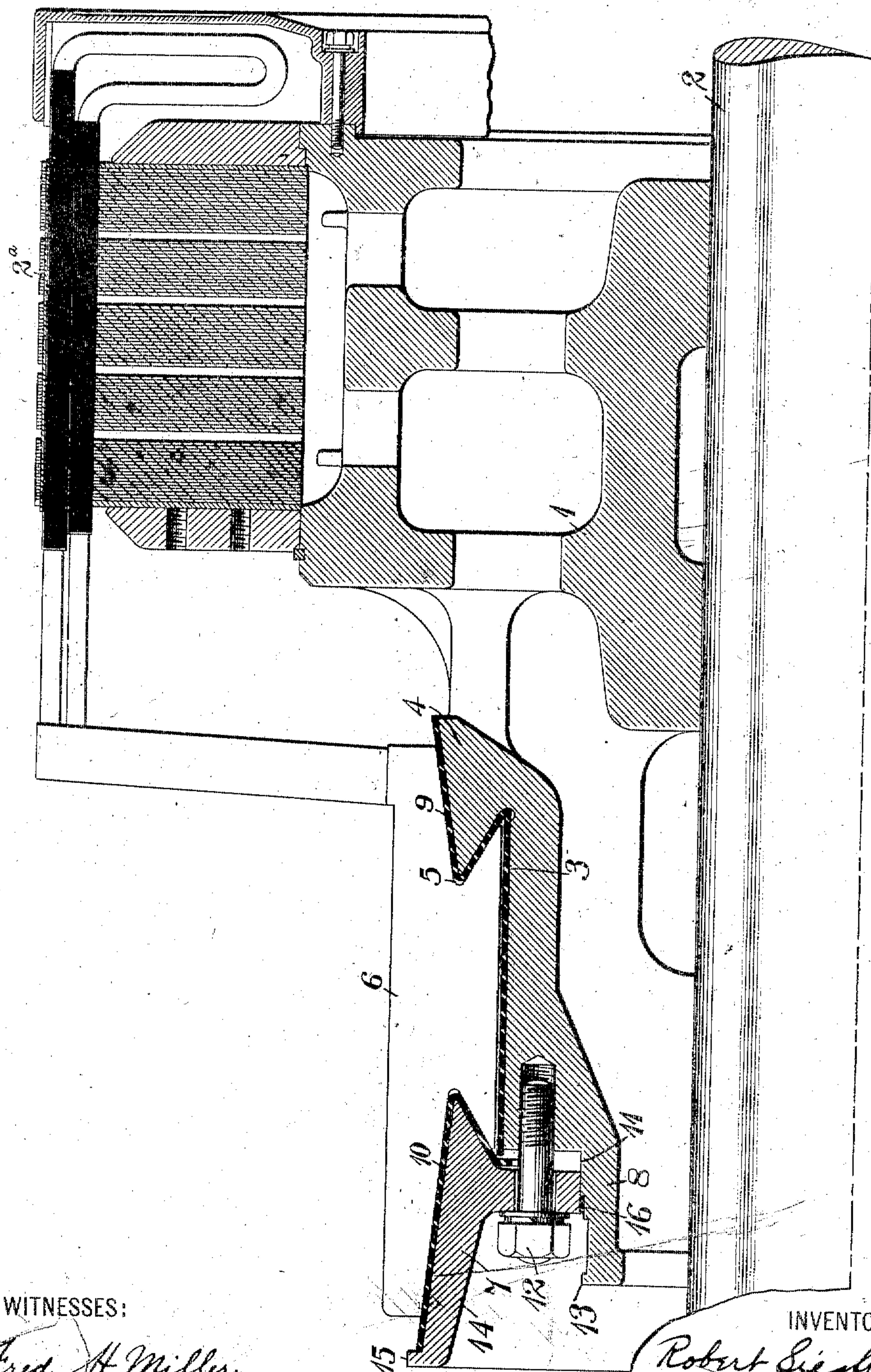


R. SIEGFRIED.  
OIL GUARD FOR COMMUTATORS.  
APPLICATION FILED OCT. 3, 1905.

981,803.

Patented Jan. 17, 1911.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ROBERT SIEGFRIED, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

OIL-GUARD FOR COMMUTATORS.

981,803.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed October 3, 1905. Serial No. 281,204.

*To all whom it may concern:*

Be it known that I, ROBERT SIEGFRIED, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Oil-Guards for Commutators, of which the following is a specification.

My invention relates to dynamo-electric machines and particularly to commutators for relatively large machines which may be direct-connected to the driving engines.

The object of my invention is to provide means for effectively preventing lubricating fluids from working into the commutator from the shaft bearings, that shall be simple and inexpensive in construction and integral with the commutator spider.

It is desirable to specially protect commutator ring joints in order to prevent oil from working into the commutator, since the application of such fluids produces deterioration of its insulation. This is particularly true in large machines which are direct connected to driving engines with which a considerable quantity of lubricating fluid is used. For large machines of this type, it has been usual heretofore to utilize commutator rings that were provided with annular projections which were fitted within the rim of the commutator spider, the rings being fastened in position by a plurality of longitudinal bolts. With this arrangement, oil was often forced by centrifugal action through the joint between the ring and the spider into the commutator.

To avoid the objectionable features in the aforesaid construction of the prior art, I have provided a concentric annular projection on one end of the cylindrical bushing upon which the commutator bars are assembled that is provided with an oil diverter which throws off any oil which may work from the bearing onto the rim of the spider. This projection is of such length that the oil is thrown against the outer surface of the commutator ring, from which it tends to creep up to the point farthest removed from the center of the shaft, which is the outer rim of the ring, and a second oil diverter is formed on the ring at this point, from which the oil is finally thrown away from the commutator.

The single figure of the accompanying drawing is a sectional view of one half of

the rotary member of a dynamo-electric machine having a commutator and its spider constructed in accordance with my invention.

Referring to the drawing, an armature spider 1 is mounted upon a shaft 2 and is provided with a magnetizable core 2\* and with a cylindrical surface 3 upon which a plurality of commutator segments may be mounted. The surface 3 is provided in the usual manner with a V-shaped clamping ring 4, which engages a complementary V-shaped groove 5 in a plurality of assembled commutator bars 6. The outer end of the commutator bars are engaged by a similar V-shaped ring 7 which is mounted upon a cylindrical projection 8, that is integral with the rim of the spider 1 and concentric with the surface 3. The commutator bars are insulated from the V-shaped rings in the usual manner by interposed insulating rings 9 and 10. The V-shaped ring 7 is fitted to a cylindrical surface 11 of the projection 8 and is clamped in position by a plurality of bolts 12 which are parallel to the axis of the shaft 2, are equally disposed about the ring 7 and hold the ring in firm engagement with the commutator segments.

The cylindrical projection 8 extends beyond the heads of the bolts 12 and is provided with a relatively small annular projection 13 which serves to prevent any lubricating fluid which may have worked from the bearing to this point from being thrown onto the joint between the ring 7 and its supporting surface 11. The outer surface 14 of the ring 7 is of such shape, having its greatest radius at a point farthest from the center plane of the commutator, that the oil which is thrown from the projection 13 tends to follow the surface 14 to the outer edge of the ring, where a projection 15, that corresponds to the projection 13, finally diverts the oil from the commutator as it is thrown away from the shaft by reason of centrifugal force. In order to prevent any oil which may be on the surface 14 when the machine is brought to rest from working into the joint between the ring 7 and the surface 14, it is advisable to interpose a ring 16 of some suitable packing material such as oakum.

My invention may obviously be applied to a commutator which is mounted on a separate spider from that of the armature and I desire that all variations in size, form and

arrangement of details which effect similar results shall be included within its scope.

I claim as my invention:

1. In a dynamo-electric machine, the combination with a commutator cylinder comprising a plurality of radial bars or segments, a commutator spider having a cylindrical rim member on which the bars or segments are mounted, and a commutator-clamping ring bolted thereto, of an integral annular projection of the cylindrical rim extending outwardly in an axial direction beyond the bolts by which said clamping ring is fastened in position.
2. In a dynamo-electric machine, the combination with a commutator spider having

a cylindrical rim provided with an external annular projection near its extremity for diverting lubricating fluid from the commutator, of a plurality of commutator segments mounted upon said rim, and a V-shaped clamping ring having an external annular projection for diverting lubricating fluid.

In testimony whereof, I have hereunto subscribed my name this 27th day of September, 1905.

ROBERT SIEGFRIED.

Witnesses:

OTTO S. SCHAIRER,  
BIRNEY HINES