(No Model.)

W. B. FOSTER.

CAR COUPLING.

No. 345,582. Patented July 13, 1886.

Fig. 1.

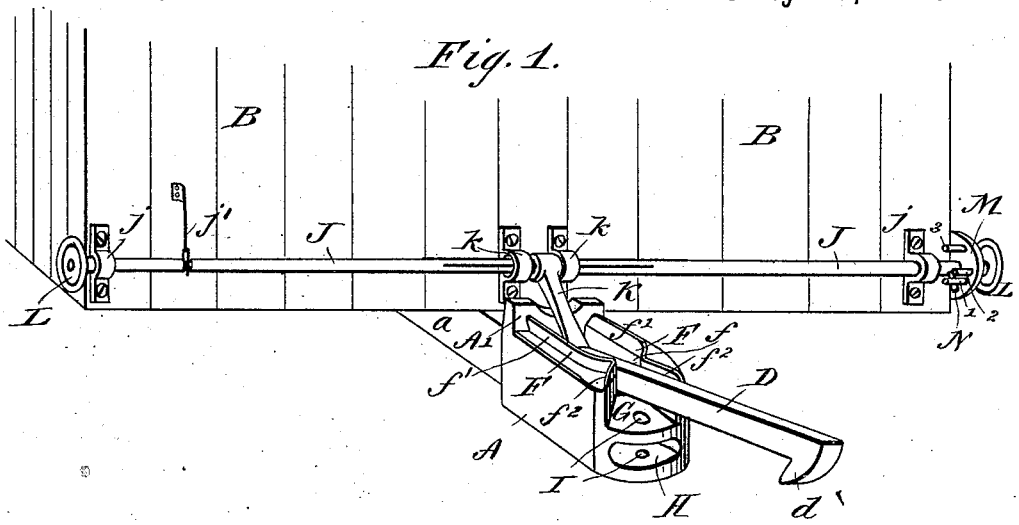


Fig. 2.

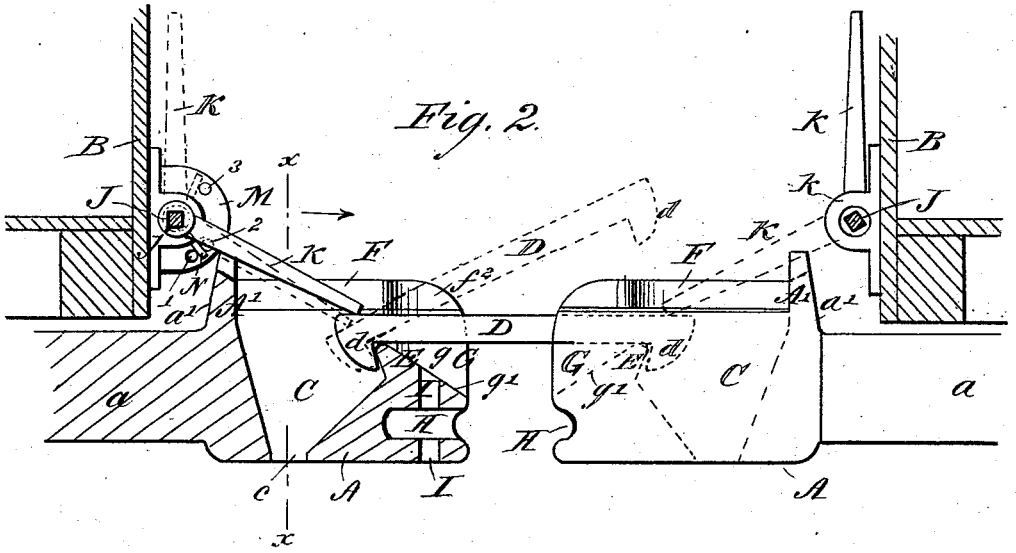
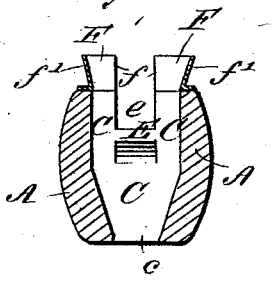


Fig. 3.



WITNESSES:

Donn Twitchell

Edwd McClark

INVENTOR:

Wm B Foster

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM B. FOSTER, OF DERBY, KANSAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 345,532, dated July 13, 1886.

Application filed February 1, 1886. Serial No. 190,562. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BERZELIUS FOSTER, of Derby, county of Sedgwick, and State of Kansas, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

My invention relates particularly to that class of car-couplings in which a coupling-bar having hooked ends is employed; and the invention has for its object to provide a simple, efficient, inexpensive coupling which may be operated for coupling and uncoupling cars without requiring the trainmen to go between the cars and expose themselves to injury.

The invention consists in certain novel features of construction and combination of parts of the car-coupling, all as hereinafter fully set forth and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of part of the end of a box-car with my improved coupling applied thereto, and the arm by which the coupling-bar is adjusted shown in its lowermost position, and the coupling-bar laid loosely in the draw-head. Fig. 2 is a sectional elevation showing parts of two adjacent cars which are coupled, and with parts indicated in different positions in dotted lines; and Fig. 3 is a transverse sectional elevation of the draw-head, taken on the line *x x* in Fig. 2.

The draw-head A of the coupling may be held by its back or bar portion *a* to the body of the car B by any approved supports, and also may be fitted with buffer-springs of any preferred kind. In the draw-head is formed a vertically-ranging central recess, C, which is tapered toward the base, where it opens at *c* through the bottom of the draw-head, thereby providing for the free escape of dust, dirt, rain, or snow from the recess, so they cannot clog or interfere with the proper action of the coupling-bar D, presently described.

At the base of the vertical open slot *e*, formed in the upper part of the outer end of the draw-head, is formed a horn, E, with which the hook *d* of the coupling-bar is adapted to engage, (see Figs. 2 and 3,) and at its top the draw-head has flanges F F at opposite sides of the recess C, said flanges leaning outward slightly at their rear portions, *f' f'*, and being converged somewhat toward the front until they touch the opposite side walls of the draw-head slot *e*, at which points the flanges stand vertically or in alignment with the side walls of slot *e*, as at *f*, whence the flanges F F diverge rather sharply, as at f^2, to stand in line with the flaring sides *g g* of a recess, G, at the top and front of the draw-head, which recess has a sloping floor or base, *g'*, up which the end of the coupling bar may ride to engage the horn E. The flanges F F prevent the coupling-bar D from jumping out of place should the cars come together violently for coupling. The outwardly-leaning parts *f'* of the flanges form flaring side guides to the falling end of the coupling-bar in coupling, and the side walls of the slot *e* and aligned portions *f* of the flanges hold the coupling-bar in place laterally, and serve as fulcrums on which the bar may swing to either side to position its outer end for dropping into the draw-head of an opposing bar, and give free play to the coupling-bar while the cars round curves of the track. The sloping base *g'* of recess C allows the outer end of the coupling-bar to fall to engage a lower draw-head of an opposing car.

Below the recess G there is formed at the end of the draw-head A a recess, H, to receive the end of an ordinary link, and a vertical hole, I, is provided, through which a coupling pin (not shown) may be passed for coupling the link to the draw-head, and whereby cars having my coupling may be coupled to cars having the common link-and-pin coupling. I prefer to make the opposite sides of the draw-head curved vertically, as best seen in Fig. 3, and at its back end the head of the draw-head has a lug, A', which provides a back-thrust shoulder at *a'*. The coupling-bar D has a hook-head, *d*, at each end for engaging the horns E of opposing draw-heads, as shown in Fig. 2.

Across the end of the car B is journaled in suitable eye-plates, *j j*, a shaft, J, and on the squared center portion of this shaft is held loosely the arm or finger-piece K, which is held laterally in proper position relatively to the recess C of the draw-head and the coupling-bar D by eye-plates *k k*, fixed to the car-body, and whereby the arm K must swing up or down accordingly as the shaft J is turned in one direction or the other by either one of

its end hand-wheels L, and whereby, also, the shaft may be moved endwise through the arm K and the eye-plates *j k*.

At one side, near one end of the shaft J, a latch-plate or bracket, M, is fixed to the car-body, and this plate is provided at its inner face with pins or studs 1 2 3, which may be engaged by a pin, N, fixed to the shaft J, for holding or locking the arm K in various positions relatively to the draw-head and coupling-bar, as presently explained. The shaft J may have a snug fit in its eye-plates *j j*, allowing the shaft to be moved endwise, but preventing its end movement by the jar incident to the travel of the car; but the shaft may be fitted loosely in the eye-plates *j j*, and be held against accidental endwise movement by a spring, *j'*, one end of which may engage a groove or shoulder of the shaft, the other end of the spring being fixed to the car-body. (See Fig. 1.)

The operation is as follows: When the car is not in service, the pin N of shaft J will be set below the pin 1 of plate M, allowing the arm K to rest in a notch at the top of the lug A of the draw-head, as shown in Fig. 1; or the arm K may be raised to vertical position, as in full and dotted lines in Fig. 2, where it may be held by setting the shaft-pin N behind the pin 3 on the plate M.

To couple two cars provided with my improved couplings the bar D will be placed in the draw-head of one car—say the left-hand car in Fig. 2—and the shaft J will be moved endwise to disengage its pin N from the pin 1 or 3 in plate M, and the arm K will be swung onto the end of the bar D, where it may be locked in place by moving the shaft J endwise to set its pin N between the pins 1 2 of plate M, and whereby the arm K will hold the coupling-bar D about in horizontal position, as indicated in full lines in Fig. 2, ready to ride up the inclined face *g'* of the draw-head of the opposing car, and so its hook *d* will drop behind the horn E of the draw-head to couple the cars. Should the draw-head of the opposing car be higher than the draw-head holding the coupling-bar, the shaft J will be moved endwise to release its pin N from the pins 1 2 of plate M, and the shaft then will be turned to lower the arm K, to lift the outer end of the coupling-bar D, as in dotted lines in Fig. 2, to allow the bar to drop into the recess C of the higher draw-head and engage its horn E, and should the opposing draw-head be lower the arm K may be raised slightly to allow the outer hook of the coupling-bar to engage the horn of the opposite draw-head. The coupling may, however, be effected with either a higher or lower car by lifting the outer end of the bar D and letting it fall into the opposing draw-head as the cars come together, and this may be the preferred plan. When the coupling is effected, the pins N of the shafts J of both cars will be placed between the pins 1 2 of their latch-plates M, which will lock the arms K of the cars onto or over the ends of the coupling-bar, as in full and dotted lines in Fig. 2, and prevent the bar jumping from the draw-heads, however roughly the cars may be jolted by travel over uneven tracks.

To uncouple the cars, it only is necessary to swing up the arm K of one car, as at the right-hand side of Fig. 2, and release the shaft J of the other car from its latch-plate M, and turn the shaft to lower the adjacent end of the coupling-bar D and lift its other end from the draw-head of the opposing car, and the cars may then be drawn apart.

It is obvious that the shaft J may be operated by an attendant grasping either of the hand-wheels L, and without requiring him to stand between the cars and expose himself to injury.

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

1. In car-couplings, the draw-head A, provided with a recess, C, a slot, *e*, a horn, E, and flanges F F, having outwardly-leaning parts *f' f'*, and converging to the slot *e*, as at *f*, where the flanges range vertically, substantially as and for the purposes set forth.

2. In car-couplings, the draw-head A, provided with a recess, C, a slot, *e*, a horn, E, and an upper end recess, G, flaring sidewise and downward from the slot *e*, substantially as shown and described.

3. In car-couplings, the draw-head A, provided with a recess, C, a slot, *e*, a horn, E, an upper end recess, G, flaring sidewise and downward from the slot *e*, flanges F F, having outwardly-leaning parts *f' f'*, converged to slot *e* at *f*, where the flanges range vertically, and said flanges made flaring at *f²* in line with the sides of recess G, substantially as shown and described.

4. In car-couplings, the combination, with a draw-head recessed at the upper side, and adapted to support and be engaged by a coupling-bar, substantially as specified, of a shaft, J, journaled to the car-body, as at *j j*, an arm, K, held loosely on the shaft above the draw-head and adapted to be swung by the shaft, and eye-plates *k k* on the car-body, preventing lateral movement of the arm K, substantially as shown and described.

5. In car-couplings, the combination, with the draw-head A, recessed at its upper side and adapted to support and be engaged by a coupling-bar, substantially as specified, of a shaft, J, journaled to the car-body, as at *j j*, an arm, K, held loosely on the shaft above the draw-head and adapted to be swung by the shaft, eye-plates *k k* on the car-body, preventing lateral movement of the arm K, a pin, N, on the shaft J, and a latch-plate, M, on the car-body, having pins or shoulders, with which the pin N may be engaged, substantially as shown and described.

W. B. FOSTER.

Witnesses:
W. B. DOLSON,
S. N. MCCOY.