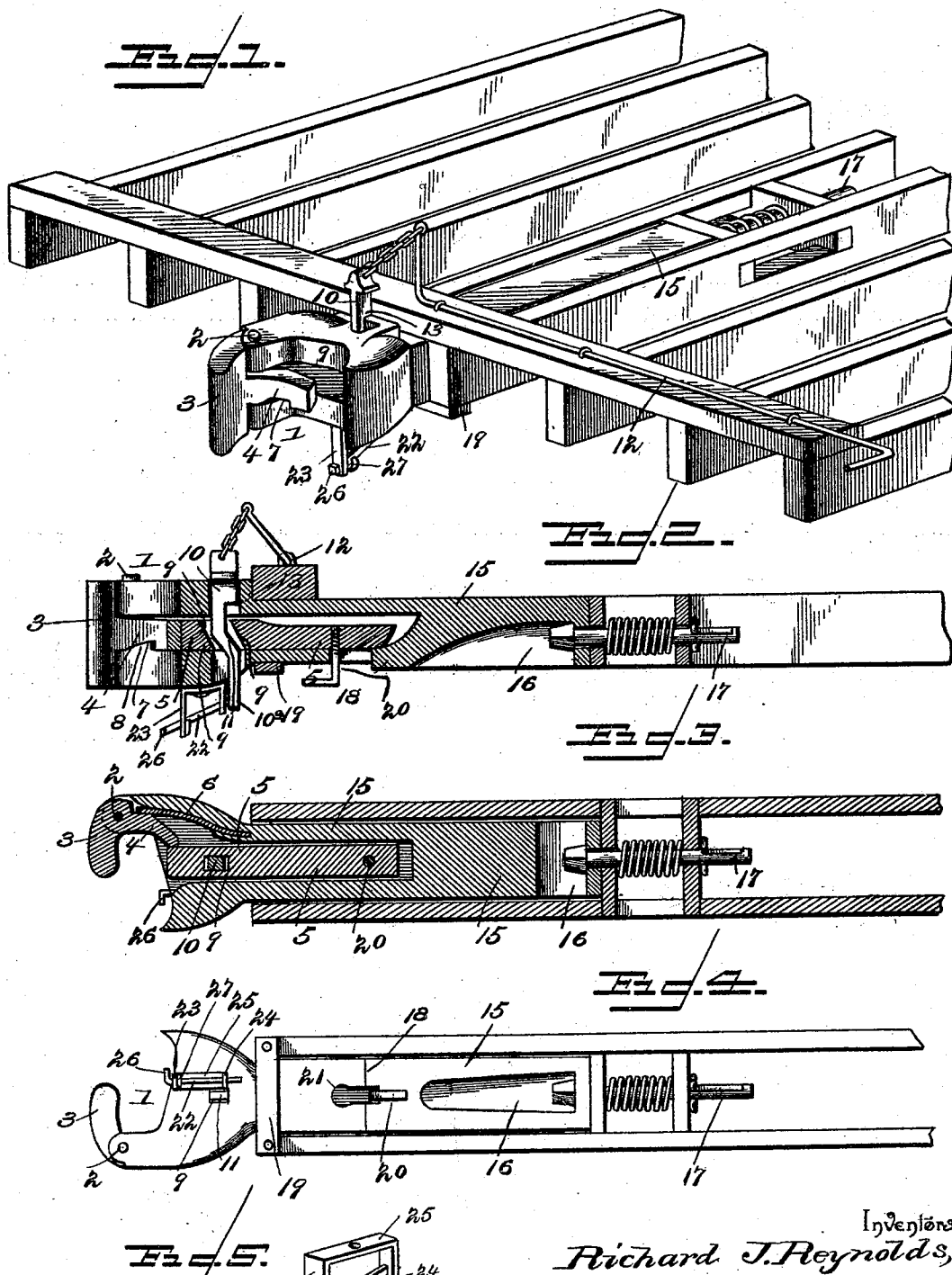


(No Model.)

R. J. REYNOLDS & G. M. JONES.
CAR COUPLING.

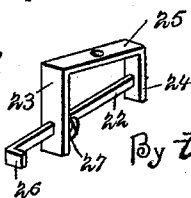
No. 518,968.

Patented May 1, 1894.



Witnesses

E. H. Stewart
N. W. Piley



By their Attorneys.

Inventors
Richard J. Reynolds,
George M. Jones,

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UNITED STATES PATENT OFFICE.

RICHARD J. REYNOLDS AND GEORGE M. JONES, OF SPRINGVILLE, ALABAMA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 518,968, dated May 1, 1894.

Application filed June 6, 1893. Serial No. 476,724. (No model.)

To all whom it may concern:

Be it known that we, RICHARD J. REYNOLDS and GEORGE M. JONES, citizens of the United States, residing at Springville, in the county of St. Clair and State of Alabama, have invented a new and useful Car-Coupling, of which the following is a specification.

The invention relates to improvements in car-couplings.

The object of the present invention is to improve the construction of car-couplings and to provide one which will couple automatically and which may be readily uncoupled without going between cars.

A further object of the invention is to provide means for automatically uncoupling should a draw-head become loose, to prevent the draw-head from being entirely drawn out and dropping upon the track and causing the wreckage of cars.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings: Figure 1 is a perspective view of a car-coupling constructed in accordance with this invention. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a horizontal sectional view. Fig. 4 is a reverse plan view. Fig. 5 is a detail perspective view of the safety attachment for preventing draw-heads from becoming separated accidentally.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a draw-head, having pivoted thereto, by a knuckle pin 2, a knuckle 3, which is provided with an inwardly-extending arm 4, and which is adapted to open as soon as released by a locking-bar 5, in order to be in proper position preparatory to coupling. The arm of the knuckle is engaged by a horizontal spring 6, which is disposed longitudinally in the opening of the draw-head and is secured therein at its rear end, its front end being free and engaging the arm for opening the knuckle. In order to relieve the knuckle-pin of the strain when the knuckle is closed, the arm 4 is provided, at its lower edge, with a shouldered recess 7, which, when the knuckle is closed, receives an upwardly-extending

lug 8, formed integral with the draw-head and engaging the shoulder formed by the notch 7, whereby the strain is directly communicated to the draw-head and is taken from the knuckle-pin. The locking-bar is disposed longitudinally of the draw-head and is arranged therein and is adapted to project sufficiently to engage the arm of the knuckle to prevent the latter from opening and to lock it closed when the cars are coupled. The front end of the locking-bar is provided with a rearwardly-inclined opening 9, forming front and rear inclined walls and receiving a vertically-movable key 10, which is provided with a rearwardly-inclined (lower) portion 11 fitting in the opening 9 whereby, when the key is lifted, its inclined portion will engage the rear inclined wall of the opening 9 and move the locking-bar 5 inward to release the knuckle and when the key descends it will engage the front inclined wall of the opening 9 and move the locking-bar outward for engaging the arm of the knuckle. The upper end of the key 10 is connected by a chain with an arm of a rock-shaft 12, and is provided at its rear side with a shoulder 13, adapted to rest upon the upper face of the draw-head to hold the locking-bar retracted when desired to obviate the necessity of a train-hand remaining at the rock-shaft after he has lifted the key. When the knuckle closes its arm automatically lifts the key sufficiently to pass the locking-bar but not sufficiently to carry the shoulder of the key in engagement with the upper face of the draw-head. The rear end of the draw-bar 15 is provided with an inclined recess 16, at its lower face to enable access to be had to the tail bolt or pin 17 to permit the tail bolt or pin to be readily removed when broken and be quickly replaced by a new one without removing or detaching the other parts of the coupling. The draw-bar is provided on its lower face with a shoulder 18, which may be formed integral with the draw-bar or be formed by a separate piece secured thereto; the shoulder is adapted to engage a cross-piece 19 of the frame of the car to prevent the draw-head being entirely drawn out in case of breakage of its connections to avoid wreckage of cars.

In order to automatically uncouple cars when the draw-head of one of them becomes

disconnected from its car, a depending pin 20 is provided and is connected to the locking-bar. The pin 20 is arranged in a key-hole slot or opening 21, of the bottom of the draw-bar, and should the latter become disconnected from its car, the draw-head in moving outward will carry the depending pin, which has a hooked lower end, in engagement with the cross-bar 19 and cause the locking-bar to be retracted to open the knuckle. This prevents any liability of the draw-head, should it become disconnected from the car, falling upon the track and forming an obstruction upon which cars could be wrecked. The depending pin is squared and is normally arranged in the narrow portion of the key-hole slot, which prevents its accidentally unscrewing and becoming lost; but it may be readily screwed to the locking-bar and unscrewed therefrom when it is arranged in the enlarged portion of the key-hole slot. The rear end of the draw-bar is provided with a perforation or opening for a pin or bolt 17, and the head of the latter is arranged in the inclined recess for the purpose set forth. A draw-spring or springs for cushioning the draw-bar may be provided and arranged in the usual manner.

Cars are prevented from uncoupling while passing over rough roadbeds by an inclined supporting-bar 22, slidably mounted in depending sides 23 and 24, of a bracket 25, which is secured to and depends from the draw-head. The bracket consists of a top plate, and the said sides 23 and 24, the former being longer to secure the inclination of the supporting-bar which is arranged in openings of the lower ends of the sides 23 and 24. The inclined supporting-bar is provided at its front end with a lug 26, preferably formed by bending the bar laterally, and it is provided intermediate of its ends with a split stop-ring 27, which engages, or is linked into, a perforation of the supporting-bar to retain the supporting-bar in the bracket. When ill-matched car-couplings are coupled the inclined supporting bar is moved inward or backward instead of being broken or injured as would be the case were it rigidly secured to the bracket. Car-couplings in moving vertically on each other will be prevented from separating and uncoupling by the supporting-bar, which projects forward sufficiently to have its front end lie beneath the vertical plane of the draw-head, which is coupled to the one on which the bracket is mounted; and each draw-head is designed to be provided with a safety device of this character.

It will be apparent that the car-coupling is simple and comparatively inexpensive in construction and positive and reliable in operation; that it is capable of automatic coupling and of being readily uncoupled without going between cars; that the draw-head, if separated from a car, cannot fall therefrom and become an obstruction on the track, but will be automatically uncoupled to prevent it from being entirely drawn out; and that

the couplings constructed in accordance with this invention cannot be accidentally uncoupled through jolting incident to a passage over a rough roadbed. It will also be apparent that the safety device is simple and effective and can not be broken or injured if struck by a mismatched car-coupling.

Other advantages of the invention will be readily apparent, and its construction and operation will be fully understood and appreciated by those skilled in the art.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

The vertically movable key is provided below its inclined portion 11 with a depending vertical portion 10^a which serves as a guide for the actuating key.

What we claim is—

1. In a car-coupling, the combination of a draw-head, a knuckle pivoted thereto and provided with an arm, a longitudinally-movable locking-bar arranged within the draw-head and provided at its front end with an inclined opening, and a vertically-movable key engaging the opening of the locking-bar and adapted to extend and retract the latter, substantially as described.

2. In a car-coupling, the combination of a draw-head, a knuckle pivoted thereto and provided with an arm, a longitudinally-movable locking-bar mounted in the draw-head and provided with an inclined opening forming front and rear inclined walls, and a vertically-movable key mounted in the draw-head and having an inclined portion located in the opening of the locking-bar and adapted to engage the rear wall of the opening when it is raised to retract the locking-bar and to engage the front wall of the opening to extend the locking-bar when it is lowered, substantially as described.

3. In a car-coupling, the combination of a draw-head, a knuckle pivoted thereto and provided with an arm, a longitudinally-movable locking-bar mounted in the draw-head and provided with an inclined opening forming front and rear inclined walls, and a vertically-movable key mounted in the draw-head and provided with an inclined portion arranged in the opening of the locking-bar and provided at its upper end with a shoulder adapted to rest upon the upper face of the draw-head to hold the key elevated, substantially as described.

4. In a car-coupling, the combination of a car provided on its frame with a transverse piece, a draw-head provided in its bottom with a key-hole opening, a knuckle pivoted to the draw-head, a longitudinally-movable locking-bar arranged in the draw-head, and having a threaded opening and a depending polygonal pin threaded and secured in the opening of the locking-bar and depending from the draw-bar of the draw-head and ar-

5 ranged in rear of the transverse piece for engaging the same, said pin being of a size to turn freely in the enlarged portion of the key-hole slot and being prevented by its size from turning when in the narrow portion of the slot substantially as described.

10 5. In a car-coupling, the combination of a draw-head having a pivoted knuckle, a bracket secured to the draw-head and depending therefrom, and a supporting-bar mounted in the bracket and arranged below the draw-head and projecting forward from the bracket to limit the vertical movement of car-couplings on each other to prevent them separating, substantially as described.

15 6. In a car-coupling, the combination of a draw-head having a pivoted knuckle, a bracket secured to the draw-head and depending therefrom, and a sliding supporting-bar mounted in the bracket and projecting forward therefrom, substantially as and for the purpose described.

20 7. In a car-coupling, the combination of a draw-head having a pivoted knuckle, a bracket secured to the draw-head and depend-

ing therefrom, and an inclined supporting bar slidably mounted in the bracket and having a limited movement and projecting forward from the bracket, substantially as described.

30 8. In a car-coupling, the combination of a draw-head having a pivoted knuckle, a bracket secured to and depending from the draw-head and having sides of unequal length arranged at its front and back and provided at their lower ends with openings, the front 35 side being longer, an inclined supporting-bar slidably mounted in the openings and provided at its front end with a laterally-extending lug forming a stop, and a stop-ring connected with the sliding supporting-bar between the sides of the bracket and retaining the bar therein, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

RICHARD J. REYNOLDS.

GEORGE M. JONES.

Witnesses:

JAMES P. PITTMAN,

IRA J. SPERRILL.