No. 709,175. Patented Sept. 16, 1902.

J. R. ROACH.

HAND CAR.

(Application filed June 14, 1902.)

(No Model.)

Fig. 1

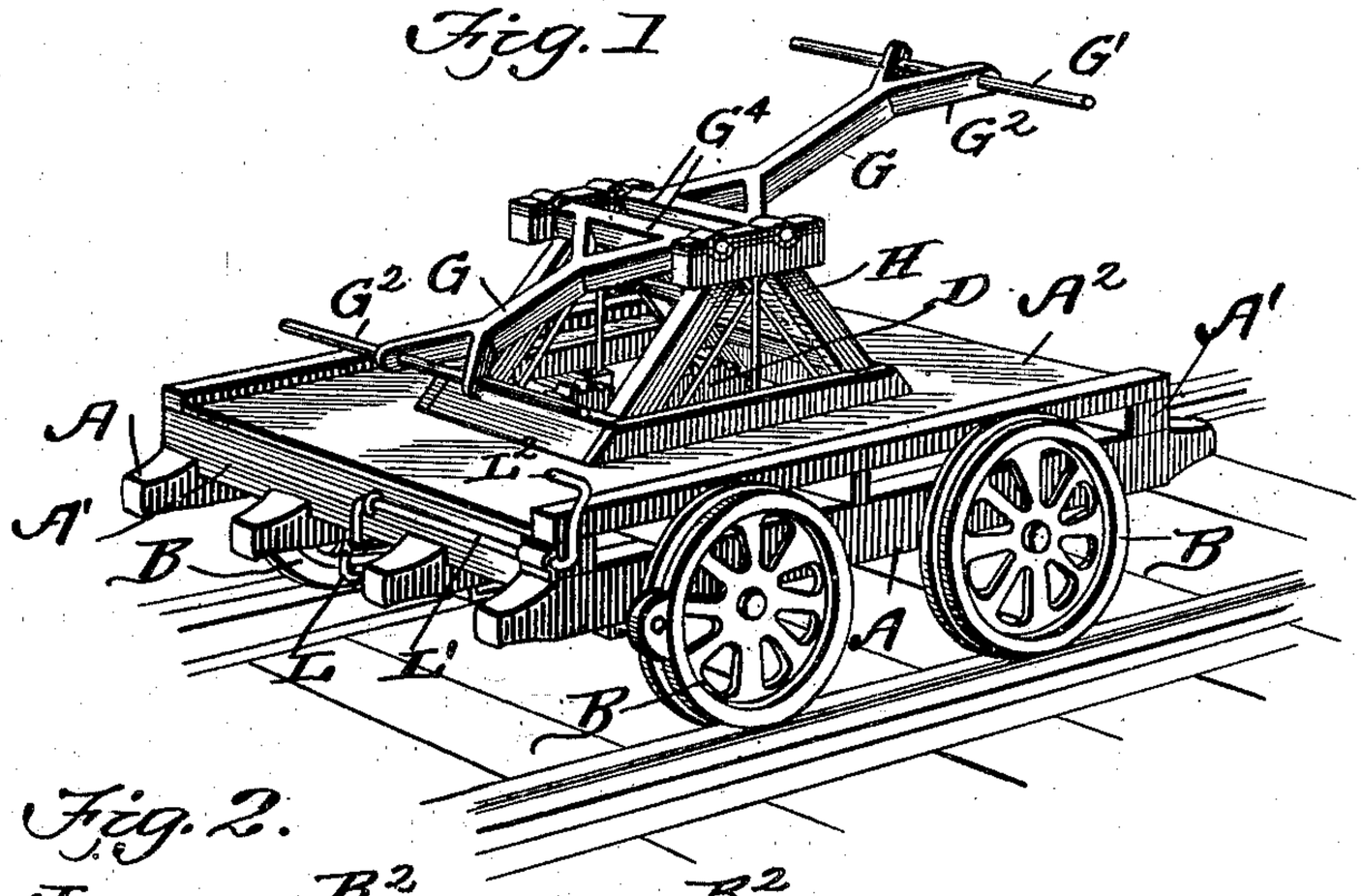


Fig. 2.

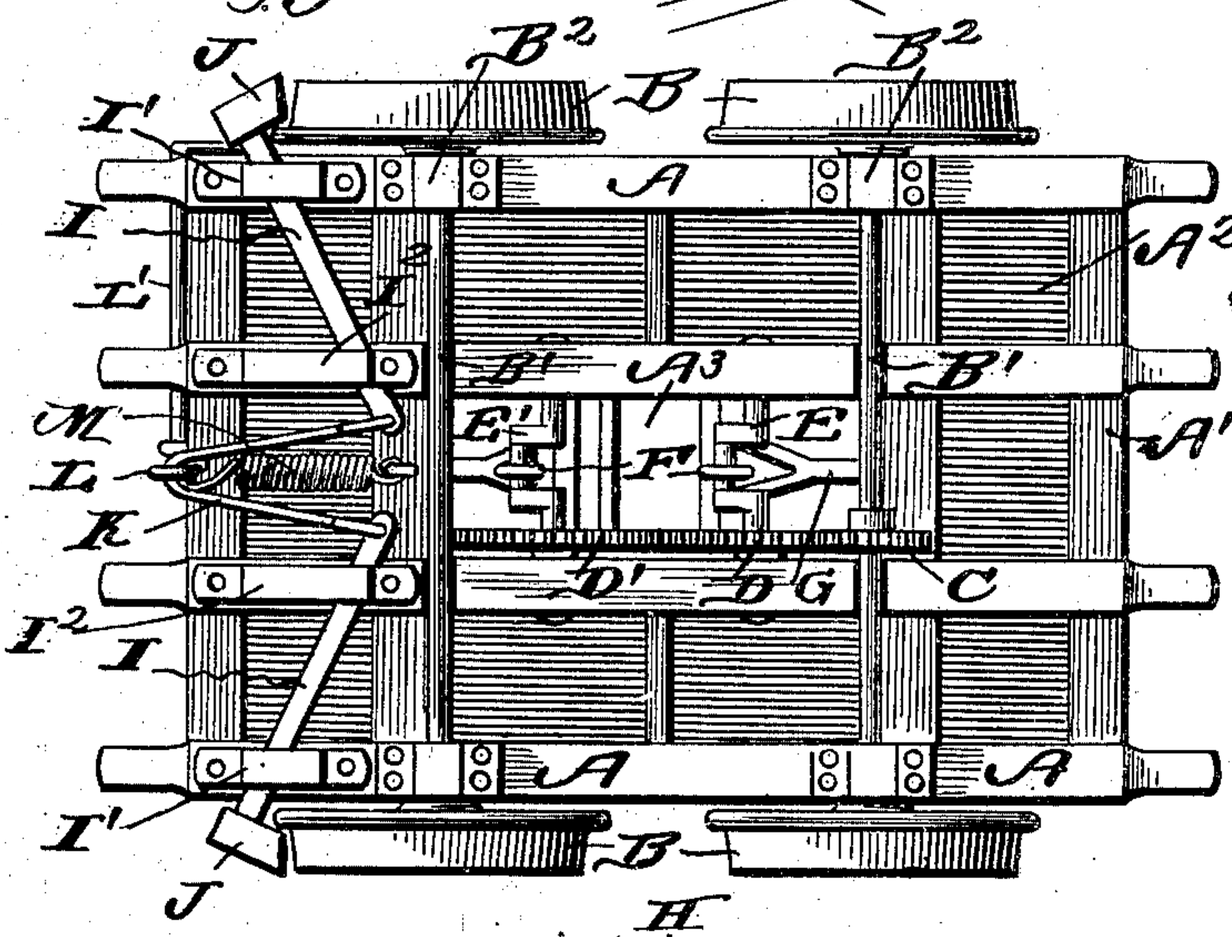


Fig. 4.

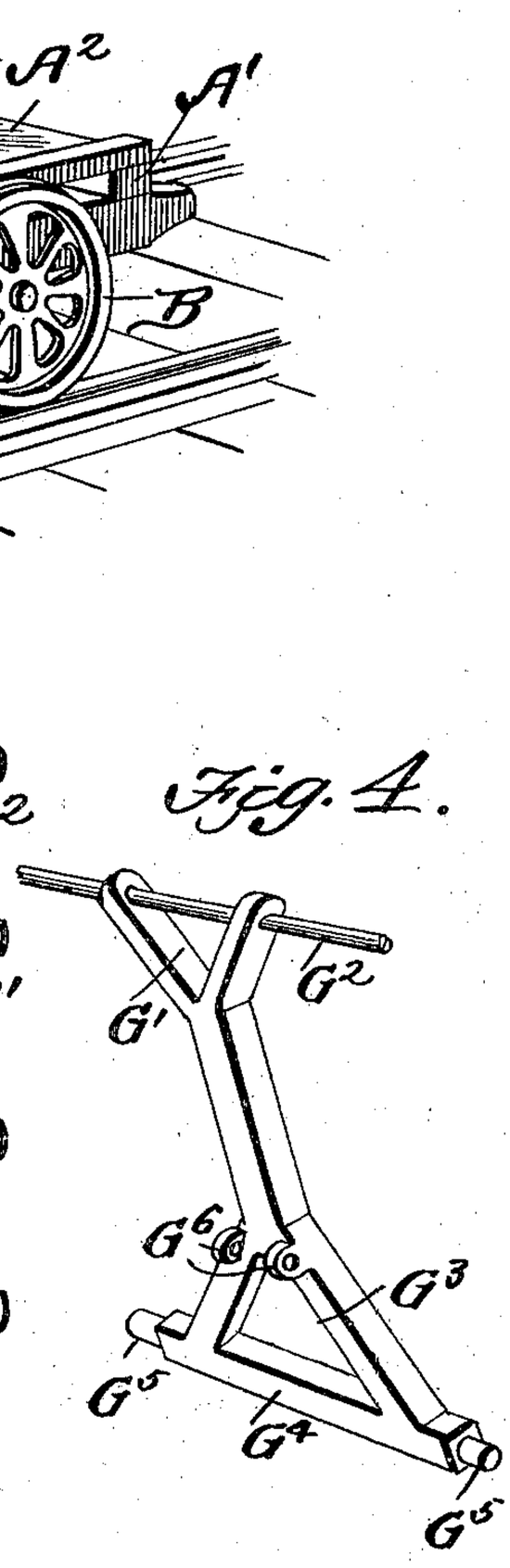
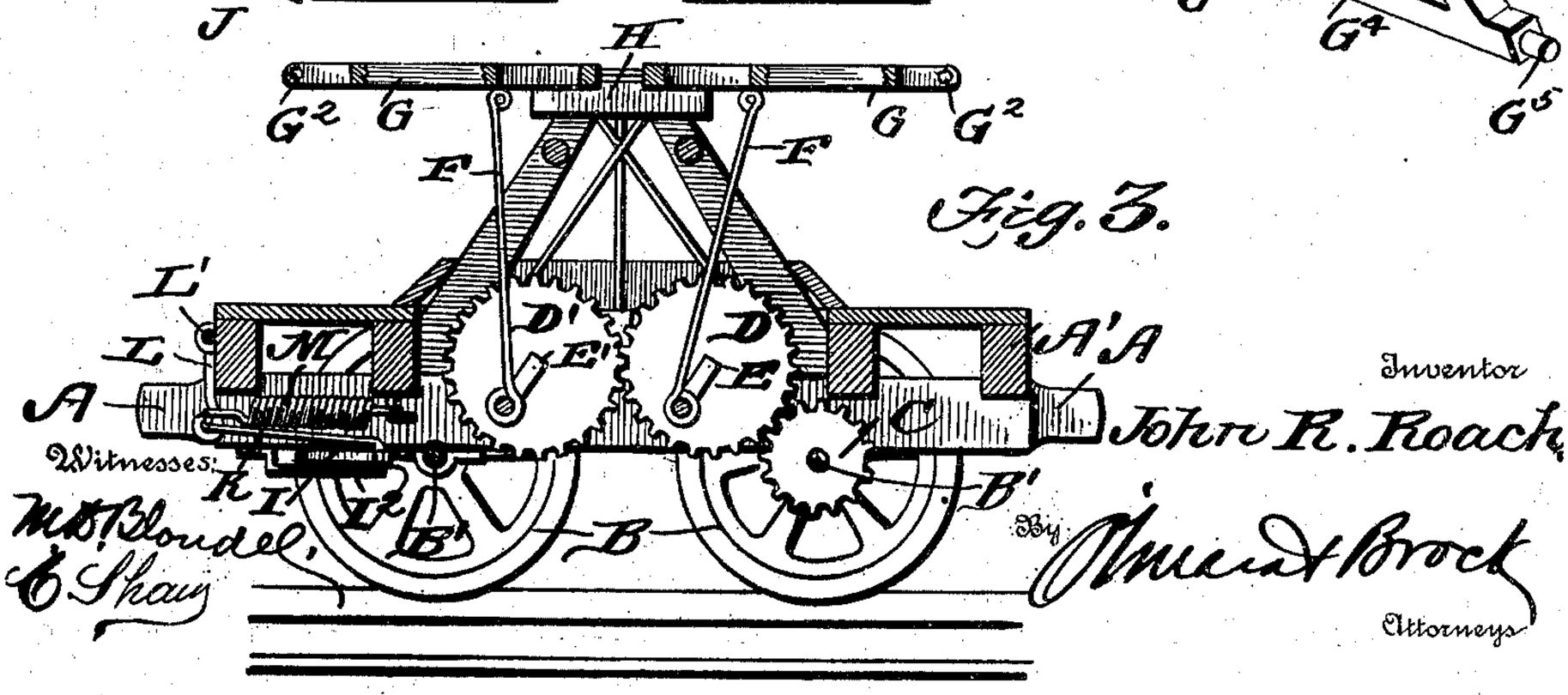


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN RUSSEL ROACH, OF CALE, INDIANA.

HAND-CAR.

SPECIFICATION forming part of Letters Patent No. 709,175, dated September 16, 1902.

Application filed June 14, 1902. Serial No. 111,749. (No model.)

To all whom it may concern:

Be it known that I, JOHN RUSSEL ROACH, a citizen of the United States, residing at Cale, in the county of Martin and State of Indiana, have invented a new and useful Hand-Car, of which the following is a specification.

This invention relates generally to hand-cars, and more particularly to an improved arrangement of driving mechanism, the object being to provide a simple and efficient construction of operating device, whereby a steady and easy movement of the car is obtained and one in which dead-centers are completely avoided.

Another object of the invention is to provide an improved form of brake mechanism whereby the movement of the car can be quickly and easily checked when desired.

With these objects in view the invention consists in the novel features of construction, combination or arrangement, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a perspective view of a hand-car constructed in accordance with my invention. Fig. 2 is an inverted plan view. Fig. 3 is a vertical longitudinal section, and Fig. 4 is a detail perspective view of one of the operating hand-levers.

By constructing a hand-car in accordance with my invention I employ the longitudinal timbers A, the transverse timbers A′, and the platform or floor A^2, arranged thereon, said parts being of the usual construction, and the center of the floor or platform is cut away, as shown at A^3, for the operation of the driving mechanism. The car is mounted upon the wheels B, arranged upon opposite ends of the axles B′, said axles being journaled in suitable boxes B^2, arranged upon the lower faces of the longitudinal beams A. One of the axles has a gear C rigidly mounted thereon, and meshing with the said gear C is a large gear D, which larger gear also meshes with the gear D′ of the same size. These gears D and D′ are mounted upon crank-shafts E and E′, journaled between the central longitudinal beams A. A pitman-rod F is connected to the crank portion of each shaft, the upper end of each pitman being pivotally connected to a hand-lever G, said hand-levers being suitably mounted upon supporting-frames H, projecting upwardly from the platform or floor of the car at opposite sides of the central opening. The lever G is bifurcated at the outer end, as shown at G′, and the hand-bar G^2 is passed through the members, as most clearly shown in Fig. 4. The opposite end of the lever is also bifurcated, as shown at G^3, said bifurcated portion being connected to a shaft or cross-piece G^4, which terminates in trunnions G^5, which are journaled in the head-blocks of the frames H. The lever is also provided with depending lugs G^6, between which the upper ends of the pitman F are connected. By constructing and arranging the operating mechanism as herein shown and described it is obvious that as one hand-lever is forced down the other one will be forced up, and vice versa, and it will also be noted that when the operating-handles are in a horizontal position the cranked portions of the shaft E E′ are substantially parallel to each other and as the said cranks are revolved in opposite directions dead-centers are avoided, one crank reaching the point of greatest efficiency as the other passes the point of least efficiency. It will thus be seen that I provide an exceedingly simple and highly efficient mechanism for driving the hand-car, it being readily understood that the motion imparted to the gears D through the medium of the hand-levers and pitman is transmitted to gear C, which is rigidly mounted upon one of the axles.

In order to check the motion of the car, I provide brake-shoes J, which are arranged upon the outer ends of the brake-beams I, said beams being pivoted within clips I′, secured to the under face of the outer longitudinal timbers A, and the inner ends of these beams slide in guide-clips I^2, secured to the lower faces of the central or inner longitudinal timbers, as most clearly shown in Fig. 2. The inner ends of the brake-beams I have operating-rods K, connected thereto, said operating-rods K being connected to the crank-arm L, formed upon the shaft L′, the outer end of said shaft being curved upwardly, as shown at L^2, and providing a suitable lever which can be pressed by the foot for the purpose of throwing the crank-arm L outwardly or away from the end of the car

in order to throw the brake-shoes into engagement with the treads of the wheels. A coiled spring M is connected at its inner end to one of the transverse timbers and at its outer end is connected to the crank-arm L, the purpose of said spring being to normally draw the said arm inwardly and thereby normally hold the brake-shoes away from the wheels.

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

1. In a hand-car the combination with the main frame, wheels and axles, said main frame having a central opening, of the crank-shafts arranged in said opening, the gears mounted upon said crank-shafts and meshing with each other, a gear mounted upon one of the axles and meshing with one of the gears mounted upon the crank-shaft, the supporting-frames arranged upon opposite sides of the central opening and main frame, and hand-levers pivotally mounted upon said supporting-frames, and the pitmen pivotally connecting the said levers with their respective crank-shafts, substantially as specified.

2. In a hand-car, the combination with a suitable platform cut away in the center, a frame above said central opening, levers bifurcated at both ends, cross-pieces terminating in trunnions secured in the bifurcated portions of the inner ends of the levers, said cross-pieces being journaled in the frame, hand-bars secured in the outer bifurcated ends of the levers, downwardly-projecting lugs secured to each lever adjacent the inner bifurcated portion, shafts mounted below said central opening having cranked portions, pitman-rods pivoted between the lugs and connected to the ends of the shafts respectively, and means for communicating the motion of said rods, and shafts to the car.

JOHN RUSSEL ROACH.

Witnesses:

GEORGE SARGENT,

WILLARD WEBSTER.