W. F. WHITNEY.

Coupling for Vehicle-Springs.

No. 210,385. Patented Nov. 26, 1878.

Fig. 1.

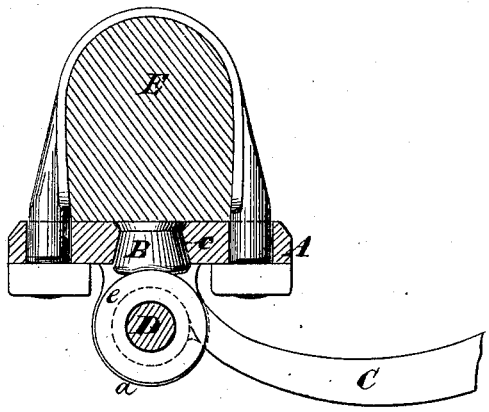


Fig. 3.

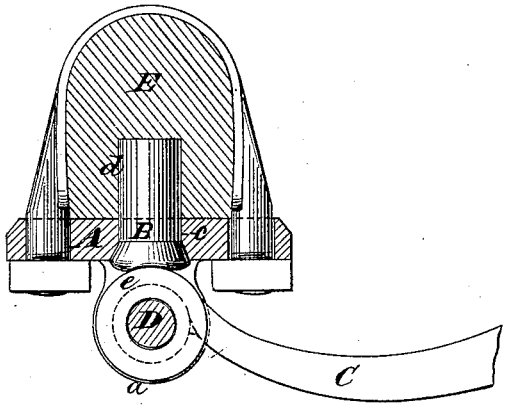


Fig. 2.

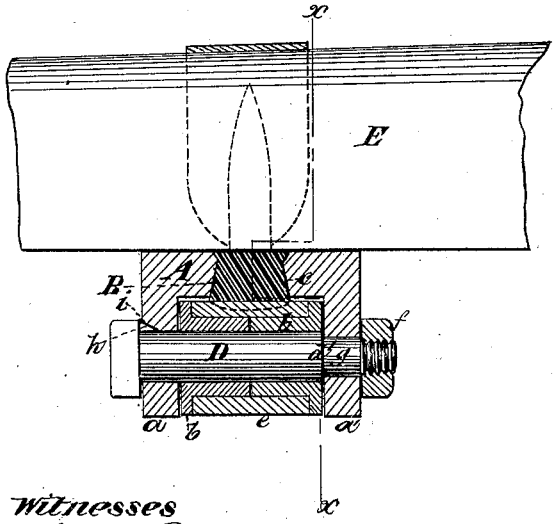
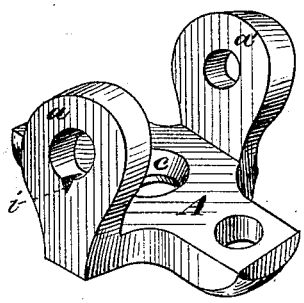


Fig. 4.



Witnesses

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IMPROVEMENT IN COUPLINGS FOR VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **210,385**, dated November 26, 1878; application filed August 22, 1878.

To all whom it may concern:

Be it known that I, WILLIAM F. WHITNEY, of Poughkeepsie, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Spring-Couplings for Wagons; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

One part of this invention relates to the application, in a spring-coupling for wagons and other vehicles, of an elastic cushion or bearing, which, in case of the wearing of the bolt of the coupling, will prevent the coupling from working loose; and this part of my invention consists in the placing of such cushion or elastic bearing within a cavity in the head of the coupling within the face thereof, whereby the necessity of elongating the ears of the coupling to provide for the insertion of such cushion or elastic bearing is obviated.

Another part of my invention consists in a certain construction of the coupling-bolt and mode of combining the same with the coupling, whereby the working loose of the said bolt and the binding of the coupling are both effectually prevented.

Figure 1 in the accompanying drawing represents a section taken transversely to the coupling-bolt, illustrating my invention applied in connection with one of the side bars and springs of a side-bar wagon. Fig. 2 represents a section of the same coupling, taken in a direction parallel with the length of the coupling-bolt. Fig. 3 is a section corresponding with Fig. 1, illustrating a modification of my invention. Fig. 4 is a perspective view of the coupling in an inverted position, the coupling-bolt being omitted.

A is the head and *a a'* are the ears of the coupling, which are of the ordinary construction, except that a cavity, *c*, is provided in the head between the ears for the reception of the india-rubber or other elastic cushion or bearing B. This cavity is entirely within the face of the head of the coupling and independent of the ears thereof.

C represents a part of the spring, which may be of the torsion, elliptic, semi-elliptic, or other kind, and which is formed in the usual way with an eye, *e*, at its end for the reception of the coupling-bolt D, which passes through the said eye and through holes in the ears *a a'* of the coupling, the said eye being fitted between the said ears *a a'*, and being represented in Fig. 2 as fitted with a bushing, *b b*.

The cavity *c* provided in the coupling for the reception of the plug of india-rubber or other elastic material which forms the elastic cushion B, which is of a form to fit tightly within said cavity, may consist simply of a hole bored partly through the head A of the coupling from its face, or a hole bored entirely through it, as shown in Figs. 1 and 3. This hole may be of cylindrical or parallel form, or may be taper or countersunk from the face of the coupling, as shown in Figs. 1 and 3, and may be also countersunk at the back, as shown in Fig. 1, to retain the cushion in place until the coupling is attached to the side bar E or other portion of the wagon or vehicle with which the spring is to be connected.

In Figs. 1 and 2 the cushion is represented as only thick or deep enough to be flush with the back of the head of the coupling, and to project sufficiently from the face thereof to press against the exterior of the eye *e* of the spring and keep the said eye pressed down firmly against the upper part of the bolt D, notwithstanding any looseness of the bolt within the said eye, and the said cushion has its bearing against the under surface of the side bar E. In Fig. 3 a bolt, *d*, is represented as bored on the side bar opposite to and of a size and form corresponding with the cavity *c*, to admit of a deeper cushion.

The cavity *c* and the cushion B, instead of being of circular form, may be of oblong or other form, to obtain a longer bearing of the cushion against the eye *e* of the spring. The cushion, instead of being composed of india-rubber or other soft material, may consist of a spiral-wire spring.

By thus inserting the elastic cushion or bearing within a cavity, *c*, formed within the face of the head of the coupling, and independent of the ears thereof, I obviate the necessity of making the ears *a a'* of the coupling of greater length than is required when no cushion is applied to the coupling, as is done in other couplings to which elastic cushions are applied

between the ears, and I am thereby enabled to keep the spring as close as possible to the side bar or other part of the wagon with which it is connected. This method of applying the cushion also provides for its being applied to the ordinary couplings in use by simply drilling a hole in the head A of the coupling to form the cavity *c* for the reception of the cushion.

The bolt D is made with a shoulder, *d'*, at a distance from its head fully equal to or very slightly greater than the distance from the outer surface of one ear, *a*, to the inner surface of the other ear, *a'*, of the coupling, and the part *g* beyond the said shoulder, which is of reduced size, fits snugly within a hole in the ear *a'* smaller than the holes in the ear *a* and the eye *e* of the spring. The screw-thread of the said bolt extends back from the point to within a distance from the shoulder *d'* slightly less than the thickness of the ear *a'*, so that when the bolt is in place and the nut is screwed up tightly the said shoulder is clamped firmly against the inside of the said ear, and so secured in place that while it forms a firm connection for the coupling it cannot clamp the ears *a a'* upon the eye *e* of the spring. The bolt is also provided with a feather, teat, or other projection, *h*, on the part which enters ear *a*, to engage with a notch, groove, or recess, *i*, in the said ear, and so prevent the bolt from turning in the coupling.

I claim as my invention—

1. In a coupling for the springs of side-bar vehicles, the combination, with the spring C, having the eye *e*, and the head A, attached to the under side of the side bar, and constructed with a cavity, *c*, intermediately of the ears of the head, of the elastic cushion B, arranged in said cavity, as and for the purpose described.

2. The bolt D, constructed with the fin, teat, or projection immediately on the inner side of its head, and with a shoulder, *d'*, in rear of its screw-threaded end, in combination with the head A, having ears *a a'*, one of which is provided with a notch, *i*, in its exterior face, for receiving the fin or teat, the shoulder *d'* bearing against the inner side of the opposite ear, substantially as shown and described.

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