No. 615,753. Patented Dec. 13, 1898.

M. B. SCHAFFER.

HAND CAR.

(Application filed Aug. 15, 1898.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

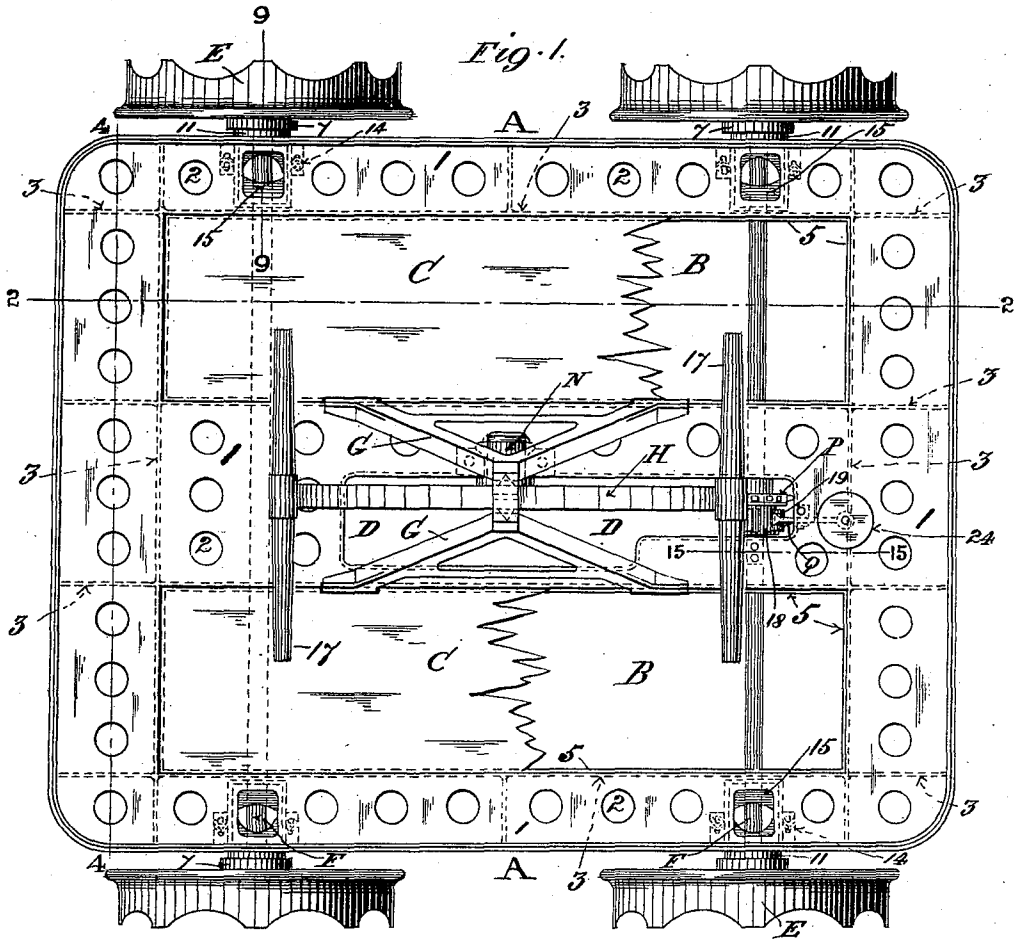


Fig. 2.

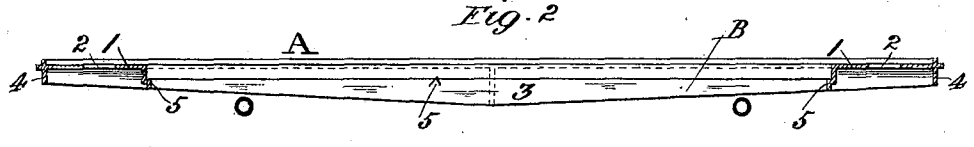


Fig. 3.

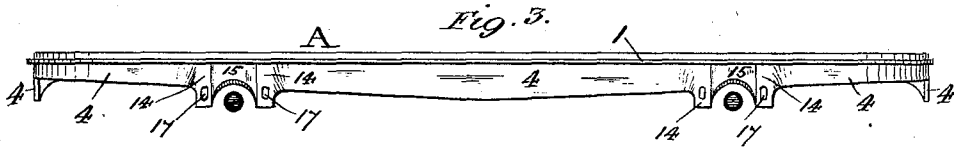
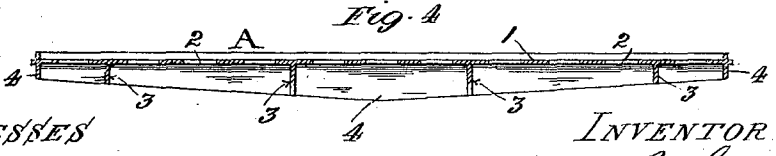


Fig. 4.



WITNESSES
Emil Steiner
Jno. L. Sutton Jr.

INVENTOR
Morse B. Schaffer
By Edward W. Turrell
His atty

No. 615,753. Patented Dec. 13, 1898.

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(No Model.) 3 Sheets—Sheet 2.

Fig. 5.

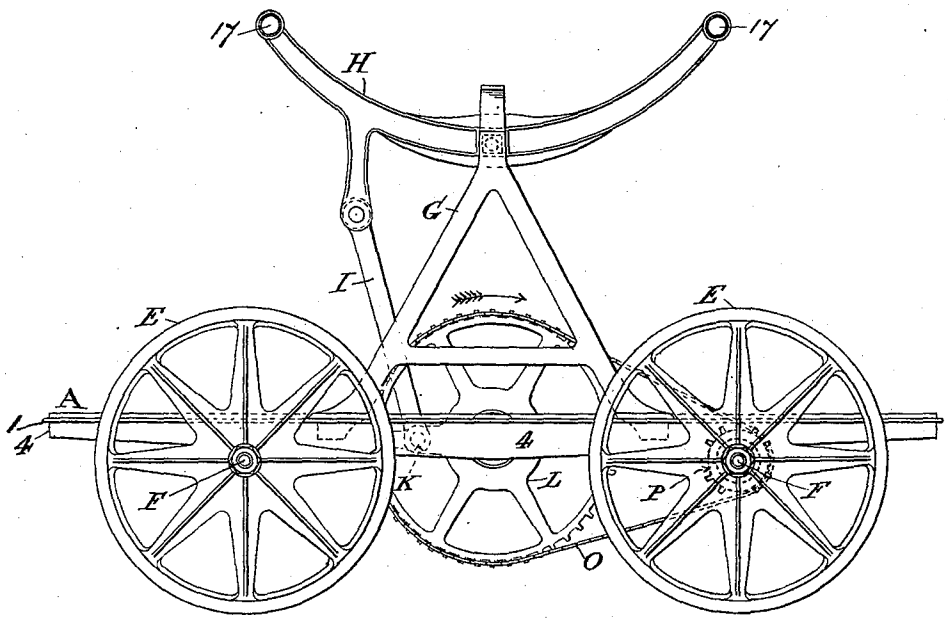

Fig. 6.

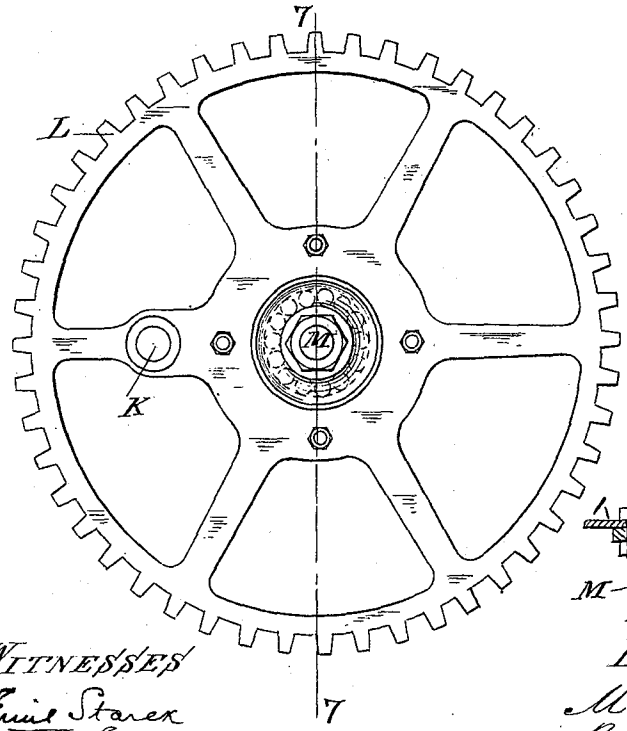

Fig. 7.

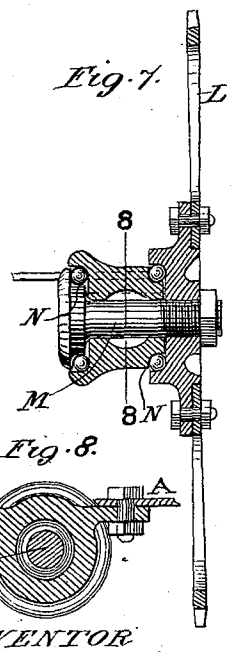

Fig. 8.

WITNESSES
Emil Starck
Jno. L. Sutton, Jr.

INVENTOR
Morse B. Schaffer
By Edwards & Turrell
His Atty

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(No Model.) 3 Sheets—Sheet 3.

Fig. 9.

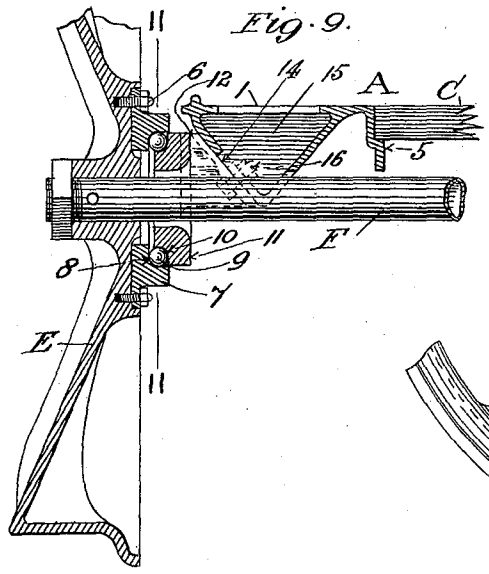


Fig. 11.

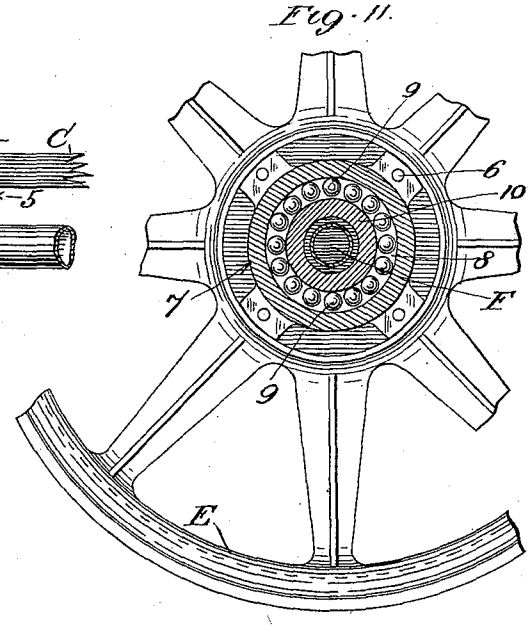


Fig. 10.

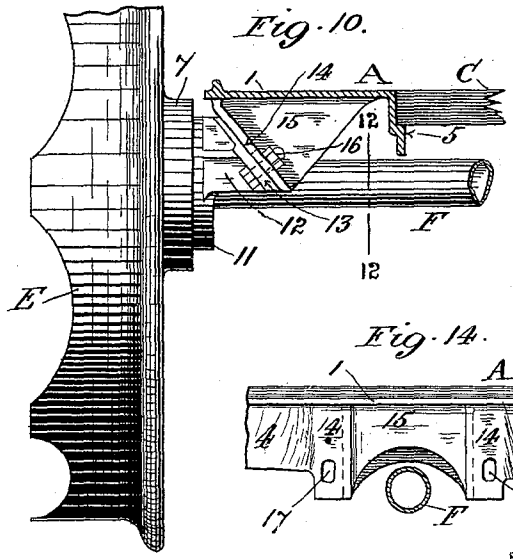


Fig. 12.

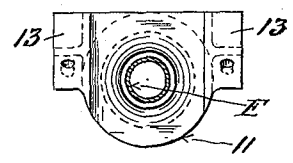


Fig. 13.

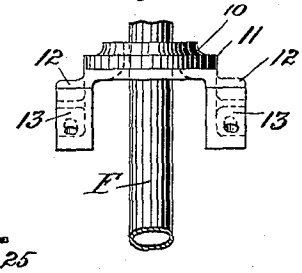
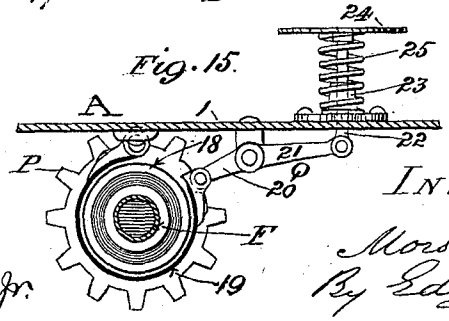


Fig. 14.

Fig. 15.



WITNESSES
Emil Starck
Jno. L. Sutton, Jr.

INVENTOR
Morse B. Schaffer
By Edward W. Turrell
His Atty

UNITED STATES PATENT OFFICE.

MORSE B. SCHAFFER, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO CLARENCE H. HOWARD, OF SAME PLACE.

HAND-CAR.

SPECIFICATION forming part of Letters Patent No. 615,753, dated December 13, 1898.

Application filed August 15, 1898. Serial No. 688,565. (No model.)

To all whom it may concern:

Be it known that I, MORSE B. SCHAFFER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Hand-Cars, of which the following is a specification.

My invention relates to a railroad hand-car, and has for its object to produce a hand-car of simple, durable, and light construction which can be readily and quickly placed on and off the track and rapidly propelled along the same with a minimum amount of power.

The invention consists in features of novelty as hereinafter described and claimed, reference being had to the accompanying drawings, forming part of this specification, whereon—

Figure 1 is a top plan of my improved hand-car; Fig. 2, a longitudinal section through the car-bed on line 2 2 in Fig. 1; Fig. 3, a side elevation of the car-bed; Fig. 4, a transverse section thereof on line 4 4 in Fig. 1; Fig. 5, a side elevation of the improved hand-car; Fig. 6, a front elevation, to enlarged scale, of the sprocket-wheel detached, forming part of the driving mechanism of the car and seen in Fig. 5; Fig. 7, a cross-section through the sprocket-wheel and its axle-bearing on line 7 7 in Fig. 6, and Fig. 8 a section through the axle-bearing of the sprocket-wheel on line 8 8 in Fig. 7. Fig. 9 is a cross-section, to enlarged scale, through one of the car-wheels (broken away) and adjacent part of the car-bed on line 9 9 in Fig. 1, showing the intermeniate ball-bearing and its abutment for adjustably supporting the car-bed, forming part of my invention; Fig. 10, a side elevation of the parts seen in Fig. 9, and Fig. 11 a vertical section through the axle and ball-bearing on line 11 11 in Figs. 9 and 10; Fig. 12, a cross-section through the axle on line 12 12 in Fig. 10, showing detached in rear elevation that part of the ball-bearing which is attachable to and supports the car-bed; Fig. 13, a plan thereof; Fig. 14, a front elevation of the corresponding part of the car-bed to which the part of the ball-bearing seen in Figs. 12 and 13 is attached; and Fig. 15, a vertical section, to enlarged scale, through the car-bed and axle on line 15 15 in Fig. 1, showing the brake-gear applied to the sprocket-pinion of the driving mechanism.

Like letters and numerals of reference denote like parts in all the figures.

A represents the car-bed, which consists, preferably and mainly, of a top plate 1, through which are lightening-holes 2, and having on its under side stiffening-ribs 3, which are arranged longitudinally and transversely along the top plate 1 and intersect each other at right angles, their ends joining with the outer rib 4, which is continuous and follows the contour of the plate 1 at or contiguous to its edges, or the ribs 3 4 may be otherwise arranged, as desired, for imparting the requisite rigidity to the car-bed A. The plate 1, with its ribs 3 4, is integral and preferably composed of aluminium, or it may be made of cast-steel, malleable cast-iron, or stamped in one piece from sheet metal, so as to combine lightness, compactness, and strength.

Through the top plate 1 are formed, preferably, rectangular-shaped openings B, one on each side of the central part of the car-bed A and parallel to each other. The sides and ends of the openings B, respectively, are formed with an offset or ledge 5 at a suitable depth from the top of the plate 1 for supporting the platforms C, which are preferably composed of wood and fitted into the openings B flush with the top of the plate 1. Through the middle part of the car-bed A is an opening D for the driving-gear of the car, as hereinafter described.

E represents the car-wheels, which are fixed clear of the sides of the car-bed A to the axles F, located beneath the car-bed A at a suitable distance apart.

To the hub of each wheel E, on its inner face, is fixed by bolts 6 a block 7, having in its outer face a circular cup-shaped recess 8, which is concentric with the axle F and bears against the balls 9, which are held in position within the recess 8 by the correspondingly-shaped reduced circular portion and shoulder 10 of a collar 11, which freely surrounds the axle F. From the outer face of the collar 11, adjacent to the car-bed A, project two parallel side arms or abutments 12, having in-

clined outer faces or flanges 13, by which the car-bed A and its appendages are supported. For this purpose the inclined faces or flanges 13 bear against and are adjustably secured to the correspondingly-inclined outer faces or flanges 14 of a preferably triangular-shaped bracket or box 15, which projects from the under side of the car-bed A beneath the top plate 1 and is preferably integral therewith. The bracket 15 is suitably shaped to allow of the free passage and play of the axle F between the flanges 14 and the lower part of the bracket 15, as shown.

The inclined faces or flanges 13 of the abutments 12 are fixed to corresponding flanges 14 of the car-bed A, preferably by bolts 16, the holes 17 for which in the flanges 14 are slotted, so that as the ball-bearings 8 10 become worn on loosening the bolts 16 the car-bed A and its appendages will be free to lower by gravity, and in so doing the inclined faces or flanges 14, bearing hard upon the inclined faces or flanges 13 of the abutments 12, will move the collars 11 toward the wheel E and so close the bearings 8 10 against the balls 9, as required, and the bolts 16 being then tightened the smooth and noiseless running of the wheel E is thereby preserved at all times.

On the car-bed A, at its central part, are fixed the standards G, between which is pivoted the walking-beam H, having the end operating-handles 17 and connected by the pitman I with a crank-pin K, which projects from the face of the sprocket-wheel L, having its axle M mounted in ball-bearings N, which are carried by the car-bed A.

The sprocket-wheel L engages by the sprocket-chain O with the sprocket-pinion P, which is fixed, preferably, on the forward axle F of the car and is preferably provided on one side with an extension-drum 18, around which is arranged a brake-band 19, secured at one end to the car-bed A and at its other or free end to one arm 20 of a lever Q, which is pivoted to the under side of the car-bed A, the other arm 21 of the lever Q connecting with the lower end of a rod 22, which passes freely upward through the car-bed A and through a guide 23 thereon, the upper end of the rod 22 having a foot-plate 24, between which and the car-bed A is placed around the rod 22 and its guide 23 a spiral spring 25. By depressing the foot-plate 24 and rod 22 the lever Q throws the brake-band 19 onto the drum 18 of the sprocket-pinion P, and by releasing the foot-plate 24 the spiral spring 25 returns the brake-band 19 to its normal position, whereby the speed of the car can be regulated at will.

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

1. In a hand-car, a suitable car-bed, an axle, a wheel fixed to the axle at either end thereof, a collar interposed between the bed and the wheel and having an opening for the free passage of the axle, the collar being adapted to support the adjacent side of the car-bed, substantially as described.

2. In a hand-car, a suitable car-bed, an axle, a wheel fixed to the axle at either end thereof, a collar interposed between the bed and the wheel and having an opening for the free passage of the axle, the collar being adapted to support the adjacent side of the car-bed, and means for adjusting the car-bed on the supporting-face of the collar, substantially as described.

3. In a hand-car, the combination of a car-wheel fixed on an axle, a recess in the hub of the wheel concentric with the axle, balls within the recess, a collar freely surrounding the axle and having a reduced circular portion and shoulder engaged by the balls, and having outwardly-projecting arms or abutments, the said abutments having inclined outer faces, or flanges, bearing against and adjustably secured to the correspondingly-inclined surfaces of a supporting-bracket projecting from the car-bed, substantially as described.

4. In a hand-car, the combination of a car-wheel fixed on an axle, a recess in the hub of the wheel concentric with the axle, a collar freely surrounding the axle and engaging the recess, the said collar having outwardly-projecting arms or abutments, the said abutments having inclined outer faces, or flanges, bearing against and adjustably secured to the correspondingly-inclined surfaces of a supporting-bracket projecting from the car-bed, substantially as described.

MORSE B. SCHAFFER.

Witnesses:
JNO. L. SUTTON, Jr.,
EDWARD W. FURRELL.