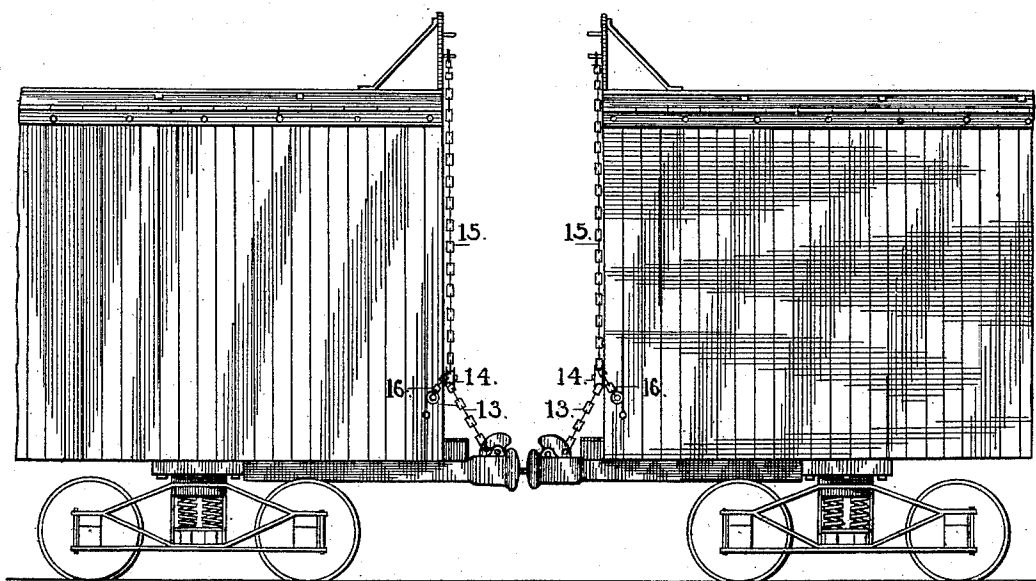
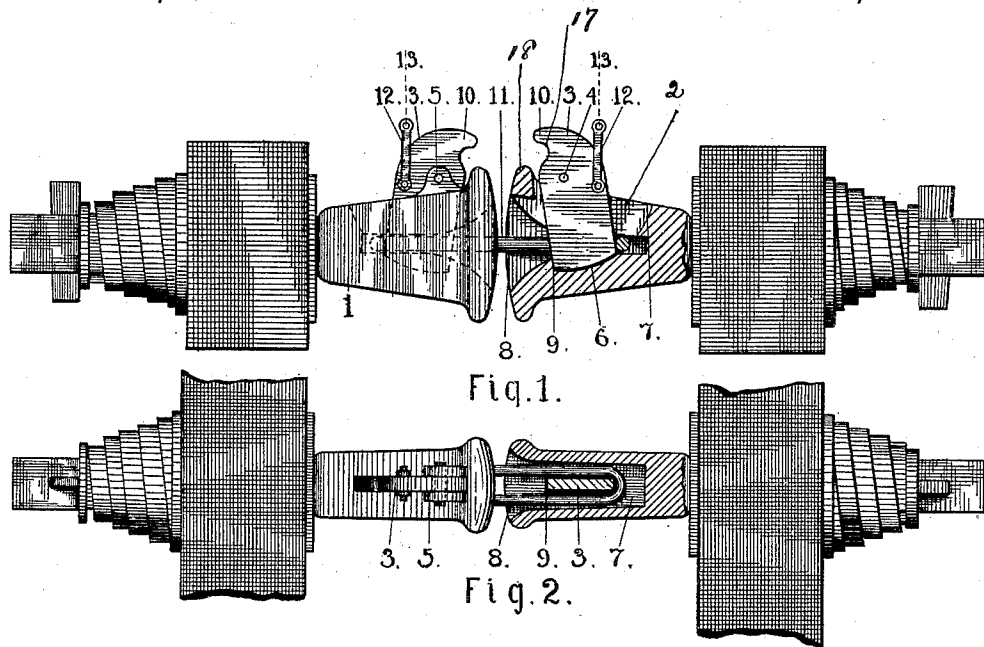


(No Model.)

M. J. McGOWAN.
CAR COUPLING.

No. 465,675.

Patented Dec. 22, 1891.



Witnesses

John Barr.
George Lucas.

Inventor.
Mark J. McGowan
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UNITED STATES PATENT OFFICE.

MARK J. MCGOWAN, OF TORONTO, CANADA, ASSIGNOR OF TWO-THIRDS TO
FRANCIS B. MORROW AND JOHN HARTNETT, OF SAME PLACE.

CAR-COUPLER.

SPECIFICATION forming part of Letters Patent No. 465,675, dated December 22, 1891.

Application filed June 13, 1891. Serial No. 396,185. (No model.)

To all whom it may concern:

Be it known that I, MARK JOSEPH MCGOWAN, laborer, a subject of the Queen of Great Britain, residing in the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Car-Couplers; and I hereby declare that the following is a full, clear, and exact description of the same.

The object of this invention is to construct a draw-head and pin, by means of which the cars when coming together can be automatically coupled as soon as the link enters the draw-head; and it consists, essentially, of forming a rectangular-shaped slot in the upper side of the draw-head, a pin rectangular-shaped in cross-section passing through said slot, the said slot being of a size sufficiently large to allow the pin to freely work therein; a bearing on each side of the slot to receive the spindle of said pin; a shoulder in the lower face of the mouth of the draw-head, against which butts the lower edge of the front of said pin; the mouth of the draw-head made bell-shaped, and the front of the same being made as large as possible consistent with the strength of said draw-head, said mouth tapering rapidly inward to front of said coupling-pin, whence it extends rearward and inward in a straight and horizontal direction with only sufficient space to allow the free forward and rearward movements of the link. By making the mouth of the draw-head as large as possible it will readily receive the links from cars of different heights and rapidly lead them back into their proper position, so that the pin can drop down into said link and securely hold it, the whole being constructed and arranged as hereinafter more fully set forth, and more particularly pointed out in the claim.

In the drawings, Figure 1 is an elevation showing my improved car-coupler, one of the draw-heads being in vertical section. Fig. 2 is a plan view of the same, showing one of the draw-heads in horizontal section. Fig. 3 is an elevation of my coupler, showing it applied to a car and means for operating the same from side and top of car.

Like numerals of reference refer to like

parts throughout the specification and drawings.

In the drawings, 1 refers to my improved draw-head, in the upper side of which is formed a rectangular slot 2 sufficiently longer than the width of the pin 3 to allow the pin to freely move in the same. The pin 3 is provided with a spindle 4, journaled in bearings 5, located one on each side of the slot 2. The pin 3 consists of a piece of metal rectangular in cross-section, having the lower end 6 curved to correspond to the curve of the groove 7 of the mouth 8 of the said draw-head, the said curve extending from the shoulder 9 in front of the coupling-pin 3 to the top of the rear end of the slot 2, said curves 6 and 7 being struck, with the center of the spindle 4 as their center. It will be noticed by reference to Fig. 1 that the pin 3 extends sufficiently above the top of the draw-head 1 to prevent the said pin being turned or lifted out of its place.

On the front face of the extension 10 of pin 3 is formed a depression 17, made so as to register with the upper curved portion 18 of the draw-head. By this arrangement it will be seen that when the link strikes the pin 3 the pin will be pushed back a sufficient distance so that enough space will be left between the lower part 9 of the said pin and the bottom of the slot 2 to enable the link to slide easily therethrough. Such would not be the case were the upper forward part of the pin 3 made perfectly straight. The pin 3 is so arranged in its bearings that the upper portion of its front edge bears against the metal at the front end of the slot 2, and the lower front edge of said pin bears against the shoulder 9, formed in the lower face of the mouth 8.

The mouth 8 of the draw-head 1 is made bell-shaped, the front of the mouth being as large as possible, so that it will readily receive the links from cars of different heights. The said mouth 8 tapers rapidly rearward until it reaches the middle vertical line of the coupling-pin 3 when hanging down, whence it extends rearward in a straight and horizontal direction, with only sufficient space for the free rearward and forward movements of the link 11, so that said link 11 will always be in a horizontal plane and will always pull hori-

zonally on the coupling-pin 3, causing a heavier strain to always be upon the shoulder 9 and a lighter strain to be on the metal at the front end of the slot 2.

5 It will also be noticed by reference to Figs. 1 and 2 that the greater thickness of the pin 3 is that which is submitted to the strain caused by the link 11, and it can be readily understood that a pin constructed on this
10 principle will stand at least three times more the strain than a pin constructed on any other principle containing the same amount of metal. By providing the coupling-pin 3 with spindles 4 and journaling said spindles in bearings
15 formed on the top of the draw-head and curving the lower end of the pin 3 and the inner face of the draw-head, with arcs struck with the center of the spindles as their center, the said pin will freely turn in its bearings when
20 struck by the coupling-link 11, the lower end of said pin turning rearward along the curve 9, and when the link 11 has passed back to the full extent of the mouth 8 the pin 3 will drop back into its hanging position and the
25 end of the link 11 will bear against the back edge of said pin and throw the strain on the shoulder 9 and the metal at the front end of the slot 2. Connected to the side faces of the coupling-pin 3 near its rear edge is a clevis
30 12, to which is connected a chain or connecting-rod 13, extending upward to and passing over the pulley 14, fixed to the end of the car vertically above the coupling-pin 3. To the end of the chain 13, above the pulley 14, is
35 connected a chain 15, extending upward to the top of the car, and a chain 16, extending outward to the side of the car on a level with the pulley 14. The object of this construction is as follows: Pulling on either the chain
40 15 or 16, the coupling-pin 3 is lifted clear of

the link 11, allowing said link to pass out of the mouth 8, and by fastening either the chain 15 or 16 in their uplifted position the coupling-pin 3 will be prevented from returning to its hanging position, thus keeping
45 it free from engagement with the coupling-link 11. By a construction of this kind it is not necessary for the man coupling the cars to ever go between them for the purpose of coupling or uncoupling the same. The pin 3,
50 being worked on the principle of gravity, will always drop into its hanging position the instant the chains 15 and 16 are released, and, being free to turn on its spindle, it will always move out of the way of the entering link and
55 will drop into the same as soon as the link has cleared it.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is— 60

In a car-coupler, the combination of a draw-head provided with an opening in its upper side, a pivoted pin passing through said opening, a clevis or link connected to said pin, a pulley fixed to the end of the car, a chain or
65 connecting-rod secured to the clevis and extending upward to and passing over the pulley, a second chain secured to the end of the first-named chain above the pulley and extending upward to the top of the car, a third
70 chain similarly secured and extending outward to the side of the car, and means for securing the chains when operated upon, substantially as set forth.

Toronto, May 13, 1891.

MARK J. MCGOWAN.

In presence of—

F. B. MORROW,
M. E. ANGELL.