

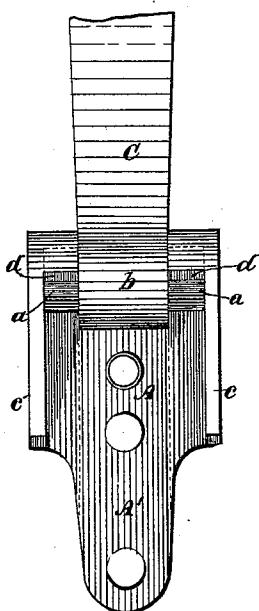
(No Model.)

E. A. FARR.
THILL COUPLING.

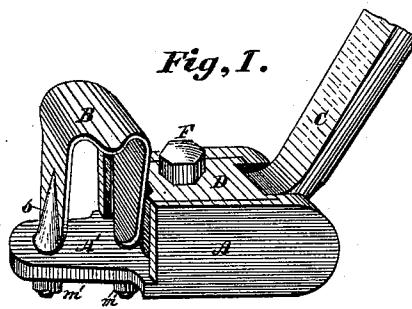
No. 402,913.

Patented May 7, 1889.

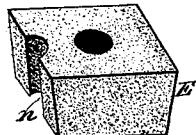
Fig, 2.



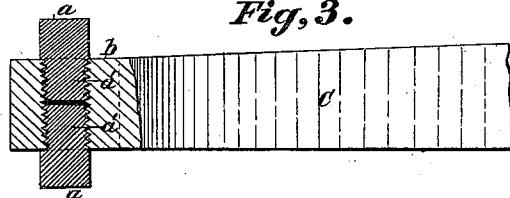
Fig, 1.



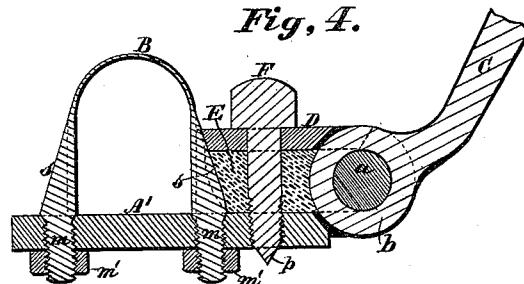
Fig, 8.



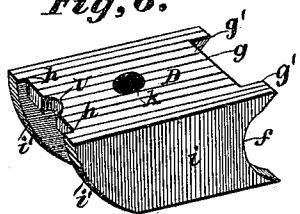
Fig, 3.



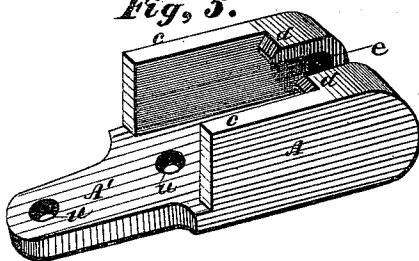
Fig, 4.



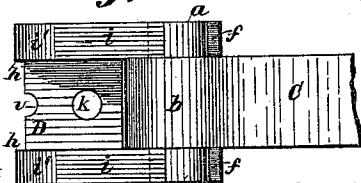
Fig, 6.



Fig, 5.



Fig, 7.



Witnesses.

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THILL-COUPING.

SPECIFICATION forming part of Letters Patent No. 402,913, dated May 7, 1889.

Application filed January 17, 1889. Serial No. 296,682. (No model.)

To all whom it may concern:

Be it known that I, EUGENE A. FARR, a citizen of the United States, residing at Galesburg, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Thill or Shaft Couplings of Vehicles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

15 My invention relates to an improvement in thill or shaft couplings of the anti-rattler type. In Patent No. 387,060, granted to me July 31, 1888, a device is shown which possesses some features in common with the subject of 20 my present invention, the object of the latter named being to render the thill-coupling previously patented by me more efficient in action, and also to improve its form of construction, whereby it is adapted for more general 25 application to vehicle-shafts of any style.

With these objects in view my invention consists in certain features of construction and combinations of parts, which will be hereinafter described, and pointed out in the 30 claims.

Referring to the drawings that make a part of this specification, Figure 1 is a perspective view of my improved coupling jointed to the terminal end of a thill-iron. Fig. 2 is a plan view of the coupling-box with a thill-iron in position therein, the other parts of the coupling being removed. Fig. 3 is a top view of a thill-iron, partly in section, showing an important novel feature in construction of the 35 same. Fig. 4 is a side elevation, in section, of the thill-coupling device and a shaft-iron jointed thereto, the latter forming a portion of the coupling. Fig. 5 is a perspective view of the coupling-box with other parts of the 40 coupling removed therefrom. Fig. 6 is a perspective view of a presser-shoe that is one of the features of my present invention. Fig. 7 is a bottom plan view of the presser-shoe shown in Fig. 6 with the mating end of a 45 thill-iron seated thereon. Fig. 8 is a perspective view of an elastic block employed to take

up end-play of the shaft-iron, and thus produce a noiseless joint between said iron and the coupling-box.

A represents the coupling-box. It is made 55 of any suitable metal and is preferably cast into form. As will be noticed in Figs. 1, 2, and 5, said box is slotted at its rear end, which is also rounded to produce curved walls *d* or sockets that are adapted to receive the journal stub ends *a* of the shaft-iron C. The laterally-projecting journal stub ends *a* are inserted in a transverse tapped hole formed in the rounded boss *b* of the shaft-iron C. The outer projecting portions of these stub ends, 65 that form journals which are seated within the box A, are rendered true cylinders, the remaining portions of the same being threaded, as shown in Fig. 3, so that they may be inserted by any proper tool which will grip the 70 journal ends, these, when in place, producing diametrically-opposite trunnions or journal ends for the rocking connection of the thill-iron with the other portion of the coupling.

An integral extension, A', is formed on the 75 coupling-box A, which is projected in the same plane with the bottom of the box at the end opposite where the thill-iron is jointed to the box, the portion A' being perforated at *u* to receive the threaded ends *m* of a clip- 80 iron, B, that are inserted, as shown in Fig. 4, and secured in place by the nuts *m'*.

It will be seen that the axle clip-iron B has the integral bolt ends *m* extended upward on the side walls of the clip, so as to form inverted wedge-shaped projections *s* thereon. These answer a twofold purpose, as they strengthen the clip, and on the side nearest the journal-sockets *d* the inclined wall thus afforded is utilized to aid in forcing forward 90 the elastic block E and shoe D, which will be further explained.

A sufficient space intervenes between the walls *c c* of the coupling-box A to permit the introduction of a presser-shoe, D, which is 95 formed as shown in Figs. 6 and 7. It consists of a top plate provided with two parallel depending flanges, *i*, which slide neatly between the walls *c* of the box A. The forward ends of the flanges or vertical walls *i* are cut into 100 curved form, as at *f*, Fig. 6, thus producing half-boxes, which are of proper curvature to

fit the journal ends of the thill-iron C when the same are seated therein, as shown in Fig. 7, the other ends, *i'*, of the walls or flanges *i* being convexly curved to permit the ready introduction of the shoe in place when the journal ends *a* are seated in the sockets *d* of the coupling-box A.

Between the flange-walls *i* the block E is inserted, this being made of any proper material sufficiently elastic to be compressed vertically and yield laterally, and it is important that this material should be capable of enduring frictional contact with the rounded surface of the boss *b*, that it is designed to press against when the several parts of the coupling are assembled and the same adjusted to afford a smooth working, noiseless jointed connection of the thill-iron C with the coupling-box A.

When the parts are in position as shown in Fig. 4, the compressing action of the screw-bolt F, that penetrates through the shoe D, elastic block E, and engages the tapped perforation in the bottom wall of the box A, will force the compacted material of the block against the adjacent rounded surface of the boss *b* or rounded terminal end of the thill-iron C. As the block neatly fits between the flanges *i*, lateral expansion is prevented, and the wedging abutment of the block against the inclined wall *s* of the clip B will coact to push the compressed block E against the boss *b*, as stated, said pressure being accurately graduated by the adjustment of the set-bolt F.

The top wall of the shoe D is cut away to form projecting ears *g'*, that loosely embrace the sides of the boss *b* on thill-iron C, and the opposite edge of said shoe is also slightly recessed, forming shoulders *h*, which impinge against the edges of the clip B. A curved notch, *v*, formed in the center of this recessed edge between these shoulders, affords a suitable bearing-surface to slide against the ribbed projection *s* of the clip B. When the set-bolt F is forced downwardly by a socket-wrench or other convenient tool, the shoe D will be made to bear with proper force against the journal ends *a* of the thill-iron C in an evident manner.

As the journal stub ends *a* are fitted so as to require some force to turn them, they will

not be moved by their ordinary frictional contact with the side walls, *c*, of the box A, and it is designed to "set" these rounded ends so that there will be no lateral motion between them and the walls *c*. It is apparent that in case wear of the parts should cause a side rattle of the journal stub ends *a* this can readily be taken up by an endwise adjustment of the same.

It is claimed for this improved thill-coupling that it is applicable to any old or new vehicle by an inexpensive adaptation of the thill-irons to receive the journal stub ends *a*; and it is evident that it provides a reliable, neat, and substantial coupling, which is perfectly noiseless and safe when in use.

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

1. In an anti-rattler thill-coupling, the combination, with a coupling-box and a thill-iron provided with adjustable journal stub ends, of an elastic block, a clip, a presser-shoe, and a set-bolt, substantially as set forth.

2. In an anti-rattler thill-coupling, the combination, with a coupling-box provided with a slotted end and socket-boxes that are adapted to receive the journal stub ends of a thill-iron, a thill-iron supporting opposite journal stub ends and two endwise-adjustable journaled stub ends, of a presser-shoe that has half-boxes formed on its depending parallel flanged walls, which are adapted to engage the journal stub ends, a removable axle-clip, an elastic block, and a set-bolt, substantially as set forth.

3. In an anti-rattler thill-coupling, the combination, with a coupling-box, a journaled thill-iron, and adjustable stub ends that are rounded to afford journals for the thill-iron and are oppositely inserted in a threaded hole in this thill-iron, of an elastic block which is located between the flanged walls of a presser-shoe, a flanged presser-shoe, an axle-clip having an inclined rib on its face, and a threaded set-bolt, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EUGENE A. FARR.

Witnesses:

S. M. ARNOLD,
C. H. TURNER.