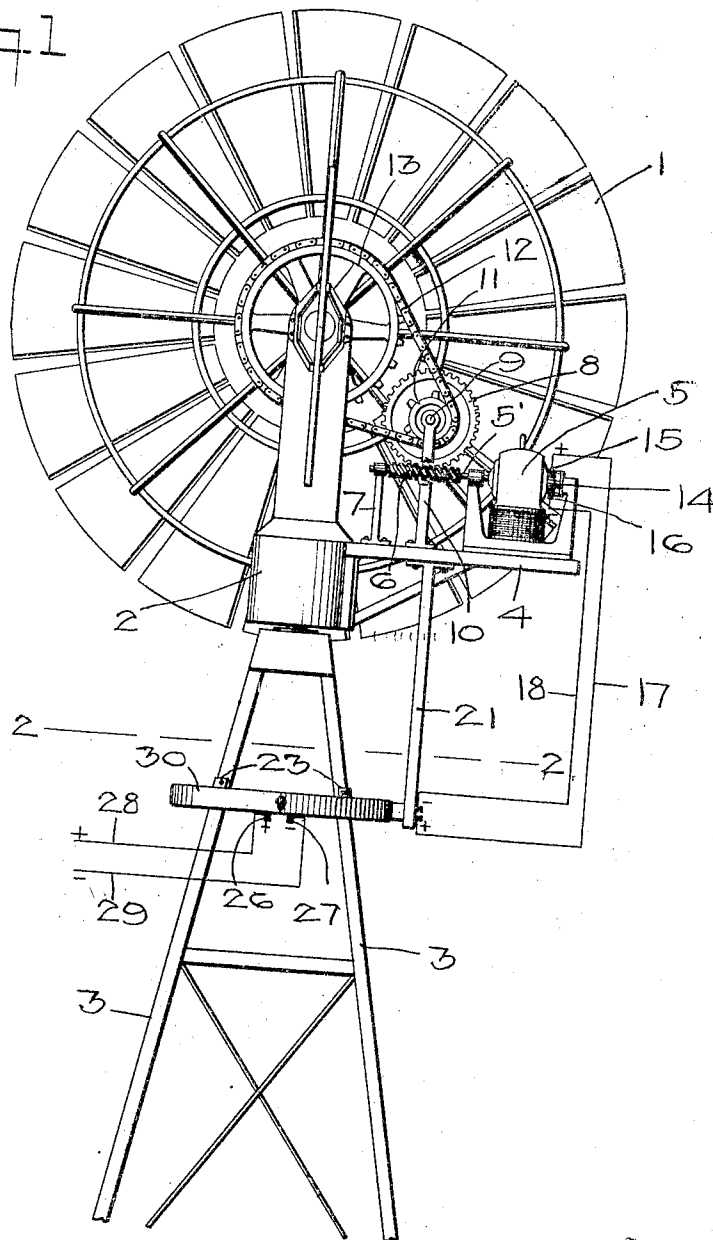


1,064,026.

T. K. STRAND.
ELECTRICAL GENERATOR.
APPLICATION FILED APR. 3, 1911.

Patented June 10, 1913.
2 SHEETS—SHEET 1.

Fig 1



Witnesses
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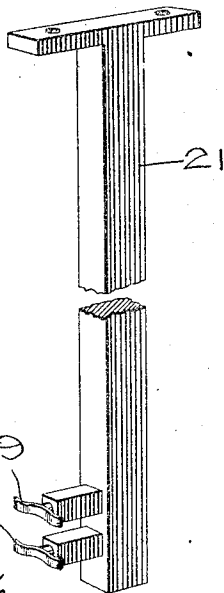
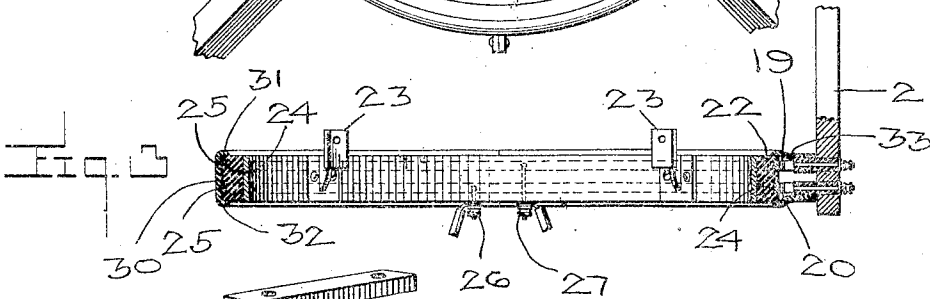
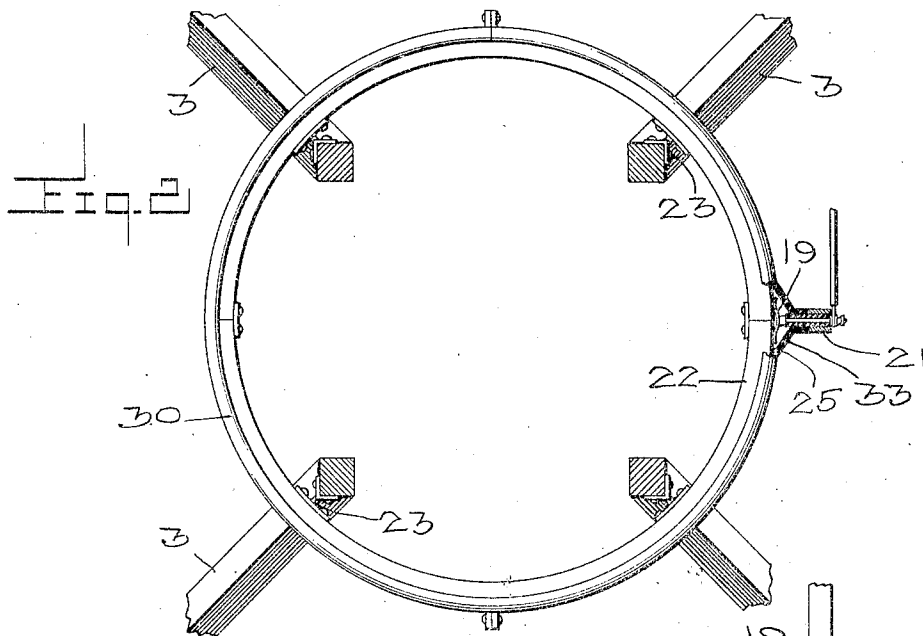
Attorneys

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

THOMAS K. STRAND, OF ROLETTE, NORTH DAKOTA.

ELECTRICAL GENERATOR.

1,064,026.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed April 3, 1911. Serial No. 613,593.

To all whom it may concern:

Be it known that I, THOMAS K. STRAND, a citizen of the United States, residing at Rolette, in the county of Rolette, State of North Dakota, have invented certain new and useful Improvements in Electrical Generators; and I do hereby 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.

This invention relates to electrical generators and particularly to one which may be easily and conveniently attached to the usual windmill.

The object of the invention is to so arrange mechanism of this character upon the usual windmill, that the wind wheel proper and its head may rotate in the usual manner and the current generated may be distributed to any suitable point and for any use.

In the drawings:—Figure 1 is a side elevation of the device mounted upon the usual windmill. Fig. 2 is a transverse sectional view taken on line 2—2 of Fig. 1. Fig. 3 is a vertical sectional view of the circular contact supporting member. Fig. 4 is a detailed perspective view of the arm for supporting contact brushes.

Referring to the drawings, the numeral 1 designates the wind wheel of any well known form, said wheel being mounted upon the revolving head 2, the wheel and head both being mounted upon the supporting legs 3, which are braced in the usual manner. Secured to the head 2 is a shelf 4 and on which is supported and secured a generator 5, said generator having its armature shaft 5' provided with a worm 6, and supported at its extreme inner end by a bracket 7, said bracket being suitably secured to the shelf. Adapted to mesh with the worm 6 is a worm gear 8 through which a shaft 9 passes, said worm gear being rigidly secured to the shaft. The opposite ends of the shaft 9 are journaled in brackets 10, said brackets being secured to the shelf 4. Rigidly secured to the shaft 9 and between the brackets 10 is a gear wheel 11 and over which is passed a sprocket chain 12, said sprocket chain leading to and passing around a sprocket wheel 13 keyed to the usual wind wheel shaft.

The outer end of the armature shaft 5' is provided with the usual commutator 14, and arranged in contacting relation there-

with are positive and negative brushes 15 and 16, and from which wires 17 and 18 lead to brushes 19 and 20, said brushes being suitably secured and insulated from a downwardly extending arm 21, said arm being secured to the under side of the shelf 4.

Encircling the legs 3 is a fiber member 22, said member being formed in two sections to facilitate the application of the same to the legs, said sections being secured to the legs 3 by brackets 23. These sections are formed from what is commonly known in the trade as red fiber, such material being especially adapted to withstand all conditions of weather. In the outer face of the member 22 are formed annular grooves 24 and in which are placed copper rings 25, and with which the brushes 19 and 20 contact, and travel over as the head 2 revolves carrying with it the shelf 4 and the mechanism thereon. Upon the lower face of the member 22 are secured binding posts 26 and 27 and to which the ends of wires 28 and 29 are connected, said wires leading to storage batteries or directly connected to a machine to be operated. Connected to each ring and passing through suitable openings formed in the member 22 are wires which have their lower ends connected to the binding posts 26 and 27, so that the circuit is completed through the rings and binding posts as the brushes 19 and 20 travel around the rings 25.

To protect the contact rings from the weather and prevent short circuiting due to moisture I provide a casing 30, said casing being formed in two sections and having upper and lower curved flanges 31 and 32, said flanges contacting with the upper and lower faces of the fiber member 22, respectively. One section of the casing 30 is formed with an off set 33, and by which the same is secured in any suitable manner to the lower end of the arm 21.

The operation of the device is as follows: As the wind wheel rotates, the worm gearing will be actuated by the sprocket 12, so that the armature shaft 5' is rotated, thereby generating the current, which passes through the positive and negative wires to the brushes 19 and 20, and from thence through the rings 25 through wires 28 and 29 to its point of use.

What is claimed, is:—

The combination with a windwheel and

its rotatable head, of means for supporting the head, a bracket shelf projecting from the head, a downwardly extending arm projecting from the bracket shelf, a generator 5 carried by the shelf, gearing supported by said shelf and connected with the wind wheel to drive the generator, a hoop encircling the head supporting means, said hoop being formed of insulating material, 10 said hoop having circumferential grooves, contact rings within said grooves, brushes carried by the lower end of the arm and engaged with the contact rings, conducting

wires leading from the contact rings, electrical connections between the generator and 15 the brushes whereby when the head is rotated the circuit remains closed, and a movable casing carried by the brushes and engaged over the periphery of the hoop to protect the contact rings. 20

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

THOMAS K. STRAND.

Witnesses:

F. L. ARMS,
G. C. BAKER.