

(No Model.)

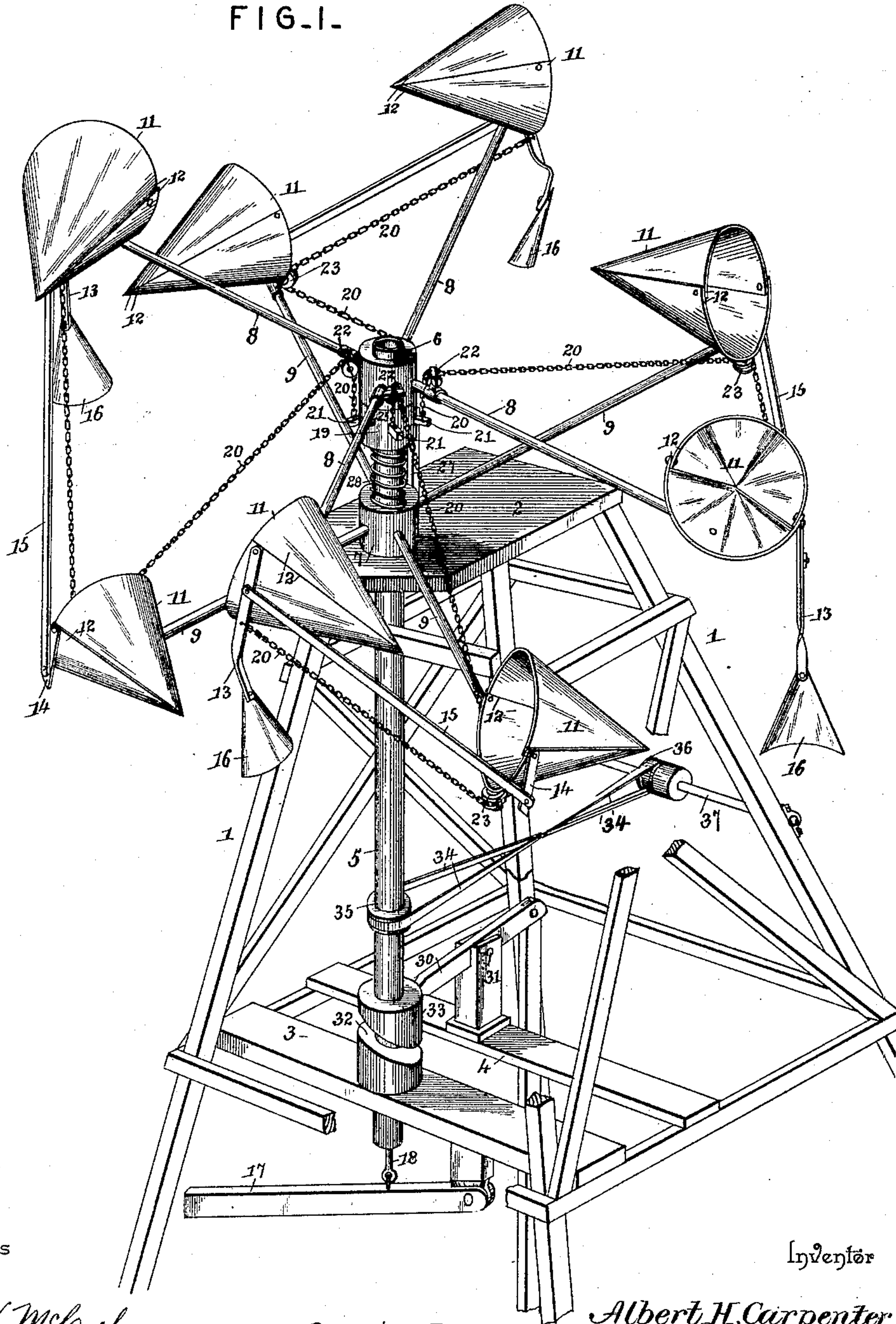
2 Sheets—Sheet 1.

A. H. CARPENTER.
WINDMILL.

No. 468,541.

Patented Feb. 9, 1892.

FIG. 1.



Witnesses

Inventor

Jas. K. McLathrum

By his Attorneys,

Albert H. Carpenter

H. J. Riley

Cashnow & Co.

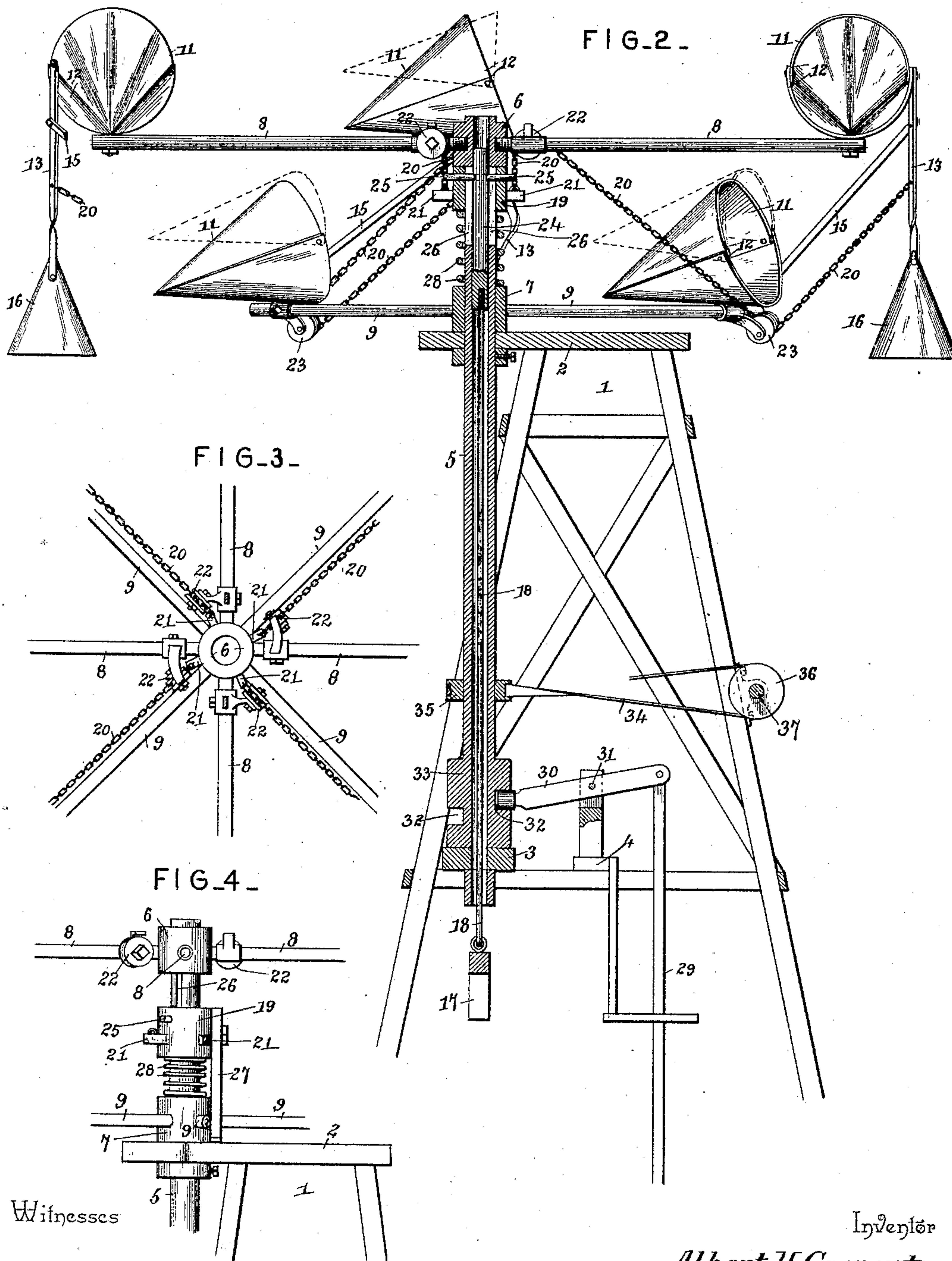
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Jas. K. McLaughlin
N. J. Riley

By his Attorneys,

Chas. Snow & Co.

Inventor

Albert H. Carpenter

UNITED STATES PATENT OFFICE.

ALBERT H. CARPENTER, OF MACKSVILLE, KANSAS.

WINDMILL.

SPECIFICATION forming part of Letters Patent No. 468,541, dated February 9, 1892.

Application filed June 30, 1891. Serial No. 398,065. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. CARPENTER, a citizen of the United States, residing at Macksville, in the county of Stafford and State of Kansas, have invented a new and useful Windmill, of which the following is a specification.

The invention relates to improvements in windmills.

The object of the present invention is to simplify and improve the construction of windmills and their attachments to a pump-rod and to enable them to be readily thrown into and out of the wind.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a windmill constructed in accordance with this invention. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a plan, partly broken away. Fig. 4 is a detail view.

Referring to the accompanying drawings, 1 designates a windmill-tower provided at its upper end with a platform 2 and near its lower end with cross-beams 3 and 4, and having journaled in the platform 2 and the cross-beam 3 a vertical tubular shaft 5, which is provided at its upper end with hubs 6 and 7, and extending radially from the hubs are tubular spokes 8 and 9, that carry buckets 11 at their outer ends. The hubs 6 and 7 are rigidly secured to the shaft and the spokes are constructed of suitable tubing and have their inner ends threaded and screwed into suitable openings or sockets of the hubs. The buckets are conical and the hubs are arranged in different planes, so that the buckets can readily take the wind, and the buckets consist of two sections 12, which are hinged together at the base of the cones, and the upper sections are adapted to be swung upward to permit the passage of wind in order to stop the windmill. Rigidly secured to the outer journals of the upper sections of the upper buckets are long arms 13, and similarly secured to the outer journals of the upper sections of the lower buckets are short arms 14, and the arms 13 and 14 are connected by a bar 15, whereby the buckets are arranged in pairs, and an upper

and a lower bucket constitute a pair. The lower ends of the long arms are provided with fans 16, which, when the wind becomes violent and greatly increases in force, are adapted to partially open the buckets to regulate the speed of the windmill.

The buckets are open and closed from below by means of a lever 17, which has one end fulcrumed to a hanger depending from the cross-beam 3 and which is connected to the lower end of a wire or other suitable connection 18, and the latter extends upward through the tubular shaft and is connected to a sliding sleeve 19, arranged on the tubular shaft between the hubs and adapted to descend to draw upon chains 20, extending to and connected with the long arms of the upper sections of the upper buckets. The chains 20 have their inner ends secured in perforations of lugs 21, extending radially from the vertically-sliding sleeve, and they pass over pulleys 22, journaled in suitable brackets of the upper hub, and over pulleys 23, journaled at the outer ends of the lower spokes. The upper end of the wire 18 is secured directly to a slide 24, arranged in the upper end of the tubular shaft, and connected with the sleeve by a horizontal pin 25, which operates in a slot 26 of the tubular shaft. The sliding sleeve is provided with a brake-bar 27, adapted when the sleeve is down to engage the upper face of the platform 2 and stop the windmill, and the brake-bar is held out of engagement with the platform, and the sleeve is held raised by a spiral spring 28, interposed between the lower hub and the sleeve.

Reciprocating motion is communicated to a pump-rod 29 by a horizontal pitman 30, which is journaled in suitable bearings 31 of the cross-beam 4, and which engages a cam-slot 32 of an enlargement 33 near the lower end of the tubular shaft. By this construction there is no dead-center, and rattling and jerking of the pump-rod to a great extent are prevented. Motion may be communicated to light machinery by a belt 34, which passes around a pulley 35 of the shaft 5 and a pulley 36 of a horizontal shaft 37.

What I claim is—

1. In a windmill, the combination of a tower, a vertically-disposed shaft journaled in suit-

able bearings of the tower, the upper and lower series of spokes extending radially from the shaft, the conical buckets composed of longitudinal sections hinged together and secured to the outer ends of the spokes, the arms secured to the movable sections of the buckets and connected together, and a sleeve sliding on the shaft and connected with the arms, substantially as described.

2. In a windmill, the combination of a tower, a vertically-disposed shaft journaled therein, the upper and lower series of spokes extending from the shaft, the conical buckets composed of longitudinal sections secured to the ends of the spokes and adapted to be opened, the arms connected with the upper sections of the buckets and being connected together, the sleeve sliding on the shaft, the pulleys journaled at the outer ends of the lower spokes and the inner ends of the upper spokes, and the chains passing over the pulleys and connected to the sleeve and the arms, substantially as described.

3. In a windmill, the combination of the tower, the vertical shaft journaled therein, the upper and lower series of spokes extending from the shaft, the conical buckets composed of hinged sections secured to the shaft, the short arms secured to the movable sections of the lower buckets, the long arms secured to the movable sections of the upper buckets and being connected with the short arms and provided at their lower ends with blades, and means for controlling the buckets from the base of the tower, substantially as described.

4. In a windmill, the combination of a tower, a vertical shaft journaled therein, the upper and lower hubs secured to the shaft, the spokes

radiating from the hubs, the conical buckets composed of hinged sections and arranged at the outer ends of the spokes, and the sliding sleeve arranged on the shaft between the hubs and connected with the buckets, substantially as described.

5. In a windmill, the combination of a tower, the vertical shaft journaled therein, the hubs secured to the shaft, the spokes radiating therefrom, the conical buckets composed of hinged sections and arranged at the outer ends of the shafts, the sliding sleeve arranged on the shaft between the hubs and connected with the buckets, the spiral spring interposed between the lower hub and the sleeve, a brake secured to the sliding sleeve and adapted to engage the tower, and means for connecting the sleeve with the base of the tower, substantially as described.

6. In a windmill, the hubs 6 7, arranged one above the other and provided with spokes 8 9, the spokes 8 being above and longer than the spokes 9, the conical buckets on the outer ends of the spokes, said buckets being arranged to face in different directions, the buckets on the lower set of spokes being arranged below and to one side of the buckets on the upper set, the buckets being composed of hinged sections, the connecting-bars to connect the buckets, and the depending fans 16, arranged as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ALBERT H. CARPENTER.

Witnesses:

GEO. E. MACK,

H. A. KIRTLAND.