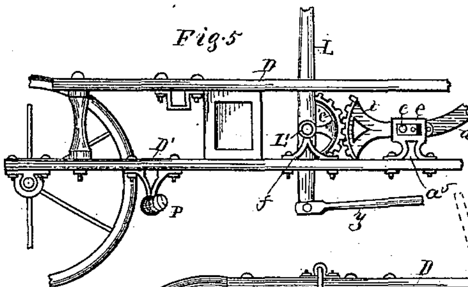
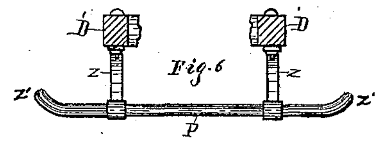
(No Model.)

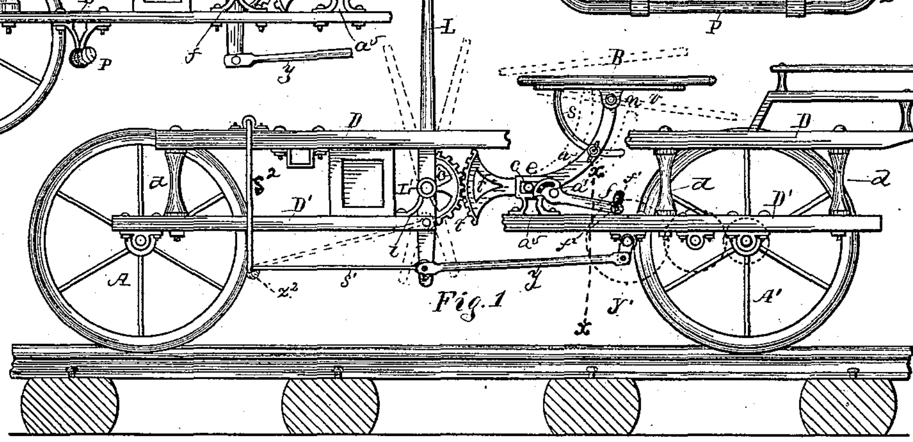
G. S. SHEFFIELD.

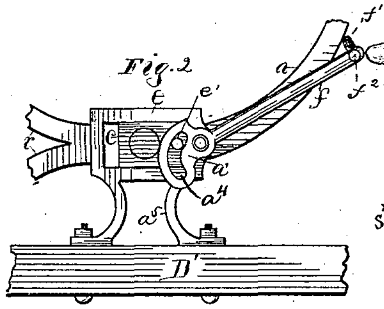
HAND CAR.

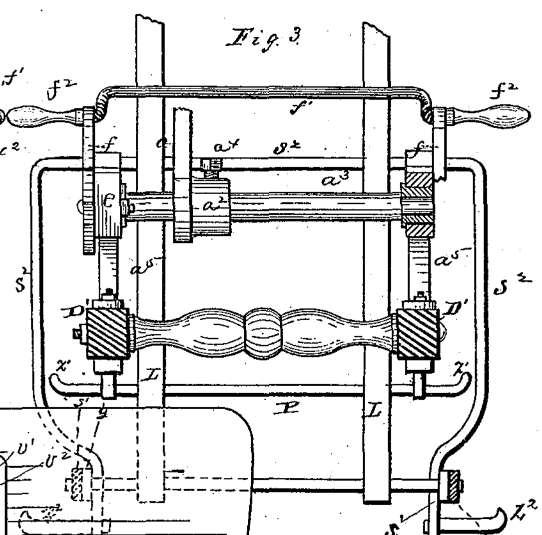
No. 269,237. Patented Dec. 19, 1882.

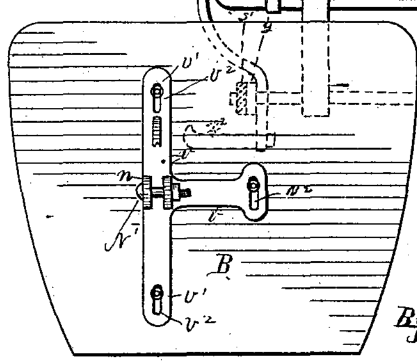












Attest.
John C. Perkins
Edward B. Linsley.

Inventor.
Geo. S. Sheffield.
By H. A. Seymour
Atty.

UNITED STATES PATENT OFFICE.

GEORGE S. SHEFFIELD, OF THREE RIVERS, MICHIGAN.

HAND-CAR.

SPECIFICATION forming part of Letters Patent No. 269,237, dated December 19, 1882.

Application filed July 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. SHEFFIELD, of Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Hand-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to hand-cars, the object being to provide a car in which the weight of the rider may be utilized to assist in the propulsion of the car, and to improve the construction of cars of this class.

The invention consists in the novel construction and combinations of parts hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a hand-car constructed in accordance with my invention. Fig. 2 is an enlarged side view of the devices for throwing the seat into or out of gear with the segment of the operating-lever. Fig. 3 is a transverse section of the car, taken mainly in the plane indicated by the line *x x* of Fig. 1. Fig. 4 is a bottom view of the driver's seat and the plate to which it is attached. Fig. 5 is a side elevation of a portion of a car provided with stationary foot-rests. Fig. 6 is a partially-sectional detail view, showing the stationary foot-supports.

The main frame of the car consists of parallel bars D D and D′ D′, connected and braced together by braces *d*.

Any suitable guiding-wheel may be secured to the car to run on the rail opposite the main frame, that shown and described in my Letters Patent No. 213,254, granted March 11, 1879, being a suitable wheel for use with my present invention.

A A represent the carrying-wheels of the car, adapted to be operated by a double lever, L, formed of two parallel single levers, fulcrumed on a transverse shaft, L′, supported in brackets *l*. The upper end of the lever L is provided with suitable handles to be grasped by the rider, and the lower ends of the two single levers, composing said double lever, are respectively pivoted to the forward ends of pitmen *y*, on opposite sides of the frame, as indicated in the partially-sectional Fig. 3, the rear ends of these pitmen *y* being pivoted to cranks on the opposite ends of a transverse shaft, upon which is rigidly fixed a gear-wheel, *y′*, which is the initial gear of a train (shown in dotted lines) for communicating motion to the shaft upon which is mounted the driving-wheel A′. The arrangement of the double lever, pitmen, gear-train, and driving-wheel is the same as shown in my patent No. 213,254, before referred to. Upon the shaft L′, upon which is fulcrumed the lever L, there is firmly secured a toothed segment, *c′*.

B represents an adjustable seat, provided on its under side with a plate having two depending perforated lugs, *n*, between which is pivoted by a bolt, *n′*, a curved support, *a*, whose lower end terminates in a segment, *r*, provided with teeth *t*, adapted to mesh with the teeth of the segment *c′*.

v represents a T-shaped plate, secured to the under side of the seat B by means of screws *v′*, passing through elongated slots v^2. A curved arm, S, depends from this plate, and is secured adjustably by means of a thumb-screw to the support *a* of the seat. The support *a* is provided with a laterally-projecting sleeve, a^2, which is secured upon a shaft, a^3, by a screw, a^4, said shaft being supported in brackets a^5 a^5 on the bars D′ D′.

The seat B may be shifted slightly on the plate *v* by loosening the screws *v′*, and said seat may be adjusted to different inclinations by means of the arm S and its set-screw. By the adjustment of the seat toward or from the operating-lever the weight of the rider may be caused to exert more or less force, as desired, on the downstroke of the seat-support.

The brackets a^5, which support the shaft a^3 and seat-support *a*, are provided with longitudinal slots *e*, adapted to receive flanged sliding blocks *c*, within which the ends of said shaft are mounted. To each bracket a^5 is pivoted a lever, *f*, whose outer ends are connected by a rod, *f′*, having handles f^2 at either end, this rod *f′* being bent upwardly in order that it may not interfere with the gear-wheel *y′* when in its depressed position. To the pivoted end of each lever *f* is secured a head, *a′*, provided with a curved slot, a^4, into which projects a pin, *e′*, of the block *c*.

S^2 represents a bail pivotally supported in

bearings on the upper side of the bars D D, and connected on each side of the main frame by a link, S′, to the lower ends of the lever L, as indicated in Fig. 3. Each depending end of the bail is provided with a foot-support, z^2, so that the driver may by means of his legs operate the bail and links S′ to assist in working the lever L.

P represents a cross-bar secured rigidly to brackets *z z*, depending from the main frame, and terminating at either end in a foot-rest or stirrup, *z′*. These stirrups enable the driver to rest his legs, and do not interfere with the bail S^2, the depending arms of which are outside thereof, as shown in Fig. 3. In addition to these stirrups I may secure to either side of the lower ends of the lever L a foot-rest, at any suitable point, which will assist in operating said lever.

It will be apparent that when the rider occupies the seat B and grasps the lever L the latter will not only receive the pull of the hands, but will be operated also by the weight of the driver through the reciprocation of the seat-support *a* and the intermeshing of the toothed segments *r* and *c′*. Thus the work required of the rider is materially lessened, and the propulsion of the car is accomplished with comparatively little effort.

The segment *r* of the seat-support may be thrown out of gear with the segment *c′* by simply raising the levers *f*, as illustrated in Fig. 2.

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

1. In a hand car, the combination, with the main frame, of an operating-lever provided with a toothed segment, and a seat-support provided with a toothed segment adapted to mesh with the lever-segment, whereby the weight of the rider is utilized in propelling the car, substantially as set forth.

2. In a hand-car, the combination, with the main frame and carrying-wheels, of an operating-lever imparting motion to the driving-wheel of the car by means of a pitman and train of gearing, and provided with a toothed segment, and a seat-support whose lower end terminates in a toothed segment, and provided with devices for throwing said segment into and out of gear with the lever-segment, substantially as set forth.

3. In a hand-car, the combination, with the main frame and operating-lever provided with a toothed segment, of brackets provided with longitudinal slots to receive sliding blocks which support a transverse shaft, a curved seat-support secured upon said shaft and provided with a toothed segment, and levers provided with heads having curved slots, into which project pins of said sliding blocks, substantially as set forth.

4. The combination, with the seat-support, of the plate *v*, having a depending lug, to which said seat-support is pivoted, and the slots v^2, and suitable bolts and nuts, by means of which a seat may be adjustably attached to said plate, substantially as and for the purpose set forth.

5. The combination, with the operating-lever having the toothed segment, and the seat-supporting lever having a similar segment engaged therewith, of the seat carried by said seat-supporting lever and adjustable toward and from the operating-lever, substantially as and for the purpose set forth.

6. In a hand-car, the combination, with the seat-support and its shaft, of sliding blocks provided with projecting pins, and pivoted levers provided with slotted heads, into which said pins project, substantially as set forth.

7. In a hand-car, the combination, with an operating-lever provided with a toothed segment, of a seat-support having a toothed segment and adapted to be thrown into engagement with the lever to utilize the weight of the rider to assist the propulsion of the car, or to be thrown out of engagement with said lever and be held stationary, substantially as set forth.

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

GEORGE SOLYMAN SHEFFIELD.

Witnesses:

ALBERT C. TITUS,

O. P. SLOTE.