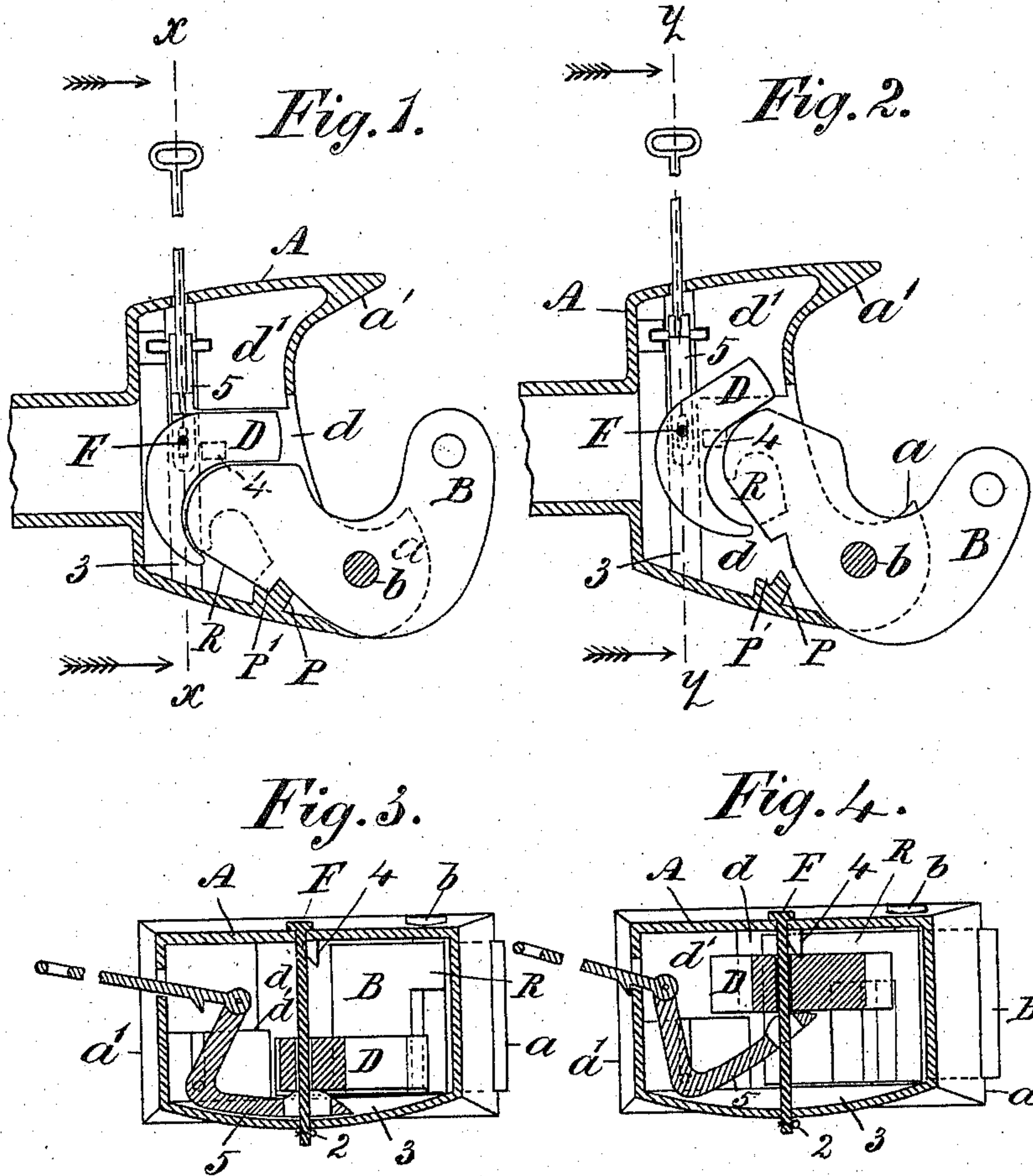


(No Model.)

M. J. GRADY & R. McMILLAN.  
CAR COUPLING.

No. 575,343.

Patented Jan. 19, 1897.



Witnesses:  
John Grist  
A. H. H. H.

Inventors:  
Michael J. Grady  
Richard M. McMillan  
By Henry Grist  
Attorney.



# UNITED STATES PATENT OFFICE.

MICHAEL JOHN GRADY AND RICHARD McMILLAN, OF KINGSTON, CANADA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 575,343, dated January 19, 1897.

Application filed November 12, 1896. Serial No. 611,843. (No model.)

*To all whom it may concern:*

Be it known that we, MICHAEL JOHN GRADY and RICHARD McMILLAN, of the city of Kingston, in the Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Car-Couplings; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a horizontal section of a draw-head embodying our invention, the parts in position as when coupling is effected. Fig. 2 is a like section showing the parts in the uncoupled position. Fig. 3 is a vertical section of the draw-head on line X X, Fig. 1; and Fig. 4 is a like section on line Y Y, Fig. 2.

Our invention relates to certain improvements in a car-coupling for which we obtained Letters Patent of the United States numbered 549,566 and dated November 12, 1895, and has for its object to reinforce the resistance of the knuckle to pressure and pull and to complete the outward throw of the knuckle by continuous engagement with the heel of the keeper or locking-block when raised by the lever to strike the inclined face of the lug pendent within the draw-head.

Our invention consists in providing the interior of the draw-head rearwardly of the knuckle with a grooved or channeled resistance block or post and the knuckle with a lug to engage said post or block, whereby said post and lug will jam the heel of the knuckle against the keeper or locking-block, and thereby relieve the pivot-pin of the knuckle from pull strain, and the heel of the knuckle bearing against the post resists inward pressure against the outer end of the knuckle; also, in providing the heel of the knuckle with a flange or filling to continuously engage the heel of the keeper or locking-block to insure complete opening of the knuckle to receive the incoming knuckle in coupling when the locking-block or keeper is lifted and swung into the side recess by striking against the inclined face of a lug pendent from the top of the draw-head internally, as shown in our before-recited patent.

A is the body of the draw-head, having arms  $a$   $a'$  at the front, which receive intermediately the opposite coupling. The draw-head has

an internal cavity  $d$  in front, and the top of one side is extended horizontally to make a shelf or recess  $d'$  to lodge the locking-block or keeper D from falling while uncoupled.

B is a V-shaped knuckle hinged to arm  $a$  by a pintle  $b$ , passing through the elbow and through jaws on the arm.

D is a V-shaped keeper or locking-block in the cavity  $d$  and in thickness less than half the height of the cavity.

F is a guide-pin passing through the top and bottom of the draw-head and loosely through the locking-block or keeper D, and extends below the bottom of the draw-head a sufficient distance to apply a cotter-key 2 to prevent the pin rising when the block is lifted, and the draw-head internally is provided with a transverse depression 3 to seat the elbow-lever 5, journaled within the cavity of the draw-head, to lift the locking-block to uncouple.

4 is a lug pendent from the top of the interior of the draw-head and has an inclined face toward the recess  $d'$ , so that when the locking-block is lifted by the lever the block strikes against the inclined face and swings to lodge in the recess  $d'$  or shelf to uncouple, and when dislodged by the inturn of knuckle B coupling is effected by the locking-block falling to the floor of the draw-head interveningly of the wall and knuckle resists the pull on the knuckle.

When the rod attached to lever 5 is pulled, the free end of the lever lifts the locking-block or keeper D against the inclined face of the pendent lug 4, and the inclined face by the impingement causes the block to rotate horizontally on pin F and moves one end of the block into the recess  $d'$ . To keep the block in the raised position for coupling and while entering the recess, the other end of the locking-block, by frictional engagement with the knuckle, throws it out to the full extent to receive the knuckle of the incoming coupling, the frictional contact not ceasing by reason of the formation of the heel of the knuckle.

Our improvements are as follows:

P is a resistance-block cast to project from the wall interior of the draw-head, and said block has a V-shaped groove  $P'$  vertically.

R is a flange or filling at the heel of the knuckle and forms a path for frictional contact with the point or heel of the locking-



block when raised to uncouple, so that some portion of the heel will be in continuous engagement with and operate against the flange or filling R when uncoupling, thereby unerringly throwing out the knuckle to the fullest extremity to receive the incoming knuckle to effect coupling when the locking-block strikes the inclined face of lug 4 and lodges said block in the recess  $d'$ .

10 The flange or filling R has a V-face to seat in the V-groove in the resistance-block, and said block resists the inward pressure on the outer end of the knuckle when pressed by bumping or coupling, and when in that position the knuckle is close against the resistance-block P and coupling effected by the locking-block having fallen to the coupled position. The knuckle and locking-block will then jam together and relieve the pin or  
15 pintle  $b$  of a pull strain, the resistance-block P taking most of the strain.

We claim as our invention—

1. The combination with the draw-head having an internal side recess  $d'$ , and a pendent inclined face-lug 4, at the interior top,  
25 a swinging knuckle B, having a flange or fill-

ing R, at the heel, a guide-pin F, passing through the top and bottom of the draw-head, a gravitating locking-block or keeper D, sliding on said pin, and having a curved heel in continuous frictional engagement with said flange or filling, and a lever 5, fulcrumed within the draw-head to lift said locking-block against said lug, as set forth. 30

2. The combination with the draw-head having an internal side recess  $d'$ , an inclined face-lug 4, pendent from the interior top, and a resistance block or post P, at the side, of the swinging knuckle B, having a flange or filling R, at the heel, and stopping against said post, a pin F, vertically within the draw-head, a gravitating locking-block or keeper D, sliding on said pin, and having a curved heel traversing said flange or filling in a continuous manner, as set forth for the purpose  
40 described. 45

MICHAEL JOHN GRADY.  
RICHARD McMILLAN.

Witnesses:

G. A. MITCHELL,  
E. OFFORD.