

(No Model.)

C. P. NICOLSON.

## CAR COUPLING.

No. 277,051.

Patented May 8, 1883.

*Fig. 1.*

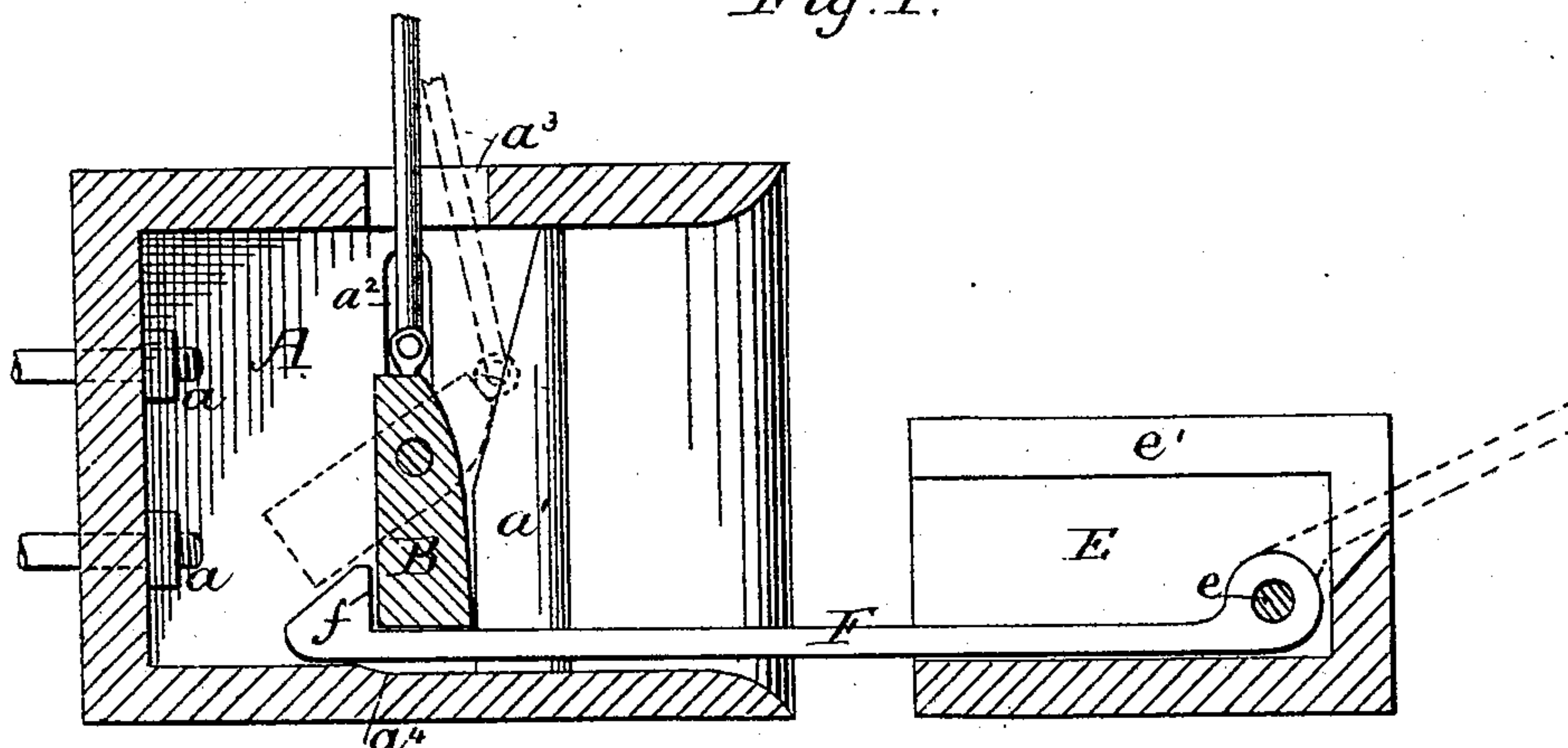
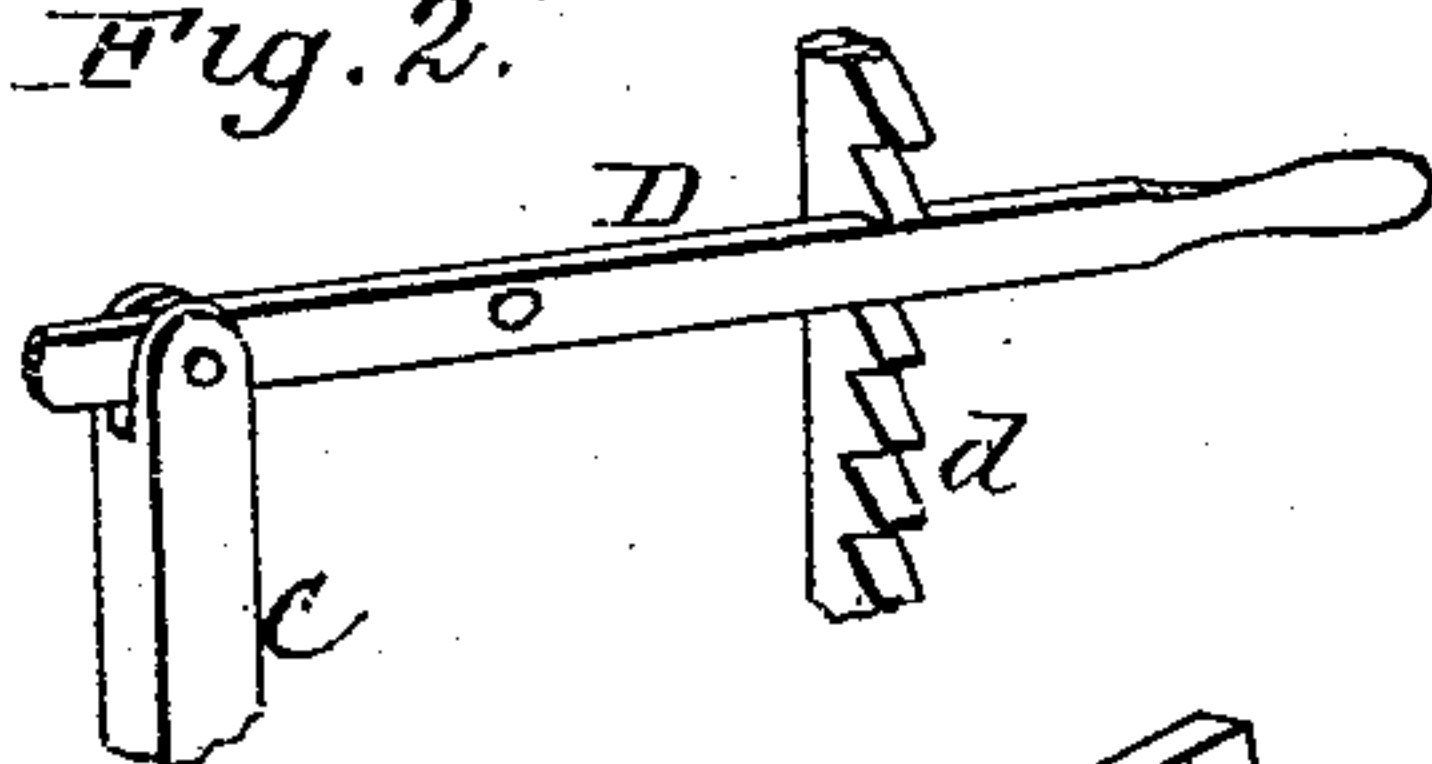


Fig. 2.



*Fig. 3.*

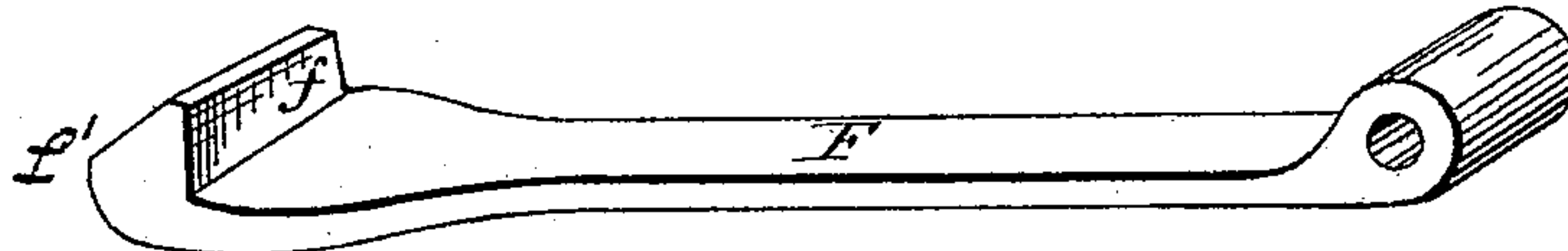


Fig. 4.

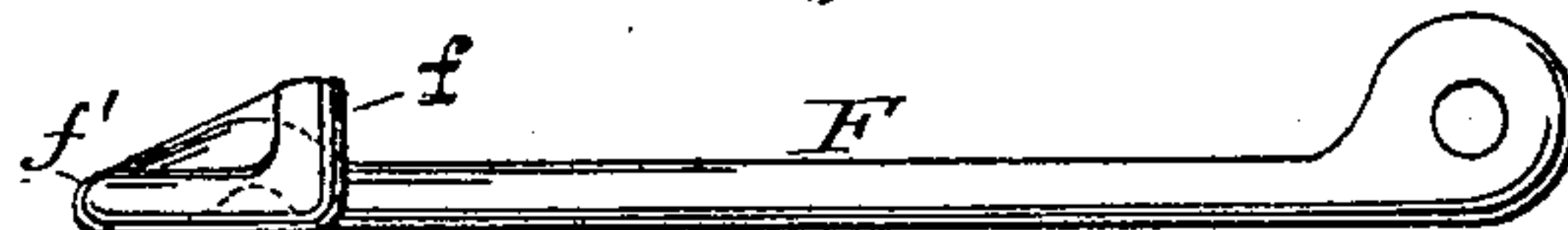
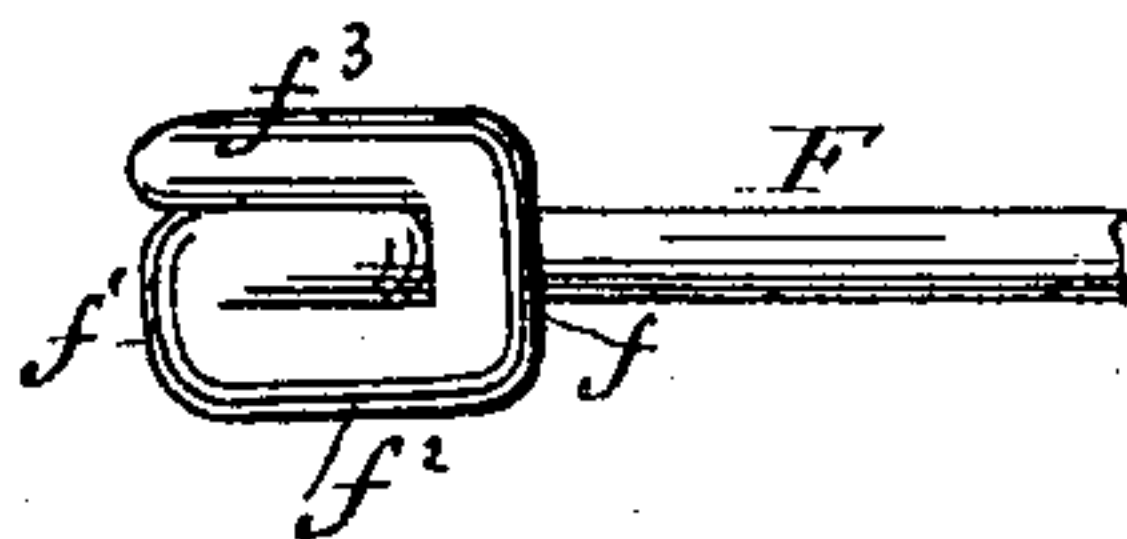


Fig. 5



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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 277,051, dated May 8, 1883.

Application filed March 17, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES P. NICOLSON, a citizen of the United States, residing at Lamar, in the county of Barton and State of Missouri, have invented certain new and useful Improvements in Automatic Car-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a central vertical section of an automatic car-coupler constructed in accordance with my invention. Fig. 2 is a detail in perspective of the locking-gate and adjacent parts. Fig. 3 is a perspective of one form of a connecting or coupling link. Fig. 4 is a side elevation of a preferred form of a coupling-link; and Fig. 5 is a detail in plan, showing the manner of forming the head or heads of said link.

Like letters refer to like parts in all the figures.

The objects of my invention are to provide means whereby cars may be coupled without the necessity of a person stepping or reaching between the cars to couple such cars in two places, to prevent coupling or uncoupling at other than desired times, and to supply duplicate couplings, so that if one becomes inoperative the other will perform its function, and to enable the operation of coupling to be performed at any speed of approach of the cars; and to attain these objects I employ the means hereinafter described, the novel features of which are specifically set forth in the claims.

A represents a case or box, which, by means of bolts  $a$ , is intended to be secured to a suitable portion of the frame-work of a car so as to project from the end thereof. The open end of the box is flared at its inner surfaces, as is usual, to facilitate the entrance of the coupling-link. Upon the inner side walls are vertical cleats  $a'$ , and in rear of said cleats are vertical slots  $a^2$ , and in the top is a hole or aperture,  $a^3$ . The bottom of the box is formed with an incline,  $a^4$ , a short distance back of the cleats  $a'$ , said incline extending transversely and entirely across the bottom. It is intended that two of said boxes shall be applied to each end of each car, or one of said boxes and one of the link-bearing boxes E, hereinafter described, each of said boxes being located a distance from the transverse cen-

ter of the car; but it is apparent that a single coupling and a single link-bearing box may be employed, if desired, in which case they would be located at the center of each end of the cars, as usual.

B represents a locking-gate, which is of sufficient length to fit the box A back of the cleats  $a'$ , and to bear against the rear edges of said cleats to sustain the draft of the car when coupled. The gate B is provided with trunnions  $b$ , which project into the slots  $a^2$  in the opposite walls of the box A, and may be grooved at its lower edge to embrace the body of the coupling-link. (See dotted lines, Fig. 2.) The gate is pivotally connected to a lifting-rod, C, to which is pivotally connected an operating-lever, D, which is pivotally secured in a suitable location to the car, and at its free end rides over a rack or ratchet,  $d$ , whereby the lever D may be locked in a position which shall hold the gate B in an elevated position, for the purpose of rendering the gate inoperative to separate coupled cars.

E represents a link-carrying box, which is adapted to be secured to the end of a companion car to that to which the box A is secured and opposite the said box. A bolt,  $e$ , passes transversely across the box E, and is seated in its side walls and serves as a pivotal means of attachment of the coupling-link F. The top and rear wall of the box E is slotted at  $e'$  to permit the link F to be thrown back, as shown in dotted lines, Fig. 1. The free end of the link F is formed with a square shoulder,  $f$ , and a wedge-shaped end,  $f'$ , this construction being for the purpose of facilitating the entrance of the link into the box A, and its co-operation with the devices therein.

In Figs. 4 and 5, I have illustrated one manner of making the entire link from a straight piece of round iron, whereby great strength is secured and the cost of manufacture is reduced. At one end an eye is formed for the bolt  $e$  in the usual manner. At the other end the rod is bent back upon itself at one side, as at  $f^2$ , carried over the main portion, and bent at right angles to its length to form the shoulder  $f$ , and then bent parallel with said main portion, as at  $f^3$ , and the whole welded and forged into the desired conformation.

The operation of the parts is as follows: As the head of the coupling-link F enters the box



A it comes in contact with the lower portion of the gate B and forces it back, as shown in dotted lines, Fig. 1, and when the shoulder *f* has passed the gate it falls against the cleats *a'*, and as the link is drawn outwardly the shoulder *f* strikes against the rear surface of the gate, and thus the cars are coupled. As shown at *b'*, Fig. 2, dotted lines, the gate may be notched so as to embrace loosely the main portion of the link just back of the shoulder, which gives a broader bearing between the gate and link, and therefore is stronger. If desired, the trunnions *b b* may be superseded by a rod, and the slots *a<sup>2</sup>* may be dispensed with and a similar slot be made in the gate. Furthermore, the coupling-link may be formed with a shoulder and pointed or wedge-shaped nose or head at each end, when, with slight modification in the arrangement of the boxes, a single pair thereof may be employed—that is to say, each car may be provided with a single box, A, located centrally at its end, as is usual. The location of the projecting end of the operating-lever D indicates whether or not the gate is elevated or lowered and whether the cars are coupled or not.

In coupling cars provided with duplicate coupling and link boxes, the turning about of either car always brings a coupling-box and a link-box opposite each other because of their location, as above stated—that is to say, car No. 1 will have a coupling-box A on the left of its center and a link-box B on the right

at one end, and a coupling-box A on the right of its center and a link-box B on the left of its center at the other end. Car No. 2 has a coupling-box A on the right of its center at one end and a link-box on the left, and on its opposite end the opposite arrangement, as stated relative to car No. 1. Now, it is apparent that the turning of any car presents link and coupling boxes opposite each other on each car.

Having described my invention and its operation, what I claim is—

1. The combination of the box A, having the flaring mouth, the cleats *a'*, the slots *a<sup>2</sup>*, and the incline *a<sup>4</sup>*, the gate B, having the trunnions *b b*, and pivotally connected to the lifting-rod C, pivotally connected to the operating-lever, and the ratchet *d*, with the box E, provided with the coupling-link F, having the shoulder *f*, substantially as shown and described.

2. A coupling-link formed of a single piece of round iron bent to form a pointed shouldered head, as described—that is to say, bent against itself, as at *f<sup>2</sup>*, over itself, as at *f*, and against itself, as at *f<sup>3</sup>*, and welded and forged into the desired conformation, substantially as shown and described.

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

CHARLES P. NICOLSON.

Witnesses:

E. B. STOCKING,

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