

(No Model.)

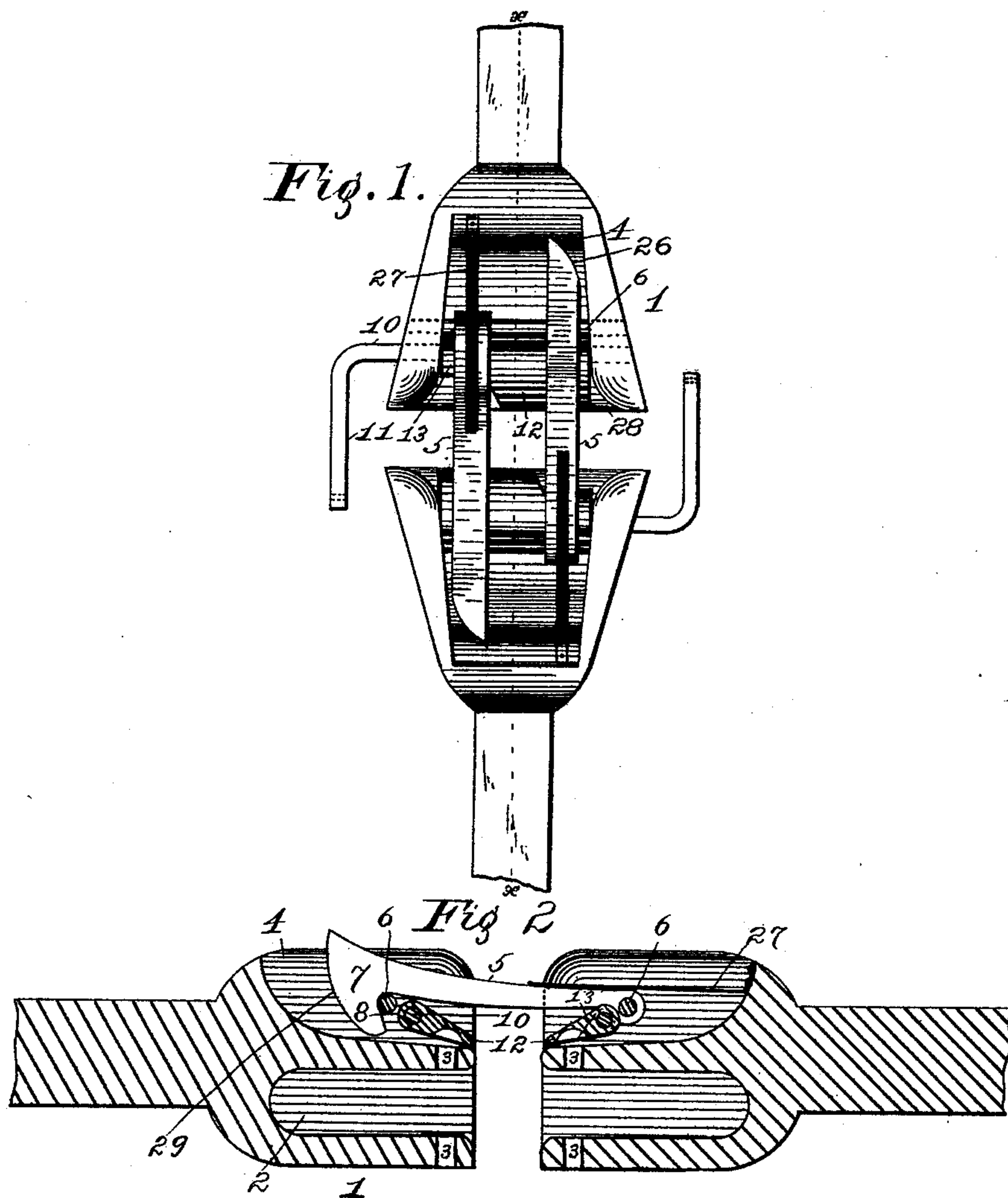
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H. NIEMANN.

CAR COUPLING.

No. 414,118.

Patented Oct. 29, 1889.



**WITNESSES:**

S. S. Gray  
J. F. Wilbur

**INVENTOR**

INVENTOR  
Henry Nicmann

BY *R. W. McDermott*

# King

**ATTORNEY**

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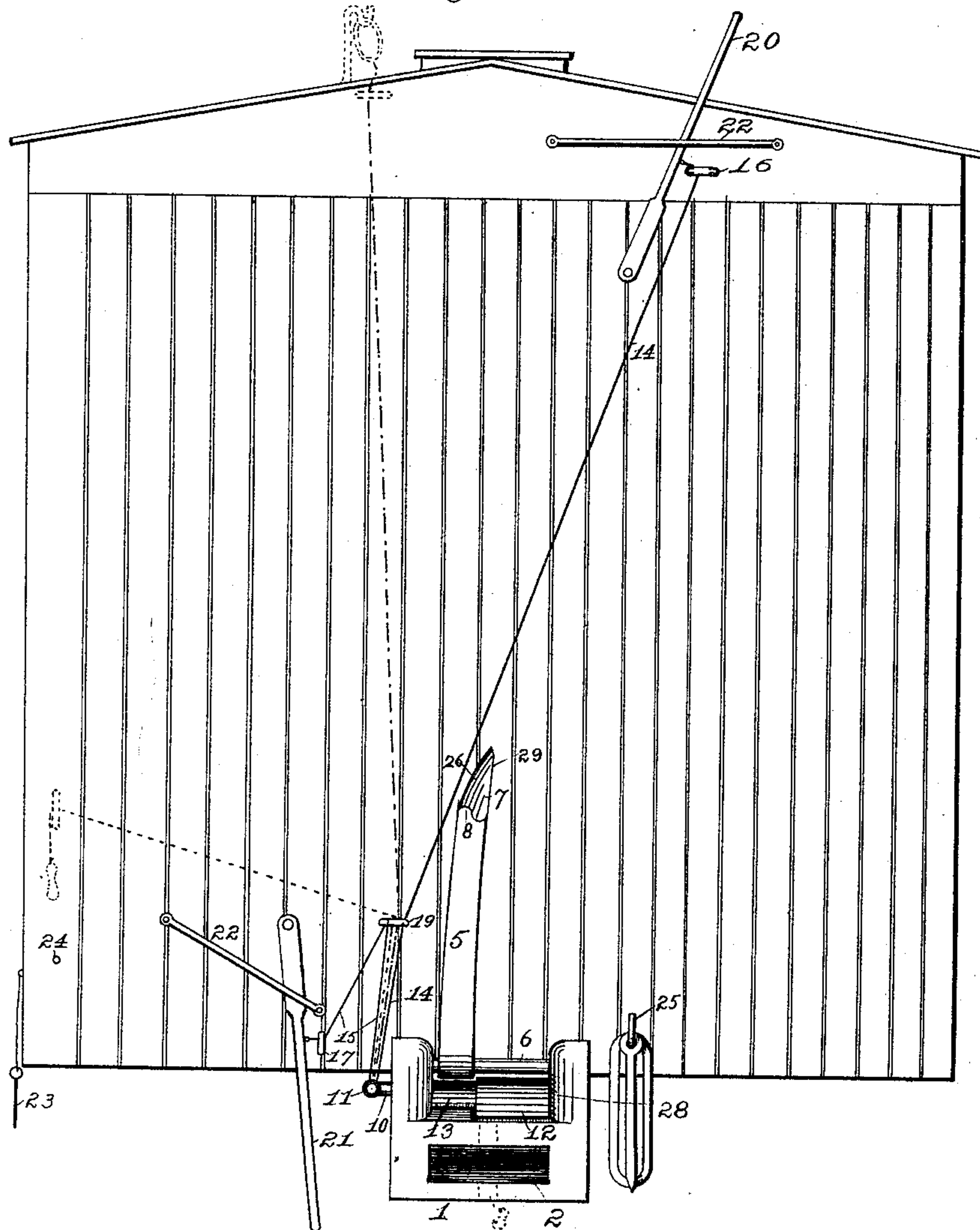
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Fig 5



WITNESSES:

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*J. F. Wilbur*

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*his*

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# UNITED STATES PATENT OFFICE.

HENRY NIEMANN, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO  
FREDERICK L. ROHLFING, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 414,118, dated October 29, 1889.

Application filed January 21, 1889. Serial No. 296,967. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY NIEMANN, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to a novel and improved construction of couplings for railway-cars, designed especially to be automatic in action.

The dangers to life and limb attendant upon the use of the common link and pin—the means for coupling universally used upon freight-cars—have long been known and recognized, and the frequent cruel and really unnecessary deaths and maimings of train-men caused by them have kept such dangers constantly before the public mind. On such account the desirability of some practical and commercially-feasible means for lessening those dangers and for doing away with the now necessary but extremely dangerous practice of the brakeman having to go in between the cars for the coupling together thereof is universally admitted. Such means, to be effective and to meet the requirements of railway traffic, must be automatic in action and self-coupling as the cars designed to be connected come together; must be arranged for uncoupling from the roof or side of the car, or from both, that flying switches and the division of a train while still in motion, when necessary, may be readily and safely effected; must have some scope of play or adjustment within reasonable limits to compensate for variance of height of the trucks or frames of adjacent cars; must have provision whereby the ordinary link or pin may be used, as would be necessary when a car provided with such an automatic coupler were next to one not so provided; must be adapted equally well for attachment to any cars either in repairs or in new constructions; must be reliable in operation, the couplings holding securely against danger of disunion from sudden jars, joltings, or bumps; must be of simple construction and few parts,

readily assembled, and easily understood and operated.

The object of my invention, therefore, is to furnish a car-coupling possessing these requisites; to which ends it consists in the features, arrangements, and combinations more particularly hereinafter described and claimed.

In the drawings is illustrated an embodiment and application of my invention, in which drawings—

Figure 1 is a top view of my improved coupling applied to and in use on two contiguous cars; Fig. 2, a section on line  $x x$  of Fig. 1; Fig. 3, an end view or elevation of a car with the coupling in place thereon, but with the coupling-bar lifted.

In the figures, the reference-numeral 1 indicates the coupling-head upon the end of a draw-bar, secured in the usual way to the truck or frame of a car. In the lower portion of this draw-head is the cavity 2, through whose upper and lower walls is the aperture 3, the cavity and aperture having the functions of the ordinary draw-head for the reception and retention of the common link-and-pin coupling when it is necessary, as before indicated, to use such a coupling. Above such cavity 2 the side and rear walls of the coupling-head are continued upward to form the recess 4, having an open front and top. Through the side walls of this recess passes, or in them is seated, the pivot and catch pin or rod 6, on which and at one side of the recess is pivoted the coupling rod or bar 5, formed with the hook-head 7 upon the under side of its front or free end. Such coupling rod or bar is also beveled, as shown at 27, upon one side at such front end, (the outer side relatively to its seating in the recess of the coupling-head,) the mouth of the recess being also somewhat flared, as at 28, that the hook end of one coupling-bar may be surely guided within the recess of an adjacent coupler and over the pin 6, even though the head of bar 5 hit slightly to one side of the proper engaging-point.

As in use the hook end of one coupling-bar is to pass over and catch upon the pin 6 of the adjacent coupling-head, the hook end is



undercut to a greater or less extent, as shown at 8, that it may not readily be thrown upward from engagement therewith by any normal joltings or bumpings, and for further security to such end a spring may be arranged to take upon the upper side of the coupling-bar, such means being shown by the flat or leaf spring 27, suitably secured at one end and taking at its free end upon the bar. It is evident with this construction that when two cars suitably provided with the coupler, as thus far described, come together the beveled ends 29 of the coupling-bars will slide up over the pins 6, and the hook ends 7 will drop behind them, coupling the cars together automatically. For the safe uncoupling thereof from the side or top of the car another set of coacting devices, as follows, is brought into requisition: Pivotaly seated in the side walls of the recess 4 and in advance of the pin 6 is a pintle 10, one of whose ends is carried outside of the coupling-head 1 and formed into a crank-arm 11. Upon such pintle 10 are rigidly secured the two curved or inclined cam lifting surfaces 12 and 13, one 13 being situated to act on the coupling-bar of the head in which it is situated, and the other 12 on the coupling-bar of the adjacent car. As one then acts on a bar near its fulcrum and the other on a bar at almost the extreme distance from its fulcrum, their projection and lifting capacity are correspondingly varied, the surface 13 being much smaller than the surface 12. Both may be formed integral or they may be formed separately and secured properly on the pintle 10.

From the free end of the crank-arm 11 a chain or cord 14 proceeds through or over eyes or pulleys 19 16 to the top of the car, while another cord or chain 15 leads from the same point through eyes or pulleys 19 17 to the side of the car. At their free ends these cords or chains may end in rings or other forms of handles, giving opportunity for a good grasp thereon and preventing them from slipping backward through the eyes or pulleys. This arrangement of handles and the location of eye or pulley 17 therefor are shown in dotted lines. It is evident that as either cord or chain is pulled upon it will raise the crank-arm 11, turning the pintle 10 and throwing upward the cam-surfaces 12 13, which in turn lift the coupling-bars they are then under, releasing the hook ends 7 thereof from engagement with the pin 6, uncoupling the cars united by the coupling-bars so acted on. It may be preferable, however, for speedy action with a minimum of force to have these cords or chains operated on by levers, in which case a lever 20 is pivoted upon the end of the car and near its top with its free end projecting thereabove, and to such lever the upper or outer end of the cord or chain 14 is fastened. A similar lever 21 is pivoted upon the end of the car

near the bottom, and with its free end projecting down below the base of the car, but in such proximity to the side of the car that it may be reached manually or by a hooked rod from beyond the side of the train, and to this lever is secured the outer end of chain or cord 15. Guideways 22 should be provided for each lever, supporting them and limiting the amount of movement which may be given them. To lock the levers in the uncoupling position, these guideways may be ratchet-toothed in the usual way; or a simple pin 23 may be used for such locking by inserting it in a hole 24 made at the proper point.

As sometimes, as before stated, there may be necessity for the use of the common link and pin, a hook 25 may be secured in the end of the car near to the coupling-head, whereon may hang a link or pin ready for use when and at the spot required.

As the coupling-hook bar may be arranged to drop several degrees below and many more degrees above the horizontal line thereof, these couplings may be used safely with cars having considerable difference of distance from the ground to the coupling-head.

The construction thus illustrated and described accomplishes fully the objects of my invention and possesses all the requisites of a safe practical automatic car-coupling, as set forth, and the use of such car-couplings would obviate to the extent of their use the perils and danger to life and limb of brake and switch men before alluded to.

Having thus described my invention, what I claim is—

1. The combination of a coupling-head or draw-bar having an open-topped recess 4 above the ordinary link-recess, a coupling-bar having a beveled and undercut hook end and independently pivoted in the upper recess, a lesser cam taking beneath such bar, a larger cam adapted to take beneath the coacting coupling-bar of the adjacent coupler, a pintle or shaft upon which such cams are secured pivoted in the walls of the upper recess and beneath the line of pivoting of the coupling-bar, and means, substantially as described, for lifting the cams to simultaneously disengage both coupling-bars, substantially as set forth.

2. The combination of a coupling-head having top recess 4, the coupling-bar 5, having the top beveled and undercut hook-head 7, the pin 6, the pintle 10, having crank-arm 11, the cam-surfaces 12 13, secured thereto, and the cords or chains 14 15, substantially as set forth.

3. The combination of coupling-head 1, the coupling-bar 5, having the top beveled and undercut hook end 7, the pin 6, the pintle 10, having projecting crank-arm 11, the cams 12 13, secured upon such pintle, the cords or chains 14 15, and levers 20 21, substantially as set forth.



4. The combination of coupling-head 1,  
coupling-bar 5, pivoted in a recess therein  
and having the undercut hook end 7, with  
side bevel 26, spring 27, pin 6, pintle 10, with  
5 projecting crank-arm 11, cam-surfaces 12 13,  
secured upon the pintle, and the cords or  
chains 14 15, substantially as set forth.

In testimony whereof I affix my signature in  
presence of two witnesses.

HENRY NIEMANN.

Witnesses:

Z. F. WILBER,  
JAS. R. HANSON.