

No. 854,760.

PATENTED MAY 28, 1907.

H. G. REIST.
INDUCTION MOTOR.

APPLICATION FILED SEPT. 11, 1906.

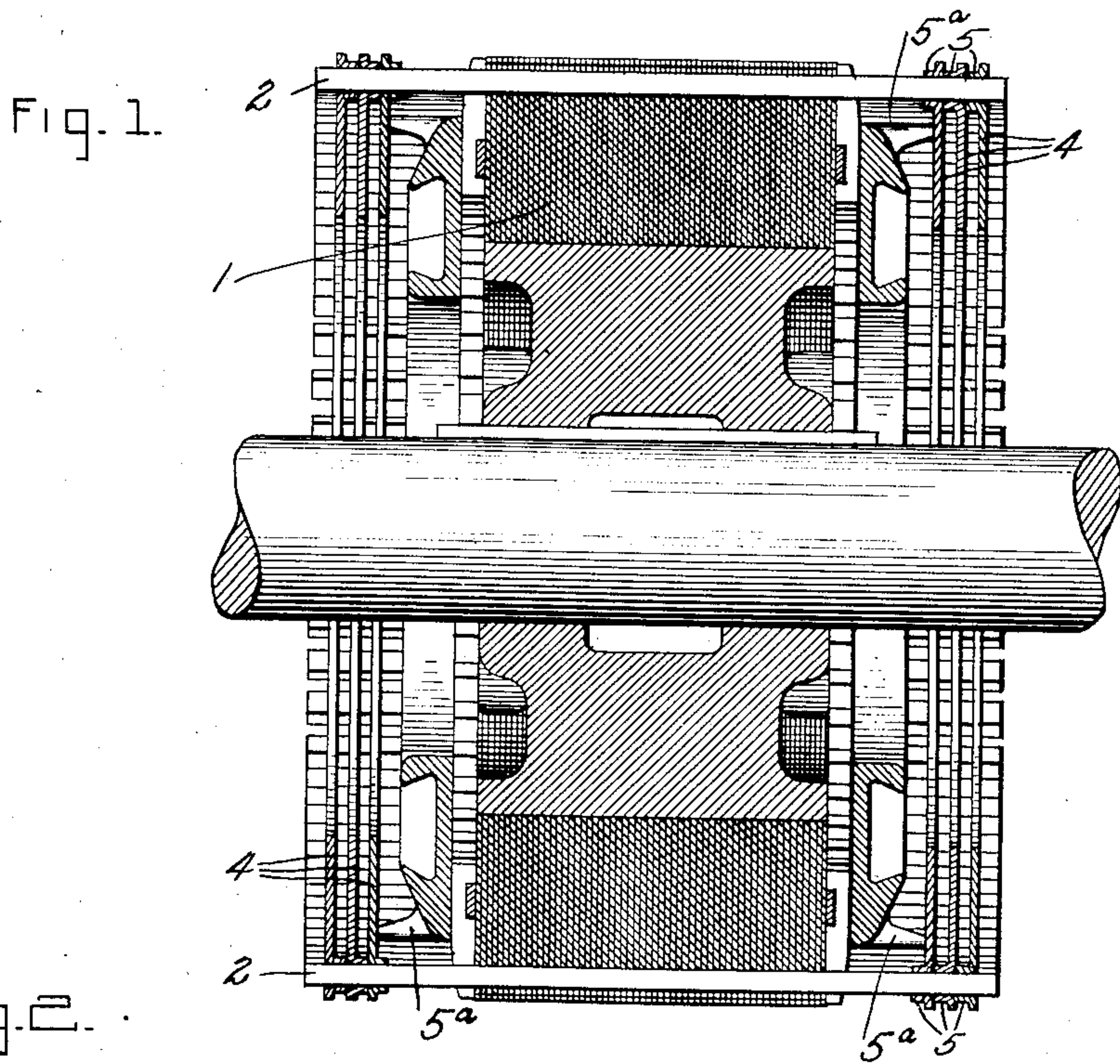


Fig. 2.

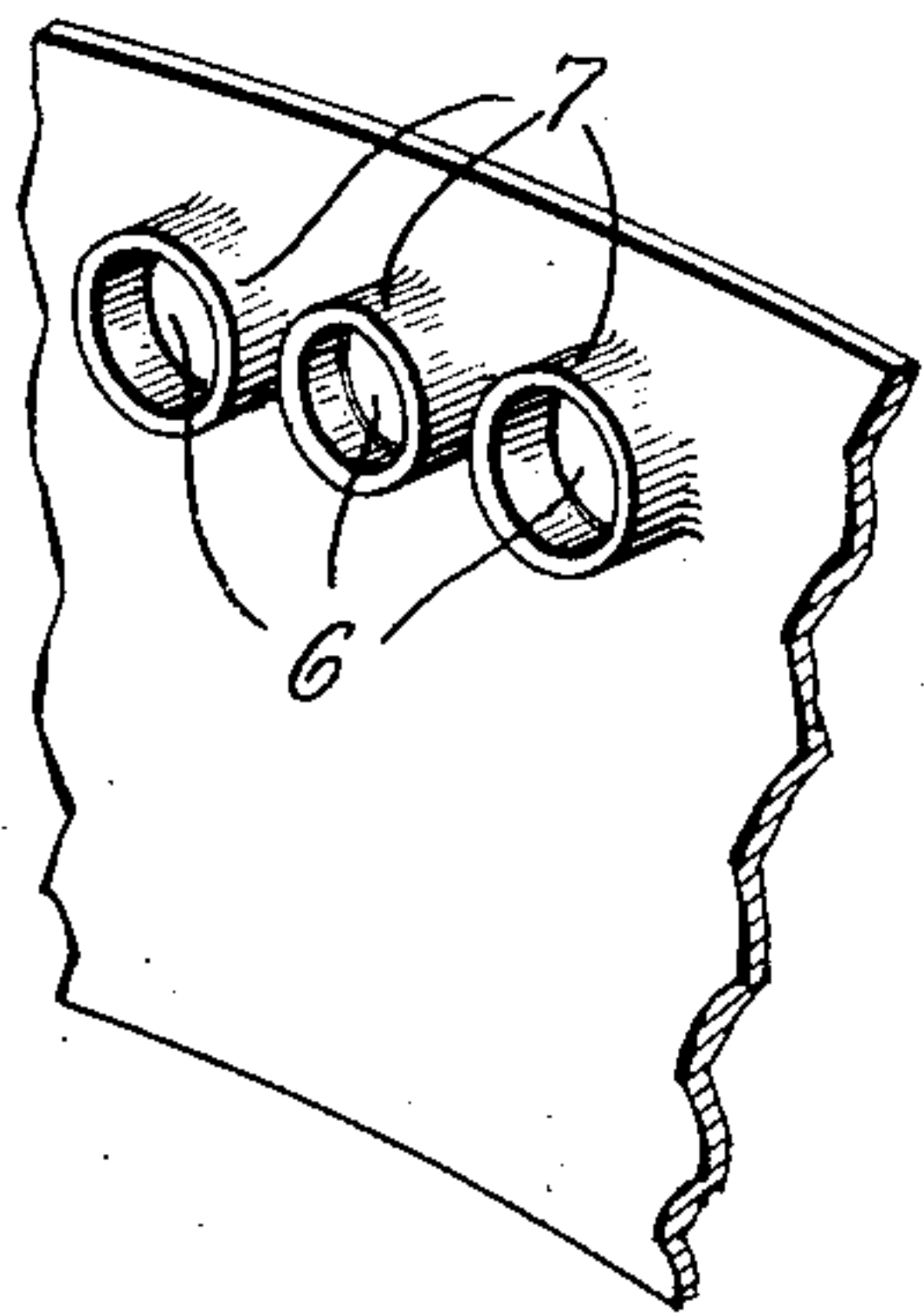


Fig. 3.

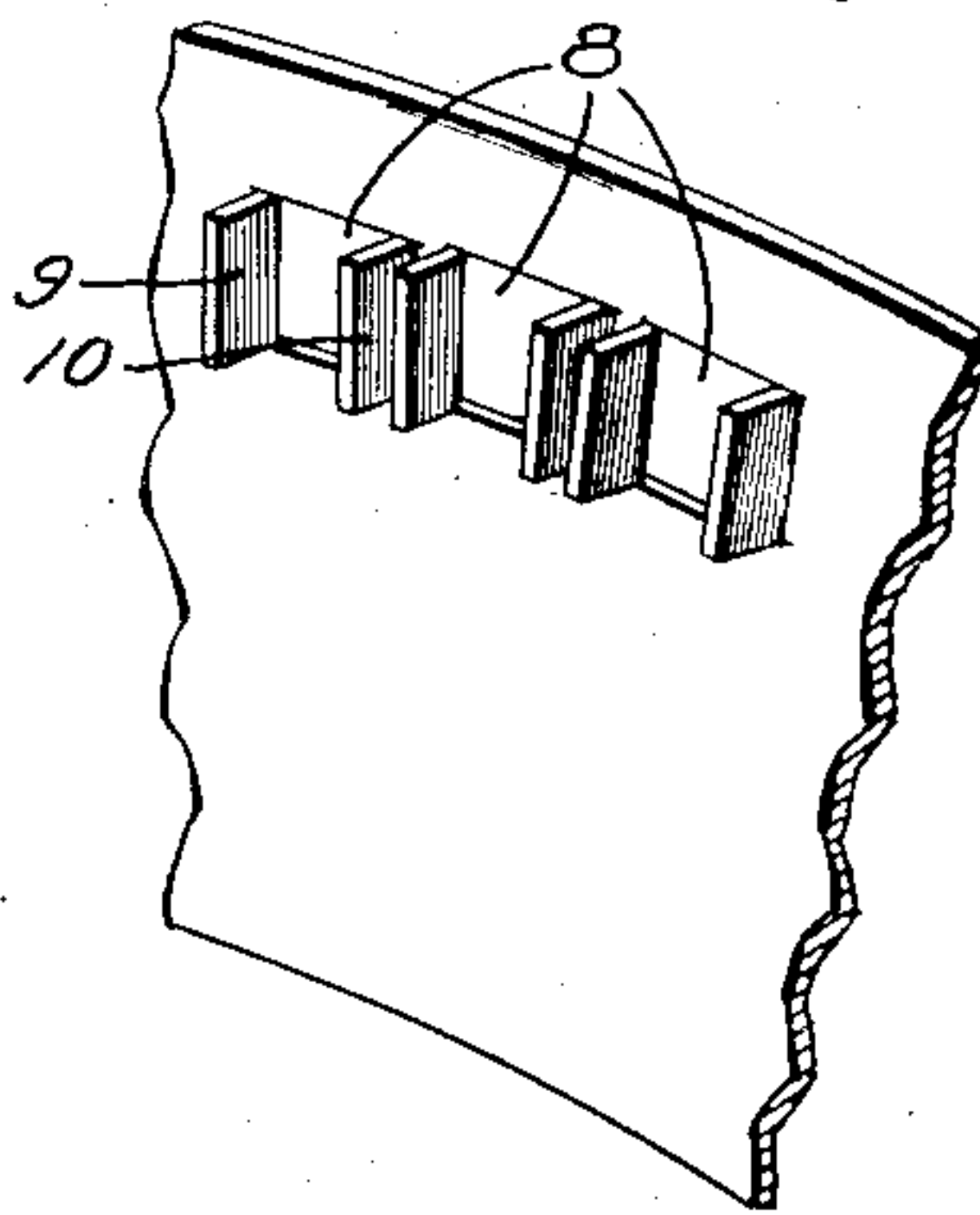
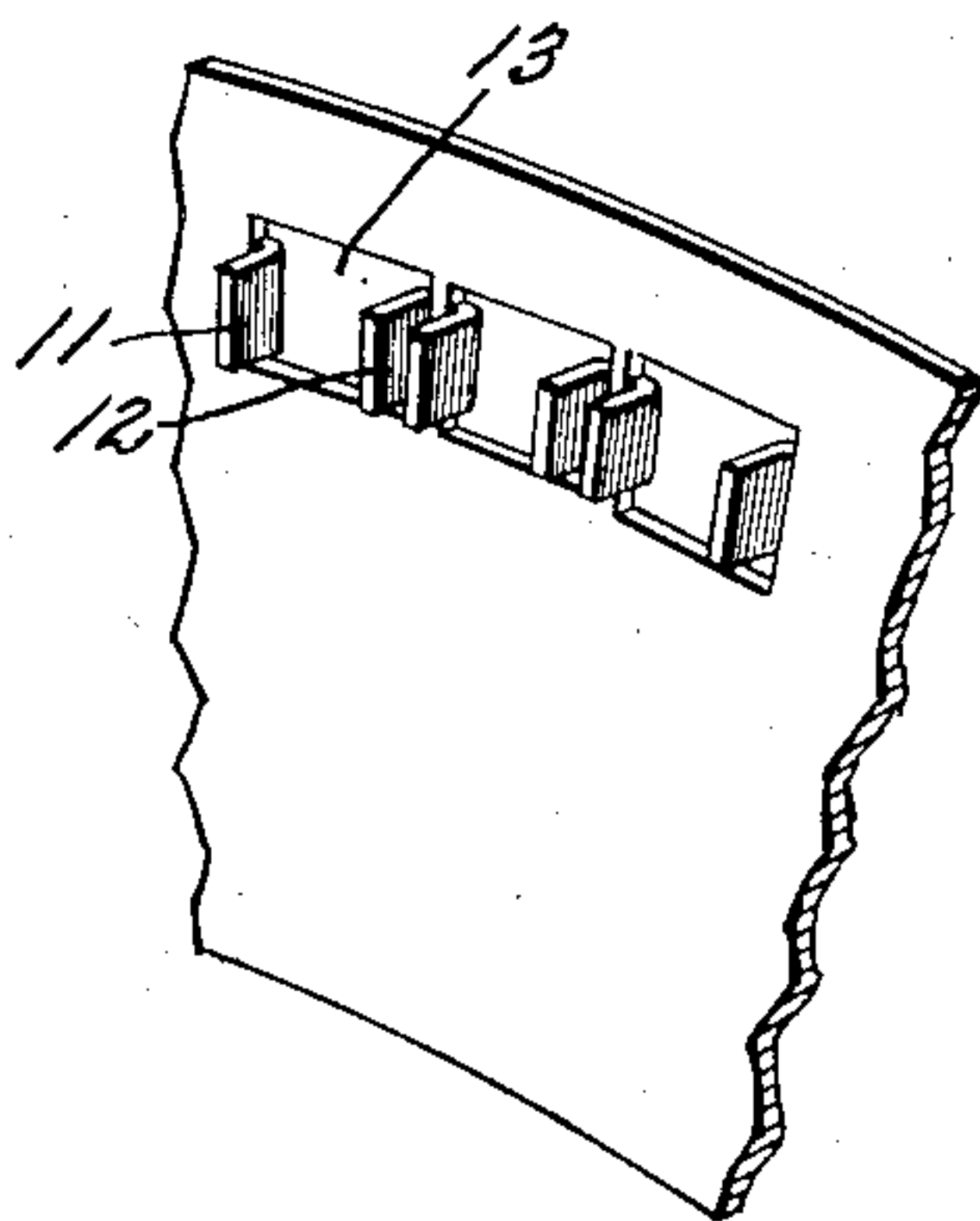


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY G. REIST, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

INDUCTION-MOTOR.

No. 854,760.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed September 11, 1906. Serial No. 334,164.

To all whom it may concern:

Be it known that I, HENRY G. REIST, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Induction-Motors, of which the following is a specification.

My invention relates to dynamo-electric machines and more particularly to end connections for induction motors, and has for its object to improve the same.

In Patent No. 784,807, granted on March 14, 1905, on an application filed by me, there is disclosed a rotor member for induction motors having end connection devices for the conductors of the squirrel-cage winding, made up of a plurality of flat sheet-metal rings separated from each other by air spaces, and the present invention may be considered as an improvement on the arrangement shown in this patent.

The various novel features of my invention will be hereinafter particularly pointed out in the claims; but, for a full understanding of the invention and of its various objects and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawing.

In said drawing, Figure 1 is a cross-section through the axis of the rotor member of an induction motor having end connections arranged in accordance with the present invention; Fig. 2 is a perspective view of a fragment of one of the end connection members; and Figs. 3 and 4 are views similar to Fig. 2 showing, however, further modifications.

Reference being had to Fig. 1 of the drawing, 1 indicates the core of the rotor and 2 2 conductors constituting a squirrel-cage winding. The ends of all of the conductors at each end of the rotor are connected together by a series of flat rings 4, these being preferably made of thin sheet metal, as in the patent referred to. It is desirable to have the various rings separated from each other in order that they may present a large cooling surface to currents of air flowing about and between the rings. For this purpose spacing devices of some kind are necessary to hold the rings apart, or else the rings when assembled upon the ends of the conductors must be carefully spaced during the

process of assembling and secured in such relation to each other. According to my invention the rings are provided with lateral projections 5 which are of such lengths that when the projections on one ring bear against the side of the adjacent ring, the two rings are maintained at a proper distance apart. In this way separate spacing devices are avoided and no particular care need be exercised in assembling the rings upon the ends of the conductors. I prefer to form these projections out of the material which must be displaced or removed in order to provide the openings through which the conductors pass. Thus, in Fig. 2 there is shown a ring adapted for use with round conductors, and in forming the openings 6 through which the conductors are to pass, the material is forced outward on one side of the plate so as to form tubular bosses 7. It is of course not necessary that a boss be formed about each opening for the purpose of securing the proper spacing, but by making the spacing devices in this manner, they are given a further function which makes it advantageous that a boss be formed about each of the openings. This additional function consists in affording a long bearing surface between the conductors and the thin rings, whereby, when the rings are soldered in place, an extremely secure joint is easily and conveniently secured. This latter function of the projections or bosses is of importance since great care must ordinarily be exercised in soldering joints such as exist between the thin edges of rings not provided with such projections and conductors, and unless such care is exercised poor joints result.

By providing suitable projections on the core, as at 5^a, it is only necessary to thread the requisite number of rings upon each end of the armature conductors and to press the inner rings against these projections in order to obtain the proper spacing of the rings with respect to each other and with respect to the ends of the core.

It is not essential that the wall about the conductor-receiving openings be continuous, but the projections may be formed in any desired way. Thus in Fig. 3, the material removed from each of the openings 8 is divided between two laterally-projecting ears

9 and 10, arranged at opposite sides of the openings. In Fig. 4, ears 11 and 12, corresponding to ears 9 and 10, are shown, these ears being, however, narrower than the openings 13.

What I claim as new, and desire to secure by Letters Patent of the United States, is,—

1. A short-circuiting device for the conductors of the rotor of an alternating-current motor, consisting of a flat metal ring having conductor-receiving openings and laterally-projecting portions adjacent said openings.

2. A short-circuiting device for the conductors of the rotor of an alternating-current motor, consisting of a thin sheet-metal ring having conductor-receiving openings and projections adjacent said openings struck up from said ring.

3. A short-circuiting device for the conductors of the rotor of an alternating-current motor, consisting of a thin sheet-metal ring having conductor-receiving openings formed therein by displacing a portion of the material of said ring laterally.

4. In an induction motor, a squirrel-cage armature and a plurality of rings for short-circuiting the armature conductors, certain of said rings having laterally-extending pro-

jections which bear against the side of an adjacent ring.

5. In an induction motor, a squirrel-cage armature and a plurality of short-circuiting rings having conductor-receiving openings and having flanges adjacent said openings and bearing upon the armature conductors.

6. In an induction motor, a squirrel-cage armature and a plurality of rings for short-circuiting the armature conductors, said rings having conductor-receiving openings and laterally-extending projections adjacent said openings, the projections on certain of said rings engaging with adjacent rings to maintain the rings separated.

7. In an induction motor, an armature core having laterally-extending projections, conductors on said core, and short-circuiting rings on the ends of said conductors, the inner ring at each end bearing against said laterally-extending projections and the remaining rings having spacing devices extending laterally therefrom.

In witness whereof, I have hereunto set my hand this 10th day of September, 1906.

HENRY G. REIST.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.