(No Model.)

E. G. TOBEY.

RAILROAD AND VEHICLE FOR RAILROAD TRANSPORTATION.

No. 454,307. Patented June 16, 1891.

Fig. I.

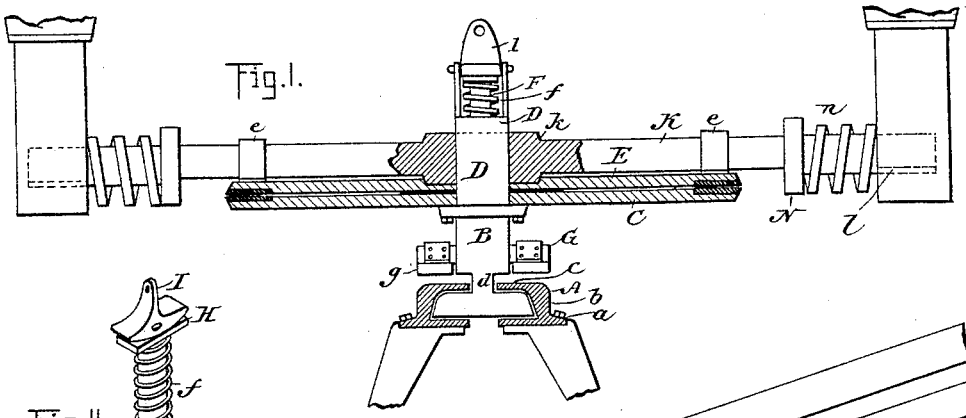


Fig. II.

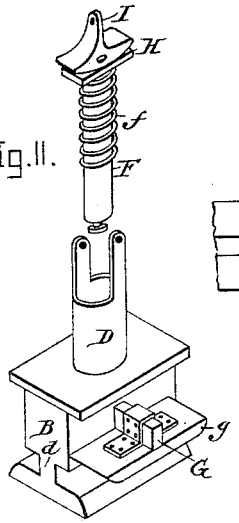


Fig. VII.

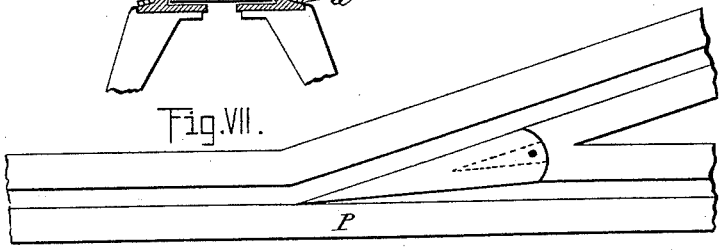


Fig. VI.

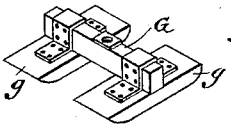


Fig. III.

Fig. V.

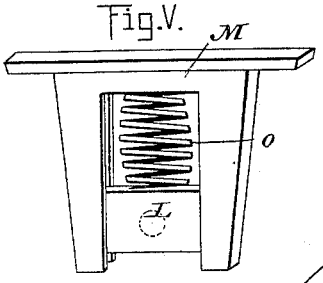
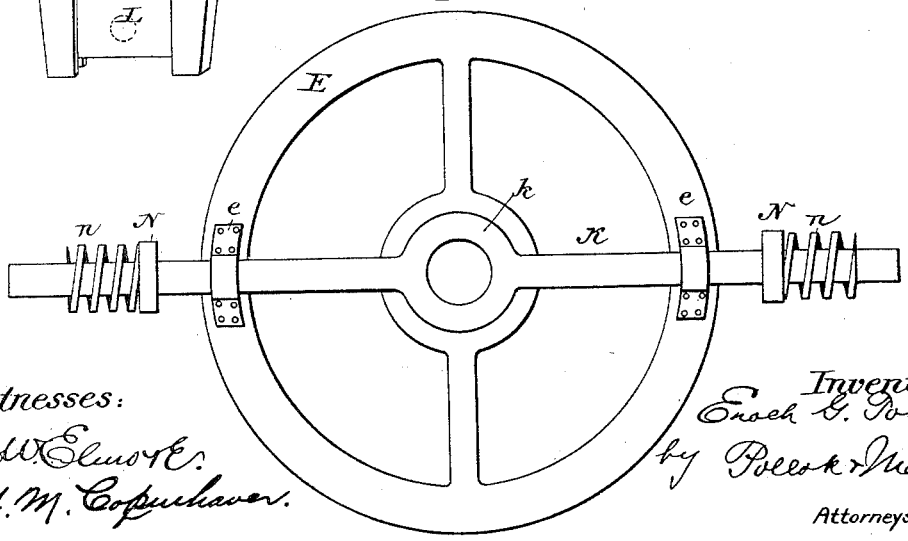


Fig. IV.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ENOCH G. TOBEY, OF TARRYTOWN, NEW YORK.

RAILROAD AND VEHICLE FOR RAILROAD TRANSPORTATION.

SPECIFICATION forming part of Letters Patent No. 454,307, dated June 16, 1891.

Application filed February 20, 1891. Serial No. 382,156. (No model.)

To all whom it may concern:

Be it known that I, ENOCH G. TOBEY, residing at Tarrytown, in the county of Westchester and State of New York, have invented a new and useful Improvement in Railroads and Vehicles for Railroad Transportation, which invention is fully set forth in the following specification.

This invention relates to certain improvements in the construction of railroad-tracks and to the structure of cars and vehicles adapted for use upon the railroad-track herein described. It is especially adapted for a sliding railroad adapted for street use with cable-traction, electric motor, steam-locomotive, or horse power.

My improved sliding track and slider require but a single opening in the street-surface for each complete track; but it may be adapted to two or more such openings for each track.

The rail consists of a double slideway. The base of the slideway may be continuous from side to side, or it may have a gap or slot in the center. On each side there is a web or column arising from the base, and upon the end of each web or column there is a flange turned toward the center. The base between the webs or columns constitutes the principal bearing-surface of the slideway upon which the slider rests and travels. The slider is kept in position by means of the flanges. The slider attached to the cars has at its base two flanges extending outward from the center in opposite directions and adapted to fit into the grooves formed by the webs of the slideway and the flanges above the same. The slider immediately above the flanges at its base has a somewhat narrow shank, which lies and moves between the flanges of the rail. The flanges of the rail also enable a brake to be efficiently used, the principle of its operation being in effect to clamp or grip the flanges between the slider and movable brake devices or shoes. This principle may be carried out in many ways. Preferably the brake-shoes are connected with a post passing through the stem of the slider and through a cylinder attached to the upper part thereof. The post is actuated by a cam-lever or other suitable device properly connected with an ordinary brake-operating device. A spring is conveniently arranged to throw the brake-shoes out of action at the proper time. The slider has a wheel-shaped horizontal bearing bolted thereto, upon the top of which another wheel-shaped horizontal bearing travels in the arc of a circle to such an extent as may be necessary. The cylinder, (already referred to) through which the brake is operated forms the king-bolt passing through both wheels or circular bearings, and also through a bar which is attached to the upper of the two circular bearings, thus making a swivel-joint with the slider and the bar just referred to, which is attached to the body of the car. This last-mentioned bar is preferably provided with springs at either end. The ends of the bar fit into slide-blocks, which are fitted in boxes with a spring above the block, (such as a spiral steel spring or a rubber spring,) in order to allow of a certain amount of up and down movement of the blocks in the boxes. These springs tend to press upward that side of the car which may for any reasons fall below the proper line. I also use the following devices for a switch to be used in tracks with a slideway and adapted to the use of sliders such as have been hereinbefore described. Near the junction of two lines of rail a gradually-narrowing wedge-shaped switch-rail is placed, the inner and larger end of which is pivoted and the outer end can be readily moved on the pivot, all of which will be readily seen by reference to the drawings.

The accompanying drawings will serve to illustrate my invention.

Similar letters of reference in the different drawings indicate similar parts.

Figure I is a cross-section showing the lower portion of a car-body and truck, the track, and part of a conduit. Fig. II is a perspective view showing details of the sliders, brake, and accessory parts. Fig. III is a side elevation of the same parts, showing also the circular bearing-wheels. Fig. IV is a plan view of the upper bearing-wheel and its supporting-bar. Fig. V is a detail of the box and supporting-block. Fig. VI is a detail of the brake-shoes, and Fig. VII a plan view illustrating the switch.

I have shown the slide-rails A at the mouth or opening of a conduit B, such as used

in a traction-railway system; but it will be understood that the improvements herein described may be used in railway systems generally without regard to the character of the motive power, though they have certain special advantage in connection with systems of which an underground conduit forms an essential part.

Rails A comprise each a base *a*, whose upper smooth surface constitutes the slideway, (which, in case there is no conduit beneath, may be continuous from side to side,) an upright web or column *b*, and a horizontal flange *c*, the flanges of the two rails being turned toward each other. The slot between the flanges is of suitable width to admit the shank of the slider B. The latter has a broad base fitting the space between the webs and between the slideway and overhanging flanges *c* and a narrow shank *d*, which moves between the flanges. Above the flanges the stem of the slide is broadened, so that it overhangs said flanges. At its upper end it is bolted fast to the center of the wheel or disk-shaped support C.

Projecting from the upper part of the slider is a sleeve D, which passes through the wheel C and constitutes the center on which the upper wheel or disk E turns. The body of the slider beneath this sleeve is hollowed out, and in the sleeve and hollow space of the slider is placed a post F, attached at its lower end (as by a swivel connection) to a cross-bar G, which projects through slots in the sides of the slider and carries on its ends the brake-shoes *g*. These shoes immediately overhang the flanges *c* of the rails and are in close proximity thereto.

Post F has at its upper end a horizontal plate H, forming the upper bearing of a spiral spring *f*, which encircles post F and normally holds the brake-shoes out of contact with the flanges *c* of the rails. Sleeve D has two upright posts, in which is pivoted a three-arm cam-lever I, its vertical arm being attached to a brake-rod, cord, or chain *i*. By pulling the rod, cord, or chain in either direction, as by means of ordinary hand or other brake operating mechanism, lever I will be tilted, forcing down post F, pressing shoes *g* directly upon the flanges *c*, and, in effect, clamping them between the slider and shoes. When the brake-cord is relaxed, spring *f* throws the brake out of action.

Other appliances for actuating the brakes will suggest themselves to persons skilled in the art to which the invention relates.

The upper disk or bearing wheel E rests on the lower disk or wheel C, the two having smooth faces in contact, so that the upper disk can turn easily on the lower one when the car assumes an oblique position, as in turning curves. Disk E is carried by a bar K, the connection being made in this instance by means of straps *e*. Bar K has at its center a hollow boss *k*, which forms part of the hub of wheel E and fits around sleeve D. The latter therefore serves as a king-bolt, making a swivel connection between the slider and the car-body. The ends of bar K fit loosely in holes *l* in blocks L, which are inclosed by boxes M, bolted to the car-body. On bar K are collars N, between which and the blocks L are coiled springs *n*. The springs serve to absorb lateral vibrations of the car or vehicle.

Between slide-blocks L and the top of boxes M are strong springs O. (Shown in the drawings as steel spiral springs.) Other springs—such as commonly used in vehicles for the same purpose—may of course be employed instead of spiral springs.

It will be understood that each car or other vehicle will be supported on two or more sliders of the construction herein set forth.

Where two tracks cross or converge, as shown in Fig. VII, a wedge-shaped switch-rail P is placed, being pivoted at *p*. By turning this device on its pivot the slider will be guided to the proper track, as will be readily understood from the drawings.

In another application of even date herewith I have described, in connection with a sliding car or vehicle, a brake mechanism similar in principle to that herein shown and described. The features of construction and operation common to the two mechanisms are not claimed herein, being reserved for the other application referred to.

I would regard two or more tracks placed close together so that the cars or vehicles would bear substantially on the central line of their bases as the equivalent of the single track herein described. Certain quite obvious modifications would of course be necessary that need not here be described. For instance, the rail and slider might be bisected with a narrow line between the two. Some of the improvements described may be used separately from the others.

What I claim, and desire to secure by Letters Patent, is—

1. A rail adapted to be used in a railway-track containing a slideway and two inwardly-turned flanges partly overhanging the slideway, one on each side, substantially as described.

2. A railway containing rails so arranged that the bearing of the car or vehicle will be substantially along the central line of its base and having two flanges turned in opposite directions and each overhanging the slideway of a rail, substantially as described.

3. The combination of a railroad-track composed of rails adapted to be used in a slideway-railroad and having two inwardly-turned flanges partly overhanging the slideway, one on each side, with a railroad car or vehicle containing a slider adapted to fit in between the base of the slideway and two overhanging flanges, substantially as described.

4. The combination of a railway containing rails so arranged that the bearing of the car or vehicle will be substantially along the cen-

tral line of its base and having two flanges turned in opposite directions and each overhanging the slideway of a rail with a railroad car or vehicle containing a slider or sliders adapted to fit in between the base of the slideways and the overhanging flanges, substantially as described.

5. The combination of a railroad-track composed of rails adapted to be used in a slideway-railroad and having two inwardly-turned flanges partly overhanging the slideway, one on each side, with a railroad car or vehicle containing a slider adapted to fit in and practically fill the space between the base of the slideway and the two overhanging flanges, the said slider having a thin shank which passes between the flanges of the slideway, substantially as described.

6. In combination with a slideway-railroad track and a slider or slides adapted to be used on a single-slide railroad or on slide-rails arranged close together, so that the bearing of the car or vehicle is substantially along the central line of its base, a brake adapted to bear upon the top surface of the rail or rails, substantially as described.

7. In combination with a slideway-railroad track and a slider adapted to be used on a single-slide railroad or sliders adapted to be used on slide-rails arranged close together, so that the bearing of the car or vehicle is substantially along the central line of its base, a brake adapted to bear upon the top surface of the rail or rails, a post carrying said brake, and a spring for throwing the brake out of action, substantially as described.

8. In a railroad car or vehicle adapted to be used on a slideway system in which the bearing of the car or vehicle is substantially along the central line of its base, a lower circular bearing connected with the slider and an upper circular bearing connected with the body of the car, the upper circular bearing traveling on the lower circular bearing, substantially as described.

9. In a railroad car or vehicle adapted to be used on a slideway system in which the bearing of the car or vehicle is substantially along the central line of its base, springs arranged against or connected with the body of the car on each side thereof, substantially as described.

10. A wedge-shaped switch-rail, in combination with a railroad-track containing a slideway and two inwardly-turned flanges partly overhanging the slideway, the inner and larger end of the switch-rail being pivoted and the outer and smaller end being free to the extent desired, substantially as described.

11. In a railroad system having a conduit for a cable, electric wire, or other means for communicating power to move the car, the combination of rails arranged at the slot or opening of said conduit and on opposite sides thereof, said rails having a slideway and overhanging flanges turned toward the center, so that only a single opening is presented, and a car or vehicle provided with a slider adapted to fit between the slideways and flanges, substantially as described.

12. The combination of the slider, the bar supporting the truck-frame and connected at its ends to slide-blocks, boxes fitting over said blocks, springs interposed between them, and other springs surrounding said bar and bearing laterally against said blocks, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ENOCH G. TOBEY.

Witnesses:
R. A. PIPER,
CHARLES H. SCHAEFER.