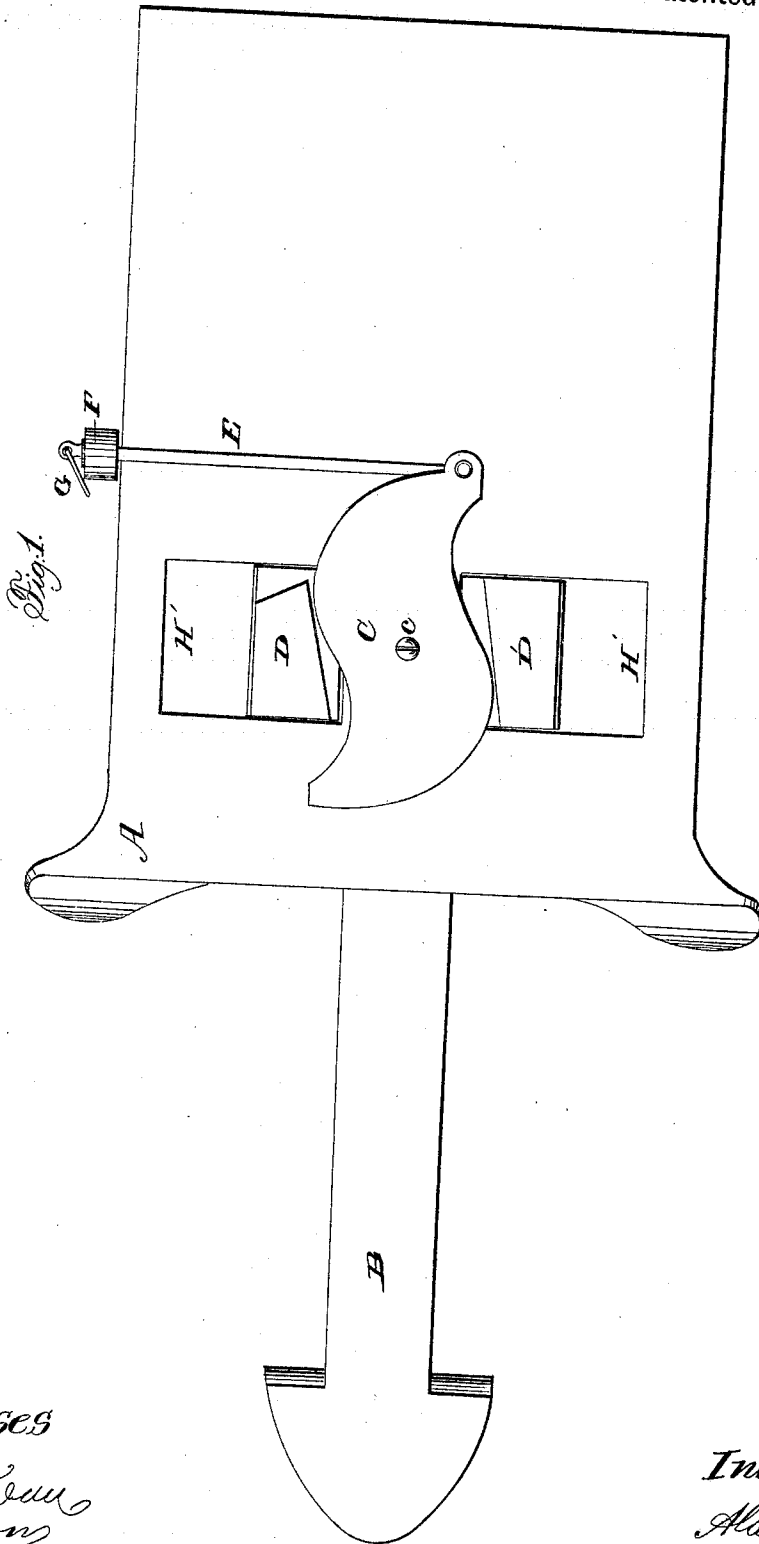


A. I. HOBBS.
Car Coupling.

2 Sheets—Sheet 1.

No. 49,879,

Patented Sept. 12, 1865.



Witnesses
Ja McKean
R Mason

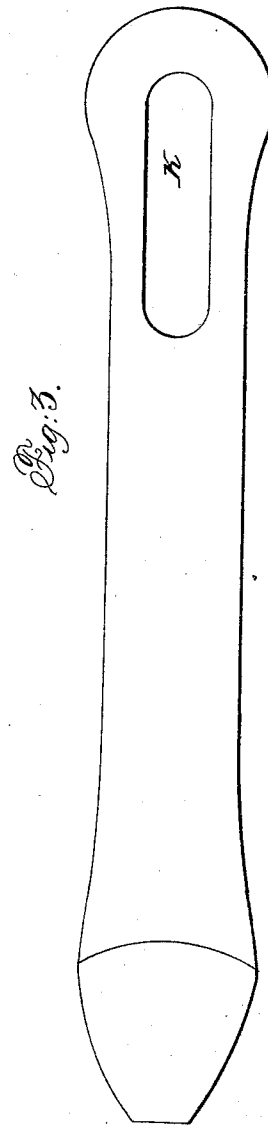
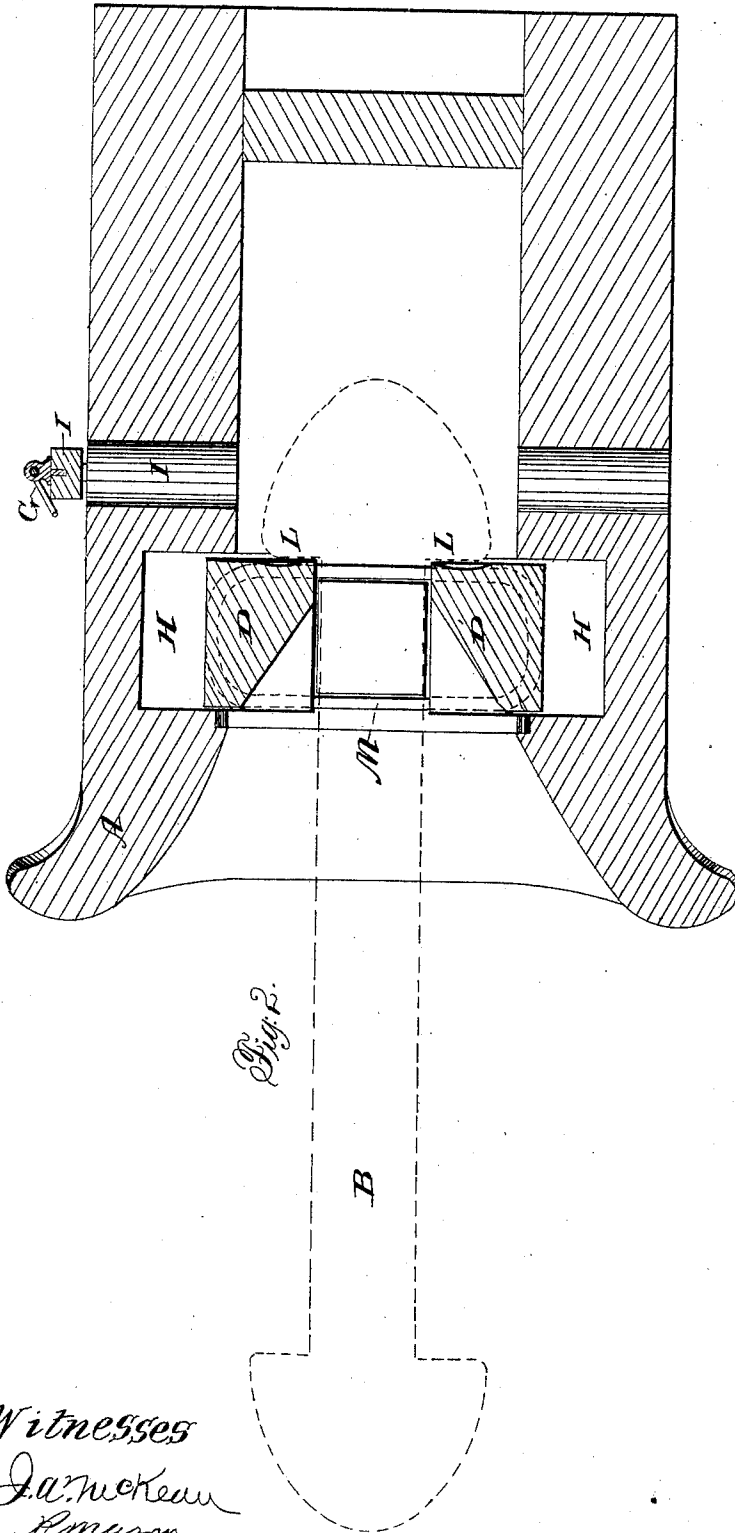
Inventor
Alvan J. Hobbs

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Witnesses
J. A. McKean
R. Mason

Inventor
A. I. Hobbs

UNITED STATES PATENT OFFICE.

ALVIN I. HOBBS, OF KOKOMO, INDIANA.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 49,879, dated September 12, 1865.

To all whom it may concern:

Be it known that I, ALVIN I. HOBBS, of Kokomo, in the county of Howard and State of Indiana, have invented a new and Improved Mode of Constructing Car-Couplings for Railroad-Cars; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a side view of the same as it is seen with the shackle-bar inserted, as when in use. Fig. 2 is a view showing the same as it would be seen when cut by a vertical plane passing through the middle of the coupling. Fig. 3 is a view of a shackle-bar, as seen from above, adapted for connecting my improved self-acting coupling with the ordinary coupling by means of a pin.

The nature of my improvement consists in using for a car-coupling, instead of the ordinary link and pin, a double-headed shackle, the heads having sides curving to an apex, and square, or nearly square, shoulders, working into a buffer or draw-head between jaws consisting of transverse bars, moving up and down through slots in the side of the draw-head, and which are separated by double eccentric cams and levers, and held firmly in position by india-rubber elastic bands passing around them, or half-elliptic springs placed above and below them, so that the bars forced apart by the wedge-shaped head return and hold firmly against the shoulders as soon as the head of the shackle-bar has passed them, and so remain until, by raising the lever by means of the double eccentric cams, the jaws are forced asunder, and the escape of the shackle-bar permitted.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In referring to the letters the same letters indicate identical parts of the machine.

A represents what is sometimes called a "buffer"—sometimes a "draw-head"—which may be made of either cast or wrought iron, the mouth of the draw-head being funnel-shaped. This draw-head may be attached to the ordinary draw-bar by bolts or otherwise, or it may be made as a part of the draw-bar.

B represents the shackle, which is made of

wrought-iron, of a length and size adapted to the work it is intended to perform. This shackle has, when my improvement is used on both the cars to be coupled, a head at each end, the extremity of which is composed of wedge-shaped sides curving to the apex, so that the length of the head shall be about two-thirds of the greatest diameter. The shoulders are made square, or nearly so. They may be slightly inclined forward or back, as intended for unusually light or heavy trains. Where one of the cars has the ordinary pin-coupling, and the other has my improved coupling, a shackle, such as is represented in Fig. 3, may be employed, having a head upon one end only, and a slot, K, in the other for attaching to the pin.

C is a double eccentric cam, attached by the pivot-bolt *c* to the side of the draw-head. The upper and inner end of this cam is an eccentric, raising the transverse bar D, and the lower and outer end is a like eccentric, depressing the transverse bar D. This cam is moved by the rod E, attached to the inner end of the same, at such distance from *c* as may afford any requisite leverage. There are similar double eccentric cams C and rods E on either side of the draw-head, connected by the cross-head F, and having the ring G at its center.

H and H' are slots in and through the funnel-shaped mouth of the draw-head. These slots will be so constructed as to have adequate strength of metal around them, and will be of a vertical height in proportion to the size of the transverse bars D and D' nearly as eight is to five.

D and D' are transverse bars, extending horizontally across the draw-head in the slots H and H', and slightly protruding on each side, so as to sustain the action of the double eccentric cam C. The general shape of the bars is that of a quadrilateral prism. The exterior end of the superior bar is shown in Fig. 1 as cut away, so as to permit the rod E to be thrown forward in operating the cam C, and both bars are cut away at the corners at so much of them as is within the funnel-shaped mouth, as shown in Fig. 2, so as to permit the free entrance and play of the shackle. The portion cut away for the operation of the cam C is inclined, rising from front to rear, so as to permit the construction of a cam of greater transverse diameter, and also increasing its power. The diameter

of the bar should be increased toward the middle, to give greater strength and increase the hold of the breast against the solid part of the draw-head in front of the slots H and H'.

L L in Fig. 2 represent grooves in the posterior sides of the bars, for the purpose of allowing the head of the shackle greater play as the opposite end operates up and down, and at the same time causing the head to hold the bar in place, thus promoting disconnection.

M represents an india-rubber elastic band, one of which passes around both the transverse bars at each end, being placed in suitable grooves in the bars, and within the slots and solid parts of the draw-head, so as to be protected from injury. Instead of these india-rubber bands, half-elliptic springs may be used, set above the upper and below the lower bar, with their centers resting above and below against the draw-head, and having their extremities working in grooves near the ends of the bars.

In Fig. 2, I represents a hole through the draw-head to permit the use of a pin when a shackle, as in Fig. 3, or the ordinary link is employed.

The mode of operating my self-acting car-coupling is readily perceived from the foregoing description. The shackle B, being placed in position in one coupling, is held by the strength of the springs upon the bars in a nearly horizontal position. When the cars come together the conical-headed shackle is directed by the funnel-shaped mouth toward the transverse bars or jaws, which are forced open, and, when the head has passed, close by force of the bands or springs. Any required amount of slack may be provided for by the length of the shackle and depth of the chamber in the draw-head behind the jaws D and D'.

The operation of uncoupling is performed by raising the rods E, by drawing the ring G either directly up or forward along the top of the draw-

head. This may be done either by hand or by a rope carried to any point thought convenient, the cam C thus forcing the transverse bars D and D' severally up and down, thus releasing the head of the shackle.

In the construction of this coupling the relative positions of the parts may be so changed as to bring the cam and its connections within the draw-head by constructing the draw-head with movable sections in its sides, so as to protect the cam and bars from the weather; or this may be done by means of caps on the outside of the draw-head. In case the cam should be placed inside the draw-head, the slots H and H' would be substituted by grooves of like width and length on the inside of the mouth of the draw-head, and the rods E work through slots in the upper side of the draw-head.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Constructing the jaws of a self-acting car-coupling of two transverse bars, D and D', supported firmly in front by breasting upon the solid portion of the draw-head, substantially as set forth.

2. The construction of a double eccentric cam, C, for the purpose of separating the jaws D and D' in such manner that, being suspended at the center c, it may be operated from the extremity with any advantage of leverage that may be necessary.

3. The combination of the draw-head A, the transverse bars D and D', the elastic bands M or equivalent springs, the double eccentric cam C, rods E, and cross-head F, with the shackle-bar B, substantially as described, and for the purposes set forth.

ALVIN I. HOBBS.

Witnesses:

HARRY C. HOLLOWAY,
I. A. MCKEAN,
R. MASON.