

No. 891,273.

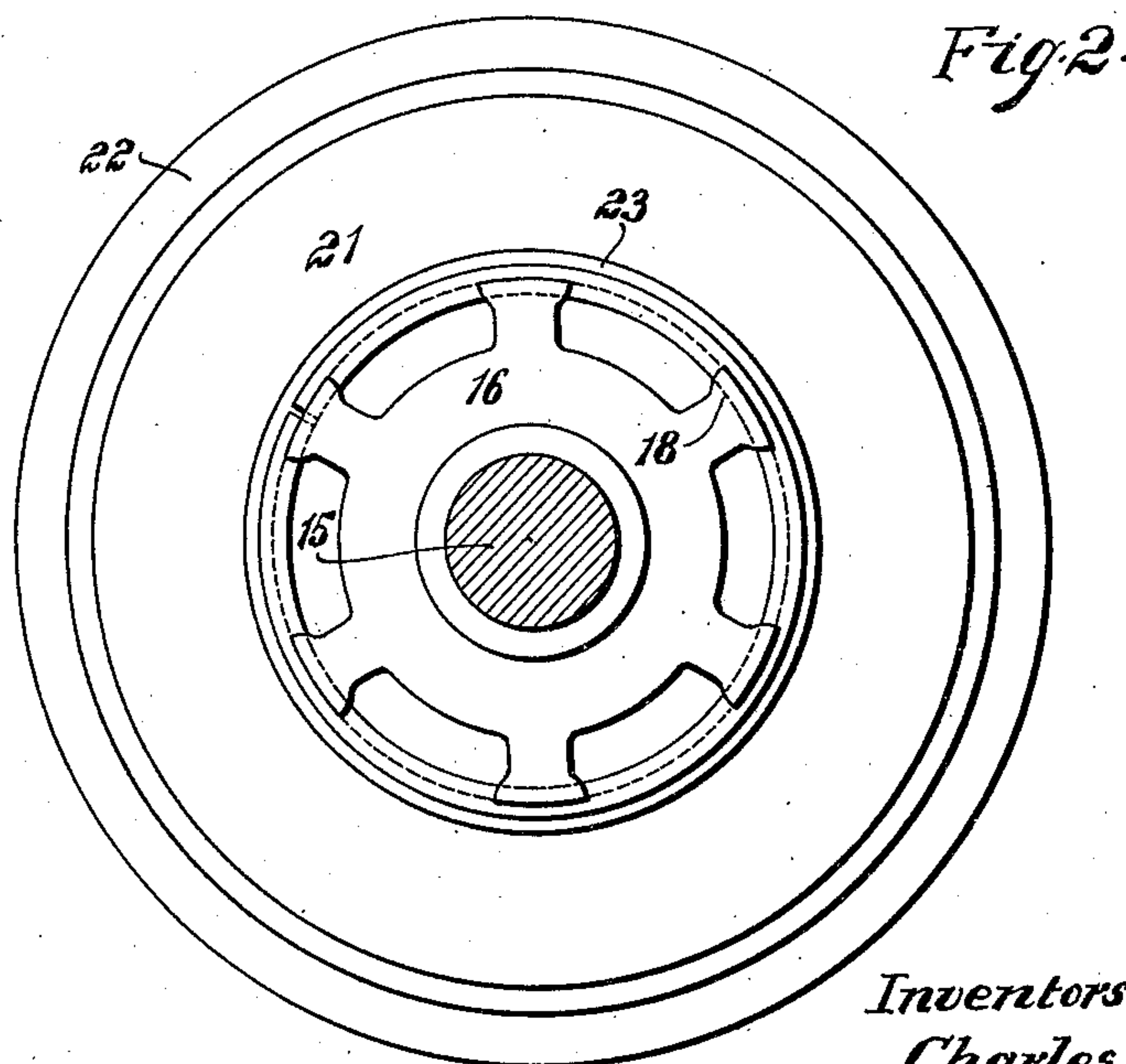
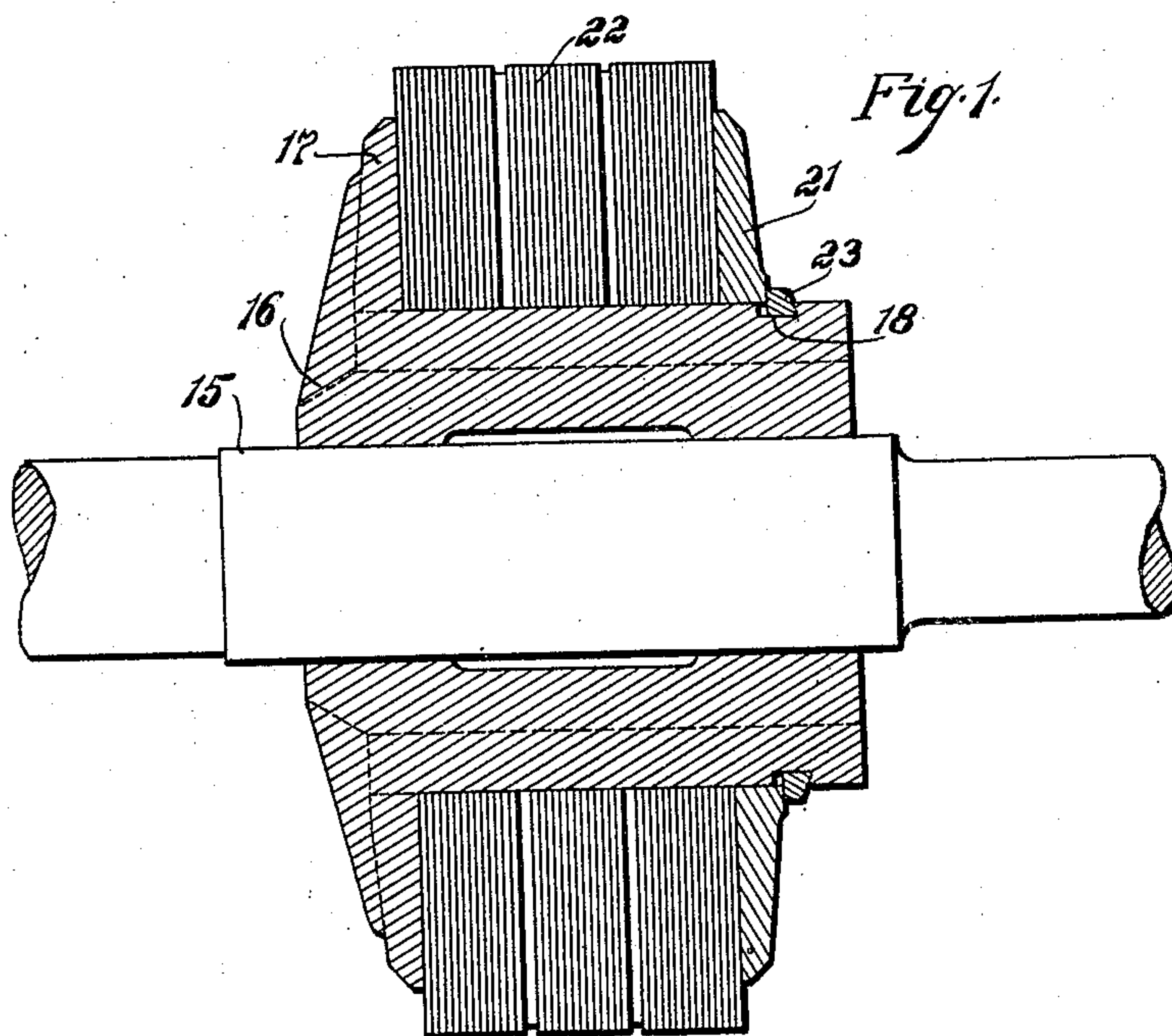
PATENTED JUNE 23, 1908.

C. E. LORD & W. H. POWELL.

CLAMPING MEANS FOR CORE PLATES OF DYNAMO ELECTRIC MACHINES.

APPLICATION FILED SEPT. 14, 1905. RENEWED JAN. 22, 1908.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

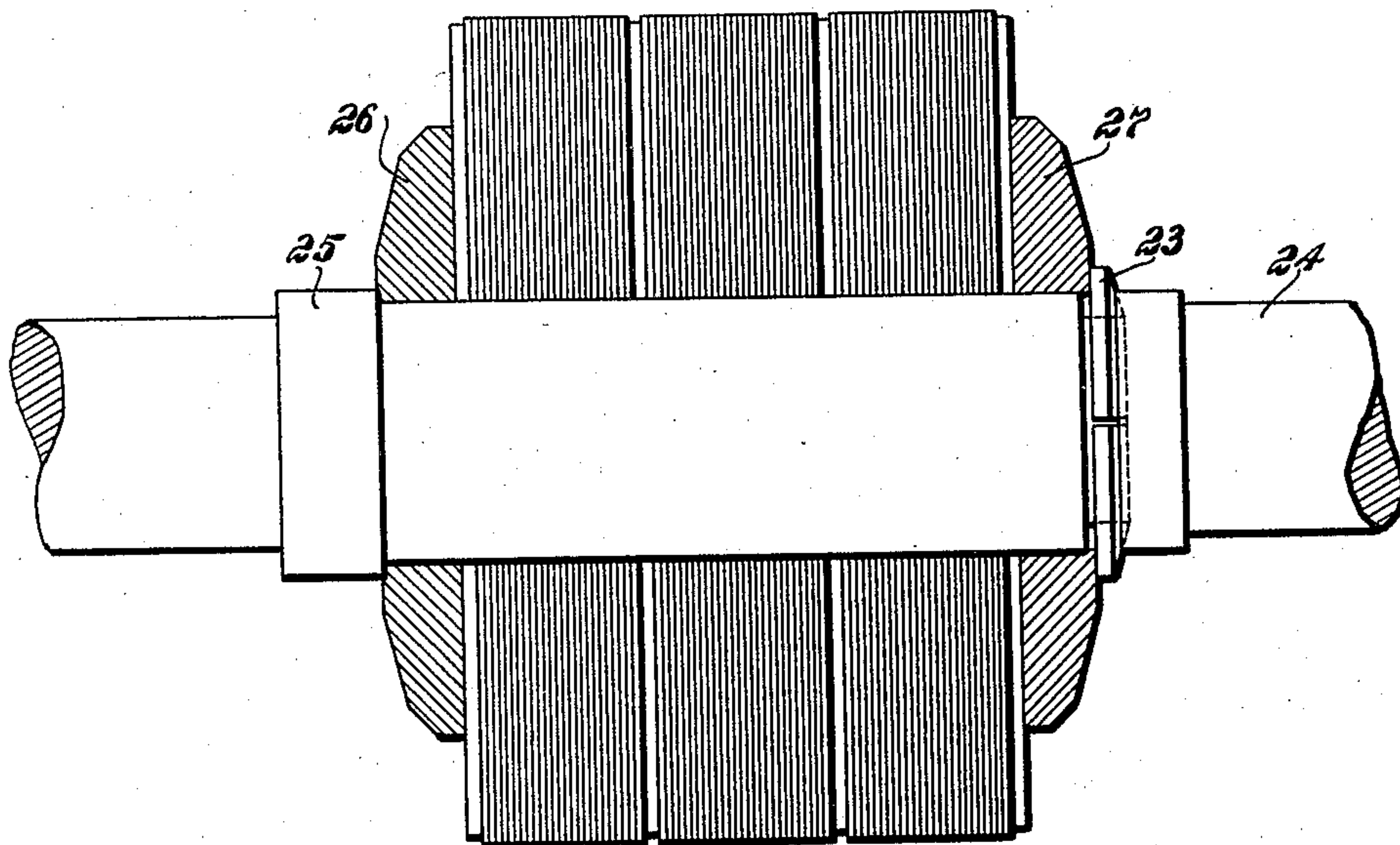


Fig. 4.



Fig. 6.

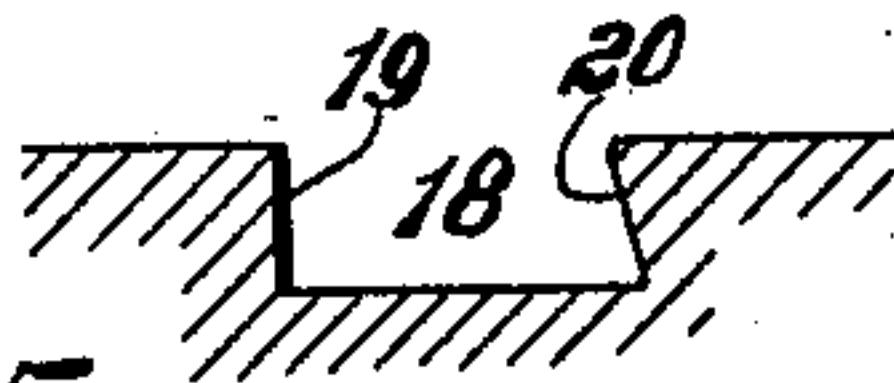


Fig. 5.

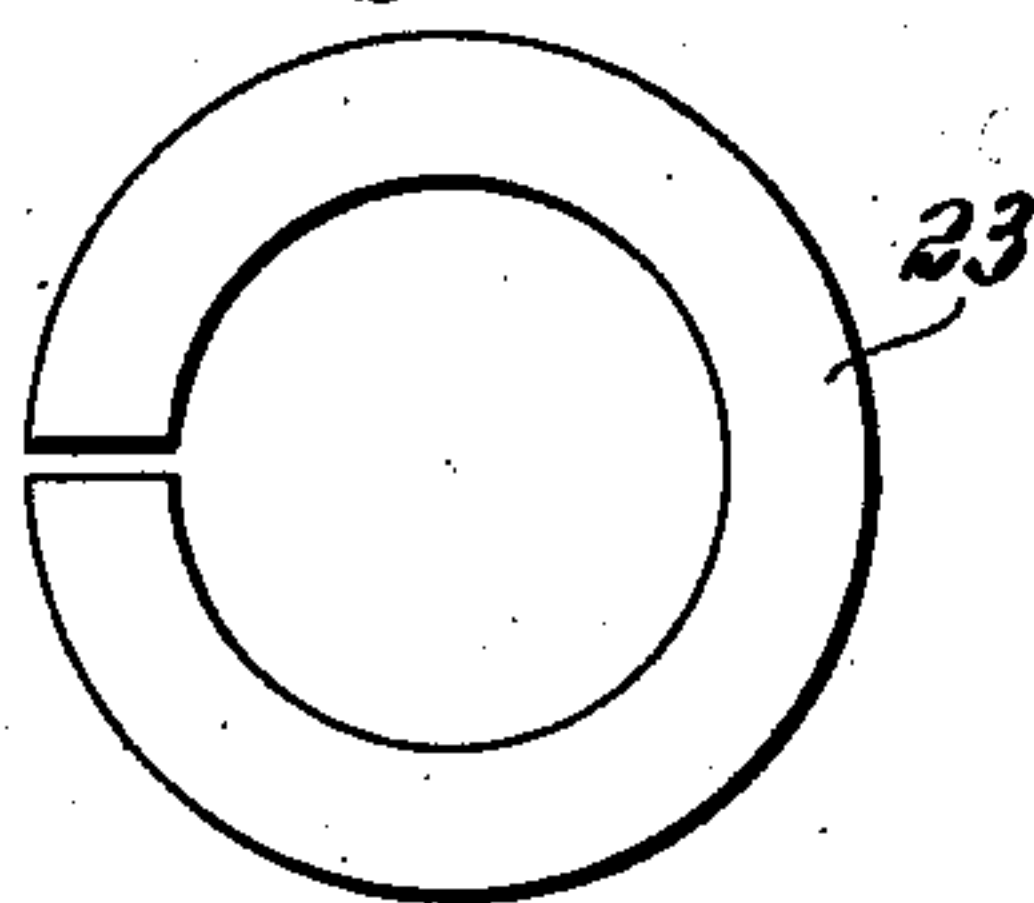


Fig. 8.

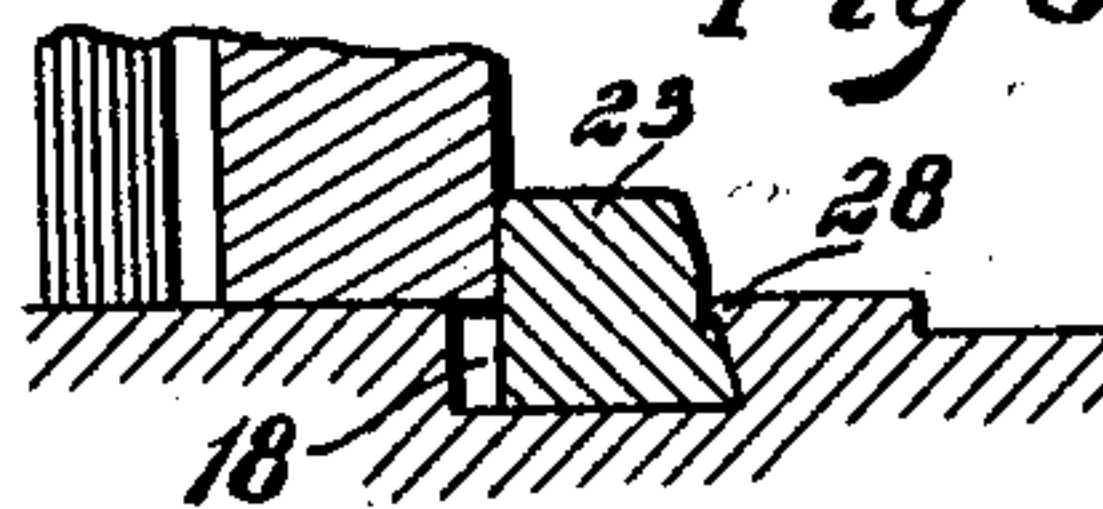


Fig. 9.

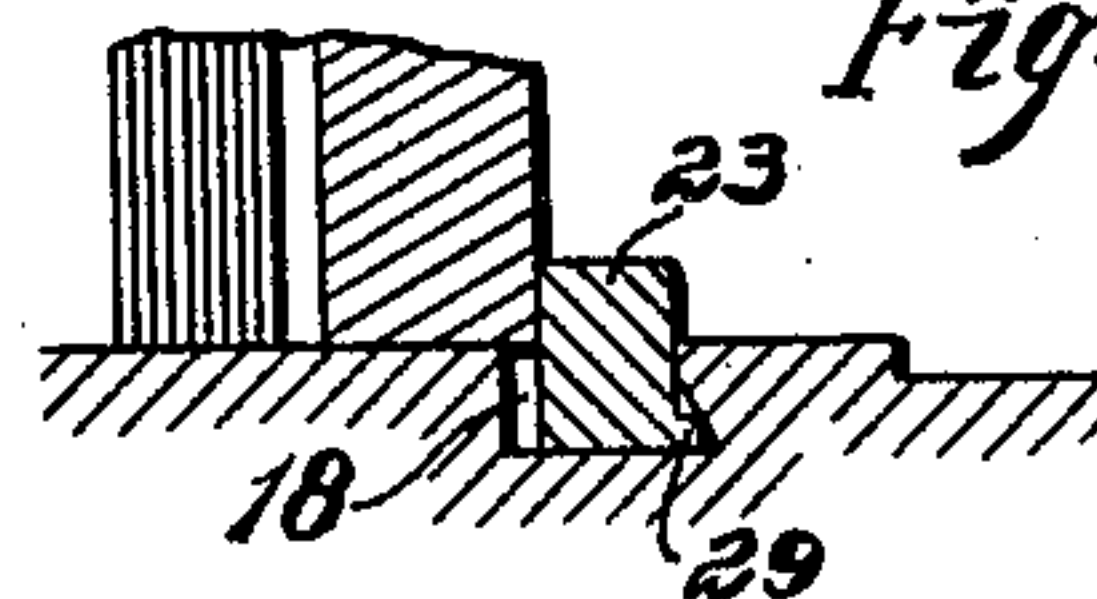


Fig. 7.

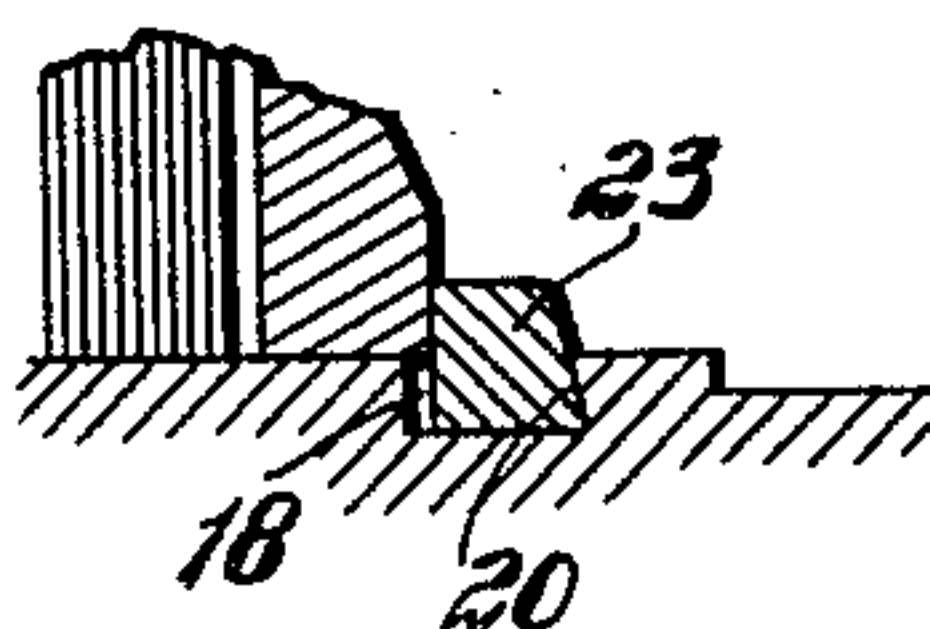
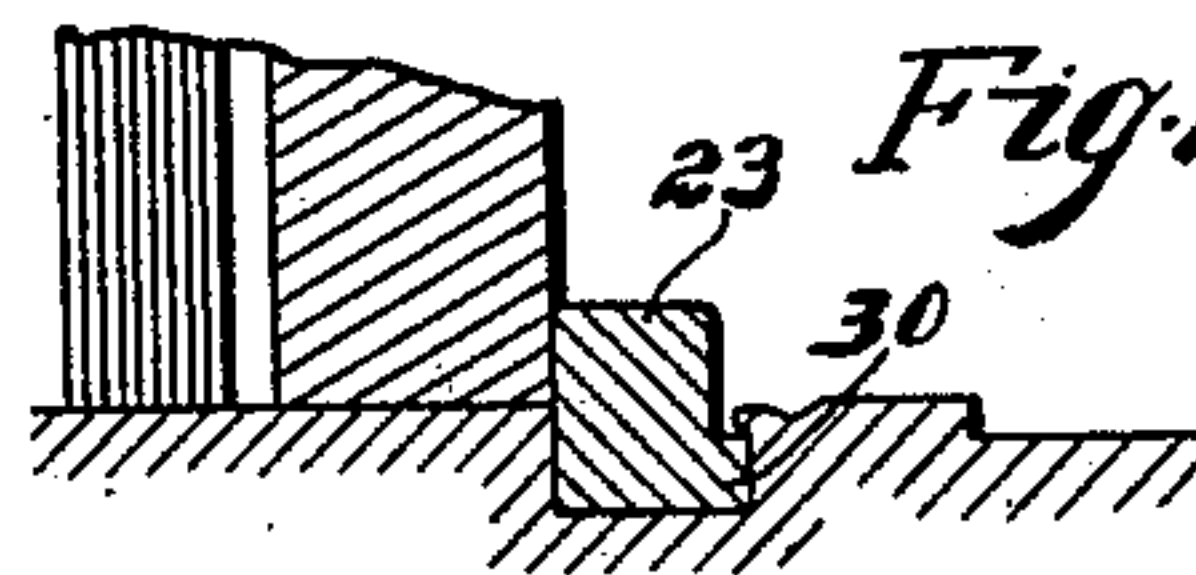


Fig. 10.



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UNITED STATES PATENT OFFICE.

CHARLES E. LORD AND WILLIAM H. POWELL, OF NORWOOD, OHIO, ASSIGNORS TO THE BULLOCK ELECTRIC MANUFACTURING COMPANY, A CORPORATION OF OHIO.

CLAMPING MEANS FOR CORE-PLATES OF DYNAMO-ELECTRIC MACHINES.

No. 891,273.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed September 14, 1905, Serial No. 278,486. Renewed January 22, 1908. Serial No. 412,225.

To all whom it may concern:

Be it known that we, CHARLES E. LORD and WILLIAM H. POWELL, citizens of the United States, residing at Norwood, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Clamping Means for Core-Plates of Dynamo-Electric Machines, of which the following is a full, clear, and exact specification.

Our invention relates to dynamo electric machines and particularly to the means for securely holding in position the laminæ of the cores of either the rotor or stator.

The object of our invention is to provide a simple, inexpensive and effective means for retaining the laminæ in position and one that can be easily applied to the machine or removed when it is desired to remove the laminæ.

In carrying out our invention we clamp the laminæ between an abutment and a ring, the ring being partially seated in a groove in a support such as a shaft, spider or frame, and retained therein by an overhanging and projecting portion of the support.

More specifically considered our invention consists of a core of a dynamo electric machine comprising laminæ, the laminæ being clamped on the support between an abutment and a plate, the plate being held in position by a ring partially seated in a groove in the support, the groove and ring having engaging faces so inclined that accidental outward displacement is prevented.

Our invention further consists in certain novel details of construction and combination of elements described in the specifications and set forth in the appended claims.

For a more complete understanding of our invention, reference is had to the accompanying drawings in which

Figure 1 is a sectional elevation of a rotor having the laminæ mounted on a spider and held in position by our improved retaining means; Fig. 2 is an end view of the same; Fig. 3 is a sectional elevation of a rotor having the laminæ mounted directly on the shaft and held in position by our improved retaining means; Fig. 4 is an enlarged section and Fig. 5 is an elevation of the spring ring employed in our retaining means; Fig. 6 is a detail of one form of the groove in which the ring is seated to hold the laminæ in place; Fig. 7 is an enlarged sectional view of the retaining means shown in Figs. 1—2 and 3; and Figs.

8—9 and 10 are sections showing modified forms of our invention.

Referring to the figures of the drawing 15 is the rotor shaft on which is rigidly mounted as shown in Figs. 1 and 2 the spider 16. At one end of the spider is an end-head or plate, in this case the circumferential flange or abutment 17 and near the other end is the circumferential or annular groove 18. In the preferred form of our invention the groove is of the form shown in Fig. 6 having one perpendicular side 19 and an inclined or under-cut side 20. At a suitable distance from the flange or end-head 17 is a second end-head or plate 21 having preferably the same outer diameter as the flange 17. The laminæ 22 are clamped between the flange 17 and plate 21. The laminæ and plate 21 are retained in position by a spring or split ring 23 seated in the groove 18. The ring 23, is in the preferred form of our invention, of the shape shown in Figs. 4 and 5, having one perpendicular and one inclined side as shown in Fig. 4. The greatest width of the ring is slightly less than the narrowest part of the groove.

In assembling the parts, the laminæ and plate 21 are mounted on the spider and pressed against the flange by any suitable means, to a point beyond the groove. The ring is next sprung into place and by the pressure of the laminæ and plate 21, the inclined side is held firmly against the under-cut side of the groove. It will be seen that it is impossible for the ring to accidentally come out of place on account of the engaging inclined and undercut sides of the ring and groove. When it is desired to remove the laminæ, the latter are compressed slightly until the pressure is no longer on the ring, when it can be easily removed from the groove.

In Fig. 3 we have shown our invention applied to a slightly different type of machine in which the laminæ are mounted directly on the shaft 24. The shaft is provided with a shoulder or abutment 25 against which the plate 26 rests. The laminæ are held between plate 26 and plate 27 by a ring seated in a groove in the shaft similar to the groove in the spider shown in Fig. 1.

The engaging faces of the groove and ring may have variety of forms. For example Fig. 8, the inclined face of the ring is provided with a circumferential groove in which the overhanging edge of the side of the groove

is peened as shown at 28. In Fig. 9 the ring is provided with a shoulder 29, which engages the inclined side of the groove. In Fig. 10, neither the ring nor the groove is provided with inclined sides but the ring is provided with a shoulder 30, over which the edge of the groove is peened.

Thus it will be seen that our invention is capable of a great many modifications and we aim to cover all the modifications which do not depart from the spirit of our invention. It is evident that our invention may be applied to the stator as well as the rotor.

What we claim as new and desire to secure by Letters Patent is:—

1. In a dynamo electric machine, a core comprising laminæ, a support therefor, said support being provided with an abutment and at a suitable distance from said abutment a circumferential groove, and a ring seated in said groove, the laminæ being clamped between the abutment and ring and said ring being held in the groove by an overhanging portion of the support.

2. In a dynamo-electric machine, a core comprising laminæ a supporting element on which the laminæ, are mounted, the supporting element having an abutment and at a suitable distance therefrom an undercut groove, and a ring partially seated in said groove for clamping the laminæ against the abutment, the ring being normally held from

outward displacement by the undercut portion of the groove.

3. In a dynamo-electric machine, a supporting member provided with a pair of end-heads or plates and a circumferential groove near one of said end-heads or plates, laminæ clamped between the end-heads or plates, and a ring seated partially in the groove for holding the laminæ and adjacent end-head in position, said ring and groove having engaging inclined faces.

4. A means for clamping laminæ on a support comprising a ring seated in a groove in the support, said groove having an undercut side and said ring having an engaging inclined face, whereby accidental displacement of the ring is prevented.

5. A means for clamping laminæ of a core to a support, comprising an abutment and a spring ring, said support having a groove in which the ring is partially seated, and means for preventing displacement of the ring comprising an overhanging portion of the support and an engaging shoulder on the ring.

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

CHARLES E. LORD.
WILLIAM H. POWELL.

Witnesses:

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