

No. 768,084.

PATENTED AUG. 23, 1904.

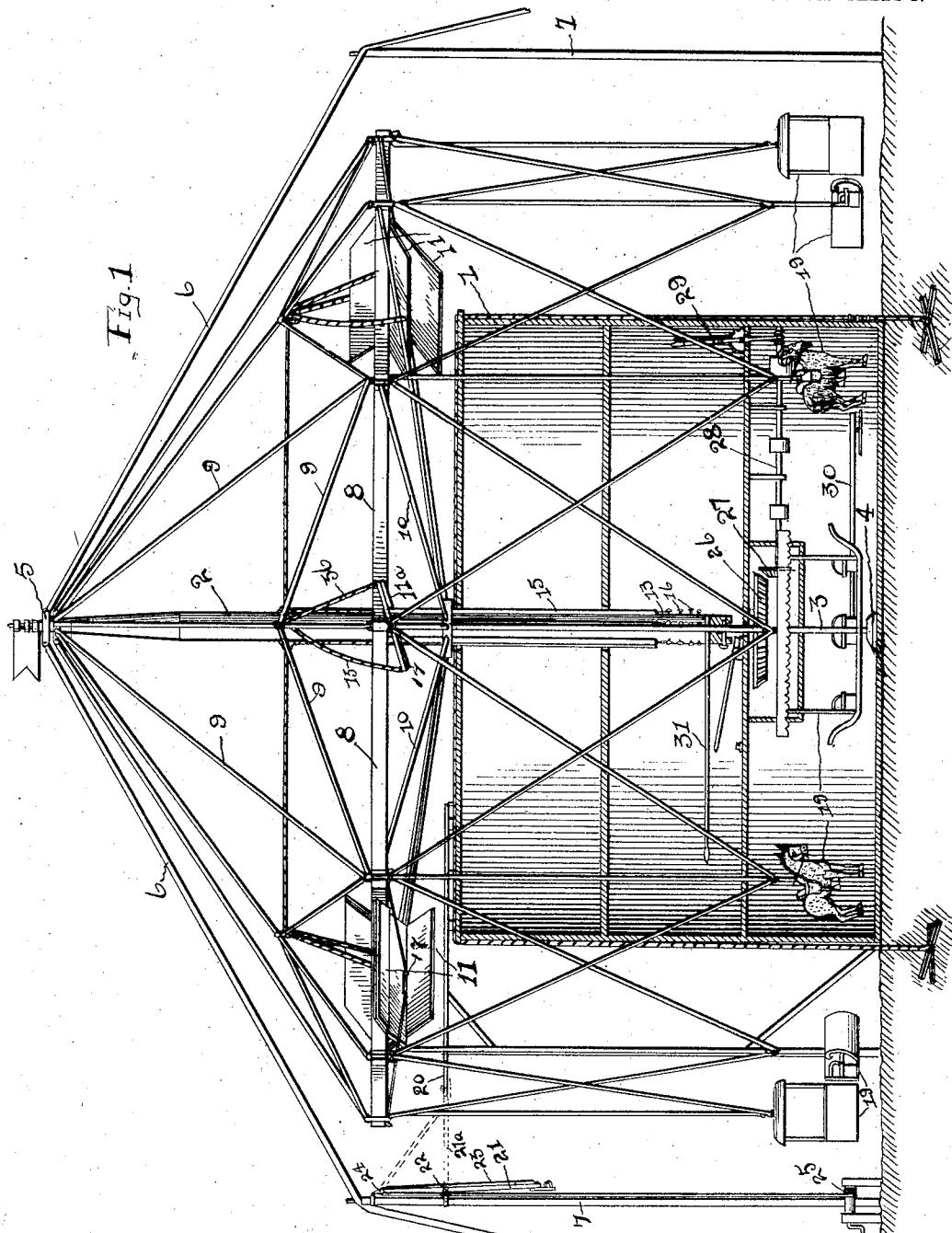
J. S. SMITH.

COMBINED WIND WHEEL AND CAROUSEL.

APPLICATION FILED MAY 11, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:

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L. L. Morill

INVENTOR

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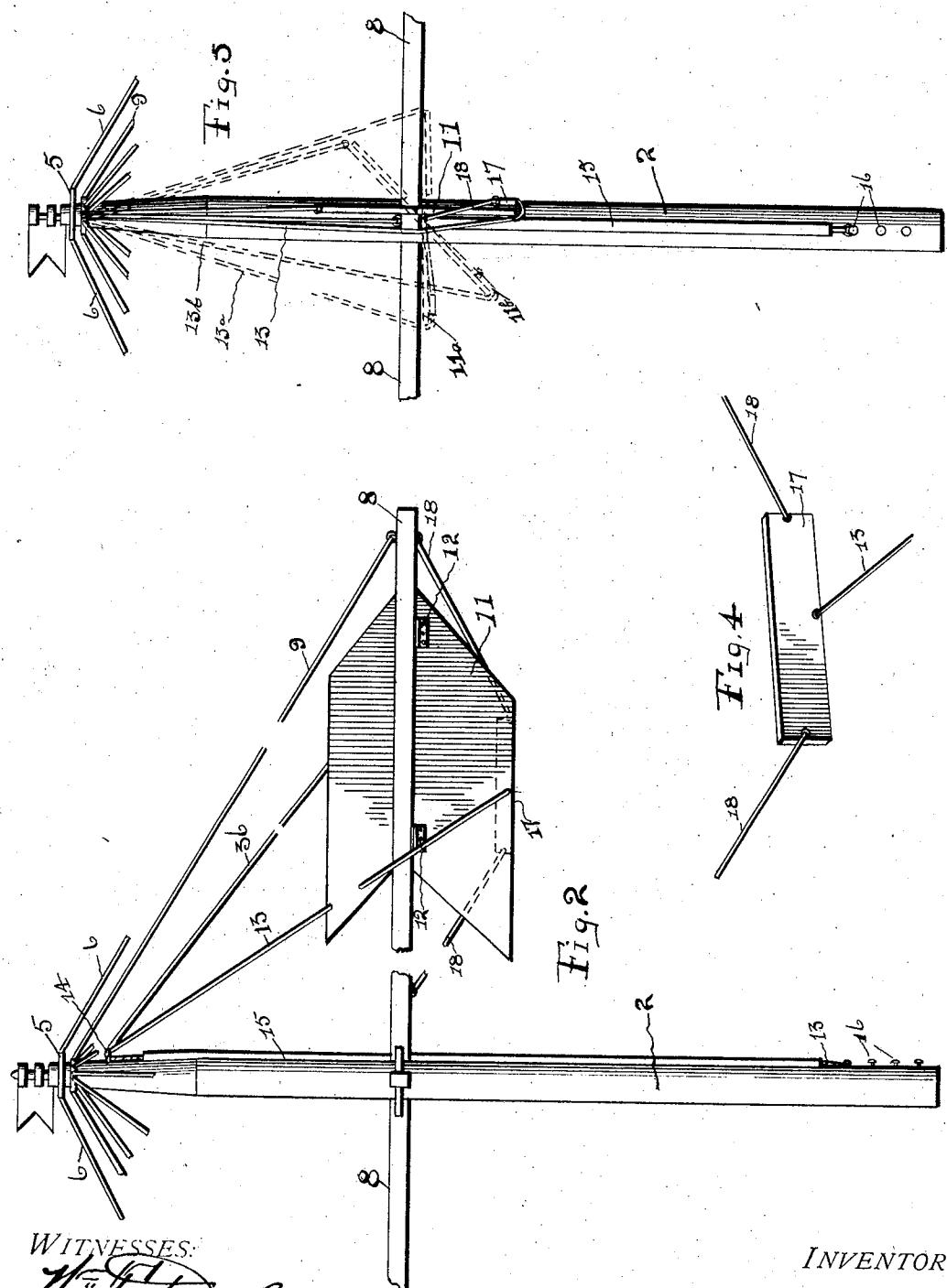
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3 SHEETS—SHEET 2.



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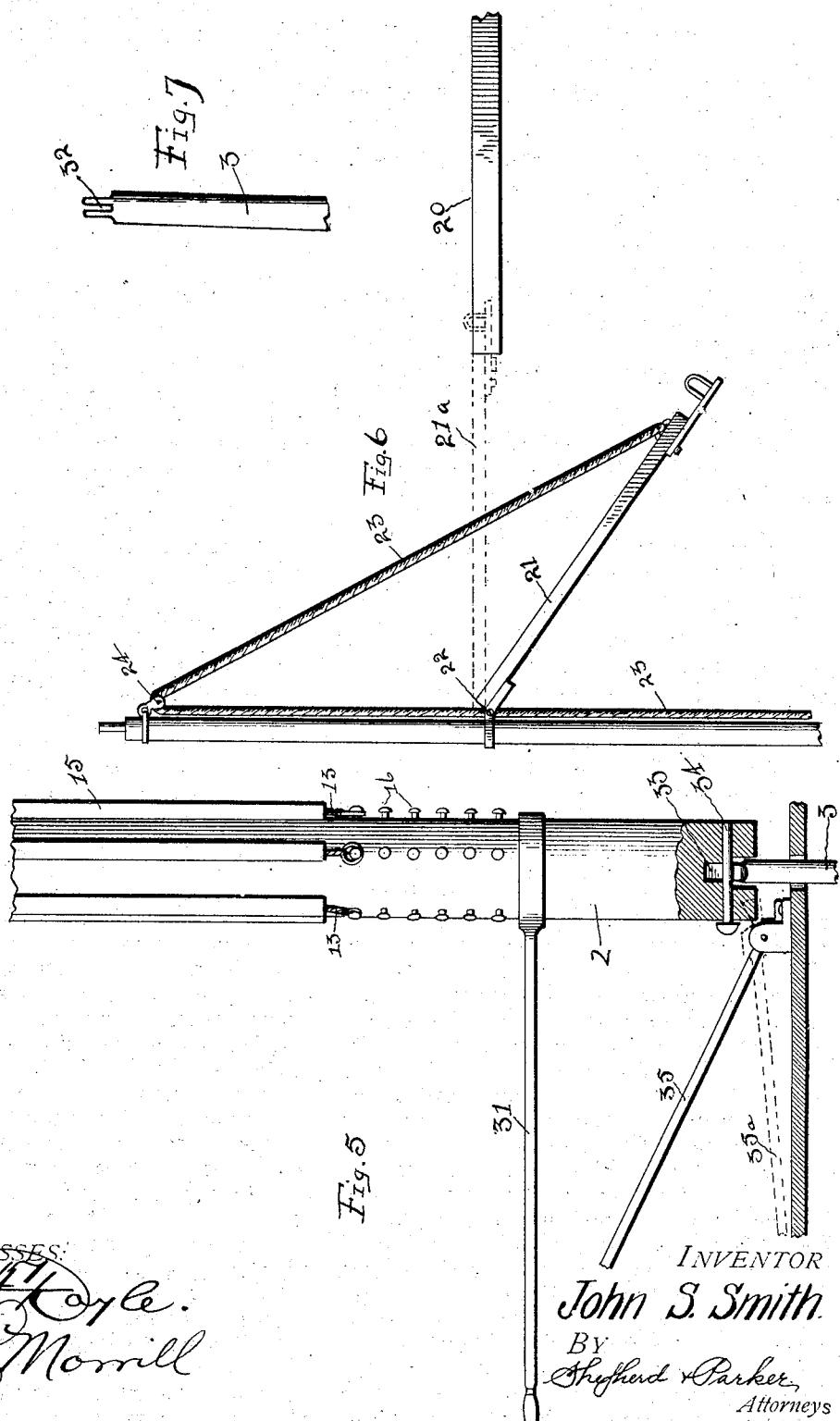
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NO MODEL.

3 SHEETS—SHEET 3.



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JOHN S. SMITH, OF NATIONAL MILITARY HOME, OHIO.

COMBINED WIND-WHEEL AND CAROUSEL.

SPECIFICATION forming part of Letters Patent No. 768,084, dated August 23, 1904.

Application filed May 11, 1904. Serial No. 207,418. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. SMITH, a citizen of the United States, residing at National Military Home, in the county of Montgomery and State of Ohio, have invented a certain new and useful Improvement in a Combined Wind-Wheel and Carousel, of which the following is a specification.

My invention relates to combination wind-wheels and carousels, and has for its object to provide a machine adapted to furnish power for both business and pleasure.

It consists, essentially, of a horizontal wind-wheel of improved construction, to the radial arms of which are suspended cars or like vehicles.

The device is so arranged and constructed as to be adapted to serve as a roundabout or carousel operated by the force of the wind. Geared to the lower end of the center shaft there is provided means for connecting the moving parts to mechanical devices to be operated thereby.

Means is also provided for operating the carousel when the force of the wind is insufficient to operate the device.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be herein-after more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a vertical sectional view of my complete invention, showing one form of assembling the various parts. Fig. 2 is a detail side elevation, and Fig. 3 is a detail end elevation, of my improved fan or vane. Fig. 4 is a detail view of the fan-regulator. Fig. 5 is a detail view of the lower end of the center shaft, showing various adjusting parts. Fig. 6 is a view of a drawbridge used by the operator to reach to upper working parts of the structure. Fig. 7 is a detail view of the rod connecting the

lower end of the central shaft with the machine to be operated.

Like characters of reference designate corresponding parts throughout the several views.

In the preferred embodiment of my invention I mount my improved wind-wheel upon any convenient building or framework 1 by placing therein upright center shaft 2. The shaft 2 is disposed through the top of the building or framework in any convenient manner and at its lower end is connected with a downwardly-extended axis 3. The axis 3 is journaled in any convenient bearing 4, rigidly secured to the base of the building 1. The upright shaft 2 is retained in a vertical position and against displacement by a collar 5, embracing it near its upper end. The collar 5 is held in position by guy ropes or wires 6 secured thereto, passed over poles 7 and secured at their lower ends to stakes or any convenient stationary objects. Intermediate of the upright shaft 2 are secured a plurality of radial arms 8. The arms 8 are braced and held against downward displacement by the brace ropes or rods 9 and from upward displacement by the ropes or rods 10.

Upon the radial arms 8 and near the ends thereof are secured fans or vanes 11 by hinges 12. The fan 11 consists of a substantially plain piece of material with an outwardly-extending angular portion at one end and a corresponding inwardly-disposed angular opening at the other end. The hinges 12 are located approximately on a line drawn from the projecting to the reentrant angle. The fan is wider on the lower than on the upper side of the line, so that a pressure of wind against the fan will rotate it from a horizontal to a vertical position. The fan is constructed with the angles and mounted as described to permit placing the fan very near the end of the radial arms and still not interfere with the various ropes and braces converging at said end. The fan is adapted to move upon hinges 12 to the position 11^a or to any position intermediate of 11 and 11^a, as 11^b. The position which fan 11 may assume is controlled by a rope 13, passed over a pulley 14, down through

passage 15, and secured at its lower end to one of the pins 16 in shaft 2.

Connected to the end of rope 13 is a weight 17, secured to the arms 8 by ropes 18. The weight 17 hangs loose upon ropes 18, except as controlled by the rope 13, and serves to engage fan 11 and hold it at any predetermined angle. From the outer ends of arms 8 are suspended in any approved manner vehicles 19 for use of passengers. The vehicles 19 may consist of any or all of the various forms of vehicles commonly used upon roundabouts.

To reach the upper portion of the structure, a bridge 20 is provided. This is secured in any convenient manner to the top of the building 1 and extends outward nearly to the supports of the vehicles 19. A drawbridge 21 is pivoted at 22 and is adapted to be drawn up to connect with the bridge 20, as shown in Fig. 6 at position 21^a, by means of rope 23, passed over pulley 24 and connected at its lower end with winch 25. A ladder, stationary or movable, may be used to gain access to drawbridge 21, across which any one may pass to bridge 20, and so to the top of the building 1.

The wind-wheel is connected to any mechanical device which it is desired to operate by means of shaft 3, upon which is mounted bevel gear-wheel 26, engaging bevel-pinion 27, mounted upon line-shaft 28. Shaft 28 may be constructed capable of longitudinal adjustment, and such adjusting movement may be produced by the operation of lever 29. The purpose of the longitudinal adjustment of shaft 28 is to throw pinion 27 in or out of engagement with gear-wheel 26, so that the device may be used as a carousel only without operating any machinery receiving motion from said line-shaft.

For the purpose of operating the device at times when no wind is blowing I attach a sweep 30 to shaft 3, to which may be attached a horse or other animal to furnish the motive power. To assist in starting the device at any time, whether operated by wind or horse-power, I provide a hand-lever 31, secured to the central shaft 2, which may be used by the operator or other person for that purpose.

For the purpose of allowing the machinery to be operated by horse-power without operating the carousel the shaft 3 is bifurcated at its upper end, as shown at 32, Fig. 7. Within the lower end of the central shaft 2 is provided a socket 33, with pin 34 passing through the shaft and socket, adapted to engage shaft 3 within the bifurcation. Adjacent to the lower end of shaft 2 lever 35 is fulcrumed to any convenient stationary object and adapted, on being thrown to position 35^a, to hold shaft 2 out of engagement with shaft 3, thus allowing shaft 3 to be rotated without turning the carousel portion of the device.

To hold the wind-wheel and carousel in a desired stationary position for any purpose, as when the machinery is being operated by horse-power, all fans but one are thrown to position 11^a out of position to engage the wind. The one fan not so disposed is held rigid in a vertical position and acts as a vane to hold the wheel "to the wind." This adjustment is accomplished by drawing ropes 13 taut, thus throwing fan 11 to position 11^a. The one fan is held in a vertical position by drawing taut rope 36, which is attached to the upper side of fan 11.

The operation of my improved wind-wheel and carousel is as follows: The fan 11 is so constructed and mounted that the side below the hinges is wider than the side above. With the fan in the position shown in Fig. 2 the wind will engage the side shown, and the lower edge coming in contact with regulating-weight 17 will be held with its largest surface presented to the force of the wind. When with the rotation of the wheel the opposite side is presented to the wind, the unequal pressure of the wind upon the two sides of the fan will cause the fan to assume the nearly horizontal position 11^a, Fig. 3, when it will offer no material obstruction to the rotation of the wheel against the wind. For the adjustment of the fans for use in wind of greater than the ordinary velocity the rope 13 is drawn down and secured to any desired one of the pins 16. Drawing rope 13 changes the position of the adjusting-weight 17, against which fan 11 is forced by the wind, so that the fan will contact with said adjusting-weight and stop at an intermediate position, as 11^b, and offer less than its greatest surface to the wind.

The fans 11 are secured near the ends of arms 8, and their operation as above described will cause a horizontal rotation of arms 8 and shaft 2, to which said arms are rigidly secured. From the extreme outer ends of arms 8 are suspended in any approved manner such vehicles as are commonly used in carousels and which may consist in the usual representations of carriages, boats, animals, or other forms of vehicle to accommodate passengers upon the roundabout.

The other parts of the device are so fully described in the description of parts that the operation thereof will be readily understood without particular explanation.

While I have shown the building 1 as being constructed especially for use in connection with my improved wind-wheel and carousel, it is my intention to mount the device upon any building already built or to be built or upon a tower or any form of structure capable of sustaining it and where it is desired for use.

It is evident that numerous other changes from the form shown and described could be made by one skilled in the art within the

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scope of the claims without departing from the spirit or sacrificing any of the advantages of my invention.

Having thus described my invention, what
5 I claim as novel, and desire to secure by Let-
ters Patent, is—

1. In a device of the character described, a fan consisting of a substantially plain piece of material with an outwardly-extended angular portion at one end and a corresponding inwardly-disposed angular opening at the other end, so disposed that the pressure of wind upon one face will hold the fan substantially vertical and present its largest face to the wind while the pressure of wind upon the opposite face will cause a rotary displacement to the position presenting the smallest surface to the wind. 2. In a device of the character described, a fan consisting of a substantially plain piece of material with an outwardly-extended angular portion at one end and a corresponding inwardly-disposed angular opening at the other end, being wider on one side than on the other of a line drawn from the outwardly to the inwardly disposed angle and so disposed that the pressure of the wind upon one face will hold the fan substantially vertical and present its largest surface to the wind while the pressure of the wind upon the opposite face will cause a rotary displacement to the position presenting the smallest surface to the wind. 3. In a device of the character described, a fan consisting of a substantially plain piece of material with an outwardly-extended angular portion at one end and a corresponding inwardly-disposed angular opening at the other end, being wider on one side than on the other of a line drawn from the outwardly to the inwardly disposed angle, and being hinged substantially at said line to permit rotary displacement with said line as an axis, and so disposed that the pressure of wind upon one face will hold the fan substantially vertical and present its largest surface to the wind, while the pressure of the wind upon the opposite face will cause a rotary displacement to the position presenting the smallest surface to the wind. 4. In a device of the character described, a fan consisting of a substantially plain piece of material, with an outwardly-extended angular portion at one end and a corresponding inwardly-disposed angular opening at the other end, so disposed that the pressure of wind upon one face will hold the fan substantially vertical and present its largest surface to the wind, while a pressure of the wind upon the opposite face will cause a rotary displacement to the position presenting the smallest surface to the wind, and means whereby the fan may be adjusted to present to the wind any predetermined surface less than the greatest. 5. In a device of the character described, a fan consisting of a substantially plain piece of material, with an outwardly-extended angular portion at one end and a corresponding inwardly-disposed angular opening at the other end, being wider on one side than on the other of a line drawn from the outwardly to the inwardly disposed angle and so disposed that the pressure of the wind upon one face will hold the fan substantially vertical and present its largest surface to the wind, while a pressure of the wind upon the opposite face will cause a rotary displacement to the position presenting the smallest surface to the wind, and means whereby the fan may be adjusted to present to the wind any predetermined surface less than the greatest. 6. In a device of the character described, a fan consisting of a substantially plain piece of material with an outwardly-extended angular portion at one end and a corresponding inwardly-disposed angular opening at the other end, being wider on one side than on the other of a line drawn from the outwardly to the inwardly disposed angle, being hinged substantially at said line to permit rotary displacement with said line as an axis, and so disposed that the pressure of wind upon one face will hold the fan substantially vertical and present its largest surface to the wind, while a pressure of the wind upon the opposite face will cause a rotary displacement to the position presenting the smallest surface to the wind, and means whereby the fan may be adjusted to present to the wind any predetermined surface less than the greatest. 7. In a device of the character described, a fan consisting of a substantially plain piece of material, with an outwardly-extended angular portion at one end and a corresponding inwardly-disposed angular opening at the other end, so disposed that a pressure of wind upon one face will hold the fan substantially vertical and present its largest surface to the wind while a pressure of the wind upon the opposite face will cause a rotary displacement to the position presenting the smallest surface to the wind, means whereby the fan may be adjusted to present to the wind any predetermined surface less than the greatest, and means for securing the fan from rotary displacement by the wind. 8. In a device of the character described, a fan consisting of a substantially plain piece of material, with an outwardly-extended angular portion at one end and a corresponding inwardly-disposed angular opening at the other end, being wider on one side than on the other of a line drawn from the outwardly to the inwardly disposed angle and so disposed that the pressure of the wind upon one face will hold the fan substantially vertical and present its largest surface to the wind, while a pressure of the wind upon the opposite face will cause a rotary displacement to the position presenting the smallest surface to the wind, and means whereby the fan may be adjusted to present to the wind any predetermined surface less than the greatest.

face less than the greatest, and means for securing the fan from rotary displacement by the wind.

9. In a device of the character described, a fan consisting of a substantially plain piece of material, with an outwardly-extended angular portion at one end and a corresponding inwardly-disposed angular opening at the other end, being wider on one side than on the other 5 10 of a line drawn from the outwardly to the inwardly disposed angle, and hinged substantially at said line to permit rotary displacement with said line as an axis, and so disposed that the pressure of the wind upon one face 15 will hold the fan substantially vertical and present its largest surface to the wind, while the pressure of the wind upon the opposite face will cause rotary displacement to the position presenting the smallest surface to the 20 wind, means whereby the fan may be adjusted to present to the wind any predetermined surface less than the greatest, and means for securing the fan from rotary displacement by the wind.

25 10. As a new article of manufacture, a horizontal wind-wheel with radial arms and vehicles suspended from the outer ends of the arms adapted for use as a roundabout.

11. As a new article of manufacture a roundabout consisting of the combination of a vertical shaft mounted to rotate, radial arms rigidly secured thereto, fans mounted upon said arms adapted to utilize the force of the wind to rotate the shaft and vehicles suspended from 30 the ends of the arms adapted for use by passengers.

12. As a new article of manufacture a machine, consisting of the combination of a vertical shaft mounted to rotate, radial arms rigidly secured thereto, fans mounted upon said arms adapted to utilize the force of the wind to rotate the shaft, means whereby the rotation of the shaft may be utilized to operate mechanical devices, and vehicles adapted for 45 use as a roundabout suspended from arms radial to the shaft.

13. In a device of the character described, a shaft adapted to be rotatably and vertically mounted upon any convenient structure, means adapted to retain such shaft rotatably 50 in such vertical position, radial arms rigidly secured to said shaft upon which are mounted fans capable of presenting to the wind upon one side of the shaft the largest possible surface and on the other side the smallest possi-

ble surface and capable of being changed from the one position to the other by the force of the wind and adapted to rotate the shaft, means adapted to utilize the rotation of the shaft to operate machinery, and vehicles 60 adapted for use as a roundabout suspended from arms radial to the shaft.

14. In a device of the character described, a shaft adapted to be rotatably and vertically mounted upon any convenient structure, 65 means adapted to retain said shaft rotatably in such vertical position, radial arms rigidly secured to said shaft, upon which are mounted fans capable of presenting to the wind upon one side of the shaft the largest possible surface and on the opposite side the smallest possible surface and capable of being changed from one position to the other by the force of the wind and adapted to rotate the shaft, means adapted to utilize the rotation of the 70 shaft to operate machinery, vehicles adapted for use as a roundabout suspended from arms radial to the shaft, a sweep rigidly secured radial to the shaft adapted to be operated by an animal to operate the roundabout and the 75 machinery independently of the wind.

15. In a device of the character described, a shaft adapted to be rotatably and vertically mounted upon any convenient structure, means adapted to retain said shaft rotatably 80 in such vertical position radial arms rigidly secured to said shaft upon which are mounted fans capable of presenting to the wind upon one side of the shaft the largest possible surface and on the opposite side the smallest possible surface and capable of being changed from one position to the other by the force of the wind and adapted to rotate the shaft, means adapted to utilize the rotation of the 85 shaft to operate machinery, vehicles adapted for use as a roundabout suspended from arms radial to the shaft, a sweep rigidly secured radial to the shaft adapted to be operated by an animal to operate the roundabout and the 90 machinery independently of the wind, means for disconnecting the machinery to permit the independent operation of the roundabout by wind-power or animal-power or both, and means for disconnecting the roundabout to permit the independent operation of the machinery by animal-power.

JOHN S. SMITH.

In presence of—
SAML. N. LEE,
IRA HARTRUM.