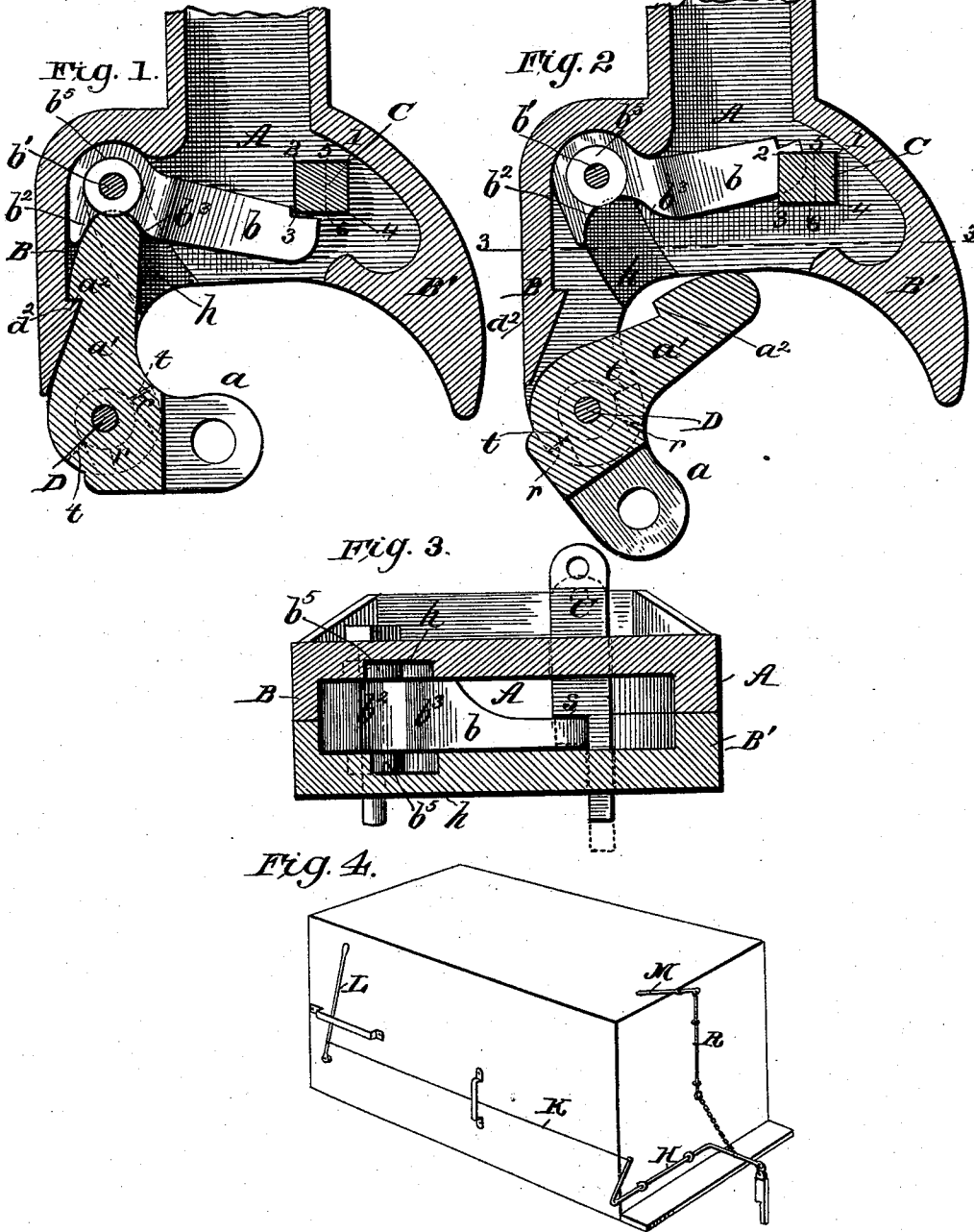


(No Model.)

T. GASKINS.
CAR COUPLING.

No. 536,139.

Patented Mar. 19, 1895.



WITNESSES:

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THOMAS GASKINS, OF ARCADIA, FLORIDA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 536,139, dated March 19, 1895.

Application filed April 21, 1894. Serial No. 508,428. (No model.)

To all whom it may concern:

Be it known that I, THOMAS GASKINS, of Arcadia, in the county of De Soto and State of Florida, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

My invention relates to that form of car coupling popularly known as the "Janney" type, in which the draw head is provided upon one side with an articulated knuckle adapted to couple with a similar knuckle on the other draw head, which knuckles are provided with means for locking them rigidly in their coupled position, or allowing them to be turned outwardly to be disengaged from each other.

My invention consists chiefly in the means for so locking these knuckles that they may be freely and easily disengaged while the parts are under the influence of the draft strain, so that there is no necessity for slackening or backing the train to uncouple.

Figure 1 is a horizontal section through the draw-head showing the coupled position. Fig. 2 is a similar view showing the uncoupled position. Fig. 3 is a vertical section taken through the line 3—3 of Fig. 2 and Fig. 4 is a view showing the different means for lifting the pin to uncouple.

In the drawings A represents the draw-head which has a hollow chambered portion B on one side, and a curved forward projection B' on the other side. In the outer end of the side B of the draw-head there is pivoted or hinged upon a vertical pin D, a coupling knuckle *a a'* constructed as a short elbow lever whose outer arm *a* forms the coupling hook, and whose inner arm *a'* is at right angles to the outer arm and is acted upon by locking devices. These locking devices consist of a horizontal lever *b* and a vertical pin C. The lever *b* is pivoted upon a vertical pin *b'* which is upon one side of the draw head and directly behind the arm *a'* of the knuckle, when in coupled position, and directly in rear of the pivot pin D of the knuckle. At one end of the lever *b* on its front side and immediately in front of its axis of articulation is a curved seat *b² b³* in which the rounded end of the knuckle arm *a'* plays, working therein as an abutment. In the opening movement of the knuckle its hook end *a* moves outwardly, and its inner arm *a'* moves toward

the center of the draw bar and bears against the side *b³* of the seat in lever *b*, tending to throw the free end of lever *b* rearwardly in the draw-head, and in the closing movement of the knuckle its arm *a'* strikes the side *b²* of the seat in the lever *b*, and tends to throw its free end outwardly or to the front.

When the cars are coupled and the knuckle is in the position shown in Fig. 1 a locking pin C upon the opposite side of the draw-head is arranged to drop vertically through a hole in the draw-head, and passes behind the notched end of the lever *b*, preventing its free end from moving to the rear from the pressure of the end of the arm *a'* against the side *b³* of the seat in lever *b*, which pressure is caused by the draft strain on the outer or hooked part *a* of the knuckle, and so long as the pin C remains behind the free end of lever *b* the knuckle *a a'* is locked in the coupled position. When, however, the pin C is raised above range of engagement with the arm *b*, the said arm may move to the rear, and the knuckle arm *a'* and the hook *a* move outwardly, to permit of the uncoupling of the cars, as shown in Fig. 2. When the draft strain is on the knuckle the pressure of its rear end is reduced in proportion to the leverage which its short arm *a* bears to the longer arm *a'*, and this pressure of its rear end is still further very greatly reduced by the lever *b* because the end of arm *a'* works against the lever *b* at a point very close to its axis, which causes the longer free end of lever *b* to rest so very lightly against the pin C, that the frictional contact thereagainst is very light, and does not interfere with the free and easy lifting of the pin C to uncouple, even when the full draft strain is on. The pin C is made square at its upper part, its cross section being indicated at 1, 2, 3, 4, in Fig. 1, and the hole in the upper part of the draw bar is made to correspond. The lower end of the pin is, however, only about half the size, being cut away on one side, so that its cross section is only that shown at 1, 5, 6, 4, and the hole in the lower part of the draw bar is made to correspond. There is therefore left on the inner side of this pin C a shoulder *s*, see Fig. 3, which when raised above the plane of the end of lever *b* allows the latter to move back in coupling, and when dropped below the

plane of lever b locks this lever from going back, and holds the coupling locked in its closed position.

On the back side of arm a' of the knuckle there is formed a shoulder a^2 which, when the car coupling is closed, locks into and bears against a similar shoulder d^2 formed on the inner side of the draw-head. When two draw-heads come together forcibly the strain is partly taken from a' of the knuckle by means of the shoulders a^2 and d^2 .

The knuckle $a a'$ of the draw bar is formed around its axis with the customary stop shoulders r that engage with similar stop shoulders t on the draw-head to limit the range of oscillation of the knuckle. The lever b is also formed around its axial hole with a cylindrical boss b^5 at the top and bottom which play within corresponding recesses in the draw-head and distribute the wear and strain, and thus relieve the axial pin b' . The knuckle $a a'$ is also provided with similar bosses for the same purpose. To permit the lever b to be inserted in the mouth of the draw bar, curved recesses or channels h at top and bottom of the throat are formed in the walls of the draw bar to give passage to the bosses b^5 in inserting or removing the lever b .

In setting the devices for automatic coupling, the parts are put in the position shown in Figs. 2 and 3 with the shoulder s of pin C resting upon the end of lever b . Now when the cars come together, the knuckles are closed by the impact, and the rear end of arm a' striking against the side b^2 of the seat in lever b , throws its free end to the front from beneath the shoulder s of the pin C and allows the latter to pass behind the lever b which is immediately locked thereby, and in turn locks the long arm a' of the knuckle.

To uncouple the cars this is easily effected even when the draft strain is on, because there is but little frictional resistance on account of the reduction of leverage by the arrangement of the parts described. The lifting

of the pin may be effected either from the top, front, or side of the car, by the devices shown in Fig. 4, in which H is a double crank shaft, connected to the pin by a chain, or other means which crank shaft is worked from the top of a car through rod R and lever M , or from the side of the car through rod K and lever L . When worked on a passenger car lever M may or may not rise above the level of the platform.

I am aware that this type of car coupling, comprising a jointed knuckle, a locking cam for the knuckle, and a retaining dog for the locking cam, is old, and I therefore only claim my peculiar construction and arrangement of the parts, in which a leading feature is the transverse lever b pivoted upon one side of the draw-head immediately behind the axis of the knuckle and extending across the draw-head to its opposite side to co-operate with the pin C . This, it will be seen, provides such a relation of leverage in the parts as to render the uncoupling of the cars practicable while the draft strain is on.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the draw-head and its hinged knuckle; of the locking lever b having seat $b^2 b^3$ for the rear arm of the knuckle, and a vertically adjustable locking pin C made larger at its upper end than at its lower end, and having a shoulder s adapted to rest upon the free end of lever b or drop behind it substantially as and for the purpose described.

2. The combination with the coupling knuckle, and the draw-head having channels $h h$ in the top and bottom walls of its throat; of the locking lever b having bosses $b^5 b^5$ around its axial hole and a detachable axial pin b' substantially as and for the purpose described.

THOMAS GASKINS.

Witnesses:

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JOHN CROSS.