A. SMITH.

Car-Coupling.

No. 167,477. Patented Sept. 7, 1875.

Fig: 1.

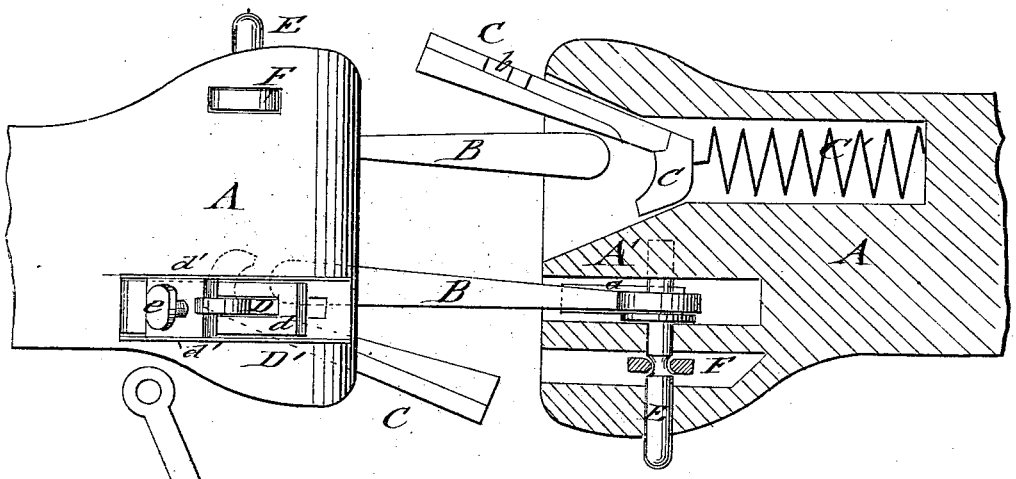


Fig: 2.

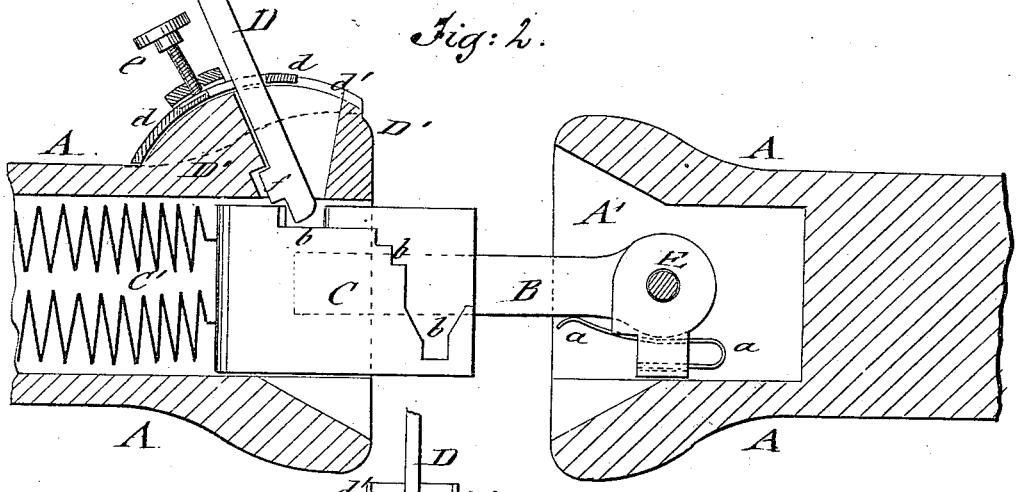
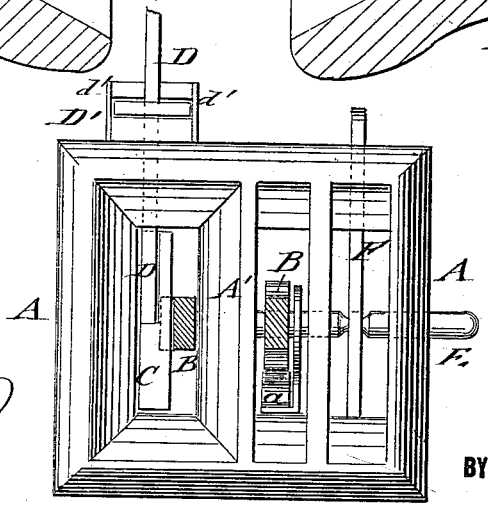


Fig: 3.



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ARCHIBALD SMITH, OF OMAHA, NEBRASKA.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. 167,477, dated September 7, 1875; application filed July 31, 1875.

To all whom it may concern:

Be it known that I, ARCHIBALD SMITH, of Omaha, in the county of Douglas and State of Nebraska, have invented a new and Improved Car-Coupling, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view and horizontal section of my improved car-coupling; Fig. 2, a vertical longitudinal section; and Fig. 3, an end view of the same.

Similar letters of reference indicate corresponding parts.

My invention relates to an improved automatic car-coupling that is made in strong and substantial manner, with detachable parts that may be readily replaced and repaired.

The invention consists of a draw-head divided by a central vertical partition into separate cavities, to one of which the wedge-shaped link-bar is secured by pivot-pin and spring, while to the adjoining cavity with tapering mouth a wedge-shaped and spring-cushioned friction-plate is applied, which is retained by a lever-pin that binds into step-shaped recesses at the back of the friction-plate, to hold the same in coupled and uncoupled position. The lever-pin is adjusted by a slotted top guide and set-screw into fixed position to secure the lever-pin and link-bar rigidly in position.

In the drawing, A represents a draw-head of the usual size and material, which is divided, by a vertical central partition, A′, into two separate parts or cavities, to one of which the coupling link or bar B is applied, while in the other, having tapering mouth, the wedge-shaped friction-plate C is arranged. The link-bar B is of wedge shape, tapering from the the broader head backward, and pivoted to a horizontal pin, E, so that it swings in vertical direction. A supporting band-spring, *a*, is arranged underneath the link to hold it horizontal, and to allow it to swing down when the opposite draw-head is lower. The pivot-pin E is retained securely in position by a forked pin, F, that passes vertically through a top hole of the draw-head over an annularly grooved or indented part of the pin until finally seated in a bottom recess of the draw-head. The link-bar can only be taken out for repairing or replacing by withdrawing the forked locking-pin, and then the horizontal pivot-pin.

In place of this locking device any other mechanism that retains securely the pivot-pin in position may be employed.

The wedge-shaped friction-plate C is cushioned by spiral springs C′, and allowed to slide entirely back into its deeper cavity. The springs are set loosely into slotted recesses of the concave rear or shoulder part of the friction-plate C, so that the plate and springs may be at any time taken out and replaced. The outer side of friction-plate C is provided with step-shaped recesses *b*, as shown in Fig. 2, of which the uppermost serves to retain the plate by means of a swinging lever-pin, D, in outward position for taking up the coupling-pin, while the lower, and especially the lowermost, serves to allow the lever-pin to drop therein when, by the entering of the link-bar, the friction-plate is carried back so as to be retained in position by the lever-pin and produce the rigid coupling of the link-bar. The wedge-shaped friction-plate binds on the wedge-shaped link-bar, and prevents the uncoupling of the same until, by the withdrawing of the lever-pin, the springs are allowed to force the friction-plate forward, in which position the same is retained by the lever-pin seated into the uppermost recess. The end of the lever-pin serves as a pivot to the friction-plate, and allows the swinging the same to the outside, as shown in Fig. 1, being thereby in a more convenient position to guide the approaching coupling-bar onto the rear shoulder and back into the cavity. The lever-pin D slides and swings in the slotted top guide part D′ of the draw-head. A slotted arc-shaped piece, *d*, is fitted on the lever-pin, and guided by side flanges or grooves *d′* of guide part D′, so as to swing with the lever-pin and admit the rigid adjustment of the same to the top guide part D′ by a clamping-screw, *e*, binding on sliding piece *d*. When the lever-pin is rigidly clamped to the guide part D′ the friction-plate C is firmly locked in position thereby, so that an uncoupling of the link-bar is impossible. The lever-pin D has near its lower end a projecting shoulder, *f*, that fits into a corresponding recess of the guide part

D′, and prevents the lever-pin from escaping the guide-slot. The entering coupling-bar carries the lever-pin into vertical position and strikes against the rear part of the friction-plate, so as to cause the swinging in and sliding back of the same into the cavity, producing the dropping of the lever-pin into the recesses, and the coupling of the link-bar by its wedge action and that of the friction-plate.

There is little or no strain on the lever-pin, as the same is merely used for retaining the friction-plate in position in the draw-head, or at the outside of the same, ready for coupling. For uncoupling, both lever-pins, or one after the other, are raised, which releases the friction-plate and allows the link-bar to escape.

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

1. The combination of a draw-head, having a sliding, wedge-shaped, and spring-cushioned friction-plate, with a wedge-shaped link-bar and a locking lever-pin for automatically coupling, substantially in the manner and for the purpose set forth.

2. The combination of the draw-head with a swinging wedge-shaped link-bar that is pivoted to a lateral detachable pivot-pin locked securely to the draw-head, and cushioned by a supporting-spring, substantially as and for the purpose set forth.

3. The sliding friction-plate constructed with outer step-shaped recesses, in combination with swinging lever-pin, dropping therein for retaining friction-plate in draw-head, substantially in the manner described.

4. The combination of swinging lever-pin, sliding in a slotted arc piece applied thereto, with the recessed top guide part of draw-head, and a fastening clamp-screw for locking rigidly lever-pin and friction-plate for positive coupling of link-bar, substantially as shown and described.

ARCHIBALD SMITH.

Witnesses:
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