

(No Model.)

F. A. FOX.
CAR COUPLING.

No. 455,589.

Patented July 7, 1891.

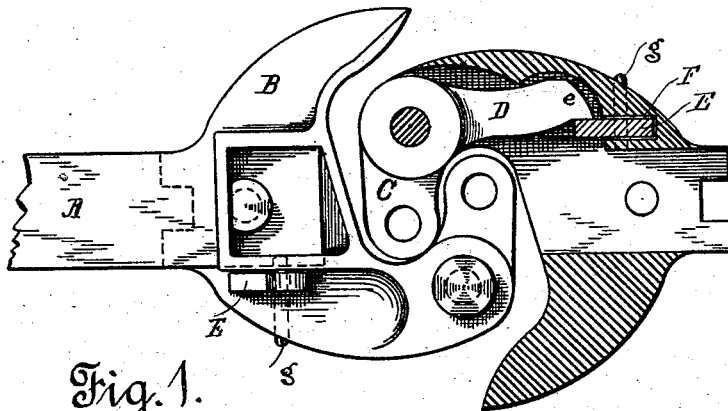


Fig. 1.

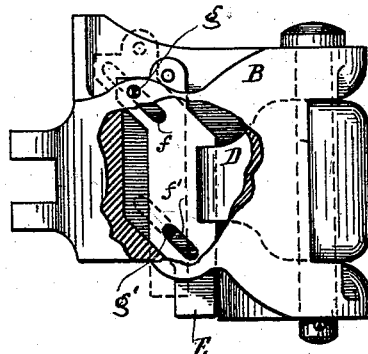


Fig. 2.

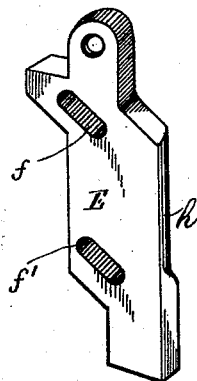


Fig. 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

FRANK A. FOX, OF SAN FRANCISCO, CALIFORNIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 455,589, dated July 7, 1891.

Application filed April 4, 1891. Serial No. 387,672. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. FOX, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My invention has reference to that class of car-couplings in which two recessed heads are provided on their opposite sides with hinged interlocking knuckle-blocks, each of which has a rectangular tail-piece moving in a recess formed in the head, and which is locked to hold the knuckle-blocks in position by some suitable device when the two heads have closed together and the knuckles have been forced into the interlocking position. This style of coupling is known as the "master-builder" type, and has been highly approved by mechanics and engineers generally; but the form of locking mechanism by which the tail-piece and hinged interlocking knuckles are secured and held when the couplings are engaged has not, as far as I am aware, been entirely satisfactory, so as to render the working of the coupling as complete as it should be.

My invention therefore relates more particularly to the locking mechanism; and it consists in providing a locking-pin which shall be simpler and more effectual in its working, whereby I secure complete automatic action and a positive and ample bearing to resist shocks and strains.

Referring to the drawings forming a part of this specification, wherein similar letters of reference denote corresponding parts, Figure 1 is a top plan showing two interlocked coupling-heads; Fig. 2, a side view in elevation, partly broken away, of one of the coupler-heads; and Fig. 3, detail view of the locking pin or bolt.

The letter A indicates the draw-bar, and B the recessed head, of a coupler of the style above referred to.

The hinged interlocking knuckle-block is represented by C, which is provided with the tail-piece D, which extends rearwardly at right angles to the knuckle-block and swings into

a recess formed specially in the head to receive it. The rear end of said tail-piece is formed with an inclined or beveled face *e*. (Shown fully in Fig. 1.)

In order to lock the tail-piece in position when the knuckle-blocks are interlocked or closed, I employ the gravity locking pin or bolt E, (shown at Fig. 3,) which fits, moves, and operates in the vertical opening or passage F, formed in the coupler-head directly across the path of the end of the tail-piece. Said bolt is provided with the inclined slots or openings *f f'*, one at the top and bottom.

Through the vertical opening or passage F, I pass the pins or bolts *g g'* for the purpose of supporting the pin or bolt therein, and upon which the same rides when moved up or down in the opening. By reason of the bolt or pin riding upon the bolts *g g'*, which work in the inclined openings *f f'*, it is obvious that the same moves or rides up or down upon an incline—that is, it drops forward when moving into locked engagement and backward when moving out of or being released from engagement by being lifted upward. The outer edge or face *h* of bolt E is beveled, so as to correspond with the beveled face *e* of the tail-piece. However, the bolt proper is vertical and straight, although having an oblique movement when acted upon by the tail-piece on its rear thrust. As the knuckle-block is thrown into locked position the beveled or inclined face of the tail-piece presses or bears against the beveled face of the locking-bolt and forces it upward, and inasmuch as the same rides upon the bolts or pins *g g'* it is moved oblique in its line of movement in order to allow of the tail-piece moving past. The instant the tail-piece has moved past the locking pin or bolt the bolt moves forward and downward obliquely by gravity until it rests in front of the tail-piece, so as to bar the reverse movement of said tail-piece, and thus hold the knuckle-blocks in an interlocked position. To uncouple the interlocked heads, the bolt is uplifted in the ordinary manner.

My locking mechanism will be found exceedingly simple and effective. It is cheaply made and furnishes a positive lock for the coupler-heads, and at the same time a full bearing entirely across the end of the knuckle-block tail-piece. If so desired, only one in-

clined opening need be formed in the locking-bolt adapted to ride on one bolt extending through the vertical slot; but by preference I prefer to use two openings and riding bolts.

I am aware that instead of providing openings in the locking-bolt and inwardly-projecting bolts, upon which the same obliquely rides, inclined inwardly-extending lugs may be formed in the walls of the vertical opening of the coupler-head, and the side faces of the locking pin or bolt provided with inclined grooves, within which the inclined lugs fit, so as to give the locking-bolt an oblique movement up or down. Owing to the extra expense attached to thus forming the bolt and coupler, I prefer to employ the form of locking-bolt support previously described.

Having thus described my invention, what I claim as new, and desire to secure protection in by Letters Patent of the United States, is—

1. In a car-coupling, the combination of a coupler-head provided with a vertical opening, a locking pin or bolt having oblique

openings formed therein, transverse bolts or pins extending through the coupler and locking-pin openings, and a swinging tail-piece constructed to engage the locking-pin, so as to effect an oblique movement of the same upon the transverse pins or bolts, substantially as set forth.

2. In a car-coupler, the combination of a coupler-head provided with a vertical opening, a locking pin or bolt arranged within said opening, lateral lugs or bolts projecting within the coupler-head opening to engage the locking-pin, and a swinging tail-piece constructed to engage the locking-pin upon its inward swing and effect an oblique movement thereof upon the lateral inwardly-extending lugs or bolts, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK A. FOX.

Witnesses:

LEE D. CRAIG,
N. A. ACKER.