No. 693,752. Patented Feb. 18, 1902.

W. SPENCER, Jr.

ELECTRIC COIL.

(Application filed Dec. 26, 1901.)

(No Model.)

Fig 1

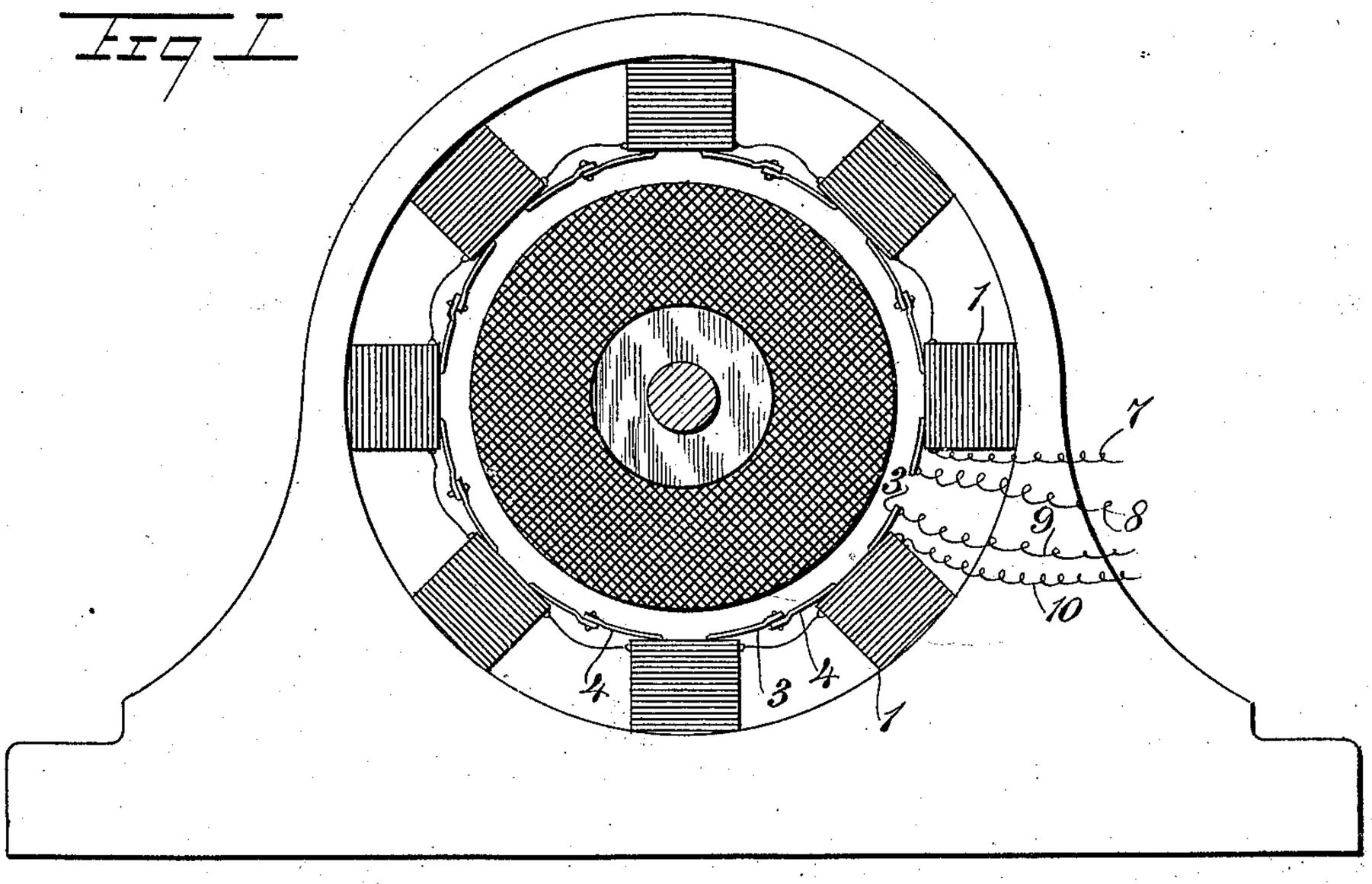


Fig 2

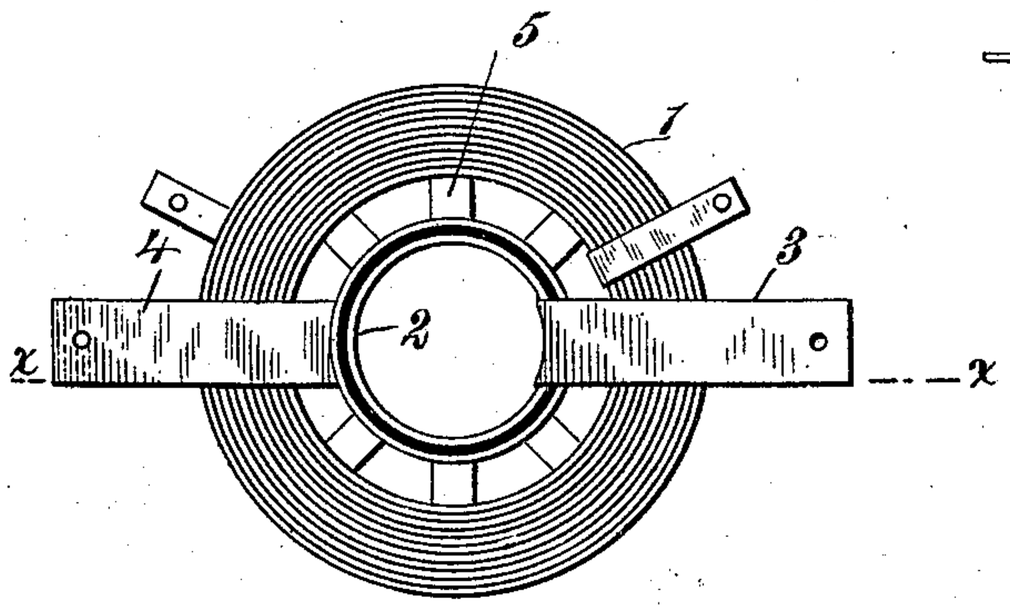
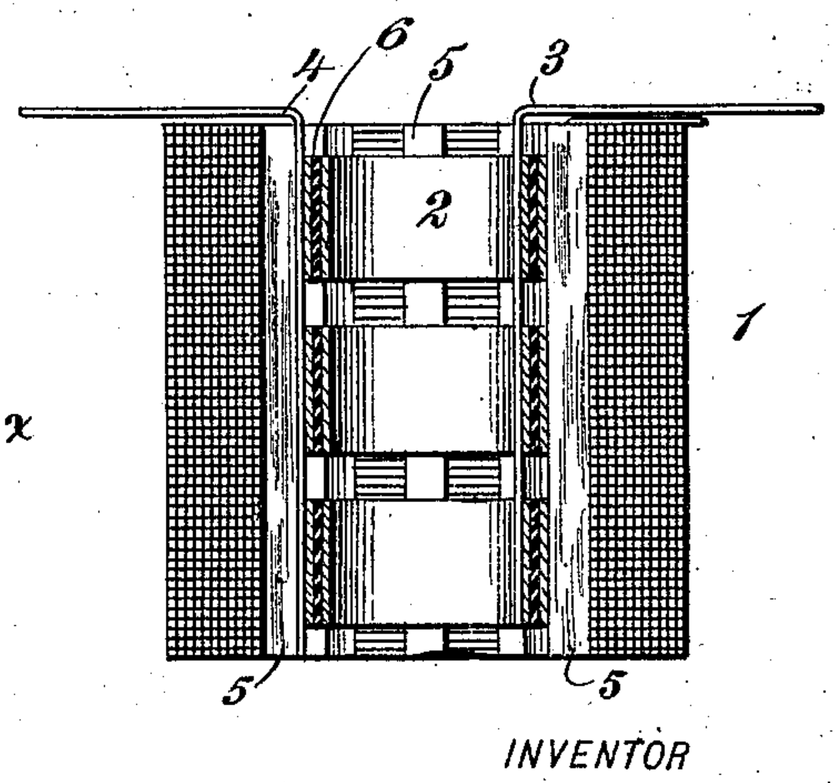


Fig 3



WITNESSES:

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ELECTRIC COIL.

SPECIFICATION forming part of Letters Patent No. 693,752, dated February 18, 1902.

Application filed December 26, 1901. Serial No. 87,243. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SPENCER, Jr., a citizen of the United States, and a resident of Schenectady, in the county of Schenectady and State of New York, have invented a new and Improved Electric Coil, of which the following is a full, clear, and exact description.

This invention relates to improvements in coils for electric devices, such as motors, generators, or the like; and the object is to provide a compound coil, the inner coil having air-spaces to prevent it from heating, and, further, to provide air-spaces between the inner and outer coils to prevent heating and burning.

I will describe an electric coil embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is an end elevation of a dynamo-electric machine, showing coils embodying my invention. Fig. 2 is an end view of a coil, and Fig. 3 is a section on the line x x of Fig. 2.

Referring to the drawings, 1 designates the outer or shunt coil, and the inner coil consists of a series of copper plates 2, spaced apart so as to permit of a circulation of air between said plates. The several plates are connected in multiple, and each plate is made in the form of a coil. The inner ends of the plates are connected by a copper strip 3 and the outer ends are connected by a copper strip 4. The inner coil is spaced from the inner surface of the outer coil and is supported by strips 5 of insulating material, which engage against the outer surface of the inner coil and against the inner surface of the outer coil. The inner coil terminates somewhat inward of the ends of the outer coil or of the spool, so as to prevent the said inner coil from being grounded by contacting with the ends of the spool. An insulating material 6 is placed between the windings of each plate 2, as clearly illustrated in the drawings.

When these coils are used in a dynamo or similar machine, the terminals 3 and 4 will be connected one with another, as illustrated in Fig. 1, and the shunt-windings will also be connected one with another. Feed-wires 7 and 8 lead, respectively, from the shunt-winding of one coil and from a terminal of the inner coil thereof, and brush-wires 9 and 10 lead, respectively, from a terminal of an inner coil and from a terminal of its outer coil.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A compound coil comprising an inner and an outer coil, the inner coil consisting of a series of windings spaced apart and connected at their terminals, substantially as specified.

2. A compound coil comprising an inner and an outer coil, the inner coil consisting of a series of coiled metal plates spaced apart, a connection between the inner ends of the several plates, and a connection between the outer ends of the several plates, substantially as specified.

3. A compound coil, consisting of an outer or shunt coil, an inner coil comprising a series of coiled plates and spaced from the inner surface of the outer coil, connections between the inner ends of said plates, and connections between the outer ends of said plates, the several plates being spaced apart, substantially as specified.

4. In an electric device, an outer or shunt coil, an inner coil consisting of a series of plates spaced apart, the said inner coil having its ends terminating inward of the ends of the outer coil, connections between the inner ends of the inner coil-plates, connections between the outer ends of said plates, and blocks of insulating material arranged between the inner coil and the outer coil, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM SPENCER, JR.

Witnesses:
ALEX. FENWICK,
A. T. G. WEMPLE.