

UNITED STATES PATENT OFFICE.

WILLIAM McNAMES, OF NORTHVILLE, SOUTH DAKOTA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 532,087, dated January 8, 1895.

Application filed July 23, 1894. Serial No. 518,372. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM McNAMES, a citizen of the United States, residing at Northville, in the county of Spink and State of South Dakota, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in car couplings and it has for its objects among others to provide an improved coupling which shall be simple and efficient in its operation, and of that class adapted to be automatic in its action and arranged to be uncoupled from either the top or side of the car without the necessity of the trainmen going between the cars. I provide a novel form of link whereby it is better adapted to enter the mouth of the drawhead. I provide a novel form of coupling pin and equip it with anti-friction rollers and with a roller-guide for the lifting pin, which latter is designed for detachable connection with the lifting crank, the said crank being connected with means on the top and side of the car for the uncoupling when desired, a latch being provided for holding the parts in position ready for coupling, said latch being connected with a plunger in position to be actuated by the entering link to throw the latch out of operative contact with the means which hold the parts ready for coupling. I provide means for relieving the pivot of the latch and lever from undue strain. I also provide means for holding the link horizontal for coupling with the next car. Doors are provided for concealing and protecting the operating parts. I aim also at improvements in the details of construction whereby the coupler is rendered more durable and is capable of manufacture at minimum expense.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The novelty in the present instance resides in the peculiar combinations and the construction, arrangement and adaptation of

parts, all as more fully hereinafter described, shown in the drawings and then particularly pointed out in the claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation, with portions broken away, showing my improvements applied to a car. Fig. 2 is a view from the opposite side of the car. Fig. 3 is a vertical longitudinal section through the draw-bar. Fig. 4 is a perspective view of the link.

Like letters of reference indicate like parts throughout the several views.

Referring now to the drawings A designates a portion of the car and B its drawbar, the mouth of which is provided with the usual tapered walls, and upon the top of this drawbar is, about one third back from its front end, the boss *a*, through an opening in which and a coincident opening in the drawbar works the coupling pin C which is adapted to enter the link in the usual manner. The upper end of this coupling pin is provided with a head *c* which is bifurcated and in the ears thus formed is supported a transverse pin C' upon opposite ends of which are the rollers D, while pivoted upon this pin and between the said ears is the reduced end *e* of the substantially horizontal plate E the upper face of which is grooved longitudinally as seen at *e'* and from which rise the ears E' in which is supported a cross shaft *e*² on which is mounted to revolve freely a grooved roller E².

F is the lifting rod or bar. It has one end mounted to slide freely in the groove of the guide plate and beneath the grooved roller as shown, while its other end is flattened and provided with a hole *f* which is adapted to receive a pin or key *f'* after the rear end has been passed through an opening *g* in the plate G on the crank shaft H which is journaled across the front end of the car in suitable bearings thereon. Upon one side of the car the end of this crank shaft is bent horizontally rearward as shown at H' and to this end is connected one end of a chain H² the other end of which is connected to the lever *h* which is pivoted between its ends as shown at *h'* on

the side of the car and its other end is connected by chain H^3 with the end of the horizontal portion I' of the crank shaft I which is journaled in suitable bearings on the top of the car and is provided with a suitable handle h^3 by which it may be operated to turn the crank shaft H to lift the coupling pin to allow the cars to be uncoupled.

J is a housing on the front end of the drawbar over the boss thereof, the same being slotted at its rear as shown at j to allow of the working of the lifting-pin guide, and the anti-friction rollers are adapted to ride upon the guides j' formed upon opposite ends of this housing as shown.

J^2 are doors hinged at opposite sides to this housing as shown so as to inclose the parts at this point and these doors are provided with a suitable fastening j^2 to hold them closed.

On the upper face of the drawbar near the rear end thereof are the lugs K between which is pivotally mounted on the pin k the metal block K' from the front end of which projects a tongue k' which is pivotally secured within a recess in the vertical block L which at its lower end, carries a roller L' which is located within the rear end of the mouth of the drawhead as seen in Fig. 3. This roller bears on the rear end of the link to keep its outer end horizontal to hold it in position for coupling with another car. The link M is drawn out and pointed at the ends as seen in Fig. 4 so as to permit the same to enter readily into the drawhead of the car.

The crank shaft H is extended upon the opposite side of the car to that hereinbefore described and its end is turned horizontally as seen at H^4 and thence upward as seen at H^5 and the end of this vertical portion is turned outward as seen at H^6 to engage in the notch n of the latch N which is pivoted at n' in the bracket N' on the side of the car and its lower end which is curved is connected with the end of the crank shaft O which is journaled in suitable bearings o upon the under side of the car and to the crank O' of which is connected the rear end of the plunger arm P the front end of which is extended upward and through a slot in the under side of the drawbar as seen at A^5 and is there connected with the plunger P' which is mounted to slide within the drawbar and around which is a coiled spring P^2 , the plunger being so arranged that its front end will be struck by a link as it enters the drawhead.

Q is a lever pivoted on the same pivot as the latch and this lever is connected with the vertical extension of the crank shaft H by a chain Q' as shown so that depression of the lever will rock the crank shaft to uncouple the cars. A spring R connects this lever with the side of the car to normally hold the lever in its uppermost position.

S is a cam lever pivoted at s on the side of the car and adapted to bear against the upper

end of the crank shaft connected with the latch to relieve the pivot of the latter of strain and also for use when changing links.

T is a door hinged at t to the side of the car to cover and protect the latch and other parts on that side of the car.

With the parts constructed and arranged substantially as above set forth the operation will be readily understood. When set for coupling the notch of the latch engages the lateral portion of the crank shaft H and holds the coupling pin elevated. When the link on an approaching car enters the mouth of the drawhead it contacts with the front end of the plunger and forces the same rearward which movement rocks the crank shaft connected with the plunger and throws the latch so that its notch is disengaged from the lateral portion of the crank shaft H and the coupling pin falls. The roller and block at the rear of the drawbar serve as a trip and cause the pin to drop when the plunger is struck by the link. The car may be uncoupled from either the top or side of the car.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. A coupling pin formed with a bifurcated head provided with rollers, as set forth.
2. The combination with a coupling pin, of a pivoted guide thereon, as set forth.
3. The combination with a coupling pin, of a grooved guide pivotally connected therewith, as set forth.
4. The combination with a coupling pin, of a grooved guide pivotally connected therewith and carrying a grooved roller, as set forth.
5. The combination with a coupling pin provided with rollers, of a grooved guide pivotally connected with the pin, and a grooved roller on the guide, as set forth.
6. The combination with the coupling pin, of the lift-bar, the crank shaft to which it is connected, and the pivoted guide on the coupling pin and upon which said lift-bar slides, as set forth.
7. The combination with the drawhead, of the pivoted roller, the vertical block pivotally connected therewith, and the roller at the lower end of said block within the mouth of the drawhead, as set forth.
8. The combination with the drawhead and the plunger at the rear thereof, of the coupling pin, the crank shaft connected therewith, and the latch having a notch and connected with the plunger, substantially as specified.
9. The combination with the pivoted latch, and the plunger, of the crank shaft connecting the same, and the cam lever pivoted on the side of the car to engage said crank shaft, substantially as specified.
10. The combination with the crank shaft

on the end of the car, of the pivoted latch, the pivoted lever, the spring connected therewith and the cam lever, all substantially as shown and described.

- 5 11. The combination with the crank shaft, the coupling pin connected therewith, and the latch having a notch to engage a portion of said crank shaft, of the lever connected with the crank shaft and the spring connecting

the said lever with the side of the car, as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM McNAMES.

Witnesses:

WM. B. CANNON,
JAMES H. HALBERT.