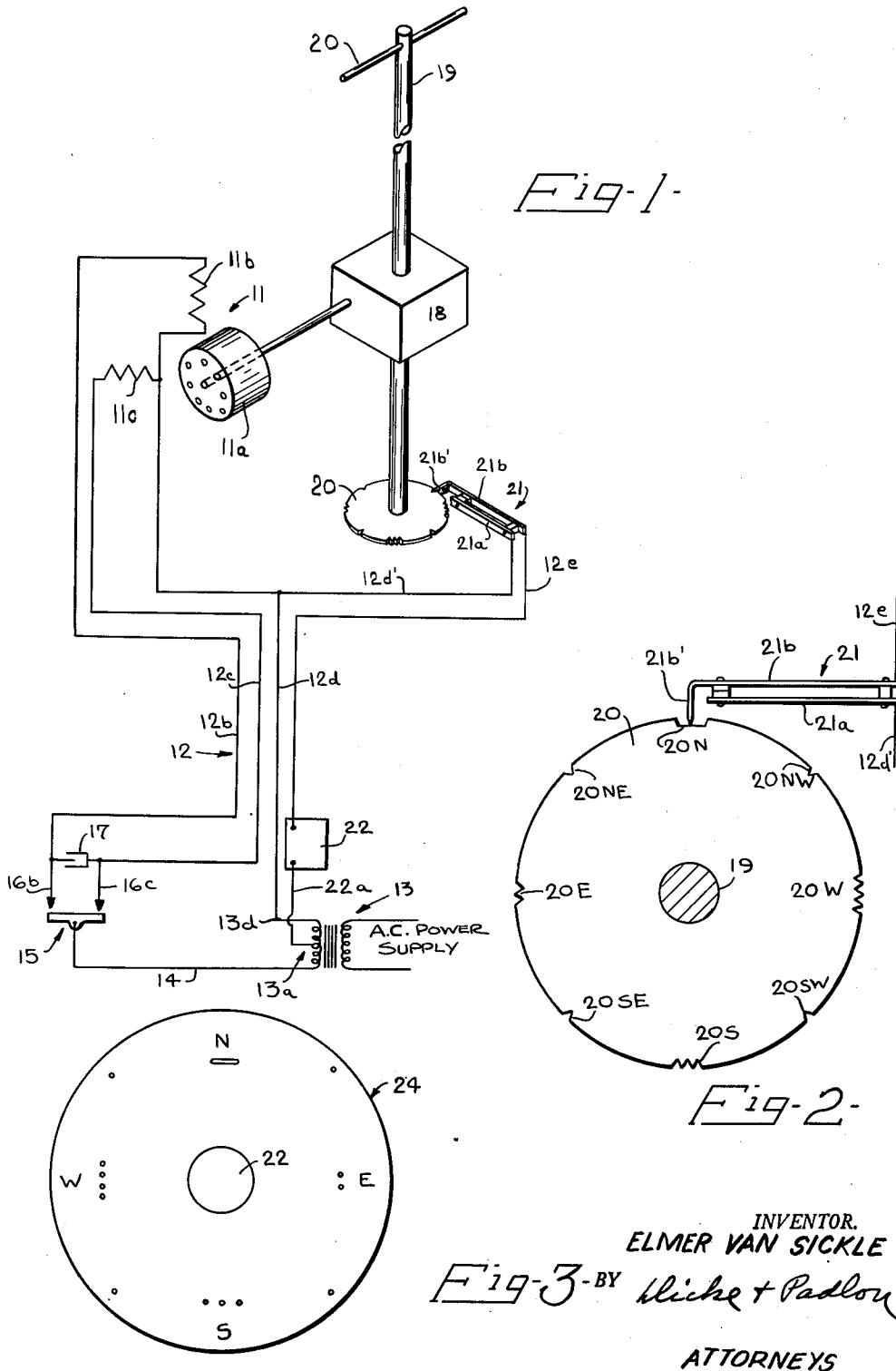


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POSITIONING SIGNALING DEVICE

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POSITIONING SIGNALING DEVICE

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2 Claims. (Cl. 340—203)

This invention relates to improvements in position signaling devices and has for an object to provide a simple, effective device for signaling at a remote point the position of a member, such as the rotative position of a rotatable shaft or turret.

Another object is to provide such a signaling device requiring a minimum of connecting conductors.

A more specific object is to provide a signaling device, such as a buzzer or its equivalent, which is energized one or more times during the movement of the member, the position of which is to be signaled, the periodical energization being effected by a switch whose contacts are opened and closed by the said member in accordance with a code which signifies the momentary position of said member.

Other objects will appear from the following description of an illustrative embodiment of the invention taken together with the attached drawings wherein:

Fig. 1 is a more or less schematic view of a device illustrating the invention together with a wiring diagram showing the electrical connections;

Fig. 2 is an enlarged view of a code disc illustrating the invention; and

Fig. 3 is a view of a dial which may form a part of the controlling instrument to indicate to the user the significance of the code signals transmitted from the movable member whose position is to be signaled.

Referring to said drawings, 11 indicates generally a reversible electric motor having a rotor 11a, a winding 11b, and a second winding 11c. 12 indicates generally a cable containing, say, four conductors, 12b connected to one end of winding 11b, 12c connected to the winding 11c, and 12d connected to the other ends of each of the windings 11b and 11c. 13 indicates generally a power transformer having a secondary winding 13a, one end of which 13d is connected to the conductor 12d and the other end of which 14 is connected to a 1-pole, double throw switch 15 engageable alternately with contacts 16 and 16c which are connected respectively to the conductors 12b and 12c. Connected across contacts 16b and 16c is a capacitor 17. It will be seen that if the switch 15 is moved in one direction to energize contact 16b, the squirrel cage rotor 11a will rotate in one direction, and if the switch is moved to engage contact 16c the rotor will turn in the other direction.

18 represents reduction gearing of any suitable form driven by the rotor 11a and serving to drive, at a lower speed, a rotary output member such as the shaft 19. The rotary member 19 may serve to rotate any device such as an antenna 20.

The signalling device for signalling at the control instrument the momentary rotative position of the member 19 may consist of a code wheel 20 serving to actuate a switch 21 which may consist of a fixed contact 21a and a movable contact 21b, the latter having an extension 21b' bearing against the periphery of the code disc 20. The contact 21a is connected by conductor 12d' with conductor 12d and the contact 21b is connected to conductor 12e. The edge of the code disc 20 is provided with suitable serrations. In the position shown, the switch contact extension 21b' is positioned in a rather long notch 20N (indicating North). The code disc is also provided with single notches 20NE, 20SE, 20SW, and 20NW, signifying, respectively, Northeast, Southeast, Southwest and Northwest. At 90° in a counter-clockwise direction from the center of notch 20N, two closely adjacent notches 20E are provided, at 180° therefrom three notches 20S are provided, and at 270° therefrom four notches 20W are provided indicating, respectively, East, South and West.

The conductor 12e is connected to a signaling device 22 which may be a buzzer or equivalent device, such as a signal lamp. The other side of said signal is connected

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through conductor 22a with the transformer secondary, preferably with a tap therefrom, so that the signal may be operated at a lower voltage than that supplied to the electric motor.

It will be seen that with the parts in the position indicated in Fig. 2, the signal will be continuously energized, and it will be apparent to the user that if the signal is continuous during a substantial period of motor operation, the shaft 19 is in the North position. If now the motor is operated further to operate the shaft 19, say in the clockwise direction (Fig. 2) the signal will be de-energized. After 45° of rotation, the signal will be energized momentarily indicating to the user that the Northeast position has been reached. Upon an additional rotation of 45°, the signal will be energized twice in rapid succession indicating that the East position has been attained. In a similar manner, the signal will indicate to the user when the Southeast, South, Southwest, West and Northwest positions have been attained. The control instrument is preferably provided with a dial 24 bearing thereon suitable indicia, such as N with a bar adjacent thereto, E with two dots, S with three dots, and W with four dots to aid the user in tying up the signals with the various cardinal points. Midway between said indicia there may be provided single dots to show, respectively, the positions NE, SE, SW, and NW. It will, of course, not be possible for the user to distinguish immediately between the single signals but by operating the device further in either direction through 45°, the user will be able to identify his position, and by returning to the single signal position, will be able to distinguish between it and other single signal positions.

It will be noted that by the arrangement shown, it is possible by using merely one additional conductor and one signal device to provide means for signaling to the user at least eight definite positions of the member whose position it is desired to know.

It will be noted that the construction shown and described will serve admirably to accomplish the objects stated above. It is to be understood, however, that the construction disclosed above is intended merely as illustrative of the invention and not as limiting as various other modifications therein may be made without departing from the invention as defined by a proper interpretation of the claims which follow.

I claim:

1. A position signaling device for remotely indicating the position of a reversibly movable rotatable member, including a code disc having in its periphery spaced apart variable notch formations corresponding respectively to positions of the compass, a direct driving connection between said movable member and said code disc, a switch, one element of which is in continuous engagement with the periphery of said code disc to open and close said switch in a variable frequency as said notched formations are encountered, and a remote signal device controlled by said switch.

2. A position signaling device for remotely indicating the position of a reversibly movable rotatable member, including a code disc positively connected to said member for motion therewith, said disc having in its periphery a notch formation corresponding to the compass position North and other differently shaped notch formations appropriately spaced from the first said notch formation to correspond to other positions of the compass, a switch in the following engagement with the periphery of said disc and operated in accordance with the notch formations therein, and a signal device controlled by said switch.

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