

J. FRYE.  
Improvement in Endless-Railways.  
No. 132,152. Patented Oct. 15, 1872.

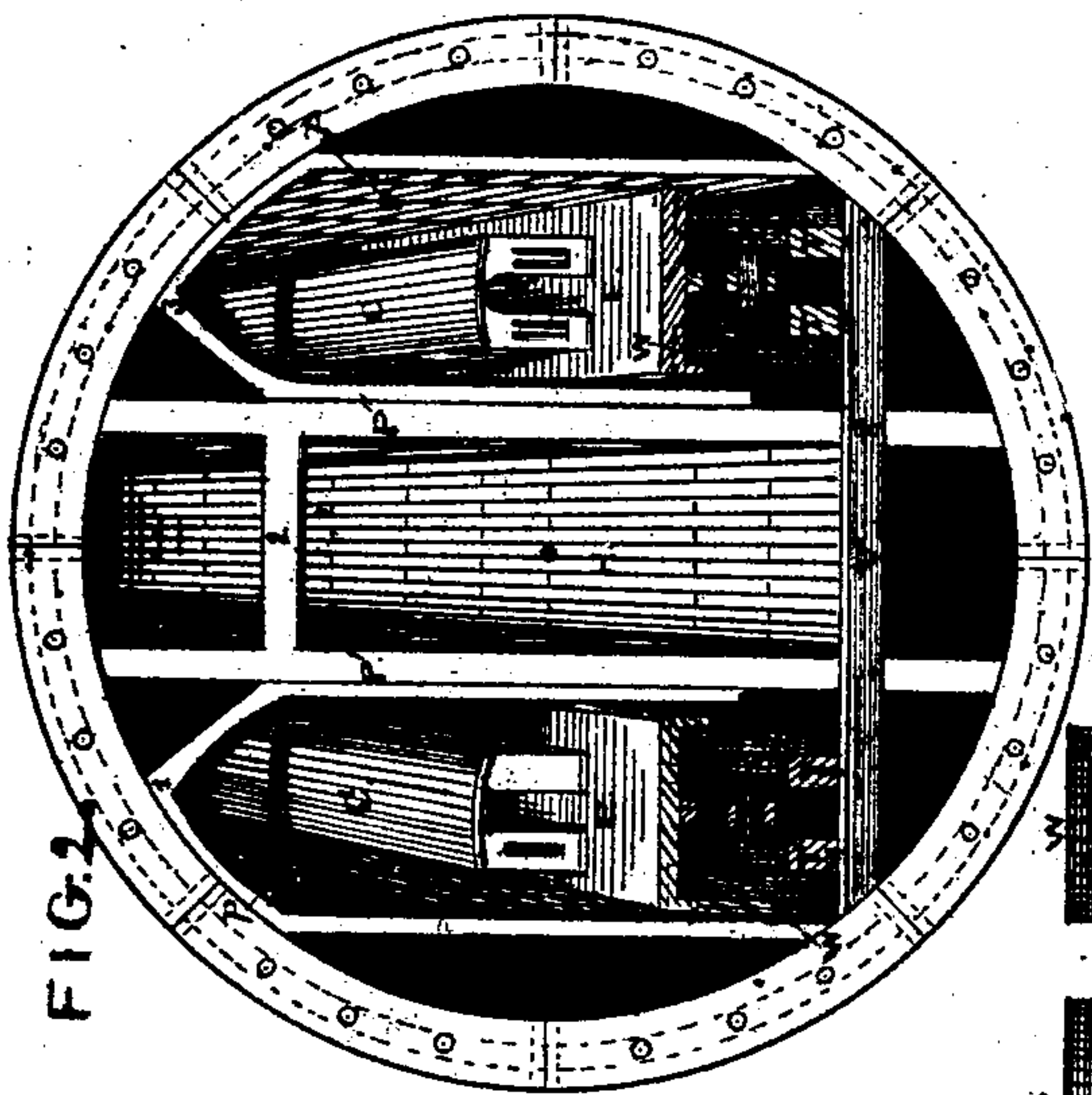


FIG. 2.

FIG. 1.

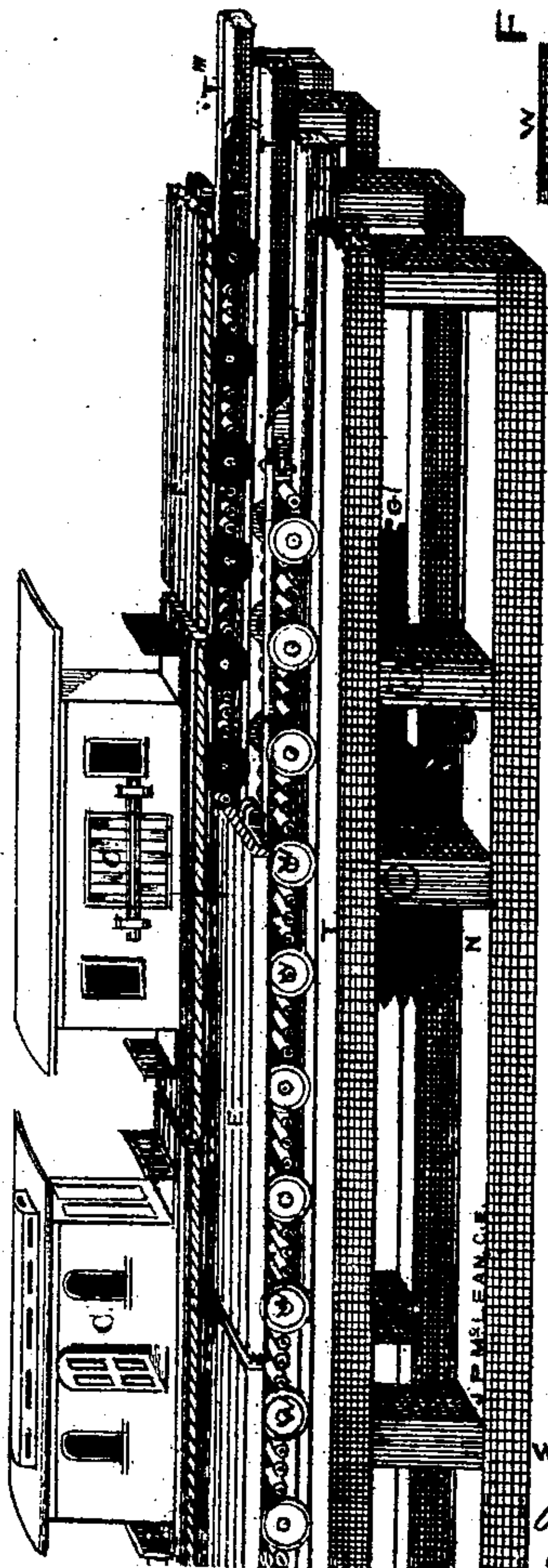


FIG. 3.

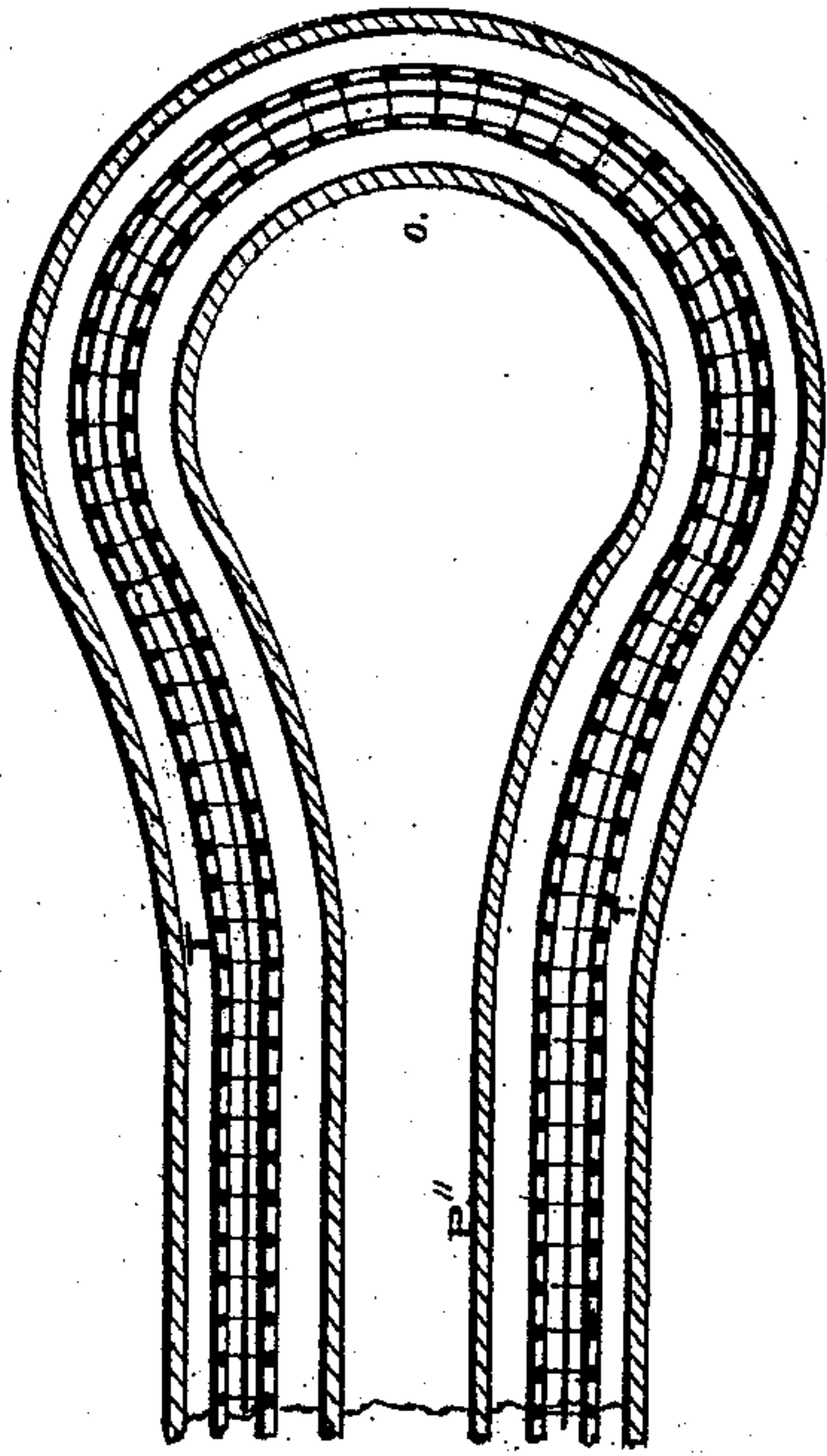
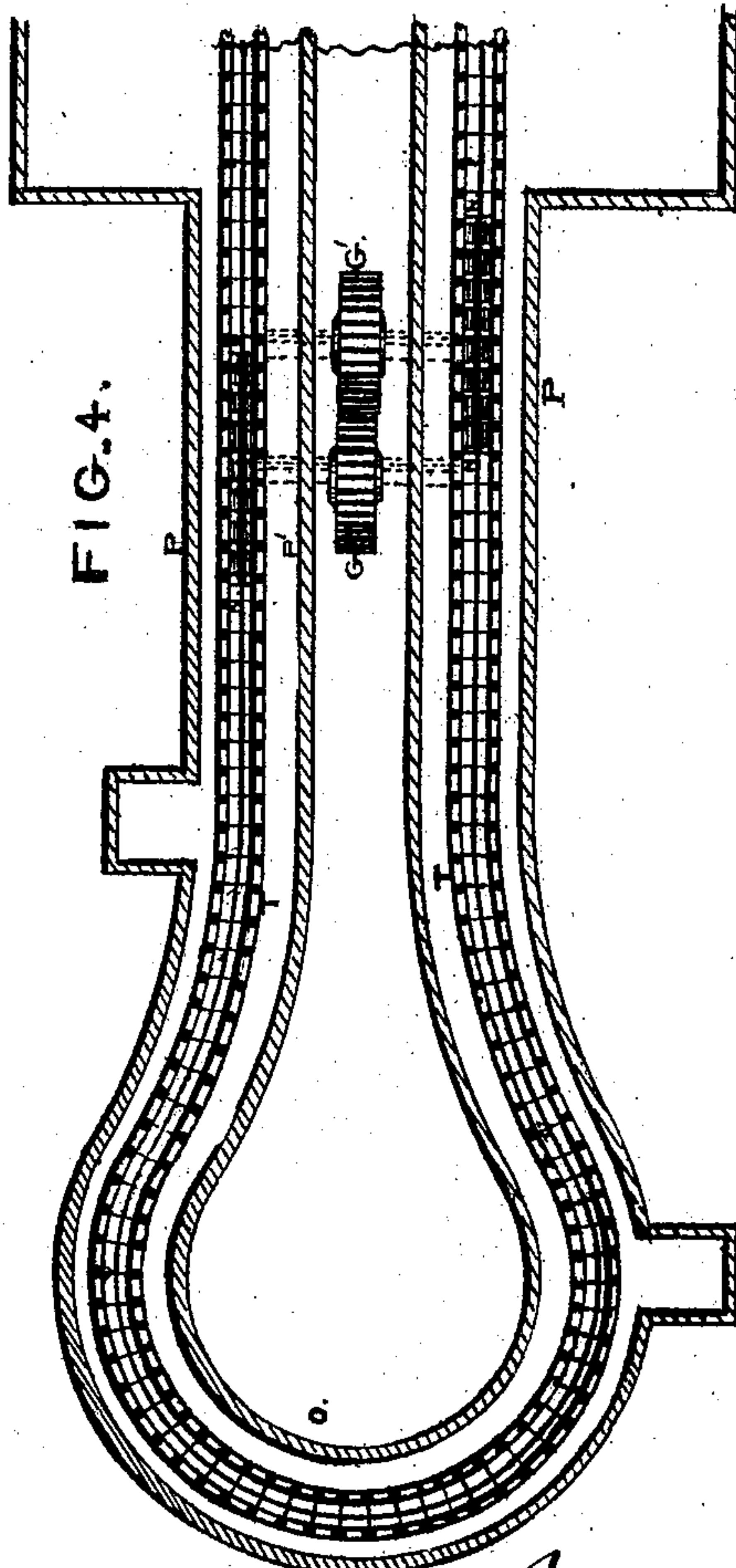


FIG. 4.



WITNESSES

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# UNITED STATES PATENT OFFICE.

JESSE FRYE, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN ENDLESS RAILWAYS.

Specification forming part of Letters Patent No. 132,152, dated October 15, 1872.

*To all whom it may concern:*

Be it known that I, JESSE FRYE, of the city of Brooklyn, in the county of Kings and State of New York, have invented a certain novel and useful Endless Railway; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, which is lettered to correspond with and form a part of the specification.

To enable the public to understand the nature of my said invention, and those skilled in the mechanic arts to construct and operate the same, I will describe it as follows, to wit:

Figure 1 is a perspective drawing of my endless railway T, showing a side elevation and an oblique top view. Fig. 2 is a vertical section of the same, inclosed in a cylindrical tunnel longitudinally divided into compartments P P' P''. Fig. 3 is a plan of a section of my endless rolling-gear to operate upon my endless tracks T T, and to receive and operate the endless platforms E E, Fig. 1.

Fig. 4 represents a plan of the endless track or "tram-way." P P' P'' P''' are the dividing partitions of the same, all arranged inside of a tunnel or archway. (See Fig. 2.) N N mark the locality and arrangement of driving-wheels provided with projecting fingers or teeth, which are operated by any suitable engine located below the track, and connecting with the cog gearing-wheels G G', which are operated in opposite directions at any suitable locality along the line of the endless track, say every five miles (more or less) apart.

This application is confined to the endless counterbalancing railway or track, and not to the rolling-gear or endless platform, as I propose to make three separate applications for Letters Patent to more fully protect the several parts of my invention.

The tracks or tram-ways T T T T being endless, I do away with the use of turn-tables, switches, turn-outs, and frogs, such as used upon ordinary railroads. These endless tram-ways or tracks are made of either metal or wood or wooden stringers T, overlaid with metal, and the tracks are firmly secured together by metallic cross-ties V, made of angle-iron, so that the tracks or stringers T T rest upon the horizontal flanges of the cross-ties V, and are secured or bolted to the same from

the under side thereof. (See Fig. 2.) I construct my endless railway inside of a single tunnel or archway, either above or below the earth's surface, excepting at the ends thereof, where the tracks will be laid upon an easy curve of not less than 1920 ft. radius for the narrow gage, and 2640 ft. radius for the wide gage; this should be the minimum and maximum of all the curves along the entire line of the road. The rails upon the narrow gage will be laid sixteen inches (more or less) apart for twenty-five (more or less) inch cars, and the rails on the wide gage will be about twenty-five inches apart for the reception of thirty-nine (more or less) inch cars, capable of seating two persons abreast. However, I do not confine myself to the above width of track or capacity of cars, but adopt that width of tracks and cars that will suit the diameter of the tunnel or archway through which the road may pass. I construct the cars of either metal or wood, and I separate the divisions of endless railway by two partitions, P' P'', so as to leave a central passage for workmen and watchmen to pass along at all times between the trains. Each division of the rolling-gear will be carefully inclosed with smooth metallic ceiling to separate the moving cars, and to prevent the resistance of the air upon the moving trains, to allow the same to move with the least resistance, as well as to prevent the concussion of the opposing currents of air which would be produced by the rapid passage of trains so near together in opposite directions.

The central passage H, Fig. 2, (through the tunnel,) must be well lighted, and all the compartments must be thoroughly ventilated by the introduction of fresh air supplied by air-engines located at each power-station or other localities along the line, so as to discharge condensed air into the passing trains in the same direction with the moving cars, which, in a small degree, assists the motor power. This air passes down between the sides of the metallic ceiling and the edges of the endless platforms or carrier E into the central passage, and from thence it passes freely through large pipes or conduits to the surface.

The above-described railroad tracks must be of the best quality of material, firmly laid upon substantial ties, and the end joints thereof must be united by a long mitered lap, securely

bolted or otherwise secured so as to form one united endless rail or track, capable of resisting any lateral or vertical strain from any cause whatever.

The novelty of my invention consists in the construction of one uniform endless railroad track, of either wood or metal, without turn-outs, turn-tables, switches, or frogs, and secured in position by means of angle-iron or other ties inside of a tunnel or archway, and separated by partitions P' P'', substantially as described and set forth, which I believe to be new and useful to the public; therefore,

What I claim as new and useful, and wish to protect by Letters Patent of the United States, is—

An endless railway track or tracks, T T T T, of either wood or metal, secured by means of angle-iron V or other ties, and united at the ends of the different sections of the rail by means of elongated mitered joints so as to form a uniform endless track, united by circular ends O O', and separated by partitions P P' P'' P''', all arranged inside of an archway or tunnel, in the manner and for the purposes substantially as above set forth.

In testimony whereof I hereunto subscribe my name in the presence of two witnesses.

JESSE FRYE.

Witnesses:

JAMES P. MCLEAN,  
J. RITCHIE MCLEAN.