

No. 864,653.

PATENTED AUG. 27, 1907.

I. KITSEE.
ELECTRIC RAILROADING.
APPLICATION FILED APR. 15, 1907.

2 SHEETS—SHEET 1.

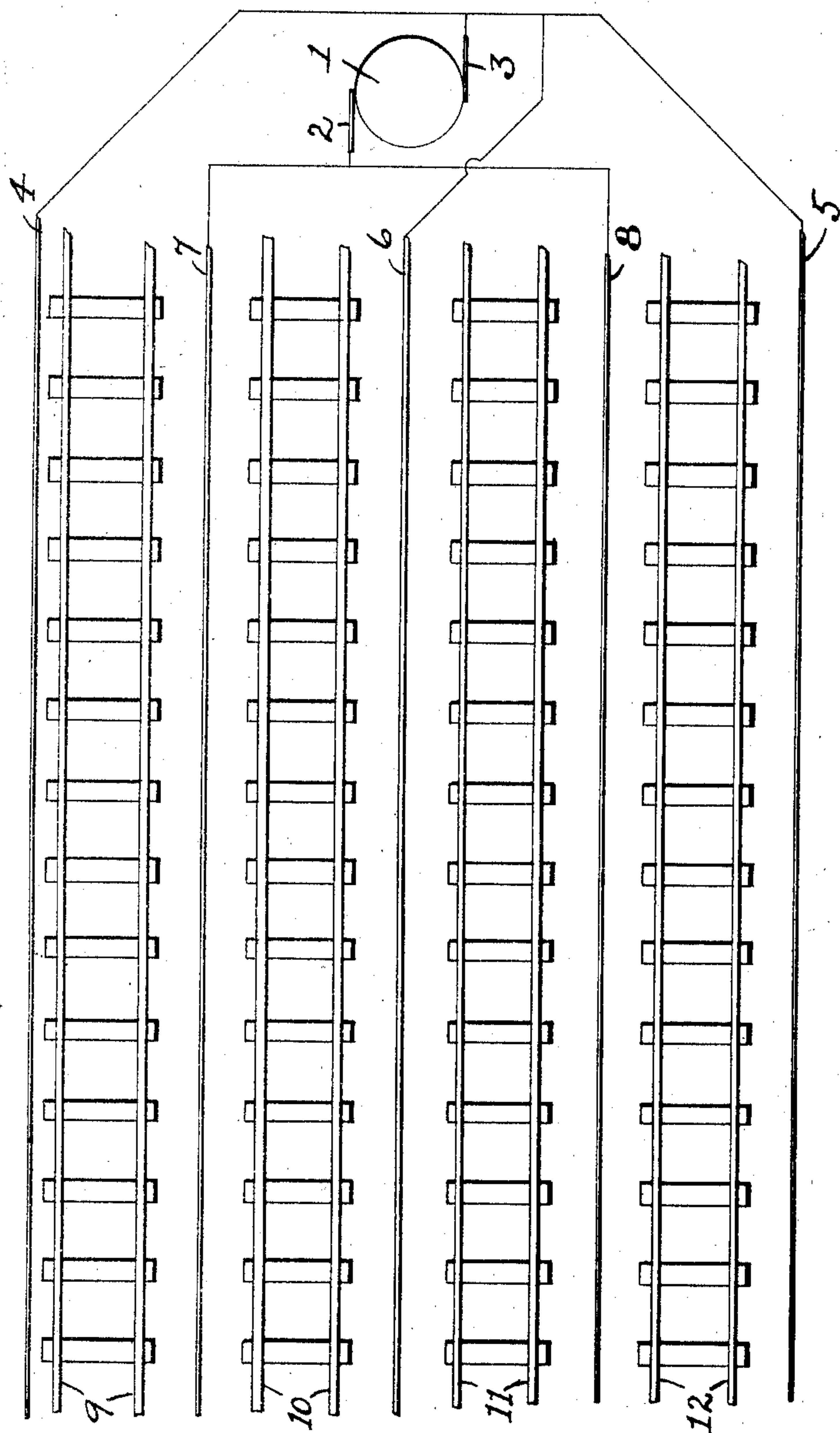


Fig. 1.

WITNESSES:

Edith R. Stille
Abraham Rittenhouse

INVENTOR

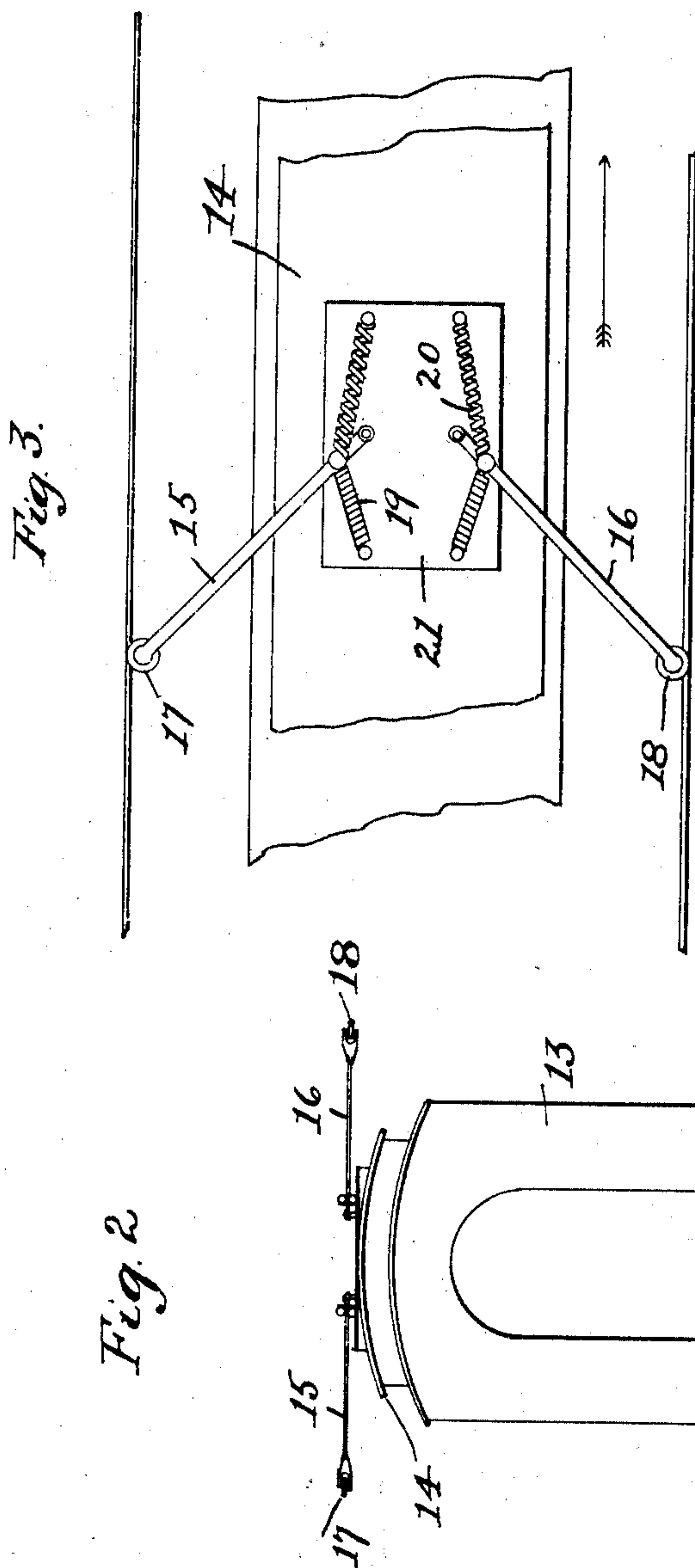
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WITNESSES:

Edwin P. Otisley
Abraham Rittenhouse

INVENTOR

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UNITED STATES PATENT OFFICE.

ISIDOR KITSEE, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC RAILROADING.

No. 864,653.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed April 15, 1907. Serial No. 368,328.

To all whom it may concern:

Be it known that I, ISIDOR KITSEE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electric Railroading, of which the following is a specification.

My invention relates to an improvement in electric railroading.

10 Its object is to produce an efficient arrangement, whereby electric railroading with the aid of high tension currents may be accomplished without undue effect on neighboring wires.

In railroading of to-day, most generally the rails 15 are used as the return. I am aware that in earlier days when direct currents of comparatively low voltage were used, both the circuit wires were placed overhead, and the two trolley wheels, separated on a vertical arm connected each with one of the circuit wires; 20 but in railroading of to-day where an alternating or phase current of ten thousand or more volts is used, it would be imprudent to bring the two wires of the power circuit as close together as is required in the arrangement as practiced before with the direct current of 25 comparatively low voltage. To obviate this difficulty, to produce an arrangement whereby the rail return can be dispensed with and yet the over-head wires reduced to a minimum, is the aim of my invention.

In the drawing, Figure 1 is a plan view of the track 30 and wire system and a diagram of the connections with the generator. Fig. 2 is a rear elevation of the car. Fig. 3 is a plan view of part of top of the car, showing the connections of the trolley wheels with the power wire.

35 1 is the generator; 2 and 3 are brushes or terminals of same; the terminal 3 being connected with the lines 4, 5 and 6 and the terminal 2 being connected with the lines 7, and 8.

9, 10, 11 and 12 are tracks on the road of travel.

40 I have illustrated here four tracks, for the reason that on parts of the road with large travel, generally one incoming and outgoing track is reserved for passenger service and one incoming and outgoing track is reserved for freight service. It is seen from this 45 drawing that all four tracks require only five over-head lines and yet the rail is not used as a return, but each track has wires connected to the two terminals of the generator, and for better understanding I will call the lines or wires connected to the brush 3, the outgoing 50 current wires and all lines connected to the brush 2 the return wires. The track 9 has the outgoing circuit

wire 4 and return 7; the track 10 has the outgoing circuit wire 6 and the return 7 which is common with the track 9; the track 11 has the outgoing circuit wires 6, 55 which wire is common to both of the tracks 10 and 11 and has the return 8; the track 12 has the outgoing circuit wire 5 and has the return 8, which is common to both the tracks 12 and 11. It is seen that with this arrangement, the least number of over-head or trolley 60 lines is required for a system where ground or rail returns are eliminated.

It is now necessary to describe the arrangement of trolleying these wires, so that the same may be placed as for apart as possible and not close enough, so that 65 any danger may arise from the swaying of the wires, or the leakage of the current from one wire to the other. The arrangement I prefer is illustrated in Figs. 2 and 3. In these figures, 13 is the car proper of which 14 is the roof and 15 and 16 are the two trolley arms, the 70 arm 15 provided with the wheel 17 and the arm 16 provided with the wheel 18. The trolley arms are held by the springs 19 and 20. The springs and arms are mounted on the base 21. With this arrangement, the two wires of one circuit incoming and outgoing, are kept so far apart that no danger can arise through 75 leakage or breakage, for it is well known that between one track and the second track, there is a space of so many feet that a coming together of the wires or leaking of one wire from the other is out of the question.

Having now described my invention, what I claim 80 as new and desire to secure by Letters Patent is:—

1. A system of electric railroading comprising more than one track, each track provided as to its outer space with one wire of a common power circuit and two adjoining 85 tracks provided as to its inner space with one wire of said common power circuit.

2. A system of railroading comprising two tracks, a wire connected to one terminal of a generator for the outside of each track, and a wire common to both tracks and connected to the opposite terminal of the generator placed 90 between said tracks.

3. A system of electric railroading comprising four tracks and five over-head wires for said tracks, the outside of the outside tracks provided each with one wire connected to a common terminal of a generator, the inside of 95 said outside tracks provided each with one wire connected to the opposite terminal of said generator and the inside of the two inside tracks provided with a common wire connected to the first named terminal of said generator.

In testimony whereof I affix my signature in presence of 100 two witnesses.

ISIDOR KITSEE.

Witnesses:

ALVAH RITTENHOUSE,
H. C. YETTER.