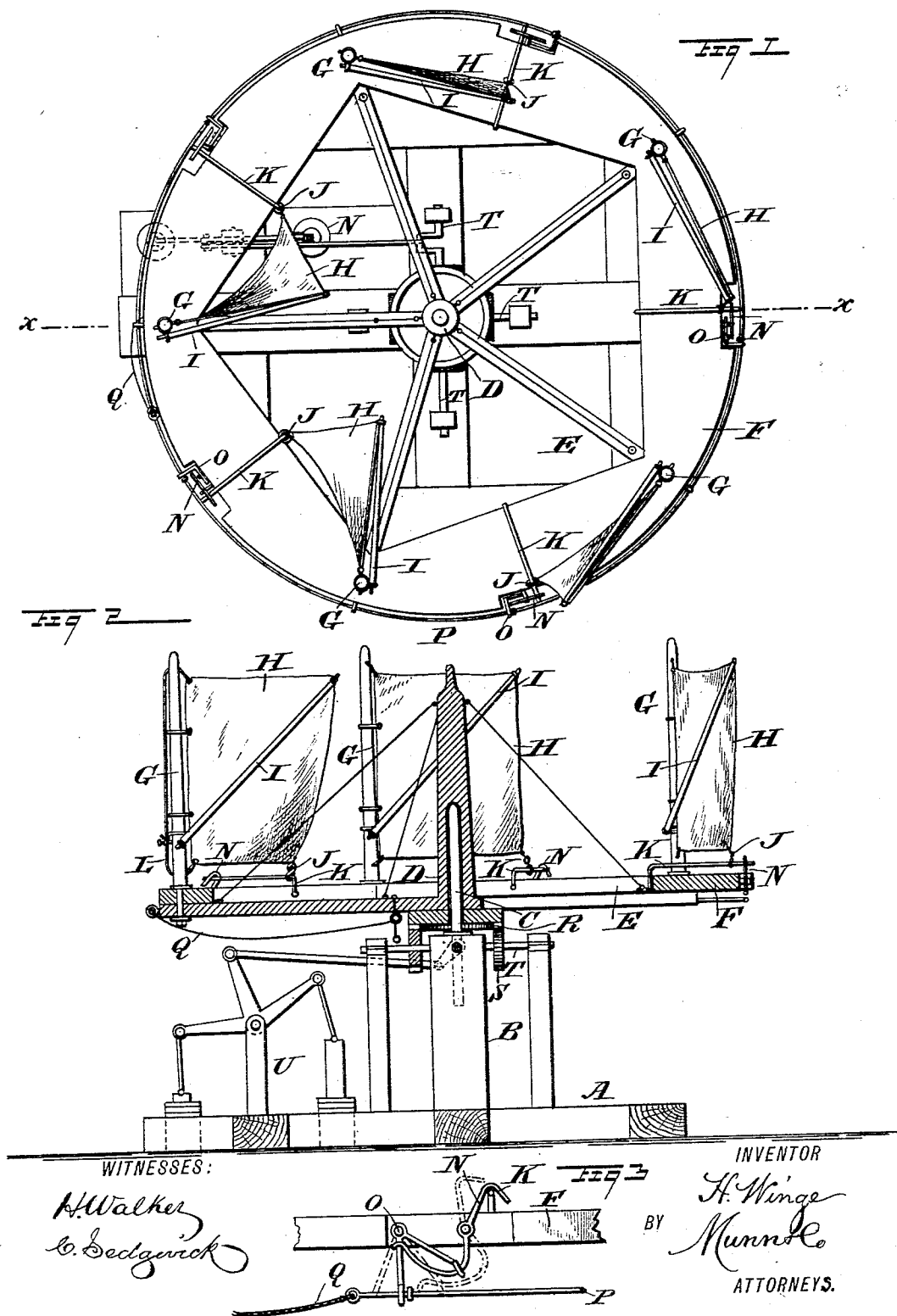


(No Model.)

H. WINGE.
WIND MOTOR.

No. 476,716.

Patented June 7, 1892.



UNITED STATES PATENT OFFICE.

HAGBARTH WINGE, OF MILES CITY, MONTANA.

WIND-MOTOR.

SPECIFICATION forming part of Letters Patent No. 476,716, dated June 7, 1892.

Application filed October 23, 1891. Serial No. 409,599. (No model.)

To all whom it may concern:

Be it known that I, HAGBARTH WINGE, of Miles City, in the county of Custer and State of Montana, have invented a new and Improved Wind-Motor, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved wind-motor which is simple and durable in construction, very effective and powerful in operation, and arranged to actuate pumps and other machinery.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement. Fig. 2 is a sectional side elevation of the same on the line xx of Fig. 1, and Fig. 3 is an enlarged side elevation of the device for unlocking the sail from the travelers.

The improved wind motor or engine is provided with a suitably-constructed base A, on which is erected a central post B, supporting a pivot C, engaging loosely the hub D of a horizontally-disposed wheel E of suitable dimensions, and provided with a flat rim F. On the latter are secured the vertically-disposed masts G, placed suitable distances apart, each carrying a sail H, having no boom, but being provided with a spar I, fastened at its lower end to the mast G and extending diagonally across the sail to its upper outer corner.

On the lower outer corner of each sail H is secured a ring J, engaging a traveler K, arranged radially on the rim F of the wheel E, and serving to drive the sail by its ring J, so as to move it into and out of the wind when the wheel is rotated. Suitable ropes L are provided for raising or lowering the sails H, said ropes being arranged in the usual manner and operating in conjunction with the mast-rings on which the sail is fastened.

The outer end of each traveler K is adapted to be engaged by a hook on a lever N, serving to prevent the ring J from accidentally sliding off the traveler. In case of a storm arising suddenly the lever N is actuated to disengage the hook from the traveler to per-

mit the ring J to slide off the traveler at the outer free end thereof. This lever N is fulcrumed on the periphery of the rim F, (see Fig. 3,) and is engaged by one end of a bell-crank lever O, also fulcrumed on the rim F, and connected with a rod P, mounted to slide in suitable bearings on the rim F of the wheel E, and connecting with the several bell-crank levers O belonging to the several travelers of the sails.

One end of the rod P is provided with a rope Q, which extends inward through suitable eyes on the under side of the wheel E, so as to be under the control of the operator for simultaneously disengaging the levers N from the travelers K to disconnect the sails from the travelers.

The under side of the hub D of the wheel E is formed with a gear-wheel R in mesh with a series of gear-wheels S, each mounted on an independent shaft T, adapted to be connected with suitable machinery to be driven. As illustrated in Fig. 2, one of the shafts is connected by a crank-arm with a link and rocking arm of a pump U. Other machinery may be connected with the remaining shafts, so that, for instance, one may drive a straw-cutter, another a thrashing-machine, a third a corn-sheller, &c.

The operation is as follows: When the several parts are in position, as illustrated in Figs. 1 and 2, then the wind coming in any direction will engage the first sail, so that the ring J is forced to the innermost end of the traveler K, whereby the sail is thrown into the wind, and the force exerted on the sail causes the revolution of the wheel E, the other sails meanwhile being out of the wind. Thus it will be seen that when the wheel revolves the different sails move continuously into and out of the wind, so that a continuous rotary motion is given to the wheel E, and the motion of the latter is transmitted by the gear-wheel R to the several gear-wheels S on the shafts T, which latter actuate the machinery connected with the same.

It will be seen that the action of the sails is entirely automatic, so that the power of the wind is utilized to the fullest advantage. The wheel E and the sails H are made of sufficient size, so that sufficient power is obtained even with a light breeze.

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

1. A wind-motor comprising a horizontally-
5 disposed wheel mounted to revolve, a series
of masts erected on the rim of the said wheel,
sails supported on the said masts, travelers
arranged on the said rim of the wheel and en-
10 gaged by a ring on the lowermost outer cor-
ner of the said sail, and means, substantially as
described, for locking or unlocking the outer
end of the said traveler, as set forth.

2. In a wind-motor, the combination, with
a frame provided with a central post carry-
15 ing a pivot, of a wheel mounted to turn on the
said pivot, masts erected on the rim of the
said wheel and carrying sails, a gear-wheel
held on the hub of the said wheel, and a se-
ries of gear-wheels in mesh with the said hub

gear-wheel, and each mounted on a shaft 20
adapted to be connected with the machinery
to be driven, substantially as shown and de-
scribed.

3. In a wind-motor, the combination, with
a wheel mounted to travel, of masts erected 25
on the rim of the said wheel, sails held on the
said masts and each provided at its outer low-
ermost corner with a ring, travelers engaged
by the rings of the said sails, levers formed
with hooks adapted to engage the outer ends 30
of the said travelers, and means, substantially
as described, for actuating the said levers si-
multaneously to lock or unlock the said trav-
elers, as set forth.

HAGBARTH WINGE.

Witnesses:

A. H. SWERDFIGER,
GEO. GROS.