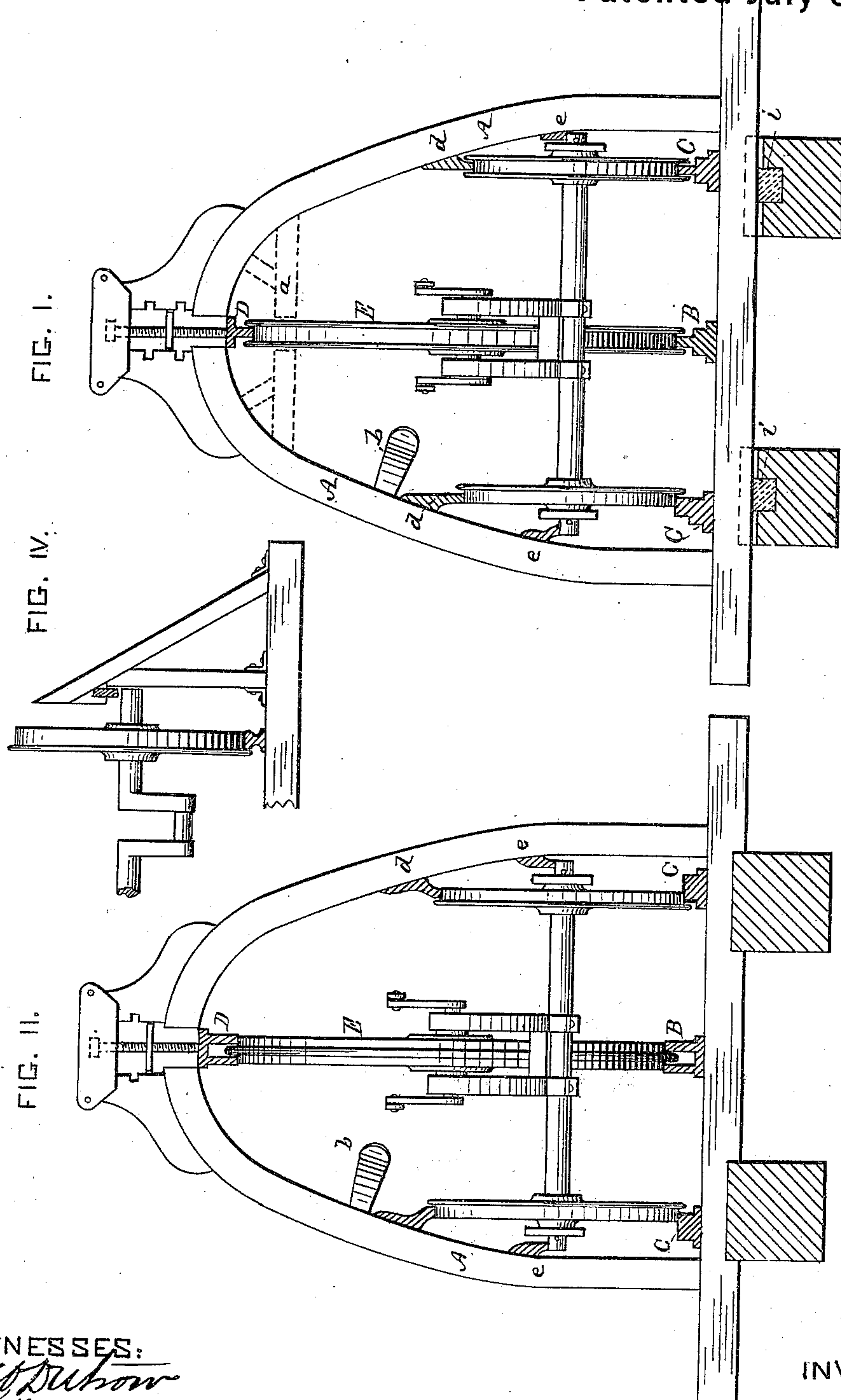


D. E. DUTROW.  
Railroad-Track.

No. 229,526.

Patented July 6, 1880.



WITNESSES:  
*A. C. Dutrow*  
*B. H. Frew*

INVENTOR:

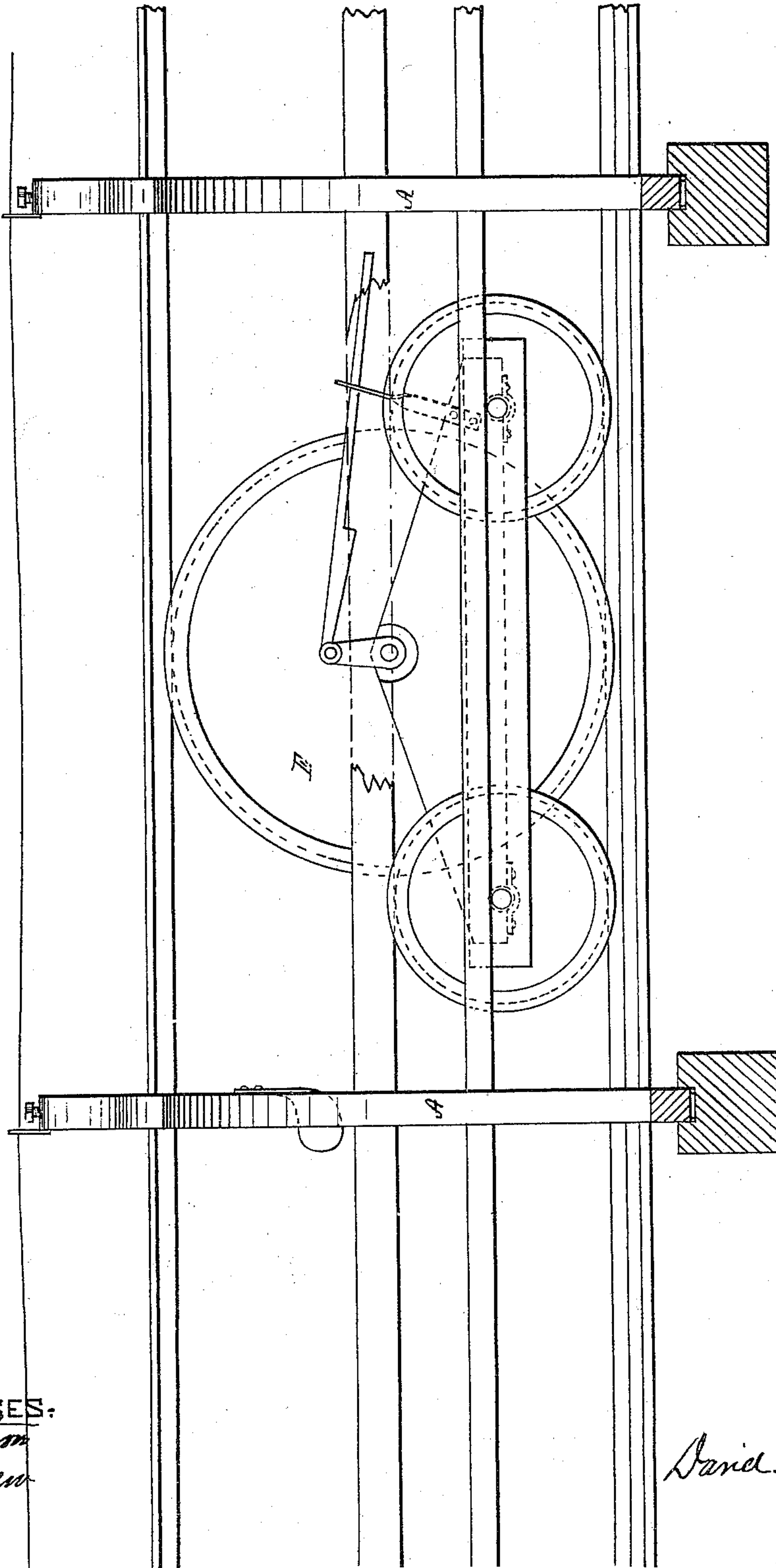
*David E. Dutrow*

D. E. DUTROW.  
Railroad-Track.

No. 229,526.

Patented July 6, 1880.

FIG. III.



WITNESSES:

*A. S. Dutton*  
*B. H. Green*

INVENTOR:

*Daniel E. Dutrow*



# UNITED STATES PATENT OFFICE.

DAVID E. DUTROW, OF WASHINGTON, DISTRICT OF COLUMBIA.

## RAILROAD-TRACK.

SPECIFICATION forming part of Letters Patent No. 229,526, dated July 6, 1880.

Application filed July 16, 1879.

*To all whom it may concern:*

Be it known that I, DAVID E. DUTROW, of Washington city, District of Columbia, have invented a new and useful Improvement in Railroads, and in devices for preventing the cars from leaving the track, and in the construction and arrangement of the running-gear of the engine and cars, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure I is a cross-section. Fig. II is also a cross-section, showing a modification. Fig. III is a perspective view. Fig. IV is a further modification.

The object of my invention is to greatly increase the speed of trains on railroads, and at the same time insure perfect safety and lessen the chances of accident by the cars or engine running off of the track; and to this end it consists in an elliptical, semicircular, or other shaped frame or half-cylinder, which supports an upper rail to steady and guide the large driving wheel or wheels of the engine, and also having side guides on said frame, immediately over the extended axles, to prevent their being raised, so that the flange of said wheel cannot rise over the top of the rail.

It further consists in providing the engine with one or more large driving-wheels, which are guided and held in a proper position by devices attached to the upper part of the frame-work.

It further consists in making the upper or guiding rail adjustable, whereby engines with driving-wheels of varying diameters can be accommodated.

It further consists in mounting the entire structure on elastic bearings, which will impart to it a certain amount of elasticity, and at the same time deadens the sound caused by vibrations from passing trains.

It further consists in certain details of construction, hereinafter more fully set forth.

Referring to the drawings, A designates the frame, within which the engine and cars are guided by rails, more particularly set forth hereinafter.

I have shown the frame, in Figs. I, II, and III, to consist of elliptical arches secured to-

gether by stringers; but instead of an open frame, I may have it a continuous or closed half or three-quarter cylinder, and it may be made of wood or metal. Within this frame or semi-cylindrical tube I lay my track, which consists of a central rail, B, and two side rails, C. The central rail, B, may be an ordinary T-rail, or it may be a grooved rail, as shown in Fig. I. If an ordinary rail be used, the driving-wheel should be double-flanged, or grooved, to take in the rail if the grooved rail be used. Then the driving-wheel will have a central flange to fit into said groove, as shown in Fig. II, or the wheel may be a plain one without flanges, and rest entirely on the groove.

In using the last-mentioned device I can dispense with the guide-rail on the top of the frame and depend on the guide-rails A (shown in dotted lines, Fig. I) to guide the driving-wheel and keep it to its course, and keep it from rising by the support from frame to frame above.

D is a guide-rail located in top of the frame or semi-cylinder, and guides and steadies the driving-wheel. The form or configuration of it may also be changed to adapt it to the kind of driving-wheel to be used without departing from the spirit of my invention. The guide-rail D is made adjustable by means of set-screws, or in any other suitable manner, to adapt it to steady and guide wheels of varying diameters; but it may be rigidly secured in position, and the wheels which are guided by it made of uniform diameter. This rail may also be insulated in any well-known manner to check the vibrations caused by passing trains and deaden the sound.

The truck-wheels of the engine and cars may be guided and held in a similar manner to the driving-wheels by placing a guide-rail, *d*, on each side of the frame, and supporting them immediately over the wheels, at a proper distance therefrom, by brackets secured to the sides of the frame or semi-cylinder.

I have shown in Figs. I and II another device, and instead of having the guide-rails in juxtaposition to the truck-wheels, I lengthen the axles of the truck or other wheels, so as to project out from the journal-boxes, and place



the guide rails or strips *e* lower down on the frame or semi-cylinder, immediately over and at a proper distance from the extended portion of the axle, thus effectually providing  
5 against the displacement of said wheels from the track.

E is the driving-wheel of the engine, and is sufficiently large in diameter to fill the space between the upper or guiding rail, D, and the  
10 lower grooved or other shaped rail, B, which is secured to the sills or cross-ties of the structure. The driving-wheel is operated upon or driven by connecting-rods or pitman-connections from a steam or other power cylinder, or  
15 by a chain of spur-gears, or in any suitable or convenient manner.

The frames or semi-cylinders A are supported on stringers or sills, upon which the cross-ties rest. The sills or cross-ties are re-  
20 cessed at proper intervals to receive rubber springs or other elastic packing *i*, which serves the double purpose of imparting elasticity to the structure and also to check the vibrations and deaden the sound caused by passing trains.

The wheel E need not of necessity be the driving-wheel. It may be a large wheel inter-  
25 posed in the center or to the side of each car or engine, and any construction having a wheel guided at the top and bottom by guide rails or brackets is embraced within the scope of my  
30 invention.

This construction I may use as a track for the engine alone when it is desired to propel cars or carriages on a lower or separate track;  
35 and to accomplish this end all that is necessary is to build the track or way for the engine in the upper portion of the frame or structure A, and have a continuous slot through the rail B, sufficiently large to allow a rope or  
40 cable to pass through, which can be connected to the cars on the track below; and in the use last mentioned I may dispense with the two outside rails, C C, by using the lower rail, B, and the upper guide-rail, D. This construc-  
45 tion would of course necessitate a change in the construction of the engine, to enable it to be operative on a single supporting-rail in connection with the guide-rail; but in this, as well as the former construction, the supporting-  
50 rail being in two parts, so as to have a continuous slot therethrough, cars on a track below can be propelled, and at the same time the engine or propelling-power can be above and out of sight, so as not to frighten horses.

It is desirable that, in case an engineer or other attendant be dispensed with, I attach to the sides of the frame or semi-cylinder, A, at suitable distances from the stations or stop-  
55 ping-places, the wedge-shaped stop-bars *b*, against which an arm or lever (not shown) from the throttle-valve impinges, and the steam or other driving power is gradually shut off, and, with proper devices to accomplish the purpose, is as gradually applied to the brakes  
60 to stop the train. In the last-mentioned case, where an attendant is dispensed with, it might

be desirable to run trains for postal and other purposes at so great a speed that no person could be induced to attend to it on the trip. In such cases the stop-bars are used to stop  
70 the train, and after the engine has been replenished with fuel and water, the train can be again started on its way by a station-master. The frames A can also be used to support telegraph-wires, as shown in Fig. III. 75

In Fig. IV I have shown a modification of my device for preventing the wheels from riding up over and off of the rails. In this instance it is simply a braced frame on each side of the track, which extends up only high enough to  
80 support the guide-rails for the top of the truck-wheels or for the guide-rails for the axle-extensions.

This modified form can be readily applied to roads already constructed, and affords a cheap,  
85 simple, and efficient means for preventing accidents by the cars leaving or being thrown from the track.

It will be readily seen that by the application of my device to railroads of all kinds I  
90 guard against accidents in the most perfect manner, and at the same time can with safety increase the rate of speed from sixty to one hundred and twenty-five miles per hour, and even greater velocities can be attained. 95

I am aware that it is not new to employ guttered or grooved rails; also, that it is not new to employ ordinary rails with grooved wheels.

I am aware, also, that it is not new to em-  
100 ploy devices for imparting elasticity to the road-bed and to deaden the sound; and to such I do not lay broad claim; but

Having described my invention, what I do claim, and desire to secure by Letters Patent, 105 is—

1. In combination with a railway-track or system of tracks and the wheels of a car traveling thereon, the semicircular or other shaped frame provided with an upper centrally-ar-  
110 ranged guide-rail, either rigid or adjustable, and a similarly-arranged fixed rail on the road-bed proper, whereby the upper and lower portions of the driving-wheels are steadied and guided, substantially as described. 115

2. The combination of the semicircular or other shaped frame or half-cylinder A, provided with the guide-rail D, with the driving-wheel E, lower guide-rail, B, and side rails, C C, whereby the engine is held and guided to  
120 its course, substantially as set forth.

3. In combination with the frame or semi-cylinder A, provided with the guide-rail D, the driving-wheel E, lower guide-rail, B, side rails, C C, and the guide-bars *d* or *e* for the  
125 extended portion of the axles or for the truck-wheels, whereby the engine and cars are guided and held to the track, and whereby greater velocity can be attained with a less proportionable amount of risk by accident, substan-  
130 tially as set forth.

4. In combination with the frame or semi-

cylinder A and the supporting sills or sleepers, the rubber or other elastic spring or packing *i*, whereby elasticity is imparted to the entire superstructure and the sound caused  
5 by the vibrations of the passing trains diminished, as set forth.

5. In a railway system, the combination of the large central driving wheel or wheels with

the centrally-arranged upper and lower guide-rails, whereby said wheels are directly stead- 10  
ied and guided, substantially as specified.

DAVID E. DUTROW.

Witnesses:

A. W. DUTROW,  
B. W. FREW.