N. A. TUCKER.

Car Coupling.

No. 37,649. Patented Feb. 10, 1863.

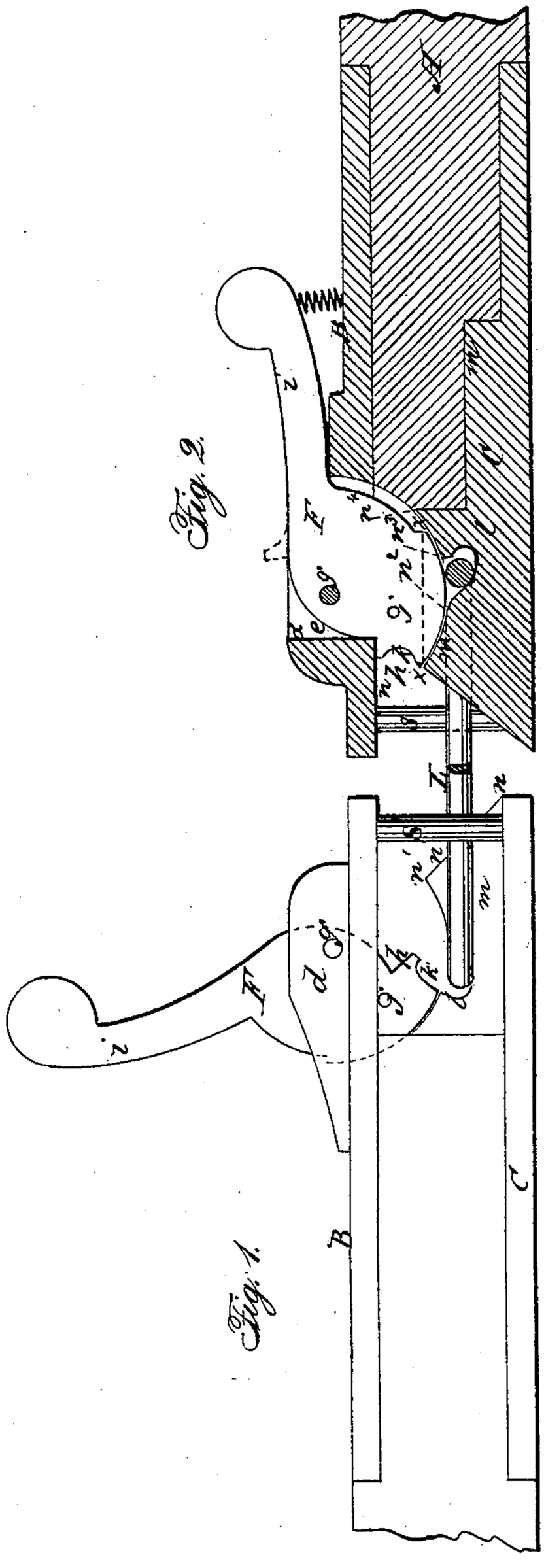

Fig. 1.

Fig. 2.

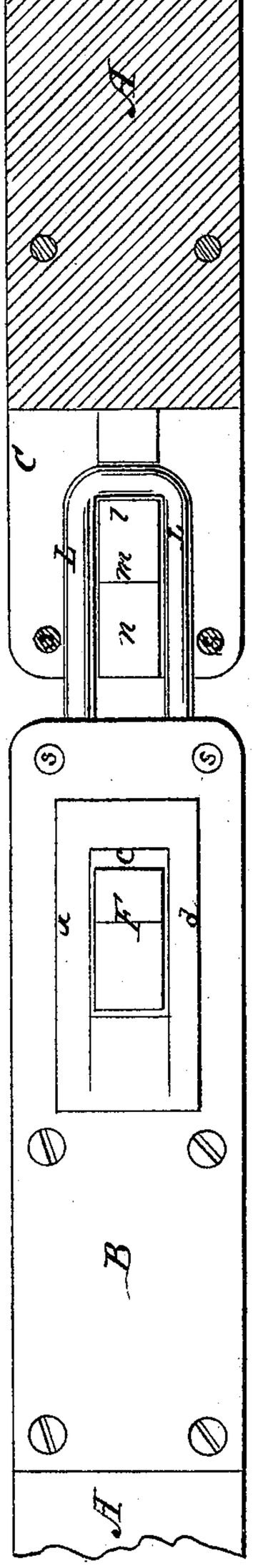

Fig. 3.

Fig. 4.

Witnesses:

Gustave Dieterich

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Inventor:

By Nathaniel A. Tucker

Mason, Fenwick & Lawrence

UNITED STATES PATENT OFFICE.

NATHANIEL A. TUCKER, OF BURLINGTON, VERMONT.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **37,649**, dated February 10, 1863.

To all whom it may concern:

Be it known that I, NATHANIEL A. TUCKER, of Burlington, county of Chittenden, and State of Vermont, have invented a new and Improved Car-Coupling 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, like letters in the several figures indicating the same or analogous parts, and in which drawings—

Figure 1 is a side view of my improved coupling; Fig. 2, a vertical longitudinal section of the same. Fig 3 is a plan view, and Fig. 4 a horizontal section, of said coupling.

The object of my invention is the construction of railroad-car couplings, which, while they shall with certainty automatically effect the coupling of railroad-cars, to which they may be attached, and under all desired circumstances hold them in such relation, will yet admit of a ready uncoupling of such cars without the application of power on the part of an attending operator to overcome the draft of one car upon another, while the train of cars is in motion.

To this end I apply my car-coupling to the draft-beam A of a railroad-car, as indicated in the figures, the location of my improved coupling being at the ends of the cars as under the use of the ordinary coupling.

As shown in the drawings, B is a lever-plate, and C a draft-plate, applied to the upper and under side of the draft-beam A, and securely attached thereto in any suitable manner. These plates are made of wrought-iron, though they, as well as the draft-beam A, may be cast, the upper one, or lever-plate, B, being provided with a projecting lever-bearing, *d*, upon its upper face, as shown, said bearing being perforated with a longitudinal slot or opening, *e*, which opening also extends through the plate B, as indicated in the figures.

F is a coupling-lever so pivoted, as at *g'*, in the bearing *d* as to permit of its free articulation in the longitudinal slot or opening *e*. This coupling-lever may be in general outline of the form shown in the drawings, but must, whatever its general form, be so constructed as to have a preponderating weight of metal, of which it is composed, in rear of its pivotal point *g'*, so that when force is applied to cause it to assume the position shown in Fig. 1 it will, when such force is withdrawn, automatically assume its position, as shown in Fig. 2, in which position it is held by reason of its shoulder *h* coming in contact with the under side of the plate B, as indicated, thus arresting a further descent of its arm *i* toward the plate B; and in order to arrest an undue elevation or upward movement of the coupling-lever F it is provided with check-pins, as at *j*, which come in contact with the under side of the plate B, when said lever is made to assume the position shown in Fig. 1, such last-named position indicating the utmost limit of the upward throw of said lever, and from which position it will of its own gravity—all force being removed from it—automatically resume its position, as shown in Fig. 2.

At the front portion of the lever F a curve or recess, as at *k*, is made so as to conform to the outline of a coupling-link, L, with which said forward portion is intended to come in contact in the act of coupling cars together, said recess *k* during such act affording a capability to the lever F to hold onto the end of the link during the upward articulation of the lever, and thus guide the link to its locking-seat *l* in the draft-plate C.

Between the points *x x* the coupling-lever F must be formed in the arc of a circle, having its center at the pivotal point *g*, so that in the articulations of said lever, whatever position its working-face between the points *x x* may be over the locking seat *l*, an upward pressure from the seat *l* against said working-face will be resisted by the lever from its central pivotal point, *g'*.

The draft-plate C on its upper face is made with a longitudinal solid projection, *m*, having an inclined portion, as at *n*, extending either from the bottom or below, or from the top of the plate, as may be desired, up to the point *n'*, between which point *n'* and the point n^2 and the points n^3 and n^4 the face of the projection *m* is made on a curve to correspond with the working-face of the lever F. Between the points n^2 and n^3, however, the face of the projection *m* is recessed, as at *l*, thus forming a locking-seat, into which the link L falls in the act of coupling cars together, and in which seat the link is securely held so long as any portion of the working-face of the locking or coupling lever F is over said seat.

The forward ends of the plates B and C are

held together in their desired relation by tie-rods *s s*, and such plates must be secured in such contiguity on the beam A as will allow the working-face of the lever F to articulate in close proximity with the curved face of the projection *m*, but without coming in contact therewith.

A coil-spring, as shown in red in Fig. 2, may be applied to the under side of the arm *i* of the lever F, and to the plate B, and thus assist in retaining said lever in the position it occupies in the figure, such spring having a tension sufficient only to prevent an upward throw of said arm by reason of the jolting of the cars when in motion.

Thus constructed, it will be evident that in order to effect an uncoupling of the link L it is only necessary to elevate the arm *i* a sufficient distance to withdraw the working-face of the lever F from over the seat *l*, and thus liberate the link from its seat in the plate C. It will also be seen that the power applied to effect this will be a lever-power exerted on a line at right angles, or nearly so, to the line of the draft upon the link, and hence that in the withdrawal of the working-face of the lever from over the end of the link the power exerted for such purpose is not required to overcome the horizontal draft upon the link. The contact, therefore, of the working-face of the lever F upon the link L is only a frictional contact, increased more or less, as the case may be, according to the power applied to the link to draw the car forward.

The device which I have shown for retaining the link in place and uncoupling it from the plate C may be applied to various purposes with advantage, as, for instance, for supporting and tripping anchors on vessels, or for attaching teams to vehicles and releasing them therefrom.

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

Confining a coupling-link in a recess located below two matching curved surfaces, one of which is stationary and the other movable, substantially as and for the purposes described.

N. A. TUCKER.

Witnesses:
GUSTAVE DIETERICH,
EDM. F. BROWN.