

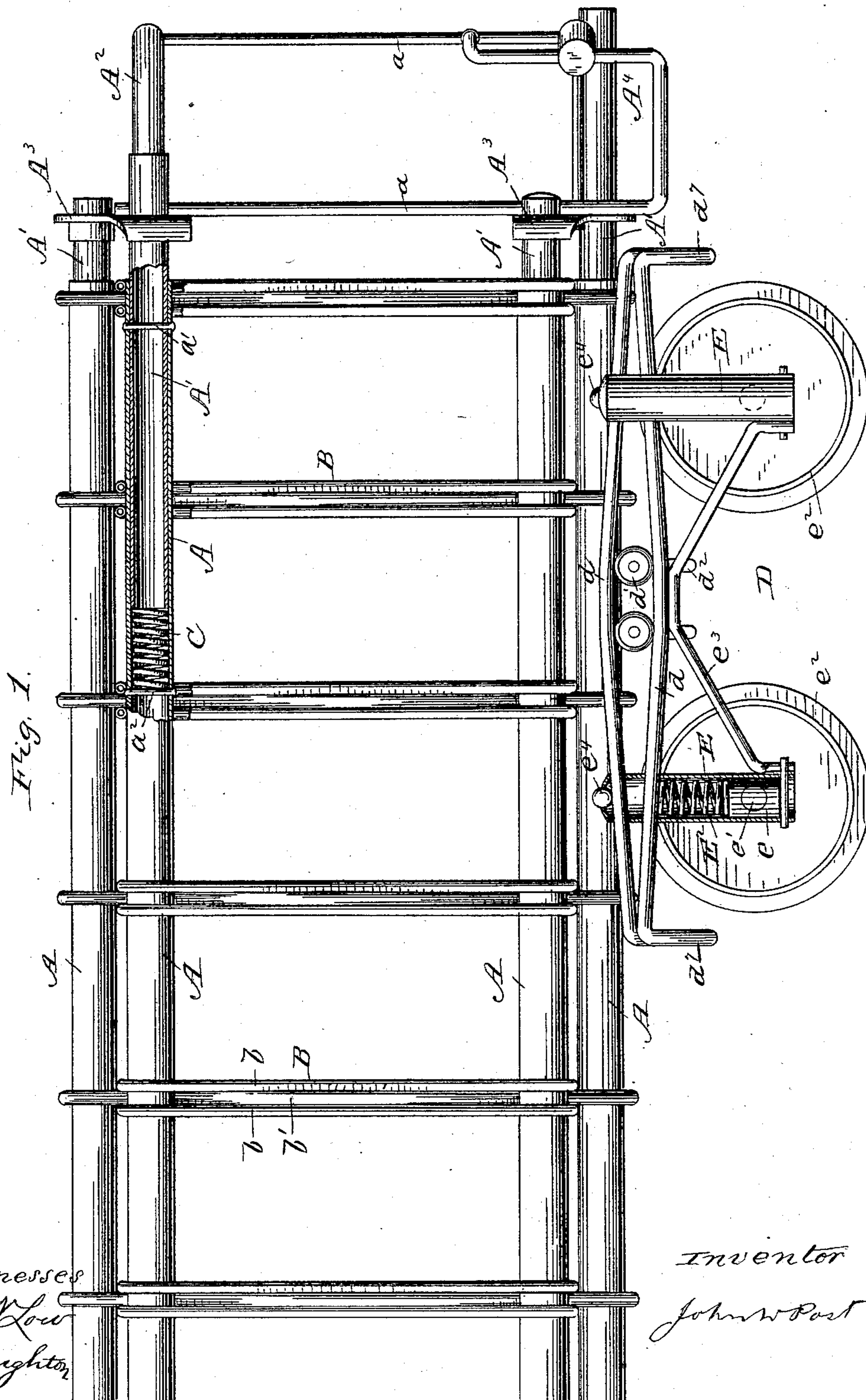
(No Model.)

3 Sheets—Sheet 1.

J. W. POST.
RAILROAD CAR.

No. 285,675.

Patented Sept. 25, 1883.



Witnesses
H. M. Low
A. J. Houghton

Inventor
John W. Post

(No Model.)

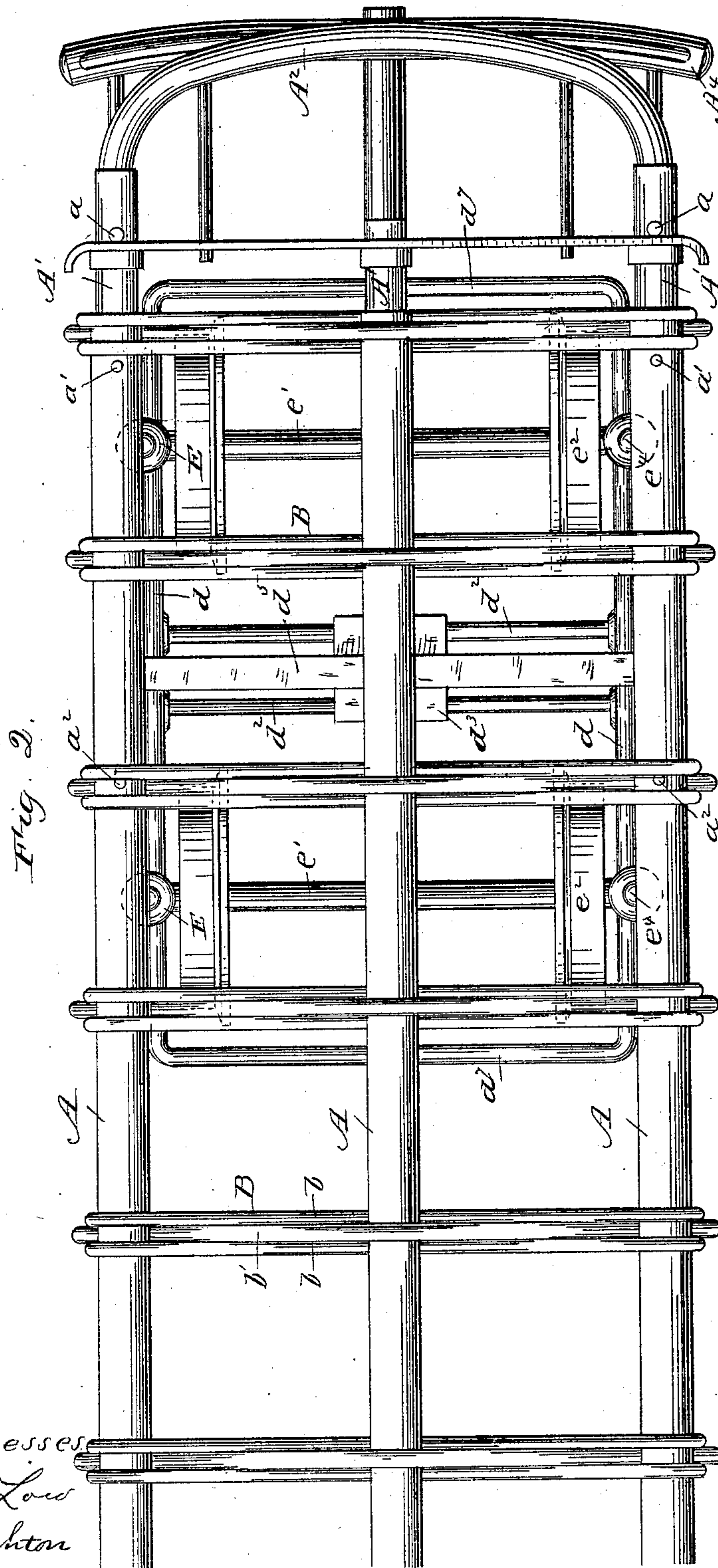
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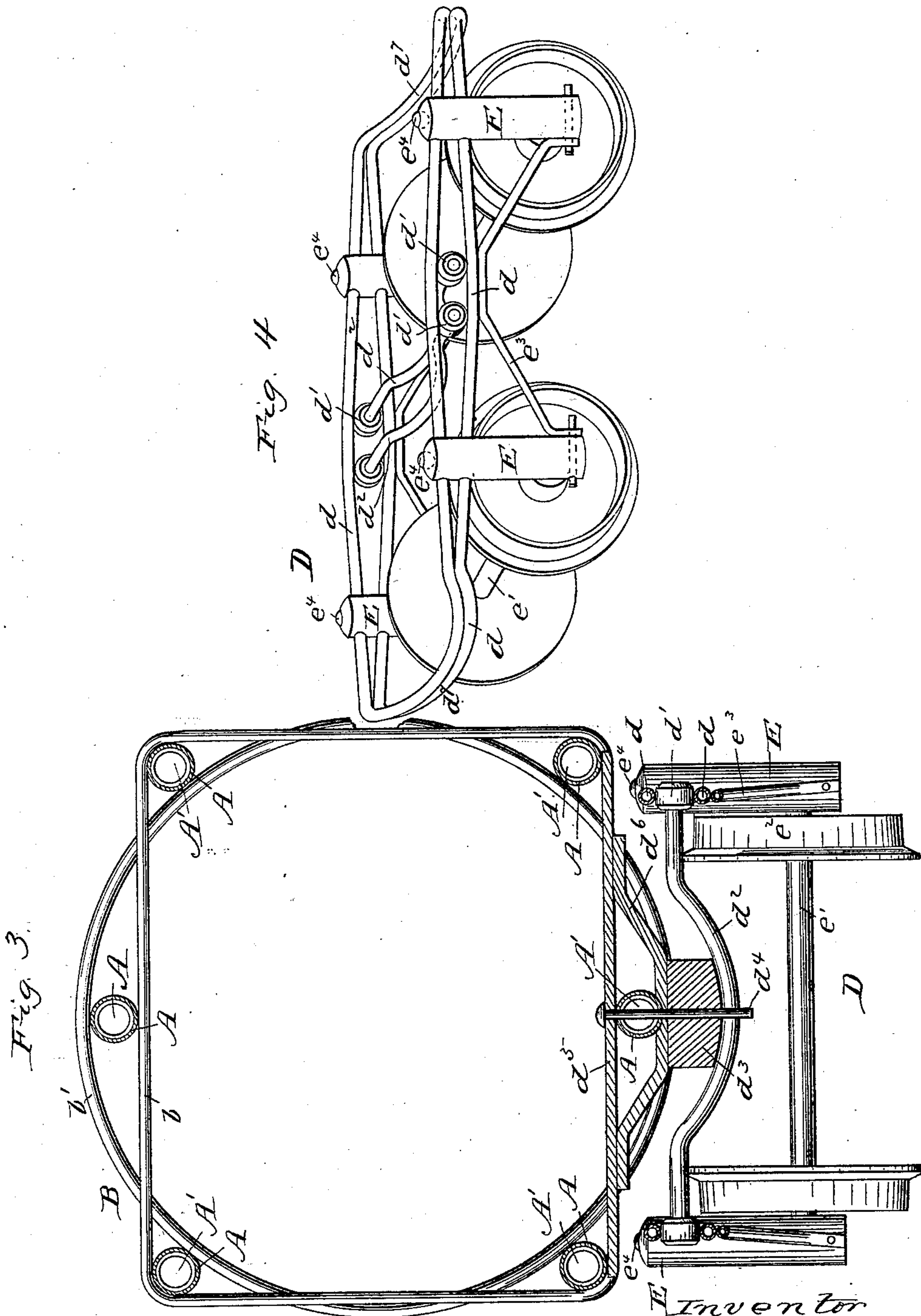
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UNITED STATES PATENT OFFICE.

JOHN W. POST, OF NEW YORK, N. Y.

RAILROAD-CAR.

SPECIFICATION forming part of Letters Patent No. 285,675, dated September 25, 1883.

Application filed July 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. POST, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Railroad-Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my invention is the production of a frame-work for a passenger or other car which may be constructed at a comparatively small expense, and still be of the greatest possible strength compatible with proper lightness, or, conversely, of the greatest possible lightness consistent with proper strength. In other words, I aim to construct a car which will be practically incapable of being crushed in case of collision or other accident, thus saving the passengers from personal injury.

In the accompanying drawings, in which like letters refer to corresponding parts in the several figures, Figure 1 is a sectional side elevation of part of a car constructed according to my invention. Fig. 2 is a partial plan, and Fig. 3 a transverse sectional view, of the same. Fig. 4 is a perspective view of one of the trucks.

A A indicate metallic tubes or tubular bars arranged longitudinally of the car and forming the main frame-work thereof, said tubes or tubular bars being of such size as to afford proper strength. These longitudinal tubes are preferably disposed as shown—that is to say, there will be three in the top of the car and three in the bottom thereof, the middle one of the top series being arranged slightly above the two outer ones, while the middle one of the bottom series will be slightly below the other two.

To the longitudinal tubes A are connected transverse supports B, each of which preferably consists of tubes or tubular bars *b* and *b'*, properly fastened together. The tubes *b* are bent into a rectangular form, with slightly-rounded corners, as shown, while the tubes *b'* form a complete circle. These forms of construction permit the tubes *b* and *b'* to be arranged on opposite sides of the longitudinal tubes A, as clearly shown, so that they will embrace and strongly support said longitudinal tubes when properly secured thereto. While I deem it preferable to make each of

the transverse supports B of two tubes, *b*, bent into rectangular form, and one tube, *b'*, bent into a circular form and arranged between the tubes *b*, it is obvious that this construction may be reversed by arranging one rectangularly-bent tube between two tubes bent into circular form. These circularly bent tubes, stiffened, as they are, by being fastened at short intervals to the rectangularly-bent tubes and to the longitudinal tubes, form braces of great strength, as they form a crowning arch at every point of their length, and should the car, in case of accident, be thrown on its side or be rolled over and over, these arched braces will serve a very efficient purpose in preventing the car from being crushed.

The frames supporting the platforms of the car consist of tubes or tubular bars A', arranged telescopically within the tubes A. The outer upper tubes, A', are connected by a bent tube, A², secured to or integral with the said tubes A'. The upper and lower series of tubes are each connected together by a transverse plate or bar, A³, and the platform-frame proper, A⁴, is suspended from the upper tubes by small vertical tubes *a*. The tubes A and A' are connected together by metallic pins *a'*, passing through both. These pins are of sufficient strength collectively to resist the strain of the traction of the cars, or to withstand the bumping incidental to coupling, &c.

Inside each of the tubes A, and adjacent to the ends of the tubes A', are arranged strong spiral springs C, which are intended to serve as cushioning-springs for diminishing the force of collisions, said cushioning-springs being held against the ends of the tubes A' by pins *a'* passing through the tubes A, or in any other suitable manner. As above stated, the pins *a'* are strong enough to withstand any ordinary bumping of the cars; but in case a collision occurs, these pins would be broken or cut off by the force of the shock, and the tubes A' would slide telescopically within the tubes A, and the force of the shock would be received by the springs C, which would soften and greatly reduce the same, the transverse plates or bars A³ being arranged a sufficient distance from the ends of the tubes A to allow the springs C to receive the full force of the shock.

The frame-work for the trucks D is also

tubular, and consists of two metallic tubes, d , bent into rectangular form, said rectangularly-bent tubes being separated at the sides of the trucks, near their middle, by blocks d' , supporting the ends of transverse bracing tubular bars d^2 , which support a block, d^3 , receiving the weight of the car. The king-bolt d^4 passes through a transverse plate, d^5 , secured to the longitudinal tubes A of the car-frame, and also through the lower middle tube, A, and a brace-plate, d^6 , and the block d^3 . To the tubes d are secured short vertical tubes E, in which are arranged vertically-movable cylindrical blocks e , affording bearings for the axles e' , to which the wheels e^2 are secured, said blocks e being cushioned by strong spiral springs E^2 , arranged within the tubes E, which thus serve to protect said springs from dust or exposure to the weather. The tubes E are strengthened in their positions by tubular braces e^3 , fastened to said tubes and the lower tube d . The tops of the tubes E are cushioned by spherical rubber buffers e^4 , to soften any bumping against them of the car as the latter sways from side to side during rapid transit.

The truck-frame just above described is economical in construction, and at the same time is very strong in proportion to its weight. The rods d of the truck-frame are secured together at the ends d' of said frame, preferably by brazing, thus making said rods practically homogeneous. In fact, I prefer to make all of the connections of the tubular frame-work for the car and truck, excepting the connections made by the pins a , by brazing the parts together, although it is obvious that bolts, pins, rivets, or clamps might be used for the purpose.

The metallic tubes constituting the frame-work of my car and truck are preferably of steel, properly tempered to afford the greatest strength consistent with proper toughness. In other words, it must not be made so hard as to be brittle, and thereby liable to break when subjected to sudden shocks, as in collisions or other severe or sudden jars.

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

1. A frame-work for a passenger-car or similar vehicle, consisting of the combination of a series of longitudinal tubes or tubular bars with a series of rectangularly-bent and a series of circularly-bent transverse tubes or tubular bars, substantially as described.

2. A frame-work for a passenger-car or similar vehicle, consisting of the combination, with a series of longitudinal tubes or tubular bars, of a series of transverse supports, each of said transverse supports comprising one or more

rectangularly-bent and one or more circularly-bent tubes or tubular bars, substantially as described.

3. A frame-work for a passenger-car or similar vehicle, consisting of the combination, with six longitudinal tubes or tubular bars, three of which are arranged at the top of the car and three at the bottom thereof, of a series of transverse supports, each of said transverse supports comprising one or more rectangularly-bent and one or more circularly-bent tubes or tubular bars, substantially as described.

4. The combination, with the longitudinal tubes A, of the transverse supports B, each of said transverse supports comprising two rectangularly-bent tubes, b , and one circularly-bent tube, b' , arranged between said rectangularly-bent tubes, substantially as described.

5. The combination, with a car the frame-work of which is composed of tubes or tubular bars suitably secured together, of a platform support or frame having a sliding connection with the frame-work of the car, substantially as described.

6. The combination, with a tubular frame-work for a car, of a platform support or frame having a sliding connection therewith, and means for cushioning said platform-frame on said car frame-work, substantially as described.

7. The combination, with the car frame-work comprising the main longitudinal tubes A, of the platform support or frame comprising the tubes A', having a sliding connection with the tubes A, and the cushioning-springs C, supported by the tubes A, substantially as described.

8. The platform support or frame consisting of the tubes A', the bent tube A², the transverse plates A³, the vertical tubes a , and the platform-frame proper, A⁴, substantially as described.

9. A car-truck frame consisting of the rectangularly-bent tubes or tubular bars d , the transverse tubular bars d^2 , the vertical tubes E, and the tubular braces e^3 , substantially as described.

10. The combination, with a truck-frame composed of tubes or tubular bars, of the vertical tubes E, the springs E^2 , and the cylindrical blocks e , arranged within the said tubes E, and the axles e' , having bearings in the said blocks e , all substantially as described.

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

JOHN W. POST.

Witnesses:

E. L. WHITE,
PHILIP MAURO.