Nov. 13, 1923. 1,474,256

W. T. GODDARD

INSULATOR

Filed March 14, 1917 3 Sheets-Sheet 1

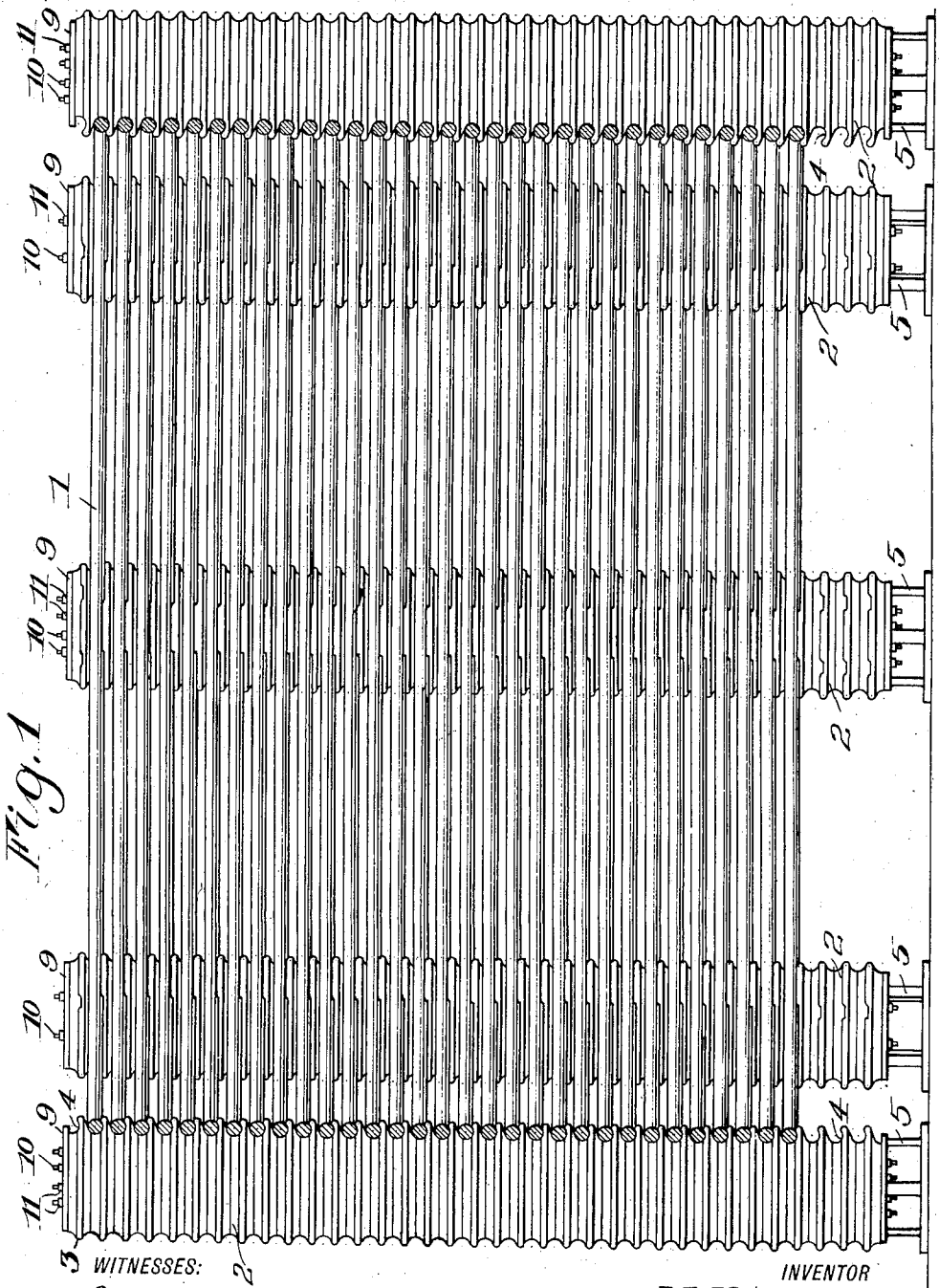


Fig. 1.

WITNESSES:

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Nelson H. Copp

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Fig. 2

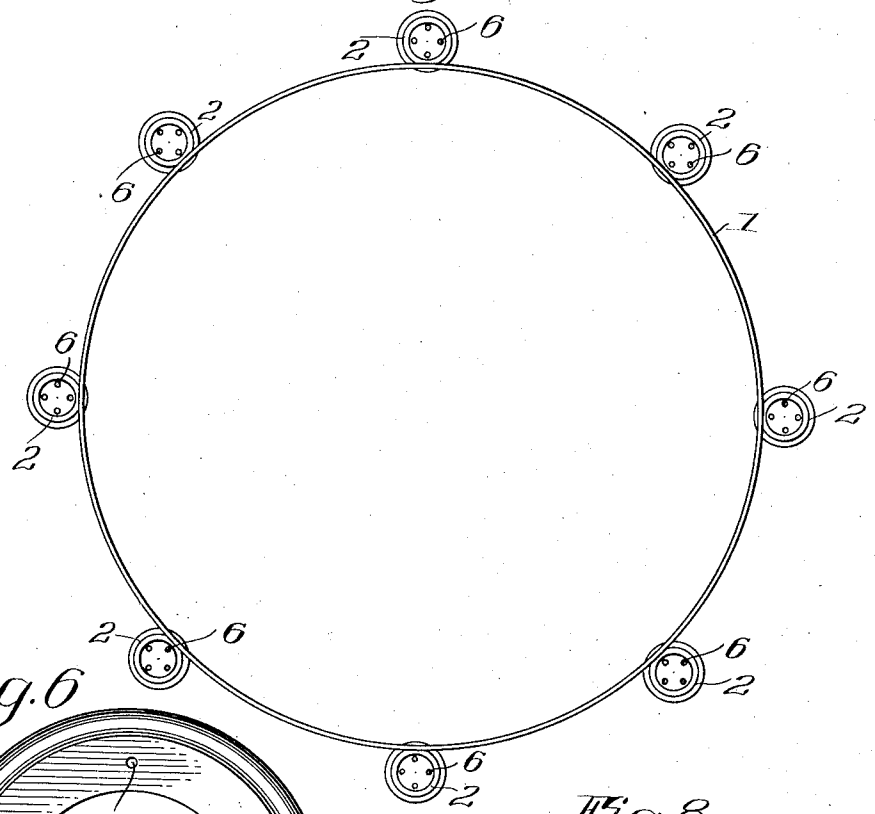
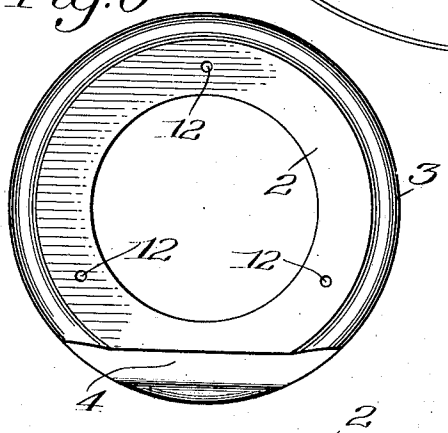


Fig. 6



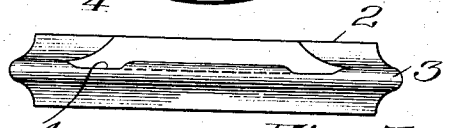
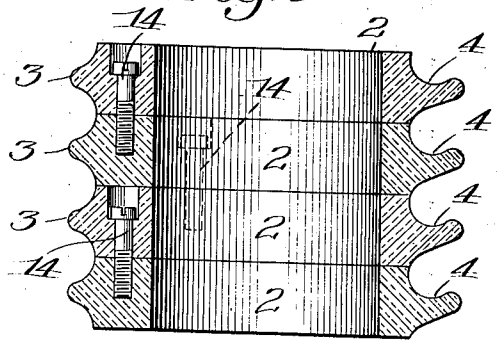


Fig. 7

Fig. 8



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Filed March 14, 1917 3 Sheets-Sheet 3

Fig. 3

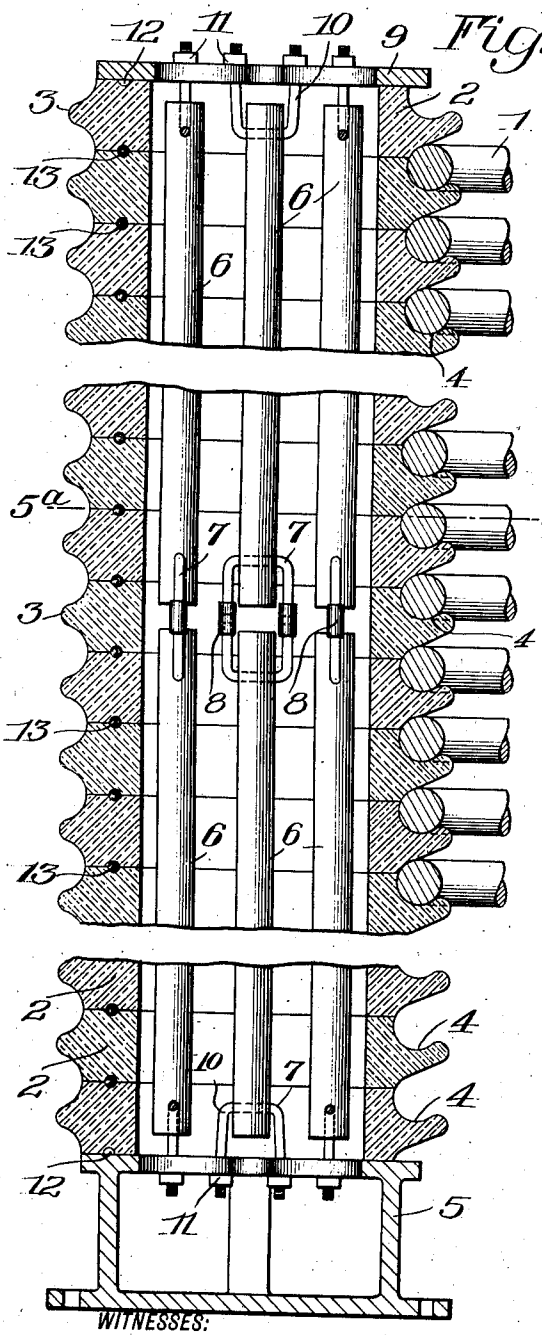


Fig. 4

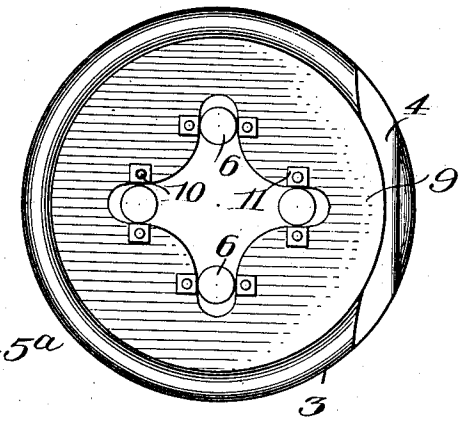
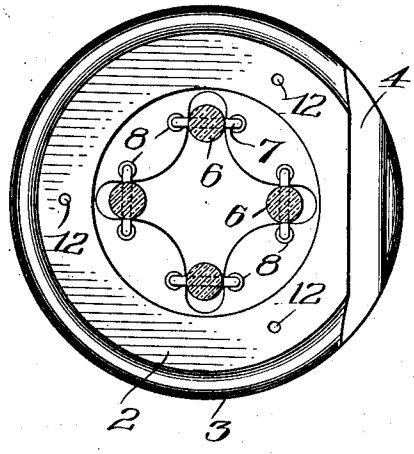


Fig. 5



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UNITED STATES PATENT OFFICE.

WALTER T. GODDARD, OF VICTOR, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO LOCKE INSULATOR CORPORATION, OF BALTIMORE, MARYLAND, A CORPORATION OF MARYLAND.

INSULATOR.

Application filed March 14, 1917. Serial No. 154,681.

To all whom it may concern:

Be it known that I, WALTER T. GODDARD, of Victor, in the county of Ontario and State of New York, have invented certain new and useful Improvements in Insulators; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference characters marked thereon.

My invention has to do with the general class of insulators and more particularly with a novel application of such structures for use in supporting a spiral or coiled conductor such as used in wireless or radio operations. In its closer aspects, the invention is intended to afford a column type insulated support which can be made up of independent units so as to extend it far beyond the limitations of a unitary or one piece post or column, and at the same time retain the strength and stability of an integral construction. A further purpose of the improvement is to permit of building up such a column type insulator to any desired height by employing a greater or less number of independent units and securing them together in such manner as to afford complete stability and rigidity. To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a side elevation showing an application of the invention, where a series of insulated supports are employed for retaining a spiral or coiled conductor;

Figure 2 is a plan view of the same;

Figure 3 is a vertical sectional view through one of the insulators with parts broken away;

Figure 4 is a plan view of the structure shown in Figure 3;

Figure 5 is a sectional view taken transversely on the line 5^a—5^a of Figure 3, with parts in elevation;

Figure 6 is a plan view of one of the insulating units;

Figure 7 is a side elevation of the same, and

Figure 8 is a vertical sectional view illustrating a modified arrangement.

Similar reference characters throughout the several views indicate the same parts.

The invention is here exemplified in a practical embodiment such as employed in radio electric work for supporting a vertically arranged conducting coil or cable 1. Such huge coils of wire sometimes extend for a distance of ten feet or more for carrying high voltage currents in high power radio stations, and it has been found quite impracticable to make a single integral post large enough or high enough for this class of work. According to the present improvement, I employ a series of insulators, each in the form of a column, and composed of a multiplicity of insulating units that are tied or bound together by tension members so as to place the individual insulating units in a state of compression and thereby obtain the same effect, from the standpoint of strength, stability and strain resisting qualities, as is obtained from a small integral post.

Each insulator, which I refer to as being of the column type, composes a series of insulating units, preferably of annular form, such as designated by 2, and having a peripheral rib or flange 3. The rib 3 of each insulating unit is cut away to form a groove 4 on the upper surface, which receives a portion of a convolution of the conducting coil as indicated in Figure 3. The insulating units are superposed one above another, preferably supported one upon the other, and receive the different convolutions of the coil, the entire assemblage being mounted on a suitable base 5. The various insulating units 2 are held in rigid relation and under a state of compression by suitable tension means which preferably embodies a series of tension members in the form of rods or bars 6 of insulating material joined by any convenient connecting devices such as the yoke 7 and nuts 8, which permit the column to be built to any desirable height by employing the sections or insulating rods 6 and using as many as may be necessary. The tension members are connected at the ends to the base 5 and to the top plate 9 respectively through yoke members 10 and 11 which may be tightened to any desired

extent, thus connecting the uppermost and lowermost insulating units and imparting to the column the necessary rigid and stable relation between the insulating units and in this manner constituting in effect a solid structure. It is desirable to provide interlocking means between the adjacent insulating units of the column and for this purpose, I prefer to employ recesses or pockets 12 in the adjacent surfaces of the insulating units, and to receive balls 13 or other suitable devices that prevent relative turning of the insulating units and serve to hold the entire structure of the column together the same as one integral, rigid mass. Instead of the pockets 12 and balls 13, I may employ the arrangement shown in Figure 8 which consists in providing a set screw 14 in one insulating unit and engaging a cooperating opening in the adjacent insulating unit, the set screws 14 being preferably in staggered relation as indicated by the dotted and full lines.

I claim as my invention:

1. A column type insulator comprising a series of hollow ring-like insulating units superposed one above the other and each provided with a rib having cut away portions forming a groove adapted to support one of the convolutions of a vertically arranged conducting coil, and a plurality of tensioning members extending through the openings in said units and spaced therefrom and acting to hold said units in position.

2. A column type insulator comprising a series of annular insulating units superposed one upon the other and each provided with a flange cut away to form a lip for receiving portions of successive convolutions of a conducting coil, interlocking means between adjacent units acting to prevent their relative movement, and tension rods formed of sections of insulating material and connecting the uppermost and lowermost units of the series and acting to hold all the insulating units in a state of compression.

3. An insulator support for a conducting coil, comprising a plurality of insulating units superposed one above the other, each of said units being of annular form and provided with a circumferential rib having portions cut away to form an upwardly open groove, said groove being adapted to receive a portion of a convolution of the conducting coil, the grooves of successive units being arranged on the same side of the support, and interlocking means arranged between adjacent surfaces of the units.

4. A column type insulator comprising a series of insulating units superposed one above another and provided with segmental grooves for supporting different convolutions of a conducting coil, tension means comprising a plurality of insulating members extending through openings provided in the insulating units and each adapted to be spaced from the adjacent portions of said units, said means connecting the insulating units and serving to hold them in a state of compression, and means interposed between and engaging adjacent units for preventing relative turning movement thereof.

5. A column type of insulator comprising a series of annular insulating units superposed one above another and provided with grooves for supporting different convolutions of a conducting coil, a metallic base member for supporting the insulator units, a metallic cap member and tensioning means connecting the said base member with the said cap member, said tensioning means comprising a plurality of insulated rods spaced from the adjacent portions of said units, said rods serving to hold the insulating units in a state of compression.

WALTER T. GODDARD.