

(No Model.)

F. A. FOX.  
CAR COUPLING.

No. 429,026.

Patented May 27, 1890.

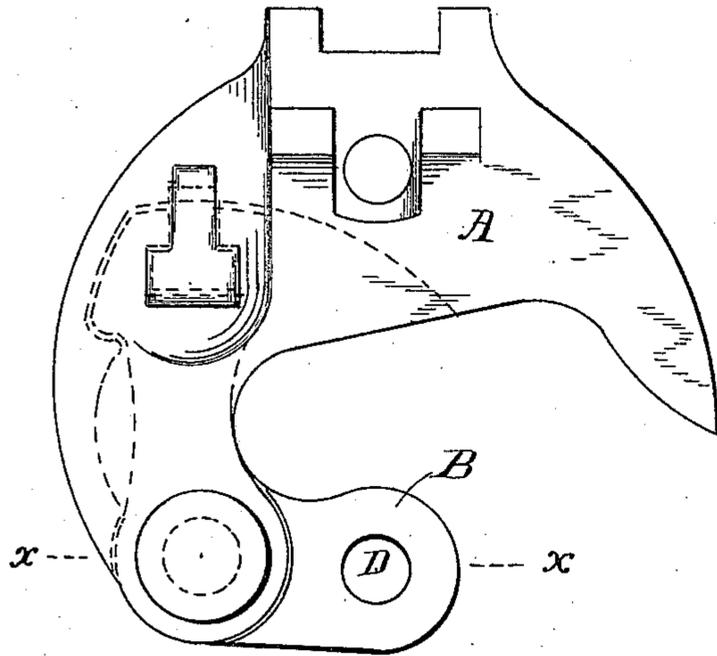


Fig. 1.

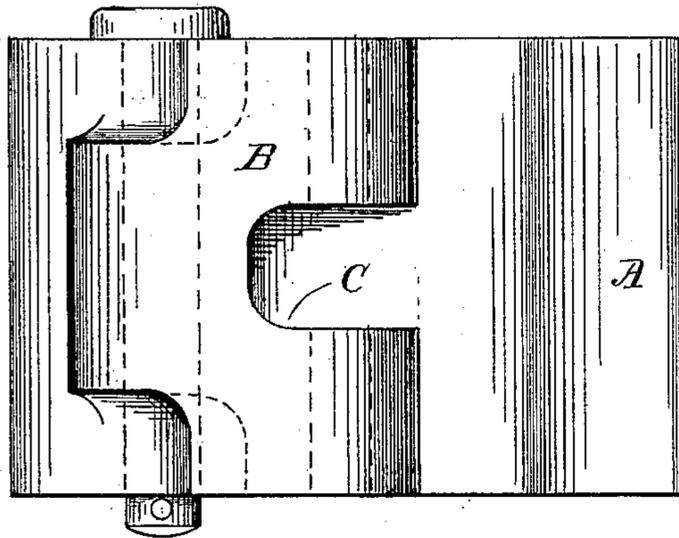


Fig. 2.

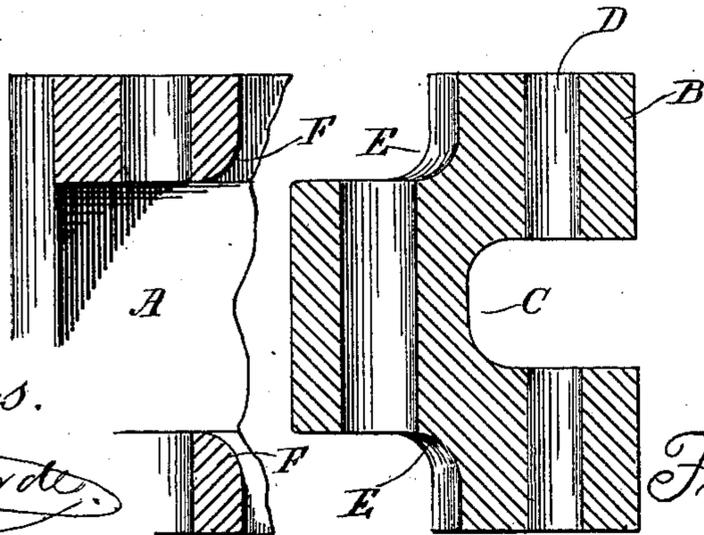


Fig. 3.

Witnesses.

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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 429,026, dated May 27, 1890.

Application filed February 15, 1890. Serial No. 340,617. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK AVERILL 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-Couplers; 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 relates to that class of devices for coupling cars together in which two hinged leaves, each of which has a locking tail-piece, are made to automatically interlock with each other by impact. In this class of couplers a horizontal opening is always made in the edge of each leaf to receive the end of an ordinary link, should it become necessary at any time to connect a car having the old link-and-pin coupling with one having the hinged-leaf coupling, and a vertical hole is made through the end of the leaf, so as to pass transversely across this opening, through which a pin can be inserted to secure the link in place. The horizontal opening must be deep enough to receive the end of the link and allow the pin to drop through it. The hinge-connections by which the leaf is jointed to the coupler-head also necessitate the cutting away of a portion of the upper and lower outside corners of the leaf next to the arm of the coupler-head to which it is connected, so that only a narrow neck of metal is left between the angle of the outside recess and the bottom or angles of the link-opening. It has been found that this is the weak part of this class of couplers, as the breakage always occurs at this point. The corners of the openings and of the recesses referred to have heretofore been uniformly made sharp and angular, so that a sudden concussion or coming together of two coupler-heads was liable to cause a fracture to extend from the sharp angle of the outside recess across the narrow neck of metal to the sharp angle of the link-opening.

The object of my invention is to remedy this difficulty, and this I accomplish by making the corners of both the link-opening and the outside recesses on circular lines, or rounding, thereby providing a greater body and

thickness of metal across this formerly weak point and destroying the sharp angles, which afford a starting-point for a fracture. 55

Referring to the accompanying drawings, Figure 1 is a plan view of a coupler-head with its locking-leaf. Fig. 2 is a front view showing the hinged leaf with its interlocking outside recesses and link-opening; and Fig. 3 60 is a vertical section through the line  $xx$ , Fig. 1, with the parts slightly separated.

Let A represent a coupler-head of the class above referred to.

B is the hinged locking-leaf, which is connected to one arm or branch of the coupler-head by a knuckle or hinge joint. 65

C is the opening in the outer end of the leaf, into which the end of a link is received when an ordinary link-coupling is to be connected with it, and D is the transverse hole through which the coupling-pin passes to lock the link in the opening. The bottom of this recess I make on circular lines, or rounding, as shown at Fig. 3. 75

E E, Fig. 3, represent the recesses at the outer corners of the hinged end of the leaf, which interlock with the projecting lugs F F on the coupler-head to form a hinge or knuckle joint. The corners of these recesses I also 80 make on circular lines, or rounding, so that a greater body of metal is introduced in the narrow neck between the angles of the recesses and the angle of the link-opening, and the sharp angle is avoided. The inner corners of the lugs F F are also made on circular lines, or rounding to conform with the shape of the recesses. 85

This improvement is of great practical utility. It remedies a serious defect in this class of couplers that has heretofore been regarded as one of the objections to this hinged-leaf coupler. The weakness occurred at just that point where it seemed impossible to remedy it without a general reconstruction of the joint-connections. I have discovered, however, that the additional strength obtained from my improved construction is nevertheless sufficient to avoid unusual breakage at this point. 95 100

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a car-coupling of the hinged-leaf type,

the combination, with a coupler-head, of a hinged leaf provided with a horizontal link-opening, the corners at the bottom of said opening being rounded or curved, said hinged  
5 leaf also provided with an outwardly-extending reduced portion adapted to fit in a corresponding recess in the coupler-head, the corners of the recess formed by said reduced portion being rounded or curved, substantially  
10 as set forth.

2. In a car-coupling of the hinged-leaf type, the combination, with a coupler-head provided with a suitable recess, the shoulders formed by said recess having their corners  
15 rounded or curved, of a hinged leaf provided with a horizontal link-opening, the corners at

the bottom of said opening being rounded or curved, said hinged leaf also provided with an outwardly-extending reduced portion adapted to fit in the recess of the coupler-head, and  
20 the corners formed by said reduced portion being rounded or curved, so as to register with the rounded or curved corners of the shoulders of the coupler-head, substantially  
25 as set forth.

In witness whereof I have hereunto affixed my signature in the presence of two witnesses.

FRANK AVERILL FOX.

In presence of—  
PHILO MILLS,  
W. R. BOONE.