(No Model.)

W. H. PARDEE.

THILL COUPLING.

No. 485,978. Patented Nov. 8, 1892.

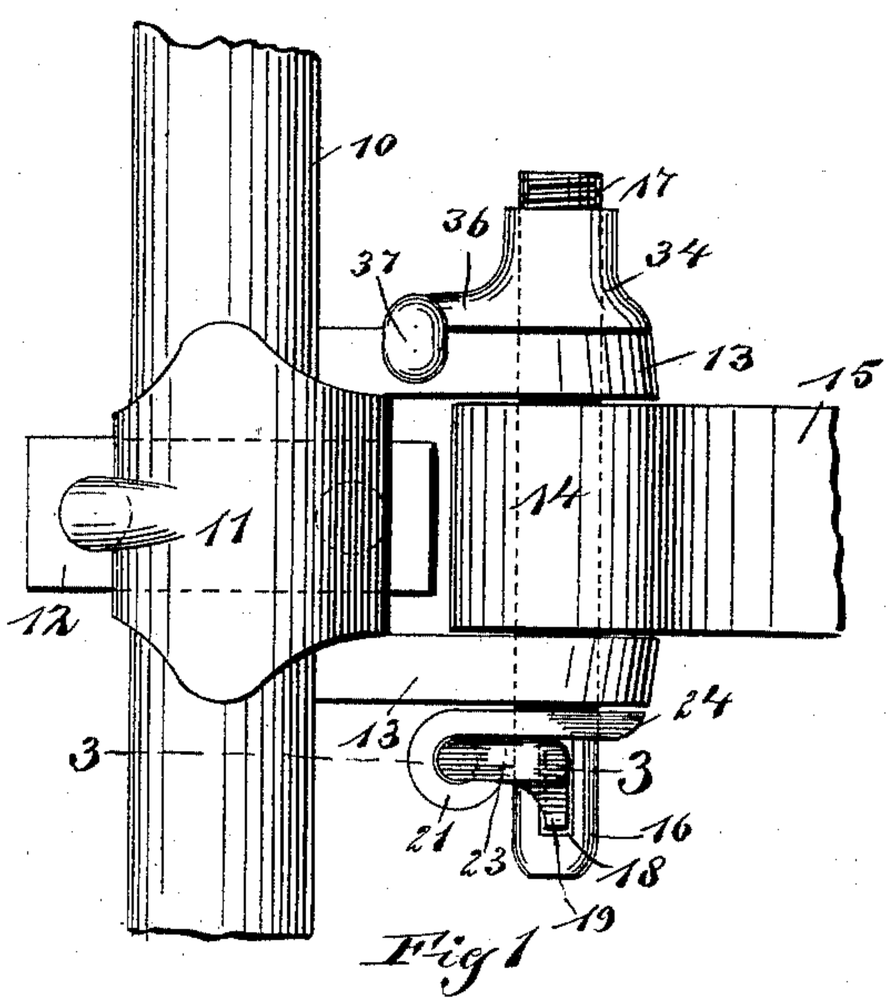


Fig 1

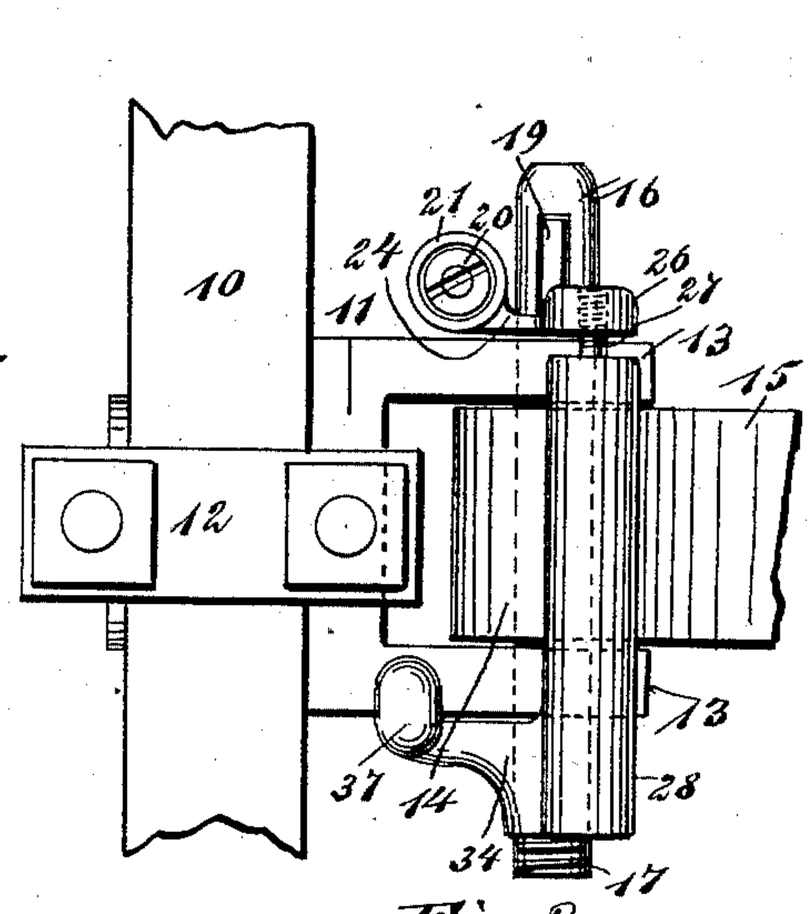


Fig 2

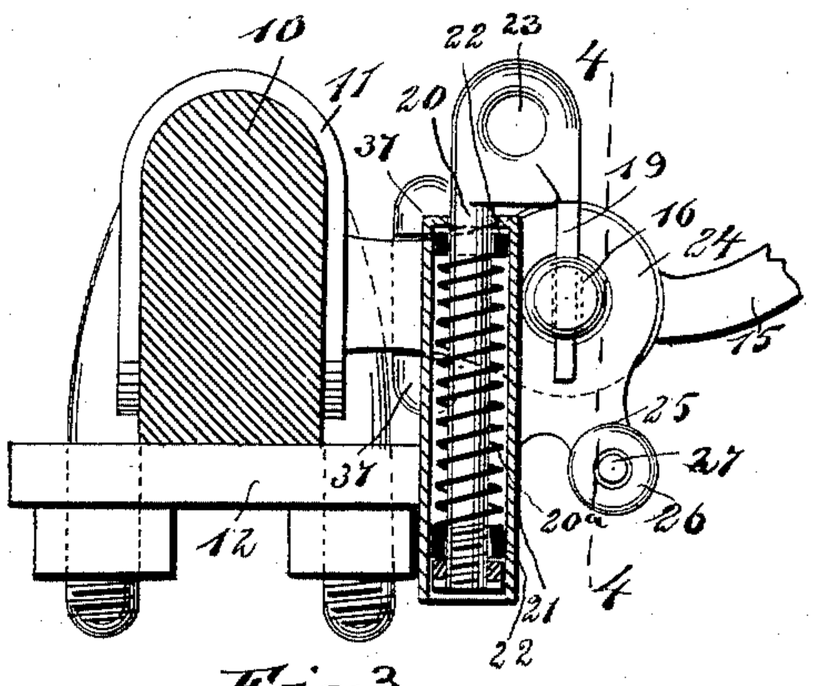


Fig. 3.

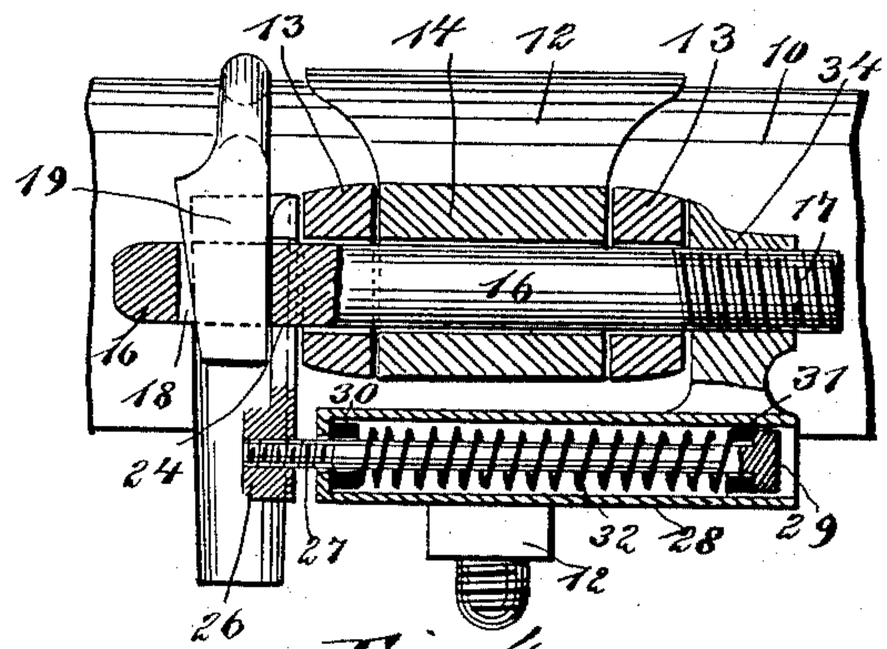
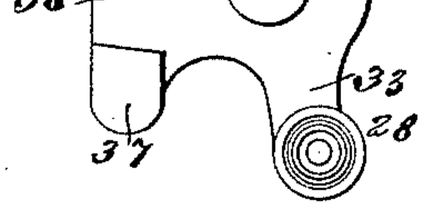


Fig 4.

Fig. 5.



WITNESSES:

F. McArdle.

C. Sedgwick

INVENTOR

W. H. Pardee

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM H. PARDEE, OF ANTIGO, WISCONSIN.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 485,978, dated November 8, 1892.

Application filed March 15, 1892. Serial No. 425,000. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. PARDEE, of Antigo, in the county of Langlade and State of Wisconsin, have invented a new and Improved Thill-Coupling, of which the following is a full, clear, and exact description.

My invention relates to improvements in thill-couplings; and the object of my invention is to produce a coupling by means of which the knuckles of a thill-iron or pole-iron may be quickly and securely fastened to the clips of a vehicle-axle, and a further object of my invention is to construct the coupling so that all lost motion will be taken up, thus preventing rattling.

To this end my invention consists in a thill-coupling the construction of which will be hereinafter described and claimed.

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

Figure 1 is a plan view of the coupling embodying my invention, showing it applied to an axle and thill-iron. Fig. 2 is an inverted plan of the same. Fig. 3 is a vertical cross-section on the line 3 3 in Fig. 1. Fig. 4 is a vertical section on the line 4 4 in Fig. 3, and Fig. 5 is a detail side elevation of the coupling-head plate and guide.

The axle 10 is provided with the usual clip 11, which terminates at its lower end in bolts, by means of which it is secured to a cross-piece 12, and the clip has on its front side the usual forwardly-extending parallel lugs 13, between which the knuckle 14 of the thill-iron 15 is held. The lugs 13 are perforated in the usual way and are adapted to receive the coupling-bolt 16, which extends through them and through the knuckle 14, this bolt having one end threaded, as shown at 17, and having the opposite end provided with a vertical mortise 18, adapted to receive a tapering key 19, formed on the upper end of and parallel with a vertically-sliding bolt 20, which is held to slide in a tubular guide 21, which is arranged at one side of the coupling and in the rear of the bolt 16, the slide-bolt 20 having a nut at its lower end and having washers 22 at each end, the upper washer being held in place by a shoulder on the tubular guide 21. The slide-bolt is normally pressed downward by a spiral spring 20^a, which is held between the upper and lower washers and which encircles the bolt, and the upper end of the bolt is formed into a perforated head 23, which serves as a handle to facilitate its lifting, and the perforation is also adapted to receive any small article which may be thrust through it and which will enable it to be lifted more easily. The downward pressure of the spring 20^a holds the key 19 tightly in place in the mortise 18, and the pressure draws lengthwise upon the bolt 16, so as to prevent side motion and rattling.

The construction of the mortise-bolt, the locking-key therefor, and the slide-bolt connected with the key form no part of this invention, as similar construction is shown in the Letters Patent of the United States No. 394,290, dated December 11, 1888.

The guide-tube 21 is open at the lower end and it is formed integral with the face-plate 24, which is held on the exterior side of one of the lugs 13, the plate being perforated to receive the bolt 16 and having on its under side a depending arm 25, the lower end of which is formed into a fixed nut 26, which receives the threaded end of a slide-bolt 27, which extends transversely beneath the coupling proper and parallel with the bolt 16, the bolt 27 being held in a tubular guide 28, which is open-ended. The bolt 27 has a head 29 at its free end, and the bolt is provided near opposite ends with washers 30 and 31, the washer 30 fitting against the shoulder at one end of the tube 28 and the washer 31 fitting against the head of the bolt 27. A spiral spring 32 encircles the bolt between its washers, and the pressure of the spring serves to bring together the face-plate 24 and the head-plate 34 at the opposite end of the coupling, so as to prevent any possible rattling. The tube 28 is formed integral with the head-plate 34, which is screwed at 35 to the threaded end of the bolt 16, the tube 28 being produced on an arm 33, which extends downward from the head-plate and parallel with the arm 25 of the face-plate 24. The head-plate 34 has a rearwardly-extending portion 36, which fits flatwise against the exterior side of one of the lugs 13, and on the upper and lower sides of the plate are inwardly-extending arms 37, having their inner edges shaped to fit the up-

per and lower portions of the lug 13, thus forming between them a channel 38 to receive the lug, as shown in Fig. 5, and the arms 37 thus act as a clamp and hold the head-plate 34 and the bolt 16, which is secured thereto, in a rigid position, so that the parts cannot shake loose or rattle.

The coupling is applied as follows: The coupling-bolt 16 is screwed firmly into the head 34, and when applied to the vehicle the knuckle 14 of the thill-iron is placed between the lugs 13, and the bolt 16 is pushed through the lugs 13 and knuckle 14, so that the arms 37 will clasp one of the lugs 13, as shown in Figs. 1 and 4. To enable this to be done, the key 19 is turned around, so as to be out of the path of the bolt 16, and the face-plate 24 is also swung downward, so as to pass beneath the lugs and the thill-iron knuckle. After the bolt is inserted the face-plate 24 is pulled outward against the pressure of the spring 32 and is turned upward, so that it may be slipped upon the bolt 16, after which the slide-bolt 20 is raised and the key 19 turned around, so that it will register with the mortise 18, and it is then dropped down into the mortise, thus locking the several parts firmly together. To detach the thills, the above operation is reversed, the key 19 being raised and turned at right-angles, the face-plate 24 being pulled out and turned down, and the bolt 16 being withdrawn from the lugs and knuckle.

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

1. In a thill-coupling, the combination, with the clip-lugs and thill-knuckle, of the coupling-bolt adapted to extend through the lugs and knuckle, the head-plate secured to the bolt and adapted to fit against one of the lugs, the face-plate adapted to fit against the opposite lug and having means, as shown, for attachment to the coupling-bolt, and a yielding connection between the head-plate and face-plate, substantially as described.

2. In a thill-coupling, the combination, with the clip-lugs and thill-knuckle, of the coupling-bolt adapted to extend through the lugs and knuckle, a head-plate secured to the bolt and having arms to clasp one of the lugs, a face-plate adapted to receive the bolt and to fit against the opposite lug, and a spring connection between the head-plate and face-plate, substantially as described.

3. The combination, with the clip-lugs and thill-knuckle, of the coupling-bolt adapted to extend through the lugs and knuckle, a head-plate secured to the bolt and adapted to fit against one of the lugs, a tube secured to the head-plate and extending beneath the coupling-bolt and parallel therewith, a face-plate adapted to fit the opposite lug and having means for attachment to the coupling-bolt, and a spring-actuated bolt held in the guide-tube and connected with the face-plate, substantially as described.

4. In a thill-coupling, the combination, with the clip-lugs, the thill-knuckle, and the coupling-bolt, of a head-plate secured to the bolt and having arms to clasp one of the clip-lugs, a guide-tube fixed to the under side of the head-plate and extending parallel with the coupling-bolt, a face-plate adapted to fit the opposite clip-lug and having means for attachment to the coupling-bolt, and a spring-pressed bolt held in the guide-tube and having one end secured to the face-plate, substantially as described.

WILLIAM H. PARDEE.

Witnesses:
S. K. STRONG,
A. K. BRUSH.