(No Model.)

C. E. MARK.

CAR COUPLING.

No. 304,115. Patented Aug. 26, 1884.

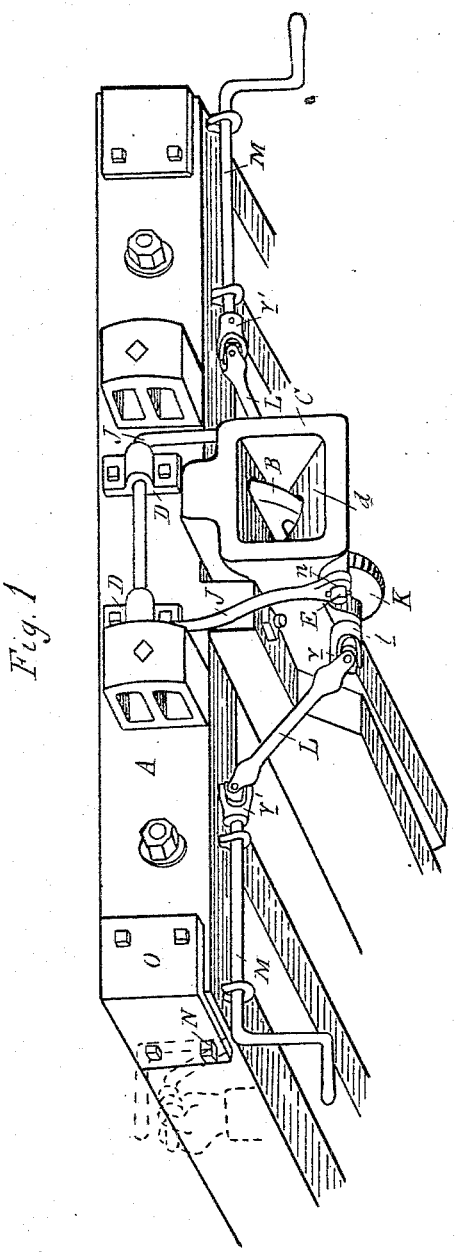

Fig. 1

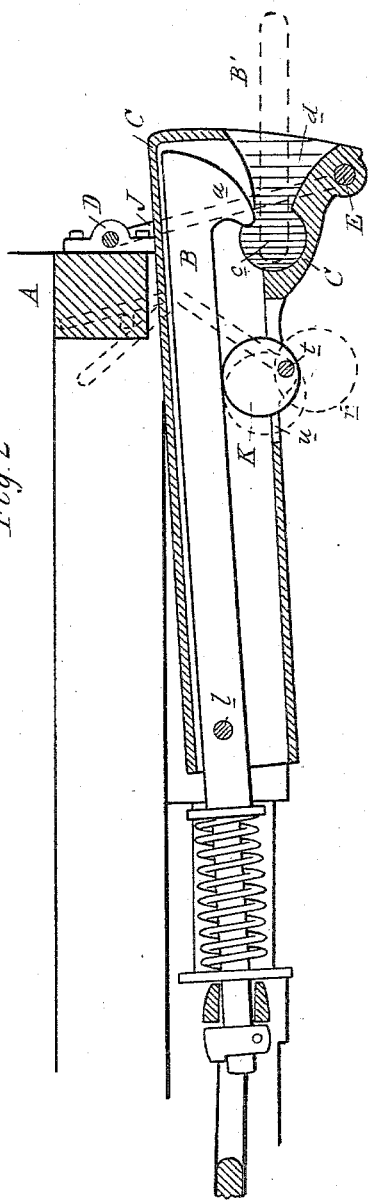

Fig. 2

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UNITED STATES PATENT OFFICE.

CHARLIE E. MARK, OF FLINT, MICHIGAN.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 304,115, dated August 26, 1884.

Application filed July 9, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLIE E. MARK, of Flint, in the county of Genesee and State of Michigan, have invented new and useful Improvements in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in railway-car couplings of that class termed "self-couplers," by means of which, when adjacent cars are uncoupled, the coupling device may be left either in position to immediately couple again on the two cars being brought together, or which will allow the coupling to be left in such position, after uncoupling, as will prevent recoupling on the cars being brought together, and as is necessary frequently in pushing or shunting cars.

It is a great desideratum to have the coupling and its attachments so constructed that when the cars are uncoupled the coupling may be left in the desired position, so that it will readily couple again, or so that it will not couple, as above described.

The object of this invention is to provide the means for accomplishing this end, and the invention is especially designed as an improvement upon a self car-coupler patented to me April 15, 1884, and numbered 296,859.

Figure 1 is a perspective showing my improved coupling and attachments secured to one end of a car, the latter being in section. Fig. 2 is a central longitudinal section of the same through the center of the coupling.

In the accompanying drawings, which form a part of this specification, A represents the front end of a car. To this front are suitably secured the boxes D, in which the bail or gate J swings. This bail or gate is in the form of a parallelogram, preferably as shown, three of the sides thereof being formed of one piece of iron, leaving two free ends, in which are formed eyes *n*, to receive a bolt or bar, E. This bar forms the fourth side of the gate, and supports as in a swinging stirrup the front end of the buffer, as shown.

B is a hook coupling-bar, the hook end whereof is adapted to engage with a coupling-link, B′, by means of the hook *a* on the bar. After the link has entered the flaring mouth *d* of the metallic box or buffer C, it incloses the hook end of the draw-bar and guides the entering link into the chamber *c* through the mouth *d*, leading thereto. The draw-bar and its inclosing-box are pivotally connected together by means of the bolt *l*. A cam, K, is eccentrically secured upon the shaft *t*, which is suitably journaled below the bottom of the coupler and buffer-box, so as to operate against the under face of the draw-bar B through the slot *u*, cut or formed in the bottom of the box or buffer C. The periphery of this cam is flattened, as at *r* in dotted lines in Fig. 2, immediately in rear of a vertical line through the axis of its shaft when the cam is in its lowest position, for purposes hereinafter explained. The cam-shaft is connected at each end by means of universal-joint connections *v* with the connecting-rods L, which are located diagonally to the plane of the cam-shaft and upward, where they connect, by means of similar universal joints, *v′*, with the inner ends of the crank-shafts M, which are pivotally secured to the bottom of the car and project beyond its sides to allow said cam to be operated without the necessity of entering between the adjacent cars to guide the link or uncouple the link from its adjoining support. In order to obtain solid bearings in the crank-arms M, they should be pivotally secured to the bottom of the car, and as the bottom of the buffer-box C is upon the lower plane, the necessity of the diagonally-located connecting-rods and universal coupling is readily seen. Upon each side of the car there projects a stop, N, which stop may be an elongated head of one of the bolts which secure the corner-iron O to the car.

In practice, when the hook *a* of the draw-bar B is engaged with a link, B′, the peculiar form of the hook, partially turning back upon itself at the point, and the peculiar form of the chamber *c* and contracted throat leading from the flaring mouth of the box C to said chamber, have a tendency to keep the projecting end of the link on a level plane. At this time the cam is turned out of contact with the draw-bar. Now, if it is desired to release the hook from its engagement with the link, it is

necessary to turn said cam into contact with the draw-bar, thereby lifting the same until the hook *a* is withdrawn from its engagement with the link. By turning the cam in one direction until its axis is vertical to the axis of its shaft and allowing it to remain in that position whenever the two adjacent cars are run together, the crank-handle, resting against the stop on the side of the car, will hold the cam in that position against being thrown out of position by the impact of the cars coming together, so that no coupling will be effected in shunting the cars about the yard. If it is desired, however, to leave the coupling and cam in such position that when two cars are run together the coupling will be effected, the cam-shaft should be rotated in the opposite direction to that already described, when the bearing or point of contact between the periphery of the cam and the draw-bar will be in rear to the axis of the cam-shaft, so that the impact of two cars coming together will throw the cam over, allowing the draw-bar to fall and its hook to automatically engage with the link. To control the position of the link, when one end thereof is engaged and it is desired to engage the other end with a similar coupling upon the adjoining car of a different height, the operator, standing by the side of the car with his hand upon one of the cranks, turns the cam slightly, but sufficient to slightly raise the draw-bar, and by this means the projecting end of the link is allowed to fall from its elevated position sufficiently to enter the lower mouth of the adjoining coupling.

What I claim as my invention is—

In combination with a car-coupling which is operated by means of a crank and connecting-levers through the medium of a cam-shaft carrying a cam from the side of the car, a stop projecting from the side of the car, substantially as and for the purposes described.

CHARLIE E. MARK.

Witnesses:
H. S. SPRAGUE,
CHARLES J. HUNT.