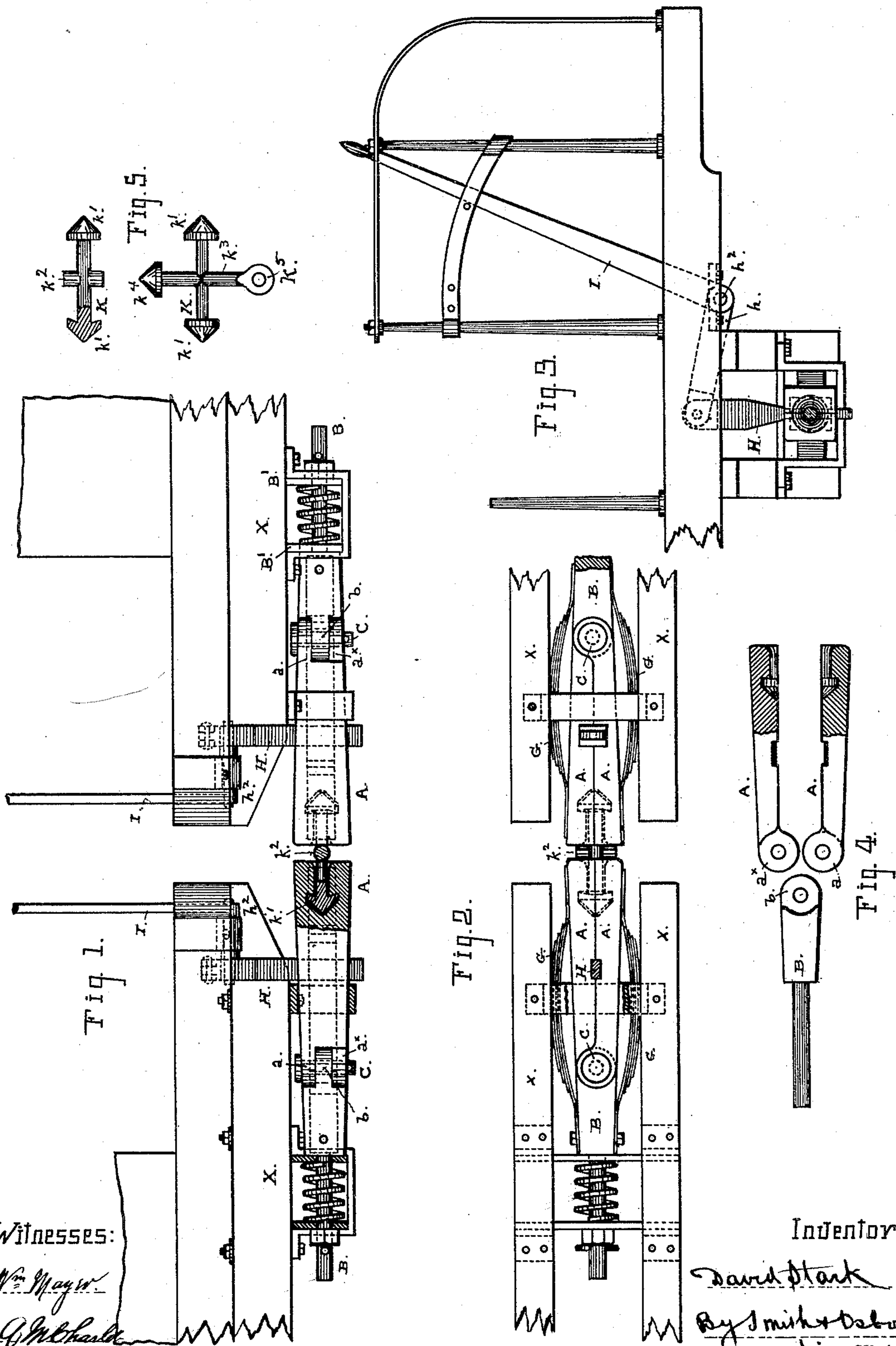


(No Model.)

D. STARK.
CAR COUPLING.

No. 467,614.

Patented Jan. 26, 1892.



Witnesses:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

DAVID STARK, OF SAN FRANCISCO, CALIFORNIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 467,614, dated January 26, 1892.

Application filed April 14, 1891. Serial No. 388,846. (No model.)

To all whom it may concern:

Be it known that I, DAVID STARK, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Automatic Car-Couplings, of which the following is a specification.

My invention relates to automatic couplings for railway-cars; and it consists in certain parts and combination of parts, as hereinafter more particularly described and specified, producing a universal coupling having several improved points and features of construction and operation.

The nature of my said improvements and the manner in which I proceed to apply and carry out the same will be understood from the following description, in which the accompanying drawings are referred to by letters.

Figure 1 represents in side elevation the platforms and portions of the ends of two cars and the coupling on them, parts of one draw-head being cut away to expose the coupling-bolt. Fig. 2 is a plan or top view of the parts of the coupling and the timbers of the platform. Fig. 3 is an end view in elevation of the coupling and a portion of the car-platform. Fig. 4 is a top view in detail of a draw-head and its draw-bar. Fig. 5 shows two different forms of coupling-link.

The draw-head of this coupling is formed of two jaws or parts A A, connected together at the inner end by a hinge-joint and united by that joint also to the end of the spring draw-bar B. The end of the draw-bar has an eye b , that fits between the two outer knuckles a of one jaw, together with the knuckle a^x of the other jaw, and the bolt C, passing through the parts, unites them together. On this joint the two jaws open laterally to take in the head of the coupling-bolt, and on it as a center, also, the closed draw-head is movable laterally under the angular movements of the car-body on its trucks, as in turning curves on the road. The inner end of the draw-bar passes through two plates B' B' , and these are carried by brackets B^2 on the longitudinal timbers X X. Elliptic springs G G are set between the timbers x and the sides of the

II is set between the two jaws in front of the hinge-joint, and is connected with a hand-lever I, operated from the car-platform. The upper end of the bar is attached to the outer end of an arm h , fixed on the end of a short rock-shaft h^2 , and the hand-lever is fixed on this shaft. The lower end of the bar is reduced in width, and sets in the slot when the jaws are closed, while the portion above outside of the slot has greater width with inclined sides that act to spread the jaws apart when pressed down between them. The point of the wedge resting in the slot serves to keep the acting part above in working position, while the arm and hand-lever furnishes a simple means of working the wedge to spread the jaws.

The coupling-bolt K is of novel construction in having conical heads k' with recessed back faces on a straight cylindrical shank, the form of which will be understood more clearly from the view of the bar in Figs. 1 and 5, where the head is shown in cross-section. A boss k^2 of cylindrical or spherical shape larger than the opening in the end of the draw-head when the jaws are closed, is formed on the shank of the bolt midway between the two heads for the purpose of taking the pressure of one draw-head against the other coupled to it and of preventing the head of the bolt from being forced against the body of the cavity in the draw-head. The inner or meeting faces of the jaws are recessed to correspond with the shape of the head and shank of the bolt, each half of the draw-head having one-half of the recess or cavity. In any longitudinal section through the axis of the link, whether taken vertically or in a horizontal plane or at any degree of inclination between them, the head of the bolt is arrow-shaped, with the rim or outer edge of the cone setting backward beyond the center or at the point where the shank joins the head. This shape is followed, also, in the recess or cavity for the head. The thrust or pressure of one draw-head against the other is taken from the head of the link by the boss or enlargement on the shank, as suitable clearance is provided at the bottom of the cavity to keep the conical head of the bolt out of contact when the two coupled draw-heads are jammed against the boss, as shown in Fig. 1 of the drawings. All pulling

forces or those exerted in the opposite direction bring the back or base of the conical head to a close seat against the front of the cavity, and the shape given to these parts has the effect to draw the two jaws of the draw-head together or preventing them from separating. The elliptical springs, however, act to prevent the jaws from separating accidentally under all ordinary angular strains or forces. One or the other of the two coupled draw-heads is movable laterally on the center pin, where it is attached to the draw-bar. In turning curves of short radius the coupled draw-heads are practically one rigid bar, as the springs allow the draw-head to swing on the center C, when the car-bodies take angular positions on their trucks, but at the same time hold the jaws together.

For convenience in coupling a car with an ordinary pin and link to a car with this improved draw-head, I provide a coupling-bolt K, with a cross-bar K^3 at the middle, having on one end an eye or slot k^5 for a coupling-pin. This form of coupling is adapted for use with two draw-heads of my construction or with one of such draw-heads and an ordinary draw-head using a pin by using either the bar K or the cross-bar k^3 . This coupling is also converted into a single coupling-bolt at pleasure by cutting off the ends k^4 k^5 and leaving a portion of the shank k^3 to form the boss at the middle.

The operation of this coupling will be readily understood from the foregoing description. The coupling-bolt is released from one draw-head by throwing over the hand-lever, which forces the wedge between the jaws, and the coupler is left in the opposite draw-head as the two cars move apart. The hand-lever should be set back after uncoupling, in order to let the jaws close, and in that position they are ready to take in the coupling-bar of another car at any time.

Either draw-head may be opened to leave the coupling-bar in one or the other pair of jaws, and in that position the conical head stands out from the draw-head ready to enter that of another car.

Having thus fully described my invention,

what I claim, and desire to secure by Letters Patent, is—

1. In a car-coupling, a draw-head composed of two hinged jaws united at the inner ends by a hinge-joint having in the outer end a recess or cavity suitably formed to take a coupling-bolt with an enlarged head and separable longitudinally on a median line through said cavity, in combination with springs applied against the said jaws to hold them together and a wedge-piece adapted to enter between said jaws and spread them apart as a means of releasing the coupling-bolt therefrom, substantially as described.

2. In a car-coupling, a two-part draw-head having a recess or cavity to take a coupling-bolt with an enlarged head and separable on a median line through said recess, in combination with a draw-bar to which said parts are united by a hinge-joint, as described, and on which joint as a center the draw-head has horizontal movement to either side when closed on the coupling-bolt and the two parts of the cross-head are separable at the outer end, substantially as described.

3. A coupling-bolt having two shanks crossing each other at right angles, enlarged heads on the opposite end of one shank, a head of corresponding shape on one end of the cross-shank, and an eye or link on the opposite end of the same shank, substantially as described.

4. A car-coupling comprising a draw-head formed of jaws inclosing a recess or cavity adapted to take a coupling-bolt with an enlarged head separable longitudinally through said cavity and united to a draw-bar by a hinge-joint, which is also the center of movement of the jaws, elliptic springs by which said jaws are held together around the coupling-bolt, and the opening-wedge, arm, rock-shaft, and locking-lever, combined for operation as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

DAVID STARK. [L. S.]

Witnesses:

EDWARD E. OSBORN,
CHAS. E. KELLY.