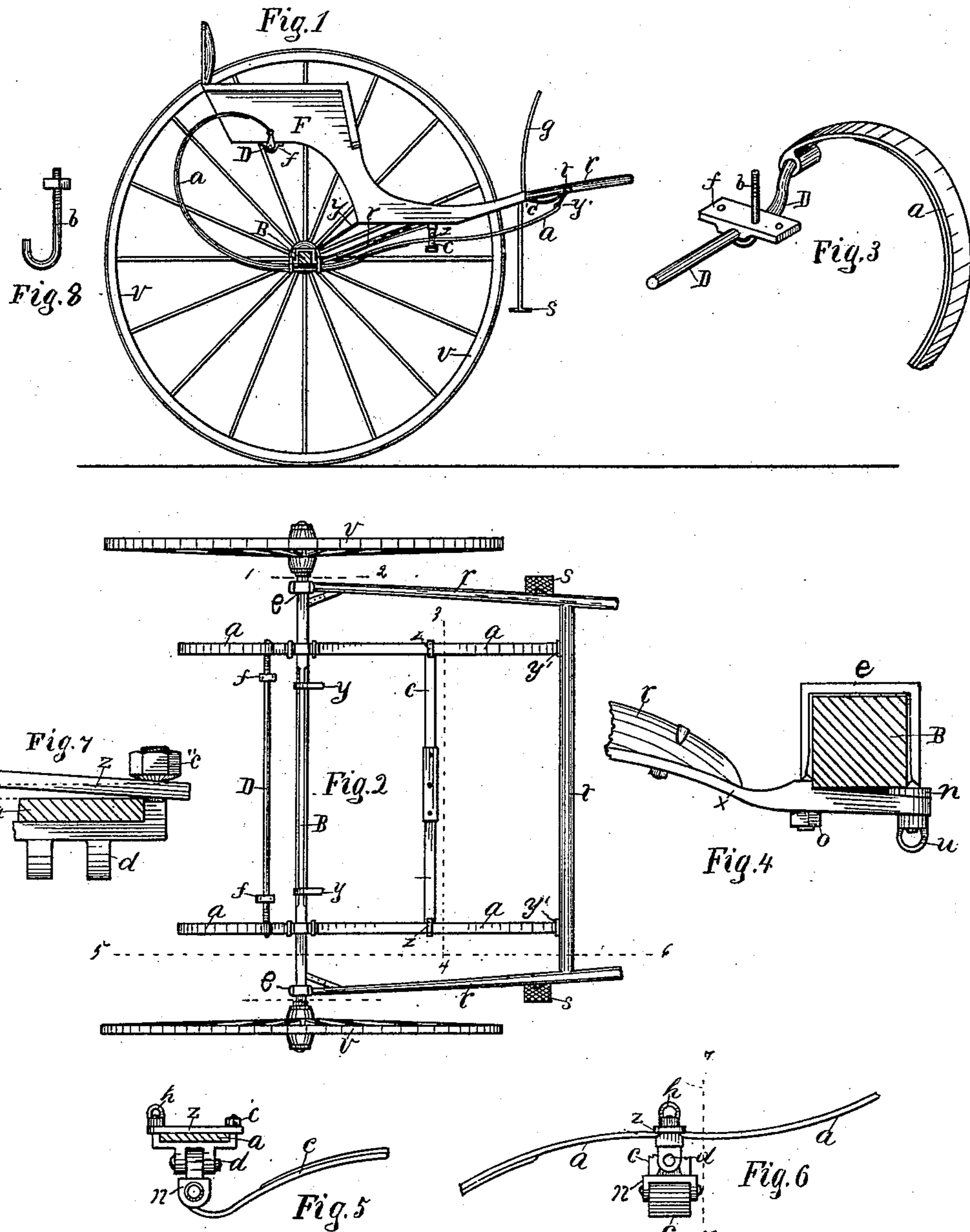


(No Model.)

L. DONLEY.  
TWO WHEELED VEHICLE.

No. 297,358.

Patented Apr. 22, 1884.



Attest.  
John C. Perkins  
John H. Chase

Inventor.  
Levi Donley  
By Lucius C. West  
ATTY-

# UNITED STATES PATENT OFFICE.

LEVI DONLEY, OF KALAMAZOO, MICHIGAN, ASSIGNOR OF ONE-HALF TO  
HOBERT B. SORTOR, OF SAME PLACE.

## TWO-WHEELED VEHICLE.

SPECIFICATION forming part of Letters Patent No. 297,358, dated April 22, 1884.

Application filed February 8, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, LEVI DONLEY, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have  
5 invented new and useful Improvements in Two-Wheel Vehicles, of which the following is a specification.

The object of my invention is to effect an improved action of the springs in this class of  
10 vehicles, and to facilitate the adjustment of the thills and body by means of the improvements in construction hereinafter pointed out in the description and claims.

In the drawings forming a part of this specification, Figure 1 is a side elevation and section on line 5 6 in Fig. 2; Fig. 2, a top view with the body removed; Fig. 3, a detached part in enlarged perspective; Fig. 4, a broken  
15 portion in section on line 1 2 in Fig. 2, enlarged; Fig. 5, a broken portion in section on line 3 4 in Fig. 2, and on line 7 8 in Fig. 6; Fig. 6, a broken portion of Fig. 1, enlarged; and Fig. 7 shows a broken portion of Fig. 5, enlarged. Fig. 8 is a detailed part of Fig. 3.

25 The body of the carriage is shown at F. B is the axle, having the two wheels *v*. A spring, *a*, is located on each side beneath the body F. The forward end of the spring is flexibly connected with the cross-bar *t* of the thills *r* by  
30 means of straps *y*, or equivalent means. From thence it extends back, forming connection with the bolster-spring *c*, passes under the axle B, with which it also forms connection by means of a clip, and circles rearward, upward, and forward in a C-shape support for  
35 the body F. A rocking bar, D, is revolvably connected with the body on the under rear side by means of a plate, *f*, and a single nut, staple, or hooked bolt, *b*, Figs. 1, 3, 8. The  
40 outer ends of the bar D terminate in cranks, with which the end of the spring at this point is pivotally connected. The spring *a* is connected with the bolster-spring by a double-jointed clip, *d*. This clip confines the springs  
45 *a a* by means of plate *z* and nuts *h c''*. With the lower end of the double joint, at *n*, the end of the bolster-spring is pivotally connected. Between this point *n* and the part of the clip *d* which confines the spring *a* another joint is  
50 formed. By this means of connecting the three

springs *a a* and *c*, each spring is allowed a free action, and can lengthen and shorten during the spring action without affecting the action of the other springs. By means of the rocking bar D the action of the C part of each  
55 spring *a* is the same—that is, if one spring were acting under a heavier burden than the other, the cranks at each end would operate alike, and hence have a like effect on each spring, and thus cause the body F to maintain a substantially level position. The underside of the  
60 nut *c''* is made rounding or convex, as in Fig. 7. The nut *h* is a thumb-nut. By loosening this thumb-nut, the plate *z*, owing to the rounded surface of the nut *c''*, may be raised, thus  
65 freeing the clip *d* when desiring to change the location of the body F, by carrying the bolster-spring *c*, with which the body is centrally connected, forward or backward, as may be desired, according to the spring action  
70 desired and the amount of burden to occupy the carriage. During said adjustment of the body the rocking bar D is revolved, thus permitting said body to be moved without expanding or contracting the C parts of the  
75 springs *a a*. The clip *d* may be made so as to locate the nuts *h c''* on the lower side, if preferred. A strap, *y*, connects the body F on each side, and the axle B and straps *c'* connect the forward end of the body and the cross-  
80 bar *t* of the thills. These straps, which add to the safety of the vehicle, are lengthened and shortened according to the location of the body and the weight of the burden, as in other vehicles.

85 The thills *r* are connected with the axle B by means of confining-clips *e e* and nuts *o u*. The nut *o* is like the rounded nut *c''*, and the nut *u* is like the thumb-nut *h*, both above described.

90 On the rear arm of the clip *e*, between the axle and the end of the thill, a wedge-shape washer is located, Fig. 4. Thus the height of the forward end of the thills *r* is fixed by loosening thumb-nut *u* and turning the washer, locating the thick or thin portion of the washer  
95 at a proper position to effect the result desired.

S S are the steps for use in getting in and out of the carriage.

A two-wheel vehicle thus constructed is very 100

simple, strong, easy of draft, can be cheaply made, and is exceedingly comfortable to ride in, owing to the action of the spring when properly adjusted in connection with the other parts in accordance with the burden, as hereinbefore set forth.

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

10 1. In a two-wheel vehicle, the combination, with the body, the thills, and the rocking bar having the end cranks, of the side and bolster springs, arranged substantially as set forth.

15 2. The combination, with the body and suitable supporting-springs, of the thills adjustably connecting with the axle by means of the confining-clips provided with the wedge-shape washers, substantially as described.

20 3. The combination, with the body and the side and bolster springs, of the rocking bar provided with the end cranks, and means for

adjustably connecting the ends of the bolster-spring with the side springs, substantially as specified.

4. In a two-wheel vehicle, the combination, 25 with the body provided with a rocking bar having a crank at each end, of the side springs, the C ends thereof pivotally connected with said cranks, and a bolster-spring, all substantially as set forth.

5. The combination, with the body and thill, 30 of the side and bolster springs, and the double-jointed confining-clips provided with a thumb-nut and the rounded nut, substantially as set forth.

35 In testimony of the foregoing I have hereunto subscribed my name in the presence of two witnesses.

LEVI DONLEY.

Witnesses:

HOBART B. SORTOR,  
JOHN H. CHASE.