

Feb. 10, 1931.

H. F. COREY

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TOY BOGIE TRUCK

Filed Oct. 30, 1929

2 Sheets-Sheet 1

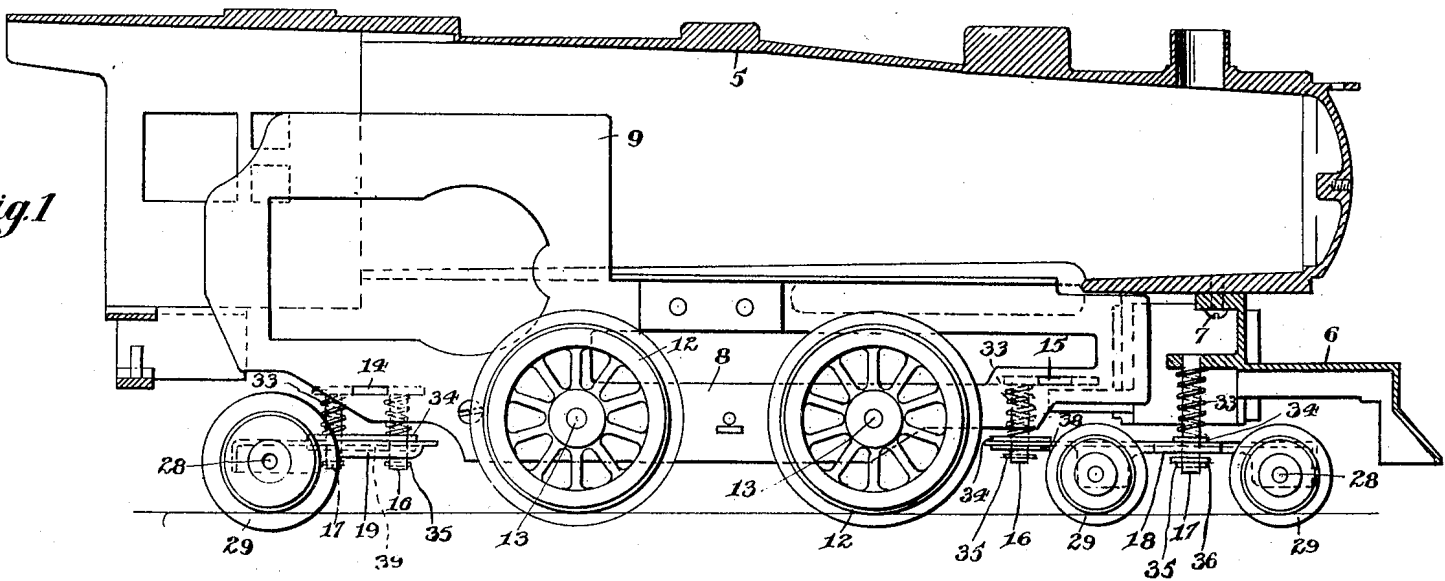


Fig. 1

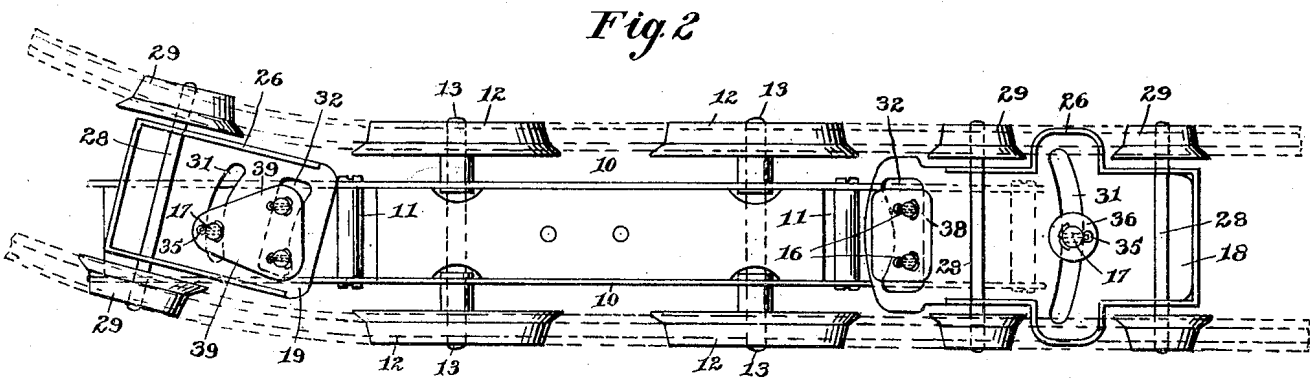


Fig. 2

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Fig. 3

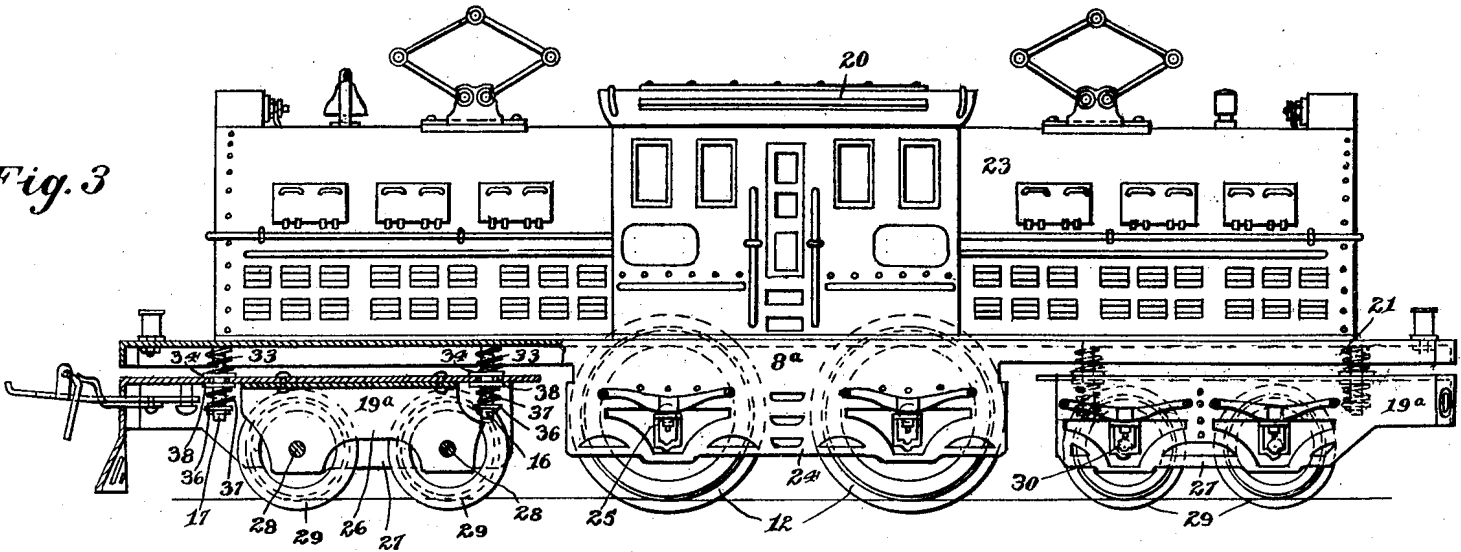
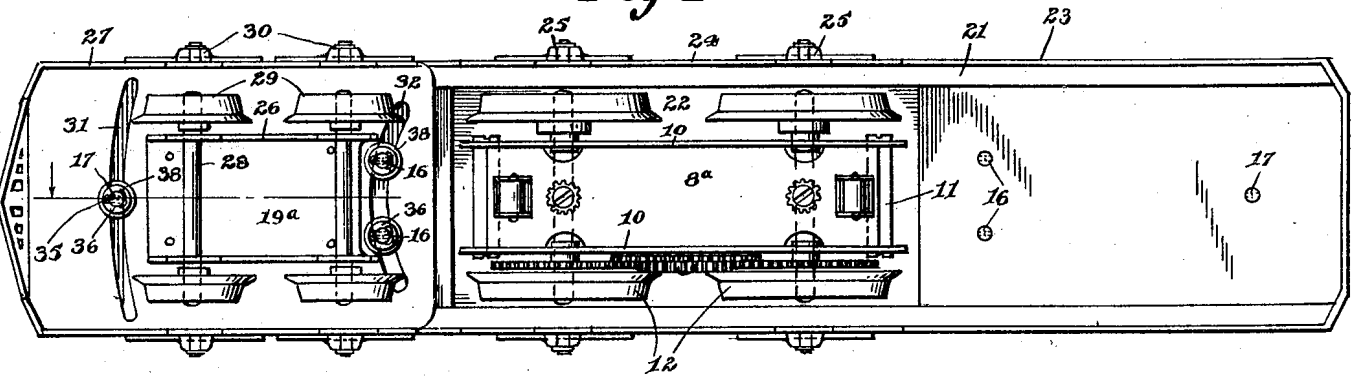


Fig. 4



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# UNITED STATES PATENT OFFICE

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## TOY BOGIE TRUCK

Application filed October 30, 1929. Serial No. 403,461.

This invention relates to toy railway trains and more particularly to toy locomotives and cars, especially to bogie trucks so-called therefor, and means for attaching the same to the car or locomotive bodies.

The invention has for its object to provide a simple form of structure whereby the invention may be applied to either a two or four wheel bogie truck; the first mentioned one of these trucks is commonly used beneath the cab portion of a steam type of toy electric locomotive, while the four wheel trucks are usually positioned beneath the forward end portion of the same type of toy locomotive and forward of the driving wheels.

An important feature of the invention is to provide a bogie truck which will stabilize the running movement of a locomotive or car and better yieldably support the off side of the same while traveling around curves, where there is a natural tendency to turn over.

A further feature of the invention is to provide a simple form of construction whereby the truck may readily be connected and disconnected from the locomotive body by the attachment or removal of a few pins from the several supporting posts upon which the truck frame is swivelly mounted. In this connection I further provide what may be termed a three-point pivotal spring suspension means for each truck in its attachment to the locomotive body, which means prevents the trucks from turning around when disconnected from a track, and consequently always retains the forward end portion of the truck in a forward position.

My improved bogie truck is more in the nature of a floating truck than a pivotal truck, since its supporting connection with the locomotive includes slots whereby the truck is allowed a limited sidewise movement with respect to the supporting means and is not adapted to turn around.

Another feature of the invention is to locate the movable connections of truck to body forward and rear of the center of the driver-truck in a way to permit of a relatively long sidewise and angular movement of the truck

frame and wheels with relation to the driver-truck including the driving wheels of the locomotive, thereby permitting the locomotive to take sharp curves with reduced friction of wheels on rails. These bogie trucks have been applied to two forms of toy locomotives; one an electric locomotive of the "St. Paul type," and the other an electrically operated, steam type of toy locomotive, modeled after the "President type" of steam locomotive as used upon the Southern Railroad. The several parts of this steam type of toy locomotive are formed of cast aluminum and along very attractive lines. The features of this cast toy locomotive pertinent to this invention are its combined hollow boiler and cab members and the cow catcher member, which are secured together, and in which a large electric driver-truck is positioned forming a rigidly united assembly. In this respect it will be noted from the accompanying drawings that the forward four wheel bogie truck is in part connected to the cow catcher member and in part to the driver-truck frame, while the rear two wheel bogie truck is entirely supported from the driver-truck frame.

Other features of the invention and novel combination of parts in addition to the above will be hereinafter described in connection with the accompanying drawings which illustrate a preferred form of the invention and its application.

Similar characters of reference denote like or corresponding parts throughout the several figures of the accompanying drawings forming a part of this specification and upon which

Fig. 1 shows a longitudinal sectional elevation through a toy locomotive boiler and cow catcher with driver and novel bogie trucks attached thereto;

Fig. 2 shows an inverted bottom plan view of the driver-truck including driver wheel, and the two bogie trucks attached to the driver-truck;

Fig. 3 shows a side elevation of an electric type of toy locomotive having two of my improved bogie trucks applied thereto, and one

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of which is shown in section, better to illustrate the spring suspension means; and

Fig. 4 is a bottom plan view of the toy electric locomotive shown in Fig. 3 with one truck removed.

Referring in detail to the characters of reference marked upon the drawings, 5 represents a cast metal, steam type, toy electric locomotive boiler and cab, 6 a separately formed cow catcher member which is secured to the under side of the forward end of the boiler by means of screws 7. This boiler and cab are hollow and open upon the under side to admit of the upper portion of the driver-truck frame 8 which is secured thereto, while the cab end of the boiler is made sufficiently large to readily receive the upwardly extended enlarged rear end portion 9 of the driver-truck frame. This driver-truck frame comprises in part two similarly shaped side plates 10—10 which together with posts 11 are suitably assembled so as to provide space between said plates to receive an electric motor, gears and drive means, not shown, through which the driving wheels 12 are operated. The lower portion of these side plates form bearings for the axles 13—13 upon which the driving wheels are mounted, said axles and wheels being in alignment and in spaced relation to each other. 14 represents a horizontally disposed sheet metal tie plate which is secured to and between the lower rear end portions of the said side frame members 10—10, and also serves to support the depending posts 16 and 17. A like plate 15 is similarly positioned and secured between the lower forward end portions of the said side frame members 10—10 and also serves in part to rigidly support depending like posts 16—16 forming two rear supports for the front truck. A slightly larger centrally positioned depending post 17 is secured to the under side of the cow catcher member of the locomotive to form the third post or means for suspending the front truck.

The front truck 18, as shown in Figs. 1 and 2, is positioned beneath the forward end portion of the locomotive boiler, while the rear two wheel truck 19 is attached beneath the cab end. The bogie truck 19 positioned beneath the rear end portion of the locomotive shown in Figs. 1 and 2, is but a two wheel truck and differs in this respect from the four wheel trucks shown elsewhere in the drawings. This truck is adapted to the same limited sidewise horizontal movements, with respect to the locomotive body and its driver-truck frame, as the four wheel truck and whereby its wheels are permitted to freely follow sharp curves in the track to the same purpose and advantages as is possible with the four wheel trucks.

These bogie trucks are each yieldably connected to the locomotive through the medium of spring actuated pivotal connecting means

including the before mentioned posts 16 and 17 and applied springs, the trucks being preferably secured to said posts by pins 35 positioned in the lower end of the posts below the trucks. The frames of the trucks 18 and 19 are each provided with two arcuate shaped slots 31 and 32, the former to receive the outer depending post 17 and the latter to accommodate the pair of depending spaced apart posts 16—16. A spring 33 and washer 34 are mounted upon each of the posts above the truck frame in a way to produce a downward pressure on the truck frame.

The electric type of toy locomotive 20 shown in Figs. 3 and 4 includes a platform 21, having an opening 22 therein to receive the driver-truck 8 positioned centrally between the ends of the platform. This truck together with the end portions of the top side of the platform is covered with a suitable form of decorative closure shell 23 which is constructed in imitation of a particular commercial type of electric locomotive. The platform of the electric type of locomotive further includes depending aprons 24 which extend down over the end portions of the driver-truck and are provided with imitation journal boxes 25. The before mentioned driver-truck 8<sup>a</sup> is positioned in the said opening 22 and between and in spaced relation to the two said aprons 24. The application of the invention to the platform 21 of the electric type of locomotive 20, as shown in Figs. 3 and 4, is somewhat like that shown in Figs. 1 and 2 and also preferably includes a series of three posts for each truck, two of which posts are secured to the under side of the platform adjacent to the central driver-truck 8<sup>a</sup>, and the third nearer the outer end of the platform and farther from the central truck; therefore, the same reference characters will be used to represent the like parts in the several applications of the invention.

The truck frames for the electric locomotive 20 are preferably provided with an inner and outer flange 26 and 27 respectively upon each side, the former to serve as bearings for the axles 28 journaled therein and upon the outer end portions of which small wheels 29 are secured. The outer flange 27 partially encloses the wheels and rims and serves to carry the imitation journal boxes 30 positioned in alignment with the axles 28. These truck frames are also each provided with two arcuate-shaped slots 31 and 32, the former to receive the outer depending posts 17 and the latter to accommodate the pair of depending posts 16—16. A spring 33 and washer 34 are likewise mounted upon each of the posts between the locomotive frame and the truck frame in a way to produce a downward pressure on the truck frame, the said washer being positioned against the frame over the slot, while the spring is applied to the posts intermediate of the said washer and the support-

ing member of the locomotive or its driver-truck frame. These parts are operatively secured together by plates 38 and 39 and washers 36 held in position on the posts, beneath the truck frame by pin 35 positioned in the lower end portion thereof.

An additional yieldable supporting connection is provided upon the under side of the truck frame as applied to the electric type of locomotive 20, whereby the truck is cushioned on the lower side and a counteracting downward pull is provided for the locomotive which serves to better counterbalance the tendency of the locomotive to tip over at it rounds a curve. In this case the posts are all made longer and a second spring 37 is positioned upon the posts between said lower washer 36 and an additional washer 38 seated against the under side of the truck frame in a way to cover the slot. From the foregoing it will be seen that the three said posts are secured to fixed parts of the locomotive so that the truck frames, through their slotted connections with the said posts, are free to swing sidewise in a horizontal plane and radially with respect to a vertical center line of the driver-truck frame, so as to permit the wheels of the bogie truck frame to follow a curved track without in any way interfering with the smooth running of the driver-truck whose frame is rigidly secured to the locomotive.

It will be seen that my improved bogie trucks may be used beneath either or both ends of a steam or electric type of toy locomotive and are attached so as to swing on a radius from the center of its driver-truck. In this respect it will be observed that the arcuate slots in the truck frames farthest from the center of the driver-truck are slightly longer than the inner slots, which allows a greater sidewise movement of the outer ends of said truck frames.

In this connection and to further counterbalance the tendency of the electric locomotive to tip over as it rounds a curve, I position the two depending posts in spaced relation to each other, one on each side of the center of the locomotive, for the front slot, and have placed two springs on each post, one above the truck frame and the other beneath, so that the springs on the under side of truck frame will serve to better support the outer side of the electric locomotive body as it rounds a curve, when a tendency to tip over develops.

The form of spring support is substantially the same throughout the drawings except with respect to the trucks as applied to the electric type of locomotive shown in Figs. 3 and 4, wherein separate washers 38 are used instead of the two or more plates, for the support of the springs 37. The invention is, therefore, applicable to the two types of locomotives and may be advantageously applied either above the truck frame as seen in Figs.

1 and 2, or both above and below, as used in Figs. 3 and 4.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A toy locomotive of the class described having a series of depending posts arranged one forward of the others, a truck frame having spaced apart transverse slots to receive said posts, wheels carried by the frame, means for connecting said truck frame to said posts for sidewise sliding movement, and means to yieldably support the truck frame in distended relation to the locomotive body to insure yieldable engagement of the truck wheels with a track.

2. A toy locomotive of the class described having a series of depending posts one arranged forward of the others, a truck frame having spaced apart arcuate slots to receive said posts, wheels carried by the frame, means for connecting said truck frame to said posts for vertical and sidewise sliding movement, and means to yieldably support the truck frame in distended relation to the locomotive body to insure yieldable engagement of the truck wheels with a track.

3. A toy locomotive of the class described having two or more depending posts arranged one forward of the others, a truck frame having a pair of slots therein in spaced relation to each other to receive said posts, wheels carried by the frame, means for connecting said truck frame to said posts for sidewise sliding movement, and spring means to yieldably hold the truck frame in distended relation to the locomotive body.

4. A toy locomotive of the class described having two or more depending posts arranged one forward of the others, a truck frame, axle and wheels carried thereby, said frame having slots therein forward of said axle, wheels carried by the frame, means for connecting said truck frame to said posts for sidewise sliding movement, and means to yieldably hold the truck frame in distended relation to the locomotive body to insure engagement of the truck wheels with a track.

5. A toy locomotive of the class described having a series of triangularly positioned depending posts, a truck frame having spaced apart transverse slots, one to receive one of said posts and the other to receive the other of said posts, wheels carried by the frame, means for connecting said truck frame to said posts for sidewise sliding movement, and means to yieldably hold the truck in distended relation from the locomotive body to better support the locomotive.

6. The combination with a toy locomotive including a central driving truck and a series of depending posts beneath each end portion of the locomotive, a bogie truck movably attached to each of said series of posts, each of said trucks including a pair of posts to

receive the posts, and means for slidably connecting the trucks to the posts guided by said slot, said trucks each being adapted for individual horizontal sidewise movement on a radius from the center of the driving truck.

5 7. A toy locomotive of the class described, including a driver-truck and bogie truck fore and aft of the driver-truck, pivotal slidable connections between the locomotive body and  
10 said bogie trucks including yieldable stabilizing supporting means for the locomotive consisting of springs positioned both above and below the bogie truck frame.

15 8. A toy locomotive of the class described, including a driver-truck and bogie truck fore and aft of the driver-truck, pivotal slidable connections as between the locomotive body and said bogie trucks including yieldable stabilizing supporting means for the locomotive,  
20 including springs upon the posts beneath the bogie truck frame to counteract the tendency of the locomotive to turn over.

25 9. A toy locomotive of the class described, including a driver-truck and bogie truck fore and aft of the driver-truck, pivotal slidable connections as between the locomotive body and said bogie trucks including yieldable stabilizing supporting means for the locomotive,  
30 including springs upon the posts and arranged on opposite sides of a center line drawn longitudinally through the locomotive.

Signed at Bridgeport, in the county of  
Fairfield and State of Connecticut, this 23rd  
35 day of October, A. D. 1929.

HARRY F. COREY.

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