

No. 609,335.

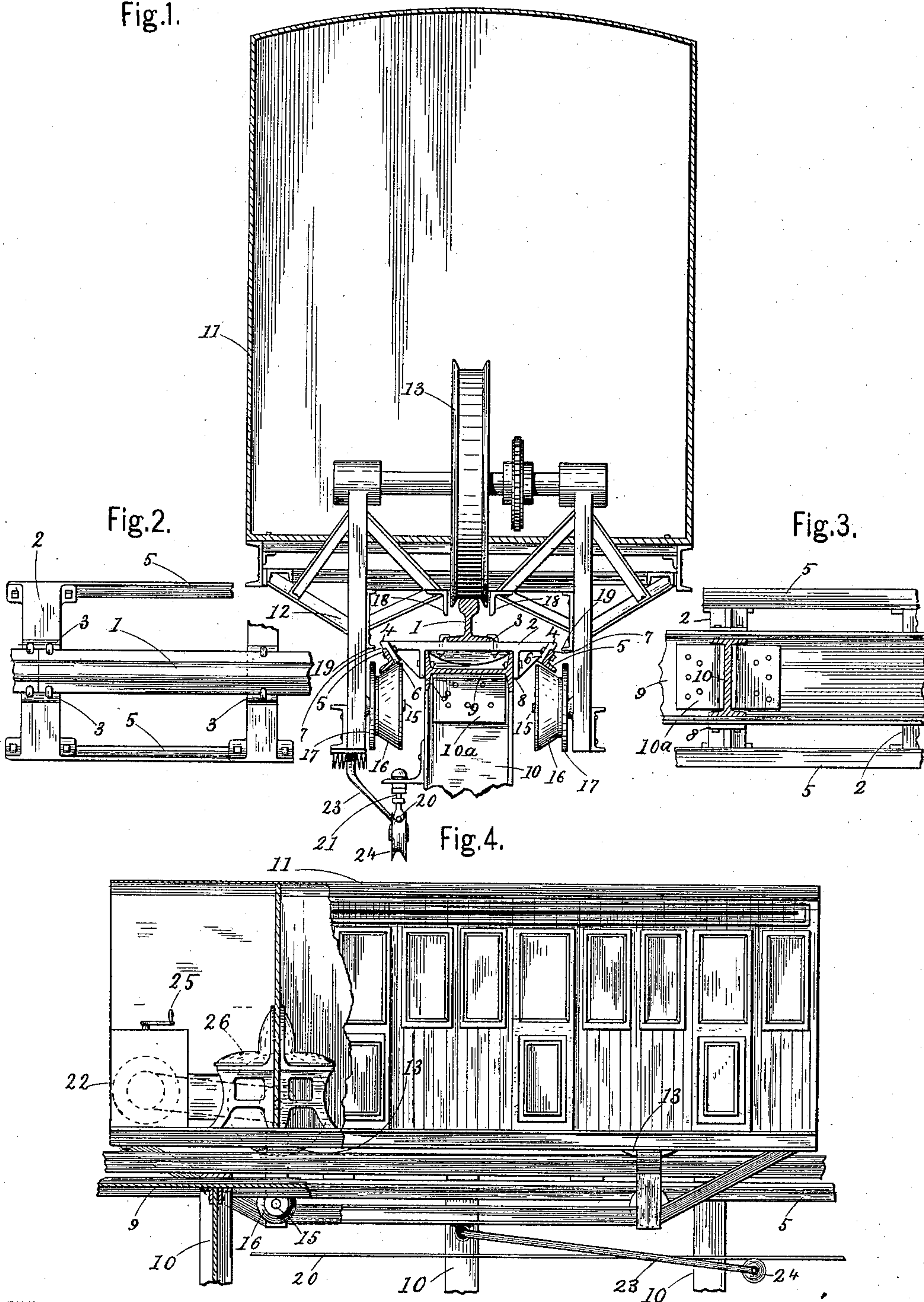
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O. B. ENGLISH.  
RAILWAY SYSTEM.

(Application filed Dec. 7, 1897.)

(No Model.)

Fig.1.



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# UNITED STATES PATENT OFFICE.

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## RAILWAY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 609,335, dated August 16, 1898.

Application filed December 7, 1897. Serial No. 661,010. (No model.)

*To all whom it may concern:*

Be it known that I, OTTO B. ENGLISCH, a citizen of the United States, residing at Oakfield, in the county of Genesee and State of New York, have invented certain new and useful Improvements in Railway Systems, of which the following is a specification.

My invention relates to improvements in railway systems of the single-track type in which the main center rail is provided on each side with a supplementary guide-rail; and the object of my invention is to simplify and cheapen the construction of single-track railways of this type and also increase the solidity thereof and the standard of safety.

It also has for its object the arrangement of the main rail and the guide-rails with each other and the supporting thereon of the main wheels and supplementary guide-wheels of the car in such a manner as to materially lessen the friction, and thus substantially increase the ease of running.

My invention also relates to certain details of construction, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, forming a portion of this specification, in which—

Figure 1 represents a front sectional elevation through a car and the main and side rails and their support, illustrating the general form and arrangement of the car, its wheels, and the supporting-track. Fig. 2 is reduced plan view of the track. Fig. 3 is an inverted plan or under side view of the track. Fig. 4 represents a side elevation of one of the cars and the supporting-track, a portion being broken away to show the interior construction.

Referring to the said drawings in detail, in which like numerals designate like parts, I indicate the main-track rail by the numeral 1, which is of the usual type employed in the two-track railways.

The chairs 2 are provided with transverse ribs 3, between which a series of rails are seated end to end to secure exact continuity, and the rails are firmly and rigidly secured therein by bolts or keys in the ordinary and well-known way. The chairs 2 extend sufficiently to each side to form the supporting

portions 4, to which the supplementary guide-rails 5 are rigidly fastened by bolts or other well-known means.

Two lines of the guide-rails 5 are used, both running parallel to the single track of main rails 1 at an equal distance from opposite sides of the said main-track rails 1 and slightly below the horizontal plane thereof, and as both lines are constructed and arranged in precisely the same manner and of similar parts I will designate each like part by the same numeral irrespective of the line it forms an element of. The guide-rails 5 are formed of angle-iron and are preferably arranged and secured to the supports 4, so as to have the upper portion of the rail pointing diagonally upward and outward and the lower portion diagonally downward and outward.

To properly support the guide-rails 5 the supports 4 are provided with extension-plates 6, the outer faces of which extend diagonally downward and inward and form bases against which the upper surface of the upper portions of the angle-irons abut and are rigidly secured.

Shoulders 7 extend outwardly from the supports 4, against which the upper edges of the angle-irons rest.

Two leg portions 8 extend downward from the chairs and form supports, between which the girder-iron or longitudinal I-beam 9 is interposed to strengthen the structure, the T-ends of the girders being firmly fastened by bolts to the leg portions.

To provide a simple, solid, and very rigid foundation and support for my elevated railway, I erect a series of supports or posts 10 at suitable distances from each other and in the longitudinal direction of the road, which form a series of vertical I-beams; to which the longitudinal I-beam 9 is firmly and rigidly fastened by corner-braces 10<sup>a</sup>.

A series of the supporting-chairs 2 are seated and secured at suitable intervals upon the longitudinal I-beam 9 and rigidly tied thereto, as heretofore stated.

The cars which are designed to be used with my improved single-track railway are provided with a body 11, which may be of any well-known construction.

The truck 12 is also of the usual form, and the main wheels 13 are mounted in journals



upon the car-truck 12, so as to be in exact longitudinal alinement with each other and the truck.

The supplementary guide - wheels are 5 mounted upon horizontal axles 15, which are journaled upon opposite sides of the truck, and each of said wheels is provided with a beveled portion 16, which is adapted to run 10 upon the lower side of the lower portion of the angle-irons forming the guide-rails. They are also provided with side flanges 17 to limit the transverse movement of the wheels upon the rails.

The truck is also preferably provided with 15 the central wheel-guard portions 18 and the inwardly-extending guard portions 19, thus affording additional safety and security.

Any well-known arrangement of bracing 20 devices may be employed to strengthen and brace the truck.

I preferably employ electricity as a motive power and suspend the trolley-wire 20 at a suitable distance beneath the car by means of the supporting-arms 21.

25 The car is provided with the usual motor 22 and a trolley-pole 23, having the usual wheel 24, which runs beneath and in contact with the wire 20.

It is obvious from the above that I have 30 materially improved, simplified, and cheapened the existing types of single-track railways, as the chairs in my improvement are formed to support both the main center track and the supplementary guide-rails, thus ob- 35 viating the necessity of additional supporting devices for the supplementary guide-rails, besides greatly strengthening the entire structure.

I am aware that changes in the form and 40 proportion of parts and in the details of construction of the devices herein shown and described as the preferred embodiment of my invention may be made by a skilled mechanic without departing from the principle or sac- 45 rificing the advantages of my invention, and I therefore reserve the right to make such modifications and alterations as fairly fall within the scope of my invention.

I claim as my invention—

50 1. A railway system comprising a series of substantially vertical supports or beams, a longitudinal beam secured to the upper ends of said vertical supports, a series of support- ing-chairs mounted upon said longitudinal 55 beam, a series of rails forming the main single-rail track supported upon the chairs, and a series of guide-rails fastened upon the outer side edges of the chairs on each side of the main single-track rails.

60 2. A railway system comprising a series of vertical beams a longitudinal beam support-

ed upon the upperends of said vertical beams, a series of supporting-chairs mounted upon the longitudinal beam and having flanged 65 side edges forming supports, main-track rails supported in longitudinal continuity with each other upon the chairs and angle-irons forming supplementary guide-rails rigidly se- cured to the supports.

3. A railway system comprising a single 70 line of main-track rails, a line of guide-rails arranged on each side of said main-track rails, a series of chairs for supporting both the main single line and the supplementary 75 guide-lines, a longitudinal I-beam for supporting the chairs, and a series of vertical beams for supporting the longitudinal I-beam.

4. A railway system comprising a series of 80 chairs having side edges or extensions extending diagonally downward and toward each other, a series of rails forming the main single-track rail secured upon and extending up- ward from substantially the central upper 85 surface of the chairs, and a series of angle-irons forming guide-rails having their upper portions extending diagonally upward and outward and securely bolted to the side edges of the chairs, and their lower portions directly 90 downward and outward, as set forth.

5. The combination with a railway system, 95 comprising a series of chairs, having side edges or extensions extending diagonally downward and toward each other, a series of rails forming the main single-track rail secured upon 100 the upper surface of the chairs, and a series of angle-irons forming guide-rails having their upper portions extending diagonally upward and outward, and bolted to the side edges of the chairs, and their lower portions diagonally 105 downward and outward, of a railway-car having two or more main central wheels which aline longitudinally with each other, and upon the main rail of the system, and supplemen- 110 tary guide-wheels journaled upon horizontal axles located beneath and on each side of the main central wheels and provided with bev- eled portions adapted to engage with the 115 guide-wheels, as set forth.

6. A railway system, comprising a series of 110 vertical I-beams, a longitudinal I-beam rigidly secured thereto, a series of supporting-chairs seated upon and rigidly secured to the longitudinal I-beam at suitable intervals, a single main track supported upon the upper 115 portion of the chairs and a series of guide-rails supported on each side of the single main track.

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