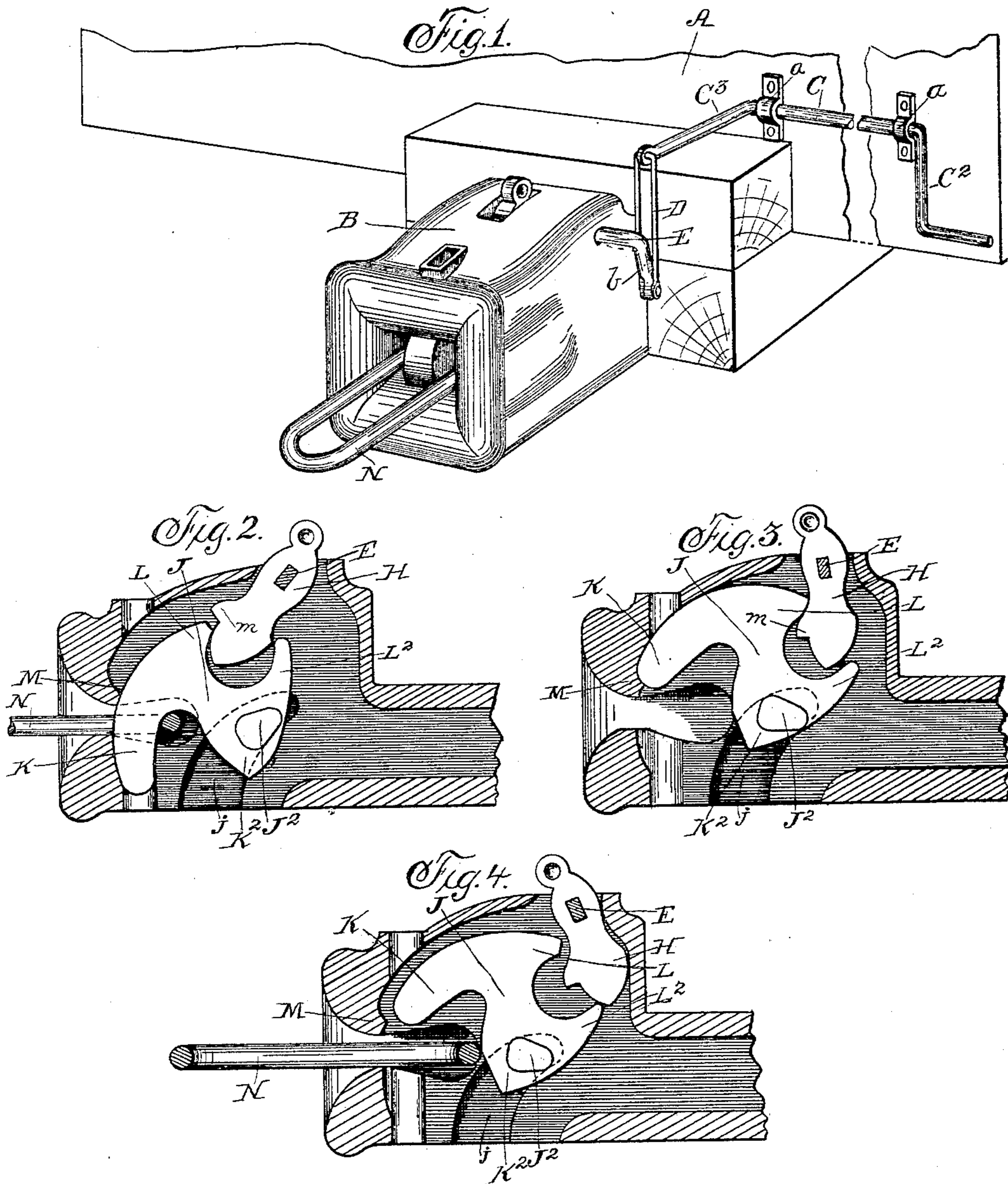


(No Model.)

G. W. DICKEY.
CAR COUPLING.

No. 454,427.

Patented June 16, 1891.



Witnesses
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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 454,427, dated June 16, 1891.

Application filed February 20, 1891. Serial No. 382,166. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. DICKEY, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

My invention relates to the class of car-coupling shown and described in a patent granted to me on the 11th day of November, 1890, the number of which is 440,250.

The object of my invention is to provide means by which the operation of coupling shall be absolutely automatic, and by which in every emergency, as well as in the ordinary act of coupling and uncoupling, the necessity of entrance by the train or yard man between the cars is entirely avoided.

My object, further, is to provide connecting mechanism, operated from the side of the car, which shall be positive in its action and of such construction as not to be damaged or get out of order.

To accomplish these desired results my invention consists, first, in a locking-block pivotally mounted within the interior of the draw-head, having an integral locking or coupling pin extending therefrom, and also a projecting boss formed with said block contiguous to the trunnions thereof and on the same side with the coupling-pin, said boss being adapted to receive the impact of the entering link in the act of automatic coupling, or to eject a link from the draw-head when desired by rotating the block through the instrumentality of a system of levers from the side of the car, together with double lugs or tangs extending from the locking-block on the side thereof opposite to the coupling-pin and boss, and a pivoted cam-block operated by said levers from the side of the car engaging each of said lugs, respectively, in the various stages of operation; second, in such a construction of the interior of the draw-head with raceways or channels and a recess, together with the locking-block having the impact-receiving and link-ejecting boss, integral pins, and trunnions within the raceways, as that said block is caused, in effecting an uncoupling from the side of the car by the train or yard man, to assume and be withheld in a position

to automatically couple with the link of an adjacent car; third, in a pivoted locking-block having an integral coupling-pin and impact-receiving and link-ejecting boss, the trunnions of which are within raceways or channels, a recess adapted to receive the end of the coupling-pin and hold the latter in an elevated position, together with a pivoted cam-block operated by a system of levers from the side of the car, adapted to engage one of the double projections on the locking-block and hold the same in such a position as that when the pressure of the link thereon is removed the block falls by gravity automatically into position for recoupling, the end of the coupling-pin being engaged by the recess of the draw-head, and the impact-boss being in a position to receive the blow of the entering link; fourth, in a journal-pin constituting the pivot of the cam-block, which latter actuates the locking-block, said journal-pin extending to the exterior of the draw-head on the side and below the plane of the top thereof, an actuating-lever extending to the side of the car, and connections between said journal-pin and actuating-lever located at a point distant from the longitudinal center of the draw-head; fifth, in the combination and arrangement of the various parts to accomplish the various desired results, reference being now had to the following detailed description and the accompanying drawings, in which—

Figure 1 is a perspective view of the exterior of the draw-head. Fig. 2 is a longitudinal section showing the position assumed by the parts when the coupling is made or the locking-block holding a link in readiness to couple. Fig. 3 is a like view showing the position assumed when the parts are in a position in readiness to automatically couple with the link of an approaching car. Fig. 4 is also a like view showing the position which the parts are caused to assume when the link of the adjacent car is exerting a pressure inwardly upon the locking-block and it is desired that the locking-block should resume its position in readiness to recouple when said pressure is withdrawn.

A in Fig. 1 designates a portion of the end of a car, to which the draw-head B is secured in the suitable well-known manner.

C is a lever formed into a winch C^2 for a portion of its length and also into the forwardly-extending arm C^3 , said lever C being pivotally secured upon the end A of the car by the clips a .

D designates a link or clevis passing at one end through an eye in the end of the arm C^3 , its remaining end passing through an eye in the lower end of the downwardly-bent arm b of the journal-pin E, which latter after passing through an aperture in the side of the draw-head, has its length formed square and extended through the upper portion of the cam-block H, Figs. 2, 3, and 4, its extreme end being journaled in the opposite side of the draw-head B.

Referring now to said Figs. 2, 3, and 4, J designates the locking-block, having the pivotal pear-shaped trunnions J^2 extending from each of its sides, said trunnions resting and playing within the raceways or channels j , which latter commence at the lower edges of the draw-head and extend upwardly and rearwardly within the interior of said draw-head on each of its sides. Formed integrally with said locking-block J is the locking-pin K, and on the same side of the block, contiguous to the trunnions J^2 , the impact-receiving and link-ejecting boss K^2 is formed.

On the opposite side of the locking-block J are located the projecting tangs L and L^2 , between which in certain stages of operation is the lower cam portion of the cam-block H, these tangs being respectively engaged by the cam-block in manner to be described.

M designates a lip forming a recess in the interior upper roof and at the forward end of the draw-head B and m is a notch formed on the cam-block H.

N is the link.

The operation of my improved coupling is as follows: In Fig. 1 the coupling is shown effected with the link N, the parts being in the position shown in said figure. When it is desired to uncouple and release the link N, the train or yard man, from the side of the car, pulls forward upon the winch C^2 of the lever C, causing the arm C^3 to describe an arc in an upward direction, and by the clevis D drawing inwardly upon the end of the bent arm b of the journal-pin E, which latter in turn causes the lower cam portion of the cam-block H to engage against the tang L^2 , rotating the locking-block J on its trunnions J^2 , which latter as they turn within their raceways j tend to elevate the locking-block and throw the same forwardly, so that when the coupling-pin K clears the recess formed by the lip M the said pin engages and rests within said recess, being thus held in an elevated position in readiness to automatically couple, as shown in Fig. 3. When now the link of an approaching car with which it is desired to effect a coupling enters the bell of the draw-head, its advancing free end strikes against the boss portion K^2 of the locking-block J, slightly raising the lower portion of

the block and causing the trunnions J^2 to ride diagonally upward within the raceways j , which dislodges the end of the coupling-pin from its engagement within the recess formed by the lip M, when the locking-block by gravity falls into engagement with the link, being somewhat assisted in this operation by the weight of the lever C and connections, which, when the parts are in readiness for automatic coupling, are not in their normal position. When the cars are coupled and the draw-heads compressed so that the link is impinging and pressing against the locking-block, in order to so adjust said block in a position which will cause the end of the coupling-pin K to engage the lip or recess M upon the withdrawal of the link, the train or yard man pulls upon the winch C^2 outwardly from the end A of the car, the cam-block H engages against the tang L^2 , the apex of the cam portion of the block H passes by said tang L^2 , first causing the locking-block to assume the position shown in Fig. 4, and holding said block in that position until the link is withdrawn, when the lower portion of the block falls by gravity, changing its position so that the end of the coupling-pin engages within the recess formed by the lip M in readiness to again automatically recouple. The notch m of the cam-block H in the position shown in Fig. 1 serves to prevent the disengagement of the coupling-pin with the link, and also in the position shown in Fig. 4 will prevent the locking-block from assuming such a position as that the end of the coupling-pin will fail to engage in the recess formed by the lip M. Assuming that a car is to be shifted from one track to another, a coupling is effected with said car automatically and the latter pulled beyond the switch, when the train or yard man operates the winch C^2 , causing the locking-block J and cam-blocks H to assume the position shown in Fig. 4, when the car may be "kicked" to the desired point, the draw-heads between the cars being compressed and the link impinging and bearing against the locking-block. When the link is withdrawn from the draw-head by the separation of the cars, the locking-block falls, the parts resuming the position shown in Fig. 3. It will be apparent from the foregoing that this result is accomplished without going between the cars or following the train. Suppose two cars to be approaching one another, each having a link held within its draw-head, as shown in Fig. 1. Either one of said links may be ejected from the side of the car by the train or yard man pulling quickly upon the winch C^2 , rotating the locking-block J, causing the boss K^2 to strike suddenly and forcibly against the end of the link, the coupling-pin being first withdrawn from engagement. In most cases the tail end of a locomotive is provided with a projecting goose-neck and when operating connections are located at or near the center of the draw-head and above the same they are liable to be damaged by

the goose-neck; but it is apparent that with my form of journal-pin E the lever-connections are located at the side of the draw-head.

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

1. In an automatic car-coupling, a locking-block, a coupling-pin integral with the locking-block, an impact-receiving and link-ejecting boss, and double projecting tangs formed with said locking-block, a pivoted cam-block operated by a system of levers and connections from the side of the car, engaging the tangs, trunnions on each side of the locking-block within raceways in the interior of the draw-head, and a recess adapted to receive and hold the end of the coupling-pin, as and for the purposes set forth.

2. In car-coupling, a draw-head having formed within its interior upwardly and rearwardly extending raceways or channels, a lip forming a recess in the upper wall or roof of the draw-head at its forward end, together with a locking-block, trunnions on each side of the said locking-block within the raceways or channels, a coupling-pin, double tangs, an impact-receiving and link-ejecting boss formed integrally with the locking-block, and a pivoted cam-block operated by a lever or levers from the side of the car, engaging the said tangs, as and for the purposes set forth.

3. In an automatic car-coupling, a locking-block, a coupling-pin, an impact-receiving and link-ejecting boss, and double tangs formed integrally with the said locking-block, upwardly and rearwardly extending raceways or channels, pear-shaped trunnions on each side of the locking-block within said raceways, a link bearing against the locking-block, and a recess formed in the forward portion of the roof of the draw-head, together with a piv-

oted cam-block having a notched face, operated by a lever or levers, and connections from the side of the car, adapted to engage one of said double tangs and withdraw the locking-block into position to engage the recess when the pressure of the link is removed, as and for the purposes set forth.

4. In a car-coupling, a cam-block within the interior of the draw-head, engaging and actuating a locking-block and coupling-pin, a journal-pin constituting the pivot of the said block, extending to the exterior of the draw-head on the side thereof, trunnions traveling within the rearwardly-extending raceway, a lip forming a recess, together with an operating-lever, and connections between said lever and the journal-pin, located at the side of the draw-head, as and for the purposes set forth.

5. In a car-coupling, the combination of a locking-block, a coupling-pin, impact-receiving and link-ejecting boss, and double-tang projections integral with the locking-block, pear-shaped trunnions on each side of the locking-block, upwardly and rearwardly extending raceways or channels, within which are the trunnions of the locking-block, a lip forming a recess adapted to engage the end of the coupling-pin, a cam-block engaging the double tangs, a journal-pin constituting the pivot of the cam-block, extending to the exterior of the draw-head on the side thereof, and an operating-lever extending to the side of the car, and connections between said lever and the journal-pin, located at a point to one side of the draw-head, as and for the purposes set forth.

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Witnesses:

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