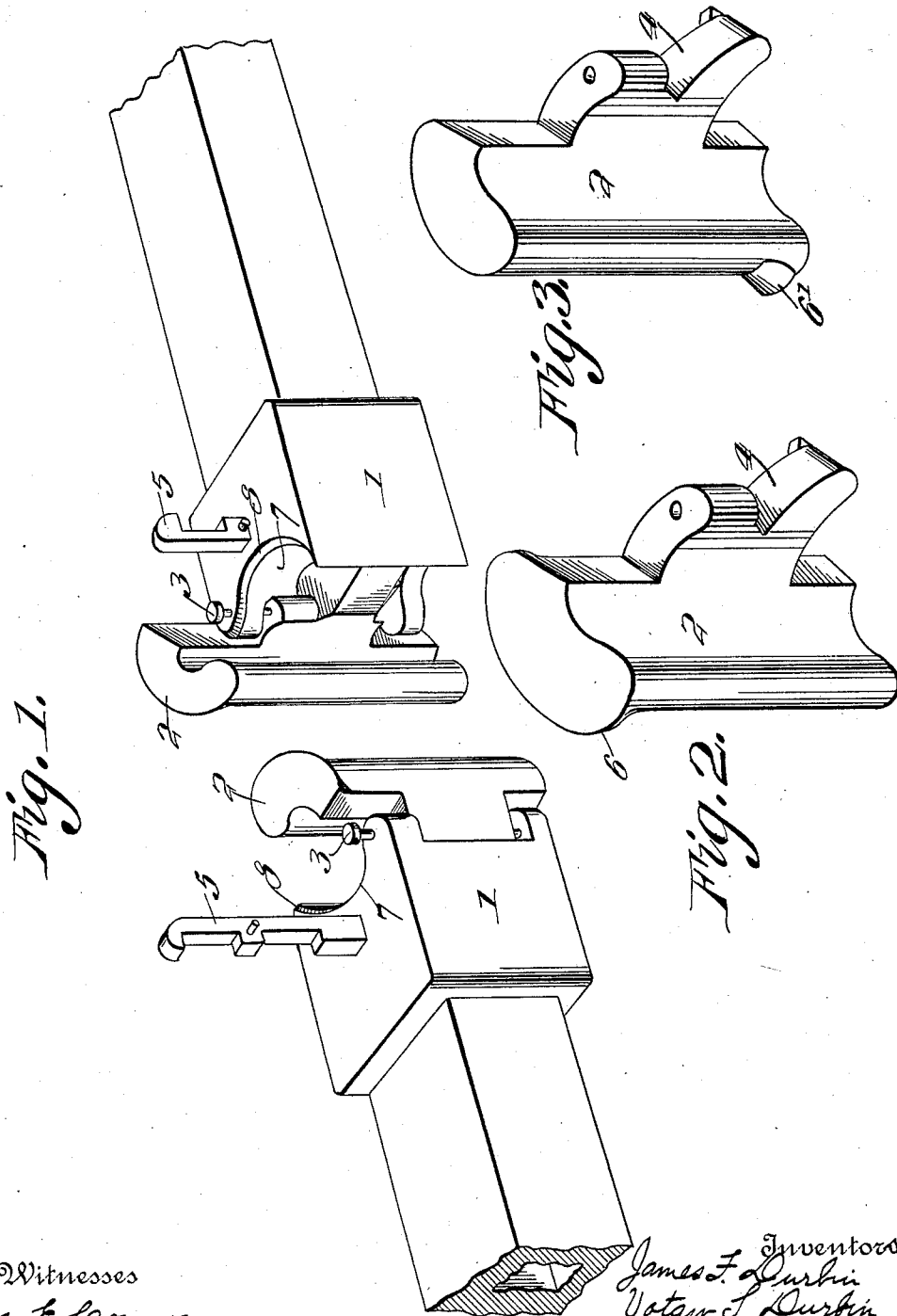


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RAILWAY CAR COUPLING.
APPLICATION FILED JAN. 11, 1910.

1,037,458.

Patented Sept. 3, 1912.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES F. DURBIN AND VOTAW S. DURBIN, OF FORT SCOTT, KANSAS.

RAILWAY-CAR COUPLING.

1,037,458.

Specification of Letters Patent.

Patented Sept. 3, 1912.

Application filed January 11, 1910. Serial No. 537,570.

To all whom it may concern:

Be it known that we, JAMES F. DURBIN and VOTAW S. DURBIN, citizens of the United States, residing at Fort Scott, in the county of Bourbon and State of Kansas, have invented new and useful Improvements in Railway-Car Couplings, of which the following is a specification.

This invention relates to railway car couplings, and pertains more particularly to the type of coupling embodied in the description set forth in our pending applications Serial Nos. 506,998 and 524,804, in which, generally speaking, opposing heads are provided with eccentrically pivoted knuckles, having offset projections which are adapted to be engaged and latched behind latch pins which are vertically slidable through the center of said heads.

The object of the invention is to provide a coupling, in which, when the coupling members are secured in coupled relation, it will be impossible for said members to become uncoupled by reason of the swaying, side-wise tilting or even the complete overturning of the cars or train in which our improved coupling is used.

More particularly, it is the object of the invention to provide a knuckle for car couplings, which when inter-engaged by the coupling process, are locked against undue vertical movement, with relation to one another, when the opposing coupling heads to which they are pivoted are subjected to unusual lateral and vertical movements.

With the above objects in view, our invention will now be fully described with regard to the accompanying drawings which form a part of this specification, and in which:—

Figure 1 is a perspective view of a coupling embodying our improvement, and showing the coupling heads in position to be engaged and locked. Fig. 2 is a perspective view of one of the knuckles provided on the coupling heads, and Fig. 3 is a similar view of another form of the knuckle.

Referring more particularly to said drawings, 1 indicates the hollow coupling heads, each of which is provided with a knuckle 2, pivoted at one side of the head as by the pivot pins 3 and having a latch member 4 which projects and operates within the cavity formed in each head. Said latch member 4 coöperates with the latch pin 5, which extends vertically through the head 1, to lock the member 4 in closed position all as

set forth in applications hereinbefore mentioned.

The knuckles 2, which as above set forth, are pivoted eccentrically, or at one side of the coupling heads 1, consist generally of a locking head portion having a rearwardly projecting shank, which in cross section is substantially a continuation of the head portion projected from one side thereof. Said head portions of the knuckles are substantially the same height or slightly longer than the height of the heads 1, and comprise vertically disposed parallel sided blocks supplemented by interference elements or lips 6 hereinafter more fully described which are on the ends of said blocks. Said head portions are formed with curved outer faces, so that, when said knuckles are set in locked position, the head portions thereof substantially seat in recesses 7 of the opposite coupling heads, and oppose the corresponding recesses of the adjacent head. The rear faces of said head portions of the knuckles are curved correspondingly to said outer faces, thus providing faces with concavo-convex formations in cross sections, and constituting the heads substantially curved rectangular blocks and the free edges of said heads are rounded whereby to join the inner and outer curved faces and said free edge in a continuous surface. Thus, said head portions of the knuckle are formed as interlocking members, and are adapted to automatically slide around one another into engagement, and this will occur, whether both or only one of said knuckles is in unlocked or open position.

The upper ends of the knuckles are provided as above mentioned with interference elements or lips 6. Said lips 6 comprise overhanging projections which substantially enlarge the upper ends of the head portions, and are beveled to gradually merge into the upper part of the head portions. As heretofore mentioned, the concave sides of the head portions of the knuckles interfit with the recesses 7 formed in the ends of the heads 1 of the coupling members, and the upper forward edge of said heads of the coupling members are rearwardly slanted or beveled to correspond with the enlargements 6, as shown at 8, formed on the head portions of the knuckles 2, so that as the knuckles are vertically reciprocated or play with the movement of the train as the car proceeds over a track, the upward move-

ment of the head 1 or the downward movement of the opposite knuckle 2 will be limited by the interlocking of the slants or bev-
els 8 with the enlargements 6 formed on the
5 knuckles.

The lip 6 above described may be formed at either the upper or lower edge of the knuckle, and in Fig. 3 is shown a modified form of the knuckle. Said knuckle is pro-
10 vided at its lower edge with the lip 6' said lip being an overhanging ledge whose lower face is a longitudinal continuation of the lower end of the knuckle and whose upper
15 face is beveled and merges into the outwardly curved side of the knuckle head portion. When this form is used, the lower forward edge of the recess 7 in head 2 is correspondingly beveled or undercut to re-
ceive the lip 6'.

20 From the above, it will be evident that the independent play of the interlocked coupling members, while being considerable, is nevertheless limited by the above mentioned interlocking of the enlargement 6 with the
25 slants or bev-els 8, and it further follows that in the event of a wreck, or in the event of the train going over a piece of rough or softened road-bed, where the couples are subjected to a great deal of vertical move-
30 ment it will be impossible for the coupling members to become separated, due to the above mentioned interlocking feature. In fact, in the event of a complete overturning of the coupling members it would be still
35 impossible for the members to become detached through the separation vertically of the knuckles 2 and consequently of the heads 1.

40 From the above description it will be evident that the various improvements described and embodied in the type of railway coupling set forth, provide a reliable, and efficient apparatus, the peculiar formation of the knuckle heads acting to completely
45 and thoroughly place the coupling members in such relation that it is practically impossible for the coupling members to become separated under any ordinary, and in fact, extraordinary conditions.

50 A further advantage of this construction resides in the fact that in the vertical play of the two parts of the coupler the lips will always hit the coupler head with a glancing blow, as it were, and thus direct impact, tending to break off the lips,
55 is avoided. Again, the incline of the lips permits them to slide some distance over the

edge of the coupler head before there will be any tendency to raise the latter, as would be the case if the engaging side of the lip ex-
60 tended at right angles to the knuckle, instead of being inclined thereto. This tends to greatly diminish the lifting of each coupler head with consequent tendency to loosen the fastenings of the draw bar. 65

Having thus fully described our invention, what we claim and desire to secure by Letters Patent in the United States, is:—

1. A car coupling comprising, in combination, opposing heads having seats
70 formed therein, knuckles pivotally mounted on said heads and adapted to have a limited vertical movement on their pivots, means for locking said knuckles in coupled position, and means to interlock said knuckles
75 and said heads to limit their relative vertical movement, said latter means comprising a projecting lip beveled on its inner side formed continuously around a horizontal
80 edge of each knuckle on its outer convex surface and adapted to rest in the corresponding seat formed in each head, said lips having an outer convex edge.

2. A car coupling, comprising, in combination, a pair of heads having correspond-
85 ing beveled horizontal edges on an exterior surface of each, knuckles pivotally mounted on said heads and adapted to have a limited vertical movement on their pivots, and a horizontal outwardly projecting lip formed
90 continuously around a horizontal edge of each knuckle on its outer convex side and beveled toward the body of the latter, and adapted to seat on the beveled horizontal edge of the opposing head. 95

3. In a car coupling, a knuckle having a convex outer face and an outwardly projecting concentric lip formed on one end of
100 said knuckle and extending entirely around its outwardly convex surface, said lip being continuous on one side with the flat adjacent end of the knuckle and inwardly beveled on the opposite side from the projecting edge of the lip toward the body of
105 the knuckle.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JAMES F. DURBIN.
VOTAW S. DURBIN.

Witnesses:

W. R. BIDDLE,
KATIE HUNKER.