

F. HEAVENER
Car-Coupling.

No. 203,451.

Patented May 7, 1878.

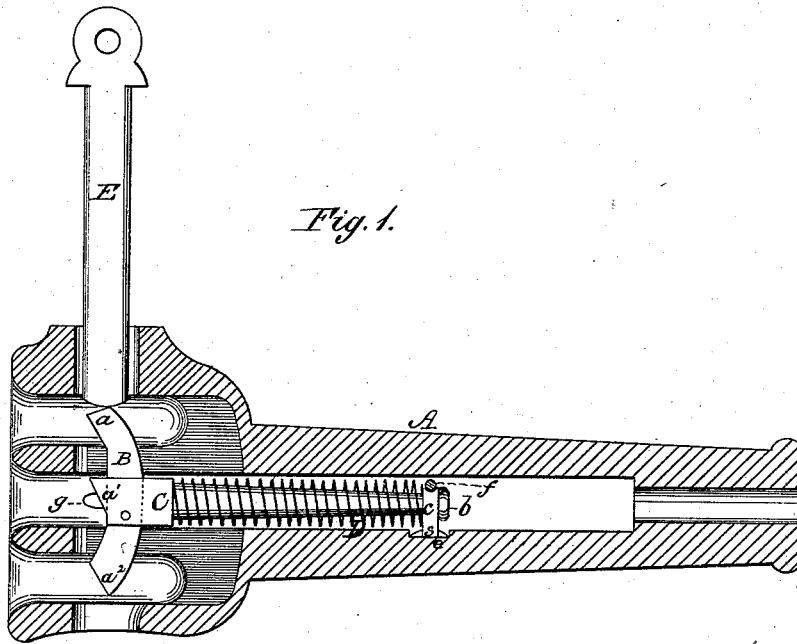


Fig. 1.

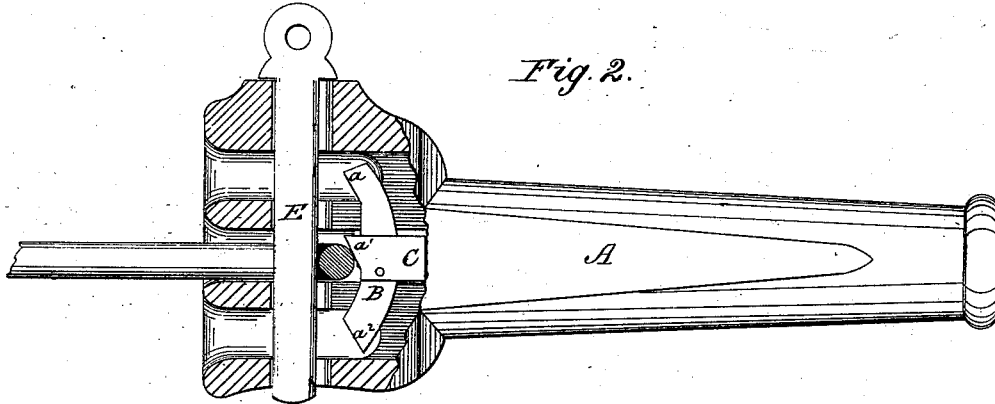


Fig. 2.

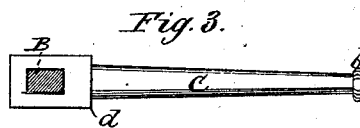


Fig. 3.



Fig. 4.

WITNESSES:

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UNITED STATES PATENT OFFICE.

FLOYD HEAVENER, OF LARAMIE CITY, WYOMING TERRITORY.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 203,451, dated May 7, 1878; application filed March 14, 1878.

To all whom it may concern:

Be it known that I, FLOYD HEAVENER, of Laramie City, in the county of Albany, Wyoming Territory, have invented a new and Improved Car-Coupling; and I do 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, in which—

Figure 1 is a vertical longitudinal section with the devices in position to be coupled. Fig. 2 is a side view, with the front portion of the draw-head broken out, showing the position of the devices after the coupling has been effected. Fig. 3 is a detail of the tapering stem carrying the cross-head. Fig. 4 is a detail of the block which guides the rear end of said stem.

My invention relates to certain improvements upon the car-coupling for which Letters Patent were granted me August 28, 1877. Said improvements are designed to secure greater strength and durability, and to reduce the wear upon the operating parts.

They consist, chiefly, in constructing the stem of the receding cross-head, which is surrounded by the coil-spring, in a tapering form, and supporting its end in a metal block, which also forms a seat for the spring, whereby the said spring is held concentric with the stem, and yet out of contact with the same, so that in the alternate advance of the stem from the action of the spring and retraction from the impact of the entering link there is no abrasion between the said stem and spring to wear the latter and impair its energy.

The improvement also consists in forming the cross-head in curved form, and combining it in a peculiar manner with the stem, and in other details hereinafter described.

In the drawings, A represents the draw-bar, which is formed in a solid piece, with an enlarged forward end, containing several link-throats, and a recess in which is arranged the cross-head B, attached to a stem, C, surrounded by a spiral spring, D, the said cross-head being arranged to be pushed forward by the spring, and to support the coupling-pin E, until struck by the entering link, when the cross-head and stem recede against the tension of

the spring, and allow the coupling-pin to fall through the entered link. The front side of the cross-head has beveled faces, which, from the pressure of the spring, hold the link in horizontal position when coupling.

As so far described, the coupling does not differ from that already patented by me. To obviate the wear to the spring, however, from the movement of the stem inside the same, the said stem is tapered from the shoulder near the cross-head, to its rear extremity, where it ends in a head or button, *b*. Said stem is supported at its rear end in an open slotted block, *c*, with the head *b* upon the rear side of the same, to define and limit the forward movement of the stem. Upon the front side of this block, and between the same and the shoulder *d*, is arranged the spring D, which serves to hold the cross-head to the front, the rear end of this spring being held in a ring-shaped seat in the block *c*, while the coils of said spring are of uniform diameter throughout the length of the same.

Now, the stem C being tapered and of less diameter than the convolutions of the spring, and the latter being held concentrically upon the stem by its ring-shaped seat, it will be seen that the coils of the spring are out of contact with the stem, so that, as the latter is moved back and forth in coupling, there is no wear produced upon the spring by abrasion, and consequently its strength, tension, or energy is maintained without depreciation. In connecting and fitting these parts, the spring is placed on the stem, and the block then placed upon the stem between the spring and the head *b*, the spring entering its seat and holding the block against said head. The stem, spring, and block are in this relation passed into the central throat, and back into the longitudinal recess of the draw-bar, until the block drops into a cross-shaped notch, *e*, in the draw-bar. A horizontal transverse bolt, *f*, is then driven through the draw-bar and into the half-round groove in the top of the block, which at the same time secures the block in the draw-bar and incloses the stem in the block by closing the open slot of the same.

To provide for any roughness or unevenness in the notch *e* of the draw-bar, the bottom of

the block is made to touch only at certain points; and to hold the metal block up straight, and prevent it from tipping over, it has an elongated foot, *s*, at its bottom, arranged at right angles to the plane of the block. After the stem has been inserted the cross-head is fitted, as in my previous patent, by passing the same through the coupling-pin hole, and riveting it to the stem through the oblong hole *g* in the side of the draw-bar. Instead, however, of making the cross-head straight, I make it curved, with its extremities bent forward. I also make it of substantially uniform transverse dimension throughout its length, and, instead of passing the cross-head into an open slot in the stem, the stem is made with a closed slot or mortise, and the central inclined face *a*¹ is formed directly on the end of the stem, while the natural curvature of the cross-head permits the upper and lower inclined faces *a*² to be formed thereon without preventing it from being passed through the mortise in the stem to be secured. By forming the central inclined face which is most used upon the stem itself the device is rendered more durable, while the mortise more securely holds the cross-head than an open slot. The curvature of the cross-head also makes it stronger, while the forward bend at the top permits the coupling-

pin to be supported without bringing the body of the cross-head too far to the front.

Having thus described my invention, what I claim as new is—

1. The tapering stem *C*, carrying the cross-head, combined with the draw-bar, the concentric spring *D*, having convolutions of uniform diameter, and the block *c*, substantially as and for the purpose described.

2. The cross-head *B* and stem *C*, having a head, *b*, to limit its movement, in combination with the spring *D*, the draw-bar, and the removable block *c* fixed in said draw-bar, substantially as and for the purpose described.

3. The combination, with the draw-bar having notch *e*, of the stem *C*, having head *b*, the spring *D*, the open slotted and grooved block *c*, and the transverse bolt *f*, substantially as and for the purpose described.

4. The forwardly-curved cross-head *B*, made of substantially uniform transverse dimensions, combined with the spring-seated receding stem, having a closed slot or mortise and an inclined forward end, substantially as described.

FLOYD HEAVENER.

Witnesses:

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E. V. PRICE.