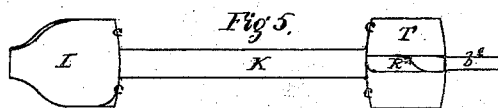
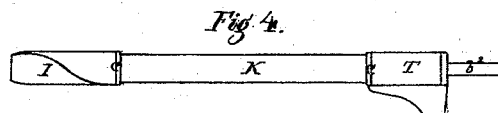
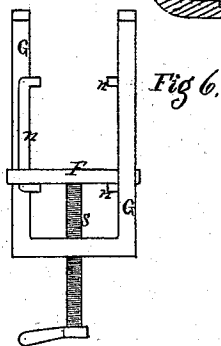
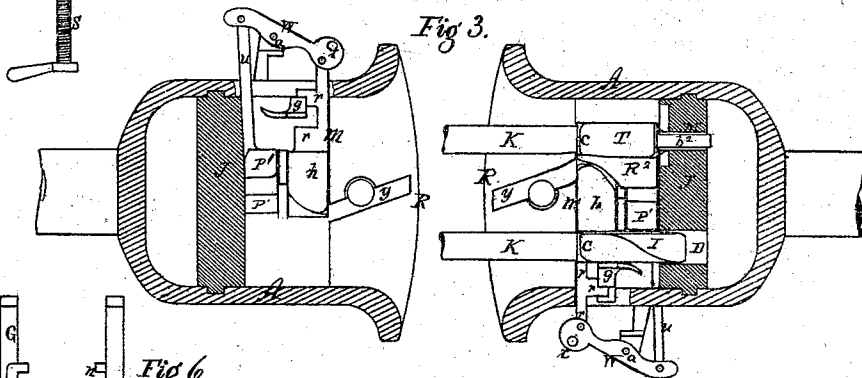
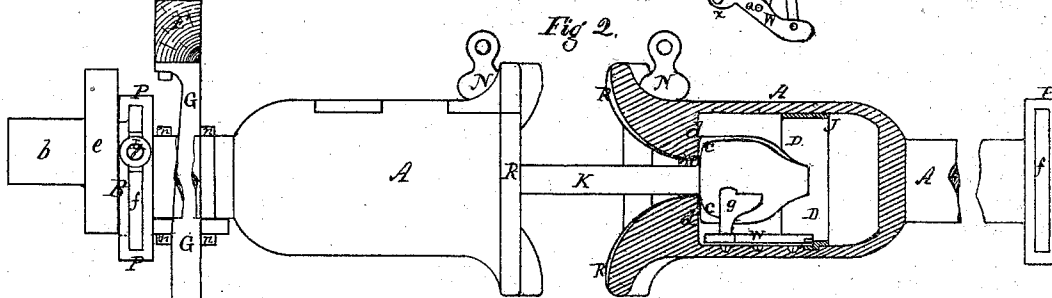
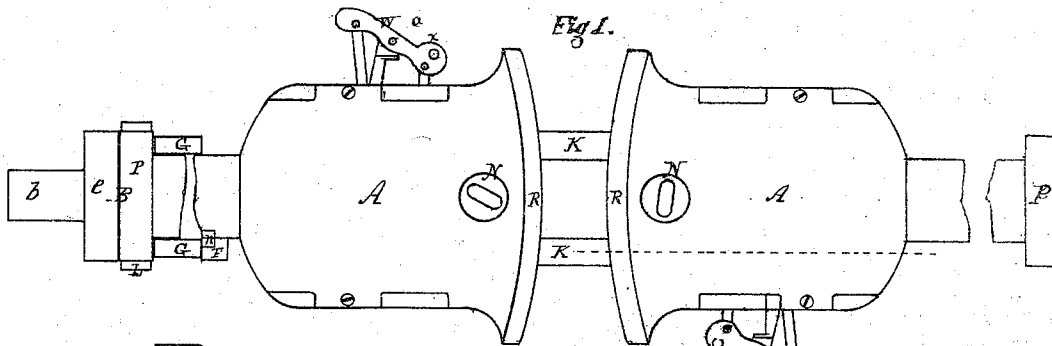


F. FOX & F. A. HOWARTH.
Car-Couplings.

No. 135,537.

Patented Feb. 4, 1873.



Witnesses.

Thos. W. Knap
Lucas A. Brunell

Inventors.

Frank Fox
Francis Howarth

UNITED STATES PATENT OFFICE.

FRANZ FOX AND FRANCIS A. HOWARTH, OF PROVIDENCE, R. I.

IMPROVEMENT IN CAR-COUPINGS.

Specification forming part of Letters Patent No. 135,537, dated February 4, 1873.

To all whom it may concern:

Be it known that we, FRANZ FOX and FRANCIS A. HOWARTH, both of the city and county of Providence and State of Rhode Island, have jointly invented a new and useful Improvement in Railroad-Car Coupling, of which the following is a specification, referring to the accompanying drawing making part of the same, in which—

Figure 1 is a plan of our improved coupling. Fig. 2 is a side elevation and section of the same. Fig. 3 is a horizontal section and plan of the same. Fig. 4 is an edge view, and Fig. 5 is a flat view, of the improved coupling-bar herein mentioned. Fig. 6 is a front view of the “adjusting-hanger” herein mentioned.

Similar letters indicate like parts in all the figures.

Our invention relates to the combination and arrangement of a suitably-constructed draw-head with a pair of coupling-bars and mechanism for coupling and uncoupling the same, the object being to provide effective means for coupling by simply bringing the two draw-heads together, and for uncoupling the same without the necessity of going between the cars to do so.

In the drawing, A is the draw-head, of cast-iron generally, and secured in the usual manner to the frame-work of the car, and provided with a suitable connection at B and an adjustable hanger, G, for elevating or depressing the bunter R in line with another bunter of different altitude, with which it is to be coupled. The said connection consists of a hub, *b*, a plate, *c*, and a neck extending therefrom into a hollow plate, P, on the draw-head, in which it is arranged to slide vertically, and to which it is secured by means of a cross-head, L, that slides with it in the slot *f*, whereby a considerable variation of the altitude of the draw-head may be made by means of the adjustable hanger G, which is secured to the forward main beam E of the car-frame and has an adjusting-screw, S, attached to a follower, F, which is confined by the keys *n n* to the square shank of the draw-head, so that, by turning the said adjusting-screw, the draw-head, which slides freely at its rear end on the cross-head L in the slot *f*, may be elevated or depressed into line with the contiguous draw-head with which it is to be coupled, and thereby adapted for

coupling with draw-heads of other cars of different altitude. The interior of the draw heads, as shown, is constructed with a narrow horizontal mouth, *m*, forming at the rear thereof two opposite shoulders, *d d*, against which the shoulders *c c* of the coupling-bars bear when the cars are properly coupled, as shown in Figs. 2 and 3, and which, it will be understood, sustain the strain for drawing the load. The said coupling-bars are two in number, as shown in Figs. 1 and 3, and are constructed as shown in Figs. 4 and 5, and consist of a straight shank, K, with a flat head, T, and a spiral flange, R², at one end and a spiral or helically-flat head, I, at the other end, both of which heads are introduced flatwise within the narrow horizontal mouth of the draw-head, and are afterward given a quarter turn behind the shoulders *d d* of the draw-heads, for coupling the same together. This turning of the said coupling-bars is effected by the helical head I of the said bars, which on being thrust within the mouth of the draw-head, its extreme end meets a vertical slot, D, in a partition, J, which has the effect to turn the coupling-bar from its horizontal inserting position to a vertical position behind the shoulders *d d*, and thus place the shoulders *c c* of the coupling-bars in position to bear against the shoulders *d d* of the draw-head and resist all efforts or force to pull the two draw-heads apart without breaking the parts. The said coupling-bars are released from the draw-heads, so as to withdraw and uncouple from the same, by means of a mechanism that is conveniently arranged beneath the two coupling-bar heads in the draw-head, and which turns the two bar-heads simultaneously by means of a lever, W, on the outside of the draw-head, as shown. This lever is connected by a sliding rod and plate, *r*, to the turn-block *h* and presser *g*, which turn the helical head I and hold it in position, and at its opposite end by the sliding rod *u* and the sliding block P', which turns the flat head T of the other coupling-bar and holds the same in position, so that, by means of a line or rod attached at the end *x* of the lever W, it is made to swing on its fulcrum-pin *a* and shift the said turning mechanism and turn the heads of the two coupling-bars into the requisite horizontal position to be readily withdrawn from the mouth of the draw-head for uncoupling the cars, and the said mechan-

ism is again restored to its requisite position for performing this function by the introduction and turning of the two coupling-bar heads within the draw-head in the act of coupling, as before described. The flat head of the coupling-bar remains in the draw-head with its opposite helical head protruding ready for entering and coupling with another similar draw-head.

For introducing the flat-head end to the draw-head the groove *y* is formed in the lower lip or surface of the draw-head mouth, which groove permits the flange *R*² to pass with the flat head through the mouth, and it is assisted in so doing, and also held in position afterward, by the center stem *b*², which slides and is held in the vertical slot *M* in the partition *J*.

Besides the special construction and mechanism for the reception and operation of the coupling-bars as described, the draw-head is so constructed and provided with a draw-pin, *N*, that it may be coupled with the ordinary draw-head by means of the common link-coupling.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination of the draw-head and the coupling-bars, constructed and operating substantially as described, for the purpose specified.

2. The coupling-bar, substantially as described, in combination with the mechanism for turning and uncoupling the same, substantially in the manner specified.

3. The combination of the sliding connection *B* at the rear of the draw-head and the adjustable hanger *H*, substantially as described, for the purpose specified.

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Witnesses:

THEO. W. KNOOP,

ISAAC A. BROWNELL.