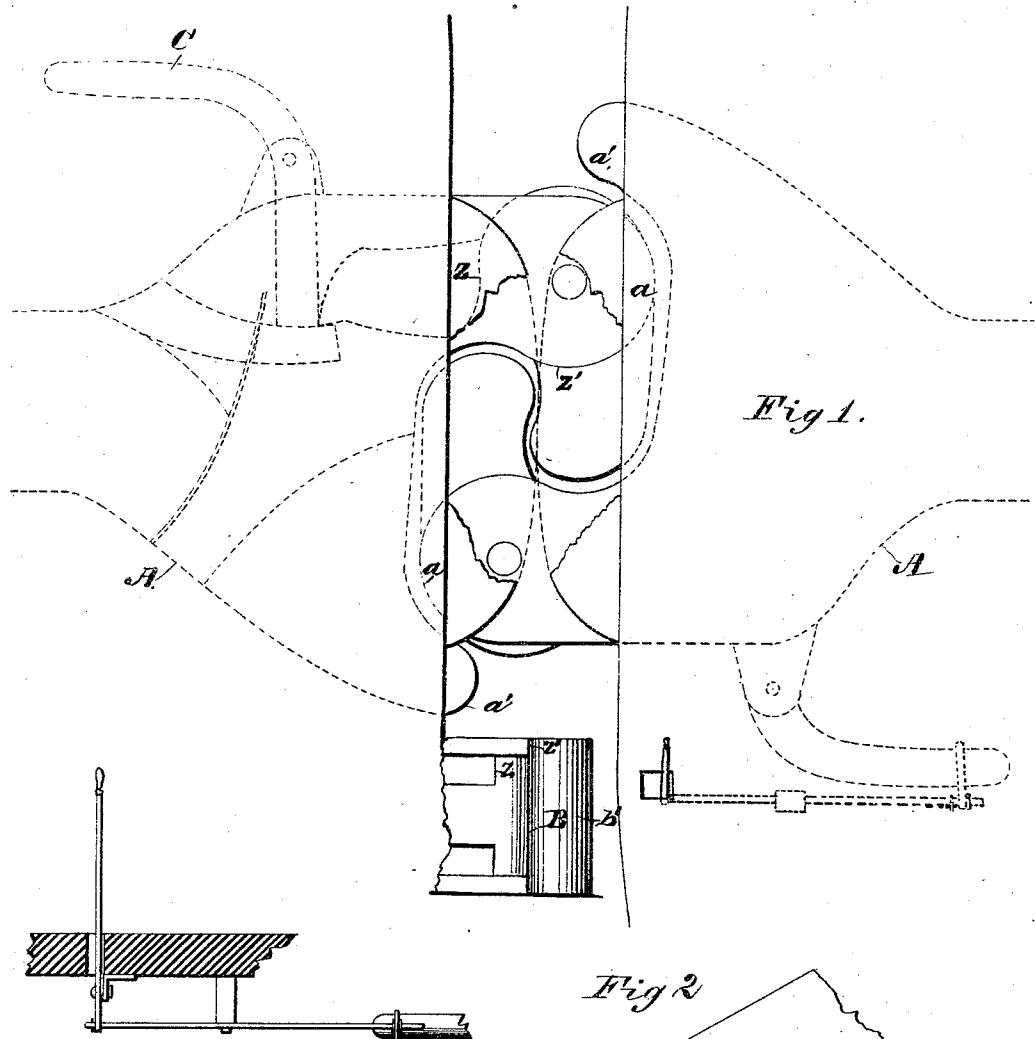


2 Sheets--Sheet 1.

E. H. JANNEY.  
Car-Couplings

No. 156,024.

Patented Oct. 20, 1874.



Witnesses:

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2 Sheets--Sheet 2.

E. H. JANNEY.  
Car-Couplings

No. 156,024.

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Fig 3.

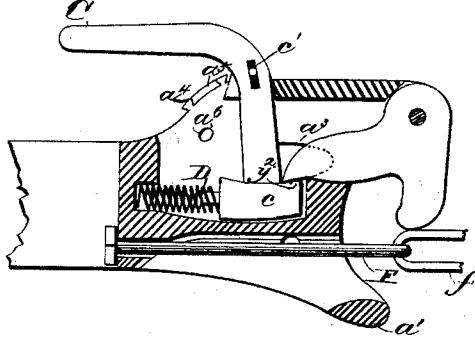


Fig 4

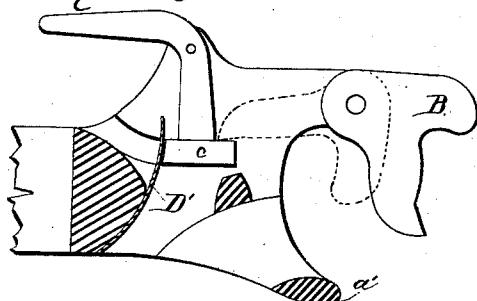
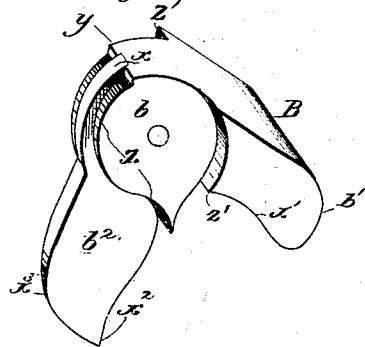


Fig 5.



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# UNITED STATES PATENT OFFICE.

ELI H. JANNEY, OF ALEXANDRIA, VIRGINIA.

## IMPROVEMENT IN CAR-COUPINGS.

Specification forming part of Letters Patent No. **156,024**, dated October 20, 1874; application filed March 20, 1874.

*To all whom it may concern:*

Be it known that I, ELI H. JANNEY, of Alexandria, in the county of Alexandria and State of Virginia, have invented a new and useful Improvement in Car-Coupling; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

This invention is an improvement upon my coupling patented April 29, 1873, No. 138,405; and consists in an improved construction and arrangement of the various parts, whereby greater strength is obtained, certain defects are remedied, and the coupling is better adapted for convenient operation, as will be fully described hereinafter.

In the drawings, Figure 1 represents a plan view of a pair of couplings united; Fig. 2, a perspective view of the front end of a single coupling; Fig. 3, a transverse sectional view; Fig. 4, a similar view of a modification of the coupling; Fig. 5, a perspective view of swinging hook detached; and Fig. 6, a view showing an arrangement of levers for operating the coupling.

To enable others skilled in the art to make and use my invention, I will now proceed to fully describe its construction and manner of operation.

A represents the draw-head, the fixed parts of which are preferably cast in a single piece with suitable openings and recesses for the moving parts. *a a* represent projecting ears, having in front a circular outline, between which is pivoted the rotary hook B. *a<sup>1</sup>* represents the guard-arm, provided, in connection with the main part of the coupling, with a suitable recess for the reception of the link when this coupling is used with one of the ordinary construction. B represents the rotary hook, pivoted between the ears *a a*, as shown, and provided with a central cylindrical pivot part, *b*, Fig. 5, swinging head *b<sup>1</sup>*, and arm *b<sup>2</sup>*. The pivot part is provided with a suitable stop, *y*, to limit its movement, as described in my patent referred to, and also with a central guard rib or projection, *x*, as shown in Fig. 5. The rear side of the pivot part, as shown at *z*, Fig. 5, is adapted, when the hook is closed, to bear against the correspondingly-curved por-

tion of the draw-head, as shown in Fig. 1, so that the strain is thus transferred to the draw-head. The head *b<sup>1</sup>* has projecting shoulders *z'* above and below the central pivot part, by which means its upper and lower surfaces are made flush with the sides of the draw-head. These projecting shoulders also have their inner surfaces curved to correspond with the adjacent circular outline of the ears, as shown in Fig. 2. The inner bearing-face of the head *b* is provided, from side to side, with a reverse curve, *x<sup>1</sup>*, Fig. 5; but from top to bottom its lines are vertical, instead of curved, as was described in my former patent. The arm *b<sup>2</sup>* is provided with a slight angular projection, *x<sup>2</sup>*, and a curved end, *x<sup>3</sup>*, as shown. C represents a catch-lever, pivoted between the arms *a* of the draw-head. It is provided with a head, *c*, adapted in form and size to move in a suitable recess in the draw-head, and has its arm bent into the proper position for convenient manipulation. It is provided, also, with a slot, *c'*, Fig. 3, in which its pivot-pin rests, by means of which it is rendered capable of moving longitudinally to a limited extent, as will be described hereinafter. This lever is preferably manipulated by a system of levers operated from the platform, as indicated in Fig. 6, but may be operated directly by the hand of the brakeman, if desired. D represents a coiled spring, the rear end of which rests in a suitable recess in the casting, and the front end of which is held in place by means of a stud upon the head of the lever, as shown. In Fig. 4, D' represents a flat spring, instead of a coiled spring, which is attached to a curved face of the casting, as shown, and adapted, by means of its location, to actuate the catch-lever. E, Fig. 2, represents a pocket formed beneath the lower face of the draw-head, which is adapted to receive the end of the draw-bar of the locomotive. F represents an eyebolt, the shank of which passes through a proper opening in the casting, and is secured in place by means of a nut at its rear end. It is provided at its front end with a link, *f*, and it is designed that it should be drawn forward only when it is desired to use the same. *a<sup>3</sup>* represents a recess in the draw-head, adapted, in connection with the external opening *a<sup>4</sup>*, to permit the catch-lever

to be easily inserted in its place in putting the coupling together.  $a^5$ , Fig. 3, represents a cover, adapted to slide in dovetailed grooves, as shown, and close the external opening.  $a^6$  represents a drip-hole, through which any moisture driven into the coupling may be discharged. The rear end of the draw-head is adapted to hold the buffering-spring and the proper connections for uniting it to the car.

It is desirable that the carriages which hold the followers should fit close against the coupling to prevent any lost motion at the rear end, and also to prevent the pin from wearing.

If desired, the front edges of the upper and lower surfaces of the draw-head may be made inclined, as shown at  $x^4$ , Fig. 2, for the purpose of permitting the couplings to have proper play, as the cars tilt at one end or the other upon the track.

If desired, also, the bearing-faces of the rotary hooks may be prolonged above and below, to adapt them to great variations in height between the cars.

The general operation of my improved coupling is like that described in the patent above referred to, and is as follows: One of the hooks being turned forward into the position shown in dotted lines, Fig. 4, its arm is struck, as the cars come together, by the hook or head of the adjacent car, and consequently forced backward into the recess formed in the casting, beyond the end of the head-spring lever, which yields sufficiently to permit this movement, in which position it is locked by the return of the head of the spring-lever to its original position through the action of the spring.

In this position it will be observed that the shoulders  $z'$  of the rotary hook bear against the correspondingly-curved faces of the supporting-ears, and, also, that the parts  $z$  bear against the correspondingly-curved portions of the draw-head, by which means the strain upon the rotary hook, when the cars come together, is transferred, in a measure, from the pivot-pin to the solid portions of the draw-head. In this position it will be observed, also, that the head of the spring-lever, against which presses the arm of the rotary hook, bears upon its opposite face against the sides of the curved recess in which it moves, the slot in the lever giving it sufficient play for this purpose, so that no strain whatever is sustained by the pivot-pin of the lever. By this means the strain upon the rotary hook, when the cars are drawn apart, is borne in part by the solid portions of the draw-head, and not entirely by the pivot-pin of the rotary hook. By means of the circular rib  $x$ , upon the cylindrical part of the rotary hook, the draw-head is protected from wear from the friction of the guard-arm of the adjacent coupling, this wear being sustained by the rib  $x$ , which projects beyond the line of the

draw-head, as shown. By means of the angular projection at  $x^2$  and the corresponding face upon the head against which it bears, the arm has a firmer hold upon the head and is less liable to be accidentally detached. In connection with the coupling I preferably employ the buffer-blocks upon the platform, as shown in dotted lines, Fig. 1.

Some of the advantages of this construction are as follows: The pivot-pin is relieved of strain in both directions; the spring-lever is held firmly in place, and, by means of a suitable system of levers, is conveniently operated from the platform. By means of the curved bearing-faces of the block to which the spring  $D'$  is attached, the latter receives support along its length as it is forced back, so that the strain is not borne at a single point. By means of the reverse curve upon the bearing-faces of the hooks, the latter, when coupled, are securely locked together, and by making the faces straight vertically the tendency of the couplings to bind upon each other as the cars rise and fall is avoided. By means of the improved construction the opening in the coupling is changed from the top, where it was liable to be seriously affected by the entrance of snow and ice, to the side, when this danger does not exist. By means of the sliding bolt and link the coupling is permanently provided with proper means to adapt it for use with cars of the ordinary construction. I preferably construct the main parts in the manner described, but, if desired, they can be constructed of wrought metal.

The improved coupling, as a whole, possesses great strength, is without the defects of the coupling described by my former patent, and is well adapted for convenient manipulation.

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

1. The rotary hook having the bearing portions  $z z$ , in combination with the draw-head having a corresponding face, as described.

2. The lever  $C$ , adapted to move longitudinally, in combination with the draw-head provided with a curved recess adapted to permit the movement of the head of the lever, as described.

3. The combination of the lever  $C$ , the coiled spring  $D$ , and the rotary hook  $B$ , as described.

4. The hook, provided with the angular projection  $x^2$ , in combination with the lever having a corresponding face,  $y^2$ , as described.

5. The rotary hook, provided with the projecting rib  $x$ , for the purpose set forth.

This specification signed and witnessed this 9th day of March, 1874.

ELI H. JANNEY.

Witnesses:

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