

W. E. CROOK.  
AUTOMATIC COUPLING FOR RAILWAY CARS.

APPLICATION FILED FEB. 7, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

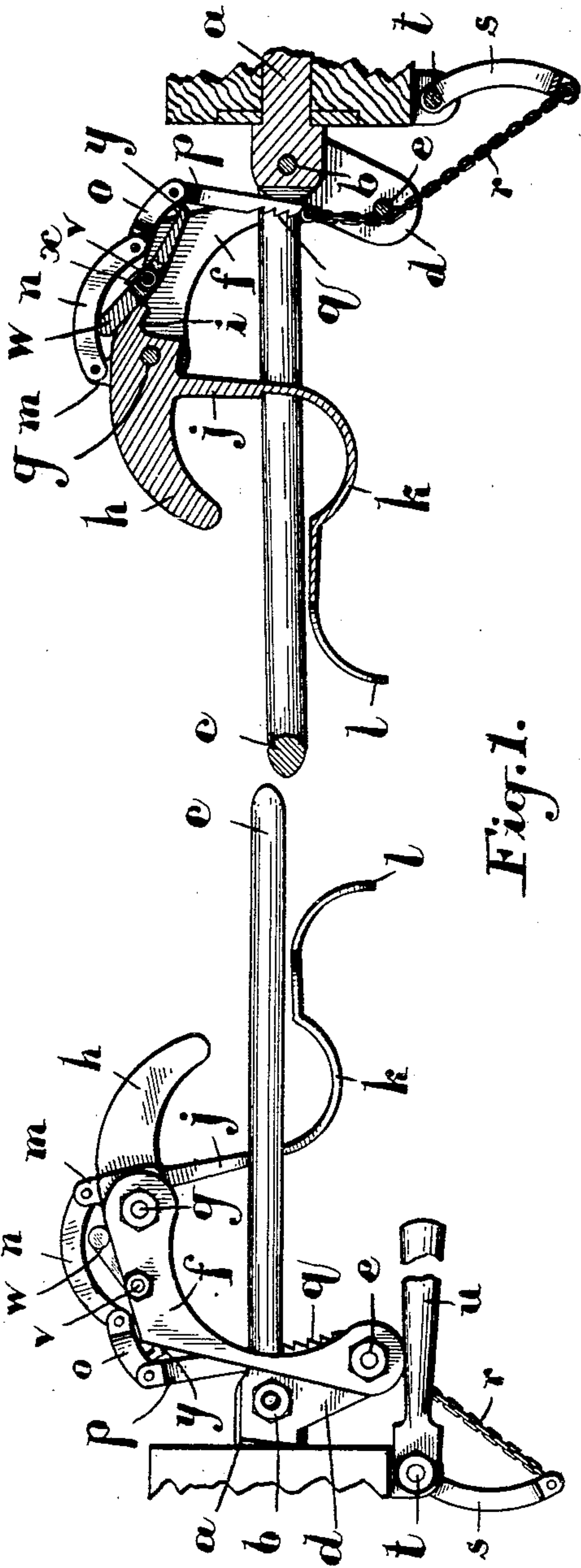


Fig. 1.

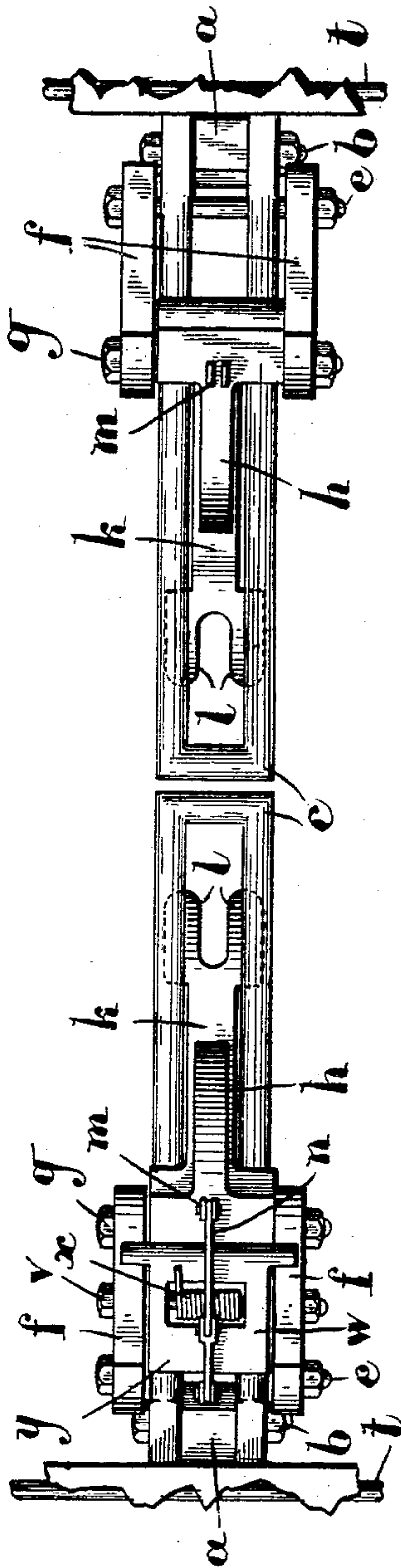


Fig. 2.

Witnesses.

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No. 745,794.

PATENTED DEC. 1, 1903.

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2 SHEETS—SHEET 2.

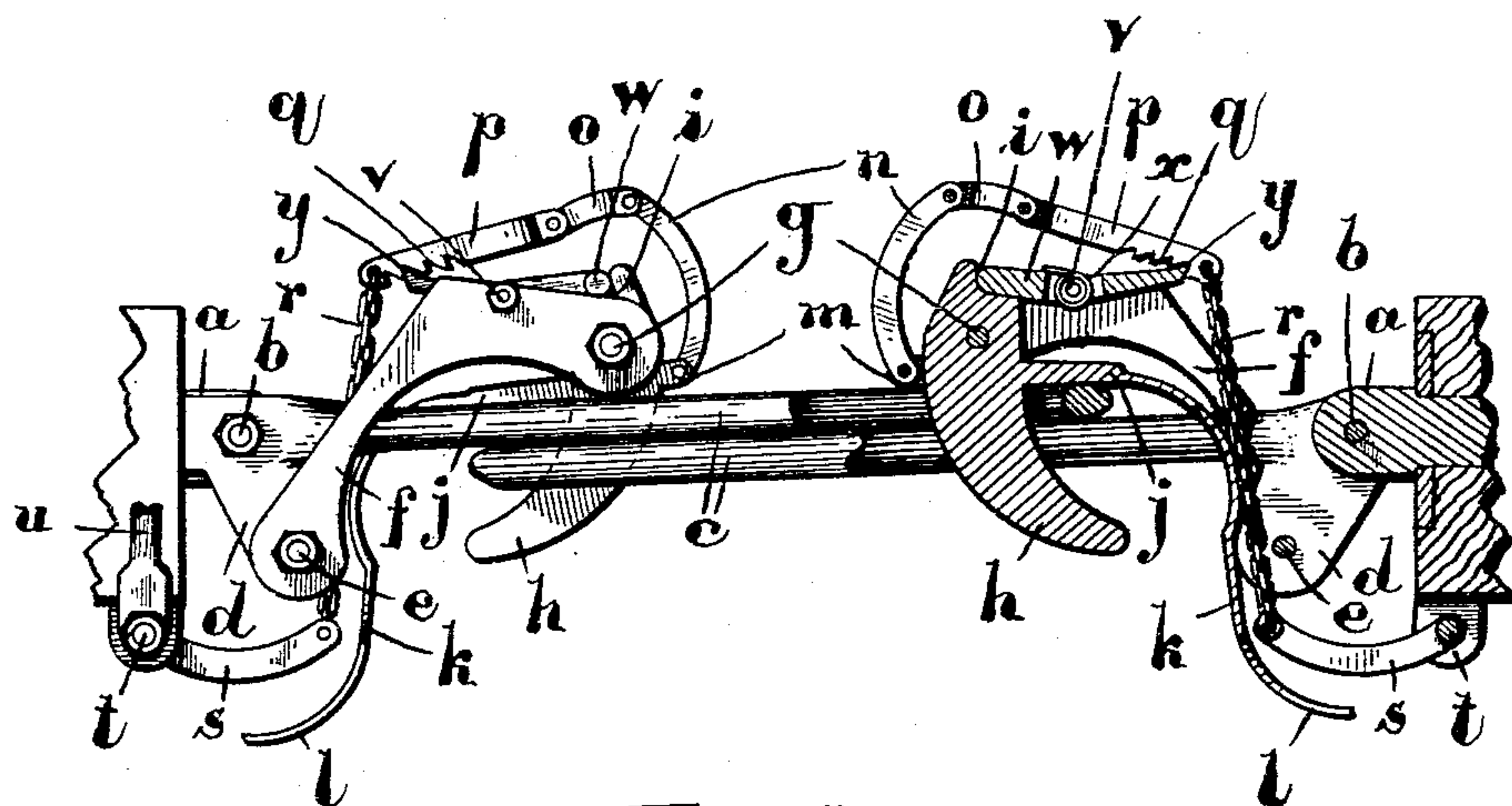


Fig. 3.

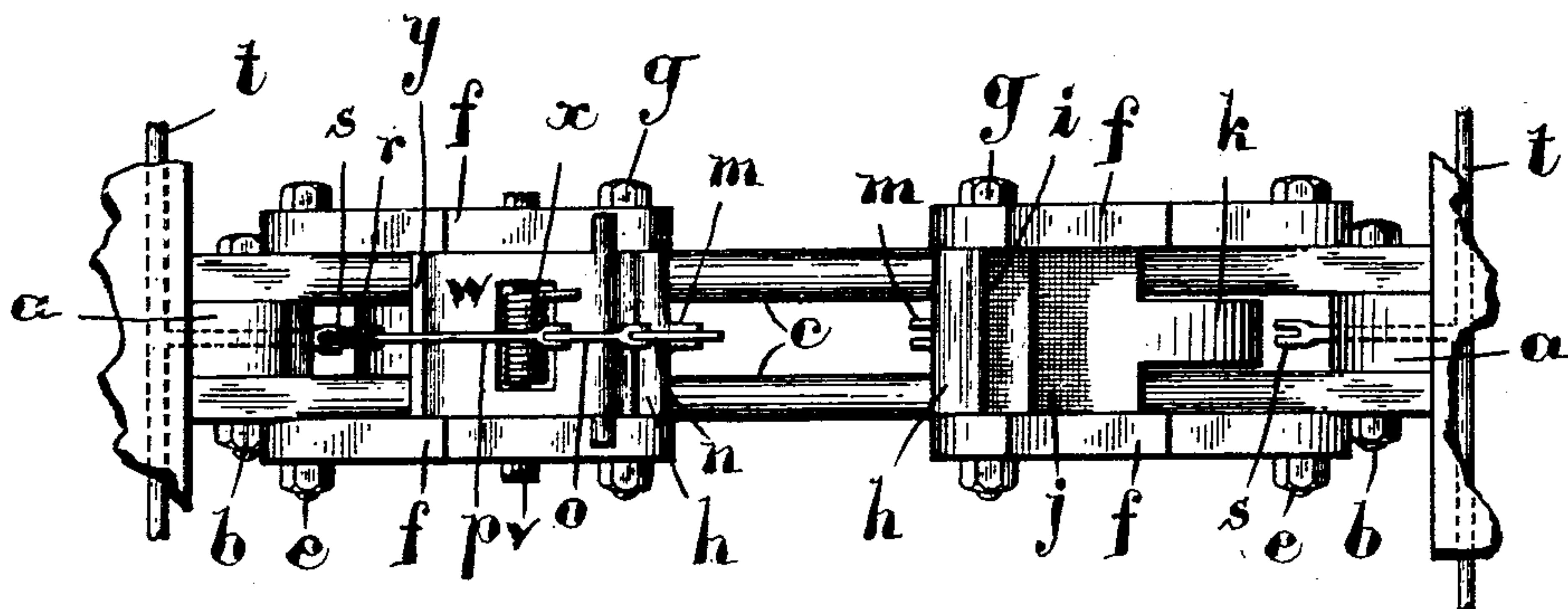


Fig. 4.

Witnesses.

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# UNITED STATES PATENT OFFICE.

WILLIAM ERNEST CROOK, OF SURRY HILLS, NEAR SYDNEY, NEW SOUTH WALES, AUSTRALIA.

## AUTOMATIC COUPLING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 745,794, dated December 1, 1903.

Application filed February 7, 1903. Serial No. 142,412. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM ERNEST CROOK, a subject of the King of Great Britain, residing at Surry Hills, near Sydney, in the State of New South Wales, in the Commonwealth of Australia, have invented certain new and useful Improvements in Automatic Couplings for Railway-Cars, of which the following is a specification.

My invention relates to improvements in automatic couplings for railway-cars.

This invention relates to a coupling for railway-cars and like rolling-stock, and is of that class in which the couplings lock automatically when the cars are pushed together and in which the unlocking is performed by the aid of an employee, who is not required to go between the cars, but works from either side of the track.

The invention provides for similar mechanisms at each end of each car, having two hooks and two links coming into engagement and both hooks having to be disengaged from the links (which can be done simultaneously) in order to uncouple.

Referring to the accompanying drawings, which show the adjacent ends of two cars fitted with the invention, Figure 1 is a side elevation, partly in vertical middle section, of the device in uncoupled position. Fig. 2 is a plan of parts in Fig. 1, some being omitted to give a clearer view of the remainder. Fig. 3 is a side elevation, partly in middle vertical section, showing the coupled position, and Fig. 4 is a plan view of the parts in Fig. 3, in each case some parts being omitted to allow other parts to be more clearly understood.

Referring now to the drawings, each end of each car has a suitable draw-bar, giving such play as may be desired, and has pivoted thereto, as at *b*, the bevel-ended link *c*, which projects horizontally forward with a slight amount of vertical play to allow it to take such an inclination as may be required in coupling, the latter being illustrated in Fig. 3. The rear of each link is extended to form a lug *d*, providing a pivot, as at *e*, for a bracket *f* at each side, and between such brackets, at their fore ends, is pivoted, as at *g*, the shanks of a hook *h*, having at its tail a slot or recess *i*. Under

der the hook is a foot *j* of such length and breadth as to rest on the link *c*, as in Fig. 1, to keep the parts when uncoupled in proper positions. Attached to the foot is an arm *k*, which passes through the link and in the uncoupled position projects forward, as shown in Fig. 1. The purpose of this arm, the fore end of which, *l*, is broadened, as shown, is to facilitate the act of coupling, as explained below, and usually the arm is made of spring-steel. Pivoted, as at *m*, to the upper side of each hook is a series of pivotally-connected links, as *n o p*, provided with a tooth or teeth *q* and connected by chain or the like, *r*, to a lever-arm *s*, projecting from a shaft *t*, attached to the car and movable, as by lever *u*, located at each side of the car end. Pivoted, as at *v*, to the brackets *f* is a tumbler or block *w*, which is normally kept by a spring, as *x*, with its force end pressing downward, so that in the uncoupled position the fore end presses upon the hook rear, keeping the hook up, while in the coupled position it presses again the hook-tail within the recess *i*, above mentioned, keeping the hook securely down.

When uncoupling is desired, it is done by operating the levers *u* of two adjacent car ends, whereby arms *s* are swung round and a pull put upon the parts *p o n m*, (see Fig. 3,) the effect being first to press down the rear end *y* of the tumbler *w*, said end projecting to engage a tooth at *q*, (or being otherwise adapted to engage with part *p*.) This raises the tumbler front, unlocking the hook *h*, which then in each case swings round on its pivot, brackets *f* also rising on their pivots until the uncoupled position of hook is reached.

As will be obvious, when two of the links *c* meet one another one will naturally slide above the other, owing to the beveled ends and the vertical play aforesaid, and equally obviously each link will (by striking the yielding part *k* or *j*, as the case may be, of the opposite car mechanism) automatically swing the hook of said opposite car through the said link into the coupled position, the tumbler *w* meanwhile being tilted up at its fore end, as will be understood from Fig. 1, until it is thrown by the spring *x* into the position seen



in Fig. 3. As soon as the foot *j* is pushed back, so ceasing to support the fore ends of the pivoted brackets *f*, the latter swing downwardly till they rest as in Fig. 3, whereby the security of the coupling is increased.

There are various minor features of the construction illustrated which may be departed from while still preserving some essential features of the invention.

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. In an automatic railway-car coupling, a pair of links arranged to slide along each other a pivoted hook for each link each having a tail slot or recess, a foot on each hook to be struck by the opposite link, and an arm projecting from each foot, as and for the purposes described.

2. In an automatic railway-car coupling a link, a hook to engage the same a spring-actuated pivoted tumbler to engage the hook to hold it either up or down substantially as and for the purposes described.

3. In an automatic railway-car coupling pivoted brackets having pivoted thereto a hook a tumbler adapted to bear upon the said hook and a link to be engaged by the hook to couple the cars, substantially as described.

4. In an automatic railway-car coupling a pivoted beveled link projecting forward horizontally with a slight amount of vertical play, and having a lug a bracket pivoted thereto and a hook pivoted to the bracket and ar-

ranged to engage the opposite link, substantially as described.

5. In combination in an automatic car-coupling device a pair of links, brackets pivoted to the links, hooks pivoted to the brackets to engage the links, foot portions on the hooks resting on the links and arms extending from the foot portion under the links adapted to contact with the opposite link to operate the device.

6. In combination in an automatic car-coupling device, a pair of links, brackets pivoted thereon, hooks pivoted to the brackets, said hooks having each a recessed tail portion, a tumbler bearing on the tailpiece of the hook and link connections for releasing said tumbler to uncouple the car and for operating the hook.

7. In combination in an automatic car-coupling device, a pair of links arranged to move along each other, hooks secured above said links and engaging the same to hold them coupled, said hooks being operated by the links.

8. In combination in an automatic car-coupling device, a pair of links, hooks secured above said links and engaging the same to hold them coupled and means for disengaging the hooks from the links to uncouple.

Signed at Sydney this 28th day of November, 1902.

WILLIAM ERNEST CROOK.

Witnesses:

H. G. ZIMMION, Jr.,  
J. J. LANGDON.