

No. 775,598.

PATENTED NOV. 22, 1904.

C. F. CHRISTY.
CAR COUPLING.

APPLICATION FILED MAR. 14, 1904.

NO MODEL.

Fig. 1.

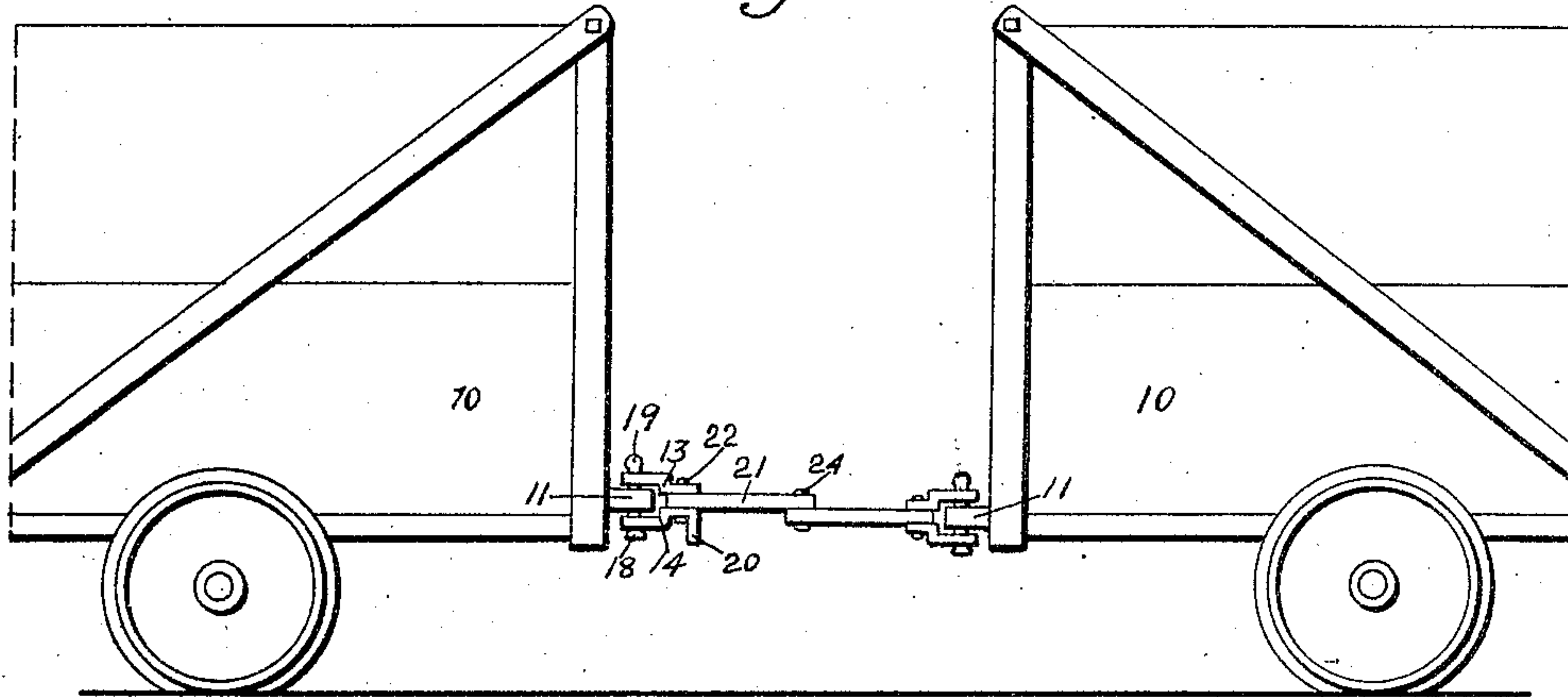


Fig. 2.

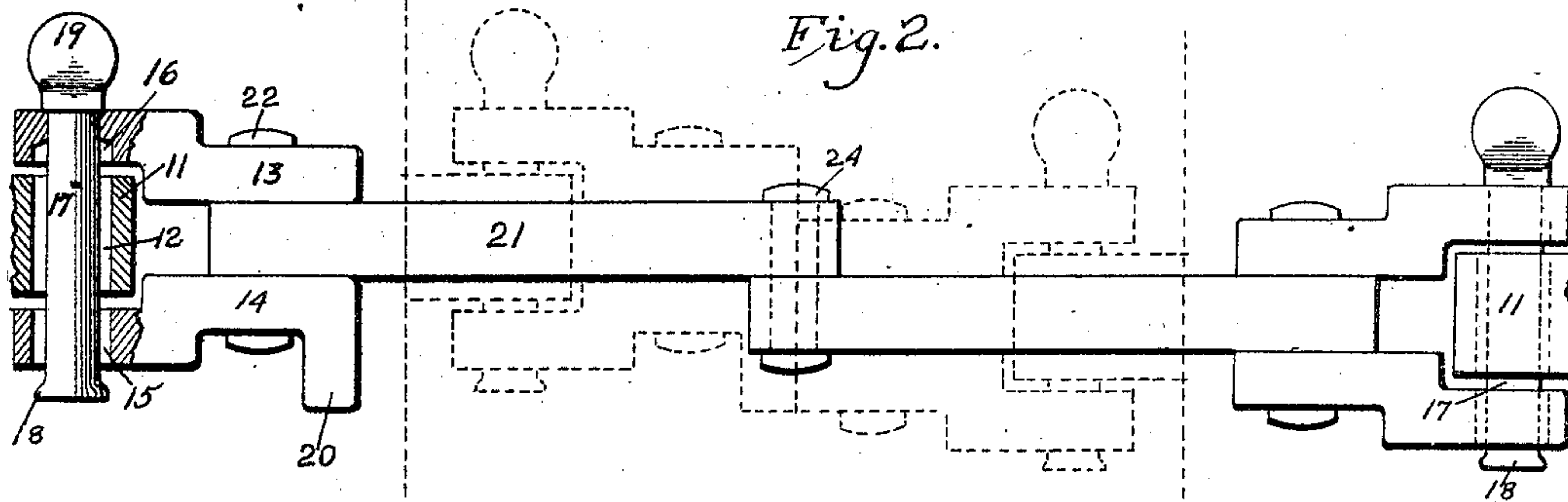
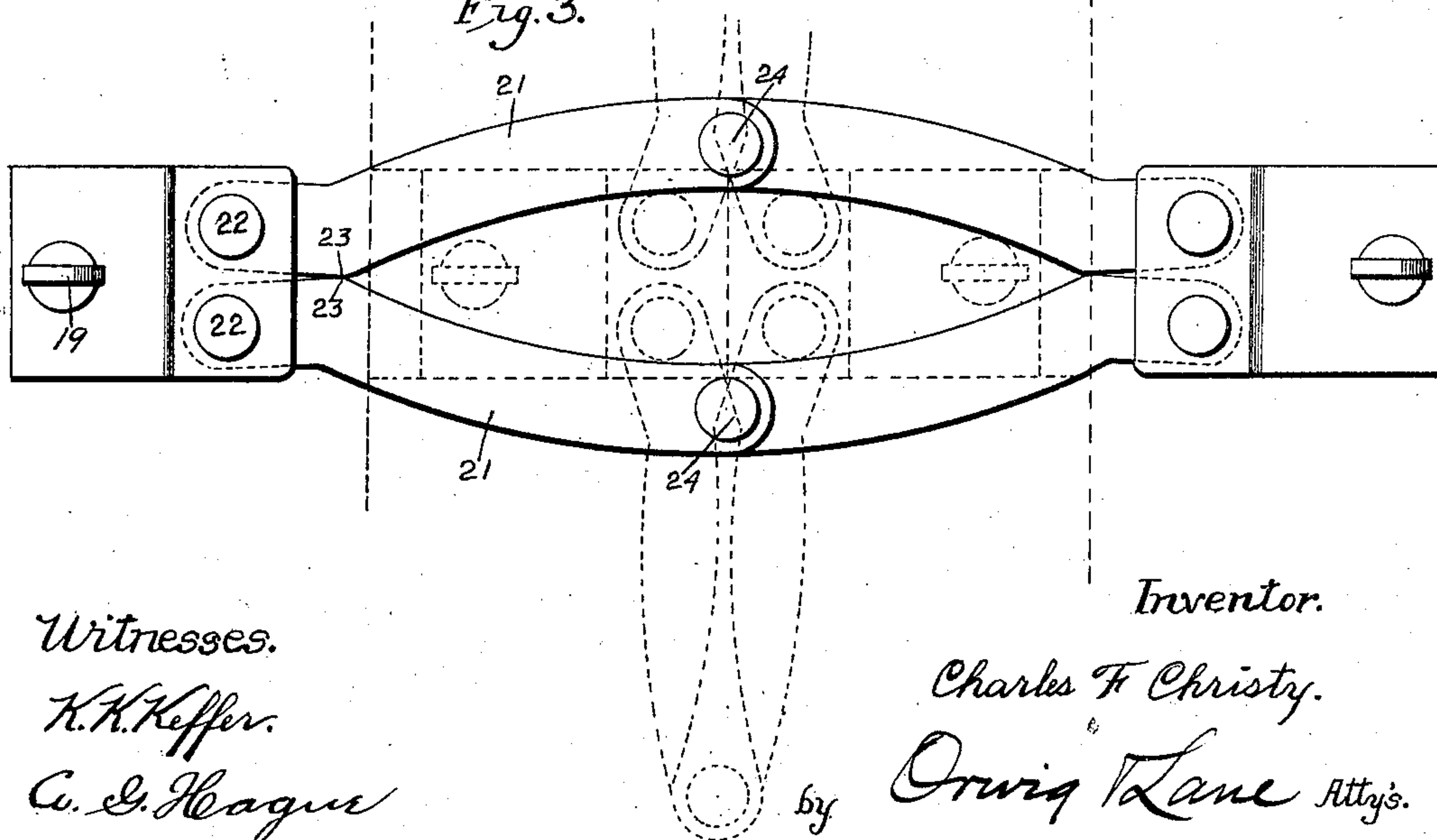


Fig. 3.



Witnesses.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 775,598, dated November 22, 1904.

Application filed March 14, 1904. Serial No. 198,122. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. CHRISTY, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

The objects of my invention are to provide a car-coupling of simple, durable, and inexpensive construction especially designed for use in connection with mine-cars and arranged to permit the cars to move to a considerable extent to and from each other while coupled.

My invention consists in certain details in the construction, arrangement, and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of the adjacent portions of two mine-cars connected by my improved coupling device. Fig. 2 shows a side elevation of a coupler, part of one of the ends of the coupler broken away and also showing by dotted lines the positions of the coupler parts when the cars are at their limit of movement toward each other; and Fig. 3 shows a top or plan view of the coupler. The dotted lines indicate the positions of the coupler parts when the cars are at their limit of movement toward each other.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate that portion of the car shown, and 11 the draw-bar attached to the car, provided with a vertical pin-opening 12.

The coupling comprises two plates 13 and 14 at each end. The outer ends of said plates are separated far enough to permit the admission of the draw-bar 11 between them. The lower plate 14 is provided with a relatively large pin-opening 15 and the upper plate provided with a relatively small pin-opening and an annular recess 16 around the lower end of the pin-opening. The coupling-pin (indicated by the numeral 17) is provided on its lower end with an annular shoulder 18 and at its top with a head 19. The body of the pin accurately fits in the opening in the top plate 13,

and the head 19 on the pin limits the downward movement of the pin, while the shoulder 18 at the bottom of the pin may freely pass through the opening in the lower plate and also through the opening in the draw-bar 11, and it may enter the recess 16. Hence the pin may not be wholly detached from the coupling, but may simply move up far enough to clear the draw-bar. On the inner end of one of the lower plates 14 is a downwardly-extending shoulder 20, for purposes hereinafter made clear.

The two sets of plates before described are connected as follows: Between the inner ends of each pair of plates I have pivoted two arms 21, supported between the plates by the rivets 22. These arms are provided with inwardly-projecting shoulders at 23, said shoulders arranged to engage each other when the inner ends of the arms are separated somewhat more than the distance between the two rivet-pins 22, as clearly shown in Fig. 3. The adjacent ends of the arms 21 are pivotally connected by the pins 24. The arms 21 between the pair of plates having the shoulder 20 are placed on top of the other pair of said arms, and the function of the said shoulder 20 is to provide a stop to engage the inner end of the lower plate of the other pair when said pairs of plates are moved toward each other, as shown by the dotted lines in Fig. 2.

In practical use I attach the coupler to the draw-bar of a car by inserting the draw-bar between the outer ends of the plates 13 and 14 and then dropping the coupling-pin 17 through the opening in the draw-bar. If the coupling is at one end of a train of cars and is not to be coupled to another car, I move the free end of the coupler to position against the attached end, and in this way the coupler is held in a compact form and will not drag upon the roadway. However, even if the coupling should be in its extended position it will be supported in an approximately horizontal position, with the free end inclined downwardly only a slight distance by the draw-bar itself. In ordinary mine-car couplers where a number of pivoted links are used the free end of a coupling of this kind is likely to drag upon the roadway and is therefore ob-

jectionable. Assuming, however, that both ends of the coupler are attached to draw-bars of adjacent cars, then the central portion of a coupling will not hang downwardly, even though the cars move to their limit of movement to each other. Assuming that the arms 21 are in the position shown by the solid lines in Fig. 3, then if the cars move toward each other the said arms will spread apart at their inner ends, because they are pivoted together at points outside of a line drawn through the pivotal points of their other ends. Hence the cars may freely move toward each other until stopped by the lower plates engaging each other.

In mine-car couplings it is desirable to have the cars arranged so that a considerable movement to and from each other may be had, because the draft-animals in starting a train of cars may first move one car a short distance before the weight of the next car must be moved, and unless some play were allowed between the cars it would be frequently impossible for the draft-animals employed to start a train of cars. It is necessary to permit a slight up-and-down movement of the ends of two adjoining cars relative to each other; but it is not desirable to permit too great a movement of this kind. With my improved coupler a slight amount of play is allowed between the draw-bars and the plates of the coupler; but this movement is limited, and there is no up-and-down movement permitted between the parts of the coupler itself. Hence when the cars are traveling at a comparatively high rate of speed over a rough track a coupler which is rigid against vertical movement will often prevent one of the cars from jumping the track by having the adjacent car hold it down by means of the coupling.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

1. An improved car-coupling comprising two devices designed to be secured to two adjacent draw-bars and arms pivoted to said devices and to each other, said arms limiting the movement of the devices away from each other and permitting a free movement of them toward each other.

2. An improved car-coupling comprising two devices designed to be attached to two adjacent draw-bars, two arms pivoted to each of said devices, the arms on said devices pivoted to the other arms, the ends of the arms that are pivoted together moving outwardly as the said devices move toward each other.

3. An improved car-coupling, comprising two devices designed to be secured to two adjacent draw-bars, an arm pivoted to each of said devices, said arms pivoted together, the ends of the arms that are pivoted together moving outwardly as the said devices move toward each other and means for limiting the inward movement of the ends of the arms that are pivoted to the devices to prevent said ends from reaching a point in line between the ends of the arms that are pivoted to said devices.

4. An improved car-coupling, comprising two sets of plates, each set consisting of an upper and a lower one, the outer ends of said lower and upper plates designed to receive a draw-bar between them, coupling-pins mounted in the outer ends of said plates and two links pivoted between the inner ends of each pair of plates and having their inner ends pivoted together.

5. An improved car-coupling, comprising two sets of plates, each set consisting of an upper and a lower one, the outer ends of said lower and upper plates designed to receive a draw-bar between them, coupling-pins mounted in the outer ends of said plates and two links pivoted between the inner ends of each pair of plates and having their inner ends pivoted together, said arms provided with shoulders arranged to prevent the ends of the arms that are pivoted together from moving to a line drawn through the ends of the arms that are pivoted between the plates.

6. An improved car-coupling, comprising two pairs of plates, each pair consisting of an upper plate provided with a pin-opening and an annular recess, a lower plate provided with a relatively large pin-opening, a pin for each pair of plates passed through the pin-opening of the upper plate, a head at the top of the pin and a shoulder at the bottom of the pin, said shoulders passing freely through the opening of the lower plate and preventing the passage of the pin upwardly through the upper plate, two arms pivoted between each pair of plates side by side, the adjacent ends of said arms pivoted together, said arms shaped so that their meeting ends cannot move inwardly to a line drawn through the ends of the arms that are pivoted to the plates and a downwardly-projecting shoulder on one of the lower plates, substantially as and for the purposes stated.

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Witnesses:

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