

A. H. CARYL.
Pneumatic Railroad.

No. 64,487.

Patented May 7, 1867.

Fig. 3

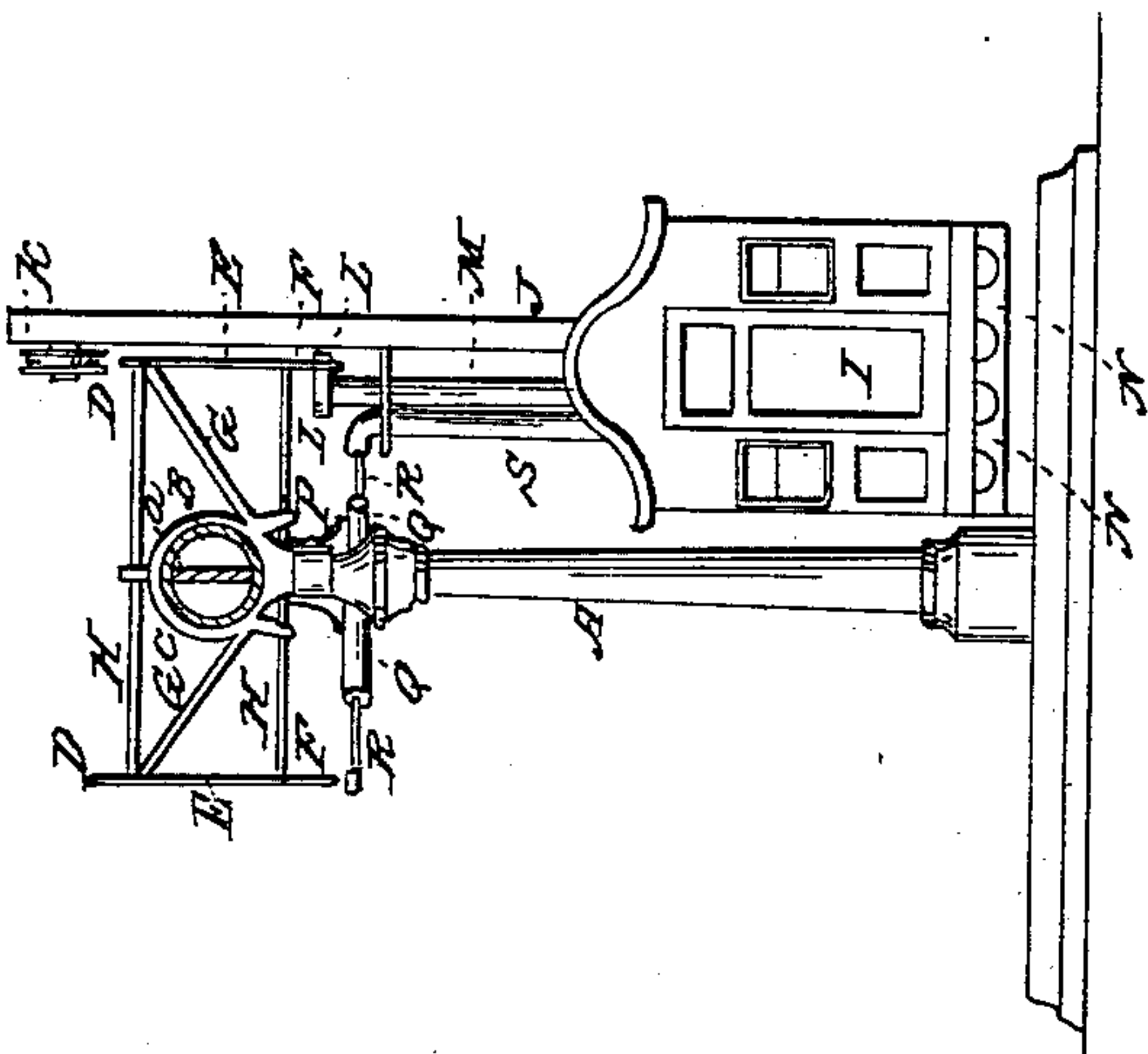


Fig. 1

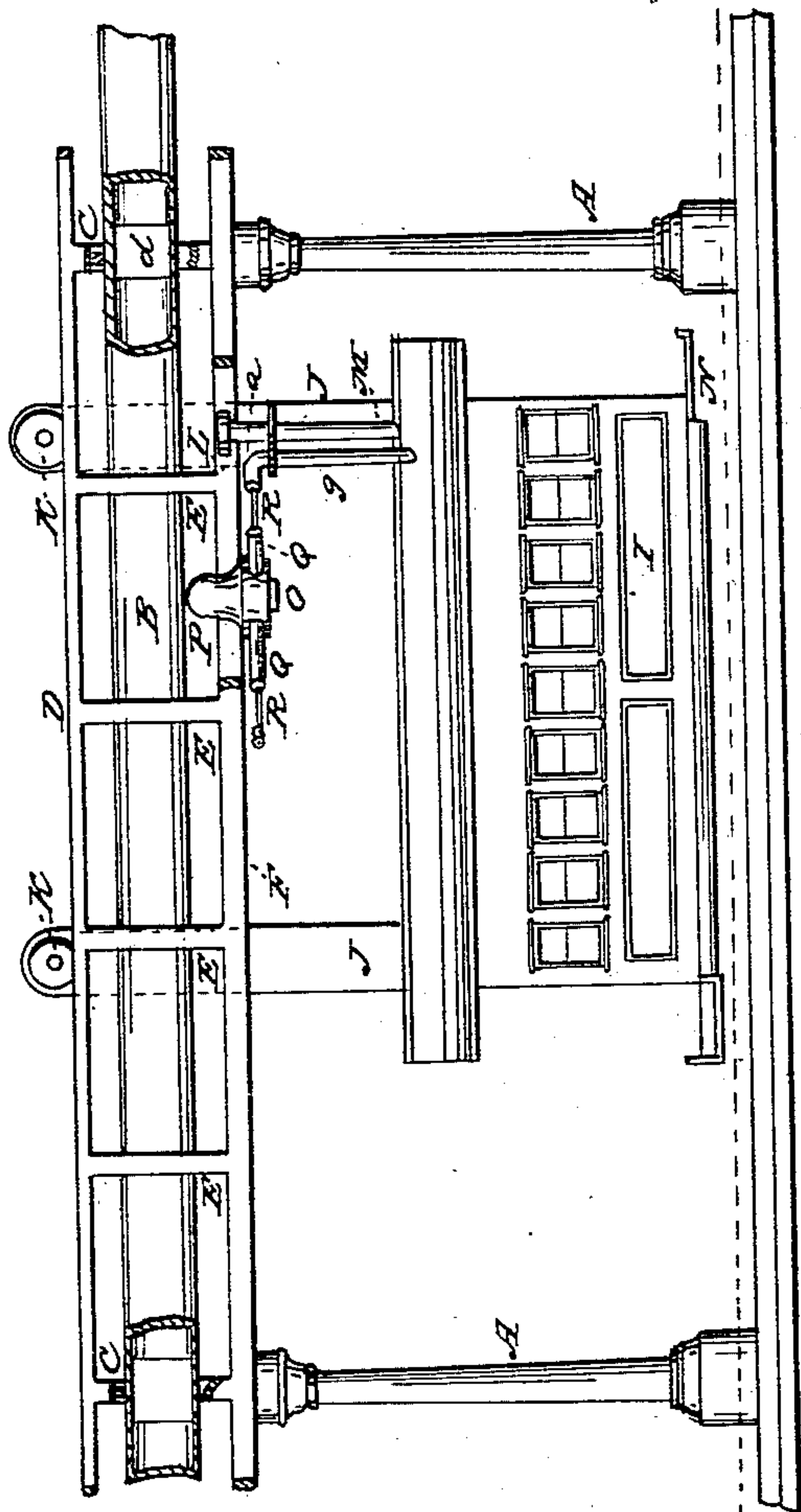
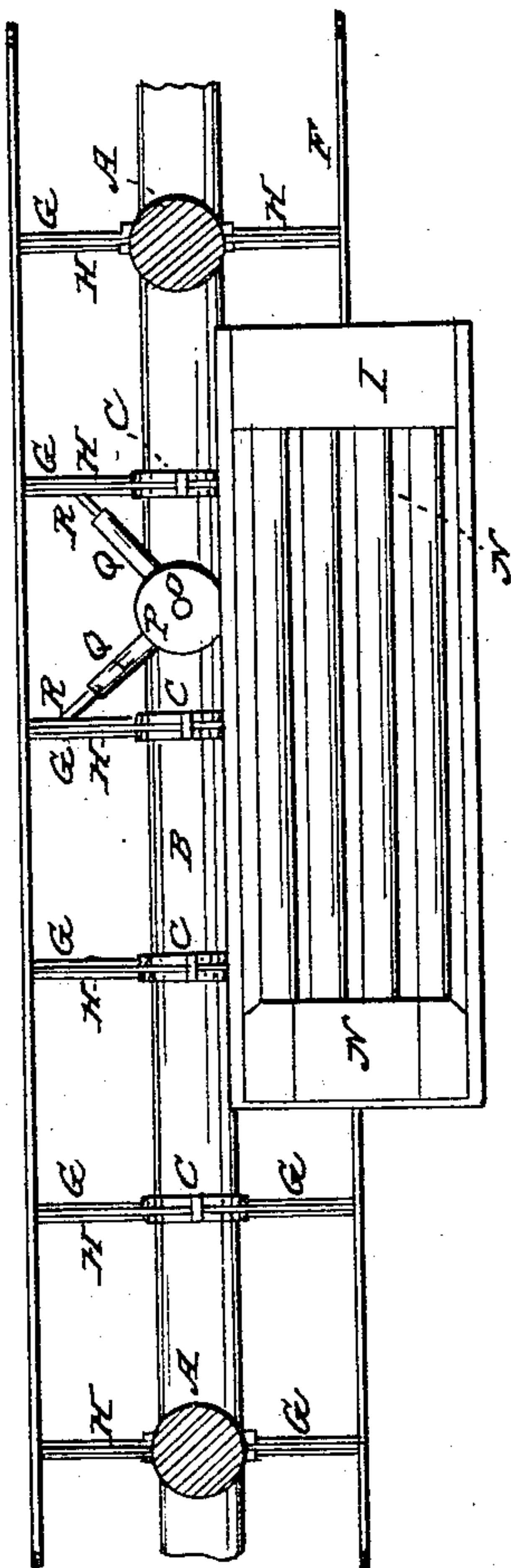


Fig. 2



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A. H. CARYL, OF GROTON, MASSACHUSETTS.

Letters Patent No. 64,487, dated May 7, 1867.

IMPROVED ATMOSPHERIC RAILROAD.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, A. H. CARYL, of Groton, in the county of Middlesex, and State of Massachusetts, have invented a new and improved Atmospheric Railroad; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of my invention.

Figure 2, an inverted plan of the same, the pillars or columns being in section, as indicated by the line *x x*, fig. 1.

Figure 3, an end view of the same.

Similar letters of reference indicate like parts.

This invention relates to a new and improved means for propelling railroad cars through the medium of compressed air, and is designed for city or street railroads, and to supersede draught animals or horse-power now employed for such purpose.

The invention consists in the employment or use of a tube or pipe extending along the whole length of the track, and supplied with compressed air by a steam engine or other means at one or both ends. Said tube or pipe being provided at suitable intervals with discharge pipes and valves, whereby the driving mechanism of the cars may be supplied with compressed air from the tube or pipe whenever necessary. The invention also consists in the general means employed for supplying the driving mechanism of the cars with compressed air from the tube or pipe; and also in the manner of hanging or suspending the cars from an elevated way or track, as well as in the peculiar application of the power for propelling the cars, as hereinafter fully shown and described.

A represents pillars or columns which support a tube or pipe B, at a suitable distance above the surface of the earth or street. This tube or pipe B may be constructed of boiler-iron, and it is encompassed by rings or bands C, at suitable distances apart; a ring or band being secured on the top of each pillar or column A, and any suitable or desired number placed on the tube or pipe between the pillars or columns. The pillars or columns may be placed about thirty feet apart, and at the centre of the street, and firmly secured in position by any proper means. The pillars or columns A not only support the tube or pipe B, but also the ways or rails D D, one at each side of the tube or pipe B, on which the cars are suspended and run. These ways or rails D D are at the upper ends of vertical bars E, the lower ends of which are connected to bars F F, the latter being parallel with the rails D D, (see figs. 1 and 3.) The bars E are connected with the wings or bands C by oblique or diagonal arms G and by horizontal rods H above and below the wings or bands, shown clearly in fig. 3. By this arrangement the ways or rails and the tube or pipe are firmly connected together, and said parts rendered perfectly stiff and firm. The tube or pipe B may also be strengthened by an internal partition or by vertical stays *a*. Partitions may be used if desired or considered preferable. I represents a car which has two uprights, J J, extending up from it, each upright being provided with a wheel, K, at its upper end to run on the ways or rails D D; the bottom of the car being a short distance above the surface of the earth or street, as shown clearly in figs. 1 and 3. The bars F F are clamped by two horizontal wheels L L, at the upper end of vertical shafts M M; one or both of which are rotated by the driving mechanism in the car, and cause the car to be propelled along. Two of these driving rollers may be used at each end of the car if desired or necessary. The tube or pipe B is supplied with compressed air by a steam engine or other means or device at one or both ends, and the cars are provided with tubes N, or other receptacles, into which the compressed air from the tube or pipe B is admitted when necessary.

The supplying of the tubes or receptacles N with compressed air from the tube or pipe B may be effected as follows: I have pendent tubes O extending down from the tube or pipe B at suitable intervals, and upon these tubes, hubs, or bosses P are fitted loosely, having tubular arms Q attached to them, in which sliding tubes R are fitted. The cars I are provided each with an upright tube S, extending above their tops or roofs, and having their lower ends communicating with the receptacles N. The upright tubes S are allowed to turn, and their upper ends are provided with a horizontal hood, *a'*, to catch over the end of a sliding tube, R, as the car moves along, the movement of the car forcing the tube R into its arm Q, and turning the hub or boss P. thereby

opening a valve to admit the compressed air into S, and down into N, the hood *a'*, as it passes off from the tube R, admitting of the latter being forced out and the valve closed by the pressure of the air in B. The upright tubes S of the cars may also be provided with a similar valve to retain the air in N. Various plans may be devised for supplying the receptacles N of the cars with compressed air, and I do not confine myself to any precise detail of parts. The means employed for propelling the cars along, to wit, the wheels L L, pressing against the sides of the bars F F, and one or both wheels rotated by the driving mechanism, is a very simple and efficient contrivance for the purpose. It is designed to have the cars travel on the way or rail D at one side of the tube or pipe B in moving in one direction and return on the other way or rail at the opposite side of the tube or pipe, a portion of the latter, with ways or rails attached, being hung on a swivel at each end of the route, so that it may be turned with the car upon it. The supplying of the receptacles N of the cars with compressed air at frequent intervals is important, as it obviates the necessity of the receptacles N being highly charged, in which case the bursting of the receptacles and serious accidents might occur.

I wish it to be distinctly understood that the gist or principal feature of the invention consists of a tube or pipe extending the whole length of the track or route, filled or supplied with compressed air, from which the air receptacles N of the cars may be supplied from time to time on the route, as occasion may require. Any approved air engine may be used on the cars, and the details of the construction herein shown and described may be varied or modified in various ways and the same end attained.

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

1. I claim the tube arranged as specified, for the holding of compressed air, in combination with tanks or reservoir on the cars, which supplies the engines that propel the cars, substantially as described as and for the purpose specified.

2. I claim the iron tube, placed on iron columns or otherwise suspended or supported above the carriage-way, to support a railroad track or tracks, as set forth, when such tube is strengthened by a vertical iron partition, or when made with perpendicular walls, in the manner described for the purpose specified.

3. The combination of the pipe B, rings C, ways D, bars E, bars F, diagonal arms G, and rods H, and pillars A, in the manner described for the purpose specified.

4. The supply tubes O, in combination with bosses P, arms Q, and sliding tubes R, operating with the tube S, and admitting the compressed air into the receptacle N, substantially as described as and for the purpose specified.

A. H. CARYL.

Witnesses:

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