

(No Model.)

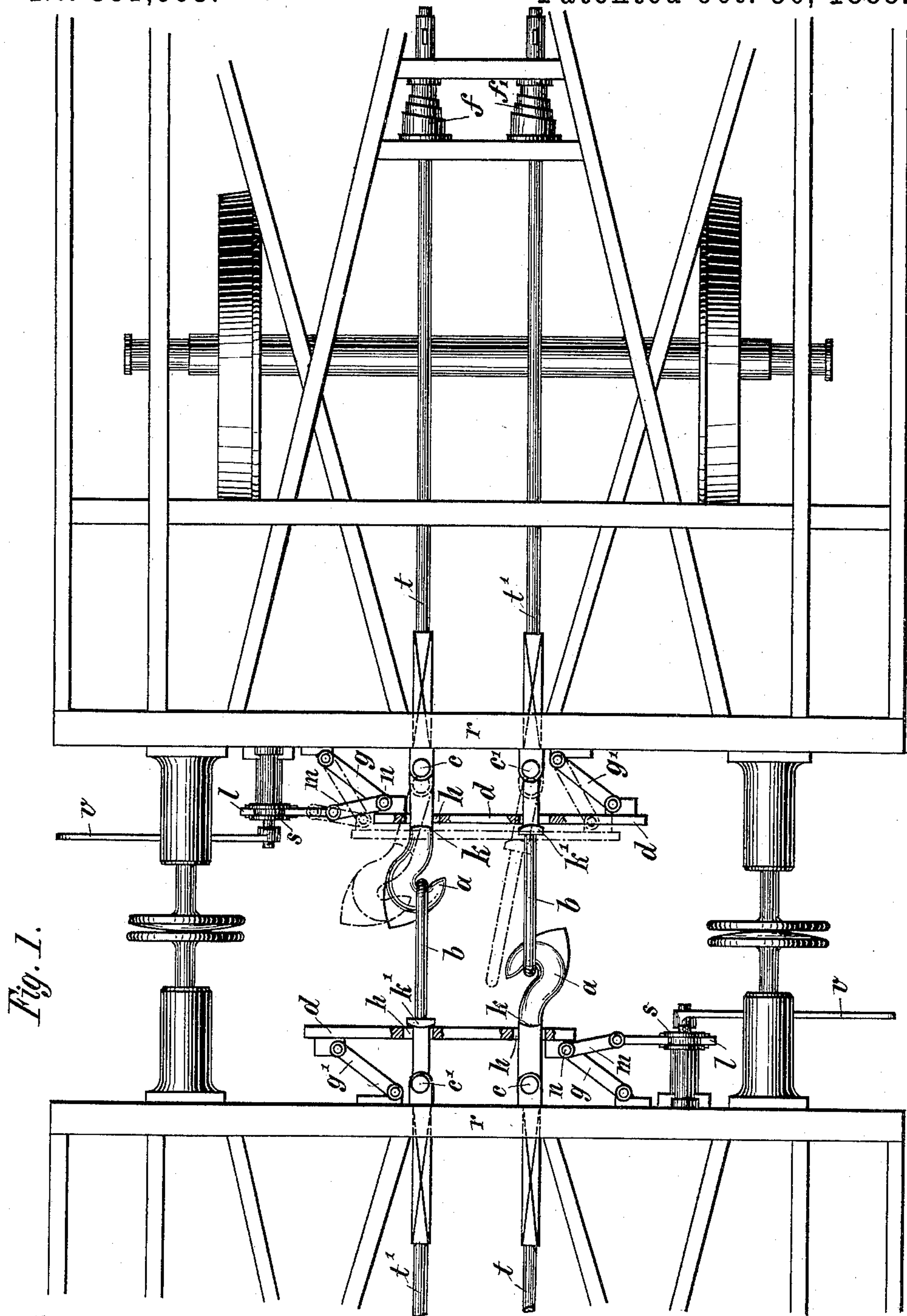
2 Sheets—Sheet 1.

F. B. VON ALTEN.

## CAR COUPLING.

No. 391,993.

Patented Oct. 30, 1888.



Witnesses,

Walter Scott,  
Abner Greenleaf.

Inventor,

Friedrich Bruno von Allen.  
By Paine & Lord.  
attys.

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2 Sheets—Sheet 2.

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Fig. 2.

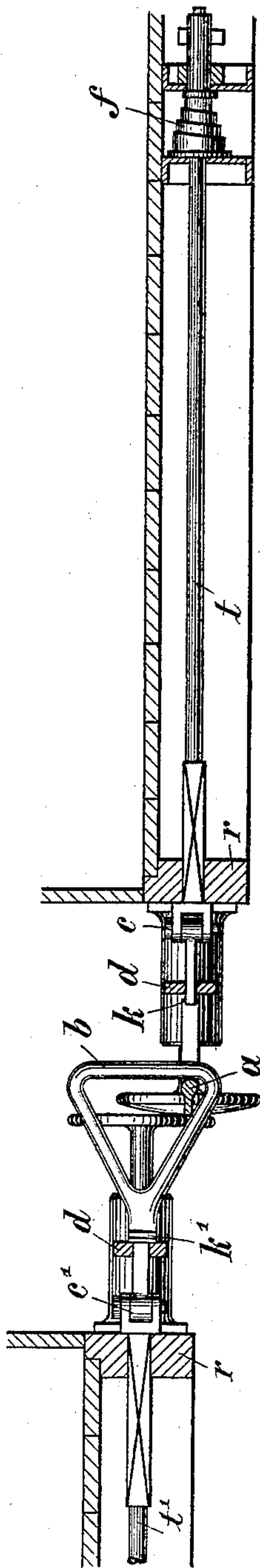
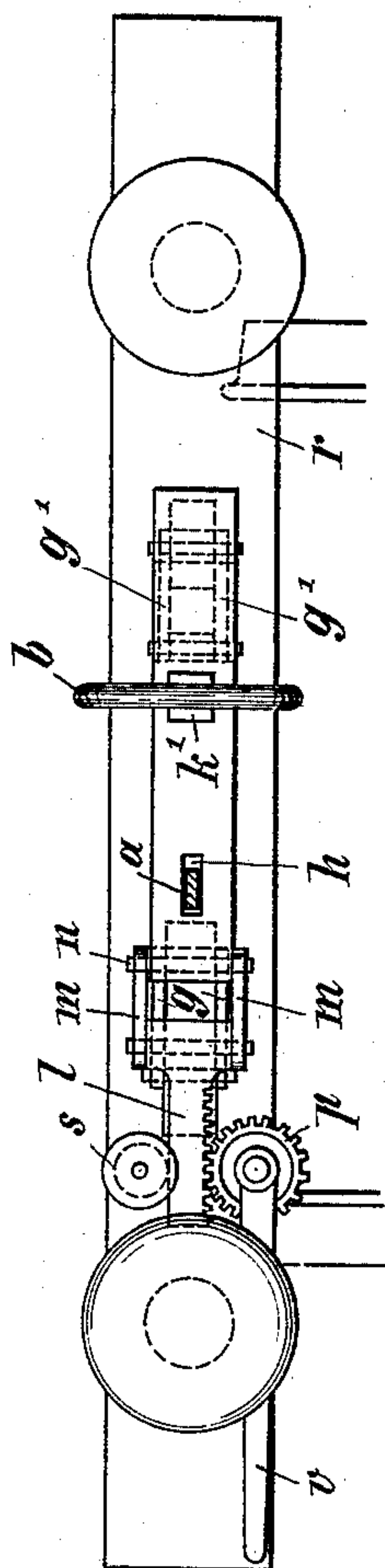


Fig. 3.



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# UNITED STATES PATENT OFFICE.

FRIEDRICH BRUNO VON ALTEN, OF REINBECK, PRUSSIA, GERMANY.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 391,993, dated October 30, 1888.

Application filed August 10, 1888. Serial No. 282,448. (No model.) Patented in Germany March 13, 1888, No. 44,253.

*To all whom it may concern:*

Be it known that I, FRIEDRICH BRUNO VON ALTEN, a subject of the Emperor of Germany, residing at Reinbeck, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Railway-Car Couplings, (for which I have obtained Letters Patent in Germany, dated March 13, 1888, No. 44,253,) of which the following is a specification.

This invention relates to railway-car couplings by which the coupling is effected automatically, while the device for uncoupling is actuated from the side of the car; and the objects of my improvements are to facilitate the coupling and uncoupling of cars and to provide a very secure connection of the same. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top view of the ends of two cars coupled together and both provided with my improved coupling device. Fig. 2 is the side elevation of my improved coupling device, and Fig. 3 the front view thereof.

Similar letters refer to similar parts throughout the several views.

Each end of the car is provided with a coupling-hook, *a*, and a coupling link or eye, *b*, both placed in such a manner that the corresponding hooks and eyes of any other car to be coupled will always meet their respective hook and eye of the adjacent car. Both the hook and eye are each pivoted, respectively, to a rod, *t t'*, by means of the vertical bolts *c c'*, and, corresponding to the vertically-placed eye *b*, the hook lies on its side, so as to engage with the former. The rods *t t'*, by which the coupling hooks and eyes are connected with the car-body, are provided in the usual manner with ordinary coiled springs, *f f'*, serving not only to elastically communicate the tractive strain on the hooks and eyes to the car-body, but also to effect the coupling and uncoupling. For this reason the coupling hook and eye at each end of the car are connected with each other by means of a cross-bar or traverse, *d*, which is secured to the end *r* of the car by a pair of links, *g g'*, in such a manner that the bar *d* and the links *g g'* form, with the car end, a parallelogram of variable angles. The hook

*a* and loop *b* are continued through the cross-bar *d* and are provided with suitable shoulders, *k k'*, adapted to bear against the cross-bar *d* in obedience to the action of the springs *f f'*.

When two cars are pushed together, the hooks *a* and the eyes *b* will yield to the thrust and connect automatically.

As a sufficient amount of lateral play is allowed, both the hooks and eyes are caused by means of the wedge-shaped surface of the hooks to swing on their respective pivots *c c'*, transmitting at the same time a lateral motion to the cross-bars *d*. By this movement the links *g g'* cause the cross-bar *d* to move at the same time away from the car end *r*, and as the shoulders *k k'* of the coupling hooks and eyes bear against the cross bar *d* the strain on the rods *t t'* and the springs *f f'* is elastically communicated to the car-body. As soon as the coupling-eyes *b* have passed the nose of their respective hooks the tension of the springs *f f'* forces the coupling-eyes to engage securely with the hooks. The cars are thereby automatically coupled and the hooks and eyes are tightened up under the action of the springs *f f'*.

The coupling-eyes *b* are considerably enlarged to enable them to engage safely with the corresponding hooks under all circumstances, notwithstanding some of the cars being loaded or empty.

When a car has to be uncoupled, the cross-bar *d* of one car only has to be moved into the position shown by dotted lines in Fig. 1. To effect this, a lateral parallel forward movement of the cross-bar *d* must be imparted by any known means to the latter, as, by way of example, is illustrated in the drawings. For this purpose the link *m* serves to connect the traverse *d*, by means of the bolt *n*, to the rack *l*, which meshes with a pinion, *p*. The rack is guided on its back by an anti-friction roller, *s*, and the pinion *p* may be turned by means of a wrench, *v*, which will cause the lateral and parallel forward movement of the cross-bar or traverse *d*. The latter communicates a corresponding motion equally to the hook *a* and to the eye *b*, which latter are thereby caused to release their respective coupling devices on the adjacent car.

Having now particularly described and ascertained the nature of my said invention and

in what manner the same is to be performed,  
I declare that what I claim is—

1. A railway-coupling consisting of a coupling-hook lying on its side and a vertically-  
5 placed link or eye, connected with each other by means of a cross-bar, which is secured to the end of a car in such a manner that on lateral movement its distance from the car end is at the same time varied, and thereby the coupling device caused to automatically engage  
10 with the corresponding hook and eye on the adjacent car under the action of springs connected thereto.

2. In a railway-coupling, the combination  
15 of the coupling-hook *a* and eye *b*, pivoted to the rods *t t'*, elastically connected to the car-

body, with the cross-bar *d*, secured to the car end by links *g g'*, substantially as and for the purpose specified.

3. In a railway-coupling, the combination 20 of the coupling-hook *a* and eye *b*, pivoted to the elastically-extensible rods *t t'*, with a cross-bar, *d*, and the links *g g'*, forming, with the car end, a parallelogram of variable angles, all substantially as set forth. 25

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 7th day of July, 1888.

FRIEDR. BRUNO VON ALTEN.

Witnesses:

ALEXANDER SPECHT,  
DIEDRICH PETERSEN.