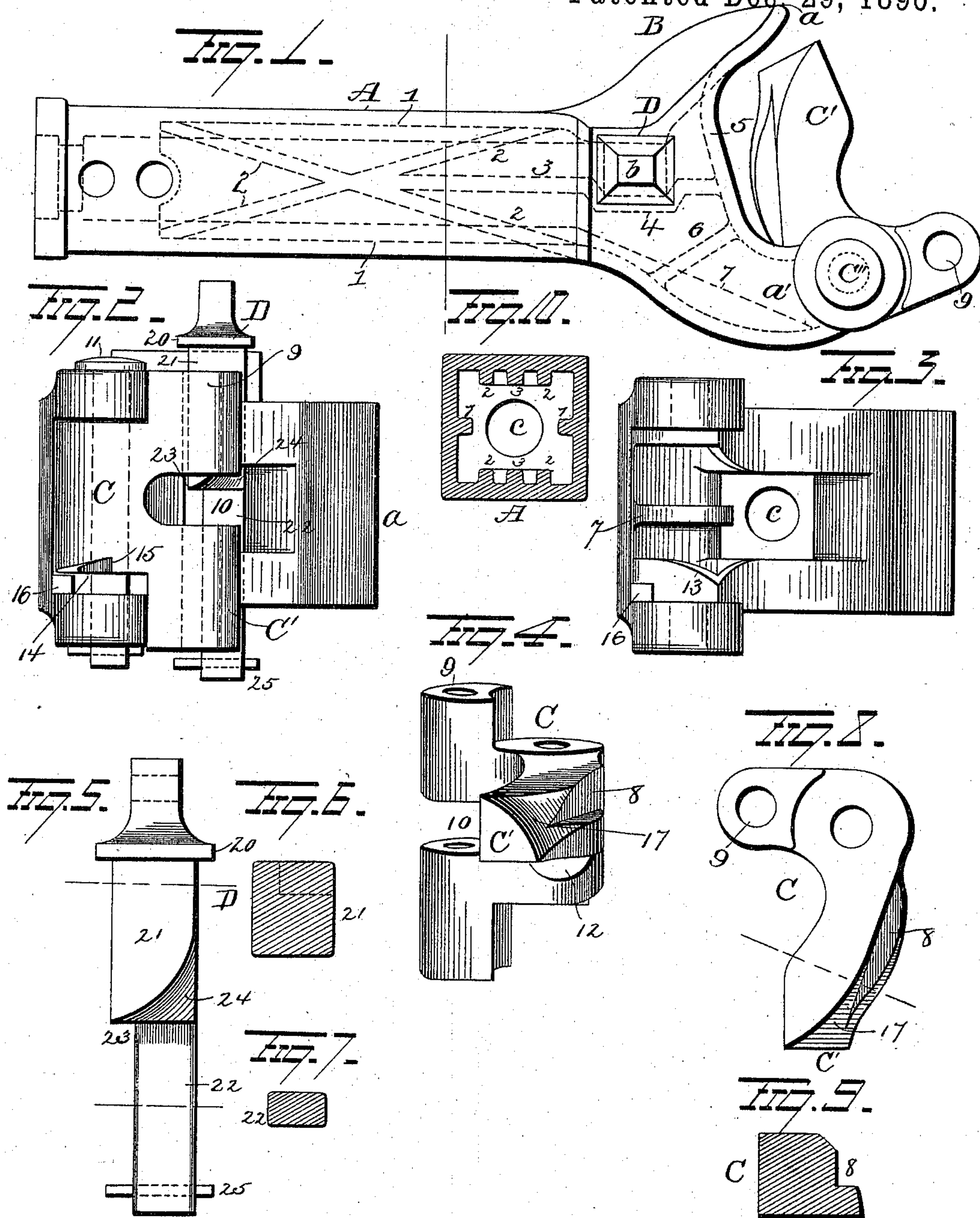


(No Model.)

O. FLOHR, Dec'd.
B. A. FLOHR, Administratrix.
CAR COUPLING.

No. 574,086.

Patented Dec. 29, 1896.



Witnesses
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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 574,086, dated December 29, 1896.

Application filed May 24, 1895. Serial No. 550,551. (No model.)

To all whom it may concern:

Be it known that I, OTTO FLOHR, a resident of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in car-couplings, and more particularly to the class known in the art as the "vertical-plane" coupler, the present invention being designed especially as an improvement upon that for which Letters Patent of the United States were granted to me on the 1st day of August, 1893, and numbered 502,413.

The object of my present invention is to simplify the construction of a car-coupling of the type specified, to render the working of the parts free and easy, to permit the swinging jaw ample movement to insure the quick and effective uncoupling of cars, and to produce a car-coupling which shall be effectual in all respects in the performance of its functions and one in which the frictional resistance between the working parts will be reduced to a minimum.

A further object is to so construct a car-coupling as to obviate danger of breakage of the draw-head or draw-bar when two couplings are brought very abruptly together with great force.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a coupling embodying my invention, certain internal features being shown in dotted lines. Fig. 2 is a front or end view with the knuckle closed. Fig. 3 is an end view with the knuckle removed. Figs. 4, 5, 6, 7, 8, 9, and 10 are views illustrating details.

A represents a hollow draw-bar, and B a draw-head at the forward end thereof, the latter having horns *a a'*, the former preferably somewhat shorter than the latter, and

the whole draw-head is, in general form, similar to that of the Janney type.

The draw-bar A is made internally with strengthening-ribs 1 1, 2 2, and 3. The ribs 1 are arranged parallel with each other, while the ribs 2 are arranged diagonally and cross each other, as shown in Fig. 1. The rib 3 is extended into the draw-head B and made to surround an angular pin-hole *b* in the upper face thereof, as shown at 4. The draw-head B is also provided with strengthening-ribs 5 6 7, the rib 7 being disposed at the side of the draw-head nearest the horn *a'* and serves to receive the impact of the knuckle C when the arm C' thereof is forced violently into the draw-head, thus preventing the knuckle from striking the wall of the draw-head and breaking the latter. For the accommodation of the rib 7 the arm C' of the knuckle is made with a recess 8. That portion of the knuckle C which interlocks with the knuckle of a similar coupler is provided with a hole 9 for the reception of an ordinary coupling-pin, and between its ends the knuckle is made with a slot or recess 10 for the reception of an ordinary coupling-link, (not shown,) through which said coupling-pin may pass, thus rendering my improved coupling adaptable for coupling cars by the use of the ordinary pin and link.

The knuckle C is pivotally connected with the draw-head by means of a pin 11, and is adapted to have a limited vertical movement thereon. A curved lug 12 projects from the knuckle C, or, more properly speaking, from the arm C' of the knuckle, and is adapted to ride on a spiral flange or way 13, made on the draw-head, the incline of said flange or way being gradual, so that it will offer but slight resistance to the movement of the knuckle when the latter is being closed or opened. From this construction it will be seen that when the knuckle is free to swing—viz., when it shall have been released or unlocked—it will swing open automatically, its own weight causing it to ride on the spiral flange or way 13. The knuckle is made with a spiral recess 14 in proximity to the hinge-pin 11, which recess terminates in a shoulder or stop 15, and when the knuckle shall have swung open to its

full extent said shoulder or stop 15 will engage a stop 16 on the draw-head and limit any further swinging movement of the knuckle. It will be observed that the arm C' of the
 5 knuckle is made of peculiar shape—that is to say, it is beveled, as at 17, the bevel portion being made at the rear upper corner of the arm, as shown in Fig. 4, and is preferably somewhat curved. The forward face of the
 10 arm C' is made straight at 18 and preferably curved at 19.

The under face of the draw-head is made with a hole, rectangular in cross-section and adapted to aline with the hole b in the upper
 15 face of said draw-head. Through these holes a locking-pin D is passed and provided near its upper end with a flange or shoulder 20, adapted to normally rest on the top of the draw-head to limit the downward movement
 20 of said pin. The upper or body portion 21 of the locking-pin is made square in cross-section, and the lower portion or shank 22 is made rectangular in form and contracted in size to pass freely through the rectangular hole c in
 25 the bottom of the draw-head. The shoulder 23, formed by the junction of the parts 21 22 of the locking-pin, is made with a curved beveled face 24, for a purpose which will be presently explained.

30 When two cars are brought together, the horn a of one coupling will engage the arm C' at the curved part 19 of the other coupling and force said arm into the draw-head, as above explained, thus causing the knuckles of the
 35 two couplings to interlock. As the arm C' of the knuckle enters the draw-head the curved beveled face 17 will engage the beveled shoulder on the locking-pin and raise the latter, so as to permit said arm of the jaw to pass said
 40 shoulder, whereupon the locking-pin will fall to its normal position, with the straight vertical body portion of the pin in front of the straight vertical face 18 of the arm C' of the knuckle, thus securely locking said knuckle.

45 It is a matter of importance that the engaging faces of the arm C' of the knuckle and the locking-pin be vertical instead of beveled, as in the latter case the hammering of the arm of the knuckle against the beveled shoulder of the locking-pin, owing to the vibration
 50 imparted to the coupling by the motion of the bars or for other reasons, would be apt to cause the locking-pin to be gradually worked upwardly and finally release the knuckle.
 55 With the abutting faces of the arm of the

knuckle and the locking-pin vertical this is impossible.

The vertical movement of the pin to release the knuckles when uncoupling may be accomplished by means of a suitable chain 60 attached to the locking-pin D and extended to a point within easy reach of the operator. The vertical movement of the locking-pin may be limited by means of a small pin 25, passed through the lower end thereof under 65 the draw-head.

My improvements are exceedingly simple in construction and are effectual in every respect in the performance of their functions.

Slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise details of construction herein set forth; but, 75

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

1. In a car-coupling of the Janney type known as the "vertical-plane" type, the combination with a draw-head, and a knuckle pivoted therein and substantially fitting the interior thereof, the draw-head provided with a spiral flange or way on its bottom, and the knuckle having a curved lug adapted to rise 85 on this flange or way, said knuckle also furnished with a beveled arm, of a pin constructed to play vertically in the draw-head and provided with a vertical portion which locks the arm of the knuckle between it and 90 the inner wall of the draw-head, said pin having a beveled portion adapted to be struck by the beveled portion of the arm whereby the pin is automatically raised by the knuckle in swinging shut, substantially as set forth. 95

2. In a car-coupling, the combination with a draw-head provided on its upper and lower inner walls with ribs which cross each other and on the side walls with longitudinal ribs, one of said longitudinal ribs terminating in 100 the longer horn of the draw-head, of a knuckle provided with a recess 8 adapted to receive said rib, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 105

OTTO FLOHR.

Witnesses:

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 WILBUR B. GRANDISON.