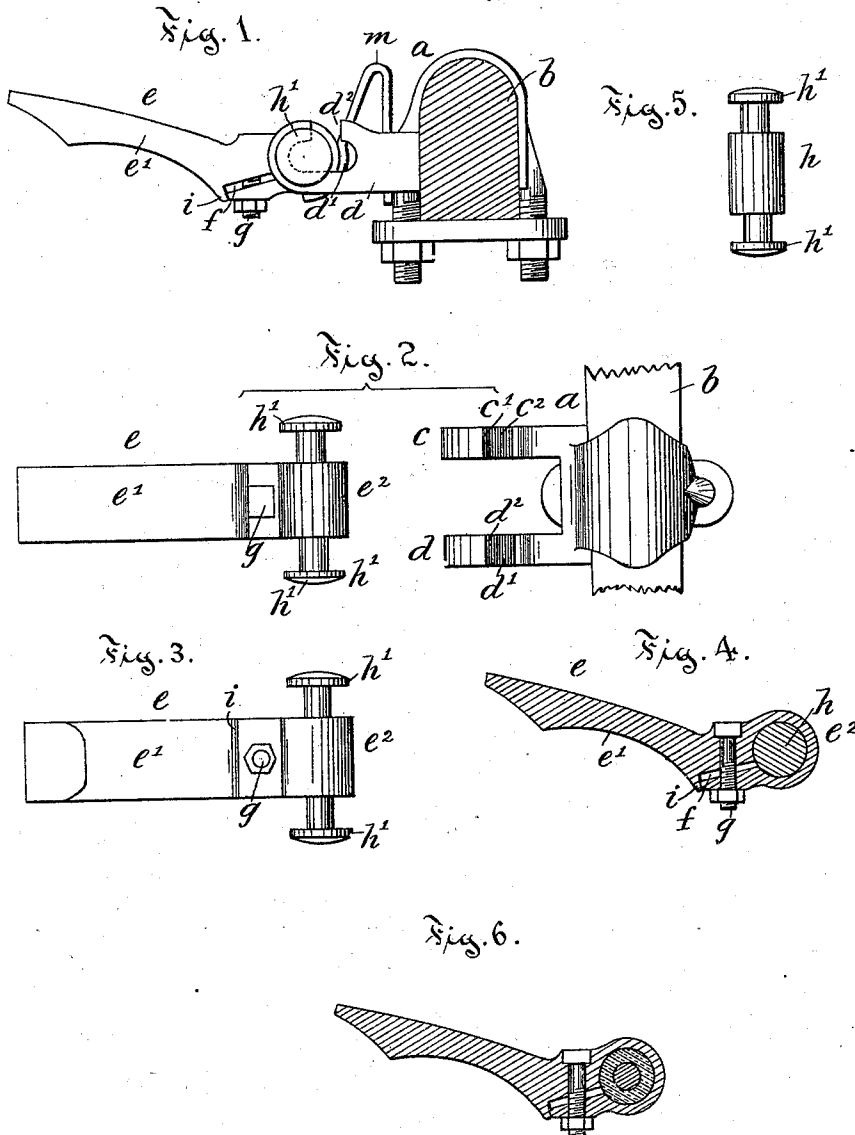


(No Model.)

W. PEARCE.
THILL COUPLING.

No. 542,652.

Patented July 16, 1895.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM PEARCE, OF PLANTSVILLE, CONNECTICUT.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 542,652, dated July 16, 1895.

Application filed June 9, 1894. Serial No. 513,997. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PEARCE, a citizen of the United States, and a resident of Plantsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Carriage-Couplings, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of my invention is to provide a carriage-coupling with the interengaging parts of the clip and the shackle-eye so constructed as to avoid certain defects in prior structures, and also to provide a greater security and ease of adjustment and of repair of the parts.

To this end my invention consists in the details of the several parts making up the carriage-coupling as a whole and in the combination of the several parts, as more particularly hereinafter described, and pointed out in the claim.

Referring to the drawings, Figure 1 is a side view of a carriage-coupling embodying my invention. Fig. 2 is a top view of the coupling with the shackle and the clip separated. Fig. 3 is a detail bottom view of the shackle-eye. Fig. 4 is a detail view, in central cross-section, of the shackle-eye. Fig. 5 is a plan view of a renewable trunnion. Fig. 6 is a detail view, in horizontal section, of a modified form of pivot connection between the shackle-eye and clip.

In the accompanying drawings the letter *a* denotes a carriage-clip of usual construction as to the yoke, the strap, and locking-nuts, by means of which the clip is secured to an axle *b*, the clip having the forward-extending ears *c d*, which are provided with pivot-sockets *c' d'* to receive the bolt which extends through the ears and through a shackle-eye to removably secure the parts together.

The form of pivot-sockets shown are elongated and have central openings *c² d²*, which are adapted to receive trunnions borne on the shackle part, the parts being connected by slipping the trunnions into the sockets against the force of a spring *m*, located between the body of the clip and the back end of the shackle-eye, the spring normally thrusting

the clip and shackle-eye apart and forming an antirattling device, as well as a means for providing for removably securing the shackle-eye to the clip.

In several prior devices, in which an open pivot-socket in the ears has been embodied, a shackle has been provided with trunnions of even diameter fitting the sockets; but in the operation of such a device the tendency has been to pry the ears apart and allow the shackle to be separated from the clip. One feature of my invention relates to the means for obviating this difficulty in prior structures.

The letter *e* denotes a shackle having a shank *e'* and an eye *e²*, the opening through the eye being made variable by a slit *f*, which severs the side wall of the eye and opens to the surface of the shank a clamping-bolt *g*, extending through the parts and forming a clamp device, by which a pivot-bolt or a renewable trunnion *h* may be removably secured in the opening through the eye of the shackle.

The trunnion is provided with heads *h'*, which may be formed by cutting a groove in the trunnion, as shown in Fig. 5 of the drawings. Such a trunnion, when located in the pivot-sockets, prevents all lateral spreading of the ears, as the head is broad enough for its edges to overhang the edges of the sockets which are formed in the ears, as illustrated in Fig. 1 of the drawings. The trunnion is made renewable—that is, in a separate piece extending completely through the eye—for the reason that it can then be made by machinery at a comparatively small expense and of a metal, as steel, of a more expensive grade, if desired, than the grade of metal used for the main part of the shackle. Such a renewable trunnion is of a size which will adapt it to enter the opening through the eye and to be securely clamped therein by means of the clamping-bolt described, which extends through the severed parts of the shank.

In order to keep the space between the clamping edges of the eye free from dirt, a guard *i* on the lower side of the shank is provided in a position where it extends across and protects the opening, as shown in Figs. 1 and 3 of the drawings. By making the trunnion renewable it is possible to provide a

cheap means not only of originally constructing a shackle-eye, but also of renewing a trunnion or pivot-bolt in case it should happen to break or become worn in use.

- 5 In the modified form of my invention shown in Fig. 6 of the drawings the shackle-eye has the clamping feature already described, by means of which a pivot-bolt or trunnion is held in place by means of a clamp; but it has
10 the added feature of an elastic cushion, which is a cylinder of rubber or like elastic material located within the shackle-eye and having the bolt extending through the interior of the elastic tube. Such construction of the
15 parts serves to prevent the rattling noise of the shackle upon the bolt, and the degree of elasticity of the cushion may be changed at will by means of the clamping-bolt, which is arranged so as to cause the walls of the eye

to bind with greater or less force upon the bolt and its cushion in case the latter is used.

I claim as my invention—

In a thill coupling in combination, a clip having ears with elongated pivot sockets open on the upper side, a shackle having an eye 25 forming a trunnion socket, a slit severing the side wall of such socket, a clamping bolt extending through the parts, a guard on the lower side of the shackle and projecting across the slit, and the renewable trunnion the outer 30 ends of which have heads which overlie the edges of the pivot sockets in the ears and on the outer surface thereof, all substantially as described.

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Witnesses:

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