

No. 885,800.

PATENTED APR. 28, 1908.

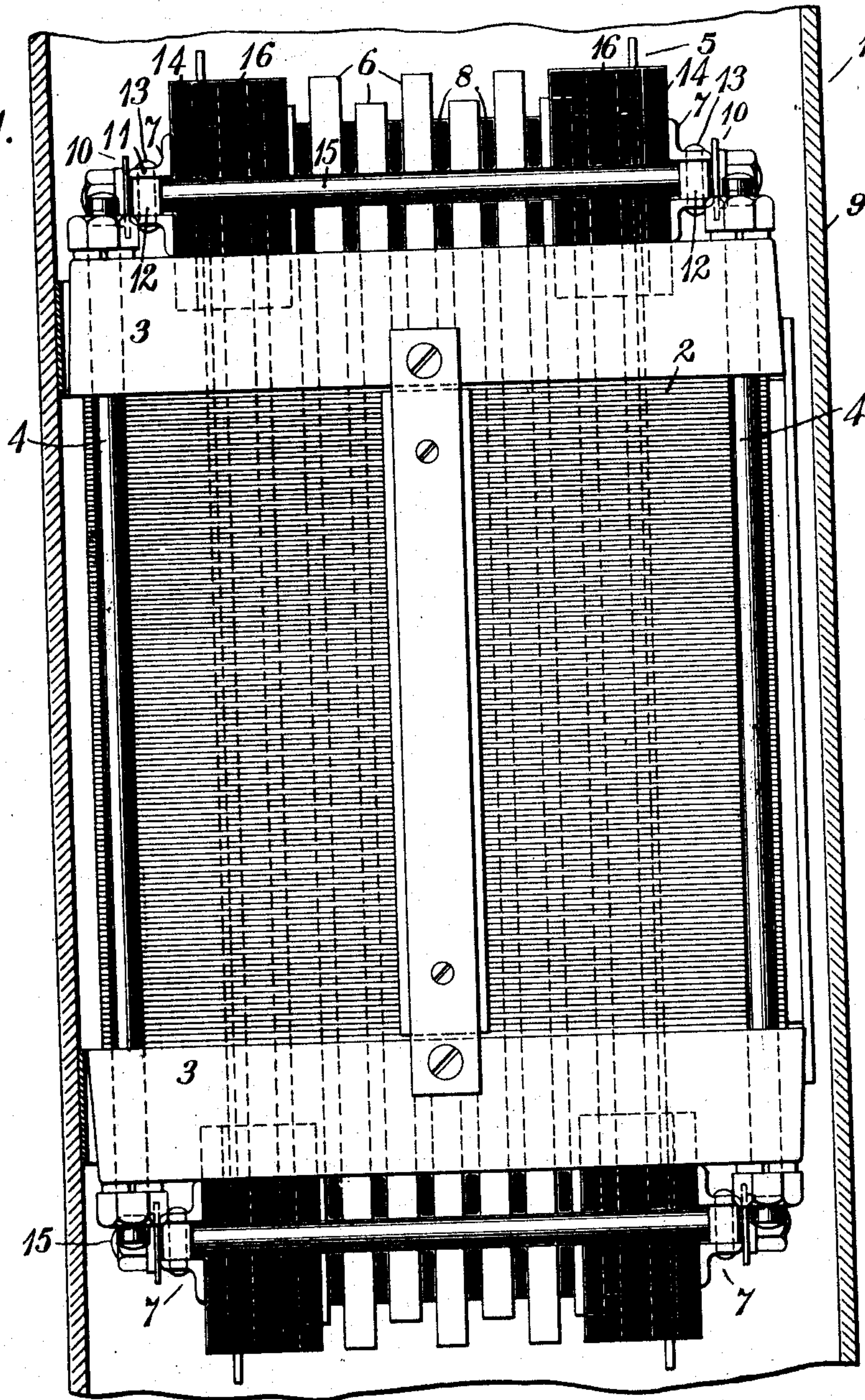
H. C. SOULE.

COIL SUPPORT FOR ELECTRIC TRANSFORMERS.

APPLICATION FILED AUG. 3, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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2 SHEETS—SHEET 2.

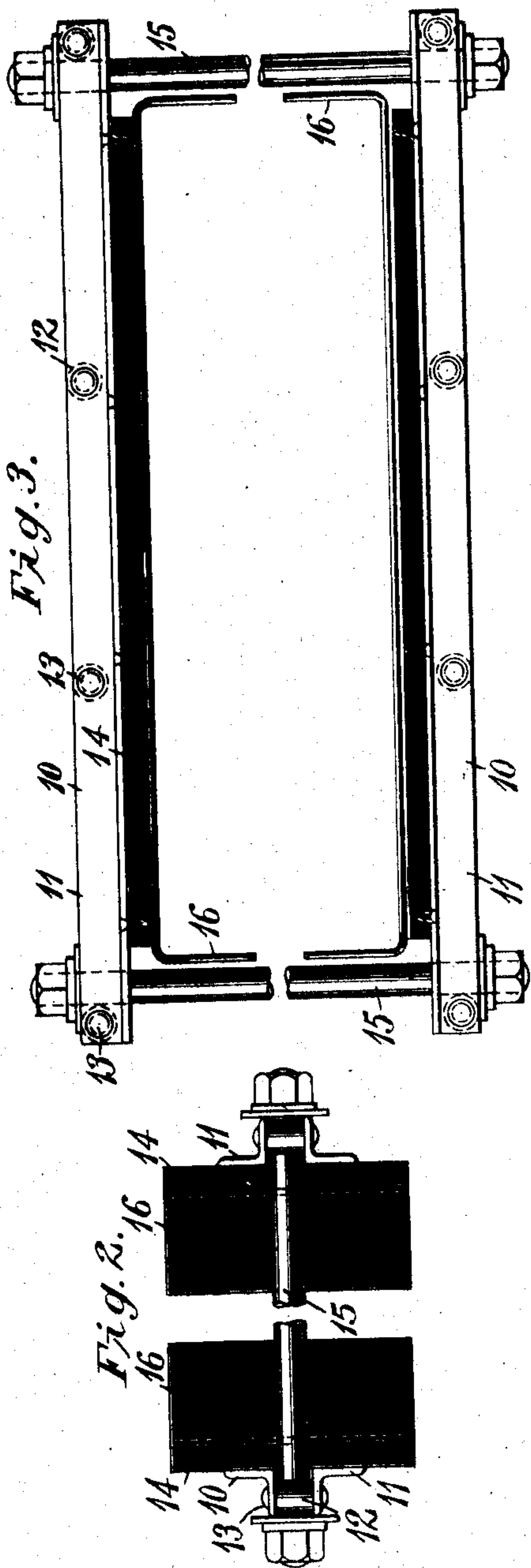


Fig. 4.

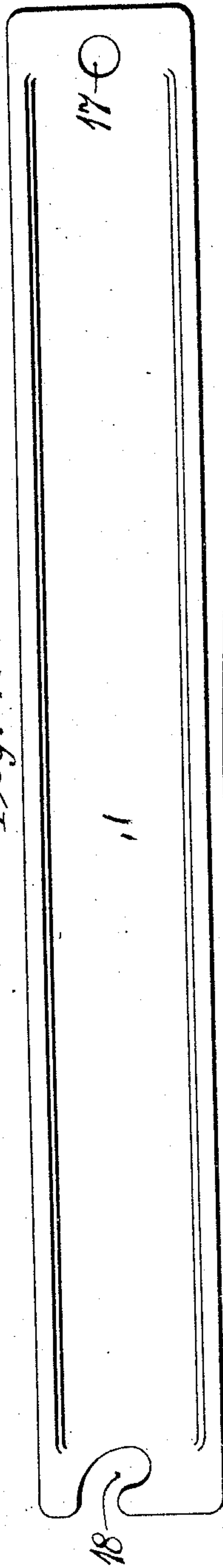
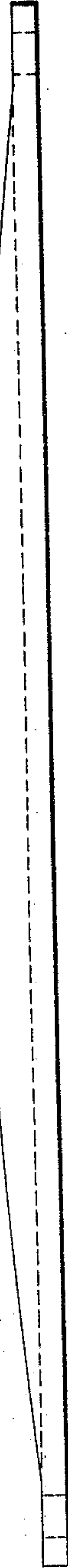


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## COIL-SUPPORT FOR ELECTRIC TRANSFORMERS.

No. 885,800.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed August 3, 1907. Serial No. 386,856.

*To all whom it may concern:*

Be it known that I, HERBERT C. SOULE, a citizen of the United States, and a resident of Wilksburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Coil-Supports for Electric Transformers, of which the following is a specification.

My invention relates to electrical apparatus and has special reference to alternating current transformers of the shell type.

The object of my invention is to provide simple and improved means for supporting the ends of the coils which extend beyond the magnetizable core member of the transformer.

It is specially desirable in transformers of the shell type to provide a coil-supporting means which may be readily applied to the coil-ends and be independent of the transformer casing, the transformer core and the core frame.

Figure 1, of the accompanying drawings, is a side elevation of a transformer equipped with the coil support of my invention, the transformer casing being broken away to disclose the transformer proper. Figs. 2 and 3 are detail views of the coil support shown in Fig. 1, and Figs. 4 and 5 are details of a modified form of side bar which may be employed in lieu of the corresponding parts shown in Figs. 1, 2, and 3.

Referring to the drawings, the transformer 1 comprises a magnetizable core member 2 which is constructed of laminated iron, bound together by end frames 3 and tie bolts 4, a winding 5 comprising a plurality of coils 6, and coil supports 7.

The coils 6, of which the winding 5 is composed, are separated by insulating strips or spacers 8 and their relative position is maintained independently of the transformer casing 9 and the core member 2 by the coil supports. Each coil support 7 comprises a pair of similar side pieces 10 built up of angle irons 11 which are separated from each other by a plurality of hollow cylindrical washers 12 or sections of pipe and are fastened together by rivets 13 which are surrounded by the parts 12. Strips 14 of insulating material are secured to the angle irons 11 and cross bolts 15 are located at the ends of the

side pieces and serve to clamp them to the coils.

In order to protect the coils from contact with the bolts 15, relatively thin strips 16 of fullerboard or other suitable insulating material are secured to the inner surfaces of the strips 14 and are bent inwardly at their ends into planes parallel to the bolts. The frame thus formed is clamped onto the ends of the transformer winding which project beyond the core structure, the side pieces of the coil supports being held in engagement with the flat sides of the coil ends by means of the cross bolts 15.

In three-phase transformers of the shell type the spaces between the groups of windings are often so limited that it would be impossible or inconvenient to use the coil support illustrated in Figs. 2 and 3, and it may, therefore, be desirable, in some cases, to employ side pieces such as are illustrated in Figs. 4 and 5 having end holes 17 to receive the cross bolts and opposite end slots 18 to receive the last bolt after the supporting frame is placed in position on the transformer winding.

I claim as my invention:

1. In a transformer, the combination with a core member and a winding having a plurality of coils which project beyond the ends of the core member, of means independent of the other transformer parts for supporting the projecting ends of the windings.

2. In a transformer, the combination with a core member and a winding having a plurality of coils which project beyond the ends of the core member, of a supporting frame, independent of the other transformer parts, for clamping the ends of the coils in position.

3. In a transformer, the combination with a core member and a winding having a plurality of coils which project beyond the ends of the core member, of an adjustable clamping frame, independent of the other transformer parts, for holding the ends of the coils in position.

4. In a transformer, the combination with a core member and a winding having a plurality of coils which project beyond the ends of the core member, of means for supporting the projecting ends of the windings comprising side bars which rest against and are insu-

lated from the coils, and cross bolts which connect the ends of the side bars.

5 In a transformer, the combination with a core member, a winding having a plurality of coils which project beyond the end of the core member, of an adjustable coil-supporting frame comprising side bars built up of angle irons, insulating strips secured to the

side bars and cross bolts which connect the extremities of the side bars.

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In testimony whereof, I have hereunto subscribed my name this 30th day of July, 1907.

HERBERT C. SOULE.

Witnesses:

OTTO S. SCHAIRER,  
BIENEY HINES.