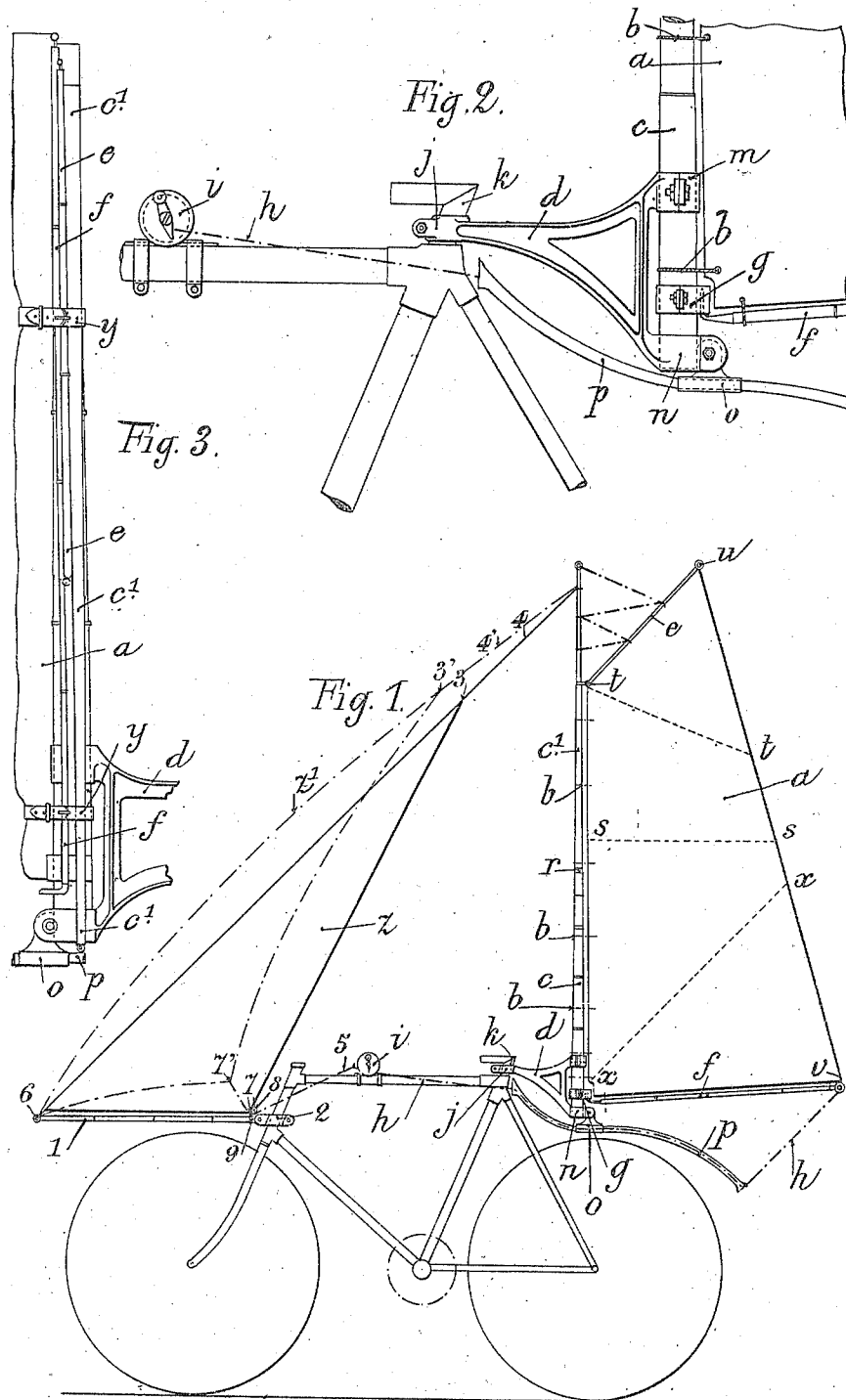


J. COUDER.
 APPARATUS FOR UTILIZING THE FORCE OF THE WIND FOR PROPELLING CYCLES.
 APPLICATION FILED FEB. 20, 1909.

947,731.

Patented Jan. 25, 1910.



WITNESSES

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APPARATUS FOR UTILIZING THE FORCE OF THE WIND FOR PROPELLING CYCLES.

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Specification of Letters Patent. Patented Jan. 25, 1910.

Application filed February 20, 1909. Serial No. 479,188.

To all whom it may concern:

Be it known that I, JEAN COUDER, a citizen of the French Republic, and residing at 28 Rue St. Rome, Toulouse, France, have invented certain new and useful Improvements in Apparatus for Utilizing the Force of the Wind for Propelling Cycles, of which the following is a specification.

This invention has for object to provide an improved apparatus for utilizing the force of the wind for propelling bicycles, tricycles and the like vehicles.

One construction of the improved apparatus is shown by way of example in the accompanying drawings in which:—

Figure 1 is a side elevation of the improved apparatus adapted to a bicycle. Fig. 2 is a partial elevation showing a detail, Fig. 3 is a partial elevation showing the folding mast and sails in the folded position.

The invention consists substantially in the arrangement of a sail *a*, one of the longitudinal edges of which is attached by means of rings or other suitable devices *b*, to a vertical mast *c*, *c'* which is preferably removable. The lower part *c* of the mast is fixed in a support *d* that is attached to a suitable point of the frame of the bicycle. The transverse edges of the sail are connected respectively to two spars *e*, *f*. The lower spar *f*, is capable of pivoting at its forward end in a support *g* provided on the mast or on the mast holder. The other end of the lower spar or another point of the same, is connected by a steering wire *h* to a small windlass *i*, mounted on the frame or any other convenient part of the cycle within reach of the hand of the rider.

In the drawings the mast holder *d* is shown formed by a bracket attached by means of a strap *j* to the saddle pin *k*. The lower part of the mast is held therein by two clamping collars *m*, *n*. The lower collar *n* is provided with a sleeve *o*, in which is brazed a tube *p* that is suitably bent and arranged in the plane of the frame of the bicycle. This tube forms a guide for the steering wire *h* which is stretched to its utmost extent when the spar *f* is situated in the plane of the bicycle. By unrolling the wire *h* by means of the windlass *i*, the rider can impart to the sail any desired inclination relatively to the plane of the machine. When the rider wishes to dispense with the sail, he can fold it. For this purpose he removes the part *c'* of the mast from the part *c*, in which it is socketed at *r*, and he folds the part *c'* on to

the part *c*, folding the sail along the line *s—s* (Fig. 1). He then arranges the spar *e* in such a manner as to place it vertically against the mast *c*. The part *t—t—u* of the sail is then raised and folded a second time along the line *t—t*. Then the spar *f* is raised into an upright position so that its end *v* comes against the upper end of the part *c* of the mast, the sail being thus folded a third time along the line *x—x*. Finally the surface *s—s—x—x* of the sail is rolled up and placed vertically against the mast. The folded sail and the two parts *c*, *c'*, of the mast are then fastened together by means of leather straps *y—y* (Fig. 3).

As shown in Fig. 1, a triangular sail *z* may be added, one of the lower ends 6 of which is fixed to the front end of a spar 1, attached at its other end to a collar 2 fixed on the steering tube of the cycle. The upper end 3 of the sail opposite the lower edge of the latter is attached by means of a stretched wire 4 to the upper part *c'* of the mast. The sail *z* may have any desired inclination given to it relatively to the plane of the cycle by means of a wire 5, attached at one end to the lower end 7 of the sail, and connected at its other end to the windlass *i* or to a parallel windlass, or to a hook attached to the top tube of the frame of the cycle. This wire is guided in a ring 8 or any other similar device fixed to the spar 1.

The improved apparatus can be readily mounted in position on any existing cycle and the like, and when placed in position it can be rapidly folded for the purpose of being placed out of operation, and can be readily unfolded for re-use.

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

1. An apparatus for utilizing the force of the wind for propelling a cycle, comprising a mast holder having one end secured to the saddle pin of the cycle and its other end located above the rear wheel, a mast mounted in said last mentioned end, upper and lower spars movably attached to said mast, a sail connected to said mast and spars, and means for manipulating the sail from a point on the frame adjacent the rider.

2. In apparatus for utilizing the force of the wind for propelling a cycle, the combination with the frame of the cycle of a collar clamping the saddle pin of the cycle, a mast holder fixed to said collar and having

its free end located above the rear wheel, a mast mounted in said free end of the holder, upper and lower spars movably attached to said mast, a sail connected to said mast and spars, a tube carried by said mast holder and extending over the rear wheel, a windlass mounted on said frame, and a tensile device attached at one end to said windlass passing through said tube, and attached at its other end to said lower spar, as set forth.

3. In apparatus for utilizing the force of the wind for propelling a cycle, the combination with the frame of the cycle, of a mast mounted on said frame, upper and lower spars movably attached to said mast, a main sail carried by said mast and spars, a bow-

sprit extending forwardly from the steering tube of said frame, a foresail attached at its lower edge to said bowsprit, and at its upper end to said mast, a guiding device on said bowsprit, a windlass mounted on said frame, and a tensile device extending through said guiding device from said bowsprit to said windlass for maneuvering said foresail, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JEAN COUDER.

Witnesses:

CNT. BELLOCQ,
I. DULAN.