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T. SCHOU ET AL

DYNAMO ELECTRIC MACHINE

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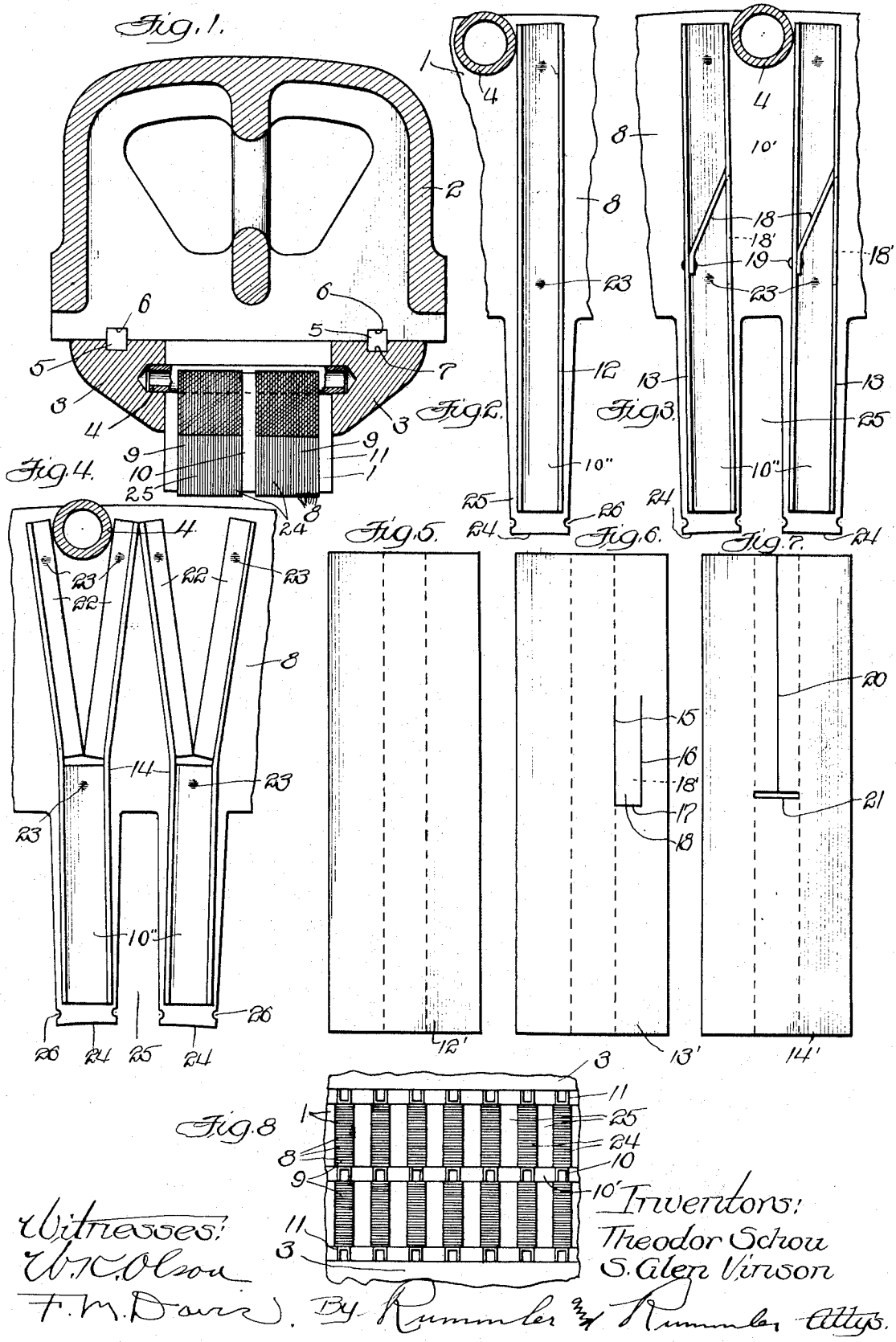

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UNITED STATES PATENT OFFICE.

THEODOR SCHOU AND S GLEN VINSON, OF MANSFIELD, OHIO, ASSIGNORS TO THE IDEAL ELECTRIC & MANUFACTURING CO., OF MANSFIELD, OHIO, A CORPORATION OF OHIO.

DYNAMO-ELECTRIC MACHINE.

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To all whom it may concern:

Be it known that we, THEODOR SCHOU and S GLEN VINSON, a subject of the King of Norway, and a citizen of the United States of America, respectively, and residents of Mansfield, county of Richland, and State of Ohio, have invented a new and useful Improvement in Dynamo-Electric Machines, of which the following is a specification.

This invention relates to dynamo electric machines, and especially to the matter of ventilation therefor and the means for holding the core laminations in place. The main objects of the invention are to provide an improved form of spacing means for insertion between successive groups of laminations whereby the ventilating air may be more efficiently distributed; to provide such means of light and rigid construction; to provide such means of a form adapted to serve as end supports whereby the tooth parts of the end laminations of each group may be held rigidly against vibration and consequent noise; and to combine such a member in a unitary manner with the adjacent lamination.

An illustrative embodiment of this invention is shown in the accompanying drawing, in which—

Figure 1 is a longitudinal radial cross section through the stator core and support.

Fig. 2 is a fragmentary view of a core lamination with one form of spacer embodying said invention.

Fig. 3 is a similar view showing another embodiment of the invention.

Fig. 4 shows still another embodiment of the invention.

Figs. 5, 6 and 7 show flat sheet metal blocks from which the spacers shown in Figs. 2, 3 and 4 respectively may be formed.

Fig. 8 is an inner face view of the stator core and adjacent clamping rings.

In the construction shown in the drawings, the stator comprises a laminated core 1 supported on a rigid frame 2, by means of clamping rings 3 and pins 4, said rings being held in place by keys 5 disposed in the slots or grooves 6 and 7 of the frame 2 and rings 3 respectively.

The core 1 comprises laminations 8 arranged in groups 9 separated by spacers 10 and secured at their ends by supports 11. Said spacers and supports 10 and 11 may be identical in form and may be of any of the forms shown in Figs. 2, 3 and 4 or any equivalent modification thereof.

In Fig. 2 the spacer or end support 12 is in the form of a plain channel bar. Such a bar may be formed from a flat blank 12′ shown in Fig. 5. In Fig. 3 the corresponding member 13 is similar to member 12 except that one of its sides has a side aperture, as will be explained. This form of member may be formed from a blank 13′ such as shown in Fig. 6. On Fig. 4 the end support and spacer 14 is in the form of a channel bar having one end split and spread open. It may be formed from a blank 14′ such as shown in Fig. 7.

Referring to Fig. 6, the blank 13′ is formed with three contiguous cuts 15, 16 and 17 to provide a tongue 18. When said blank is bent into its channel shape the tongue 18 is disposed diagonally across the bottom of the channel and its free end is secured to the opposite wall as at 19, preferably by spot welding. This provides a lateral vent aperture 18′. When the member 13 is positioned as shown in Fig. 3 the tongue 18 serves as a vane to deflect part of the air outward from the channel through vent 18′ into the space 10′ between spacers.

Referring to Fig. 7, the blank 14′ is formed with a T-cut including a central lengthwise cut 20 and a short central cut 21 across the inner end of cut 20. The cut 21 may well be of the nature of a slot. When said blank is bent into a channel shape the bifurcated end is spread apart to form legs 22 as shown in Fig. 4, with the unsplit end against its corresponding lamination tooth.

In each case the spacer or end support 10, in any of its forms as 12, 13 or 14, is secured rigidly to the lamination against which its channel base rests, spot-welding being preferable, as at 23.

Each tooth supporting part 10″ is preferably somewhat narrower than the tooth 24 and good clearance is provided for the winding slots 25. The part 10″ comes a little short of the coil locking notches 26, so as to clear the wedge or key members, not shown.

Although three specific embodiments of this invention are herein shown and de-

scribed it is to be understood that no attempt has been made to show all practical forms of embodiment; that some of the details of the constructions shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

We claim:

1. In a dynamo-electric machine, including a laminated core member having alternately disposed radial teeth and slots, a plurality of groups of laminations in combination with a series of radially disposed spacers between said groups to provide ventilation, said spacers having air passageways each respectively, each spacer also including a core body supporting part, and each body supporting part having a side part formed and disposed diagonally to spread the air laterally opposite the non-slotted body of the core.

2. In a dynamo-electric machine a toothed lamination, in combination with a channel bar disposed radially thereon and secured thereto in a rigid and unitary manner, said bar having one end disposed lengthwise of and against a lamination tooth and its other end being split and spread apart and disposed against the body part of said lamination.

Signed at Mansfield, O., this 4th day of January 1922.

THEODOR SCHOU.
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