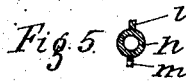
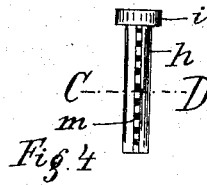
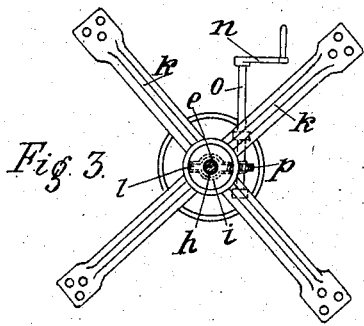
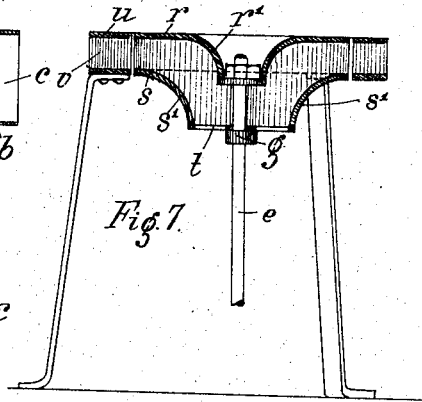
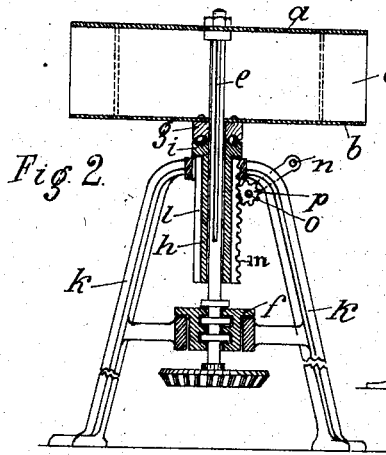
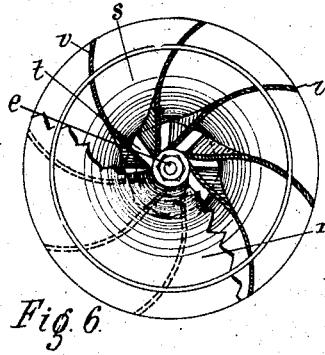
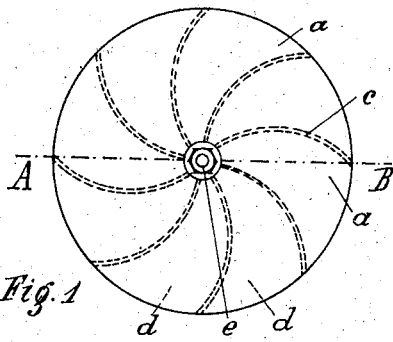


A. VON MUNTEAN & S. BIRTLER.

WIND WHEEL.

APPLICATION FILED NOV. 7, 1903.



Witnesses:

Max H. ...
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Inventors:

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 Samuel Birtler
 by *Carl M. Thommwig*
 Attorney

UNITED STATES PATENT OFFICE.

AUREL VON MUNTEAN AND SAMUEL BIRTLE, OF SZÁSZVÁROS,
AUSTRIA-HUNGARY.

WIND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 789,993, dated May 16, 1905.

Application filed November 7, 1903. Serial No. 180,273.

To all whom it may concern:

Be it known that we, AUREL VON MUNTEAN and SAMUEL BIRTLE, subjects of the King of Austria - Hungary, residing at Szászváros, Austria-Hungary, have invented a new and useful Wind-Wheel, of which the following is a full, clear, and exact description.

The present invention relates to wind-wheels; and its object is to provide a wheel which will always be rotated in one direction by the wind whatever the direction of the latter may be without the necessity of first adjusting the position of the wheel. Simple and convenient means for stopping the wheel are also provided.

In order to render the present specification easily intelligible, reference is had to the accompanying drawings, in which similar letters of reference denote similar parts throughout the several views.

Figure 1 is a plan of the wheel; Fig. 2, a sectional elevation taken on the line A B of Fig. 1; Fig. 3, a plan of the wheel-supporting frame with the wheel removed; Fig. 4, a side elevation of a sleeve used for raising and lowering a part of the wheel; Fig. 5, a plan of the same in section on line C D of Fig. 4; Fig. 6, a plan, partly in horizontal section, of a modified form of wheel; and Fig. 7, a sectional elevation of Fig. 6.

The wind-wheel consists of the upper and lower horizontally-disposed disks *a* and *b*, which are mounted to rotate on a vertically-disposed shaft *e*, and between which the sails *c*, of canvas or other flexible material, are mounted. These sails are curved in plan view and are fastened to the top and bottom disks, along their edges, in any suitable manner. The lower disk is mounted in the device illustrated in Figs. 1 and 2 so as to be capable of movement toward the upper disk, and when the disks are thus closed up against each other the sails will be folded and the wheel will cease rotating, because the wind will no longer have access to the sails. In order to raise the lower disk *b* and close it against the upper one, *a*, the former is provided with a ring *g*, by which it is coupled to the shaft by means of a key or feather and recess in the

known manner so that the disk will rotate with the said shaft, but will be free to slide on the same. The disk *g* runs on a ball-bearing, the lower cup of which is formed by the upper flange *i* of a sleeve *h*, mounted on the standards *k*, the said sleeve being held against rotation by means of a key or feather and recess in the standard-top. This sleeve is provided with a rack *m*, and a pinion engages in the same at the upper part, said pinion being mounted on a suitable shaft journaled in the upper part of the standards *k*. The shaft *o* of the pinion *p* is provided with a crank-handle *n*, so that when the handle, and with it the pinion, is turned the sleeve *h* may be raised up and closed against the upper disk *a*, whereby the sails will be folded between the two disks. The shaft *e* is journaled at its lower end in a thrust-block bearing *f* and may carry a suitable gear at its lower end for transmitting power to any desired mechanism.

In the device illustrated in Figs. 6 and 7 the wheel is formed to a turbine-wheel, the wind entering the same in a horizontal plane and leaving it in a vertical direction. In this case the upper plate *r* is provided with a central dip *r'*, and the lower plate *s* is also provided with a downwardly-extending central flange *s'*, leaving a central downward opening, the said lower plate *s* being attached to the ring *g* by means of bars or spokes *t*. Around the wheel is mounted a stationary ring *u*, having guide-blades *v* therein to guide the wind into the wheel. The means for raising the lower disk to close up against the upper one and the arrangement of the sails in this modification are similar to that of the device first described, with the difference that the inner ends of the sails are of course deflected in the known manner, as will be clearly seen on reference to Fig. 6 of the drawings.

We claim as our invention—

1. A horizontally-disposed wind-wheel consisting of two superposed disks, having the sails attached along the tops and bottoms between them a vertical shaft to carry the said disks, means for normally keeping the sails stretched, and means for moving the disks to close them together and fold the sails in the

manner and for the purpose substantially as described.

2. A horizontally-disposed wind-wheel consisting of two superposed disks having the sails attached along the tops and bottoms between them, means for normally keeping the sails stretched, means for closing the disks together, the said sails being curved radially, in plan view in the manner and for the purpose substantially as described.

3. A horizontally-disposed wind-wheel consisting of two superposed disks having the sails attached along the tops and bottoms between them a vertical shaft to carry the whole, means for normally keeping the sails stretched, and means for raising the lower disk to close against the upper one and fold up the sails in the manner and for the purpose substantially as described.

4. A horizontally-disposed wind-wheel, consisting of a pair of superposed disks, a vertically-mounted shaft to carry the said disks, a series of sails of flexible material having their top and bottom edges attached respectively to the upper and lower disks, and means for moving one of the said disks longitudinally on the supporting-shaft in the manner and for the purpose substantially as described.

5. A horizontally-disposed wind-wheel, consisting of a pair of superposed disks having

their central portions annularly deflected to form a lower outlet, a series of flexible sails mounted between the said disks, means for moving one of the said disks toward the other, a vertically-disposed shaft to carry the whole, and a stationary ring surrounding the said wheel and having guide-wings therein in the manner and for the purpose substantially as described.

6. A horizontally-disposed wind-wheel, consisting of an upper and a lower disk having a series of flexible sails mounted between the same, a vertical shaft to which the upper disk is fixed, and on which the lower disk is slidably mounted on a key or feather, a sleeve surrounding the lower part of the said shaft and a frame to support the same, ball-bearings inserted between the top of said sleeve and the lower surface of the lower disk, and means for raising and lowering the said sleeve at will in the manner and for the purpose substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

AUREL V. MUNTEAN.
SAMUEL BIRTLE.

Witnesses:

MARCELL PAXTOR,
LOUIS VANDOR.