D. MacD. CAMPBELL.

CAR-COUPLING.

No. 173,528. Patented Feb. 15, 1876.

Fig: 1

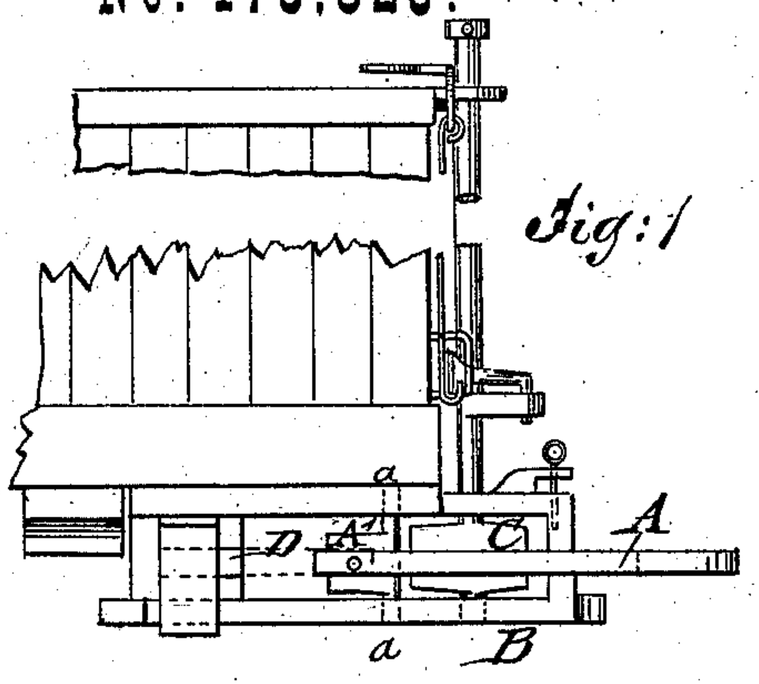


Fig: 2.

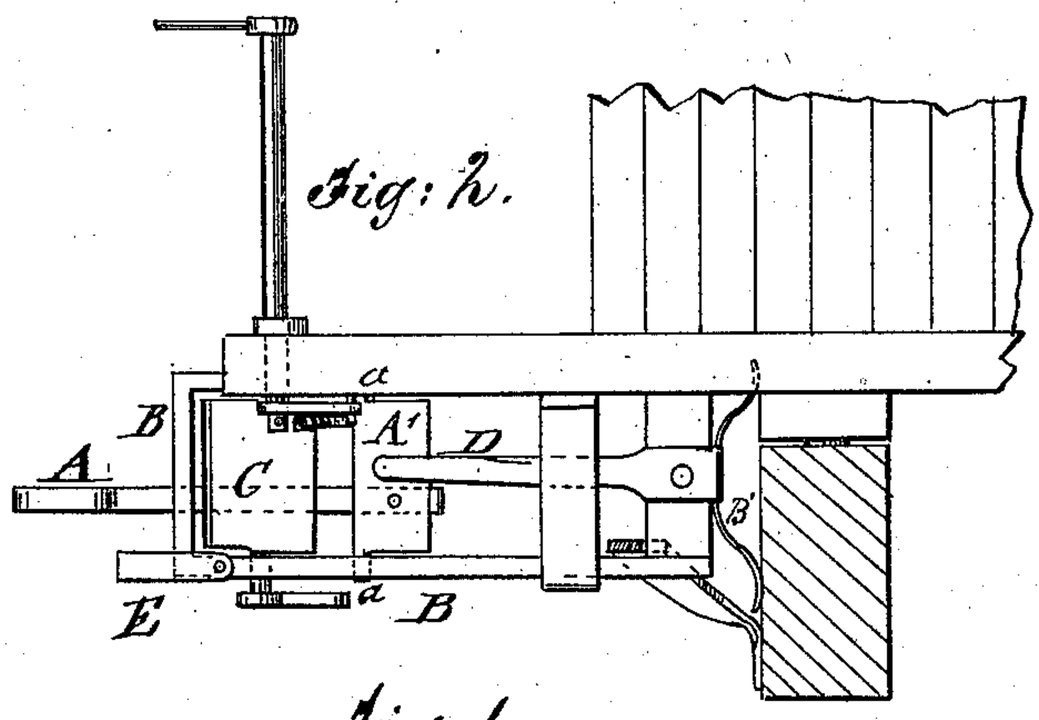


Fig: 3.

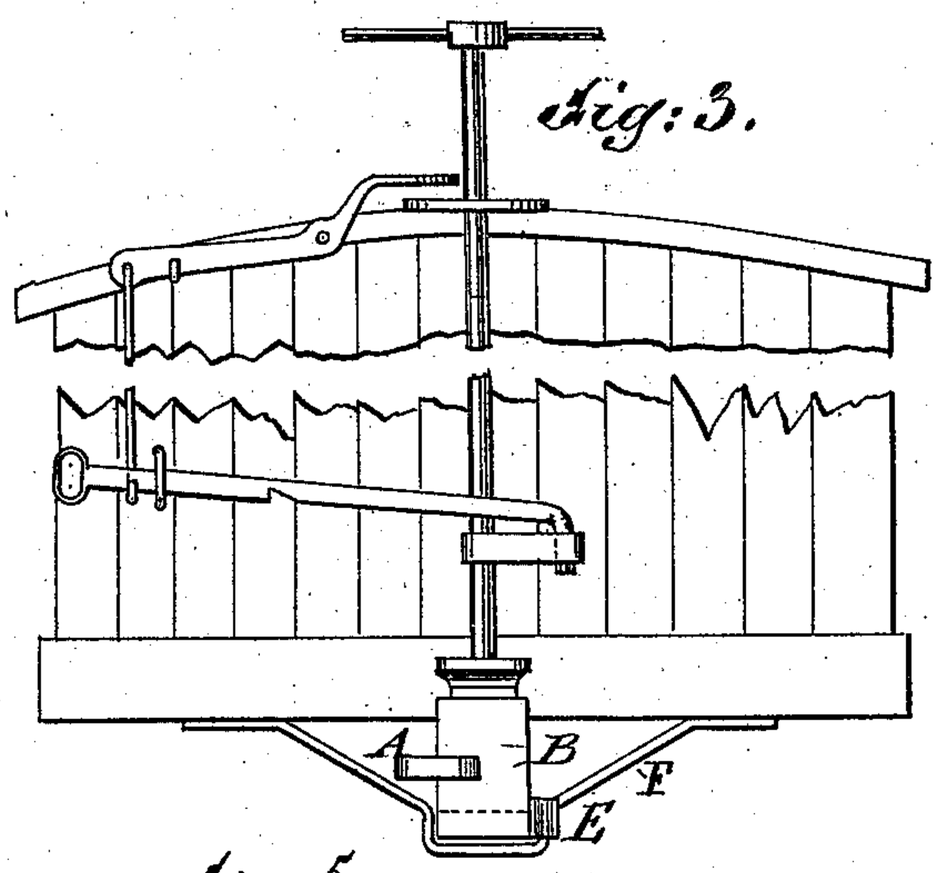


Fig: 4.

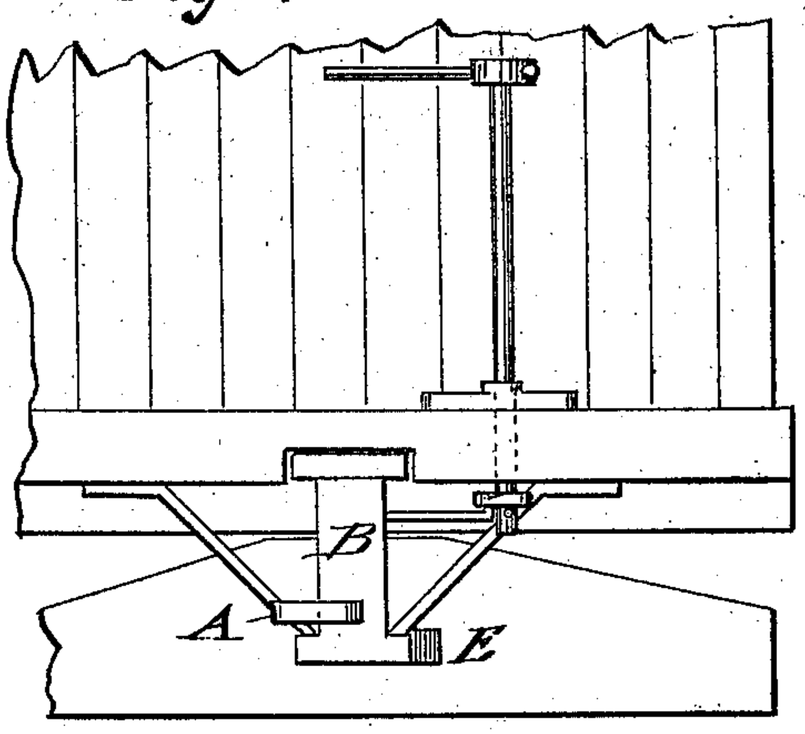


Fig: 5.

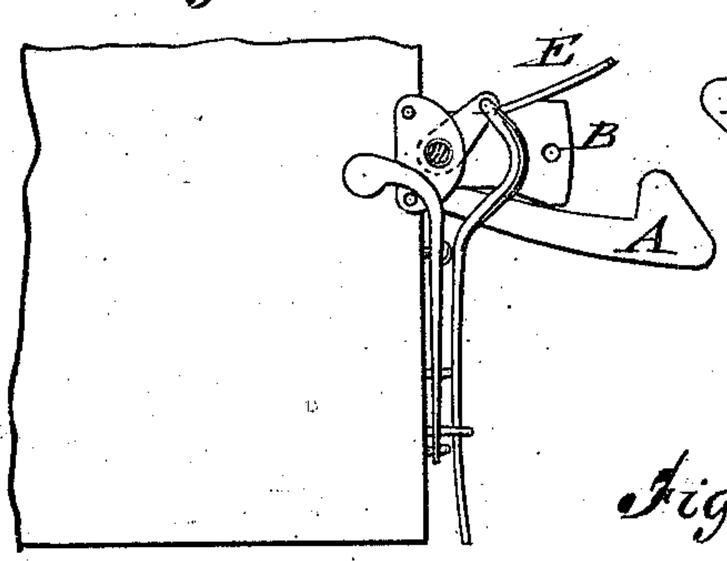


Fig: 6

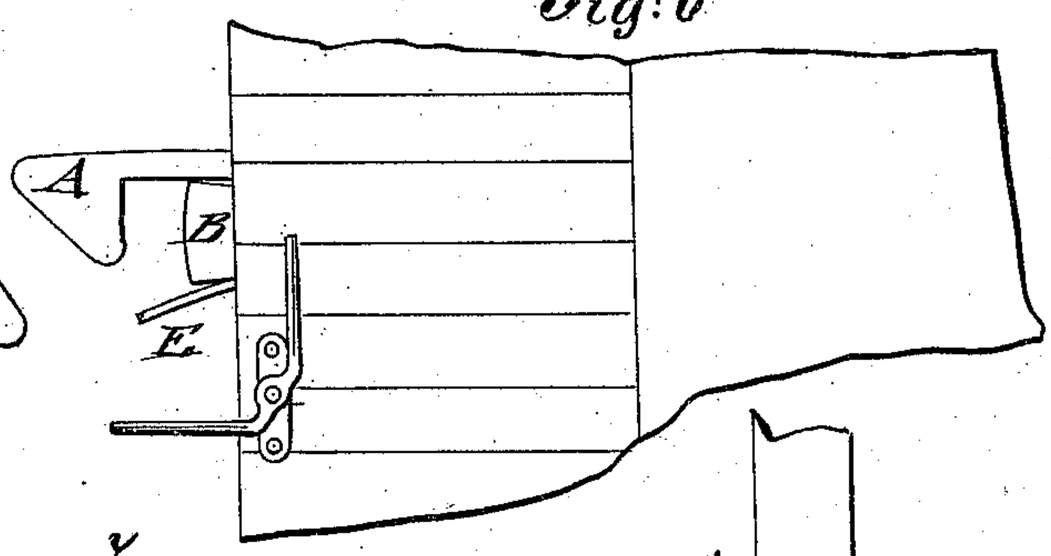
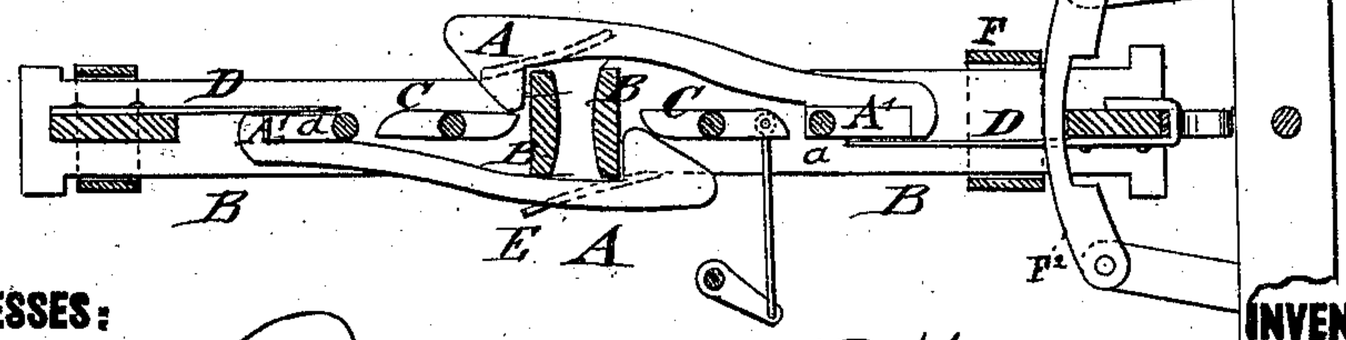


Fig: 7.



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DUNCAN MACDOUGALD CAMPBELL, OF HOLLY, MICHIGAN.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **173,528**, dated February 15, 1876; application filed September 17, 1875.

To all whom it may concern:

Be it known that I, DUNCAN MCD. CAMPBELL, of Holly, in the county of Oakland and State of Michigan, have invented a new and Improved Car-Coupling, of which the following is a specification:

In the accompanying drawing, Figures 1 and 2 represent side elevations of my improved automatic car-coupling; Figs. 3 and 4, end views of the same, being respectively applied to a freight and platform car. Figs. 5 and 6 are top views of the coupling, and Fig. 7 a horizontal section of two adjoining cars in coupled position.

Similar letters of reference indicate corresponding parts.

My invention relates to an automatic car-coupling that couples with cars of different heights in reliable manner, while uncoupling readily when any car is thrown off the track, so as to avoid danger of accidents.

The invention consists in a spring attached to truck and bottom of car, in the rear of buffing-frame, to take up the strain of back pressure, and thus prevent injury to the king-bolt; also, in a check attached to truck and stiffening-bar of buffer-frame.

In the drawing, A represents the coupling link or hook, that is fulcrumed near its rear end by a vertical pivot-pin, *a*, to the draw-bar B, which is secured in substantial manner to the bottom frame of the car, being of greater or lesser height, according to the height of the car above the track.

The coupling-hook is placed in such position into draw-bar B that the strain or draft throughout the train is at nearly the same height above the track, which utilizes the full power of the draft without loss by friction and other causes.

The coupling-hook A is curved to pass sidewise of the buffer-shaped head or front part of the draw-bar to such distance in front of the same that the hook-shaped front end of the link may readily hook over the buffer-head of the adjoining car-coupling.

On the rear-extending plate A′ of the coupling-hook acts a strong band or other spring, D, which is firmly bolted to a vertical stiffening-bar of the draw-bar B. The spring D presses on the rear plate A′, and causes the hook end of the link A to interlock firmly with the adjoining draw-bar, yet yield to the vibration and side sway of the cars.

Intermediately between the pivot of the coupling-hook and the front, or buffer part of the draw-bar is centrally pivoted a swinging plate, C, which is operated by suitable lever mechanism from the side platform or top of the car, according as the coupling is attached to a freight or passage car. The swinging plate assumes a position between the coupling-hooks in the direction of the longitudinal axis of the draw-bar when the cars are coupled, but acts on both coupling-links at the same time—on one at the hook end, and on the other in front of its pivot part—so as to detach both simultaneously from the draw-bar, and produce the uncoupling of the same.

The coupling-hook may be retained in uncoupled position, if desired, by a latch-lever or equivalent mechanism, as shown in Fig. 3, which has to be released when the automatic coupling of the cars is desired.

Each draw-bar may be provided, if desired, at the buffer-head opposite to the coupling-hook, with an outwardly-curved guard-bar, E, that comes in contact with the buffer-head, and takes up the side motion or sway of the car, to prevent the uncoupling by too violent motion. The draw-bar may also be provided at the upper part with a perforated top lug or plate, for coupling with cars having the common pin-and-link coupling.

The rear end of the draw-bar is cushioned by suitable springs B′, attached to the truck and bottom of car, equalizing back pressure and saving king-bolt by pressing equally against the beams of truck and car, so as to bring the strain forward between truck and car. Said draw-bar is also connected by strong downward-extending supports F to the car, and by braces F^1, with horizontal arc-shaped piece F^2, to the car-truck, for preventing the spread of rails, and the truck from turning beyond a certain distance.

Having thus described my invention, I claim

as new and desire to secure by Letters Patent—

1. A check attached to truck, to prevent turning of truck beyond a certain distance, consisting of supports F, braces F^1, and arc-piece F^2, as set forth.

2. The vertical spring B′, arranged at the rear of buffer-frame, against beams of truck and car, to equalize back pressure and save king-bolt, as described.

DUNCAN McD. CAMPBELL.

Witnesses:

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