

W. H. SHOTWELL.

WEATHER VANE.

APPLICATION FILED DEC. 27, 1909.

993,800.

Patented May 30, 1911.

2 SHEETS-SHEET 1.

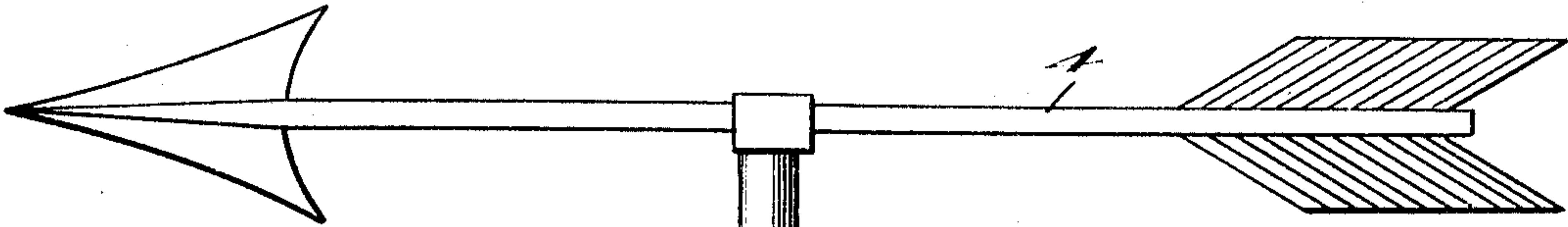


Fig. 1.

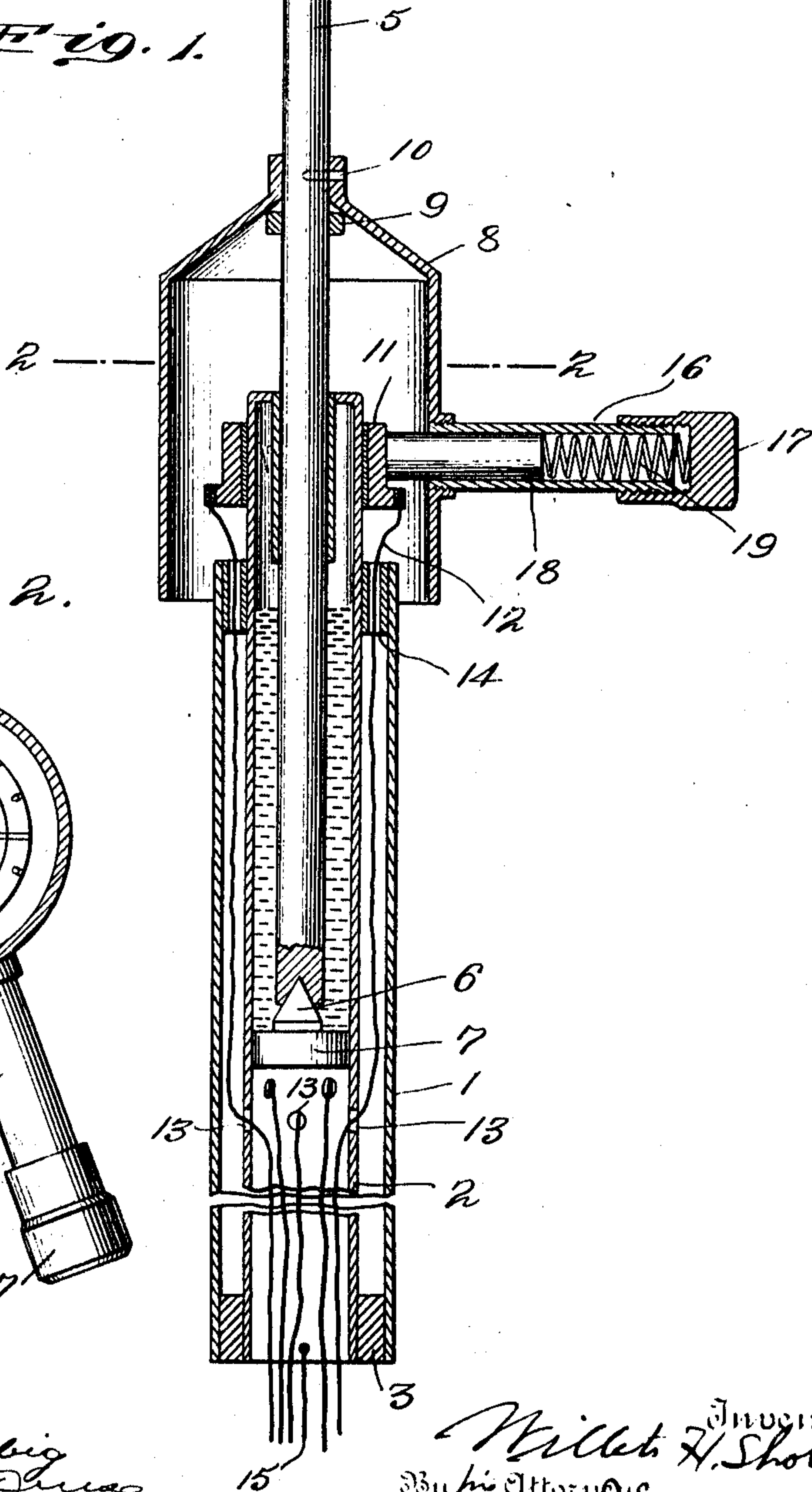
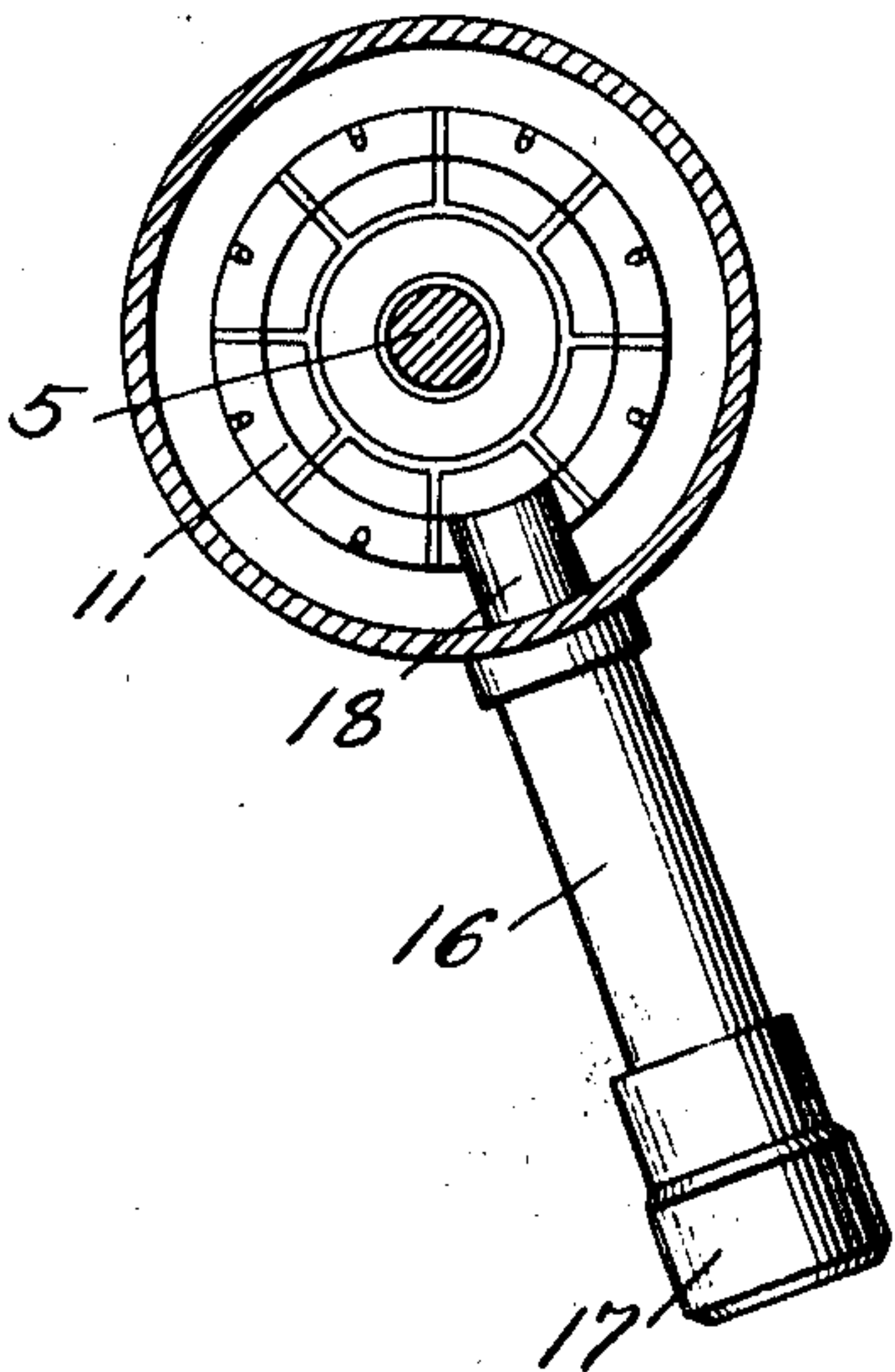


Fig. 2.



Witnesses:
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Inventor:
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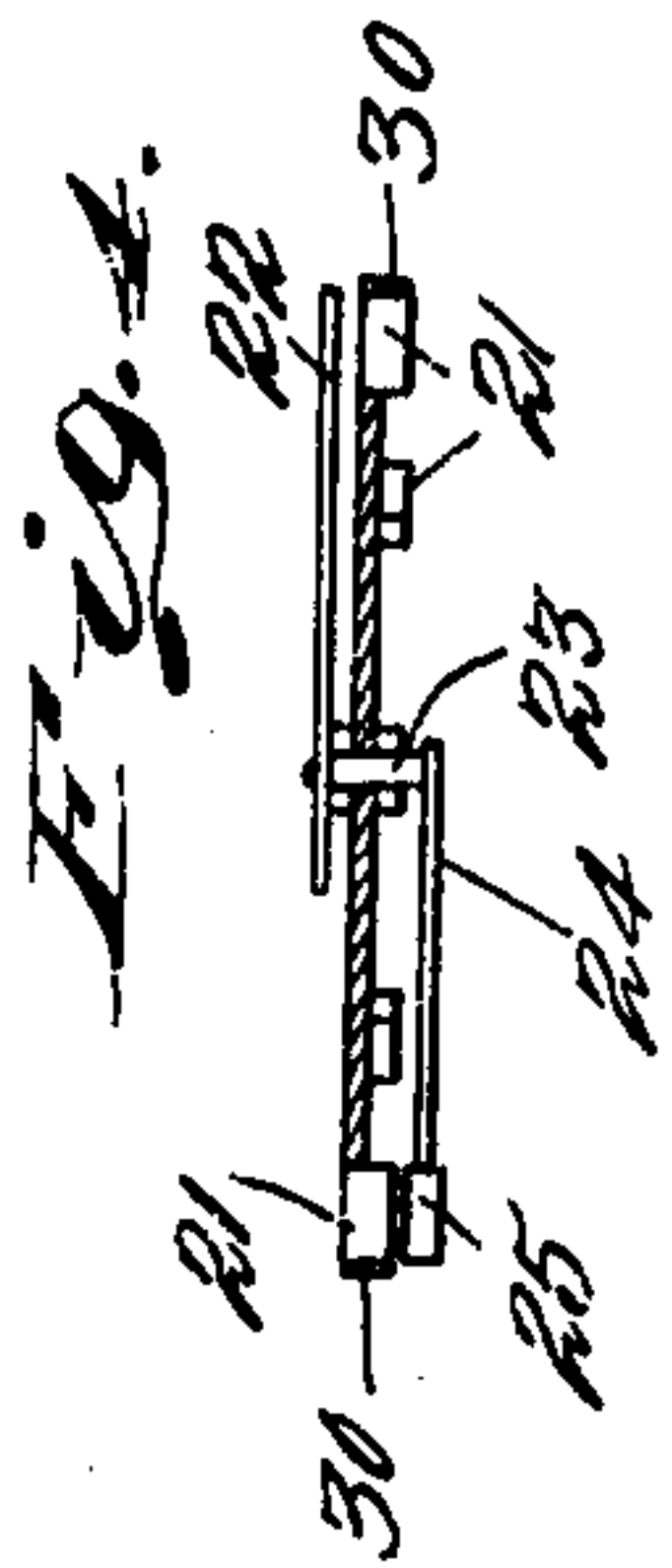
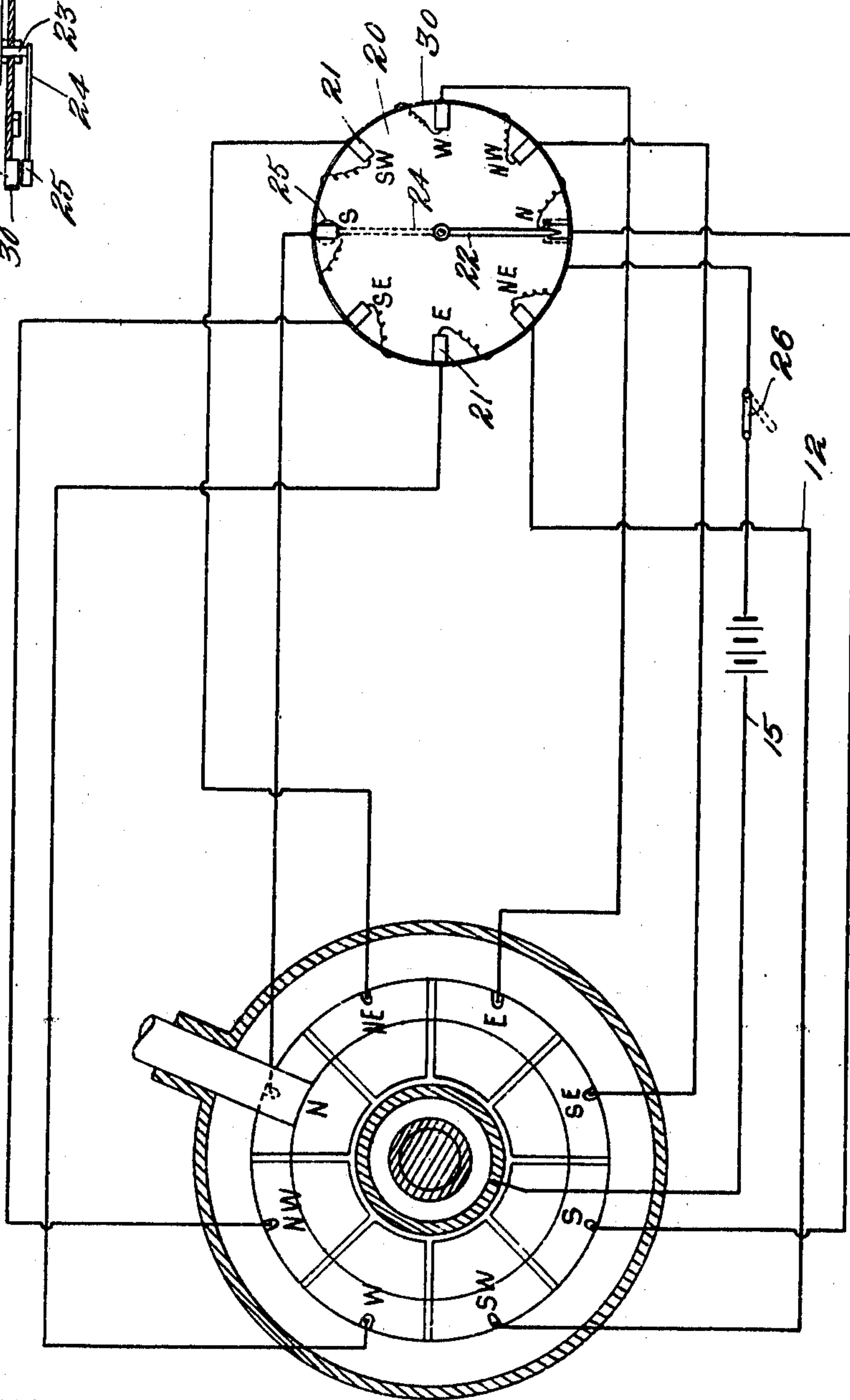


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLETS H. SHOTWELL, OF GLEN COVE, NEW YORK.

WEATHER-VANE.

993,800.

Specification of Letters Patent. Patented May 30, 1911.

Application filed December 27, 1909. Serial No. 535,189.

To all whom it may concern:

Be it known that I, WILLETS H. SHOTWELL, a citizen of the United States, residing at Glen Cove, in the county of Nassau and State of New York, have invented certain new and useful Improvements in Weather-Vanes, of which the following is a full, clear, and exact specification.

This invention relates to weather vanes, and particularly to the use therewith of electrical means whereby the direction of the wind may be indicated upon a dial situated at any convenient place, and, in connection therewith, to the employment of a revolving brush carried by the weather vane, which makes electrical contact with a fixed commutator having segments corresponding to the principal points of the compass, and consists in the particular arrangement and construction of such devices and of the connections thereto.

A desirable manner in which the invention may be embodied is illustrated in the accompanying drawings wherein—

Figure 1 is an elevation, partly in section, of my improved weather vane. Fig. 2 is a transverse section on line 2—2 of Fig. 1. Fig. 3 is a diagrammatic plan view of the system. Fig. 4 is a section of the dial.

Upon the roof of a building or in other convenient location exterior to a building, I provide a stand-pipe 1, which is suitably secured to the roof of the building, and which has within it a second stand-pipe 2. The said stand-pipes may be suitably attached together at the bottom, as by block 3. The weather vane 4 is fixed upon a vertical shaft 5, which at its lower end turns upon a conical bearing 6, projecting upwardly from a plug 7, which closes the inner stand-pipe 2, at some distance above its bottom. The said stand-pipe above the plug 7, may be filled with oil, as shown, for the purpose of providing a lubricant for the shaft 5.

Fixed upon the shaft 5 so as to revolve therewith, is a hood 8, which rests upon a collar 9, fixed to the said shaft 5, and which hood is pinned to the shaft 5 at 10, so as to revolve therewith. The said hood projects below the top of the stand-pipes and incloses and protects them, and also the electrical devices about to be described.

Stand-pipe 2 projects some distance above the outer stand-pipe 1, and at its upper end it carries fixed thereto, but electrically insulated therefrom, a commutator 11, which

is divided into as many segments as represent the principal points of the compass. I have shown eight segments, representing north, northeast, east, southeast, south, southwest, west, and northwest, the different sections being properly insulated from each other and each section having attached thereto, as for instance by soldering, a signal wire 12, which is brought up through the bottom of the inner stand-pipe 2 and passes outwardly through a perforation 13 therein, then up between the inner and outer stand-pipes, through the perforated collar or block 14, which separates the inner and outer stand-pipes at the upper end of the outer stand-pipe. Battery-wire 15 is electrically connected to the bottom of the inner stand-pipe 2.

Carried by the hood 8 and revolving therewith, is a housing 16, having screw-cover 17, which carries brush 18, which is held in contact with the commutator by a coil-spring 19. The battery circuit from wire 15 will pass up through inner stand-pipe 2, vertical shaft 5, hood 8, housing 16, and brush 18.

The means for indicating the direction of the wind comprise a dial 20, upon which is carried, near the periphery thereof, a series of magnets 21, each of which is electrically connected to one of the signal wires 12, and to an electrical conductor 30, arranged peripherally of the dial 20. A pointer 22 upon the face of the dial, is attached to a hub 23, and at the rear carries a swinging arm 24, having magnetized counterweight 25. Upon the closing of the switch 26 in the battery wire, which is connected to the conductor 30, the current will pass through that particular magnet 21 attached to the signal wire, which is connected to the section of the commutator with which the brush happens to be in contact. Such magnet 21 will thereupon be magnetized and will attract the magnetized counterweight 25, causing the pointer 22 to swing in the opposite direction, thereby indicating the point from which the wind is blowing. For instance, as illustrated in Fig. 3, the wind would be blowing from the north and the magnet adjacent S upon the dial which is in circuit with segment N of the commutator would be magnetized upon the closing of the switch, causing the magnetic counterweight to pass under said magnet and the pointer to pass to the opposite side, where the letter

N would indicate that the wind was blowing from the north. When the vane assumes a position between two of the compass points represented in the commutator series and the brush 18 bridges the space between two commutator segments, both the circuits will be closed and the pointer caused to assume a position between the indicators corresponding to such commutator segments.

10 I claim:

1. In an electrically-operated wind indicator, a stationary stand-pipe, a commutator carried thereby and having subdivisions corresponding to the principal points of the compass, signal wires inclosed by said stand-pipe and connected one to each subdivision of said commutator, a revolving weather-vane-shaft mounted in said stand-pipe, a revolving hood upon said shaft inclosing said commutator, a brush carried by said hood and held in contact with said commutator, a battery electrically connected to said brush, an indication dial, a magnetized pointer co-operating therewith, and a series of magnets on said dial, each of said signal wires being connected to its respective magnet, and an electrical connection from said battery to said dial.

2. The combination with a weather-vane, of a stand-pipe, a revoluble shaft carrying the vane and having a portion disposed within said stand-pipe and a portion extending above the upper end of the same, a closure at the other end of said stand-pipe, a bearing for the shaft carried thereby, a bearing-support carried by and located within the stand-pipe, said bearing support constituting a closure for the stand-pipe for affording an oil receptacle and a bearing carried by the said bearing-support for the lower end of the shaft.

3. The combination with a double walled stand-pipe, of a commutator carried thereby, a weather-vane, a revoluble shaft for the weather-vane, having a portion disposed within the stand-pipe and a portion extending above the upper end of the same, a bearing-support carried by and located within the stand-pipe, a bearing carried by said support for the lower end of the shaft, said bearing constituting a closure for the stand-pipe for affording an oil receptacle surrounding said shaft-bearing, a closure at the upper end of the stand-pipe, a bearing for the shaft carried by said closure, a hood fast with the shaft and affording a housing for said commutator and the upper end of the said stand-pipe, the bearing carried by the closure at the upper end of the stand-pipe

being located inwardly of the commutator, a brush carried by said hood for engaging said commutator, and elastic means for pressing said brush against the commutator, said brush, commutator, and upper bearing being disposed in substantially the same horizontal plane.

4. The combination of a stationary stand-pipe, a commutator carried thereby, signal wires inclosed by said stand-pipe and connected to the commutator, a weather-vane, a revoluble shaft fast with the vane and mounted within the stand-pipe, a hood fast upon the shaft and inclosing the commutator, a brush carried by the hood and means for holding the same in contact with the commutator, a battery in electrical connection with the brush, and an indicator in electrical connection with said wires and battery.

5. The combination with a weather-vane, of a double stationary stand-pipe, a commutator carried thereby, signal wires inclosed between the walls of the stand-pipe and connected to the commutator, a revoluble shaft carrying the vane, bearings for said shaft within the stand-pipe, a hood fast upon the said shaft and surrounding the commutator, a brush-housing carried by the hood, a brush mounted in said housing for reciprocation toward and from the commutator, elastic means for pressing said brush into engagement with the commutator, a battery electrically connected to said brush, and an indicator electrically connected to said wires and battery.

6. The combination of stationary double-walled stand-pipe, a commutator carried at the upper end thereof, signal wires passing between the walls of said stand-pipe and connected to the commutator, a revoluble weather-vane shaft having a portion disposed within said stand-pipe, a bearing within the standpipe for the shaft, a hood secured to said shaft and surrounding the commutator and the upper end of the stand-pipe, a brush carried by the hood, elastic means for pressing said brush into engagement with the commutator, a battery electrically connected to the brush, and an indicator electrically connected to said wires and battery.

In witness whereof, I have hereunto set my hand in the presence of two subscribing witnesses.

WILLETS H. SHOTWELL.

Witnesses:

ADOLPH F. DINSE,
BERNARD BLASCOW.