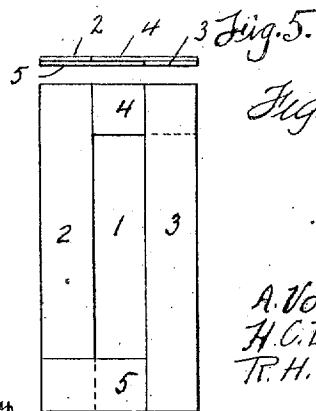
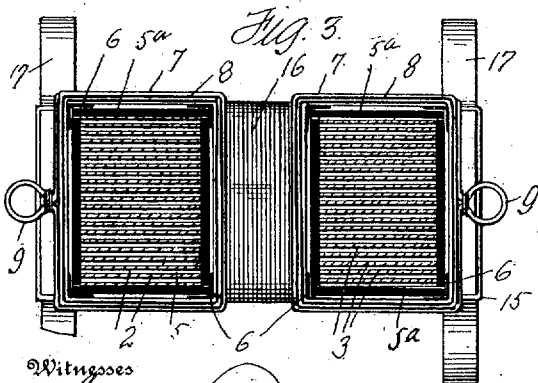
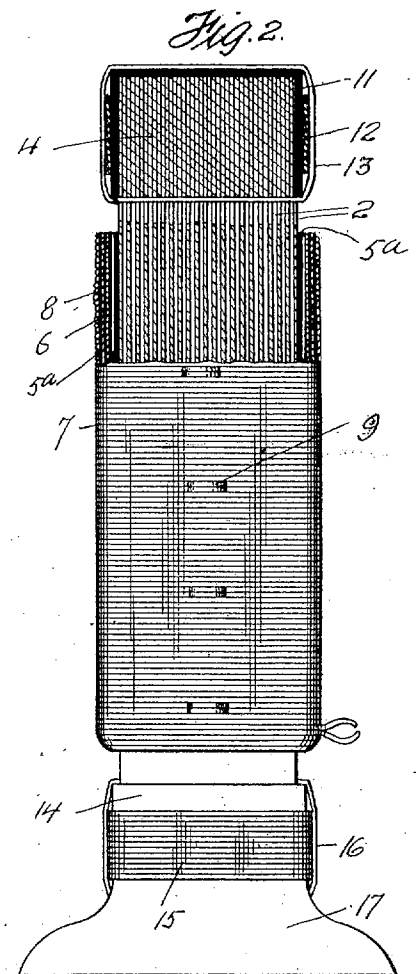
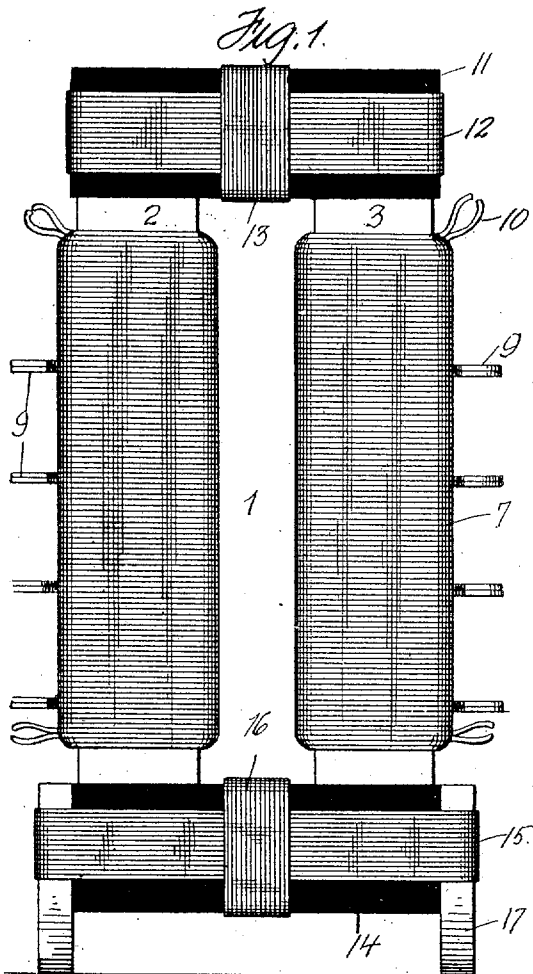


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COIL.

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972,950.

Patented Oct. 18, 1910.



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UNITED STATES PATENT OFFICE.

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COIL.

972,950.

Specification of Letters Patent.

Patented Oct. 18, 1910.

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To all whom it may concern:

Be it known that we, ANTON VOEGTLE, HARRY C. LEA, and RICHARD H. VOEGTLE, citizens of the United States of America, residing at Sharpsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Coils, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to coils, and more particularly to inductive resistance arc coils.

The primary object of the invention is to provide a noiseless non-heating coil that will not consume more than two kilowatts per hour when used with a five-eighth carbon on from one-hundred to one-hundred and twenty-five volts, sixty to one-hundred and thirty-three cycles, this amount being less than used by the same arc with a rheostat.

Another object of this invention is to provide a coil wherein a complete circuit of iron is employed, and by using taps to cut out the required number of turns in the winding to get different and proper voltage, instead of raising and lowering the coil, we secure greater economy.

We attain the above objects by a coil which is wound with two No. eight wires paralleling each other, which will carry sixty amperes without noise and heating, the coil being provided with eight taps to regulate the voltage. The coil is built of three layers of two—No. eight wires, thirty-three turns to the layer, double cotton covered wire being used. The iron forming the body of the coil is laminated, and insulated with one-eighth fiber and fish paper, the whole coil being compact and occupies a comparatively small space.

The detail construction of the coil will be hereinafter considered and then claimed, and reference will now be had to the drawing forming a part of this specification, wherein there is illustrated a preferred embodiment of the invention, but it is to be understood that the structural elements thereof can be varied or changed as to the size, shape and manner of assemblage without departing from the spirit of the invention.

In the drawings: Figure 1 is a front elevation of a coil constructed in accordance

with our invention, Fig. 2 is a side elevation of the same partly broken away and partly in section, Fig. 3 is a horizontal sectional view of the coil. Fig. 4 is a front elevation of one of the frames, and Fig. 5 is an end view thereof.

Our coil is constructed of a rectangular laminated body consisting of a series of rectangular frames 1, each frame comprising vertical flat plates 2 and 3, a flat top plate 4, and a flat bottom plate 5, these plates being made of iron of high efficiency, preferably No. 29—nine gage. The plates are arranged with the inner ends of the plates 4 and 5 bearing against the inner edges of the vertical plates 2 and 3, while the opposite ends of the plates 4 and 5 overlap the ends of the vertical plates 2 and 3.

The vertical plates 2 forming one side of the coil body have the exposed sides thereof covered with insulation 5^a, and the vertical edges and corners formed by the plates 2 are additionally insulated, as at 6. The plates are then wrapped with three layers of wire 7, each layer being insulated from the other, as at 8. The layers of wire are provided with equally spaced connections 9 for leading-in wires 10, the connections being used to cut out the required number of turns in the wires to obtain the required voltage. The plates 3 forming the other half of the coil are similarly insulated and wrapped.

The top plates 4 and the upper ends of the vertical plates 2 and 3 are covered with insulation 11 and horizontally wrapped with what is known as torpedo twine, as at 12, and transversely wrapped with torpedo twine, as at 13, thus binding the plates 4 and the upper ends of the plates 2 and 3 together.

The plates 5 and the lower ends of the plates 2 and 3 are covered with insulation 14 and horizontally wrapped with torpedo twine, as at 15, and transversely wrapped with torpedo twine, as at 16, the horizontal wrapping of torpedo twine 15 maintaining legs or supports 17 in engagement with the lower end of the coil, these legs being preferably made of fiber or a similar non-conductive material.

Having now described our invention what we claim as new, is:—

An inductance coil comprising a rectangular laminated core consisting of a series of

rectangular frames, each comprising vertical plates, a top plate and a bottom plate, the said plates forming vertical members, a top member and a bottom member of the
5 core, insulation surrounding each of the vertical members intermediate the ends thereof, layers of insulated wire wrapped upon said vertical members, each layer being insulated from the other, connections carried by the
10 insulated wire, insulation covering the top member and the upper ends of the vertical members, means for binding said insulation in position, insulation covering the bottom

member and the lower ends of said vertical members, means for holding said insulation 15 in position, and supports secured to the last mentioned insulation by the last mentioned means.

In testimony whereof we affix our signatures in the presence of two witnesses.

ANTON VOEGTLE.

HARRY C. LEA.

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