UNITED STATES PATENT OFFICE.

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COMBINED CAR AND TRAIN.PIPE COUPLING.


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To all whom it may concern:

Be it known that I, John W. Barth, a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in a Combined Car and Train-Pipe Coupling; 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 come together and couple when the cars are pushed together, thus doing away entirely with hand coupling and correspondingly reducing the liability of injuring the train hands. Heretofore, however, these automatic train pipe couplings have 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 heretofore been proposed to make the draft mechanism of the car coupler laterally movable on the car body and connect the same to the truck so that on curves there will be a greater coupling of the track 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. But the train pipe couplings have not heretofore been made laterally movable with reference to the car body and connected to the truck so as to move therewith on curves.

The present invention has for its object to overcome the above objections, and it consists, generally stated, in suspending or mounting the coupling heads of the train pipes that they will be movable laterally on the car body, and connecting the same to the truck so that on curves said coupling heads will move with the truck and be held fairly close to the center of the track, thereby facilitating the coupling of the train pipes on curves.

The invention also consists in mounting the draft mechanism so as to have 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.

In the accompanying drawing Figure 1 is a plan view showing in diagram the ends of two cars with my invention applied thereto; Fig. 2 is a vertical section on the line 2—2, Fig. 1.

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 the usual or 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 will be connected to any suitable draft and bulling rigging indicated diagrammatically by the draw bar 6. The latter instead of being mounted between draft timbers, as is generally done, will be pivotally connected to the car body so as to swing freely laterally thereof.

As shown in the drawings the draft mechanism is pivoted on 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 outwardly as shown, in order to allow the draft mechanism to swing freely.

The draft mechanisms at 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 gear and provided with arms 10 which are suitably connected to any convenient portion of the truck, such as the transom. 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 slightly 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 will be 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 and springs, which guide the sections together when the cars are pushed together. These coupling heads will have connected thereto hose sections 15 which in turn will be 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 two 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 will preferably end just outside of the body bolster and will be 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 hose sections 18. This constitutes in effect a sectional or flexible train pipe and permits of the use of only short hose sections 15, even with 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 take part 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 will be secured to the draft mechanism so as to make unnecessary an additional connection to the truck. This is accomplished by securing the train pipe 65 coupler members to suitable hangers 20 connected to a bracket 21 on the car coupler or draft mechanism. The forward end of the train pipe coupler section may also be connected by means of a chain 22 to an arm 70 secured to the hanger 20 or bracket 21.

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. The train pipe coupling members 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 the train pipe coupler heads will be substantially in the center of the track and entirely irrespective of the angles 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 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 members will adapt themselves for my purpose, and the connections 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:

1. In a combined train pipe and car coupler, the combination of an automatic car coupler, draft rigging therefor pivoted to the car body, connections between said coupler and the truck for moving the former with the truck, an automatic train pipe coupler member connected to the swinging draft rigging, and a pipe section connected to the draft rigging and flexibly connected to the train pipe and also to the coupling member.

2. In a combined train pipe and car coupler, the combination of an automatic car coupler, draft rigging therefor pivoted to the car body, connections between said coupler and the truck for moving the former with the truck, an automatic train pipe coupler member connected to the swinging draft rigging, a pipe section mounted on the draft rigging, and hose sections flexibly connecting said pipe sections to the train pipe and also to the coupling member.

3. A car having a draft gear mounted to swing radially and having a guiding connection with the car truck, and pipes extending along the draft gear and having flexible connections with corresponding pipes extending
along the car frame; substantially as described.

4. A car having a draft gear mounted to swing radially and having a guiding connection with the car truck, pipes extending along the draft gear and having flexible connections with corresponding pipes extending along the car frame, and brackets on the draft gear by which said pipes are held; substantially as described.

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

JOHN W. BARTH.

Witnesses:

ROBERT C. TOTTEN,

J. R. KELLER.