

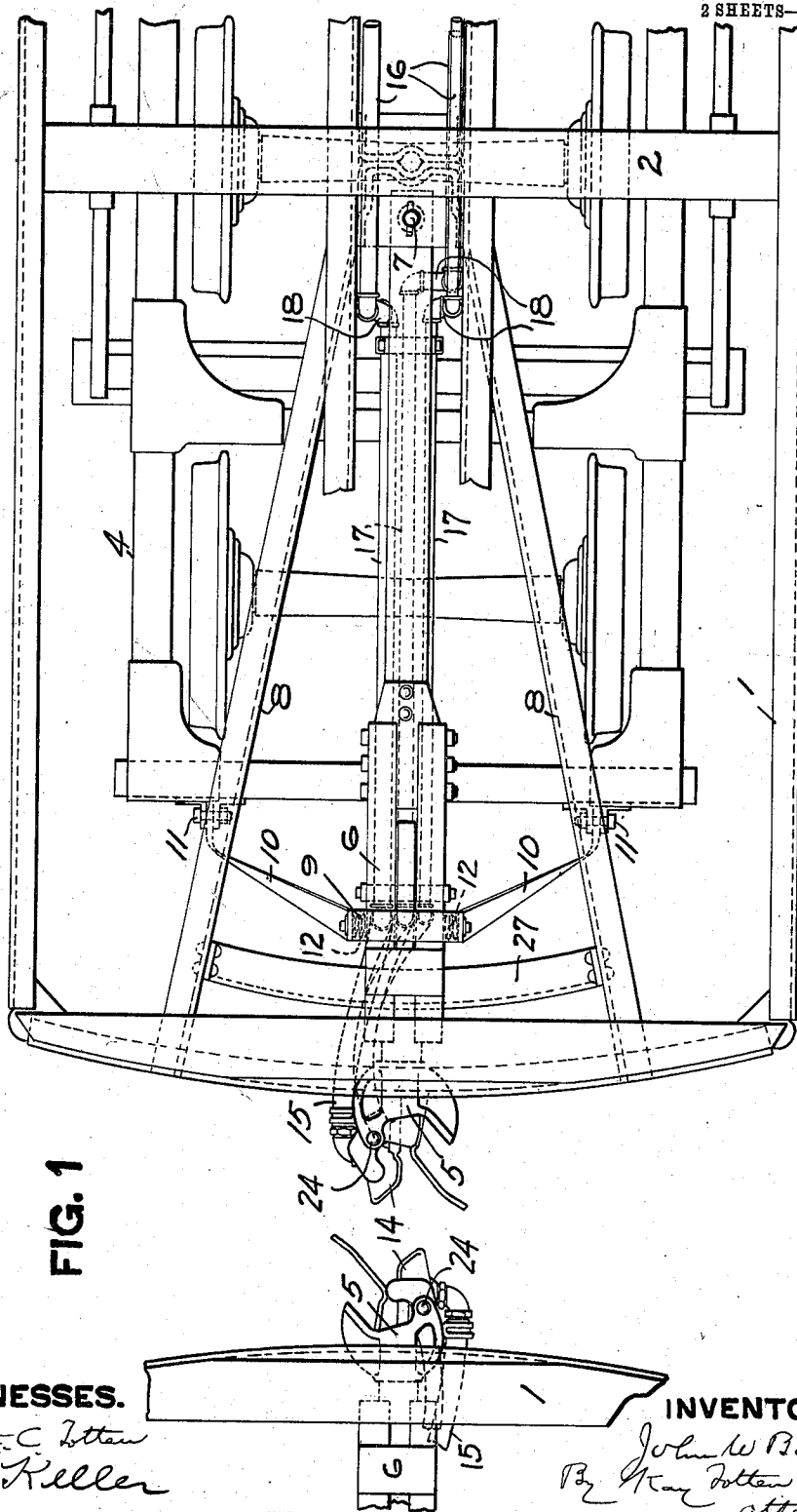
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PATENTED DEC. 10, 1907.

J. W. BARTH.
COMBINATION CAR AND TRAIN PIPE COUPLING.

APPLICATION FILED JAN. 19, 1907.

2 SHEETS—SHEET 1.



WITNESSES.

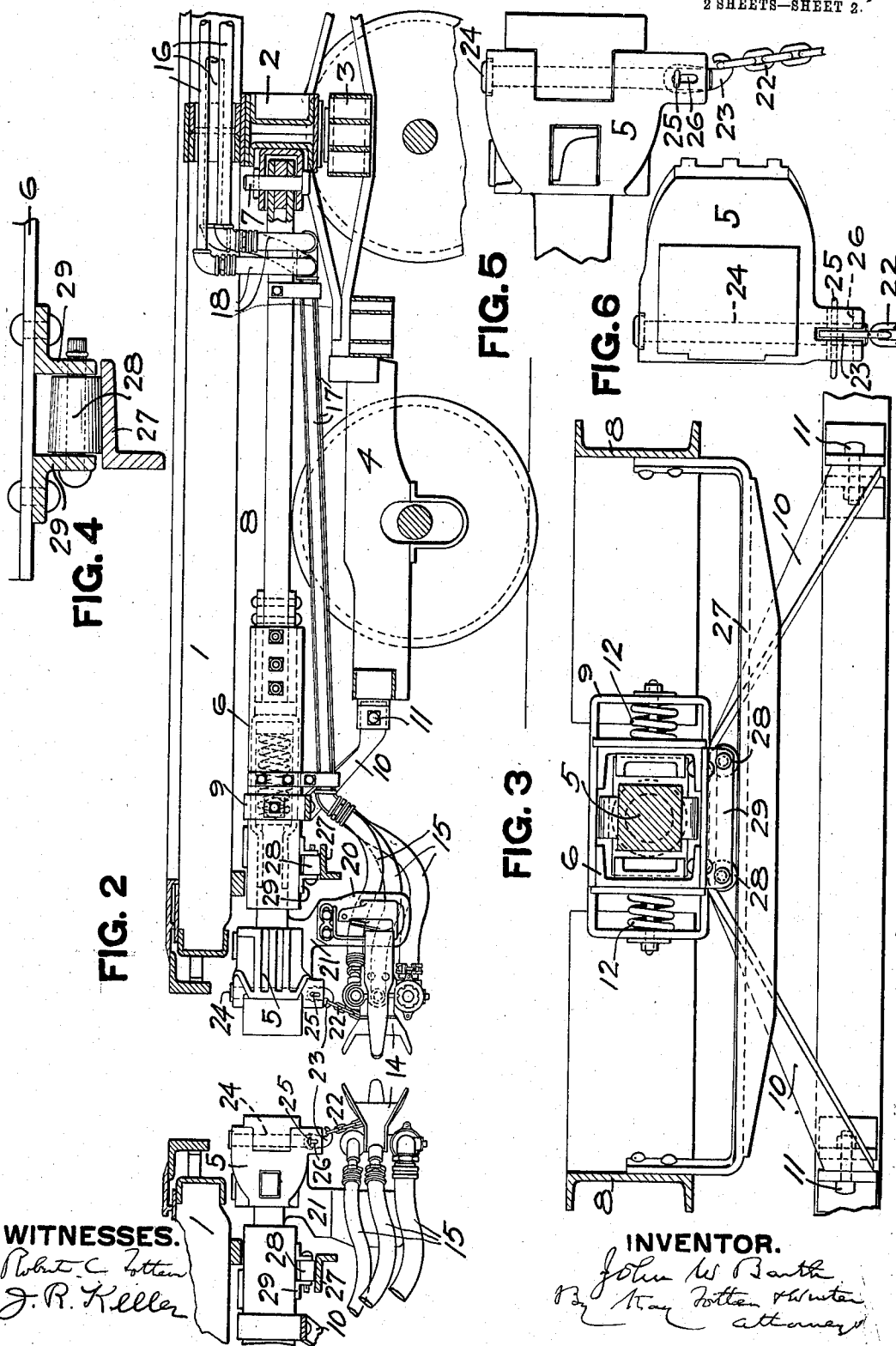
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN W. BARTH, OF PITTSBURG, PENNSYLVANIA.

COMBINATION CAR AND TRAIN-PIPE COUPLING.

No. 873,288.

Specification of Letters Patent.

Patented Dec. 10, 1907.

Application filed January 19, 1907. Serial No. 353,127.

To all whom it may concern:

Be it known that I, JOHN W. BARTH, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Combination Car and Train-Pipe Couplers; and I do hereby declare the following to be a full, clear, and exact description thereof.

This invention relates to combined automatic train pipe and car couplings.

The object is to provide for the automatic coupling not only of the cars but also of the train pipes on sharp curves.

Automatic car couplers are now in general use, and in recent years there has also been provided coupling heads for the air, steam and signal train pipes which are so constructed that they will automatically come together and couple when the cars are pushed together, thus doing away with hand coupling and correspondingly reducing the liability of injuring the trainmen. In practice these automatic train pipe couplings have heretofore been supported practically immovably laterally on the car body, or at least having only a slight lateral movement. As a consequence, they do not couple with certainty on sharp curves, that is, where the car bodies necessarily are presented at a considerable angle to each other, thus bringing the couplings out of position so that they will not interlock when the cars are pushed together. It has, however, been proposed to make the train pipe couplings laterally movable on the car body and connect the same to the truck so that on curves the couplings will partake of the position of the truck and not of the car body. As the couplings are thereby held fairly close to the center line of the track coupling on curves is greatly facilitated.

The present invention relates to train pipe coupling heads so suspended or mounted that they can move laterally on the car body, and being connected to the truck so that on curves said coupling heads move with the truck and are held fairly close to the center of the track, thereby facilitating the coupling of the train pipes on curves.

The invention consists in mounting the draft mechanism so as to have free lateral movement with reference to the car body and connecting the same to the truck so as to be centered by the latter, and suspending

the train pipe coupling heads from draft mechanism so mounted.

The invention also consists in so connecting the train pipe coupling head to the pivot pin of the car coupler as to prevent the train pipe coupling head falling onto the track in case the pivot pin should break; and also providing means which will indicate to the inspector that the pivot pin has broken.

In the accompanying drawings Figure 1 is a plan view showing the ends of two car underframes with my invention applied thereto; Fig. 2 is a vertical section taken substantially on the longitudinal center of the cars; Fig. 3 is a transverse section taken immediately in front of the draw bar and supplying bracket; Fig. 4 is a vertical section showing a portion of Fig. 2 on an enlarged scale; Fig. 5 is an enlarged side view of the car coupler head; and Fig. 6 is a front view of the same.

The car underframes are shown at 1, and these will be provided with the usual body bolster 2 having a center plate resting upon bolster 3 of the truck 4. Both the car body and truck may be of any preferred construction.

The car couplers themselves may be of any suitable automatic type, those shown at 5 being the standard Master Car Builders' form, and are so well known that detailed description thereof is unnecessary. These couplers are connected to any suitable draft and buffing rigging indicated diagrammatically by the draw bar 6. The latter instead of being mounted between draft timbers, as is generally done, is pivotally connected to the car body so as to swing freely laterally thereof. As shown in the drawings the draft mechanism is connected by a vertical pivot 7 to the body bolster of the car, but obviously it may be pivoted to any other suitable portion of the car body. The beams 8 for supporting the end of the car body or platform and which correspond to the usual draft beams, are spread or splayed outwardly as shown, in order to allow the draft mechanism to swing freely. The draft mechanism of the two ends of a car are independent of each other. In order to hold said draft mechanism substantially central of the track it is connected by any suitable means to the truck so as to partake of the movement of the truck on curves. The specific connection shown comprises a yoke 9 embracing the

draft mechanism and provided with arms 10 which are suitably connected to any convenient portion of the truck. Preferably these arms will be connected to the truck by means of horizontal pivots, as shown at 11, so as to allow for relative vertical movement between the car body and truck. Preferably the yoke 9 which embraces the draft mechanism will be wider than said draft mechanism so as to permit the latter to have lateral movement in the yoke independently of the truck. Preferably springs 12 are interposed between the yoke and sides of the draft mechanism. Any other suitable connection between the draft mechanism and the truck will answer my purpose equally as well. The train pipe couplings may also be of any suitable form capable of coupling automatically when the cars are pushed together. In the drawings I have shown a standard form of coupling head 14, the same being provided with sloping faces, wings or arms, which guide the sections together when the cars are pushed together. These coupling heads have connected thereto hose sections 15 which in turn are connected to the train pipes of the cars. As many hose sections will be connected to the heads as there are train pipes to be coupled. In passenger practice there will generally be three such pipes, one for the air brakes, another for the steam, and another for the signaling system. For freight service generally only one pipe is necessary; but for some special characters of cars, such as the Goodwin dump cars, in which the dumping mechanism is operated by fluid pressure, additional pipes may become necessary. The train pipes 16 preferably end just outside of the body bolster and are flexibly connected to pipe sections 17 mounted to swing with the draw bar and having their outer ends connected to the coupling heads by the hose sections 15. In the drawings the pipe sections 17 are shown mounted on the bottom of the draft mechanism and connected to the train pipes 16 by flexible pipe couplers 18. This constitutes in effect a sectional or flexible train pipe and permits of the use of only short hose sections 15 even with a draft mechanism which swings laterally through a large arc.

The train pipe coupling heads 14 will be connected to the truck by any suitable mechanism so as to partake of the movement of said trucks on curves. This connection may be independent of the connection of the draft mechanism to the truck. Preferably, however, and for simplicity, the train pipe coupling members are secured to the draft mechanism so as to make unnecessary an additional connection to the truck. This is accomplished by securing the rear end of the train pipe coupler member to suitable hangers 20 connected to a bracket 21 on the car coupler or drafting mechanism. The forward

end of the train pipe coupler head is suspended by a chain 22 from a hook 23 connected to the lower end of the knuckle pivot pin 24 of the car coupler 5. The hook 23 is connected to the pin 24 by means of a transverse pin 25 whose ends project into or through openings 26 in the coupler head 5. As a consequence, even if the pin 5 should break, the hook 23 and train pipe coupler head cannot fall onto the track as would otherwise be the case. Obviously, in place of this transverse pin suitable projections of other form might be provided on the hook 23.

In order to make detection of a broken pivot pin 24 easy the construction is such that when the pin 24 breaks it will permit the train pipe coupler head to drop somewhat, thus indicating to the inspector that the pin is broken. This is provided for by making the openings 26 in the form of vertical slots, as shown in Fig. 5, so that in case the pin 24 breaks the train pipe coupling head will drop until the projection or pin 25 reaches the lower end of the slots. Further downward movement of the train pipe coupling head is then arrested but the position of the head will be such as to inform the inspector at a glance that the pivot pin is broken. At the same time the train pipe coupler head is prevented from falling onto the track and possibly causing derailment or other serious accident.

The combined draft gear and train pipe coupler head is of considerable weight and especially on passenger cars where the draw bar must be very long. Said combined parts therefore offer considerable resistance to lateral movement. The draw bar is supported on the horizontal bracket 27 and in order to relieve the friction of the heavy draft mechanism thereon, I provide suitable friction reducing devices, such as the rollers 28 between the bracket and the draw bar. These rollers may be supported in any suitable way but preferably are mounted between the brackets 29 on the draw bar. Preferably these rollers are slightly conical, as shown, with the small ends pointing toward the pivot 7 of the draft gear.

When the car moves on a curve, the truck will swivel with reference to the car body, thus through the connections described swinging the car coupler and draft mechanism laterally with reference to the car body, and the parts can be so proportioned that the coupler will lie practically centrally of the track, no matter what the curvature of the track may be. The train pipe coupling heads being supported from the coupler or draft mechanism will also partake of this lateral movement. As a consequence on curves both the car coupler and train pipe coupler heads will be substantially in the center of the track and entirely irrespective of the angle that the car bodies may bear to

each other. The result is that both the car couplers and train pipes will interlock with certainty.

The details of construction may be varied 5 widely without departing from the spirit of my invention. Any suitable form of automatic car coupler and any suitable form of automatic train pipe coupling heads are adapted for my purpose, and the connections 10 between these and the truck may also be of any suitable form, the essential being that these couplers shall move with the truck rather than with the car body.

What I claim is:

15 1. In a railway car, the combination of a draft gear mounted to swing radially and having a guiding connection with the car truck, an automatic pipe coupling head carried by said draft gear, and anti-friction devices supporting said draft gear.

20 2. In a railway car, the combination of a draft gear mounted to swing radially and having a guiding connection with the car truck, an automatic train pipe coupling head 25 carried by said draft gear, a bracket on which said draft gear moves laterally, and an anti-friction device between said draft gear and bracket.

30 3. In a railway car, the combination of a draft gear mounted to swing radially and having a guiding connection with the car truck, a bracket on which said draft gear is supported, and anti-friction rollers between said bracket and draft gear.

35 4. In a railway car, the combination of a draft gear mounted to swing radially and having a guiding connection with the car truck, a bracket on which said draft gear moves laterally, and anti-friction rollers 40 mounted on the lower face of said draft gear and supporting the latter on the bracket.

5. In a railway car, the combination of a draft gear mounted to swing radially and having a guiding connection with the car 45 truck, an automatic train pipe coupling head carried by said draft gear, a bracket on which

said draft gear moves laterally, and anti-friction rollers between said draft gear and bracket.

6. In a railway car, the combination of an 50 automatic coupler provided with a swinging knuckle, a pivot pin connecting said knuckle to the coupler head, an automatic train pipe coupling member suspended from said pivot pin, and means for preventing said train pipe 55 coupling member from falling when the pivot pin breaks.

7. In a railway car, the combination of an automatic car coupler provided with a swinging knuckle, a pivot pin connecting said 60 knuckle to the coupler head, an automatic train pipe coupling member suspended from the lower end of the pivot pin, and means for preventing the coupling member from falling when the pivot pin breaks and serving as an 65 indicator to show that the pivot pin is broken.

8. In a railway car, the combination of an automatic coupler provided with a swinging knuckle, a pivot pin connecting said knuckle 70 to the coupler head, an automatic train pipe coupling member suspended from the lower end of said pivot pin, and laterally projecting portions connected to said suspending member and arranged to have a limited vertical 75 movement with reference to the car coupler.

9. In a railway car, the combination of an automatic car coupler provided with a swinging knuckle, a pivot pin connecting said knuckle to the coupler head, said coupler 80 head being provided with vertical slots, a suspending member connected to the lower end of said pivot pin by a transverse member projecting into vertical slots in the coupler head, and a train pipe coupling member con- 85 nected to said suspending member.

In testimony whereof, I the said JOHN W. BARTH have hereunto set my hand.

JOHN W. BARTH.

Witnesses:

ROBERT C. TOTTEN,
J. R. KELLER.