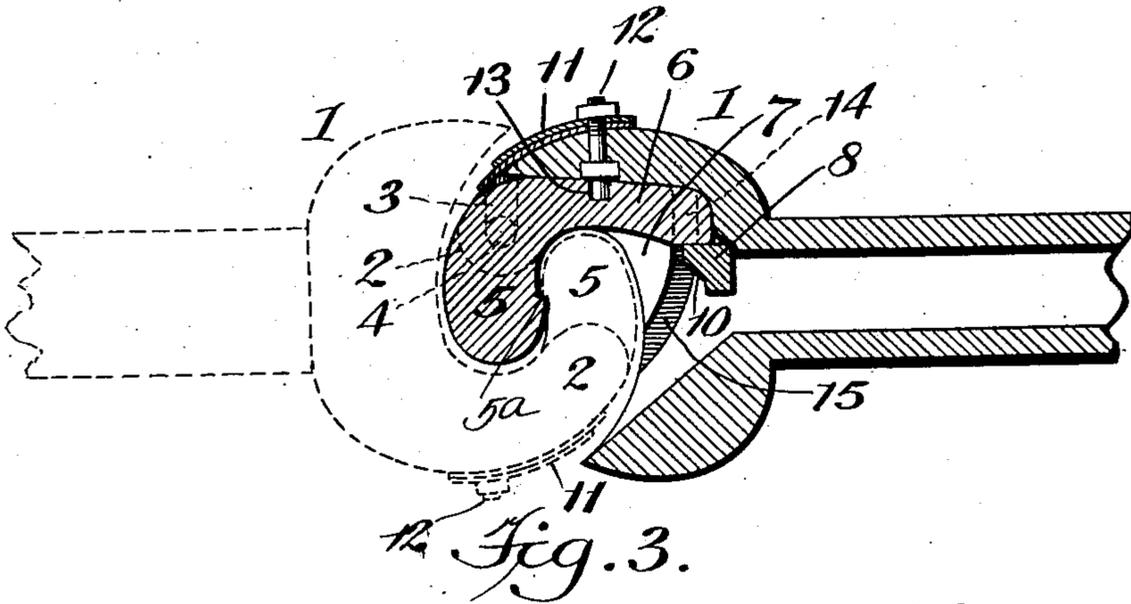
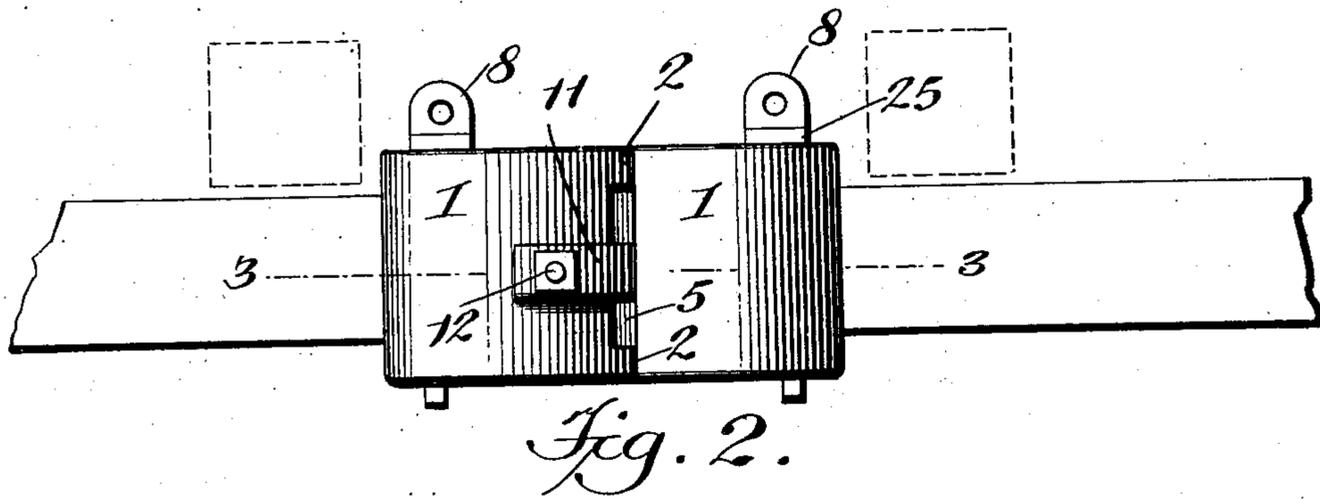
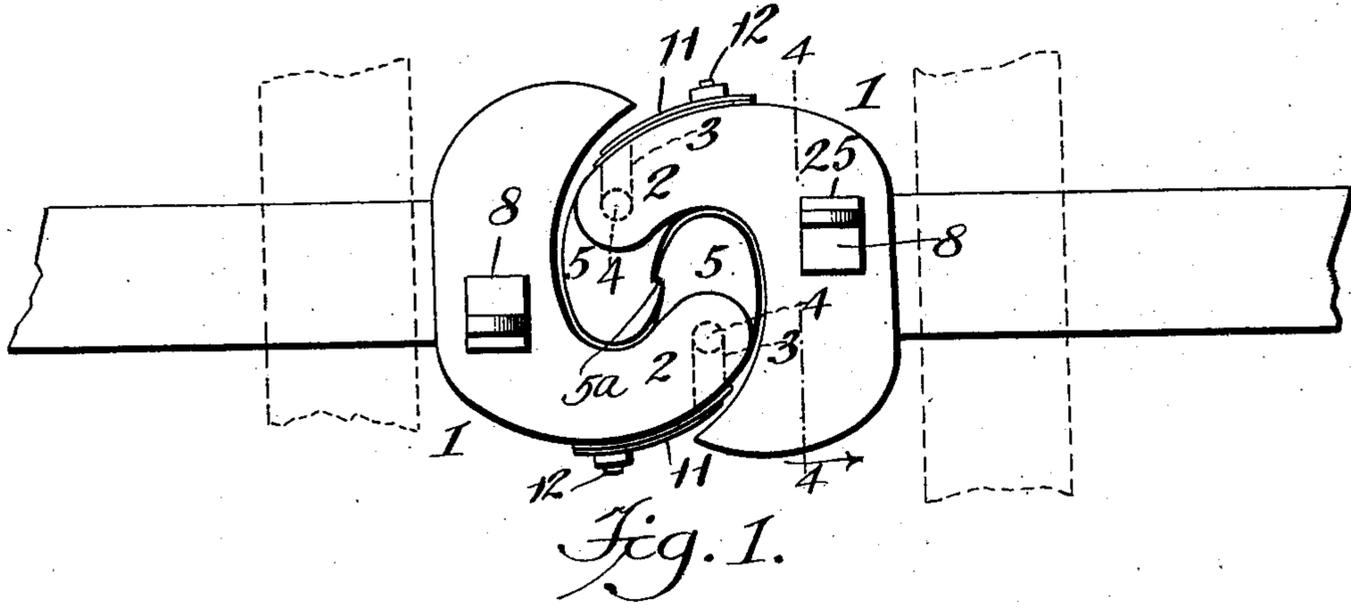


H. E. WELSH.  
CAR COUPLING.

APPLICATION FILED APR. 22, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses  
*E. J. Stewart*  
*J. D. Olinore*

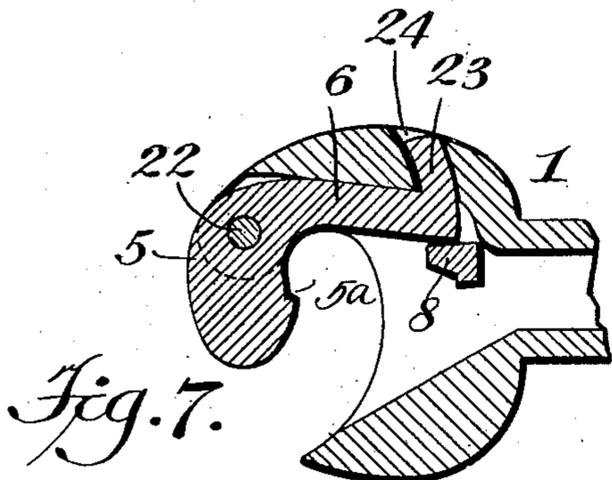
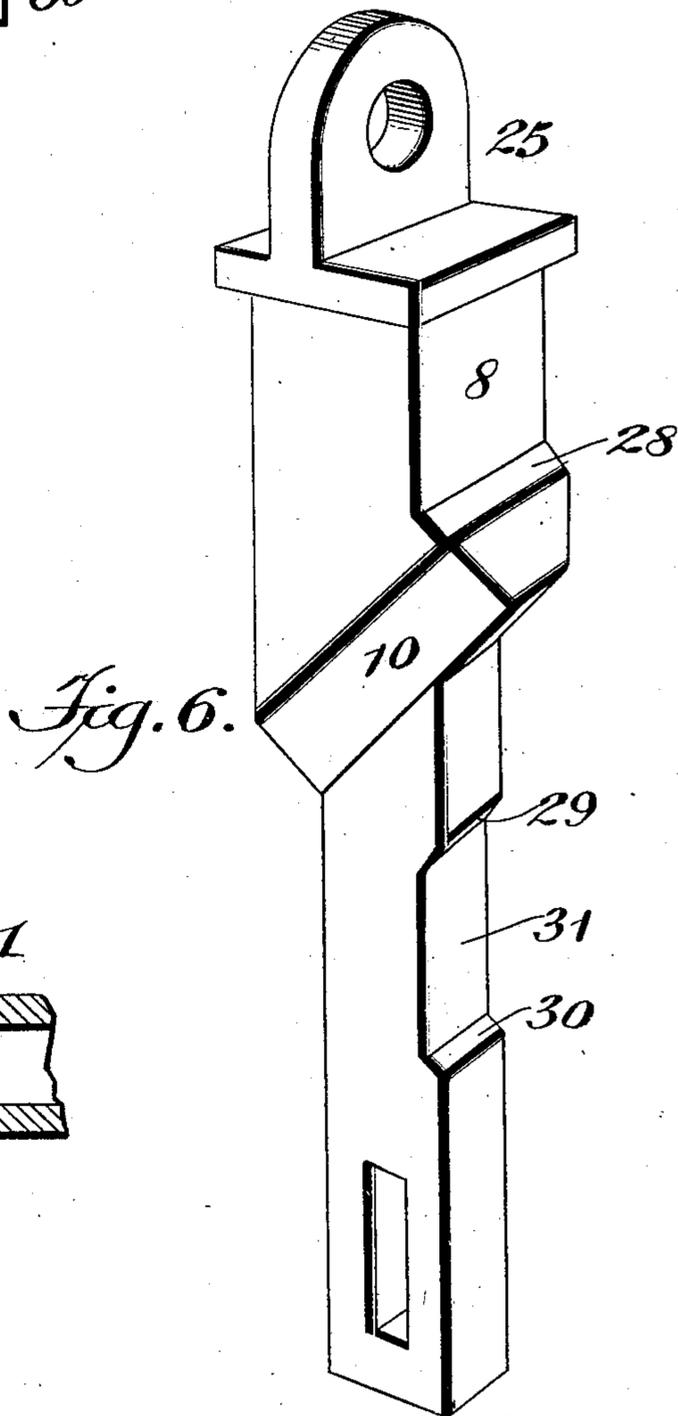
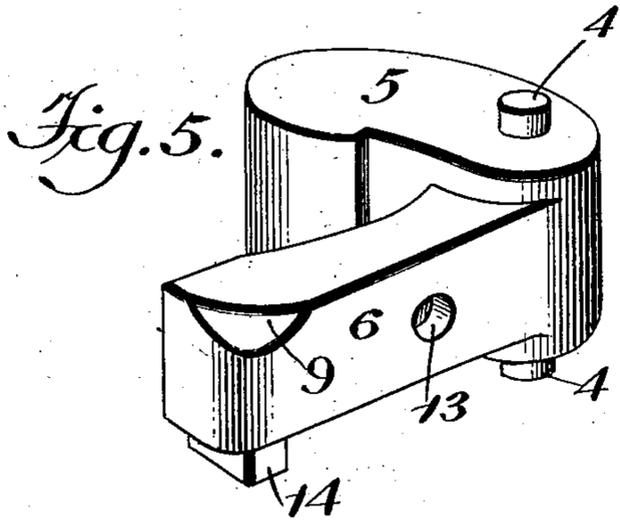
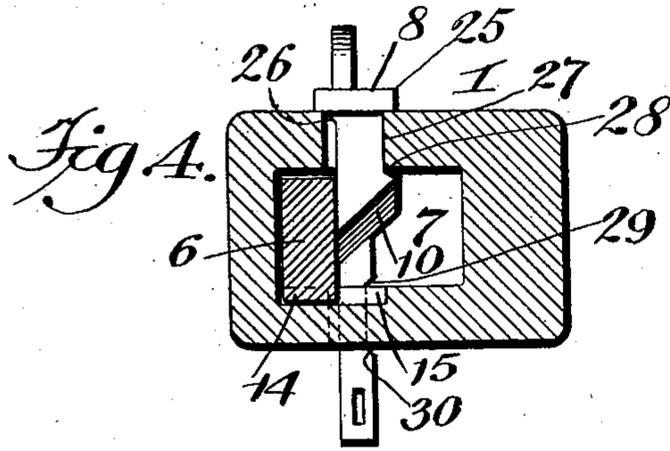
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2 SHEETS—SHEET 2.



Witnesses  
*E. H. Stewart*  
*J. J. O'Connor*

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# UNITED STATES PATENT OFFICE.

HAMILTON E. WELSH, OF LEWISTOWN, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO FRANK E. MANN AND H. S. ELDER, OF LEWISTOWN, PENNSYLVANIA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 749,246, dated January 12, 1904.

Application filed April 22, 1903. Serial No. 153,839. (No model.)

*To all whom it may concern:*

Be it known that I, HAMILTON E. WELSH, a citizen of the United States, residing at Lewistown, in the county of Mifflin and State of Pennsylvania, have invented a new and useful Car-Coupling, of which the following is a specification.

My invention relates to car-couplers, and has for its objects to produce a device of this character which may be readily operated for uncoupling, one which will operate automatically for coupling, one in which the tail-finger of the coupling-knuckles will engage automatically with the coupling-pins, and one in which the knuckles will yield readily during the passage of the cars around curves.

With these and other objects in view the invention comprises the novel details of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a plan view of the pair of coupling members constructed in accordance with my invention and shown in the coupled position. Fig. 2 is a side elevation of the same. Fig. 3 is a central horizontal section on the line 3 3 of Fig. 2. Fig. 4 is a vertical transverse section on the line 4 4 of Fig. 1. Fig. 5 is a detail perspective view of one of the coupling-knuckles. Fig. 6 is a similar view of one of the coupling-pins. Fig. 7 is a central horizontal section on the line 3 3 of Fig. 2, illustrating the modified form of the device.

Referring to the drawings, 1 1 indicate the respective draw-heads or members of a car-coupler, which are composed of any suitable or desired material. Inasmuch as these members are identical in construction and operation, I will describe but one in detail.

Each head 1 is provided with a pair of horizontal arms 2, spaced vertically one above the other, with their inner faces transversely grooved or recessed, as at 3, to receive vertically-extending lugs 4, which project from the upper and lower faces of a knuckle 5 for pivotally associating the same with the head 1, the lugs being susceptible of travel longi-

tudinally of the grooves to permit slight play of the knuckle in a direction transversely of the head for the purpose presently described. The knuckles 5 each have an inwardly-extending portion which engages with the similar portion of the knuckle of the companion head or member when brought to coupling position and with a rearwardly-extending finger 6, which projects into a recess 7 of the head for engagement with the coupling-pin 8 to maintain the knuckles in coupling engagement. The upper outer corner of the finger 6 is beveled or inclined, as at 9, and this beveled or inclined portion co-operates with a reversely-inclined portion or shoulder 10, formed upon the coupling-pin for automatically raising the latter to permit the finger 6 to pass into the recess behind the pin when the knuckles 5 are forcibly moved from the releasing to an engaging position.

The knuckles 5 are maintained in yielding engagement when the members 1 are in the coupled position, each by means of a suitable leaf-spring 11, bolted to the side of the head 1 with its free end bearing upon the outer face of the knuckle in position to hold the latter normally in engaging position and at the same time to permit a slight yielding movement on the part of the knuckle transversely of the head sufficient to allow the heads 1 to assume the proper relative positions in passing around curves without danger of the knuckles becoming disengaged one from the other, the movement of the knuckle relative to the head and against the action of the spring being due to the peculiar pivotal connection above described. The bolt 12, which serves as the means for securing the spring 11 to the head, extends through the wall of the latter and projects slightly into the recess 7 for engagement with the finger 6, the face of which is socketed, as at 13, for the reception of the end of the bolt, the purpose of this arrangement being that the bolt may sustain a part of the strain to which the pivoting-lugs 4 of the knuckle will be subjected in practice and which strain is borne also in part by a lug 14, projecting

downward from the under face of the finger 6 at the rear end thereof for engagement with a groove or recess 15, formed upon the under wall of the head 1 upon its interior. The recess or groove 15 is arranged to permit the lug to travel freely therein during the movement of the finger when swung from an operative to an inoperative position.

In Fig. 7 there is disclosed a slightly-modified form of construction in which the knuckle 5 is pivoted to the head by means of a vertical pin 22 and in which the finger 6 is provided at its rear end with a lateral projection or lug 23, adapted for engagement with an orifice 24, formed through the wall of the head, the purpose of this construction being to relieve the pivoting-pin of a portion of the strain when the device is in operation.

The coupling-knuckles 5 are each provided with a shoulder 5<sup>a</sup>, and when the parts are in the coupled position, as in Fig. 1, these shoulders interengage to obviate all liability of the knuckles becoming accidentally disengaged, owing to yielding of the parts in passing around curves or to sudden jerking of the engine.

The coupling-pin 8 is, as more clearly shown in Figs. 4 and 6, provided with a head 25, the lower face of which is beveled or inclined, as at 26, and which serves when the pin is dropped into the orifice 27, formed vertically through the head, to receive it to move the pin laterally and bodily for the purpose of bringing an upper shoulder 28, formed thereon, into engagement beneath the upper wall of the head and at the same time to bring the shoulders 29 and 30, which are formed by a recess 31, into engagement, respectively, above and below the lower wall of the head. By this arrangement accidental escape of the pin or undue upward motion of the same, owing to jarring of the parts in operation, is entirely obviated, thus insuring the pin properly holding the knuckle 5 in coupling position until released by an attendant.

From the foregoing it will be seen that I produce a simple and efficient mechanism which is admirably adapted for the attainment of the ends in view, and it is to be understood that I do not limit myself to the precise details herein shown and described, inasmuch as minor changes may be made therein without departing from the spirit of my invention.

Having thus described my invention, what I claim is—

1. In a car-coupler, the combination with a recessed head, of a coupling-knuckle having a movable pivotal connection with and yieldable at its pivotal point laterally of the head, a finger carried by the knuckle and normally lying within the recess, a pin engaging the finger, and a spring connected with the head and bearing upon the knuckle adjacent to its pivotal point.

2. In a car-coupler, the combination with a recessed head having a pair of spaced arms projecting therefrom and provided upon their inner faces with grooves, of a coupling-knuckle provided with lugs engaging the grooves for movably associating the knuckle with the head, a finger carried by the knuckle and lying within the recess in the head, a pin engaging the finger, and a spring associated with the head and bearing upon the outer face of the knuckle.

3. In a car-coupler, the combination with a recessed head having a pair of spaced arms projecting therefrom and provided upon their inner faces with grooves, of a coupling-knuckle provided with lugs engaging the grooves and with a finger projecting into the recessed head, a pin for engaging the finger, a spring associated with the head and bearing upon the outer face of the knuckle, and a lug-and-groove connection between the finger and head.

4. In a car-coupler, the combination with a recessed head provided with a perforation, of a knuckle pivotally associated with the head and having a finger to lie within the recess, and a coupling-pin extending through the perforation in the head in the path of said finger, said pin having a head provided with an inclined face operable for engagement with the head to move the pin bodily laterally, and shoulders formed upon the pin for engagement below the upper wall of the head and above and below the lower wall of the head upon said movement of the pin.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HAMILTON E. WELSH.

Witnesses:

GEO. D. MOORE,  
W. F. ECKBERT, Jr.