2 Sheets--Sheet 1.

S. USTICK.

Car-Coupling.

No. 168,197. Patented Sept. 28, 1875.

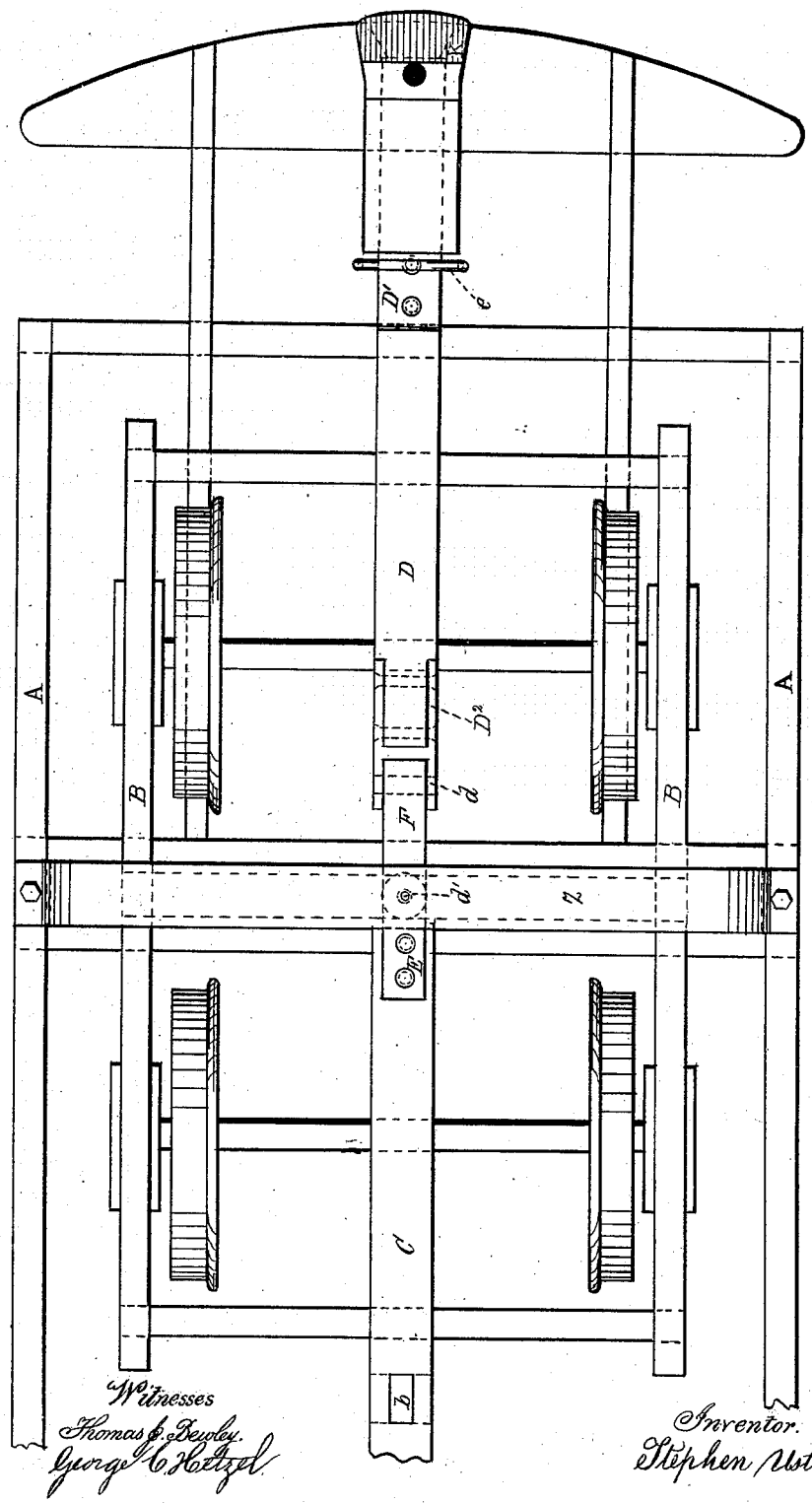

FIG. 1

Witnesses
Thomas G. Bewley.
George C. Hetzel

Inventor.
Stephen Ustick

2 Sheets--Sheet 2.

S. USTICK.

Car-Coupling.

No. 168,197. Patented Sept. 28, 1875.

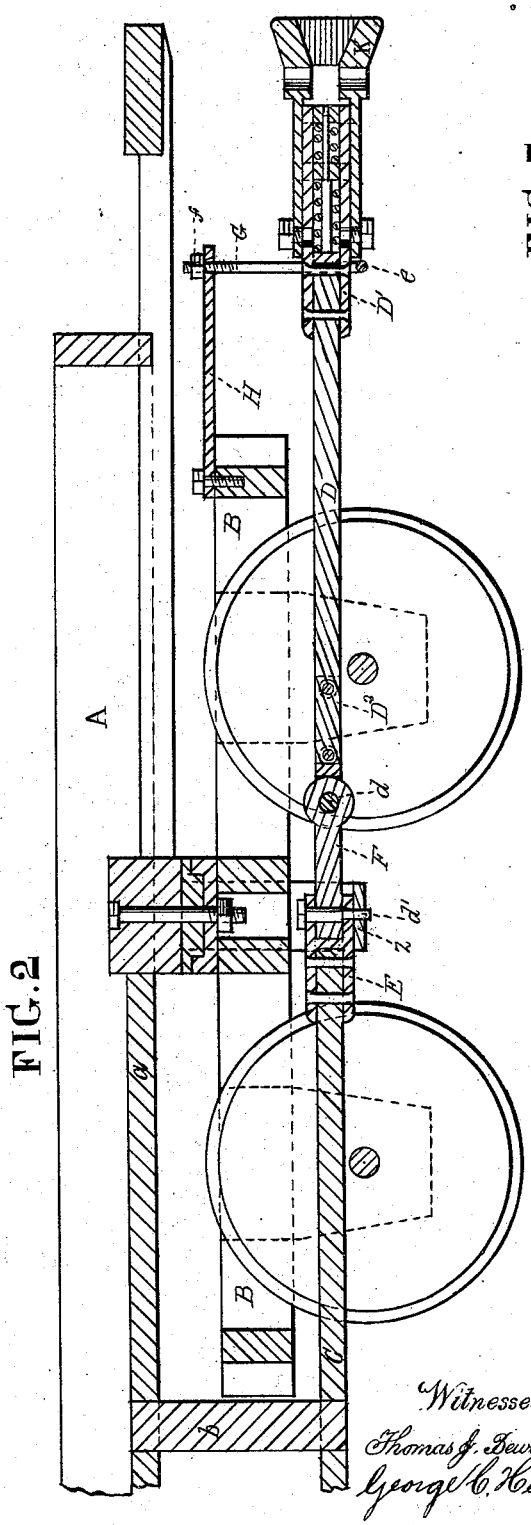

FIG. 2

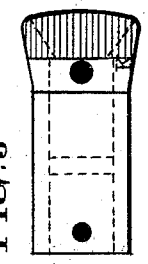

FIG. 5

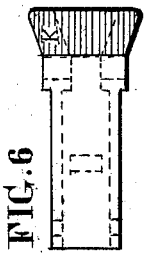

FIG. 6

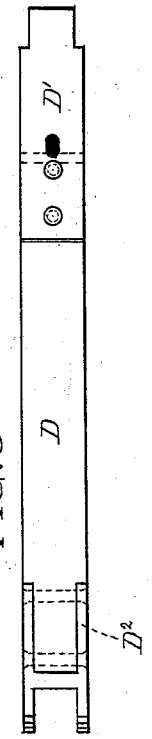

FIG. 3

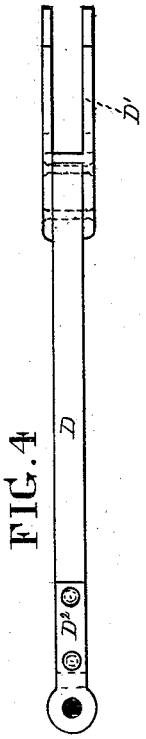

FIG. 4

Witnesses
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Inventor
Stephen Ustick

UNITED STATES PATENT OFFICE.

STEPHEN USTICK, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **168,197**, dated September 28, 1875; application filed December 4, 1874.

To all whom it may concern:

Be it known that I, STEPHEN USTICK, of the city and county of Philadelphia, in the State of Pennsylvania, have invented an Improvement in Car-Couplings, of which the following is a specification:

This is an improvement on my invention for which an application for Letters Patent was filed on the 14th day of August, 1874, and relates to the following particulars:

There is a longitudinal beam or bar beneath the truck-frame, to the ends of which the inner ends of the draw-bars are pivoted, to admit of their turning horizontally in either direction, for the purpose of keeping them in a straight line with each other in turning curves. This beam is projected from the under side of the bottom-frame of the car, by means of a frame-work, (whereby a great power of resistance is given it,) or by suitable hangers; but I prefer the frame-work constructed as hereinafter described. To the inner end of each draw-bar is pivoted an extension-piece, the other end of which is pivoted to the contiguous ends of the beam or bar, the two pivots being at right angles to each other to admit of the vertical and horizontal movement, for the purpose hereinafter stated. In order to avoid great weight in the draw-bars, the middle and main portion is of wood, the ends being of iron, and connected as hereinafter described.

The draw-bars may also be used for coupling the tank with the front car, and also with the locomotive.

In the accompanying drawings, Figure 1 is a bottom view of the bottom-frame A of a car-body, and trucks B B, having my improvements attached. Fig. 2 is a longitudinal vertical section through the middle of the same. Figs. 3 and 4 are side and edge views of one of the coupling-bars B. Figs. 5 and 6 are top and edge views of one of the draw-heads K.

Like letters of reference in all the figures indicate the same parts.

A is the bottom frame of a car-body, and B B the trucks connected therewith in the usual manner. C is longitudinal timber beneath the truck-frames, connected with the middle longitudinal timber *a* of the frame A, by means of studs *b*.

This frame-work may be strengthened by means of braces, if desired.

The ends of the longitudinal timber C are supported by the hangers *z*, which are bolted to the bottom frame A, as seen in Fig. 1. D D are draw-bars, the inner ends of which are pivoted to the bifurcated irons E on the ends of the timber C, there being intermediate links F connected at one end to the inner ends of the draw-bars by means of the horizontal pivots *d*, and at the other end to the irons E by means of the pivots *d'*. The outer ends of the draw-bars are held up at their front ends the proper height by means of the vertical rods G G, which have loops *e* at their lower ends that encircle said bars. The other ends are passed through the projecting ends of the bars H, and held by means of nuts *f*. These bars are permanently connected with the truck-frames, as seen in Fig. 2. The connection of the inner ends of the draw-bars with the beam C by means of the intermediate irons F, the horizontal pivots *d*, and vertical pivots *d'*, provides for both a vertical and horizontal movement of the front ends of the draw-bars. The horizontal movement takes place as the trucks change their position in relation to each other in turning curves, and in that movement the ends of the draw-bars are somewhat elevated as they leave a perpendicular position. When the cars run again on a straight track, the trucks return to a straight line, and the draw-bars assume a central position with them, and are ready for coupling, and they are kept in this position by the weight of the bars inclining the rods G to a vertical position.

The draw-bars may be made in any convenient manner; but in order to be of sufficient strength to resist the bumping without being very heavy, I make the middle and main portion D of hard wood, and the end sections D^1 and D^2 of iron, and confine them together by means of bolts or rivets, as seen in Figs. 3 and 4.

The outer edges *m* of the end timbers of the platforms are curved to correspond to the curve described by the outer end of a draw-bar turning on the pivot *d'*, so as to maintain at all times a uniform space between the contiguous platforms, and thus make it practicable to couple the cars with but little play.

This form is given by striking the circle from the center of the king-bolts, or from centers vertical with the pivots d', on which the draw-bars oscillate.

I claim as my invention—

1. The longitudinal beam C, in combination with the studs b, hangers z, and the frame A of the car-body, for the connection of the draw-bars, substantially as described.

2. The combination of a draw-bar of a railroad-car with link F, bifurcated iron E, longitudinal beam C, and pivots d and d', whereby to effect free horizontal and vertical movements of the draw-bar, substantially as set forth.

3. The combination of the middle section D and end sections D^1 and D^2 of the draw-bars, the sections being held together by means of bolts or rivets, substantially as and for the purpose set forth.

STEPHEN USTICK.

Witnesses:

THOMAS J. BEWLEY,

M. A. LATHAM.