

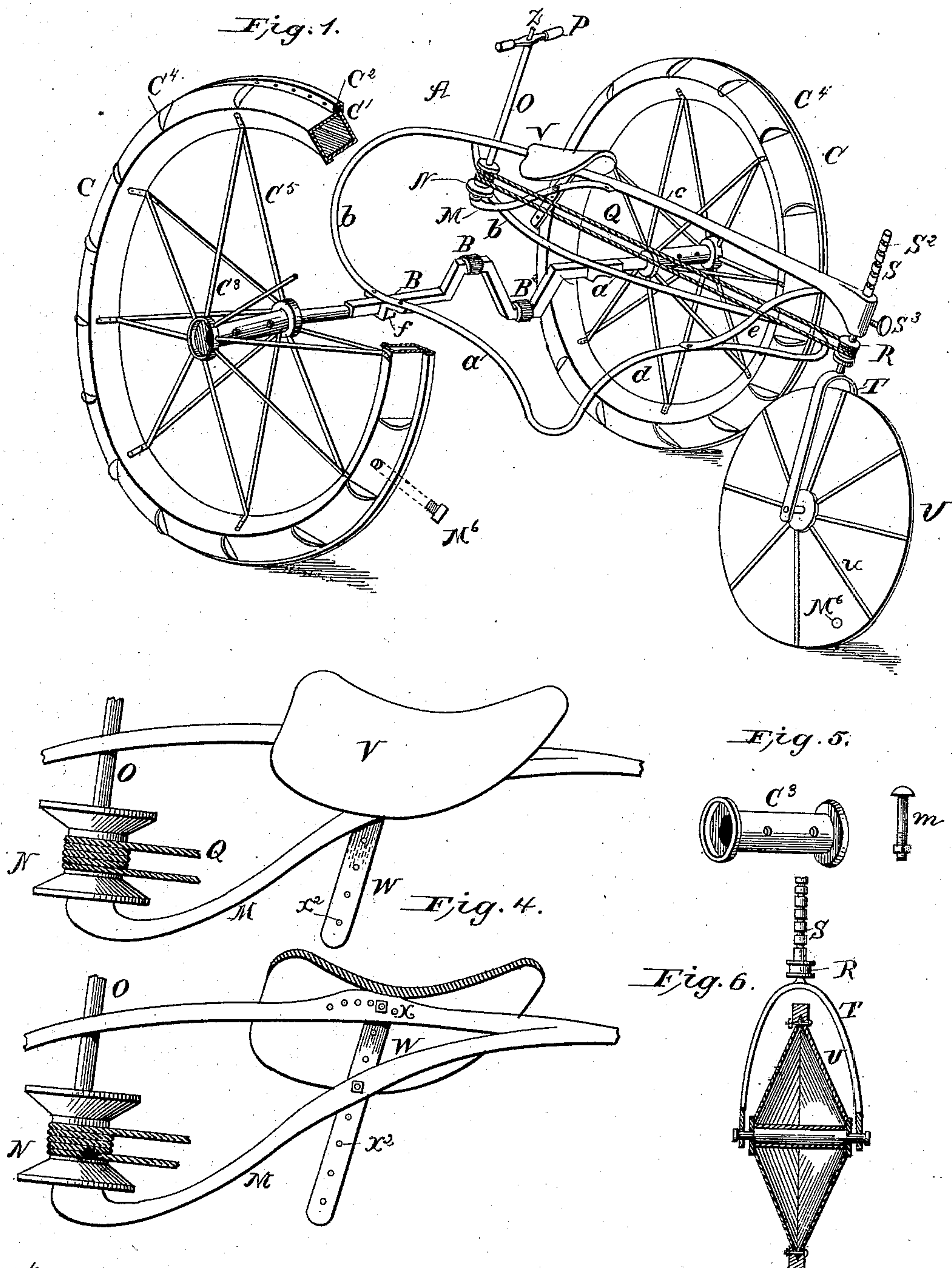
(No Model.)

2 Sheets—Sheet 1.

F. A. COOMANS.
MARINE VELOCIPEDE.

No. 271,799.

Patented Feb. 6, 1883.



Witnesses:
A. M. Long.
M. A. Alesch.

Inventor.
Felix A. Coomans
By A. M. Tanner
Atty.

(No Model.)

2 Sheets—Sheet 2.

F. A. COOMANS.
MARINE VELOCIPEDE.

No. 271,799.

Patented Feb. 6, 1883.

Fig. 2.

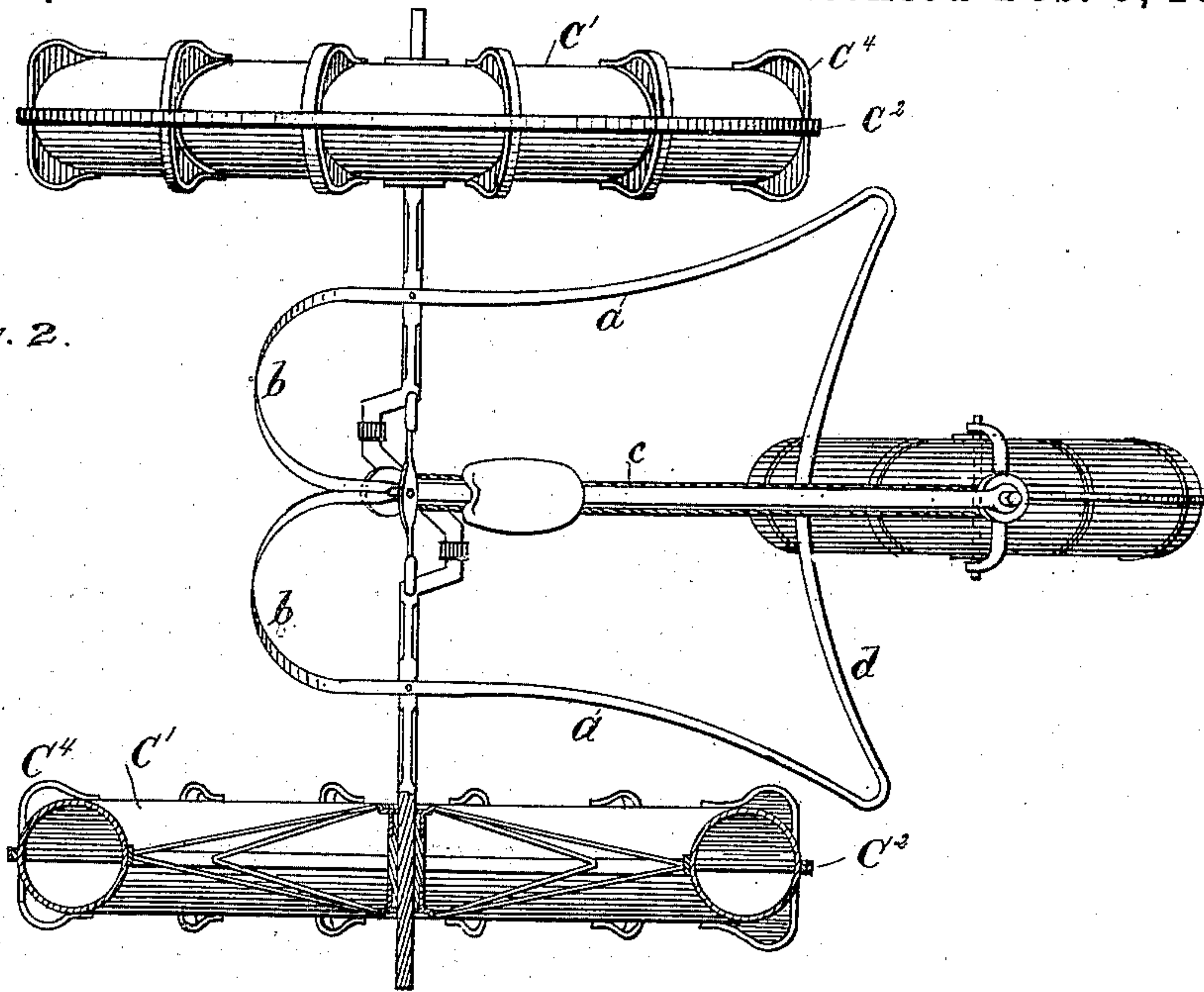
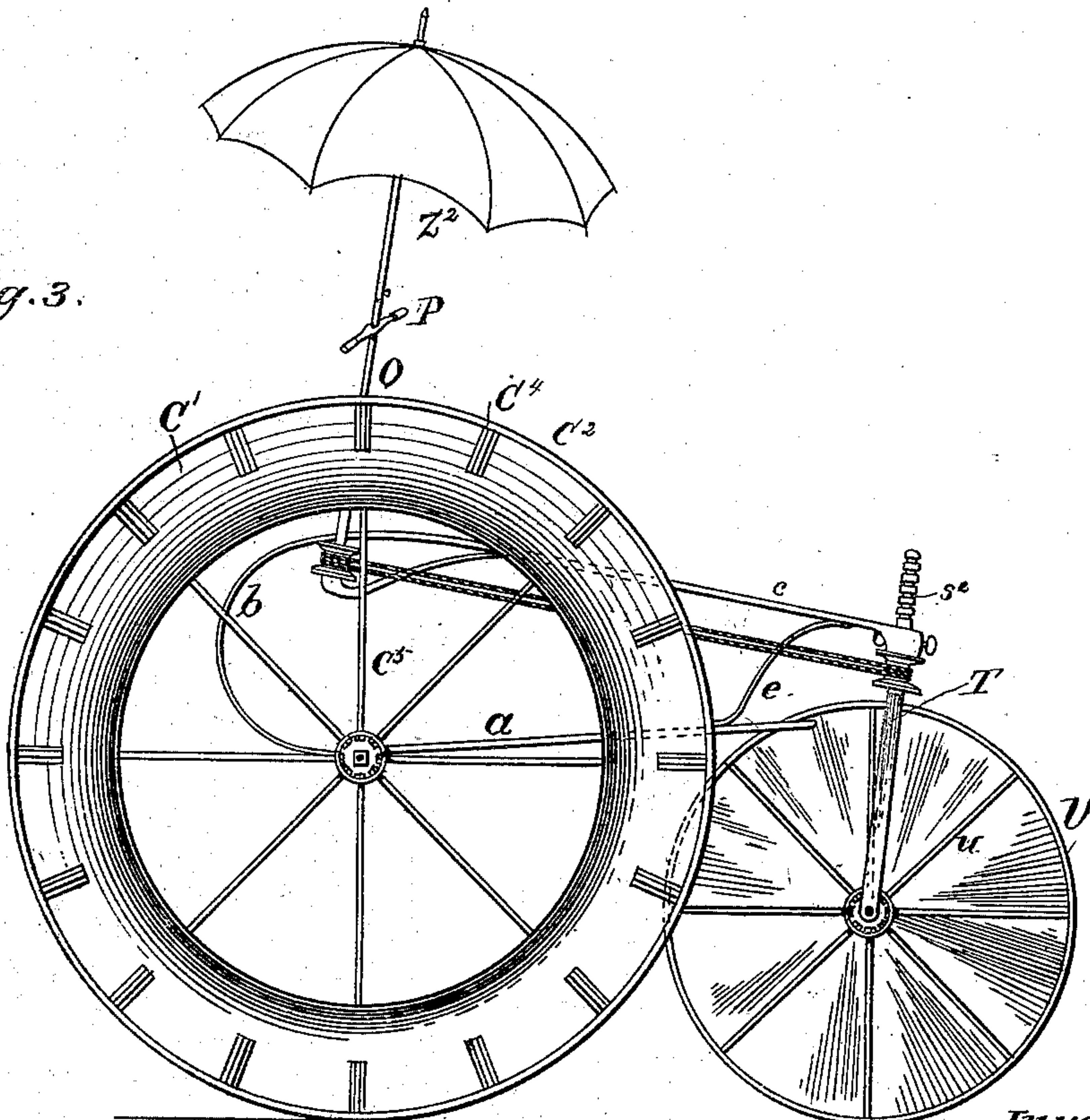


Fig. 3.



Witnesses:

A. M. Long.
M. H. Hallen

Inventor.

Felix A. Coomans
by A. M. Tanner Atty.

UNITED STATES PATENT OFFICE.

FÉLIX A. COOMANS, OF PHILADELPHIA, PENNSYLVANIA.

MARINE VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 271,799, dated February 6, 1883.

Application filed August 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, FÉLIX A. COOMANS, a citizen of Belgium, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Marine and Land Velocipedes; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The present invention relates to that class of velocipedes which are adapted to travel upon land and water, such vehicles being generally provided with buoyant wheels and means for propelling and steering the same by the rider.

The object of the invention is to overcome certain defects of land and water velocipedes heretofore devised, these defects being generally the excessive weight and cumbersome construction of prior devices, which render an attainment of a maximum degree of speed an impossibility, as the weight of such devices necessitates the employment of large wheels or drums and steering-floats in order to properly support the velocipede in the water. The degree of immersion of velocipedes heretofore devised being considerable, it follows that only a minimum amount of speed can be attained on water, and obviously the propulsion on land is also slow. My invention is designed to provide a velocipede which travels equally well on land and water, and this result I attain by combining simplicity and lightness of construction with increased facilities for applying the propulsive power, as will hereinafter be more fully described, and then set forth in the claims.

In the drawings, Figure 1 is a perspective view of my land and water velocipede, showing one of the driving-wheels partly removed from its axle, on which it is free to turn. Fig. 2 is a plan or top view of a velocipede having a square axle revolving with the wheels. Fig. 3 is a side elevation, showing the position of the rider on the "machine." Fig. 4 gives detail views of the adjustable driver's seat. Fig. 5 is a detail view of the loose cylindrical hub

of the front driving-wheels. Fig. 6 is a vertical sectional view of the steering-wheel.

The letter A designates the reach or frame 55 of my velocipede, which is composed of two lateral arms or bars, *a*, upwardly-curved front arms, *b*, converging to an elevated perch-bar, *c*, and a rear connecting-bar, *d*, extending between the lateral arms *a*. An arm, *e*, rising 60 from the center of the rear bar, *d*, and bolted or otherwise secured thereto, forms part of the perch-bar *c*, or is an integral member thereof.

The front axle, B, carrying two driving or transporting wheels, C, is journaled in boxes 65 or bearings *f*, secured to the side bars, *a*, of the frame, so as to permit the axle and wheels to revolve in said bearings. The axle B is provided with two cranks, B' B², having suitable treadles or foot-pieces for applying power 70 thereto. The wheels C, mounted on the cranked or driving axle, are of a construction combining strength, lightness, and great buoyant properties. As shown in Fig. 1, the rim or body C' of the wheel is made with a double-inclined 75 periphery, the shape being that of two conic frusta with the bases placed together. This construction presents a keel-shaped periphery for facilitating the passage of the wheel through the water. A felly or rim, C², having a V-shaped groove in its under side and a flat tread-surface, receives the adjoining edges 80 of the two sections comprising the shell or hollow body C'. Rivets or bolts passing transversely through said felly and body-sections 85 serve to unite these parts. The lower edges of the sections comprising the hollow body are joined by means of a slip or lock joint, or a second rim, similar to the felly C², may be resorted to for a like purpose. Spokes C⁵, secured to the inner periphery of the hollow rim or body, as shown in Fig. 1, or by extending the same through said body and securing them to the felly or otherwise, are united with a hub or sleeve, C³, fitted on the driving-axle. 95 As shown in Figs. 2 and 3, the latter has square or angular extremities, and the wheels, or the hubs thereof, are free to slide on said axle when not locked thereto. The object of this provision is to permit the space between 100 the wheels to be varied in order to set them close together when the velocipede is used on land, or farther apart when used on water.

Suitable set-screws or other devices may be

employed for holding the wheels stationary on the axle.

In the construction shown in Figs. 2 and 3 the hollow rim or body of the rim is made cylindrical in cross-section, and has a felly or tread secured to its outer surface. The construction shown in Fig. 1 involves the use of cylindrical or round journals or spindles which receive wheel-hubs having corresponding bores. These hubs, in addition to being adjustable on said spindles for the object heretofore stated, can be loosened so as to rotate on the spindles. Fig. 5 represents a hub or sleeve having openings for the passage of bolts m , which extend through the axle-spindles and serve to lock the wheels thereto when the machine is used in water. On land the bolts are removed and the hub caused to revolve between two wedges or linchpins driven through the axle.

The object of permitting the wheel to turn on its axle is to facilitate steering or turning curves.

It will be obvious that only one wheel is loosened at a time, either the right or left one.

Paddles or wings C^4 , secured to the outer periphery of the hollow body or rim of the wheels C , act upon the water, in the manner of ordinary paddles. These paddles C^4 are permanently fixed to the rim, and are of such a size and shape as not to interfere with the proper running of the machine on land.

A curved arm, M , secured to the under side of the perch-bar, at or near the driving-axle, has a bearing or journal for a spool, N , which is connected with an upright shaft, O , provided with a handle, P , for turning said shaft and spool. An endless cord or chain, Q , passing around said spool, extends in a rearward direction, and passes around a second spool, R , on the spindle S of a forked hanger, T . Said spindle is socketed in the rear end of the perch-bar, and has a number of circumferential grooves or channels, S^2 , which are designed to receive a set screw or screws, S^3 , passing through the spindle-socket of the reach. By loosening said screw the spindle can be raised and lowered for setting the wheel U , journaled in the hanger T , at various heights, according to the weight of the rider or the degree of immersion of the machine in water. The wheel U , whether used on land or water, acts as a "steering-wheel," and may be described as follows, viz: It is composed of two dished rims having their inner edges secured to a hub and their outer edges united and made airtight by a rim or felly. Spokes u , secured to the hub, extend along the outer faces of the rims for imparting to the same the requisite degree of rigidity. Journals or gudgeons on the wheel, or the hub thereof, turn in suitable bearings in the forked hanger.

The rider's seat V is located in rear of the

steering-shaft, and is provided with a shank or arm, W , which passes through the perch and arm M , and is secured to both by set-screws or bolts. The perch has a row of holes, x , arranged in a curved line, and the shank W has a vertical row of holes, x^2 . By loosening the retaining-bolts of the seat and shifting the same into the proper holes in the perch and seat-shank the seat can be adjusted longitudinally or set farther to the front or to the rear for accommodating different-sized riders.

The steering is performed by turning the shaft O , and obviously the position of the wheel U determines the direction in which the machine is to run.

A square shank, Z , rising from the steering-handle, is designed to receive the socketed handle or holder of an umbrella, Z^2 , as is shown in the drawings.

In order to increase the buoyancy of the wheels, I provide the same with screw-openings and caps M^6 , which admit of the introduction of gas into the interior of the wheels.

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

1. In a marine and land velocipede, the combination of the frame, consisting of the lateral bars a' , front converging arms, b , rearwardly-extending perch c , rear transverse bar, d , arm e , connected with the latter and the perch, and arm M , extending from the bottom of said perch, with the cranked driving-axle, buoyant wheels fitted thereon, rear steering-wheel, front steering-shaft, and the rider's seat, substantially as and for the purpose set forth.

2. In a marine and land velocipede, the combination of the cranked driving-axle, the shiftable or laterally-adjustable buoyant wheels fitted on said axle, and means, substantially as shown, for locking the wheels to the axle, with the supporting-frame, the steering-wheel and its operating devices, and the rider's seat, substantially as and for the purpose set forth.

3. In a water and land velocipede, the combination of the buoyant vertically-adjustable steering-wheel, and means, substantially as described, for turning and adjusting the same, with the front buoyant wheels, the cranked driving-axle, and supporting-frame and perch, as and for the purpose set forth.

4. The forked hanger and circumferentially-channeled stem or spindle, in combination with the buoyant steering-wheel, perch having a socket and retaining-screw, and the front supporting and propelling wheels and steering-gear, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FÉLIX A. COOMANS.

Witnesses:

MARTIN TANNER,
AUG. M. TANNER.