(No Model.)

B. C. SHAW.

Platform Gearing for Vehicles.

No. 238,811. Patented March 15, 1881.

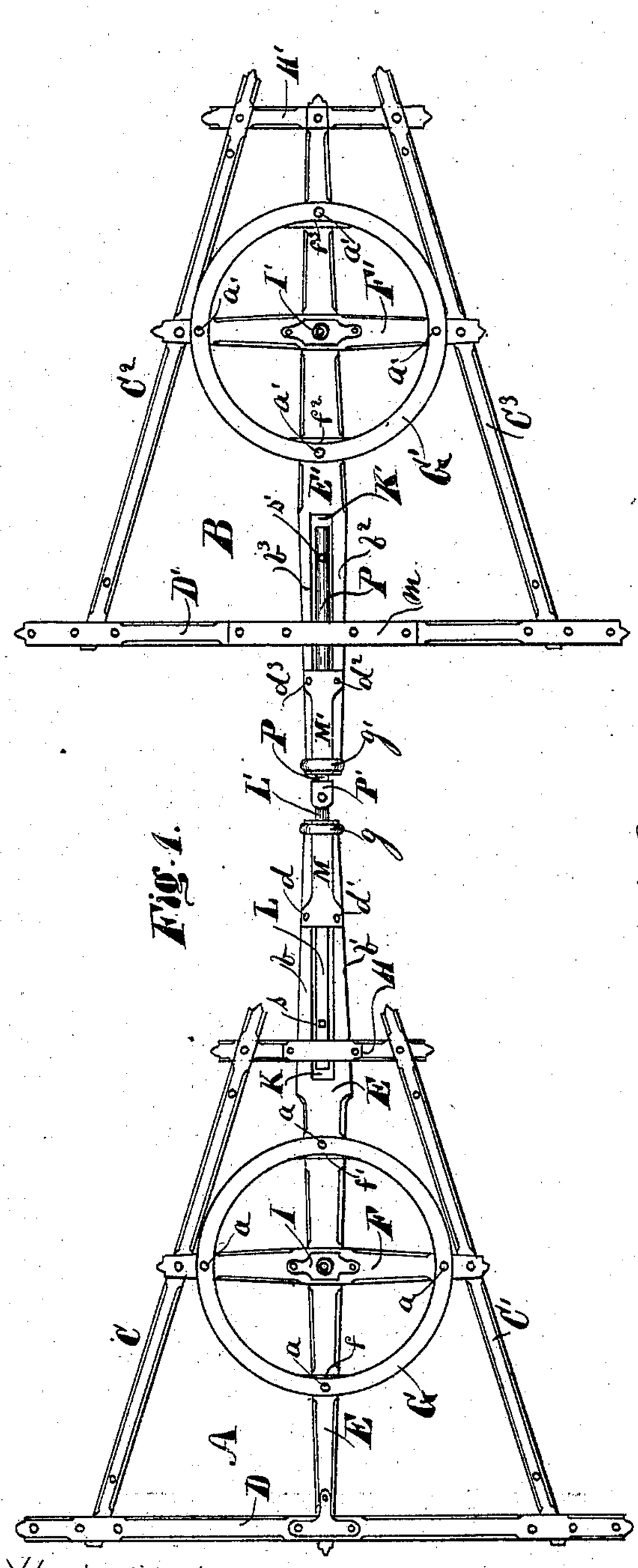

Fig. 1.

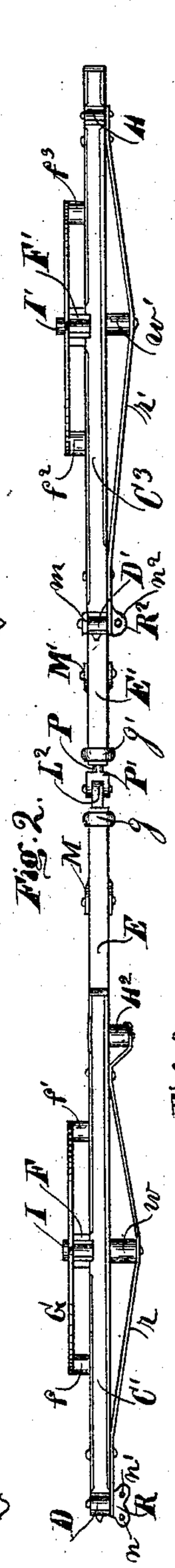

Fig. 2.

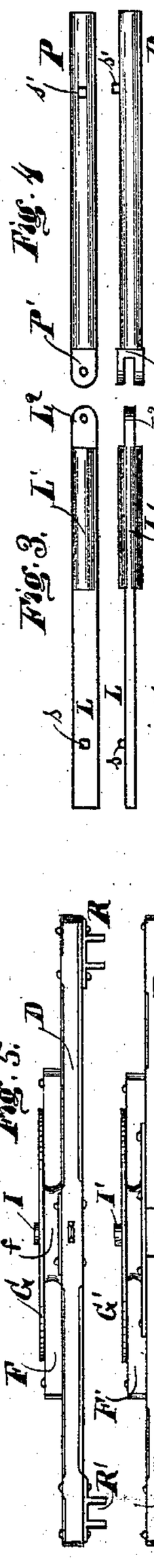

Fig. 3.

Fig. 4.

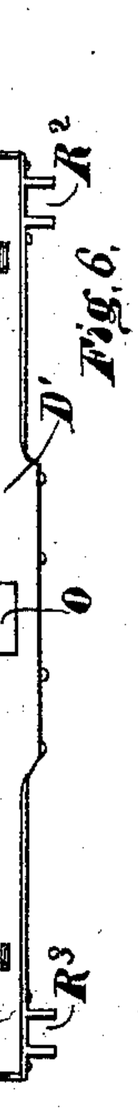

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

WITNESSES;

G. H. Bennett.

C. D. Marsh.

INVENTOR.

Benjamin C. Shaw

Per E. C. Brink.

UNITED STATES PATENT OFFICE.

BENJAMIN C. SHAW, OF INDIANAPOLIS, INDIANA.

PLATFORM-GEARING FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 238,811, dated March 15, 1881.

Application filed April 5, 1880. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN C. SHAW, of Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Double-Platform Curved-Track Truss-Gearing for Omnibuses and other Platform-Spring Vehicles, of which the following is a specification.

My invention relates to improvements in the gearing of platform-spring vehicles, in which the front platform or truss operates in conjunction with the rear platform or truss and a double sliding jointed extension-reach for the purpose of making the hind wheels track with the front wheels in turning; and the objects of my improvements are, first, to provide the central reach-bars which operate on king-bolts with slide-boxes and a double sliding jointed reach, also with stops; second, to provide newly-constructed platform truss-frames, both rear and front, for supporting the fifth-wheel circles, the springs, and sections of the jointed reach. These objects I accomplish by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a plan view of the entire device. Fig. 2 is a side elevation of the same. Figs. 3 and 4 are detail views of the jointed double sliding reach. Fig. 5 is a front view of the front spring-platform truss-frame. Fig. 6 is a front view of the rear spring-platform truss-frame. Fig. 7 is a top view of one of the slide-blocks, and Fig. 8 is a vertical longitudinal section of the same.

Like letters refer to like parts throughout the various views.

A represents the front spring-platform truss-frame, which is constructed as follows, to wit: To the front splinter-bar, D, the front ends of the converging side rails, C C′, and front end of one stationary section of the jointed reach E are made fast. The other or rear ends of the side rails, C C′, and the jointed reach E are made fast to the spring-bar H between the splinter-bar D and spring-bar H. The bolster pivot-bar F is secured to the reach E, also to the side bars, C C′, and to the jointed reach E. Immediately over the bar F the front fifth-wheel circle, G, is located, and secured, not only to the bar F, but to the jointed reach E, by the bolts *a a a a*, with the blocks *f f* inserted between the fifth-wheel and bar E, to make it firm and level. In the center of the fifth-wheel G, on the bar F, is secured the front king-bolt plate, I, as shown. The stationary section E of the jointed reach is of peculiar construction, to wit: It has a gradual taper from the front splinter-bar to a point a short distance in front of the spring bar or block H, where it widens out and then tapers gradually to its rear end, as shown at *b b′*. This wide and tapering part is provided with a slot, K, the sides of which are parallel to each other, in which is secured the front slide-block, M. This slide-block is also of peculiar construction, to wit: It has a round hole, *v*, extending horizontally from its rear end to near its front end, and the front end is provided with an oblong hole, *p*, the long sides of which are flush with the walls of the round hole, the use of which will be hereinafter described. The upper front portion of this block M may be provided with ears having holes in them to project over the tops of the tapering sides *b b′* and made fast to the jointed reach by bolts, or it may be secured in place by the band *g*. The lower sides of the bars C C′ are each provided with truss-bars *r*. The center of each bar *r* is secured to a spool, *w*. The rear end is secured to the rear end of the bars C and to the spring bar or block H. The front end is secured to the front end of the bars C and to the front splinter-bar, D, with a pair of double ears, R, at each end of the splinter-bar. The rear holes, *n′*, are to receive the front ends of the side springs, (not shown,) and the front holes, *n*, are to receive the shaft or pole irons. (Not shown.) The rear cross-spring (also not shown) is secured to the under side of the spring bar or block H, and to its outer ends the other or rear ends of the side springs (not shown) are attached, all in the usual manner.

The rear platform, B, is of like construction, except as follows: First, the front splinter-bar, D′, is made thicker vertically in its center, and provided with a hole, O, of sufficient size to receive the wide tapering front end of the stationary section of the jointed reach E′, and is provided with an iron plate, *m*, above, to strengthen the splinter-bar; second, the section E′ of the jointed reach is reversed from that shown in the front frame or truss, and its slot K′ is provided with a slide-block, M′, which has a plain round hole through it from

end to end for the round part of the section P of the jointed sliding reach to operate in, as will be hereinafter described; third, the truss-bars r', at their front ends, under the splinter-bar D', are provided with ears R^2, having only one set of holes, n^2, to receive and hold the front ends of the rear side springs. (Not shown.)

The jointed double sliding reach is composed of two parts, as follows, to wit: The part which operates in the front slide-block M is round, as at L', for about one-half of its length, to operate in the round hole v of the block. The front half is made flat, as at L, and operates in the rectangular hole p at the front end of the block M to prevent the rod from turning in the block. The rear end is also flattened for a short distance and provided with a bolt-hole, as shown at L^2. This flat part L^2 fits in the jaws P' of the part P, and is pivoted thereto by a bolt which is secured in the holes of the joint. All of that part of the rod P from the rear end of the jaws P' to its end is made round to operate in the round hole formed in the rear block, M'. Each section of the sliding reach is provided with pins or stops s s' to limit the turning of the wheels to the point desired. The king-bolt plates I I' are equidistant from the bolt in the joint of the jointed sliding reach.

Where a vehicle is too short to permit the full turning of the front and rear wheels without their striking together in turning the rear end of the stationary section of the reach E of the front truss may have a permanent pivot-iron (not shown) attached thereto, instead of the block M and sliding rod L L' L^2, and the sliding rod P P' may be attached directly to this permanent pivot-joint at the rear end of the reach E. Thus the sliding rod P gives the whole extension, and permits the front truss to twist more than the rear one, by means of which the front wheels are turned to a greater angle than the hind wheels, and thus permit the front wheels to strike the wear-irons on the vehicle-bed between the periphery of the hind wheel and the bed.

Having thus described the construction and arrangement of the various parts of my improvements, I will now describe its mode of operation, as follows, to wit:

The front and rear gearing is pivoted by king-bolts to riser-blocks attached to the upper circles of each fifth-wheel, to which riser-blocks the wagon-bed is firmly attached in the usual manner. Thus the wagon-bed becomes the draft-reach, as usual in all platform-spring vehicles. The axles of the vehicle are secured to the side springs, (not shown,) and the wheels mounted thereon, also in the usual manner. When the wagon is drawn forward in a direct line the sections of the jointed reach are in line, as shown in Fig. 1, with each section of the jointed sliding reach shoved fully into its respective slide-block. The flat part L of the jointed sliding reach prevents the sliding reach from turning around in the slide-block M, and the round part P of the other section, operating in the round hole in the rear slide-block, permits the gearing to twist, as in passing over obstacles in the road or when the wheels are passing over uneven ground, &c. As the front spring-platform truss-frame, A, is turned to one side or the other the rear platform, B, is turned in a reverse direction, causing the hind wheels to track with the front ones. At the same time the parts L L' and P of the jointed sliding reach work out or in their respective boxes M M' and are stopped by the stop-pins s s' at the desired place.

By this construction and arrangement of devices I am enabled to use front and rear wheels of the same size, and higher than the usual front wheels; also, to hang the body lower and yet have a perfect arrangement for turning the vehicle in a very short space.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination, the central reach-bars, E E', operating on king-bolts, the slide-boxes M M', and the double sliding jointed reach L L' L^2 P P', as and for the purpose specified.

2. In combination, the central sections, E E', of the reach-bar operating on king-bolts, the slide-boxes M M', the double sliding jointed reach L L' L^2 P P', and stops s s', as and for the purpose specified.

3. The truss-frame A, composed of the front splinter-bar, D, the side bars, C C', the spring bar or block H, the bolster pivot-bar F, the fifth-wheel circle G, and the center section, E, of the reach, said bar E having its rear end provided with a slot, K, and slide-block M, substantially as shown and described.

4. The combination of two slide-boxes, M M', permanently attached to reach-bars E E', and the double sliding jointed reach L L' L^2 P P', one section of the sliding reach adapted to slide and rotate in its box, the other section of the sliding reach adapted to slide longitudinally of the box and not rotate, for the purpose of extending the coupling or changing the angle of the front and rear parts of the carriage, substantially as shown and described.

5. In combination with the front and rear trusses, A and B, each of which are provided with fifth-wheel circles and pivotal king-bolts, and mounted on side and cross platform-springs, the central reach-bars, E E', the double slide-boxes M M', and a double sliding jointed reach, L L' L^2 P P', all arranged and combined substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BENJAMIN C. SHAW.

Witnesses:

E. O. FRINK,

G. H. RENNETT.