F and its cushion G. The part C of the clamp is bolted to the shaft, and it has a stud, H, going through a mortise in the part D, and having the cam-lever E pivoted to it, so as to force the clamp together, and hold it fast. The safety-strap is connected to the cam-lever, as shown, instead of the eye-plate, so that, besides serving the purpose of the strap itself, it prevents the cam from working loose.

I propose to connect the safety-strap to the axle by passing it under the latter, up and over the top to the front portion, and buttoning it on the stud K, instead of buckling it to a loop of the jack, as it is now arranged, for the jack is liable to break in some cases and release the strap, which cannot be released in such an event when the strap is connected as I propose.

The cushion, of elastic material, is made with a wide groove in the middle portion, and the eye in the eye-strap clamp is contracted along the middle portion, so that the collars O of the cushion are interposed between the ears and the eye-strap, which is made considerably narrower than the space between the ears L of the jack, and thereby effectually prevented from striking against the ears and rattling.

Cushions have been employed in shaft-couplings to prevent the contact of the eye-piece with the bolt, as a means of preventing noise; but up to this time a cushion has never been interposed between the eye-strap and the ears of the jack.

M represents the conical portion of the bolt next to the head; and N is the conical extension of the nut, for forcing into corresponding holes in the ears of the jack, to bind the bolt and the nut by friction, so as not to work loose, and also to secure the bolt against rattling.

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

1. The combination of clamps C D, cam-lever E, and strap I, as and for the purpose set forth.

2. The combination of conically-headed screw-bolt F M, conical nut N, grooved cushion G, having collars O O, and the ears L L, as and for the purpose set forth.

EPHRAIM SOPER.

Witnesses:

T. B. MOSHER,
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