

(No Model.)

G. M. POWELL.

VELOCIPÈDE.

No. 365,488.

Patented June 28, 1887.

Fig. 1.

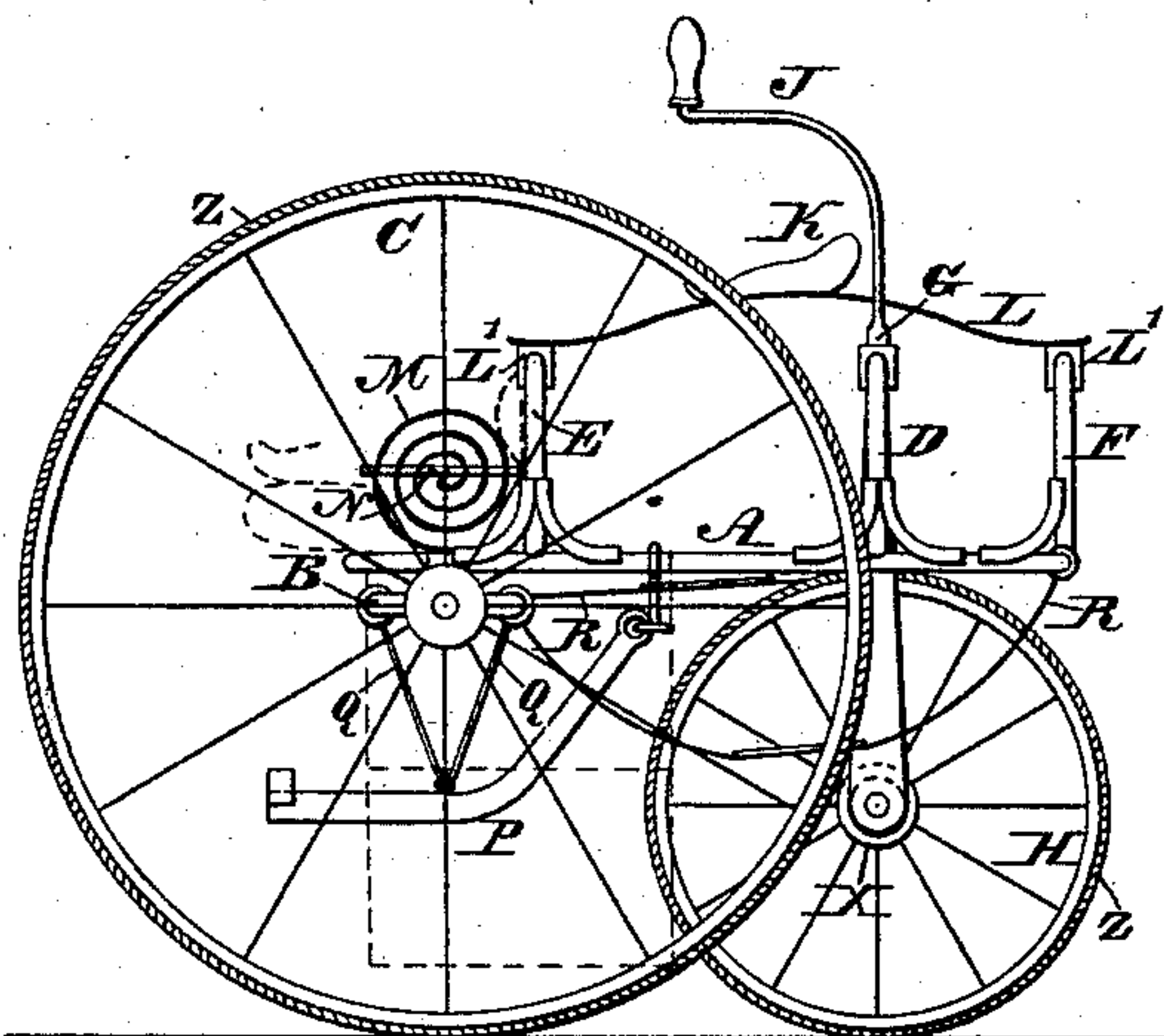


Fig. 2.

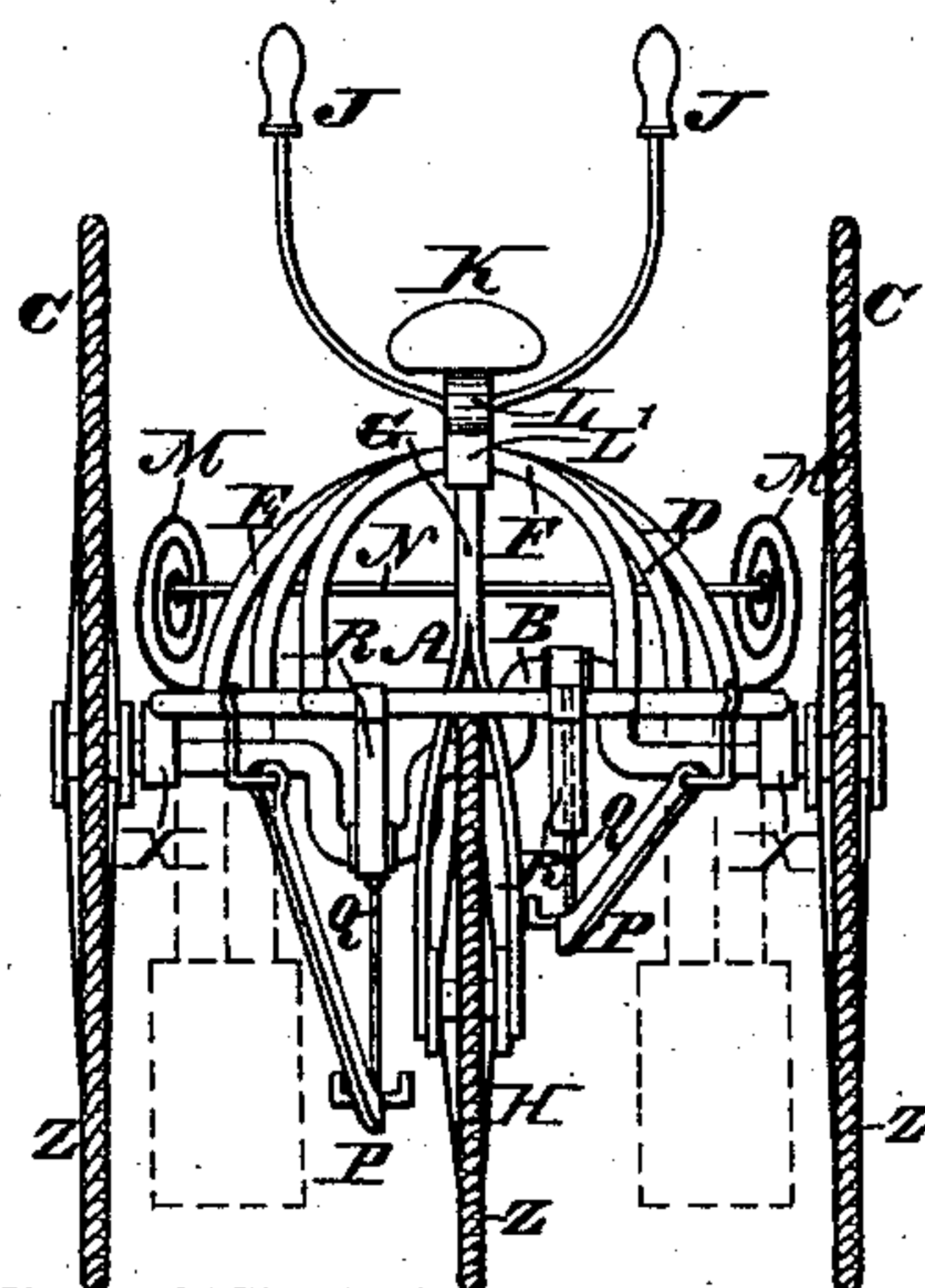


Fig. 5.

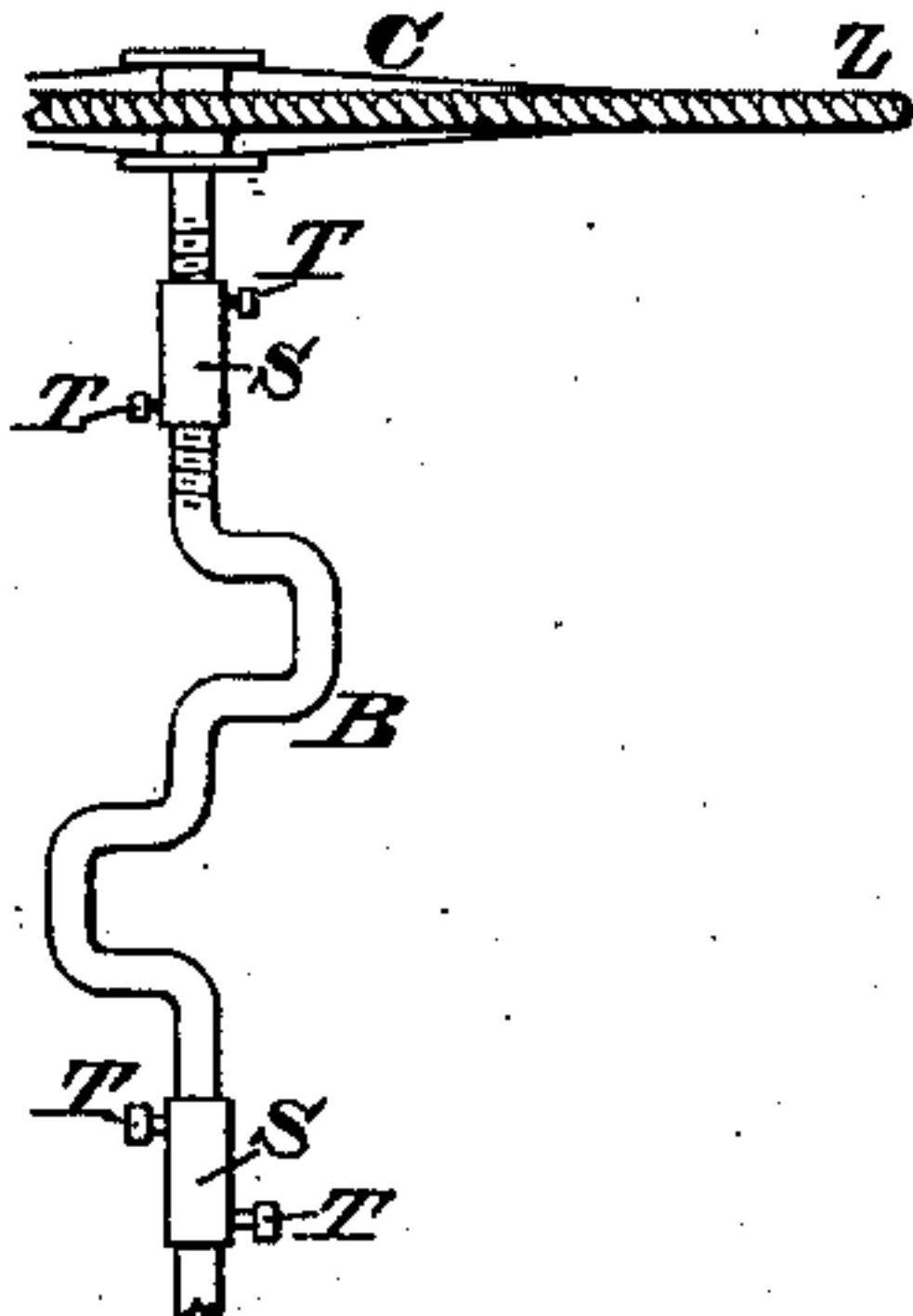


Fig. 3.

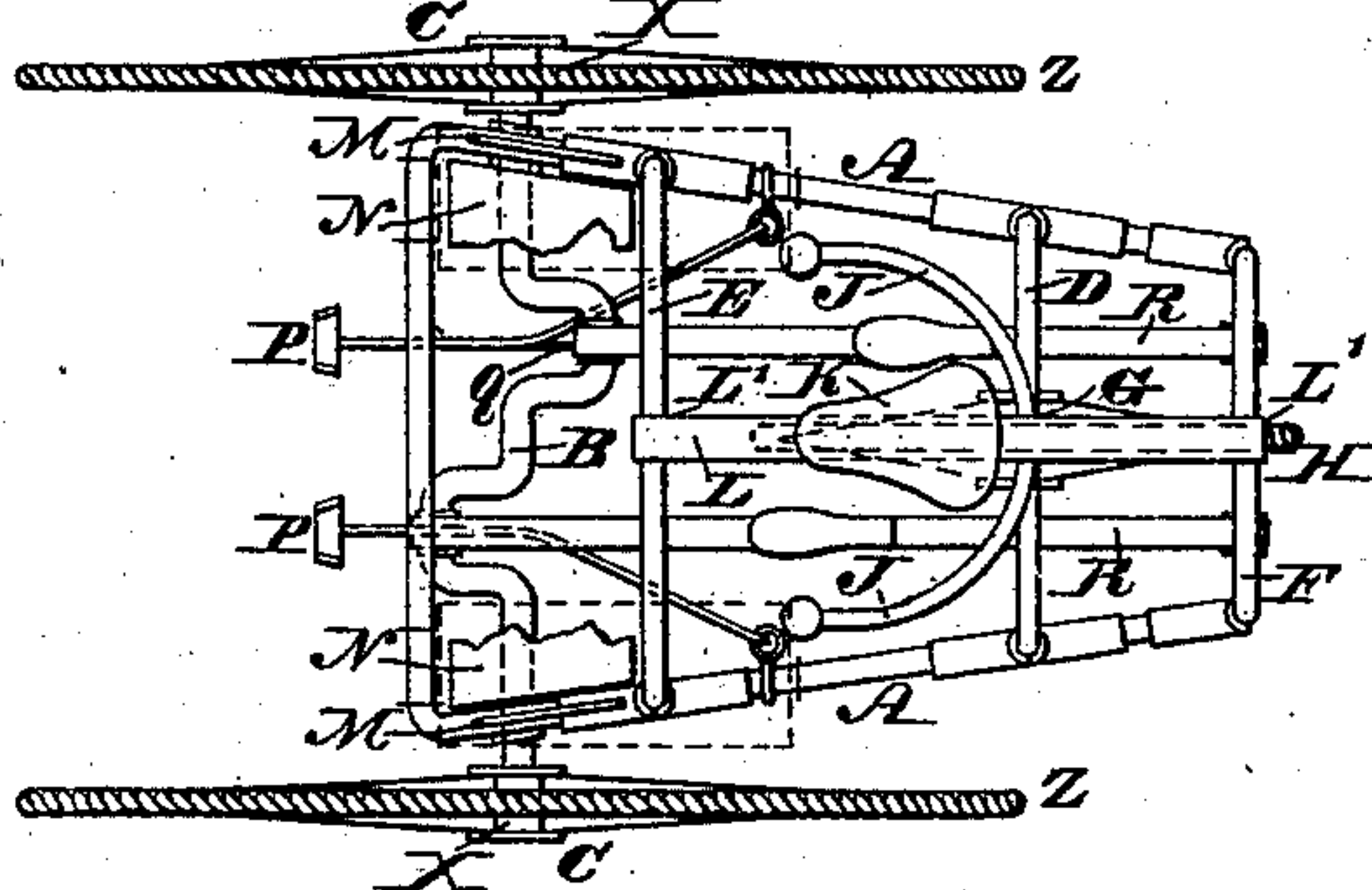


Fig. 6.

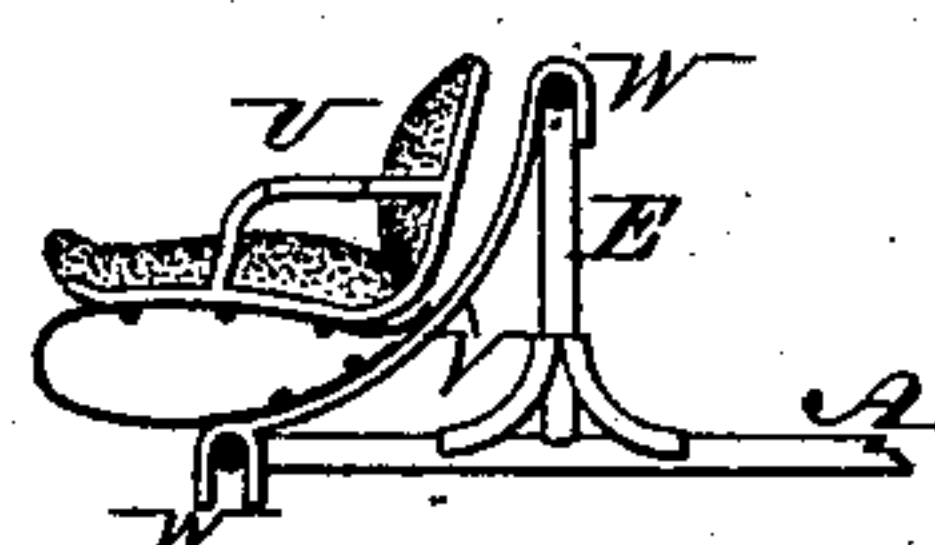


Fig. 7.

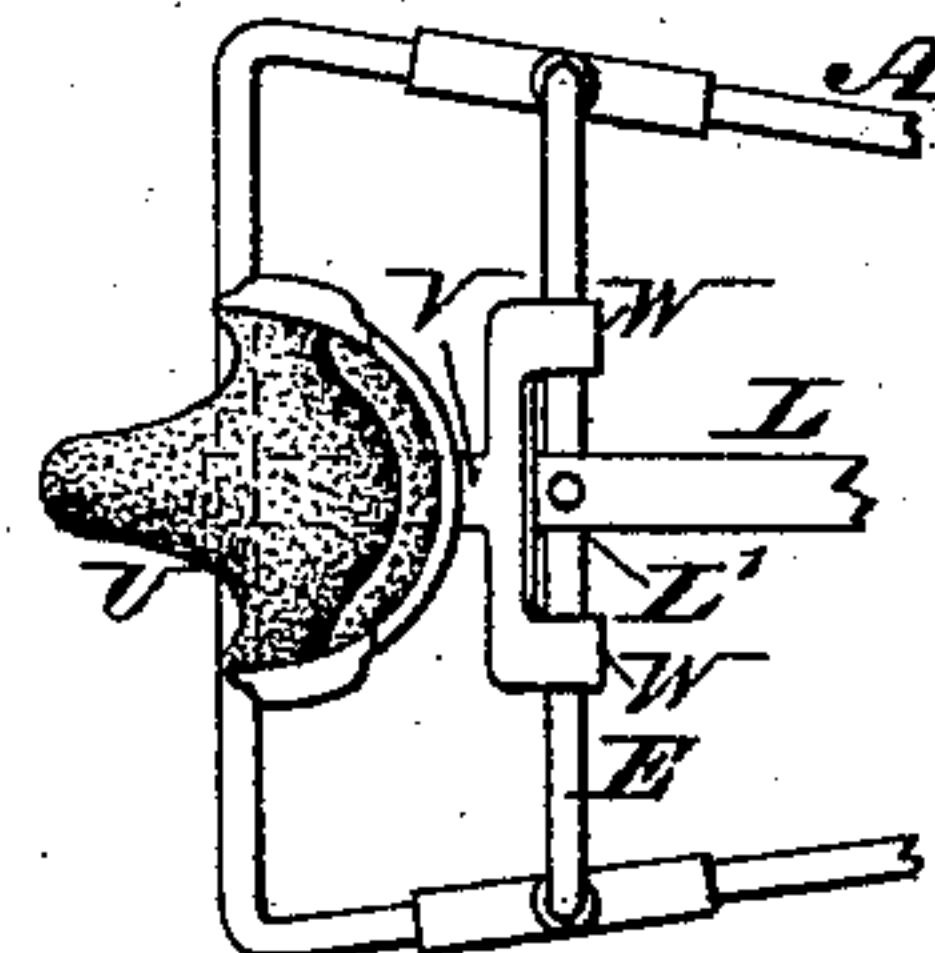


Fig. 8.

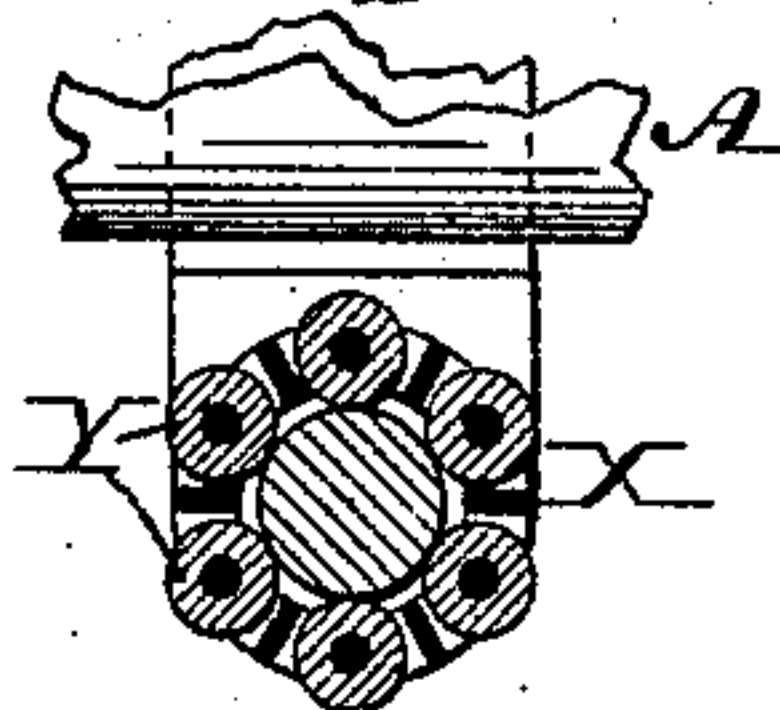


Fig. 4.

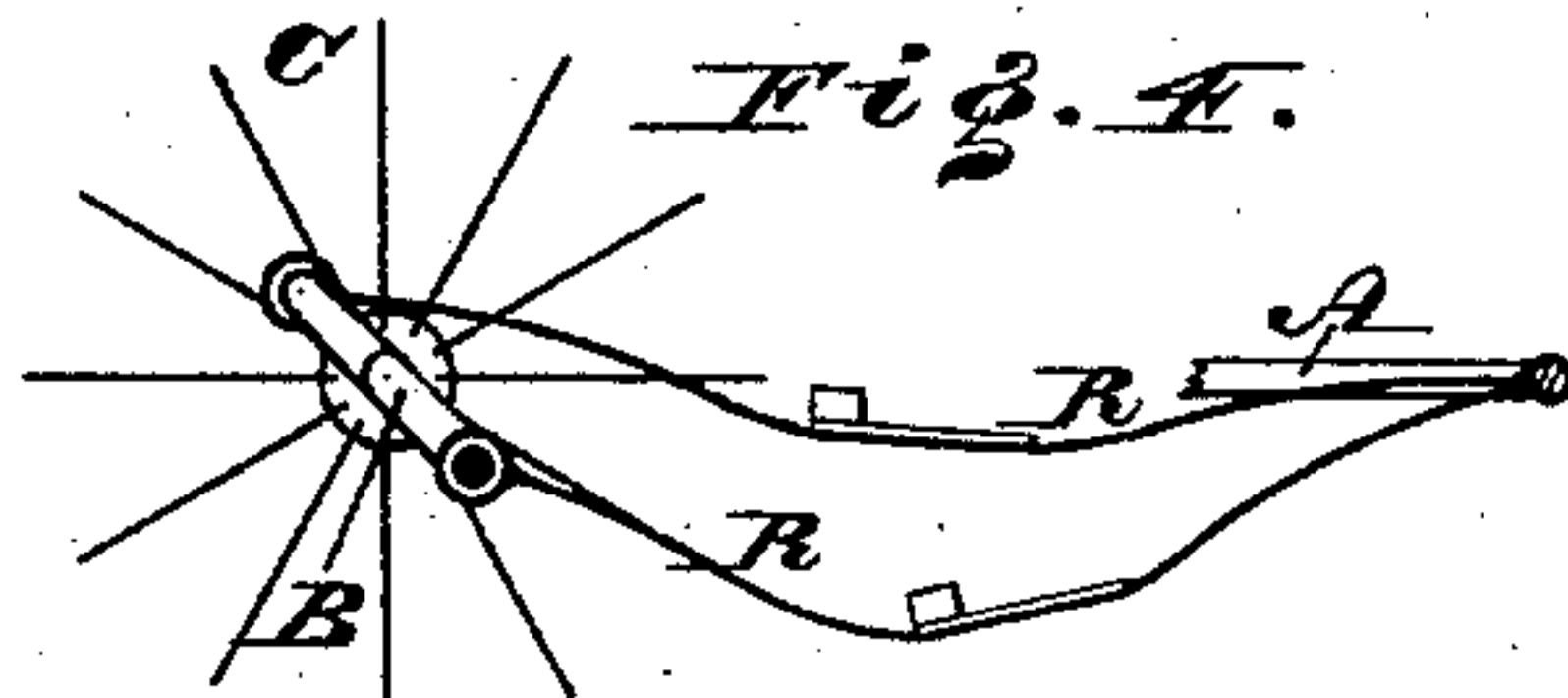


Fig. 9.



WITNESSES:

A. P. Grant,
L. Douville

BY

INVENTOR:

Geo. May Powell.
John A. Diersheim
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE MAY POWELL, OF NEWFIELD, NEW JERSEY.

VELOCIPED.

SPECIFICATION forming part of Letters Patent No. 365,488, dated June 28, 1887.

Application filed September 20, 1886. Serial No. 214,037. (No model.)

To all whom it may concern:

Be it known that I, GEORGE MAY POWELL, a citizen of the United States, formerly residing at Vineland, in the county of Cumberland, State of New Jersey, now residing at Newfield, in the county of Gloucester, State of New Jersey, have invented a new and useful Improvement in Velocipedes, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a side elevation of a velocipede embodying my invention. Fig. 2 represents an end view thereof. Fig. 3 represents a top or plan view thereof. Fig. 4 represents a side elevation of means for operating the crank shaft. Fig. 5 represents the mode of lengthening or shortening the crank-shaft for adjusting the width or gage of the velocipede. Figs. 6 and 7 represent, respectively, side and top views of a chair-seat and supporting portions of the frame. Fig. 8 represents a vertical section of a journal-bearing of one of the shafts of the velocipede. Fig. 9 represents a section of the tread of one of the wheels.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of several novel distinct features in the class of velocipedes or bicycles, as will be hereinafter fully set forth and definitely claimed.

Referring to the drawings, A represents the frame of a velocipede, generally known as a "tricycle," having a crank-shaft, B, mounted thereon, to which shaft the front wheels, C, are firmly attached. Rising from the frame A are arches D E F, which are located on the center and ends of said frame, the crown of the arch D forming a bearing for the shaft G, to which the steering-wheel H is secured, said shaft having connected with it the bifurcated tiller arm J, which is located convenient to the rider's seat K, which, as will be seen, is supported on a spring or spring-plate, L, whose ends have downwardly-projecting forked lugs L', adapted to embrace the crowns of the arches E F and be secured thereto. Secured to the sides of the front of the frame A are coiled springs M, to the ends of which, within the coil, is attached a seat, N, which, owing to its support on said springs M, is of an easy-riding nature.

P represents treadles, which have their rear

ends mounted on the frame A and their front ends located below the crank-shaft B, so as to be reached by the occupant of the seat N, said treadles being connected with the said shaft by means of arms Q. When the occupant of the seat N does not desire to operate or assist to operate the velocipede, the arms Q are removed from the crank-shaft and hung on the adjacent end of the frame A, whereby the treadles P form convenient foot-rests for said person.

The velocipede is operated by the occupant of the seat K by means of straps R, of leather, &c., having foot-pieces thereon. The ends of the said straps are attached to the crank-shaft B and end of the frame A, respectively, said straps acting as treadles, and are of such length that during rotation of the crank-shaft one of the straps tightens as the crank to which it is attached advances, and may then be depressed, while the other strap slackens as the crank to which it is attached returns, the straps thus alternately tightening and slackening, and produce convenient and reliable means for operating the crank-shaft, the same being easy to the feet and avoiding dead-points. In Fig. 4 the straps are shown as made of strips or plates of spring metal, which may be deflected downward by the feet and afterward straighten out, so as to conform to the motions of the crank-shaft, which they rotate by the action of the rider.

In order to adjust the gage or width of the velocipede, the crank-shaft is adapted to be lengthened or shortened. For this purpose said shaft is made in sections, which are connected by couplings S and secured by bolts T, said couplings and the ends of the sections being threaded or unthreaded, as desired, both forms being shown in Fig. 5.

In Figs. 6 and 7 I show a chair-seat, U, whose support V has bifurcated or hooked ends W, whereby they may embrace the standard E and end of the frame A, and thus reliably sustain the seat, the latter, however, being readily removable from the standard and frame when so required.

The shafts of the driving and steering wheels C H have anti-friction journal-bearings X, which are secured to the frame of the velocipede and consist of a series of rollers, Y, which

are mounted on a box or support in annular form, so as to encircle the shafts and cause them to rotate with reduced friction.

The tires or treads Z of the wheels are formed of tarred rope, which rests in grooves in the rim of the wheels and is properly secured thereto, the material of which the treads are formed rendering them durable, owing to their water and insect proof nature, and causing them to take firm hold of the ground or pavement without liability to slip, besides being inexpensive and running comparatively noiseless.

The arches D E F and frame A may be made of tubing or rods, as desired, and form a light and strong structure for the support of the parts for which they are intended.

While the straps are described as made of leather, spring metal, &c., I prefer to employ the spring metal, so that the varying lengths of the treadle from the rotation of the crank are self-accommodating, dead-points are avoided, and the spring of the treadle by its up motion in recovering from the downward thrust, drawing or pulling the crank-shaft, produces a pushing action on the half of the circle described by the crank as it rises, whereby there is an economy of power otherwise lost. Again, the same result is produced in reverse order if the metallic treadle is used to push instead of pull in the downward stroke of the same.

The frame may have connected therewith boxes or receptacles, as shown in dotted lines, for carrying luggage or lunch, &c.

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

1. In a velocipede, a frame having arches rising therefrom and having their ends connected to opposite sides of the frame, and a spring supported on said arches and carrying a seat, all combined substantially as described.

2. In a velocipede, the frame A, having arches E and F, supporting the spring-plate L, with seat K thereon, and the arch D, furnishing a bearing for shaft G, all combined substantially as described.

3. In a velocipede, the frame A, having arches D E F thereon, the ends of said arches resting on said frame, a spring-plate having means for securing the same to the arches E and F, and the shaft G, having a bearing in said arch D and attached to the wheel H, all combined substantially as described.

4. In a velocipede, the frame A, having coil-springs M, attached to opposite sides thereof, and the seat N, having its ends resting on the ends of the springs within the coils, all substantially as described.

5. In a velocipede, metallic treadle-straps secured at one end to the crank-shaft and at the other to the frame, and of such length that when the crank to which the treadle-strap is secured is advanced the said strap is right-lined and taut, all substantially as described.

GEO. MAY POWELL.

Witnesses:

JOHN A. WIEDERSHEIM,
A. P. GRANT.