

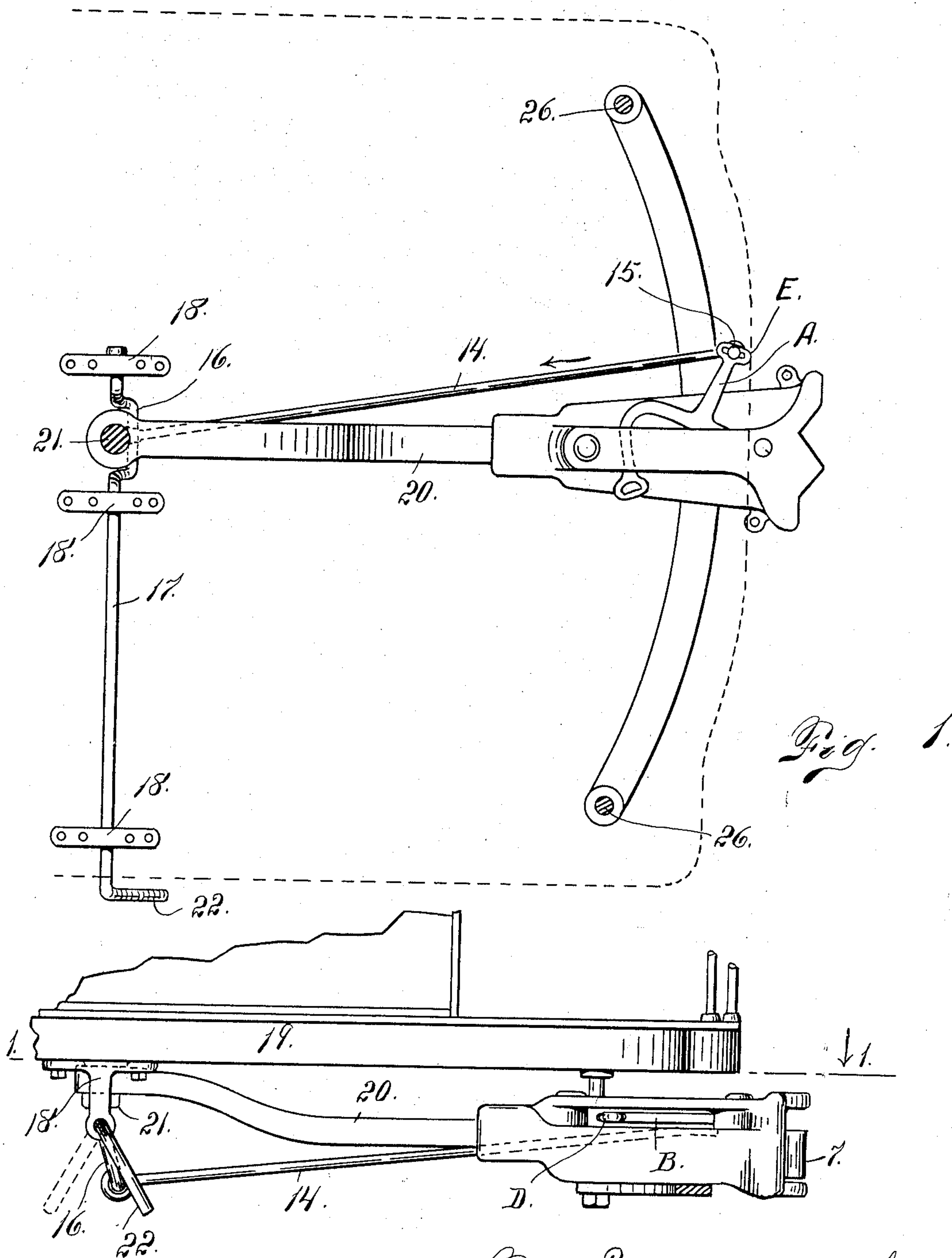
No. 821,204.

PATENTED MAY 22, 1906.

C. H. TOMLINSON.
UNLOCKING MEANS FOR CAR COUPLINGS.

APPLICATION FILED SEPT. 12, 1905.

2 SHEETS—SHEET 1.



Witnesses
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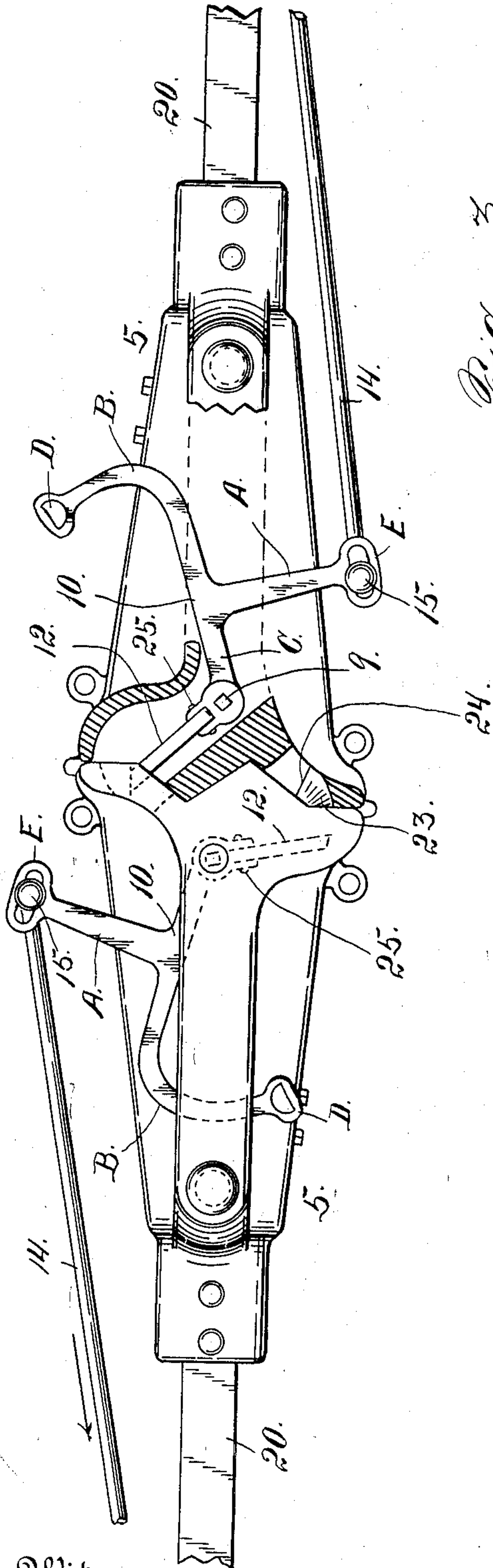


Fig. 3.

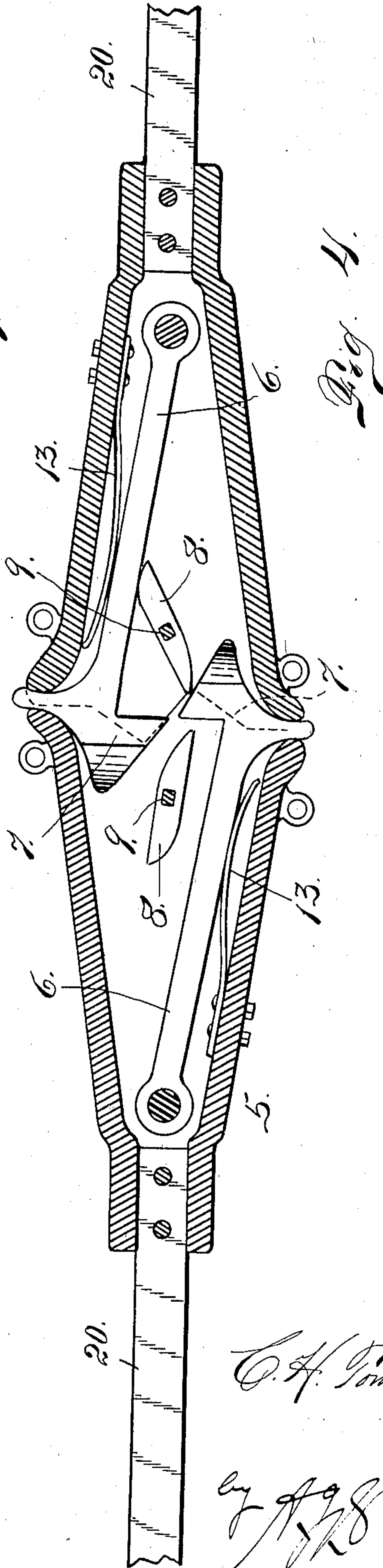


Fig. 4.

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UNITED STATES PATENT OFFICE.

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UNLOCKING MEANS FOR CAR-COUPPLINGS.

No. 821,204.

Specification of Letters Patent.

Patented May 22, 1906.

Application filed September 12, 1905. Serial No. 278,191.

To all whom it may concern:

Be it known that I, CHARLES H. TOMLINSON, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Unlocking Means for Car-Couplers; and I do 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, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in means for unlocking car-couplers or for throwing the locking device to the unlocked position.

While my improvement is shown in connection with the car-coupler set forth in my application, Serial No. 245,043, filed February 10, 1905, it must be understood that its use is not limited to this special construction, but may be employed with other styles of draw-heads to equal advantage.

My object is to produce an unlocking device composed of a crank-shaft and connecting-rod, which shall be adapted for use with radiating draw-bars or draw-bars whose rear extremities are pivotally connected with the car, whereby the bars are allowed to swing as is necessary in making short turns, as in street-car service in cities.

My improved construction, as shown in the drawings, consists of a rock-shaft whose axis intersects the axis or pivotal center of the draw-bar and is provided with a crank to which is attached the rear extremity of the connecting-rod, whose forward extremity is connected with the unlocking device in proper operative relation. By virtue of this arrangement or an arrangement approximating that just stated the forward extremity of the connecting-rod or that attached to the unlocking device describes an arc parallel or approximately parallel with the arc described by a point on the draw-head during the swinging or radiating movement of the latter, thus preventing any tendency to impart an unlocking movement to the unlocking device during the swinging or radiating movement of the draw-head. The forward extremity of the connecting-rod is preferably

so connected with the unlocking device as to allow a small amount of play to compensate for any possible inaccuracy or variation in the construction or position of the operating parts.

Having briefly outlined my improved construction, as well as the function which it is intended to perform, I will proceed to describe the same in detail, reference being made to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a top view of a single draw-bar equipped with my improvements, the top of the car being indicated by dotted lines. This is a view looking downward from the plane indicated by the broken line 1 1 in Fig. 2. Fig. 2 is a side elevation of the same, showing a fragment of the car in full lines. Fig. 3 is a top view showing two abutting draw-heads similarly equipped, but with my improved device, as well as the draw-bars, partly broken away. Fig. 4 is a horizontal section taken through two draw-bars with all the parts in the relative position shown in Fig. 3.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a draw-bar equipped with a spring-actuated coupling device 6, having a hook-shaped head 7, adapted to interlock with the corresponding coupling device of the opposite draw-head. Each draw-head is provided with an unlocking-cam 8, secured to a spindle 9 and adapted to act simultaneously on both coupling devices 6 for uncoupling purposes when the spindle is properly manipulated. To this spindle 9 is secured a lever 10, to one of the extremities of which is pivotally connected a pawl 12, adapted to engage an offset 24, formed in the abutting extremity of the opposite draw-head, whereby when the lever is actuated to throw the coupling device 6 to the unlocked position the coupling devices will be held in the uncoupled position until the cars separate or are drawn apart, in which event the spring 13, acting on each coupling device or hook, will return the unlocking-lever 10 to its normal position, or that shown on the left of Fig. 3.

The lever 10 may be said to be composed of three arms A, B, and C. The arm B is provided with an opening at its extremity, as shown at D, into which a hook-shaped tool

(not shown) may be inserted from the outside of the car when it is desired to manipulate the lever in this manner for the purpose of throwing it to the position shown in Fig. 3.

5 This feature, however, was covered in the aforesaid application. By virtue of my improvement the lever is provided with the arm A, whose extremity E is provided with an elongated opening or slot, with which is

10 connected one extremity of the rod 14 by means of a wrist-pin 15. By virtue of this connection the rod 14 has a limited movement on the lever-arm. The extremity of the rod 14 remote from the lever is loosely

15 connected with a crank 16, formed in a rock-shaft 17, journaled in suitable bearings 18, attached to the bottom of the car 19, the axis of the shaft 17 intersecting the axis of the draw-bar 20, which is pivotally connect-

20 ed with the car, as shown at 21. The shaft 17 protrudes slightly beyond the vertical wall of the car and is provided with a hand-crank 22 for manipulating purposes. Now if the shaft 17 be turned in a direction to

25 cause the rod 22 to move as indicated by the arrows in Figs. 1 and 3 it is evident that the lever 10 will be actuated to cause the pawl 12 to move up the inclined surface 23 of the opposite draw-bar and drop downwardly to en-

30 gagement with the offset 24, whereby the lever will be held in the adjusted position. During this movement of the lever the spindle 9 and its corresponding cam 8 are actuated to separate the coupling devices 6 or throw

35 them to the position illustrated in Fig. 4, whereby the coupling devices are disengaged, permitting the cars to separate. The function of the pawl 12 is to hold the unlocking-lever in the adjusted position or that corre-

40 sponding with the unlocked position of the coupling devices until the cars separate. For a more detailed description of this pawl reference is made to the aforesaid application. It may be stated, however, that the

45 pawl is pivoted to the lever just forward of the fulcrum of the latter, as shown at 24, whereby it is allowed to swing vertically. This pawl, however, has no lateral swing, and therefore will hold the lever in the adjusted

50 position when the pawl has dropped to engagement with the offset 24, as heretofore explained.

It will be understood that as the draw-bar swings upon its pivot 21 and between the

55 stops 26 the movement of the pin 15, which connects the rod 14 with the lever, will be in an arc parallel or approximately parallel with that described by any point of the draw-bar, since the rear extremity of the rod 14 is

60 approximately directly below or in line with the axis of the draw-bar. When, however, the crank 16 is swung forwardly or rearwardly of this axis, there will be a slight variation in the travel of the pin 15 from the

65 path just described. However, by provid-

ing the extremity E of the lever A with an elongated opening, in which the pin 15 is free to slide, this slight variation in the arc described by the pin 15 is compensated for and the parts are all maintained in operative re-

70 lation and in the proper relative position during the swinging movement of the rod 14 and the draw-bar.

It must be understood that the inner or rear extremity of the rod 14 must be loosely

75 connected with the crank 16, whereby the rod is allowed the necessary swinging movement to correspond with the swing of the draw-bar, while the crank-shaft 17 remains stationary.

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It will be readily understood that other forms of unlocking devices may be manipulated by virtue of the construction and arrangement of the devices just explained. It must therefore be understood that the in-

85 vention is not limited to the special construction of draw-bar, coupling devices, and unlocking-lever shown in the drawings and heretofore described.

Having thus described my invention, what

90 I claim is—

1. In mechanism of the class described, the combination with a rotating draw-bar and an uncoupling device, of a shaft journaled to cause its axis to intersect, or approximately

95 intersect, the axis or center of motion of a swinging draw-bar, and a rod connecting the shaft and uncoupling device of the draw-bar in operative relation, substantially as described.

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2. In unlocking devices for car-couplers, the combination with a rotating draw-bar and an uncoupling device, of a shaft journaled to cause its axis to intersect, or approxi-

105 mately intersect, the axis or center of motion of the swinging draw-bar, and means for connecting the shaft and the coupling device of the draw-bar in operative relation, substantially as described.

3. In unlocking devices for car-couplers, the combination with a radiating draw-bar and uncoupling device, of a rock-shaft jour-

110 naled to cause its axis to intersect, or approximately intersect, the axis or center of motion of the swinging draw-bar, the rock-shaft having a crank and a rod loosely connected with the crank at one extremity, its opposite ex-

115 tremity being connected with the uncoupling device, substantially as described.

4. In unlocking mechanism for car-couplers, the combination with the radiating draw-bar and uncoupling device, of a rock-shaft journaled to cause its axis to intersect, or approximately intersect, the axis or center of motion of a swinging draw-bar, an un-

120 locking device, a rod loosely connected at its respective extremities with the rock-shaft and draw-bar respectively.

5. In mechanism of the class described the combination with a radiating draw-bar and

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coupling device, of a rock-shaft journaled to
intersect the axis of the swinging draw-bar,
and a suitable operative connection between
the rock-shaft and the coupling device, for
5 uncoupling purposes whereby the parts will
maintain their relation during the swinging
movement of the draw-bar.

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

CHARLES H. TOMLINSON.

Witnesses:

DENA NELSON,
OTTO E. HODDICK.