

No. 890,988.

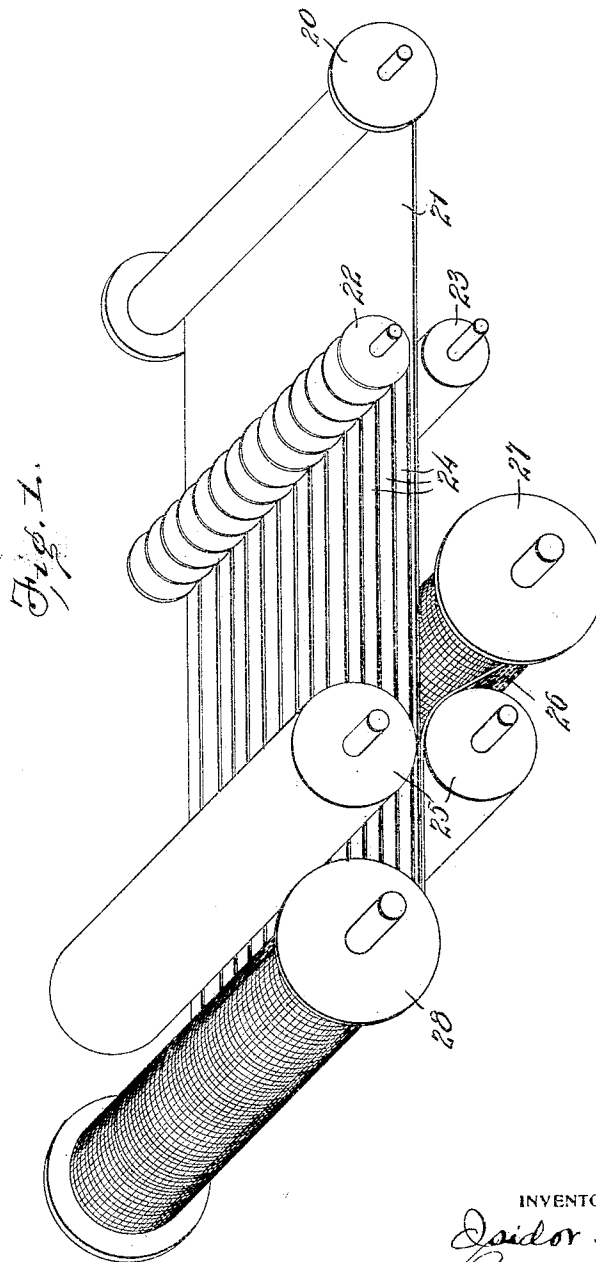
PATENTED JUNE 16, 1908.

I. KITSEE.

ELECTRIC COIL AND METHOD OF PRODUCING SAME.

APPLICATION FILED FEB. 11, 1907.

3 SHEETS—SHEET 1.



Witnesses.
L. H. Cunningham
M. E. Tucker

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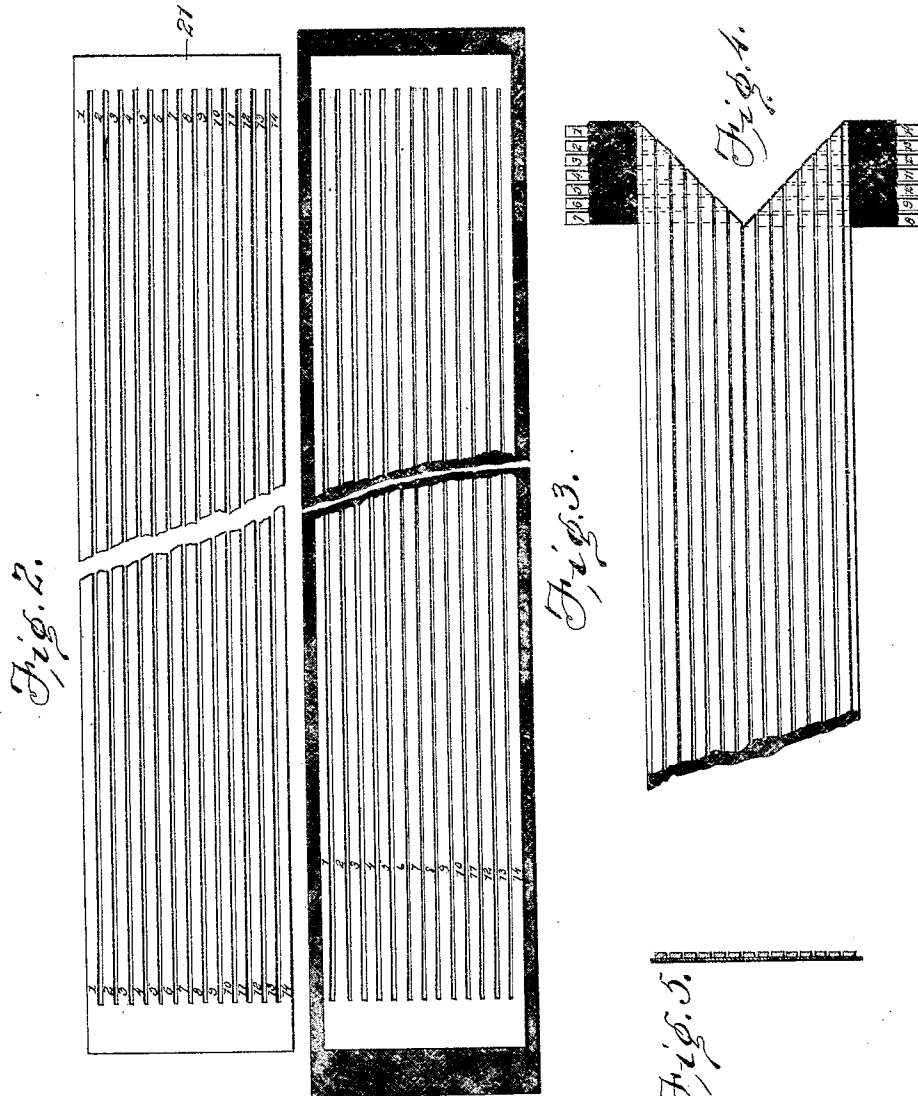
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ELECTRIC COIL AND METHOD OF PRODUCING SAME.

APPLICATION FILED FEB. 11, 1907.

3 SHEETS—SHEET 2.



Witnesses.

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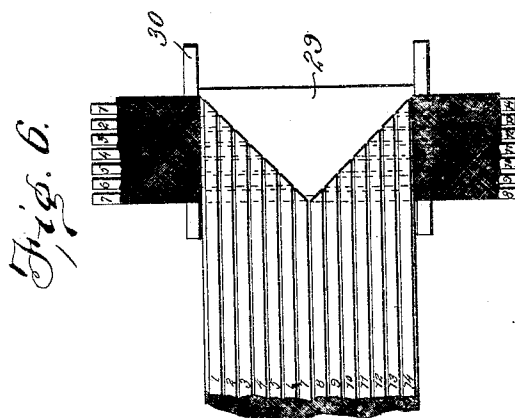
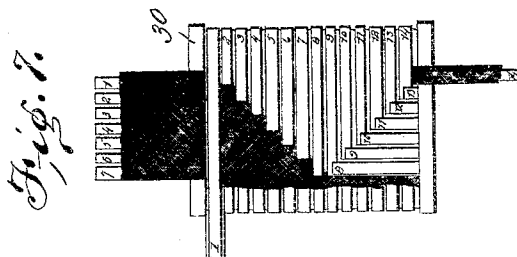
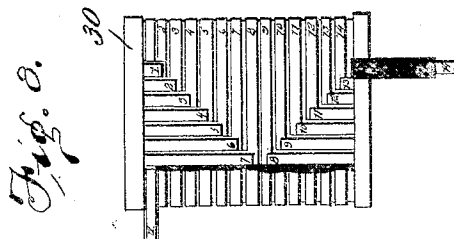
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3 SHEETS—SHEET 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

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ELECTRIC COIL AND METHOD OF PRODUCING SAME.

No. 890,988.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed February 11, 1907. Serial No. 356,795.

To all whom it may concern:

Be it known that I, ISIDOR KITSEE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Electric Coils and Methods of Producing Same; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in electric coils and the method of producing same, and it has for its object to provide a coil of this character constructed of a plurality of strips properly insulated to form the requisite number of windings, in contradistinction to the employment of insulated wire, each strip bearing a definite relation to the others, and so connected to the contiguous strips as to form a continuous path for the current throughout the diameter of the coil.

A further object of the present invention is the provision of a coil of the character mentioned the windings of which are formed from a single strip of metal slitted to provide the necessary lengths to form the respective convolutions, the convolutions being subsequently connected in series, and thus forming a continuous path for the flow of the current from one end of the coil to the other.

Having these general objects in view, and others that will appear as the nature of the improvements is better understood, the invention consists substantially in the novel construction, combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings—Figure 1 is a perspective view illustrating the manner of forming the conductors employed in connection with the production of the herein-described coil. Fig. 2 is a plan view of the slitted metallic sheet. Fig. 3 is a similar view illustrating the sheet shown in Fig. 2 as mounted upon a backing of insulation. Fig. 4 is a view similar to Fig. 3 illustrating the formation of one end of the backed sheet adapting the same for application to a bobbin for the construction of the coil. Fig. 5 is a transverse sectional view thereof. Fig. 6 is a plan view illustrating the sheet formed as disclosed in Fig. 4 applied to a bobbin preparatory to winding the sheet thereon. Fig. 7 is a side elevation of the coil

after the sheet has been wound thereon and in the finishing stages of construction. Fig. 8 is a side elevation of the completed coil.

Referring in detail to the drawings, and more especially to Fig. 1, the numeral 20 designates a roll having a sheet of metal wound thereon, said sheet being designated by the numeral 21, and from said roll 20 the sheet 21 is led to a slitting roll 22 that coöperates with a cylinder 23, and through the medium of which the sheet 21 is formed into a series of narrow strips 24. After leaving the rolls 22 and 23 the strips 24 formed thereby are caused to pass between a pair of compressing rolls 25 between which rolls also passes a web of insulating material 26 that is carried by a roll 27, and from which latter the web 26 is led through the rolls 25 at the under face of the strips 24. The web 26 is caused to adhere to the under sides of the strips 24 by any suitable medium, such as cement, and after leaving the rolls 25 the combined strips and web are wound upon a receiving roll 28. From this roll 28 any desired length of the combined strips and insulating web may be taken in accordance with the size of coil that it is desired to produce, but by referring to Figs. 2 and 3 it will be noted that in slitting the sheet 21 the same commences and ends at a point slightly remote from the ends of the sheet so that the extremities of the strips 24 may be held intact, and thus preserve the relative arrangement of the strips until it is desired to fully separate the same for the production of the coil.

To form a coil from the conductors produced as above described one end of the sheet 21 is slitted in order to separate the strips 24 at that particular end, and when this has been accomplished the strips are divided and an equal number preferably bent in opposite directions, and at right angles to the bodies of the strips, as clearly shown in Fig. 4, in which position it will be seen that the web of insulation lies between the bent back ends of the strips and the bodies thereof. After the ends have been positioned in this manner the same are placed upon a bobbin 29 forming the core of the coil, said bobbin being provided with heads 30, which latter form the ends of the coil, and the strips 24 are thereupon wound around the bobbin to the desired depth, and to impart to the coil the requisite diameter. When this has been accomplished the outer ends of the strips 24 are cut so that each successive strip, com-

mencing at the central portion thereof, is slightly less in length than the immediately adjacent one, as clearly seen in Fig. 7. By so cutting the strips 24 it is manifest that the outer ends thereof will be in a position to be overlapped by the inner ends which have been permitted to project, and these projecting inner ends are thereupon bent down upon the exposed outer ends, in a manner as clearly seen in Figs. 7 and 8, and the ends are securely fastened together, as by soldering. In this connection, however, it is to be noted that the projecting inner end of each strip is connected to the exposed outer end of the next immediately contiguous strip. This will be readily appreciated from the designations of the respective strips, to which consecutive numerals have been applied, the strips being designated from 1 to 14, and in connecting the projecting inner ends with the exposed outer ends, the inner end of strip No. 1 is connected to the outer end of strip No. 2; the inner end of strip No. 2 is connected to the exposed outer end of strip No. 3, and this continued throughout the entire series of the strips constituting the full winding of the coil. Thus the respective strips are connected in series, and a continuous path provided from one end of the coil to the other. It will be observed, however, that the outer end of strip No. 1, and the exposed inner end of strip No. 14 remain unconnected, and these strips constitute the terminals of the coil to enable the latter being connected to a circuit.

From the foregoing description it will be seen that an exceedingly simple but efficient coil is provided; that each strip constitutes a winding of the coil and bears a definite relation to the others, and that in connecting the strips in the manner described a continuous path for the flow of the current is provided from one end of the coil to the other.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

1. An electric coil, comprising a series of strips, said strips forming a series of independent windings insulated from each other, the inner end of each of said strips being connected to the outer end of the next contiguous strip to provide a continuous path for the flow of the current through the coil.

2. An electric coil, comprising a series of strips, each of which constitutes a separate

winding, and an insulating web mounted upon one face of said strips and serving to insulate the convolutions of the windings from each other, the inner end of each of said strips being connected to the outer end of the next contiguous strip to provide a continuous path for the flow of the current through the coil.

3. An electric coil, comprising a series of strips each of which constitutes a separate winding, and an insulating web mounted upon one face of said strips and serving to insulate the convolutions of the windings from each other, the inner ends of the strips overlapping the outer ends thereof and each connected to the next contiguous strip to provide a continuous path for the flow of the current through the coil.

4. An electric coil, comprising a core, and a series of independent windings arranged in sheet form wound upon said core, said windings being insulated from each other, the inner end of each of said windings being connected to the outer end of the next contiguous winding to provide a continuous path for the flow of the current through the coil.

5. An electric coil, comprising a bobbin forming the core of the coil, and a series of independent windings arranged in sheet form wound upon said core, said windings being insulated from each other, the inner end of each of the windings being connected to the outer end of the next adjacent winding to provide a continuous path for the flow of the current through the coil.

6. The method of producing an electric coil, which consists in winding in coil form a sheet of insulating material having thereon a series of independent conductors, and then connecting the latter in series as to each other.

7. The method of producing an electric coil, which consists in winding in convolute form a sheet of insulating material having at one of its sides a series of independent conductors, the convolutions of the insulating material separating the convolutions of the conductors, and then connecting the latter in series as to each other.

In testimony whereof I affix my signature, in the presence of two witnesses.

ISIDOR KITSEE.

Witnesses:

EDITH R. STILLEY,
MARY C. SMITH.