(No Model.)

F. R. BISCHOFF & J. C. BAIRD

CAR COUPLING.

No. 535,661. Patented Mar. 12, 1895.

Fig: 1.

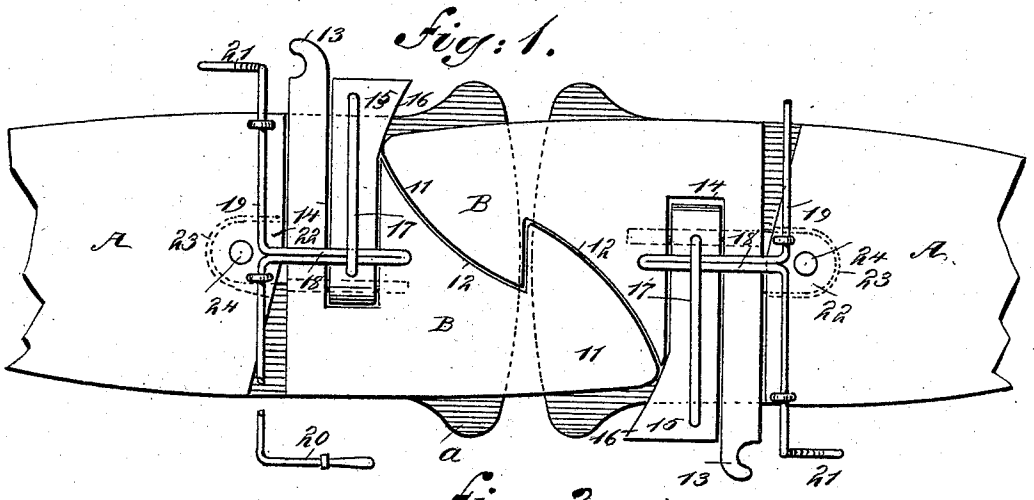


Fig: 2.

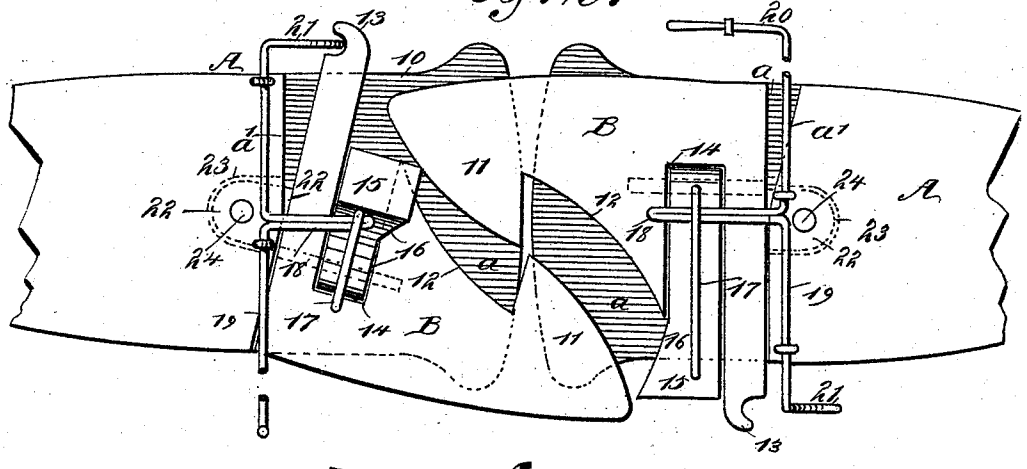
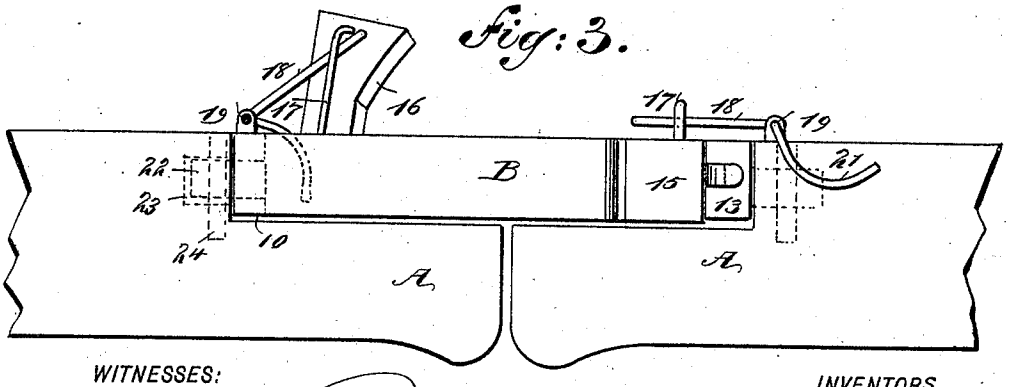


Fig: 3.



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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 535,661, dated March 12, 1895.

Application filed January 9, 1894. Renewed October 29, 1894. Serial No. 527,324. (No model.)

To all whom it may concern:

Be it known that we, FRANK R. BISCHOFF, of New Castle, in the county of Weston, and JOHN C. BAIRD, of Cheyenne, in the county of Laramie, State of Wyoming, have invented a new and Improved Car-Coupler, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in car couplers, and it has for its object to provide a coupler of exceedingly simple and durable construction, and further to provide a knuckle coupler so constructed that by the movement of a single lever the locking devices will be removed from the path of the knuckle and the knuckle swung to one side to clear that with which it was in engagement.

Another object of the invention is to provide a car coupler embracing but few parts, and to so construct the several parts that all of them may be made exceedingly strong, and duplicated at any time.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improved car coupler, illustrating two of the couplers in locking engagement. Fig. 2 is a similar view, illustrating two opposing couplers in uncoupling position; and Fig. 3 is a side elevation of opposing drawheads in the position illustrated in Fig. 2.

The drawhead A, may be connected with or be integrally formed with any approved form of drawbar, and the drawbar and drawhead may be mounted upon the bottom of the car in any manner known to the trade. The drawhead is provided with a recess 10 in the front thereof, the said recess being somewhat L-shaped, providing a horizontal surface *a*, located a predetermined distance below the plane of the upper surface of the drawhead, and a vertical wall or surface *a'*, which extends transversely across the drawhead, one portion of the wall being straight and the other portion inclined, the straight and inclined surfaces meeting at or near a central line drawn longitudinally through the drawhead. The two surfaces of the vertical wall of the recess 10, are plainly shown in Figs. 1 and 2, the general contour of the recess being illustrated in Fig. 3.

The knuckle B, is pivoted or fulcrumed in the recessed portion of the drawhead, and is capable of free lateral movement therein. The knuckle comprises a partial arrow head or hook section 11, located at one end thereof, the general contour of the knuckle being more or less triangular. The inner side surface of the knuckle adjacent to the arrow head or hook section 11, is more or less concaved, inclined or beveled, as shown at 12 in Figs. 1 and 2. In fact, the surface 12 is adapted to receive the inner edge surface of the hook or arrow head section 11 of an opposing drawhead, the shape of the said inner surface of the knuckle hook and the edge 12 being made to closely correspond. One extremity of the knuckle extends transversely over and beyond one side of the drawhead, and the projecting portion of the knuckle may be either substantially hook-shaped, as shown at 13 in Figs. 1 and 2, or it may be simply reduced and be circular in cross section, or of other desired shape.

The knuckle is provided with a transverse slot or recess 14, which extends preferably from a point at one side of the center through the edge of the knuckle at which the extension 13, is located, as shown in Figs. 1 and 2. In this recess 14, a lock bar 15 is pivoted or fulcrumed, the pivot pin of the lock bar being preferably located at its inner end. The lock bar is usually made of sufficient length to extend beyond the side of the drawhead, and its outer end is usually made wider than at any other point in its length, and the forward side surface of this widened portion of the lock bar is beveled or slightly curved, as illustrated at 16 in Figs. 1 and 2. The lock bar has secured upon it a staple 17, and a crank arm 18 has movement in the staple 17, that is, between the staple and the upper surface of the lock bar, said crank arm being attached to or integral with a rock shaft 19, which is journaled transversely upon the up-

per surface of the drawhead, and one end is provided with a handle 20, through the medium of which the rock shaft is manipulated, while at its opposite end a crank arm 21, is formed adapted to act upon the extension 13 of the knuckle in a lateral and forward direction, after the central crank arm 18, has acted upon the lock bar to raise the same.

The knuckle B may be pivoted in the drawhead in any approved manner. Ordinarily, however, a lug 22, is projected from the rear central portion of the knuckle into a recess 23, made in the vertical wall a' of the recess 10, and a pivot pin 24, is passed through the lug and likewise through the upper portion of the drawhead and the recess 23, as illustrated in Fig. 3.

In the operation of the coupler to effect a coupling, the crank shaft 19, is manipulated in a manner to throw the crank arm 18 upward, which will carry with it the lock bar 15, maintaining the lock bar in the elevated position shown in Figs. 2 and 3, and about the time the lock bar is raised the crank arm 21 on the end of the rock shaft will engage with the projection 13 of the knuckle sufficiently to move the knuckle upon its pivot, and carry its hook head 11 beyond the side of the drawhead, as illustrated at the left in Fig. 2. When the head of the knuckle of another coupler of the same type strikes the knuckle, which is in a diagonal position, the knuckle diagonally located will be drawn inward to a locking engagement with the opposing knuckle, and the lock bar will drop downward, entering its recess 14 and engaging with the entering knuckle, as shown in Fig. 1, thus securing the two knuckles in locking engagement. An uncoupling can not be effected until one of the lock bars 15 is elevated, and the knuckle on the drawhead to which that lock bar belongs is carried to its outer or diagonal position, whereupon the two cars may be drawn in oposite directions, their couplers not interfering with each other. By beveling an outer portion of the vertical wall of the recess 10, the knuckle may be rocked in direction of either side of the drawhead, and thus provide for coupling upon curves, or for ample room between coupled cars when rounding curves.

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

1. In a car coupler, a drawhead, a pivoted knuckle having a rear portion extending transversely beyond one side of the drawhead, a latch or lock bar carried by the knuckle, and a device for elevating the latch and engaging the projecting portion of the knuckle to move the same in a lateral direction, substantially as shown and described.

2. In a car coupler, a drawhead, a knuckle fulcrumed upon the drawhead and having lateral movement, a latch carried by the knuckle, adapted for engagement by an opposing knuckle, a rock shaft, a lift arm connected with the rock shaft and with the latch, and a propelling mechanism connected with the shaft and adapted for engagement with one portion of the knuckle, whereby the knuckle is moved upon its pivot, substantially as shown and described.

3. In a car coupler, a drawhead having a recess therein, the vertical wall of which is partially straight and partially inclined, a knuckle fulcrumed in the drawhead near the junction of the straight and inclined portion of the vertical wall of the recess, a latch pivoted in the knuckle and adapted for engagement with an opposing knuckle, a rock shaft, a lifting device carried by the rock shaft and engaging with the latch, and a propelling device operated by the rock shaft and engaging with one portion of the knuckle, whereby the knuckle is turned upon its pivot, substantially as and for the purpose specified.

4. In a car coupling, a drawhead provided with a recess, a knuckle pivoted in the recess and capable of lateral movement, a latch carried by the knuckle, a lifting device adapted to operate the latch, and a propelling device adapted to engage with the knuckle after the lifting device has commenced to operate and move said knuckle upon its pivot, as and for the purpose set forth.

5. In a car coupler, a pivoted knuckle, a latch or lock bar carried by the knuckle and having a forward extension at its outer end adapted to engage with the opposing knuckle and hold the two knuckles in locking engagement, and a device for elevating the latch and moving the knuckle in a lateral direction, substantially as shown and described.

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