(No Model.)

2 Sheets—Sheet 1.

L. E. H. SPREE.

ONE WHEELED VELOCIPEDE.

No. 344,059. Patented June 22, 1886.

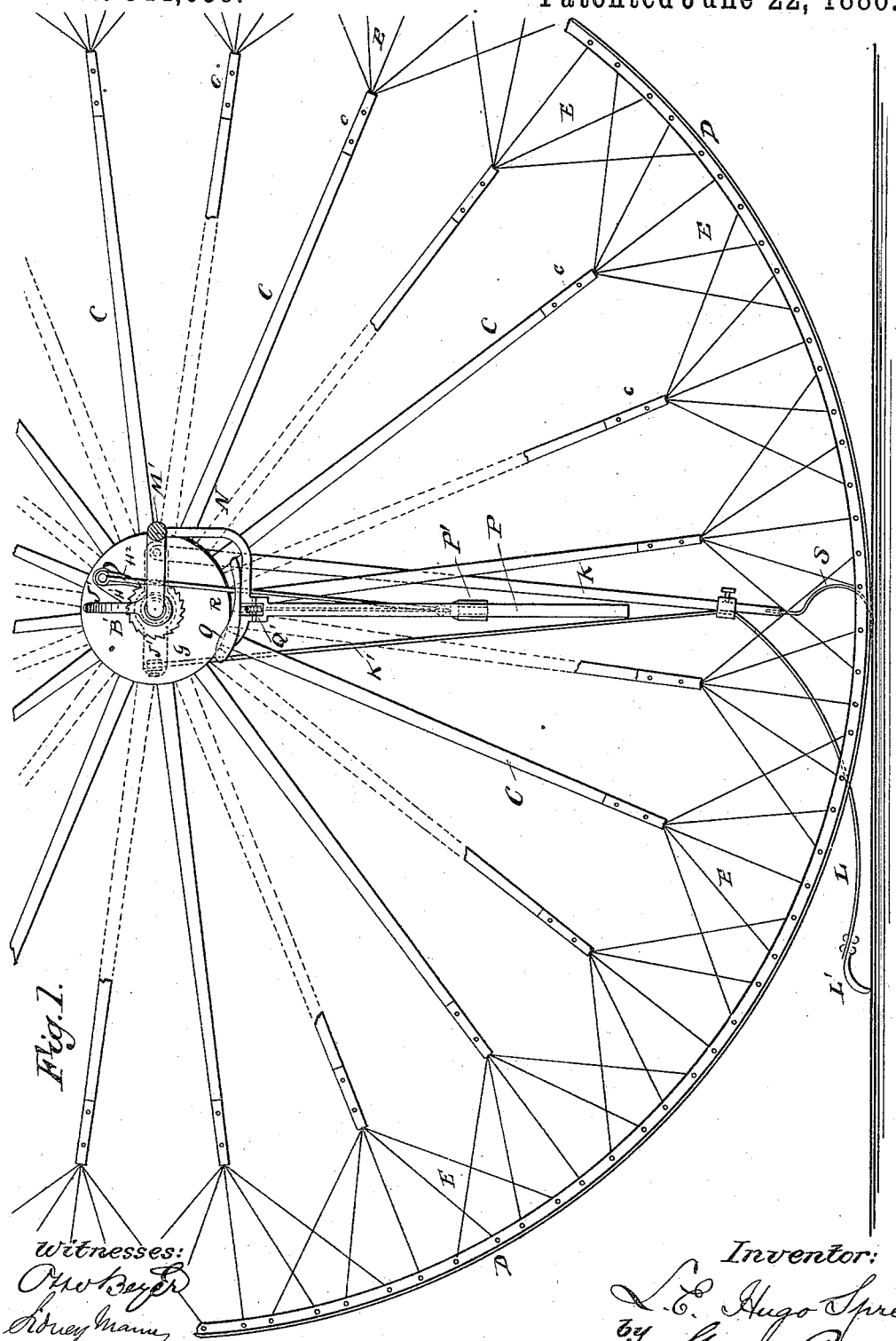


Fig. 1.

Witnesses:
Otto Bayer
Robert Mann

Inventor:
L. E. Hugo Spree
by Goepel & Raegener
his Attorneys

(No Model.) 2 Sheets—Sheet 2.

L. E. H. SPREE.

ONE WHEELED VELOCIPEDE.

No. 344,059. Patented June 22, 1886.

Fig. 5.

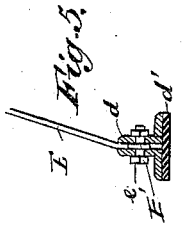


Fig. 4.

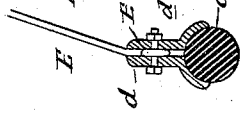


Fig. 6.

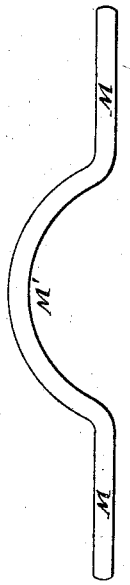


Fig. 3.

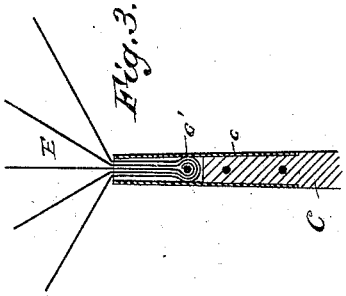
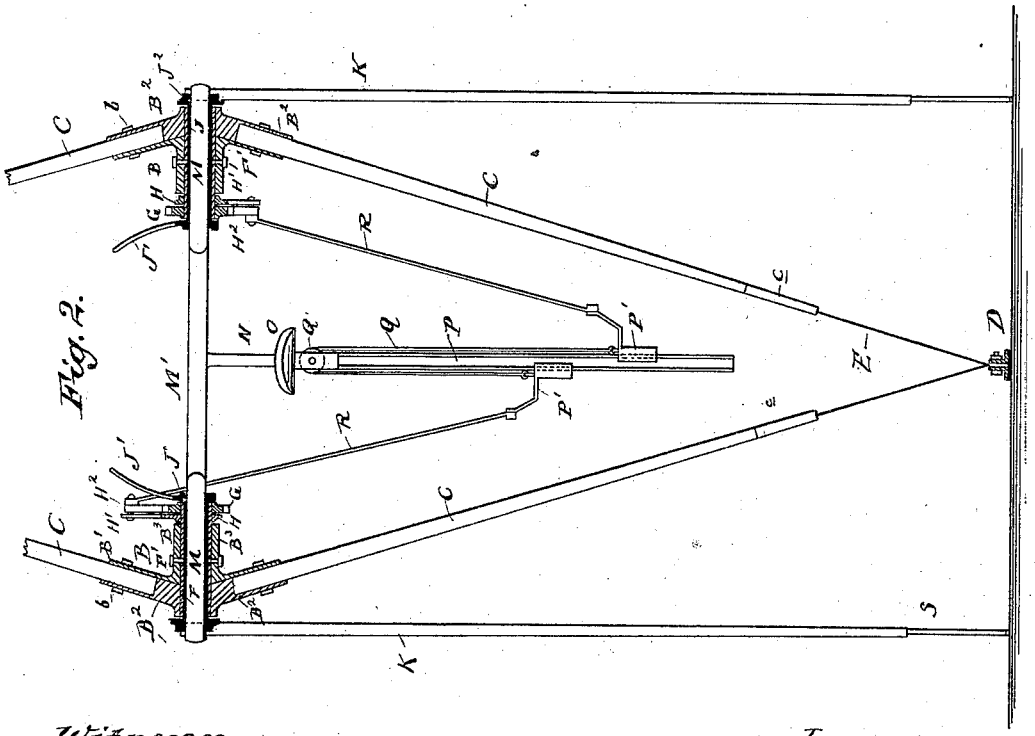


Fig. 2.



Witnesses:
Arno Beyer
Sidney Imann

Inventor:
L. E. Hugo Spree
by Goepel & Raegener
his Attorneys.

UNITED STATES PATENT OFFICE.

L. E. HUGO SPREE, OF NEW YORK, N. Y.

ONE-WHEELED VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 344,059, dated June 22, 1886.

Application filed February 10, 1886. Serial No. 191,426. (No model.)

To all whom it may concern:

Be it known that I, L. E. HUGO SPREE, of the city, county, and State of New York, have invented certain new and useful Improvements in One-Wheeled Velocipedes, of which the following is a specification.

This invention relates to certain new and useful improvements in that class of velocipedes provided with a single wheel.

The object of my invention is to simplify the construction of the velocipede, to make it more stable and durable, and to provide devices for steering it and for checking the speed.

The invention consists in the combination, with a single wheel of such size that a person can sit in the same, of a seat hung on the axle and within the wheel, a treadle mechanism for revolving the wheel, and of bars mounted loosely on the axle outside of the wheel and extending down to the ground, which bars can be manipulated by handles within the wheel, all as will be fully described and set forth hereinafter, and then pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of my improved one-wheel velocipede, parts being broken out. Fig. 2 is a central cross-sectional view of the same, parts being broken out. Fig. 3 is a detail sectional view of the outer end of a spoke. Fig. 4 is a detail sectional view of the rim of the wheel. Fig. 5 is a detail cross-sectional view of a modified construction of the rim. Fig. 6 is a top view of the axle.

Similar letters of reference indicate corresponding parts.

The wheel A is constructed with the two hubs B on the same axis, the spokes C held in the hubs, and the rim D, united by rods or wires E with the ends of the spokes, the hubs being such distance apart that a person can conveniently sit between the hubs, and the spokes being inclined toward each other and toward the rim. The inner ends of the spokes C are placed against the circular flanges B′ of the hubs B, and against the outer sides of the spokes the plates B^2 are placed to complete the hubs, bolts *b* being passed through the flanges B′, the plates B^2, and the inner ends of the spokes between said plates and flanges, for the purpose of holding the spokes firmly on the hubs. The necks B^3 of the hubs extend inward and toward each other, and in each neck a sleeve, F, is held and fastened to the same by screws F′, which sleeves also pass through the plates B^2. The inner ends of the sleeves F project beyond the inner ends of the necks B^3, and on said inner end of each sleeve F is rigidly mounted a ratchet-wheel, G, and between each ratchet-wheel G and the end of the adjacent neck B^3 a ring, H, is loosely mounted on the sleeve F, which ring is provided with an arm, H′, to which is pivoted a dog or pawl, H^2, resting on the rim of the ratchet-wheel G, a suitable spring being provided for keeping the pawl engaged with the rim of the ratchet-wheel.

Within each sleeve F a sleeve, J, is contained, the ends of which project beyond the ends of the sleeve F.

On the inner end of each sleeve J an upwardly-projecting handle, J′, is formed, and on the outer end a cross-piece, J^2, is secured, which is shown in dotted lines in Fig. 1. To one of each of said cross-pieces a downwardly-projecting bar, K, is secured, and is braced by the rod K′, secured to the opposite end of the cross-piece and held to the rod K′ near its lower end by means of a clamping-device or collar, as shown in Fig. 1, or by means of any other suitable fastening device. The end of the rod K′ is projected toward the rear from the lower end of a bar, K, to form the spring brake-arm L, which is provided at its rear end with a downwardly-projecting claw or shoe, L′, preferably made of steel. If desired, the spring brake-arm L can be made of a separate piece and need not necessarily be a continuation of the rod K′.

Through the sleeves J the straight end parts of the axle M are passed, said axle being provided between the end parts with a semicircular or like part, M′, extending toward the front, and from the center of said curved part M′ the curved arm N extends downward and toward the rear, so that its rear lower end will be directly below the center of the transverse axis of the wheel. The seat O is supported on said arm N, so that the center of gravity of the load—that is, of the person occupying the seat—will be as near as possible below the middle of the transverse axis of the wheel.

From the arm N the bar P projects downward, on which two foot-rests, P′, are mounted to slide vertically, said foot-rests being connected by a strap or band, Q, passed over

a pulley, Q′, pivoted in a slot in the upper end of the bar P, directly below the seat O. Each foot-rest, P′, is connected by a rod, R, with an arm, H′, of one of the loose disks N on the sleeve F. The rim B of the wheel is formed of two angle-irons, *d*, on the laterally, projecting flanges of which the tire, *d′*, of rubber, leather, or metal, is fastened. If desired, the laterally-projecting flanges of the angle-irons *d* may be curved, and a rubber tire, *d²*—such as are usually used on bicycle-wheels—fastened between said curved flanges. The rods or wires E have eyes E′ formed on their ends, which are inserted between the flanges of the angle-irons *d*, and bolts *e* are then passed through the flanges of the angle-irons and through the eyes on the ends of the wires.

On the end of each spoke C a sleeve, *c*, is fastened to project beyond the end of the spoke and form a socket, in which a pin or bolt, *c′*, is held, around which the several wires, E, are passed, the said wires diverging from the end of the socket. The wires of the several spokes cross each other in the manner shown, thereby stiffening the wheel at the rim.

The rider is to enter the wheel by passing in between two spokes, and for that reason the spokes must be a considerable distance from each other. If said spokes were extended to the rim of the wheel the points at which the rim would be supported and braced would be too far from each other, and for the purpose of supporting and stiffening the rim at a greater number of points I provide the wires E in manner shown, as it was impossible to introduce a greater number of spokes on account of the difficulty of entering the wheel.

The operation is as follows: The rider enters the wheel and occupies the seat, the curved part M′ of the shaft and the curved arm N on the same being in front of the rider. The rider then places his foot on the foot-rests P′ on the bar P, which bar hangs down vertically and alternately forces the foot-rests downward, whereby the arms H′ of the loose rings H are alternately swung downward, causing their dogs or pawls to rotate the ratchet-wheels G, the sleeves on which the ratchet-wheels are mounted, and the wheel. When one foot-rest, P, is forced down, the other is raised, as the foot-rests are connected by a strap or cord. The rider grasps the two handles J and moves them slightly toward the front, so as to swing the lower ends of the bars K to the rear and thus keep the spring brake-arms S and L clear of the ground. In case he wishes to steer the velocipede he swings the handle J′ on the side to which he wishes to direct the wheel slightly toward the rear, so as to bring the corresponding brake-shoe S in contact with the ground, whereby the desired direction is given to the wheel. In case he wishes to check the speed of the wheel, he can bring both brake arms or shoes S in contact with the ground, and in case he wishes to stop the wheel altogether the arms J′ are swung still farther toward the rear, so as to press the shoes or claws L′ on the ground. The bars K with their brake-arms S and L form braces, stays, or supports to prevent tilting of the wheel when the same is not in motion and during the time that the rider enters it.

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

1. A one-wheeled velocipede provided with bars projecting downward from the hubs at the sides of the wheels, and brake devices on the lower ends of said bars, substantially as shown and described.

2. A one-wheeled velocipede provided with bars projecting downward from the hub at each side of the wheel, a brake-arm on the lower end of each bar, and a brake-shoe on the end of the brake-arm, substantially as shown and described.

3. A one-wheeled velocipede provided with sleeves in the hubs, through which sleeves the ends of the axle are passed, cross-pieces on the outer ends of said sleeves, handles on the inner ends of the sleeves, and bars projecting downward from the cross-pieces on the outer ends of the sleeves, substantially as shown and described.

4. In a one-wheeled velocipede, the combination, with a wheel having a hub in each side, of a shaft having its ends in the hubs and having a curved part between the ends, a seat-supporting arm projecting downward from the curved part, a downwardly-projecting bar below the seat, sliding foot-rests on said bar, and ratchet-and-pawl mechanism for revolving the wheel, the pawl mechanisms being connected with the foot-rests, substantially as shown and described.

5. In a one-wheeled velocipede, the combination, with a wheel having a hub in each side, of a shaft having its ends mounted loosely in the hubs, a sleeve fixed in each hub, a ratchet-wheel on each sleeve, a rocking piece carrying a pawl adjacent to each ratchet-wheel, a bar extending downward from the shaft, sliding foot-rests on said bar, rods connecting the foot-rest with the rocking pawl devices, and a strap or cord connecting the sliding foot-rests, substantially as shown and described.

6. A wheel for one-wheeled velocipedes, constructed of two hubs, which are on the same axis, spokes secured to the hubs and inclined toward each other, a socket on the end of each spoke, a pin in each socket, wires passed around the pins and converging from the outer ends of said sockets, and a rim fastened to the outer ends of said wires, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

L. E. HUGO SPREE.

Witnesses:
OSCAR F. GUNZ,
SIDNEY MANN.