

(No Model.)

F. B. LAY.
TWO WHEELED VEHICLE.

No. 388,292.

Patented Aug. 21, 1888.

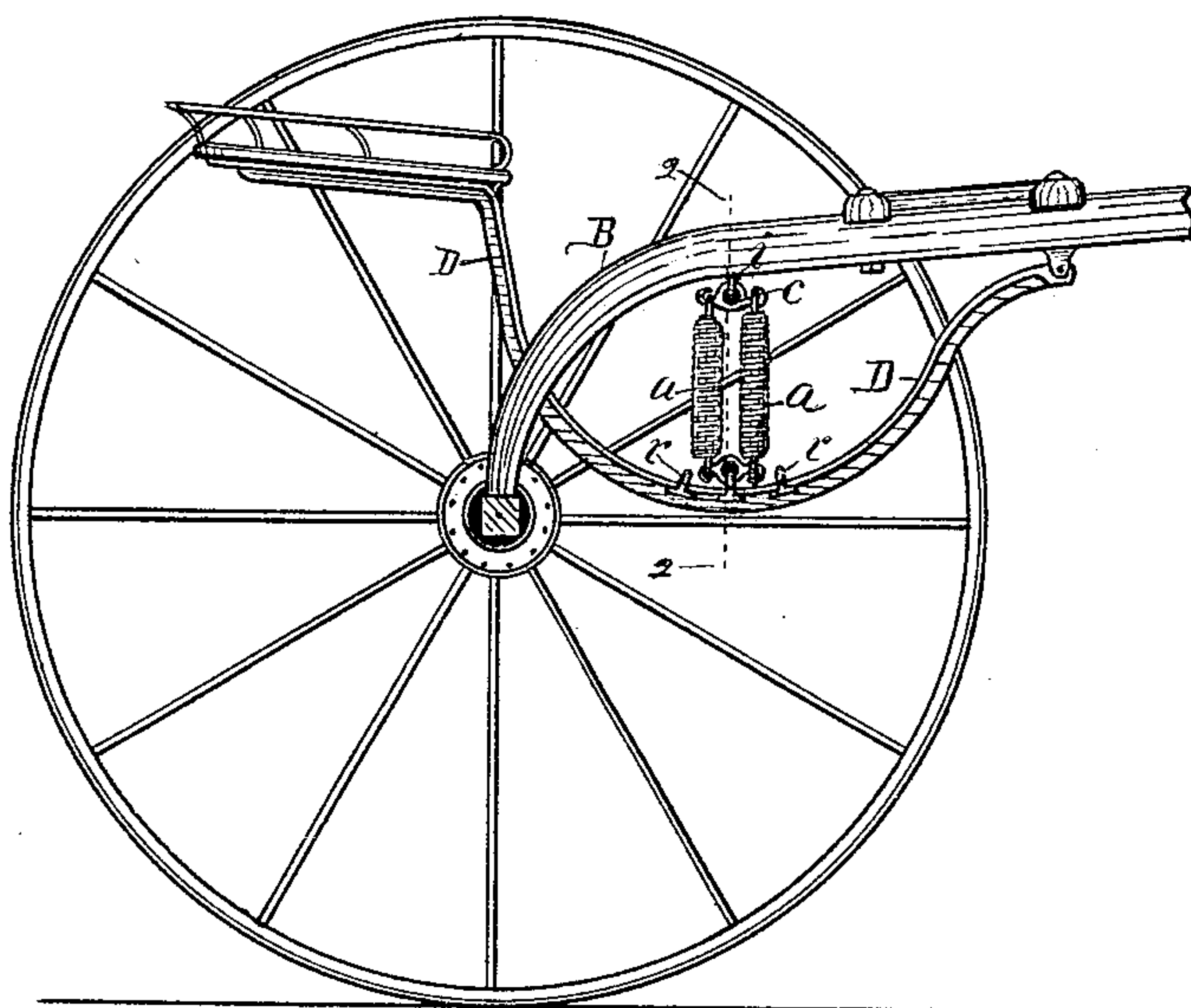


Fig. 1

Fig. 2

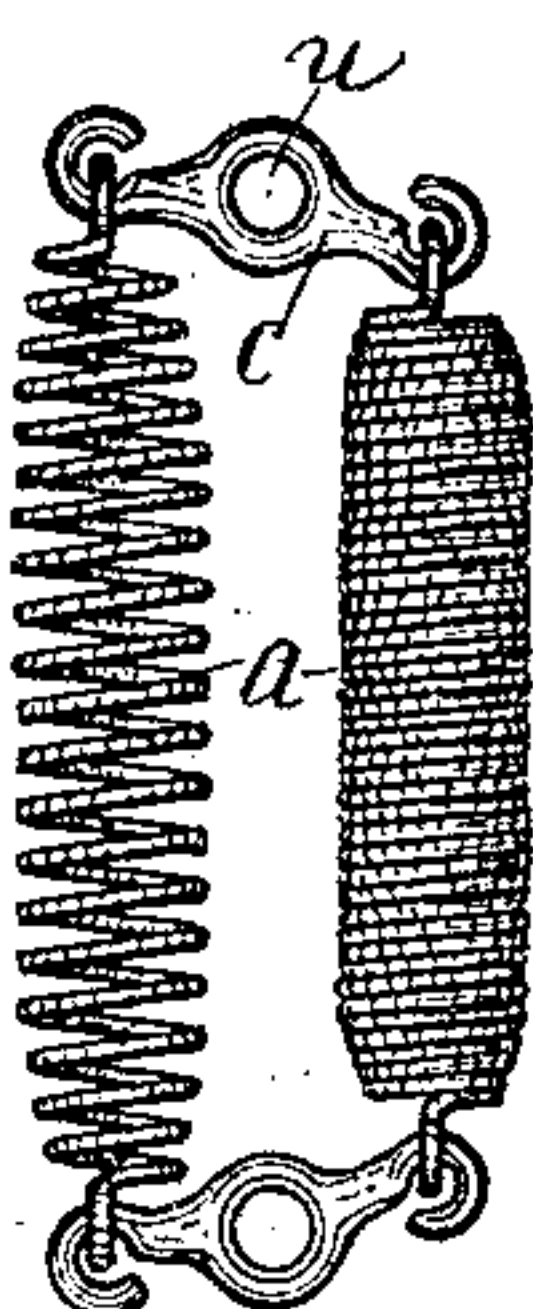


Fig. 3

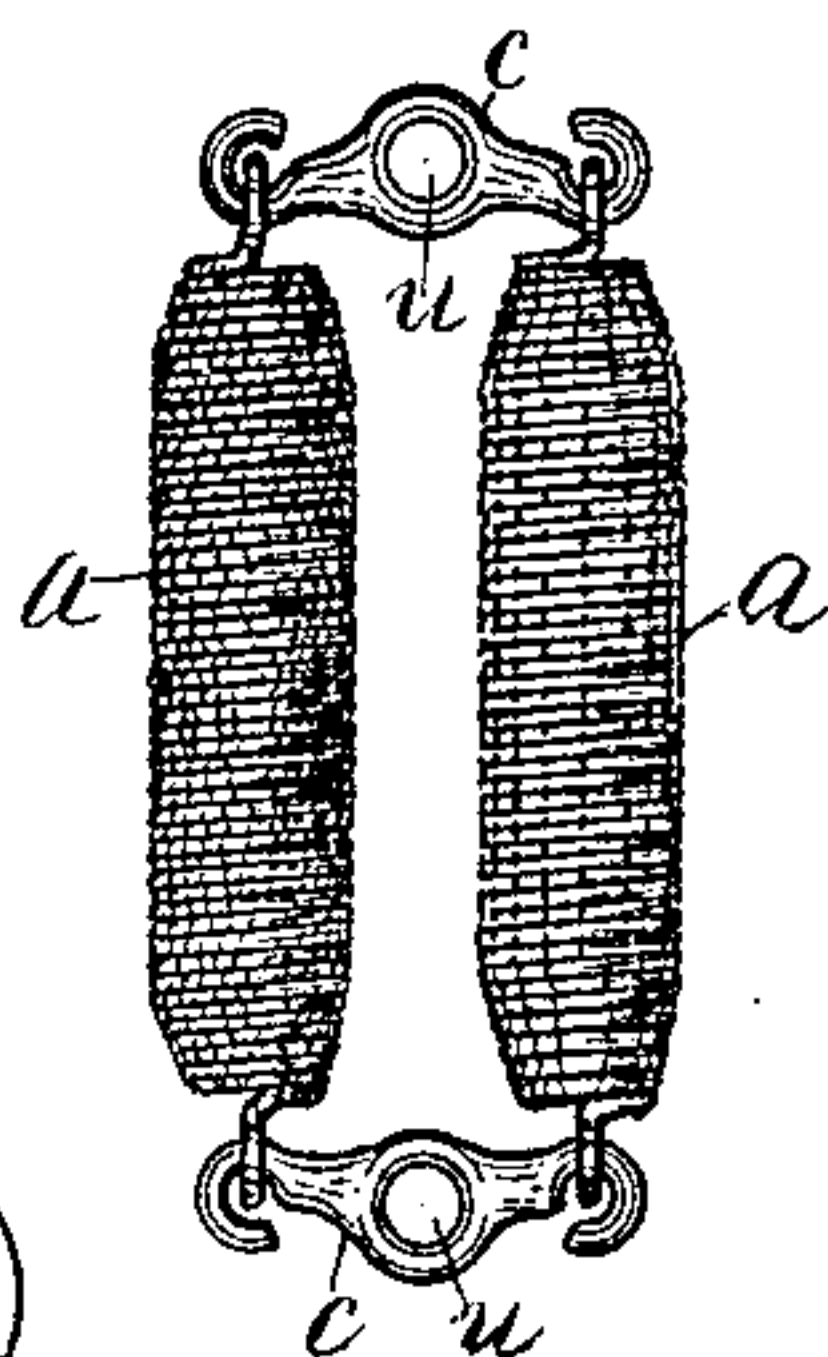


Fig. 4

Witnesses.
John C. Perkins.
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att'y-

UNITED STATES PATENT OFFICE.

FRANK. B. LAY, OF KALAMAZOO, MICHIGAN.

TWO-WHEELED VEHICLE.

SPECIFICATION forming part of Letters Patent No. 388,292, dated August 21, 1888.

Application filed April 7, 1888. Serial No. 269,929. (No model.)

To all whom it may concern:

Be it known that I, FRANK. B. LAY, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Two-Wheeled Vehicle, of which the following is a specification.

This invention relates to that class of two-wheeled vehicles the body of which is suspended from the thills by double spiral-spring hangers on each side; and it has for its object the below described and claimed improvements.

In the drawings forming a part of this specification, Figure 1 is a side elevation, one wheel being removed. Figs. 2 and 3 are enlarged details from Fig. 1, and Fig. 4 is an enlarged section on line 2 2 in Fig. 1.

Referring to the letters marked on the drawings, D is the ordinary seat-bar or body hinged at the forward end to the thill B. A hook, *i*, is attached to the thill and a series of hooks, *r*, is attached to the seat-bar.

At C C are shown equalizers having a central hole, *u*, from which they extend laterally both ways and terminate with a hook at the end, or with an eye, if preferred. One of the equalizers jointedly couples the upper ends of the spiral springs *a a*, and the other equalizer jointedly couples, in like manner, the lower ends of said spirals. The eye *u* of the upper equalizer is detachably hooked on the hook *i*, and the eye of the lower equalizer is detachably hooked on one of the hooks *r* of the seat-bar D. The bar D may have one or more hooks *r*. When more than one are used, the lower equalizer can be unhooked from one hook *r* and hooked onto one of the others, to change the leverage of the seat-bars on the spring when changing for heavy or light weight persons. During the natural up-and-down movement of the seat-bars the equalizers rock on their pivotal connections at *r i*, thus giving an easy movement to the body of the vehicle and freedom to the independent action of each individual spring.

Among other points of utility which may be named are the following: Should one of the

springs *a* break or become detached from the end of one of the equalizers, the body could not fall, for the equalizers and the other spring would hold it up. Should one of the springs *a* be more elastic than the other, the equalizers allow one to spring more than the other; and, further, should one spring be weaker than the other and become separated between the spirals, so as to be longer than the other spring, the equalizers conform to the condition as shown in Fig. 2. More than two springs *a* may be used.

The illustrations and description here given only refer to one side of the vehicle; but it will be understood that the other side is the same.

Having thus described the invention, what I claim, and desire to secure, is—

1. The spring-hangers for suspending a vehicle-body or seat-bars, said hanger comprising the upper and lower equalizers having the central hole, and the two springs side by side and jointedly attached at the ends to the ends of the equalizers, substantially as set forth.

2. The combination of a wheeled-axle, thills, fulcrumed body or seat-bars, and the elastic hangers comprising the equalizers, one jointedly attached to the thills, the other jointedly attached to the body, and springs jointedly attached at the ends to the equalizers each side of the center or pivotal attachment of said equalizers to the thills and body, substantially as and for the objects set forth.

3. The combination of a wheeled axle, thills, a fulcrumed body or seat-bars provided with a suitable number of hooks, the upper equalizers pivotally attached to the thills, the lower equalizers pivotally and detachably attached to the seat-bar hooks, and the springs jointedly attached at the ends to the ends of the equalizers, substantially as set forth.

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

FRANK. B. LAY.

Witnesses:

CHAS. FRIEDMAN,
G. D. B. HALL.