

(No Model.)

R. M. HOLLAND.

ROAD BED OR RAIL SUPPORT FOR RAILWAYS.

No. 341,575.

Patented May 11, 1886.

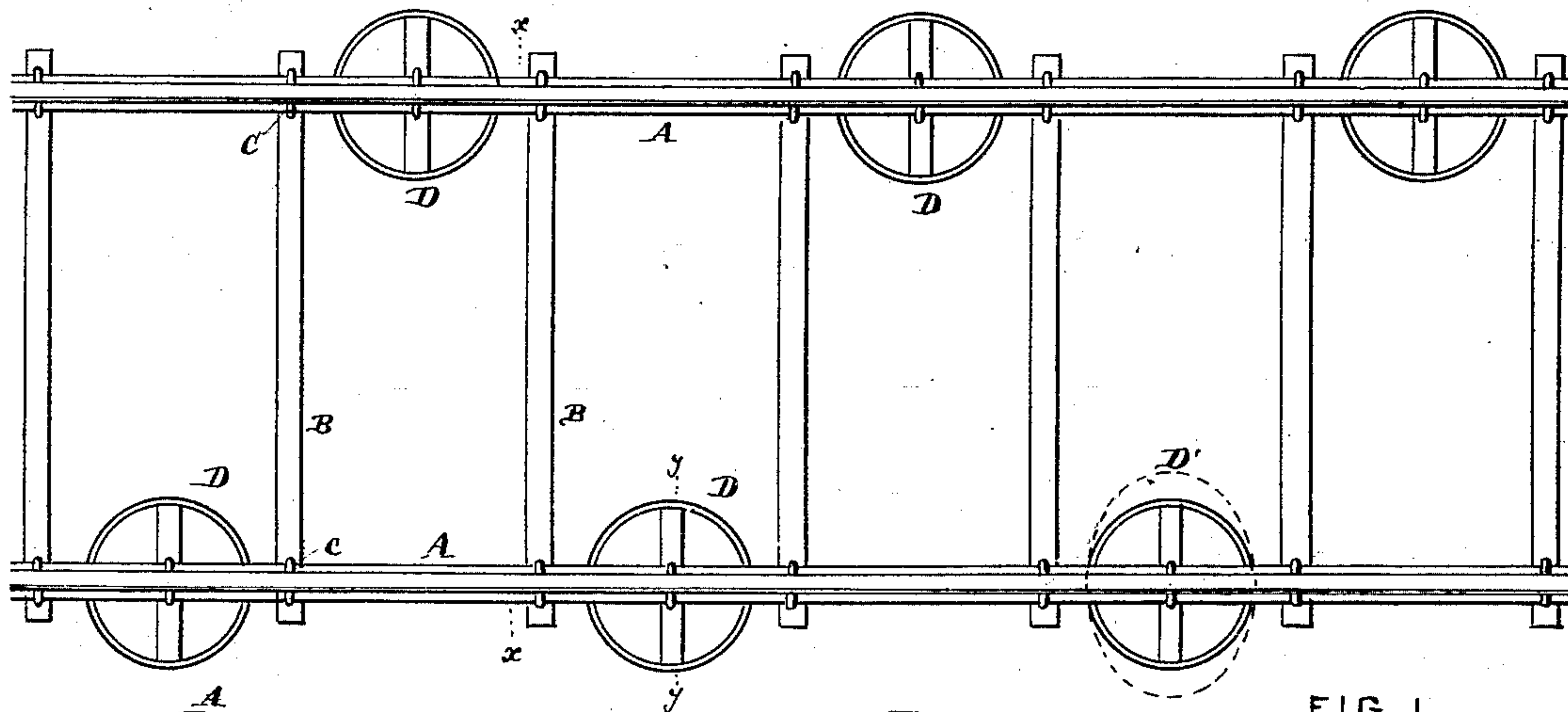


FIG. 1

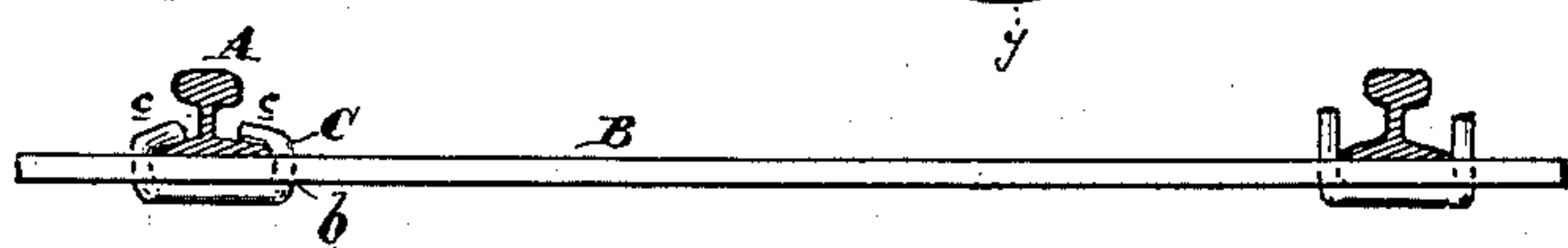


FIG. 2

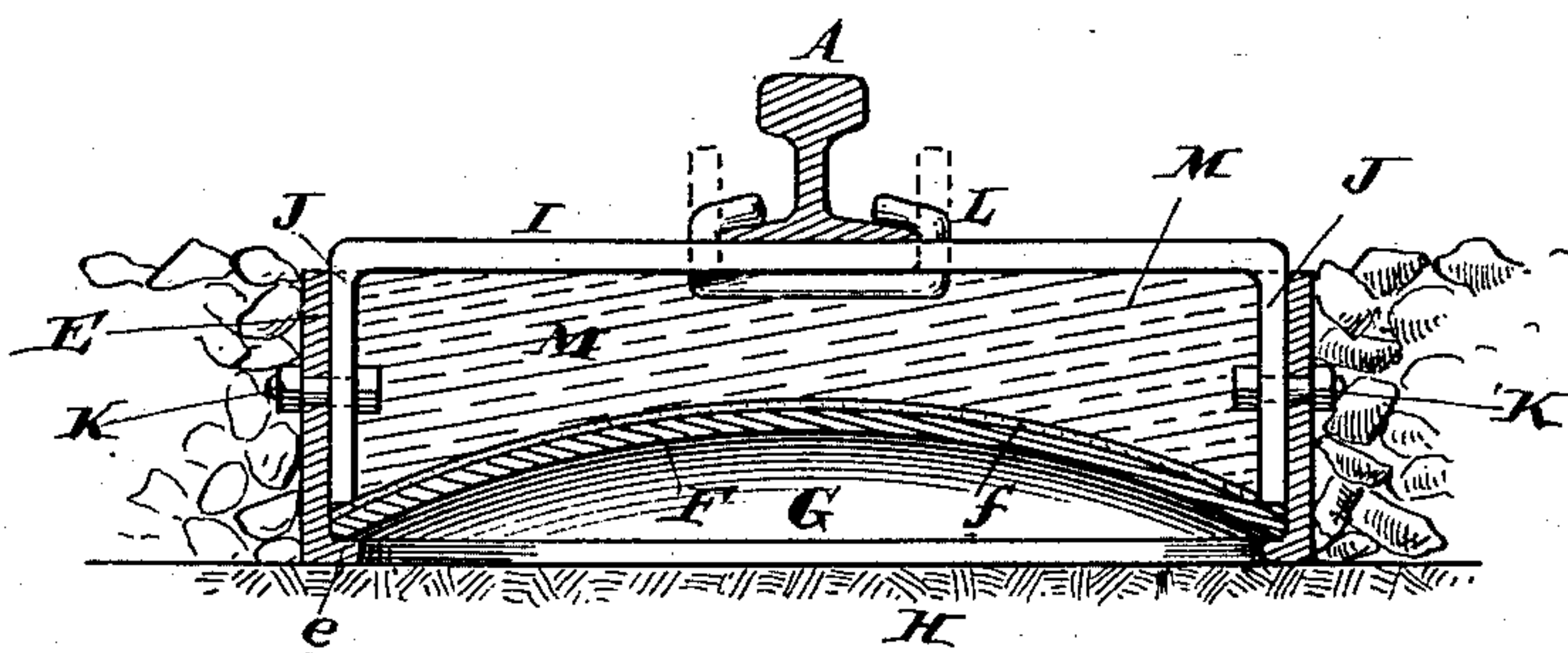


FIG. 3

Attest

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ROAD-BED OR RAIL-SUPPORT FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 341,575, dated May 11, 1886.

Application filed March 8, 1886. Serial No. 194,412. (No model.)

To all whom it may concern:

Be it known that I, ROBERT M. HOLLAND, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in the Road-Bed or Rail-Supports to Railways, which is fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

The object of my invention is to provide suitable cushioning and supporting devices for rails of railways, dispensing with the usual sleepers, to the end that the cars traveling over such a road-bed may run more smoothly and less jarring to the occupants of the train.

In carrying out my invention I connect the rails by metallic ties, so as to insure their exact gage, and support the said rails upon air-cushioning devices, whereby vertical elasticity is given to them.

In the drawings, Figure 1 is a plan view of a railway embodying my improvements. Fig. 2 is a cross-section of same on line *xx*, and Fig. 3 is a cross-section on line *yy* through one of the rolls and one of its supporting cushions or chairs.

A are the rails, and are coupled together to the requisite gage by the metallic tie-bars B, which may be secured to the rails in any suitable manner, a simple construction being that shown, in which a U-shaped bolt, C, is passed through holes *b* in the bar, and the upper end, *c*, bent down over the flange of the rail. These rails are supported upon the cushioning-chairs D, which are preferably arranged between their alternate bar or ties, and under one rail are also preferably staggered with reference to those under the other rail. In construction these chairs are composed of a cylindrical casing, E, having a flange or shoulder, *e*, at the bottom, and into which the inverted dished or dome-shaped diaphragm, F, is placed, forming an air-space, G, between it and the base H, upon which the chair rests.

I is a stirrup or rail support, having its ends J bent down to fit within the cylinder E, and secured therein by bolts K. To this stirrup the rail A is secured and supported, and fastened by bolts L, similar to those, C, already described, or in any other manner.

f is a sheet of felt, paper, or other similar

material, placed in the bottom of the cylinder and upon the diaphragm F as a frost-protector. The interior of the cylinder E above the diaphragm is now filled with concrete or asphaltum M, so that the rail and its stirrup I rests upon the floor of concrete, and the concrete is supported above a metallic diaphragm and an air-cushion beneath. The metallic portions may be galvanized, if desired, or the cylinder E alone may be galvanized, to prevent the action of the elements upon the iron. These cylinders may be elliptical, as indicated in dotted lines D', Fig. 1, if desired, to obtain a greater area; but such changes are immaterial to my invention.

These cushioning-chairs are supported upon a level ground surface, H, and the road may be ballasted with stone, which, surrounding cylinder E, retains the rails from lateral displacement and keeps them in line. If desired, holes may be dug in the ground and these chairs placed within the same, resting upon the level bottom thereof, and the weight with the cylinder E resting upon the ground securely closes the air in the space G.

While I prefer the construction shown, I do not limit myself to the details thereof, as they may be modified in various ways without departing from my invention.

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

1. A railway consisting of the two parallel rails, in combination with a series of air-cushion chairs, upon which they are supported and secured, and a series of tie-bars connecting the opposite rail, to insure the gage being uniform, the said chairs being arranged between the ties, and those under the opposite rails being staggered with relation to each other, substantially as and for the purpose specified.

2. A railway consisting of the two parallel rails, in combination with a series of air-cushion chairs, upon which they are supported and secured, the cushion-chairs under the opposite rails being staggered with relation to each other, substantially as and for the purpose specified.

3. The combination of rail A, case or cylinder E, and diaphragm F, inclosing the air-space G, and supporting the rail, substantially as and for the purpose specified.

4. The combination of rail A, case or cylinder E, diaphragm F, inclosing the air-space G, concrete or asphaltum M, and stirrup I, resting upon the concrete or asphaltum, and directly
5 supporting the rail, substantially as and for the purpose specified.

5. The level floor of earth H, in combination with the case E, having flange *e*, diaphragm F, forming air-space G, concrete M, stirrup
10 L, and rail A, substantially as and for the purpose specified.

6. The level floor of earth H, in combination with the case E, having flange *e*, diaphragm F, felt paper *f*, forming air-space G, concrete M, stirrup L, and rail A, substantially as and
15 for the purpose specified.

ROBERT M. HOLLAND.

Witnesses:

JOSHUA MATLACK, Jr.,
FRANK J. CROWNE.