

(No Model.)

J. P. RUNKEL.  
CAR COUPLING.

No. 597,861.

Patented Jan. 25, 1898.

Fig. 1.

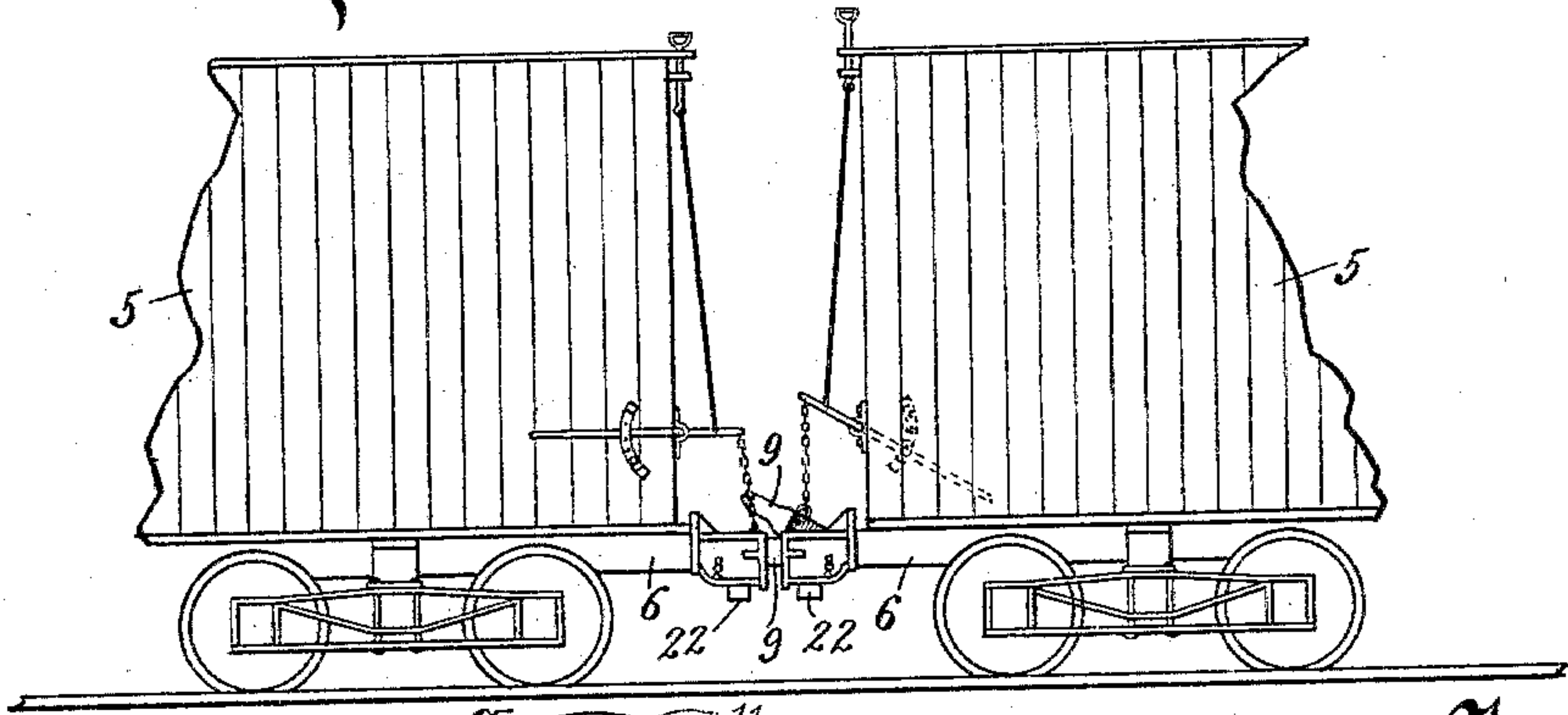


Fig. 2.

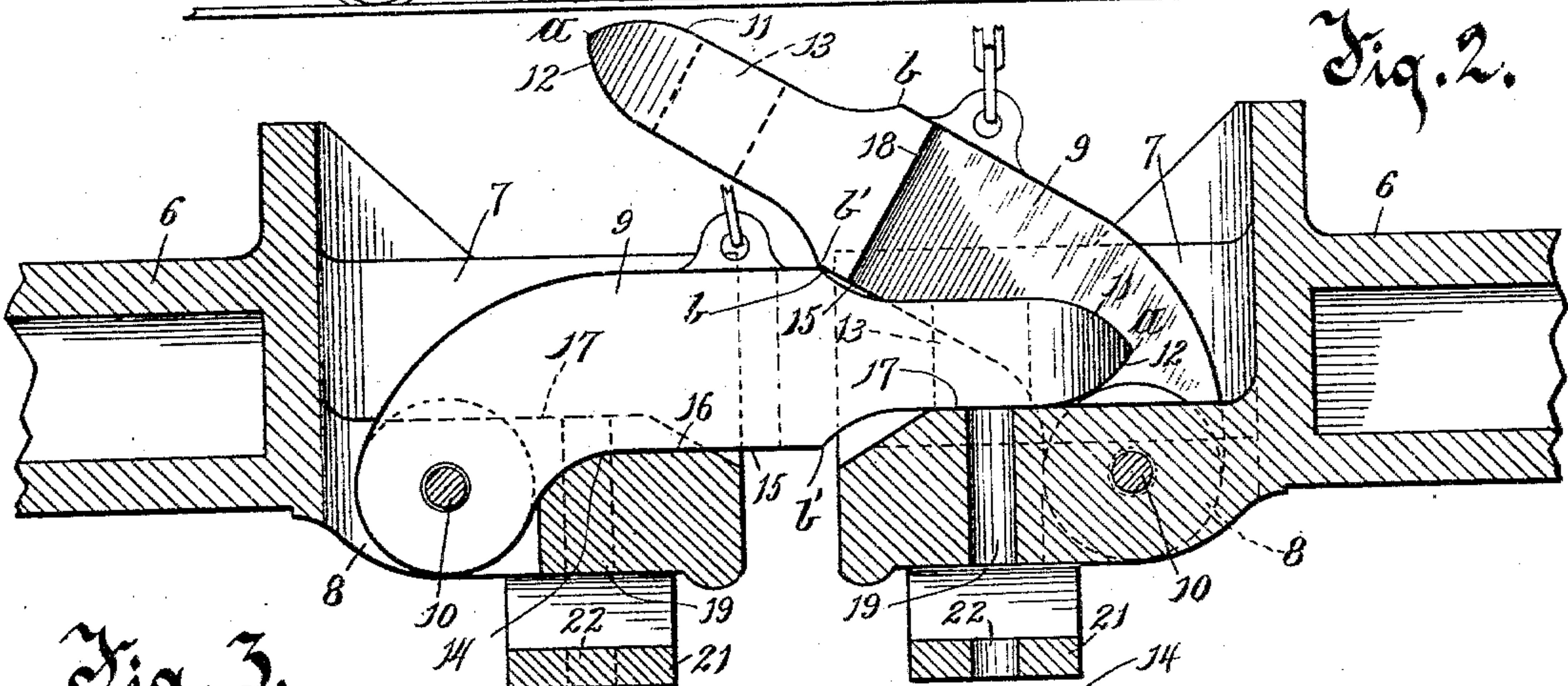


Fig. 3.

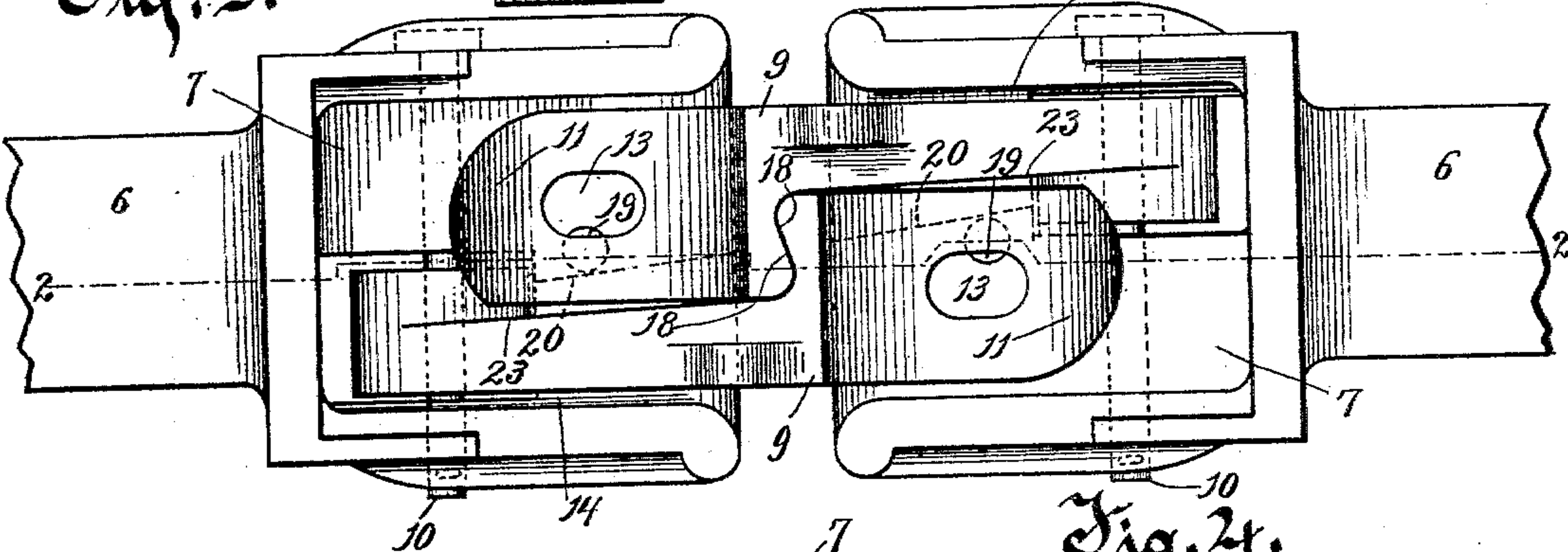
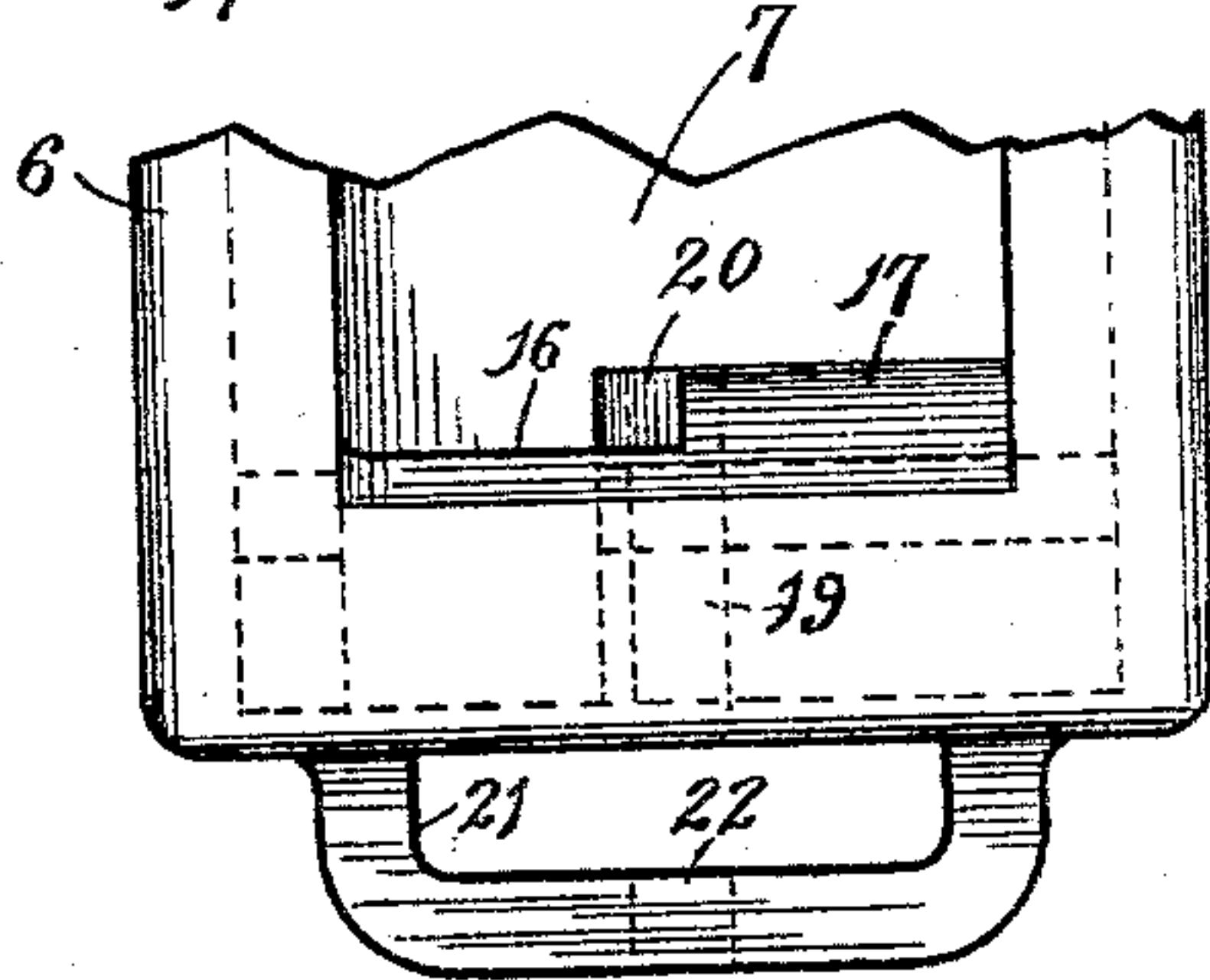


Fig. 4.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 597,861, dated January 25, 1898.

Application filed December 26, 1896. Serial No. 617,027. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN P. RUNKEL, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Car-Couplers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in car-couplings; and it consists in certain improvements upon Letters Patent of the United States No. 376,164, issued to me under date of January 10, 1888.

The invention consists of the devices and parts or their equivalents, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 represents a side view of two cars provided with my improved form of couplings, showing the coupling-hooks detached from each other. Fig. 2 is a vertical sectional view on the line 2 2 of Fig. 3, the hooks, however, not being sectioned and in their raised position ready for uncoupling. Fig. 3 is a plan view showing the hooks coupled, and Fig. 4 is an end view of a fragment of one of the draw-heads.

Referring to the drawings, the numerals 5 5 indicate two cars provided with my improved form of coupling. The draw-heads are indicated by the numerals 6 6. These draw-heads are each provided with recesses 7 7, extending from their top surfaces downwardly for a desired distance. At their inner ends these recesses are formed with downwardly-extending branch recesses 8 8. In each of these recesses a coupling-hook 9 is pivoted upon a pivot-pin 10. These hooks have a peculiar formation at their free ends, consisting of beveling the upper and lower edges thereof, the upper bevels being indicated by the numerals 11 11 and the lower bevels by the numerals 12 12. These beveled surfaces are shown as slightly rounded; but it is obvious that they could be formed with sharp bevels along straight lines. The form shown, however, is perhaps the more advantageous construction, as I am thereby enabled to provide a greater thickness of metal in front of the elongated openings 13 13 of the hooks, which openings are adapted to receive therethrough ordinary coupling-pins

when a car carrying my improved coupler is to be connected to another car carrying an ordinary form of coupling provided with a coupling-pin. It will be seen that the beveled or angular surface 11 of each hook extends from the point *a* to the point *b* and the beveled or angular lower surface from the point or apex *a* to the point *b'*. In my former Letters Patent, No. 376,164, the beveled or angular formation was only provided on the upper surface of the free end of the coupling-hook. The present construction therefore contemplates the duplication of this beveled or angular formation upon the lower edge of the coupling-hook. This lower bevel enables the hook to more readily ride or pass into the opposing draw-head when two cars are brought together for coupling, and when one car is provided with my improvements and the other car with an ordinary form of draw-head this under beveled or angular formation will cause the hook to readily pass into the opening or recess of said ordinary form of draw-head. The construction is particularly advantageous where the opposed draw-head is not on the same horizontal plane.

It will be noticed that the draw-heads are each provided with a side recess 14, into which recess the shank of a hook is disposed, the inner end of said shank extending downwardly into the branch recesses 8 8, hereinbefore referred to, in order to receive the pivot-pins 10. The shanks of the hooks fit snugly between the walls of these side recesses, so as to prevent lateral displacement of the hooks. Each hook is provided upon its under side medially with a straight surface 15. It will also be noticed that the bottom of each recess 7 has a portion thereof cut away, as indicated at 16. This cut-away portion is adapted to receive and support the straight surface 15 of a coupling-hook when such hook is thrown down upon its pivot. The raised or higher portion of the bottom of each recess is indicated by the numeral 17, and this portion 17 is adapted to receive thereon the forward angular or beveled end of a hook. The beveling of the under edge of each hook necessarily decreases the width of the hook at such point, and consequently a higher surface, such as 17, is required in order to support the hook when turned down on its pivot on a true



horizontal line. The hooks at their free ends are provided with lateral extensions forming the hook members. The inner edges of the lateral extensions form the drawing or bearing surfaces 18 18, which are disposed at acute angles to the sides of the lateral extensions. I prefer to round the inner and outer corners or angles of each bearing-surface, so that when the hooks are in engagement the convex outer rounded corners of one will fit in the concave inner rounded corner or angle of the other, thereby holding the hooks securely against slidewise wobbling.

In case one car is equipped with my improved form of draw-head and coupling-hook and the other car is provided with the draw-head, but is without the improved form of hook, then the coupling can be effected by running an ordinary coupling-pin through the elongated opening 13 of the hook and through the opening 19 in the bottom of the recess 7. It will be noticed, however, that the elongated opening 13 does not squarely register with the draw-head opening 19, and in order to provide for said openings being brought into register, so as to admit of a coupling-pin passing therethrough, I form the inner walls of the side recesses 14 at a bevel or incline, as indicated at 20, so that the free end of the hook may be swung inwardly a slight distance to bring its opening 13 into register. It will be understood that the opening at the inner end of the hook for the passage therethrough of the pivot-pin 10 is sufficiently large to permit of the slight lateral movement of the outer end of the hook just referred to. Not only does this arrangement provide for coupling to another car having the same form of draw-head and without the coupling-hook, but also to another car having any of the usual forms of draw-heads provided with a coupling-pin opening.

It might frequently be found necessary to couple a car carrying my improved coupling to another car carrying an ordinary coupling-link. In order to provide for this, I form on the under side of the draw-head 6 a loop or bail 21, the lower connecting-piece of said loop or bail provided with an opening 22, which is in register with the bottom opening 19 of the draw-head. It is obvious that the link carried by the other car can readily enter this loop and a coupling-pin pass through the registering openings 19 and 22.

The coupling-hooks may be raised and lowered by any desirable means; but I prefer to employ mechanism covered in my former Letters Patent, No. 376,164, and shown in Fig. 1 of the present drawings.

In the operation of the device when two cars are brought together for coupling as the front ends of the hooks are brought in contact one

or the other of said hooks will be thereby caused to slide above the other until they reach the locking position, when the upper coupling-hook drops into the horizontal position in line with the lower hook, as shown in Fig. 3.

In order to provide for cars equipped with my couplings rounding curves without too much lateral strain on the hooks of the couplings, I bevel the inner edges of the shanks of said hooks, as indicated at 23 23. It is obvious that this, in connection with the loose pivots for the hooks, permits a slight lateral play, the hooks turning on the fulcrum formed by the angle of one hook fitting into the angle of the other, whereby the liability of strain on or breakage of the parts is avoided.

What I claim as my invention is—

1. In a car-coupling, the combination, with a draw-head provided with a recess having a lateral branch recess, the side wall of said branch recess being at an incline, and said draw-head also having a pin-opening extending centrally through its bottom, of a coupling-hook pivoted loosely in the side recess, said hook provided at its free end with a pin-opening, the loose pivot of the pin and the inclined wall of the branch recess permitting the hook to be thrown over laterally so as to bring its pin-opening into register with the pin-opening of the draw-head.

2. In a car-coupling, the combination, with draw-heads provided with recesses, the bottom of each recess having a raised portion and a cut-away portion, of hooks pivoted in the recesses, each hook provided on its under edge medially with a straight surface adapted to rest on the cut-away portion of the draw-head, and each hook also having a beveled or angular reduced end adapted to rest on the raised portion of the bottom of the recess.

3. In a car-coupling, the combination, of draw-heads provided with recesses, horizontal pivot-pins in the recesses, and coupling-hooks loosely pivoted on the pins so as to swing upwardly and downwardly, said hooks being provided at their free ends, upon the inner edges thereof, with lateral extensions forming the hook members, the angle of one hook fitting in the angle of the adjacent hook, and the inner edges of the shanks of the hooks being beveled, so as to leave a space between the beveled edge of the shank of one hook, and the opposite edge of the hooked portion of the other interlocking hook.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN P. RUNKEL.

Witnesses:

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ANNA V. FAUST.