LE VERT CLARK.

RAILROAD TRACK.

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927,830.

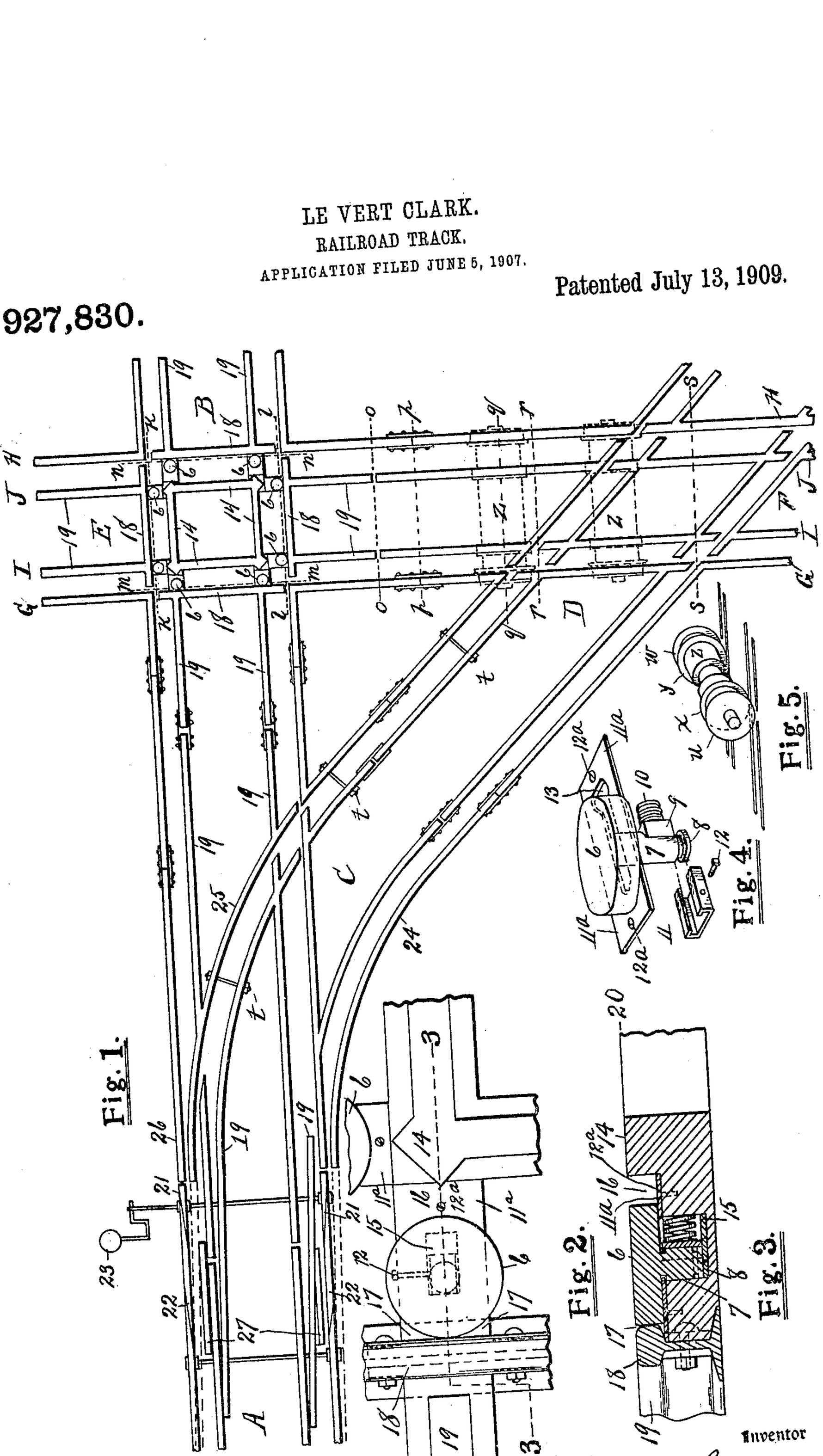

Fig. 1.

Fig. 4.

Fig. 5.

Fig. 2.

Fig. 3.

Witnesses

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LE VERT CLARK, OF DETROIT, MICHIGAN.

RAILROAD-TRACK.

No. 927,830. Specification of Letters Patent. Patented July 13, 1909.

Application filed June 5, 1907. Serial No. 377,384.

To all whom it may concern:

Be it known that I, LE VERT CLARK, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Railroad-Tracks, which I designate as Boosting-Rails; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to railway tracks. It has for its object: two concentric tracks in combination on a single line of cross ties; by which a stronger railway can be built, with lighter rails, affording better facility for a higher speed with the greatest possible safety in cases of derailment, when used with my tubular wheels, each having two tires, one flanged and the other flangeless; a better and more economical maintenance of roadbed and track surface, with the practical effect of the two adjacent rails, on the same side of the common center, being welded into one solid unbroken rail, without a perceptible joint or notch, or the serious disadvantages, from expansion and contraction, of welded-joint rails. In which provision is made for the gage rails nearest the center or vice versa; with only such intersections notched, where the flanged tires are to pass through. The boosting track member on which run tires without flanges being constructed, without having the other concentric track member notched where said boosting rails intersect with another boosting track at crossings and switches, and omitting altogether in city streets the necessary and usual grooves for wheel flanges in the pavement alongside the boosting tracks.

The design or further object is to have each concentric track member normally support only one-half of the burden of traffic carried by double wheels over the concentric tracks railroad; whereby the wear and tear to rolling stock, track and roadbed is materially reduced and "low joints" made practically impossible.

In the drawings:—Figure 1 is a diagram of the concentric tracks combination embodying this invention. Fig. 2 is a horizontal plan view of the movable rotary disk-crossing member and its yoke. Fig. 3 is a section on the line 3—3 of Fig. 2. Fig. 4 is a perspective view of the yoke and disk member with its spindle, spring-bearing and clutch. Fig. 5 is an isometric projection of a detail open rail joint, notch or broken rail, and a solid rail adjacent thereto, in the other concentric track member, supporting my tubular wheel.

In its essentials this two track combination consists of a standard gage track member, spiked to cross ties in the usual way and having concentric therewith a boosting track member throughout the full length of the railroad with its rails and crossing disks laid inside or outside of the gage track, its joints being staggered with the adjacent joints of the other concentric track member, on the same side of the common center; so that when a wheel with double tires runs on the gage rail, boosting rail and disks, on the same side of the track center, there is always a solid rail or disk adjacent to each notch or joint in the other track member to support one tire, while its companion tire on the same wheel rolls noiselessly over the said gap, in the other adjacent rail, without shocks, jolts, or causing "low joints" in either of said concentric track members. Also the arrangement of rails at the junction points or switches being such that my wheels having double tires, while on the main line, can "run out through" a switch while the same is "thrown to a side track" without having to throw back the switch rails to meet the on coming wheels.

In Fig. 1 A B represents we will say, a main and A C D a side combination track or junction and E F a combination track crossing the main line at right angles. 24 and 26 are rails of the gage track with similar rails on the outside across, laid at standard gage; these are to support only tires having flanges. It will be noted that notches for flanges are made only in rails intersecting with gage rails 24, 25 and 26 which cross them. The rails 19 and 19 of the boosting track are laid between said gage rails. It will be further noted that there are no notches required in these boosting rails 19 where they intersect with each other, for the reason always that the tires intended to run upon the boosting track have no flanges but will nevertheless run smoothly like a wagon wheel across any of the concentric tracks thereby dispensing with

all grooves and notches alongside thereof in this construction. It will be again noted that wherever the joints come in the gage rails 24, 25 and 26 there are always solid bearings for the flangeless tire on the rails 19; and conversely, the notches and joints in rails 19 always present a solid bearing adjacent in the gage rails 24, 25 and 26 for the flanged tire on the same wheel. 21 and 21 are two movable switch rails attached by a rod to the switch stand 23, which is set to the main line A B. The dotted lines show the position of the switch rails when thrown to the side track A D; in which latter case when a train with double tired wheels goes from B to A on the main line, the wheel flanges along the rail 26 will run through the long acute angle notch 22 on the top of the upper switch rail 21; at the same time the flangeless tire on the same wheel is supported on the boosting rails 19 and guided by the rails 27 in its passage through the switch from B to A. If the switch is set as shown to the main line, when a double wheel passes from D to A, the wheel flange going along the rail 24 will pass through the long notch 22 of lower rail 21; the flangeless tires being supported by the rails 19 in parallel relation and guided by 27 the same as before. 6 and 6 are movable disks on the line of the boosting rails 19 and 19 which are intended to support the flangeless tires of each double wheel on the lines *m*—*m* and *n*—*n* while its flanged tires are being carried over the adjacent notches in the gage track, and passing along the rails 18 on the lines *k*—*k* and *l*—*l* force back the disks in the boosting rails I—I and J—J. The combination track E F, similarly constructed, performs the like office for wheels with double tires crossing the combination track A B. On the other cross lines *o*—*o* to *s*—*s* are shown gaps and notches alternately in both members of the combination concentric tracks and crossings. *t t t* are stay bolts on curved track.

While I have indicated in the drawings the boosting track member as laid inside its concentric gage track member, which is all right for locomotives of the reciprocating engine pattern: nevertheless for them, as well as for electric motor cars, the boosting track member may be laid outside of the gage track member which permits a wider wheel base with increased space for wider fire boxes in locomotives and longer and more powerful armatures on motor trucks. It is preferred that on a curve of very short radius the boosting track member be laid in a plane parallel with, but a little lower than the plane of its adjacent concentric gage track member; so that the flangeless tires of my tubular wheels will not be in contact with it at all; but it will still be there to guide the double tires in case of derailment, until the cars can be stopped in the usual way; instead of allowing the trucks to go off the track at a tangent, drop down and tear up the cross ties as is the common result on so-called standard railroads. In which event the barrel portion of the tubular wheels will roll on tops of the rails and prevent the tires from traveling on the cross ties underneath.

Fig. 2 represents in detail one of the four corners of the right angle railroad crossing of combination concentric tracks in which the disk 6 is held against the gage rail 18; and when the tire flange runs through the space 17 the disk is forced away from the gage rail and springs back again after the flange passes.

In Fig. 3, 6 is the disk laid in line with the boosting rails 19 against the gage rail 18 of the cross track. 17 is the space through which a tire flange runs forcing back the disk into the space 16. 14 is a continuation of the boosting rail 19, forming part of the crossing structure. 15 is a pocket or recess under the disk into which the spindle and its attachments (Fig. 4) are dropped and secured preferably by the yoke 11^a or the clutch at 8 at the bottom of the spindle. The yoke 11^a is easily renewable, when it becomes worn by the friction of the disk over it, to maintain a more even surface.

In Fig. 4, 6 is the movable rotary disk having a spindle shank 7 underneath with a groove around the shank just under the disk; 11^a is a yoke with a long slot 13, made, in its widest part, of the same diameter as the groove part of the shank just under the disk, so that the shank may be dropped through the larger hole of the slot 13 and the upper groove of the shank slid onto the narrow part of the slot; 12^a are screws to attach the yoke to the boosting rails 14. 9 is a half bearing, concave on the side toward the shank, and flat on the side toward the spring 10. 12 is a clutch and bolt which may be used to hold the shank in the pocket; but it is believed that the yoke 11^a will make the use of the clutch 12 and groove 8 unnecessary. The spindle and the disk will have a sliding and slightly rotary motion during the passage of wheel flanges between the disk and gage rails.

In Fig. 5 Z represents my tubular wheels. *u* and *w* are the flanged tires suspended in a vertical line over gaps in the gage track; *x* and *y* are flangeless tires resting on the solid rails adjacent, of the concentric boosting track. The relative position of the tires being reversed when the concentric boosting track is placed outside of the gage track.

What I claim is:—

1. A railroad track having in combination a movable rotary disk with a spindle shank underneath working against a collar and spring; a yoke seated on top of the rail mem-

ber and acting as a guide to the disk; a clutch guiding and holding the spindle near its bottom; retaining bolts holding the yoke and clutch; the boosting-rail being provided with a pocket or recess, under the yoke, in which the spindle and its attachments may move and yet be firmly secured, substantially as described.

2. A railroad track having in combination a fixed boosting rail secured as are the other rails, which rail has a pocket or recess and bolt holes from the outside through which bolts are passed to secure a yoke seated over the top; a clutch inside the pocket holding a rotary spindle; a disk member sliding horizontally over said pocket on said yoke seated in the top of said boosting-rail member, substantially as described.

3. A concentric track railroad having in combination two movable switch rails, having wide notches, cut at a very acute angle one in the top of each rail; and adjacent thereto and acting in conjunction therewith a concentric boosting track member, with guard rails adjacent to the wide notches of the switch rails, substantially as described.

4. A concentric track railroad having in combination a standard gage track member and another track concentric and acting, in conjunction therewith, on the same cross ties as a boosting track member made without notches and gaps where the same intersects with a similar boosting track of another concentric track combination railroad, substantially as described.

5. A concentric track railroad consisting of a combination of standard gage track and a boosting track of the same length as the former acting in conjunction therewith under a double tired wheel; the boosting track member made with a solid unbroken base opposite to all joints, gaps, and notches in the nearest adjacent rail of the eccentric gage track member, substantially as described.

6. A concentric track railroad construction consisting of a combination of a standard gage track member, a boosting track member concentric therewith embedded flush, with its street pavement member without wheel flange trenches, therein on either side of the boosting rails and without notching the rails where said boosting track member intersects a similar boosting track member, of another concentric track railroad, substantially and for the purposes as described.

7. A concentric track railroad having in combination throughout its entire length two concentric tracks on the same roadbed, consisting of a standard gage track member and another concentric track member acting as a boosting track in conjunction with a double tired wheel, substantially and for the purposes as described.

8. A concentric track railroad having in combination a gage track member and a boosting track member concentric therewith; the joints, gaps and notches of one member being laid in alternate relation with the joints, notches, and gaps of the other concentric track member on the same side of the common track center; each of which track members being normally designed to support only one half of the load, constituting the traffic carried thereon by double wheels having flanged and flangeless tire portions abreast, on each end of the same axle; substantially, and for the purposes, as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

LE VERT CLARK.

Witnesses:

O. B. Baenziger,

I. G. Howlett.

Letters Patent No. 927,830.

Correction in

It is hereby certified that in Letters Patent No. 927,830, granted July 13, 1909, upon the application of Le Vert Clark, of Detroit, Michigan, for an improvement in "Railroad-Tracks," an error appears in the printed specification requiring correction as follows: Page 3, line 43, the word "eccentric" should read *concentric;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 4th day of January, A. D., 1910.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.