(No Model.)

P. W. MÖLLER.

CAR COUPLING.

No. 598,156. Patented Feb. 1, 1898.

Fig. 1

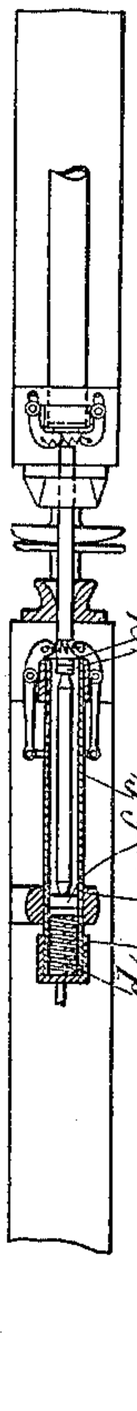


Fig. 2

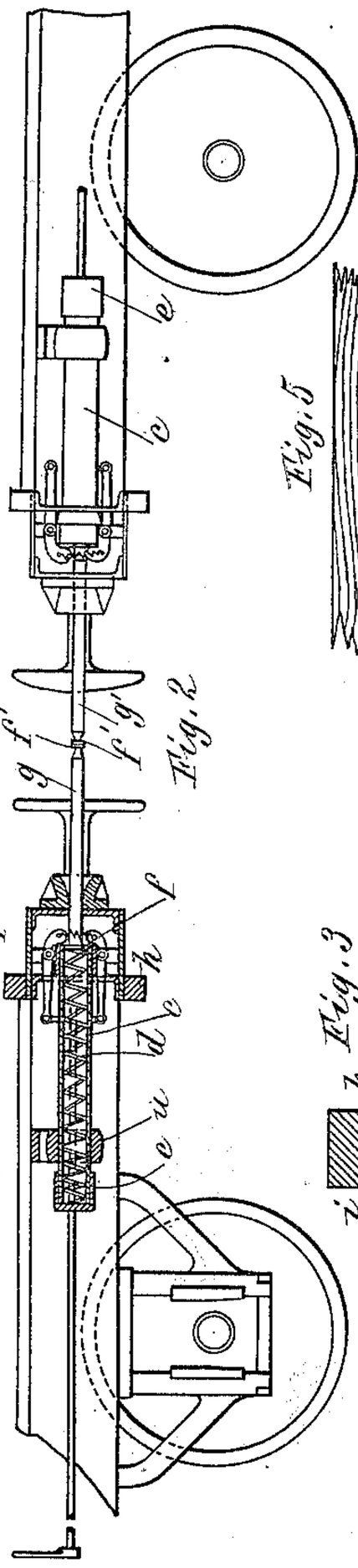


Fig. 7

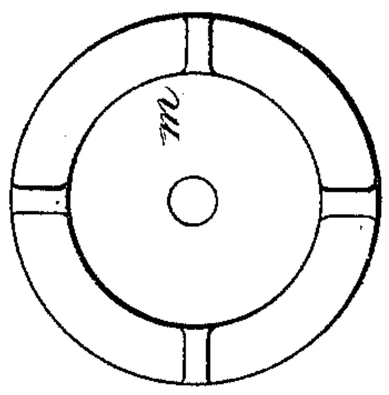


Fig. 5

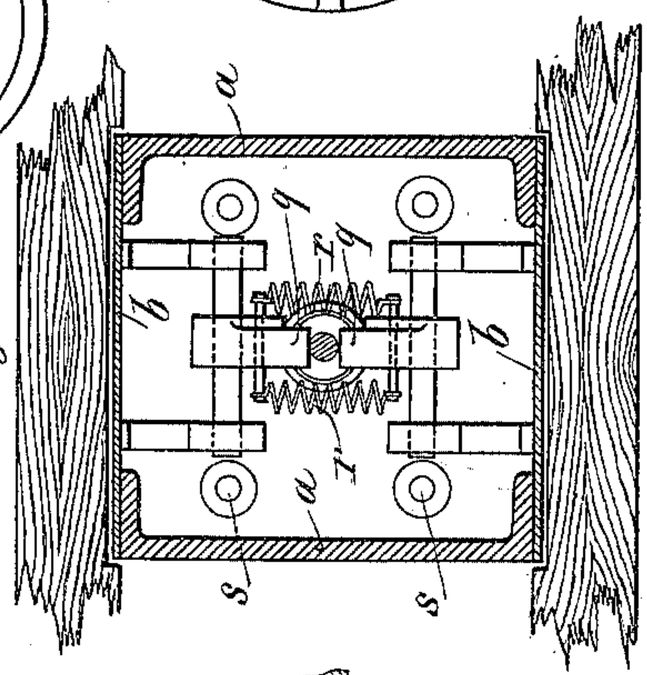


Fig. 3

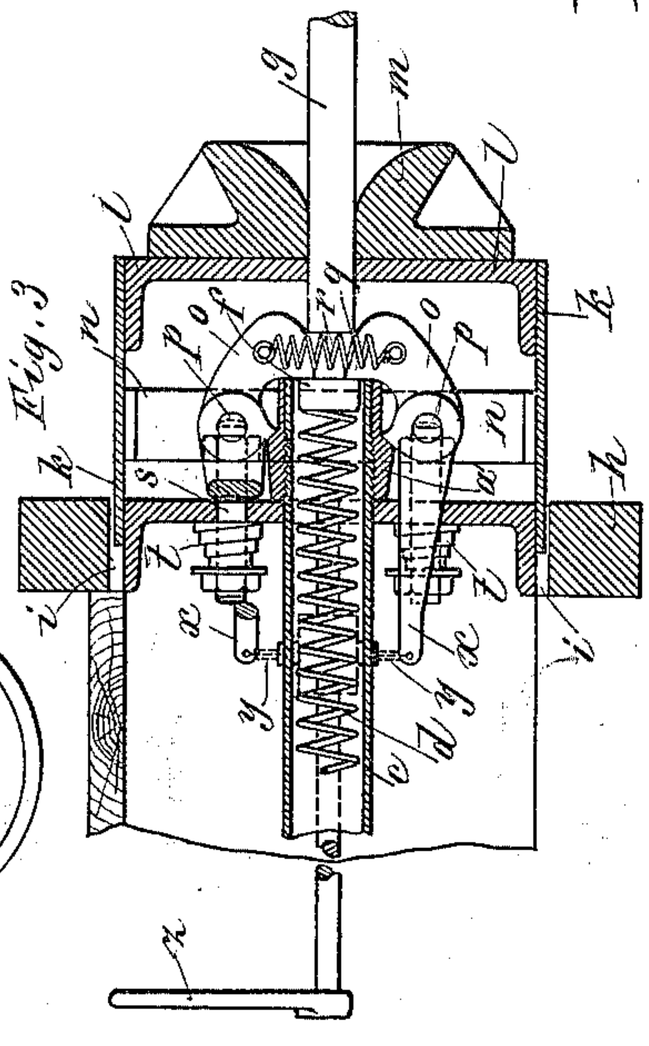


Fig. 6

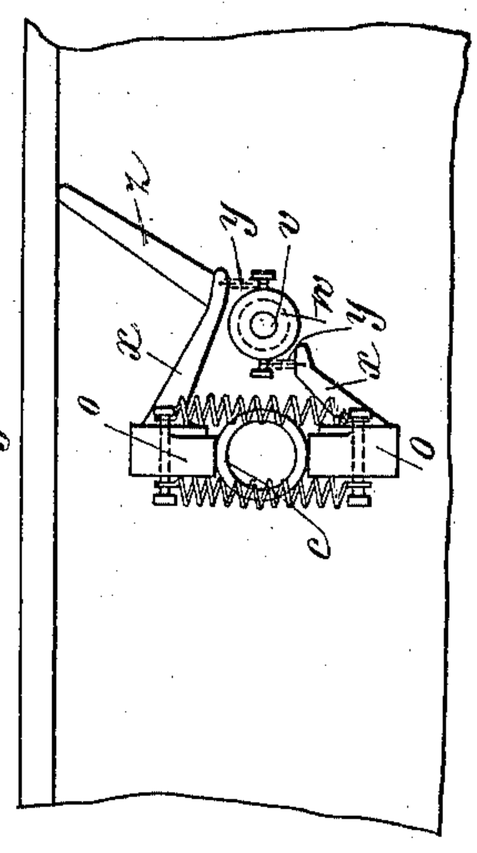
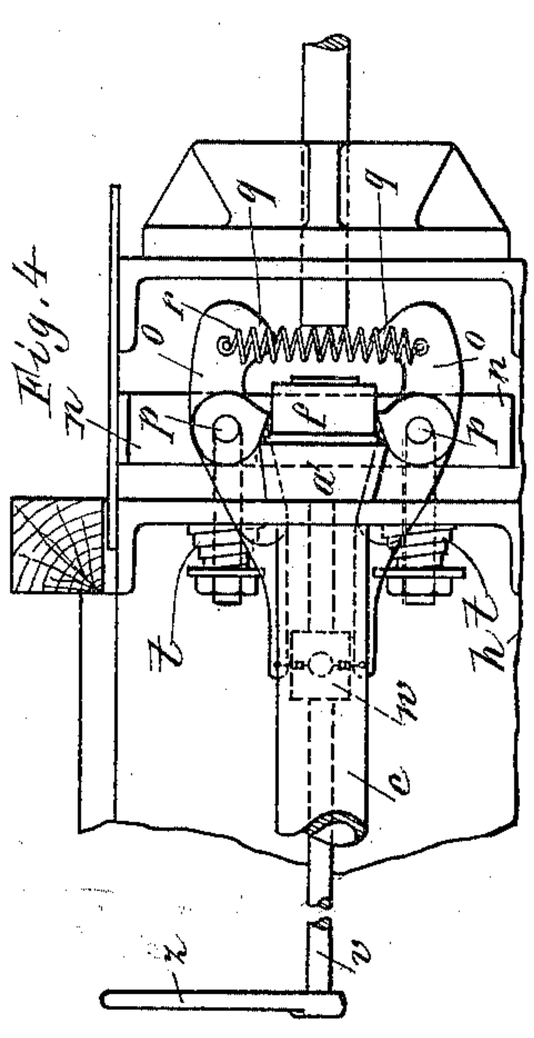


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

PETER WILHELM MÖLLER, OF ALTONA, GERMANY.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 598,156, dated February 1, 1898.

Application filed September 24, 1896. Serial No. 606,842. (No model.)

To all whom it may concern:

Be it known that I, PETER WILHELM MÖLLER, of Altona, in the German Empire, have invented a new and useful Improvement in Coupling Apparatus for Railway and Like Vehicles, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to coupling apparatus designed for railway and like vehicles which automatically couples the vehicles as they are pushed in contact with each other, the uncoupling being effected by lever-operated mechanism.

In the accompanying drawings, Figure 1 is a side elevation of my apparatus applied to railway-trucks. Fig. 2 is a corresponding view of the apparatus uncoupled, partially in section and partially in elevation. Figs. 3 to 7 illustrate details which are identified by the same reference-letters.

On each vehicle I arrange a box constructed from channel-irons *a* and sheet-metal plates *b*. In this box is provided a tube *c*, containing a spring *d*. This spring *d* bears, on the one hand, against the sleeve *e*, screwed upon the tube *c*, and, on the other hand, against a collar *f* or enlarged end of the rod *g*. I arrange the box *k* upon the front *h* of the vehicle and adapt such box to slide in recesses *i*. I provide upon the front face *l* of this box a striking plate or boss, upon or within which is provided an aperture of appropriate shape for the purpose of guiding the rod *g* on introduction. In the box *k* are arranged the catches *o*, fitted to turn about the centers *p*, provided in bracket-bearings *n*. The two catches *o* are continually forced against the projection *f f* by means of the spiral spring *r*. The box *k* is secured to the front wall by screw-threaded bolts. Springs *t* are mounted upon bolts *s*, suitably secured upon the front of the vehicle, which have the tendency to always keep the box in its normal position, as shown in Fig. 3.

For each vehicle there is a rod *g* and also a rod *g'*. The rod *g*, which is controlled by a spring *d*, is provided at one end with a flange *f* of greater diameter and at the other end with a flange *f'* of the same diameter as said rod *g*. By means of the flange *f'* the rod *g* is kept back by the hooked pieces *o* and the device *m*. When two wagons collide, the rod *g* will be pressed in by means of the rod *g'*. The rod *g'* is also controlled by a spring in order to avoid too sudden an impact. This spring must be stronger than the spring *d* of the next wagon, so that the rod *g* can be forced completely into the casing *c* and the flange *f'* of the rod *g'* pass between the hooks *o*, being there retained and thus coupling the wagons. The rod *g'* is provided with a spring only for the purpose above cited—viz., to avoid the injurious effects of too sudden an impact.

I provide bearings *u* for the purpose of guiding the tube *c*.

For the purpose of uncoupling the connection I provide a collar *w*, secured upon a shaft *v*, suitably and securely mounted, preferably parallel and in proximity to the tube *c*, and I secure to such collar chains or links *y*, the other extremities of which are secured to the opposite ends of arms *x* of the lever-catches *o*. A lever *z* is provided to effect the rotation of the shaft *v*, and upon such being operated the chains or links *y* are wound round the collar *w*, to which they are attached, thereby effecting the closure of the outer arms of the lever-catches *o* and the withdrawal of the noses or catches *q* from engagement with the projection on the connecting rod or link *g*. It is obvious that the shaft *v* may be otherwise actuated from without by suitable gear. To each end of the vehicle I fix such an apparatus, and a rod *g* or *g'*, furnished with projections *f f'*, is introduced into the apparatus of the other vehicle, so that during the coupling of the rod *g'* of one vehicle the rod *g* is pressed into the tube *c* by the rod *g'* until the projection *f'* is taken hold of by the catches *o*, thereby effecting the fastening of the coupling. When it is desired to disconnect the coupling so formed, the uncoupling-lever *z* is operated and the catches *q* withdrawn, as before described. The coupling-rods *g g'* are each provided with projections *f f'* at their front and rear ends, the projections *f' f'* directed outward having exactly the same diameter as the rods *g* and *g'*, whereas the inner projections *f f* have that of the tube *c*. Accordingly the projections *f' f'* can always pass through the openings in the box, while the projections *f f* are precluded from so doing.

When two vehicles push against each other,

the rod g', provided with the projection f', will pass through the cast-metal boss m into the box k, push asunder the catches o under the action of springs r, enter the interior of the tube c, and cause the rod g to bear against the springs d. This spring prevents the concussion that might thereby be produced and forces back the rod g until the catches or noses q bear against the projection f' on the rod g'.

In Figs. 1, 2, 3, and 5 are various views showing the apparatus with its catches closed, and Figs. 4 and 6 show the same with its catches open.

The buffers are arranged independently of the coupling.

Upon the tube c is screwed a sleeve a', provided with a circular projection, against which the projections on the catches q bear for the purpose of fixing the tube in the longitudinal direction.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. An automatic coupling device for railway-vehicles consisting of two corresponding devices on separate vehicles, each of such devices comprising a box having an aperture, a coupling-rod sliding in said aperture, and having a projection at its outer end smaller than the aperture, and a projection at its inner end larger than the aperture, catches for engaging with said outer projection, means for withdrawing said catches, and a spring forcing said coupling-rod outwardly, said spring being stronger in one of the said corresponding devices than in the other, substantially as set forth.

2. An automatic coupling device for railway-vehicles consisting of two corresponding devices on separate vehicles, each of such devices comprising a box having an aperture, a tube located behind said aperture and containing a spring, said spring being of different strength in the two corresponding devices, a coupling-rod sliding in said tube and aperture and of a length to enable it to be pushed entirely within the box and tube, said rod being pushed outwardly by said spring and having a projection at its outer end smaller than the aperture and a projection at its inner end larger than the aperture, catches for engaging with said projections, and means for withdrawing said catches, substantially as set forth.

In witness whereof I hereunto set my hand in presence of two witnesses.

PETER WILHELM MÖLLER.

Witnesses:

GUSTAV WEBER,

E. H. L. MUMMENHOFF.