(No Model.)

S. D. TRENHOLM.

CAR COUPLING.

No. 285,181. Patented Sept. 18, 1883.

Fig. 2.

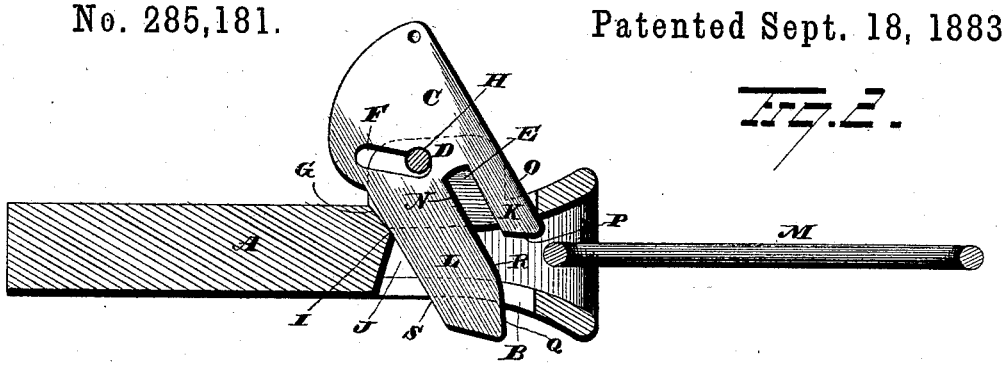


Fig. 3.

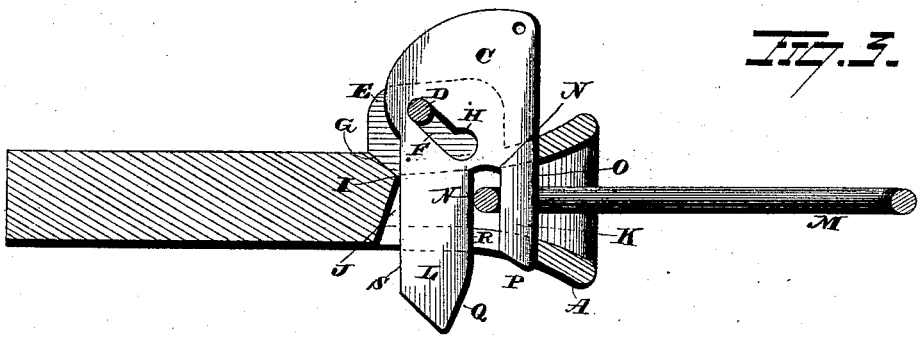


Fig. 4.

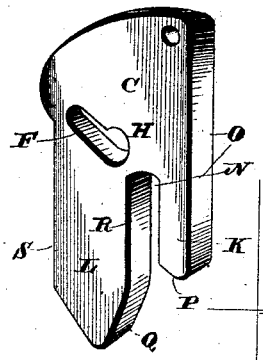
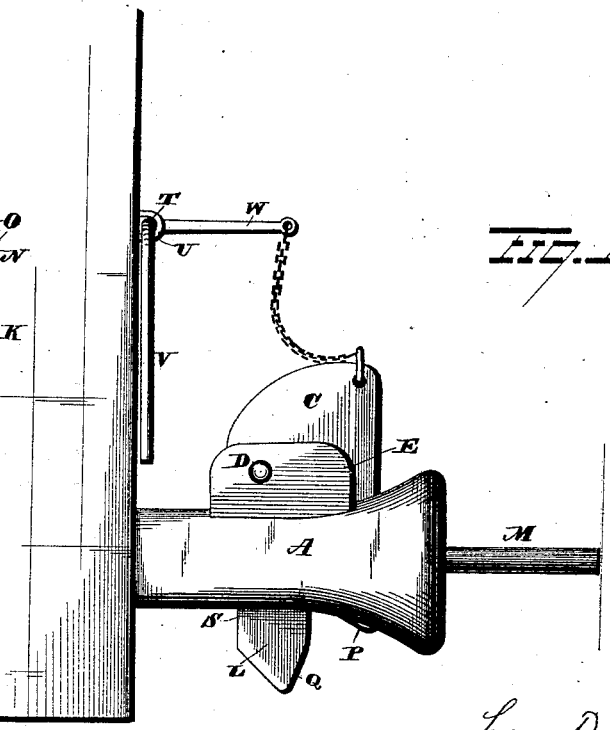


Fig. 1.



WITNESSES.

E. D. Nottingham,

Geo. O. Seymour.

INVENTOR

Savage D. Trenholm

By F. O. Seymour,

Attorney

UNITED STATES PATENT OFFICE.

SAVAGE D. TRENHOLM, OF CHARLESTON, SOUTH CAROLINA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 285,181, dated September 18, 1883.

Application filed July 6, 1883. (No model.)

To all whom it may concern:

Be it known that I, SAVAGE D. TRENHOLM, of Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Car-Couplings; and I do hereby 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.

My invention relates to an improvement in automatic car-couplings, the object being to produce a coupling which shall combine simplicity and cheapness of construction with durability and efficiency in use.

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

In the accompanying drawings, Figure 1 is a view in side elevation of a car-coupling embodying my invention. Fig. 2 is a view thereof in vertical longitudinal section, the coupling being unlocked. Fig. 3 is a similar view, the coupling being locked; and Fig. 4 is a detached view in perspective of the coupler.

In the drawings, A represents a draw-head, which may be of any approved type and construction. A vertical slot, B, formed in the draw-head is adapted to receive the coupler C, which is suspended therein by a pin or fulcrum, D, mounted in bearings E, respectively located on opposite sides of and running parallel with the slot B. These bearings, which are preferably cast integral with the draw-head, also perform the function of protecting and guiding the coupler. The pin D aforesaid extends through a diagonal slot, F, formed in the coupler and situated therein, as shown, the coupler being raised and lowered through the range offered by the slot. A bevel or incline, G, located within the draw-head, permits the coupler to be tipped back, when in its unlocked or elevated position, in which it is maintained by the engagement of the pin D aforesaid with a semicircular recess or set-off, H, formed in the forward end of the diagonal slot F, as shown. The metal of the coupler is so disposed that when it is elevated and tipped back or inclined the line of the center of gravity falls to the rear of the pin or fulcrum D, and thereby prevents the coupler from being dislodged by the vibration and shock of the train. When, however, a link enters the draw-head and engages with the coupler, it is elevated, and the pin being released from engagement with the recess H, the coupler is left free to fall forward and downward through the length of the diagonal slot. When the coupler begins to fall, the line of its center of gravity is shifted to a point so much forward of the pin or fulcrum D that it is turned upon the shoulder I, forming the base of the bevel G, as upon a fulcrum, and its lower portion is deflected rearwardly into the recess J, located below the bevel aforesaid. The object in thus arranging to have the coupler describe a slightly-curved path in its descent is to prevent the forward arm, K, thereof from engaging with that portion of the lower wall of the draw-head lying directly in front of the slot B thereof. This arrangement also effects an economy of space and insures a very prompt action of the coupler. The lever portion of the said coupler is divided into a forward arm, K, and into an arm, L, by an upright slot, N, which is adapted to receive the link M. The said arm K, which acts as a bolt for retaining the link within the draw-head, is of such length as will not interfere with the introduction of the link into the draw-head when the coupling is unlocked, as shown in Fig. 2 of the drawings. As soon as any strain is imposed on a link engaged with the coupler it will draw the same forward and engage the straight edge O of the arm K with the end walls of the slot B, the pin F being entirely relieved. In virtue of this arrangement the wear of the coupler is reduced to the minimum and its efficiency prolonged. The lower edge of the said arm K is cut away or beveled, so as not to interfere with the introduction of the link into the draw-head and to act as an incline for guiding the link into the slot N. With reference now to the arm L, it is provided with the bevel Q, which, when the coupler is in its elevated and inclined position, forms a square surface for the link to impinge against, thus insuring a positive action of the parts.

It will be observed that in the elevated and inclined position of the coupler the straight

portion R of the inner edge of the arm L is inclined, and therefore, if the link on entering the draw-head engages with this inclined edge, it will be deflected thereby to the bottom of the draw-head and brought into juxtaposition with the bevel Q aforesaid.

The construction of the coupling precludes lateral motion of the link engaged by the coupler, except within narrow limits, and, furthermore, when, as often happens, the link is thrust violently into or jerked away from the draw-head, the shock is not transmitted to the suspension-bearings of the coupler, but absorbed by the draw-head, to which the shock is conveyed by the outer edge of the arm L and the outer edge of the arm K. If, for instance, the link is suddenly jerked away from the draw-head, the shock falls on the forward end walls of the slot B, with which the straight edge of the arm K is engaged, before any wrench can be transmitted to the fulcrum of the coupler. On the other hand, if the link is thrust into the draw-head, the rear arm of the coupler is deflected into the recess J and engaged with the rear wall thereof, and the fulcrum is relieved of all strain. This feature of relieving the suspension-bearings of a pivoted or suspended coupler from all strain is one of the most important attaching to my invention, as it reduces the wear of the parts to the minimum.

To unlock the coupling and release the link, the coupler is simply lifted. This done, it tips back and sets itself for automatically engaging with another link as soon as one enters the draw-head.

A great variety of devices may be employed for lifting the link, and I hold myself at liberty to select such as may prove the best adapted to the purpose. The device herein shown consists in a shaft, T, mounted in staples U, secured to the end of a car, and provided with a depending handle, V, and a lifting-arm, W, the latter being connected to the coupler by a chain, X.

My invention may be applied to any of the ordinary forms of draw-head by providing them with vertical slots, and with bearings for the pin to which the couplers are suspended. Preferably, however, the bearings and slot are formed when the draw-heads are cast.

My improved coupling, being simple in construction, is therefore cheap to manufacture and to maintain in running order. It is, moreover, prompt and reliable in action and easy to operate.

The particular form of the coupler may vary somewhat; but, however changed in form, the diagonal slot and the forward and rear arms will remain in substantially the same relationship as herein shown. I would therefore have it understood that I do not limit myself to the exact combination and arrangement of parts herein shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. The combination, with a slotted draw-head, of a coupler provided with a diagonal slot and with a forward and a rear arm, the former being the shorter, and the latter having its inner face beveled, and a pin extending through the diagonal slot of the coupler and mounted in the draw-head, substantially as set forth.

2. The combination, with a slotted draw-head provided with the described incline, of a coupler having a diagonal slot and arranged to rest upon the incline of the draw-head when in its elevated position, and a pin extending through the diagonal slot of the coupler and mounted in the draw-head, substantially as set forth.

3. The combination, with a slotted draw-head, of a coupler provided with a diagonal slot, and suspended in the draw-head by a pin extending through the said diagonal slot and mounted in the draw-head, and means to elevate the coupler for unlocking the coupling, substantially as set forth.

4. The combination, with a slotted draw-head, of a coupler provided with a diagonal slot, and suspended in the draw-head by a pin extending through the said diagonal slot and mounted in the draw-head, substantially as set forth.

5. The combination, with a slotted draw-head provided with bearings, of a coupler provided with a diagonal slot, and with forward and rear arms separated by an upright slot, and a pin mounted in the bearings of the draw-head and extending through the diagonal slot of the coupler, substantially as set forth.

6. The combination, with a slotted draw-head, of a coupler provided with a diagonal slot having a recess or set-off, and a pin extending through the diagonal slot of the coupler and mounted in the draw-head, substantially as set forth.

7. The combination, with a slotted draw-head, of a coupler having a diagonal slot, and provided with a forward arm, a rear arm, the former being the shorter and having the lower edge beveled, and a pin extending through the diagonal slot of the coupler and mounted in the draw-head, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SAVAGE D. TRENHOLM.

Witnesses:

S. G. NOTTINGHAM,

GEORGE COOK.