April 22, 1924. 1,491,345

J. O. GARGAN

ELECTRICAL REGULATING DEVICE

Filed Dec. 7, 1921

Fig. 1.

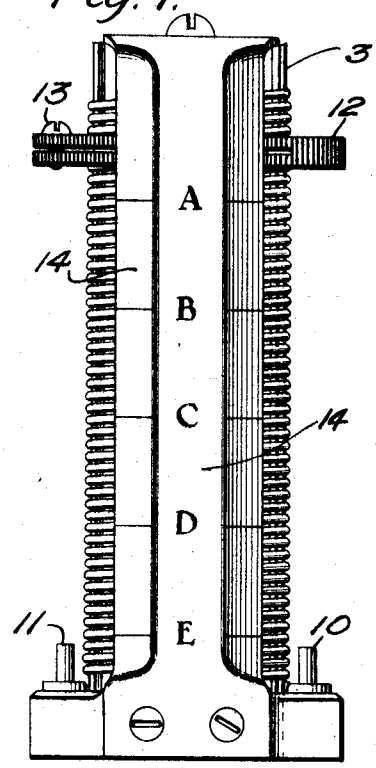
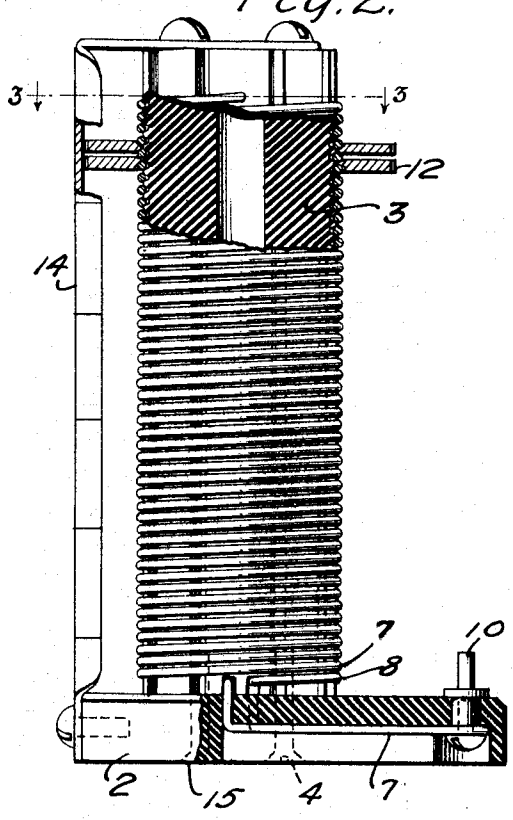


Fig. 2.



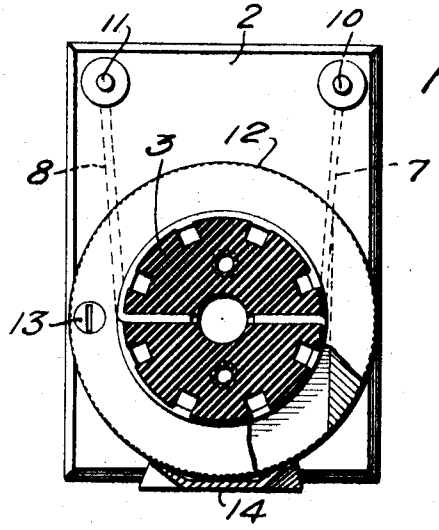
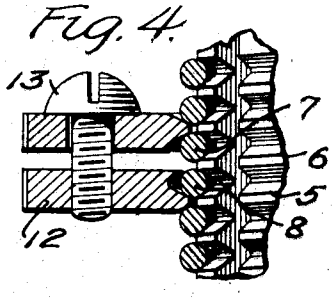


Fig. 3.

Fig. 4.



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Att'y.

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UNITED STATES PATENT OFFICE.

JOHN O. GARGAN, OF BROOKLYN, NEW YORK, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ELECTRICAL REGULATING DEVICE.

Application filed December 7, 1921. Serial No. 520,709.

To all whom it may concern:

Be it known that I, JOHN O. GARGAN, a citizen of the United States, residing at Brooklyn, in the county of Kings, State of New York, have invented certain new and useful Improvements in Electrical Regulating Devices, of which the following is a full, clear, concise, and exact description.

This invention relates to electrical regulating devices and particularly to variable resistance coils.

An object of the invention is to provide a resistor capable of fine adjustment.

In general the invention consists in providing a helically wound coil of resistance wire with an internally threaded annulus for engaging the convolutions of the coil as threads in order to vary the effective length of the resistance wire and providing the threaded annulus with means for locking it in its adjusted position.

In the drawing:

Fig. 1 is a front view of the variable resistor;

Fig. 2 is a side view, partly in section;

Fig. 3 is a plan view, partly in section; and

Fig. 4 is an enlarged detail view.

On the base 2 of insulating material is supported vertically a core 3, also of insulating material, and secured to the base by screws 4 and 15. The core is provided with double helical threads 5 and 6 in which are laid wires 7 and 8 so as to project about half their diameter above the crest of the threads. Thus, the wires 7 and 8 simulate the threads of a double threaded helical screw. Terminals 10 and 11 are provided on the base for external connections. To terminal 10 is connected wire 7 and to terminal 11, wire 8. A double threaded nut 12 is adapted to engage the wires 7 and 8 in the same manner as a nut and screw for the purpose of varying the resistance between the terminals 10 and 11. By turning nut 12, the effective resistance may be varied any amount as any portion of a convolution may be inserted or removed, as desired. Nut 12 is shown split and provided with a screw 13 for securing it against rotation. For certain uses it has been found advantageous to obtain the necessary frictional engagement between the nut and wire by slightly spreading the nut.

The scale 14, secured to the coil, is provided with an arbitrary marking, which, after the coil has been once calibrated, permits accurate setting of the contact member 12 in order to obtain the proper amount of resistance without the use of other instruments. If desired, this scale may be graduated in ohms.

What is claimed is:

1. An electrical regulating device comprising a core having a double thread formed thereon, a resistance conductor in each thread and projecting slightly therefrom thereby forming other threads, an adjustable split nut engaging said conductor threads and a screw through the split portion of said nut for securing it against rotation.

2. An electrical coil comprising a core, resistance conductors wound thereon as threads, a split nut rotatably engaging said threads for varying the effective resistance of said conductors and a screw through said nut for securing it against rotation.

3. An electrical regulating device comprising a core having a double thread formed thereon, a resistance conductor in each thread and projecting slightly therefrom, thereby forming other threads, an adjustable split nut engaging said conductor threads, a screw through the split portion of said nut for securing it against rotation, and a scale parallel to the axis of said core and supported thereon.

4. An electrical regulating device comprising a base and core, having a double thread thereon supported vertically upon said base, resistance conductors in each thread of said core and projecting slightly therefrom, thereby forming other threads, an adjustable split nut engaging said conductors, a screw through said nut for securing it against rotation and a scale parallel to said core and supported thereon, said scale cooperating with said nut to indicate the value of the resistance of said conductors.

In witness whereof, I hereunto subscribe my name this 5th day of December, A. D. 1921.

JOHN O. GARGAN.