H. C. LOWRIE.

Draw-Heads for Railroad Cars.

No. 145,881. Patented Dec. 23, 1873.

Fig. 1.

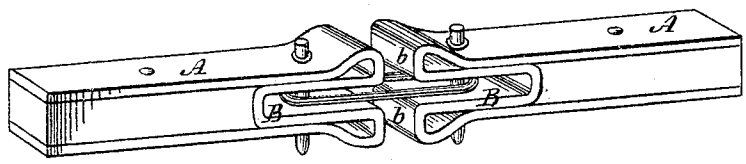


Fig. 2.

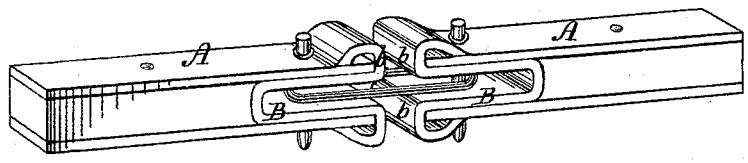


Fig. 3.

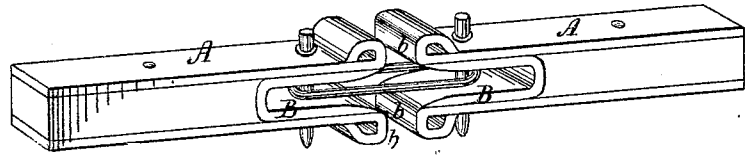


Fig. 4.

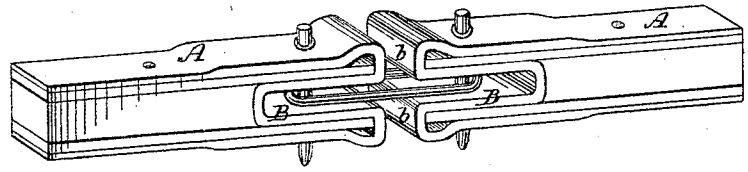
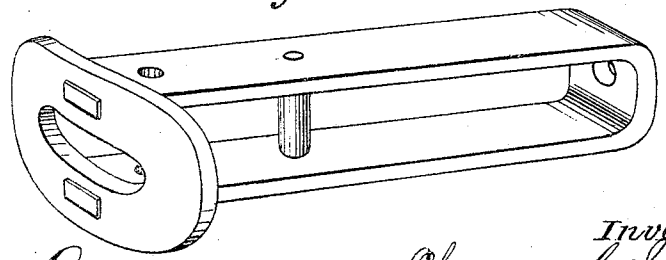


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

HARVEY C. LOWRIE, OF FORT WAYNE, INDIANA, ASSIGNOR OF ONE-HALF HIS RIGHT TO W. A. ROBERTS AND DANIEL GIBSON, OF SAME PLACE.

IMPROVEMENT IN DRAW-HEADS FOR RAILROAD-CARS.

Specification forming part of Letters Patent No. **145,881**, dated December 23, 1873; application filed November 18, 1873.

To all whom it may concern:

Be it known that I, HARVEY C. LOWRIE, of Fort Wayne, in the county of Allen and State of Indiana, have invented a certain new and useful Improvement in Draw-Heads for Rail-Cars.

My improvement relates to that class of draw-heads which have a laterally open-link jaw; and it consists in constructing the same, of wrought or forged metal, in such a manner that no separately-constructed and riveted face-plates are requisite, and whereby the draw-head may be economically constructed, and possess all the well-known requirements for securing durability, strength, and general utility; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a true, clear, and exact description of my invention, and of draw-heads embodying the same.

Referring to the drawings, Figures 1, 2, 3, and 4 represent, in perspective, draw-heads, which embody my improvement. Fig. 5 represents an ordinary draw-head of the class which my improvement is intended to practically supersede.

Heretofore lateral-jawed draw-heads have been, to a limited extent, constructed experimentally of cast-iron, and in attempts at use frequent breakage necessarily occurred to such an extent as to wholly preclude their practical adoption. Although much attention has been given for many years to automatic car-couplings, and others of a character more or less complex and expensive, such as have been proven to be of value are not practically adapted for use in connection with heavy-freight rolling-stock, but have been almost exclusively confined to passenger-coaches.

In the several figures, A denotes in each instance one of the main longitudinal flat bars of the draw-head, having a length, breadth, and thickness to adapt it to the special requirements for which they are intended.

It will be seen that in the ordinary draw-head shown in Fig. 5, the bars are of a similar character, but are united by the curved face-plate by means of open mortises in the plate and riveted tenons on the bars. The lateral jaw feature is not possibly available in such draw-heads, because, in order to maintain a proper connection between the upper and lower bars, the face-plate is provided with an opening for receiving the link longitudinally, which admits of those portions of the plate on each side of the said opening to serve the function of ties for uniting the two bars. In practice the frequent abrasion and abutting of the coincident faces of the curved plates causes the more or less projecting heads of the riveted tenons to become so worn away that the plates become detached, and serious results follow in the battering and twisting of the then exposed ends of the bars. It frequently occurs, too, that in rounding curves the side edge of one plate will pass the adjacent edge of the opposite plate, and then on straightening out one or the other must give way before the links can draw, and thereby effect results already described. These several difficulties are surmounted in the practical use of my improved draw-heads by reason of the non-requirement of the plate as a connecting-tie for the two bars.

The jaw-brace B constitutes the novel feature of my draw-head. It is susceptible of varied construction, as illustrated in the drawings.

In Fig. 1, the two bars are shown to be composed of a single length of rolled iron, with the bunter-faces *b* formed by a vertical curvature and a turn to the rear. The jaw-brace B in this instance is formed by bending the center of the piece from which the draw-head is to be made in a U shape, which, when the bars are placed horizontally, constitutes the lateral jaw.

In Fig. 2, the jaw-brace B is shown to be constructed in a separate piece, and with vertical curvatures constituting the bunter-faces. The ends of the two longitudinal bars abut against the inner side of the metal adjacent to the bunter-faces, and, at the several points of contact of the surfaces of the two parts, they are in practice to be united by the art of welding and the use of swage blocks and tools readily adapted to the service by those skilled in analogous working of metals.

In Fig. 3, the outer ends of the bars are bent upward and downward, respectively, and are

so curved backward upon the upper or lower adjacent surfaces of the bars that they will constitute durable and effective bunter-faces. The jaw-brace B in this instance is of simple U form placed laterally, and it may or may not extend fully to the outer ends of the bars.

In Fig. 4, a draw-head is shown which is particularly adapted for use on tenders, as it possesses great strength. It consists of the combined upper and lower bar with jaw-brace, shown in Fig. 1, combined with two bars, so connected therewith that their outer ends will be embraced between coincident surfaces of the jaw-brace and the main bars. It is to be understood that in all cases it will be preferable that the jaw-brace be united with the bars by welding, although approximately desirable results will be attained if they are united by strong vertical rivets with heavy countersunk heads.

The form shown in Fig. 2 is particularly well adapted and is specially intended to be employed in reconstructing the ordinary curved face draw-heads. The jaw-brace B, properly shaped, may be readily applied to the upper and lower bars, as shown, and admit of the connection of the head with the car by means of the same identical devices originally employed with the draw-head.

The advantages of the lateral jaw are obvious, as the link can be adjusted at any time while the bunter-faces are in contact, and without endangering the operative. When the train is in motion there is a free lateral movement of the ends of the draw-heads, and a consequent decreased liability to break the link. The jaw-brace so thoroughly ties the two bars, and braces them laterally and vertically, that the "bunting" thrust is borne without possible injury.

As to durability, there are no face-plates to be broken off or bent, the heads of no riveted tenons to engage with each other, and any unusual thrust upon either of the bunting-faces (should the draw-heads occupy different planes) will, by the presence and operation of the jaw-brace, be proportionately borne by the two bars.

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

The lateral-jawed draw-head composed of the longitudinal bars and the jaw-brace B, substantially as described.

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Witnesses:

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