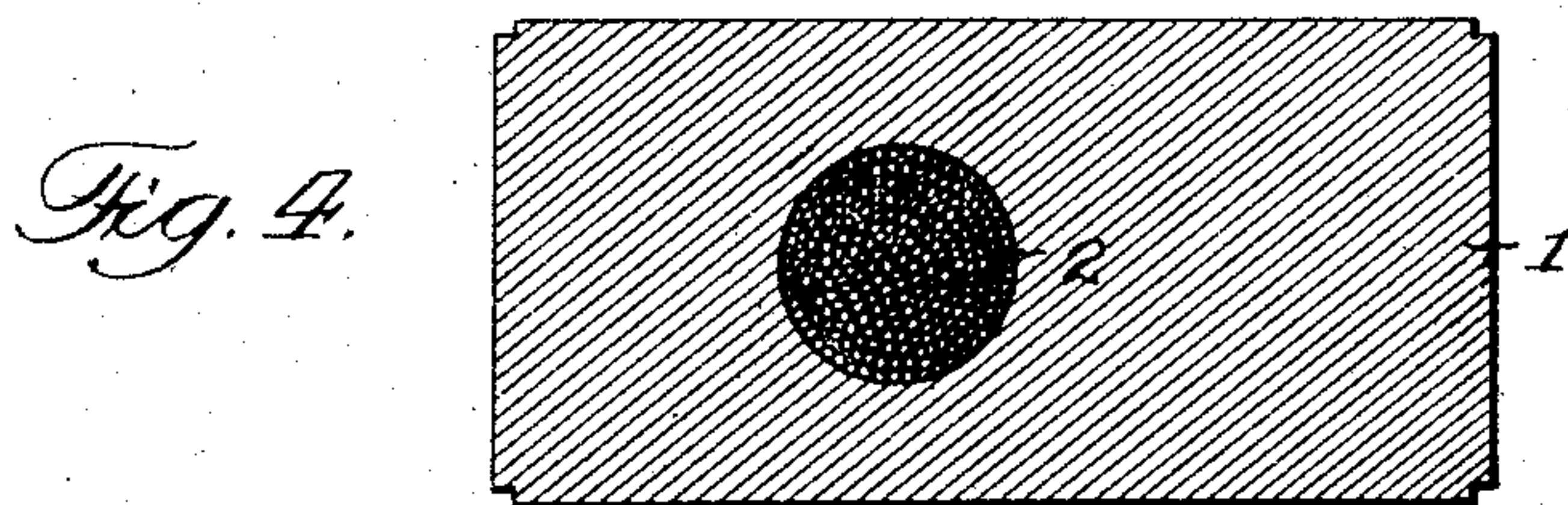
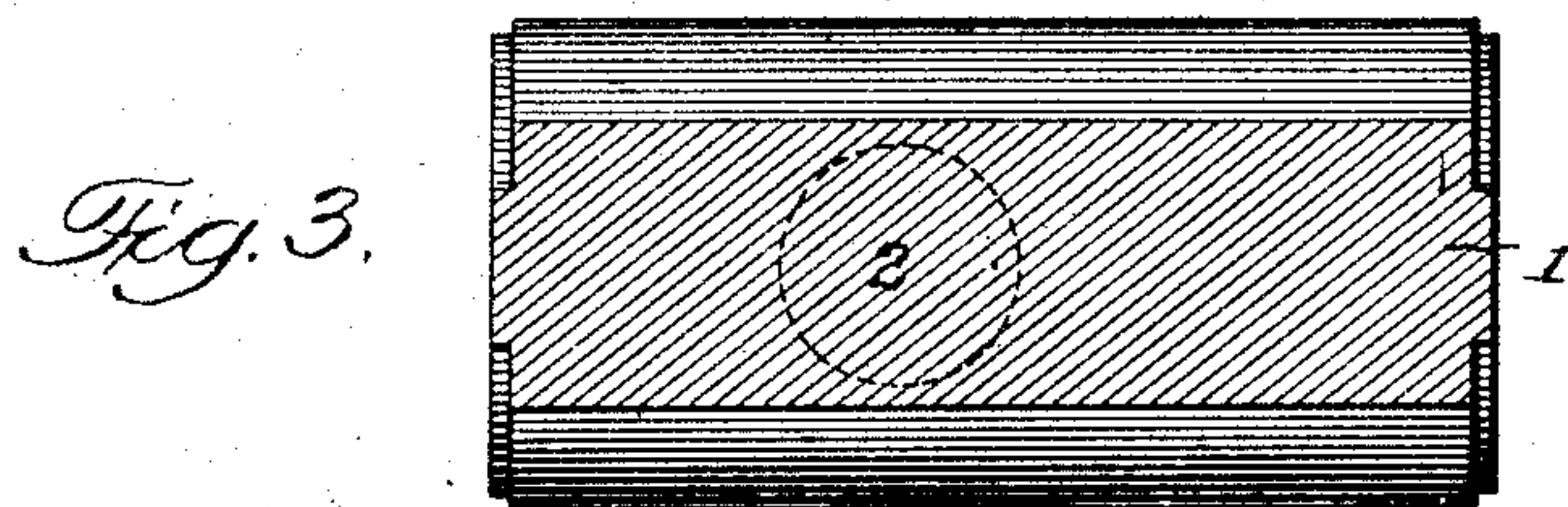
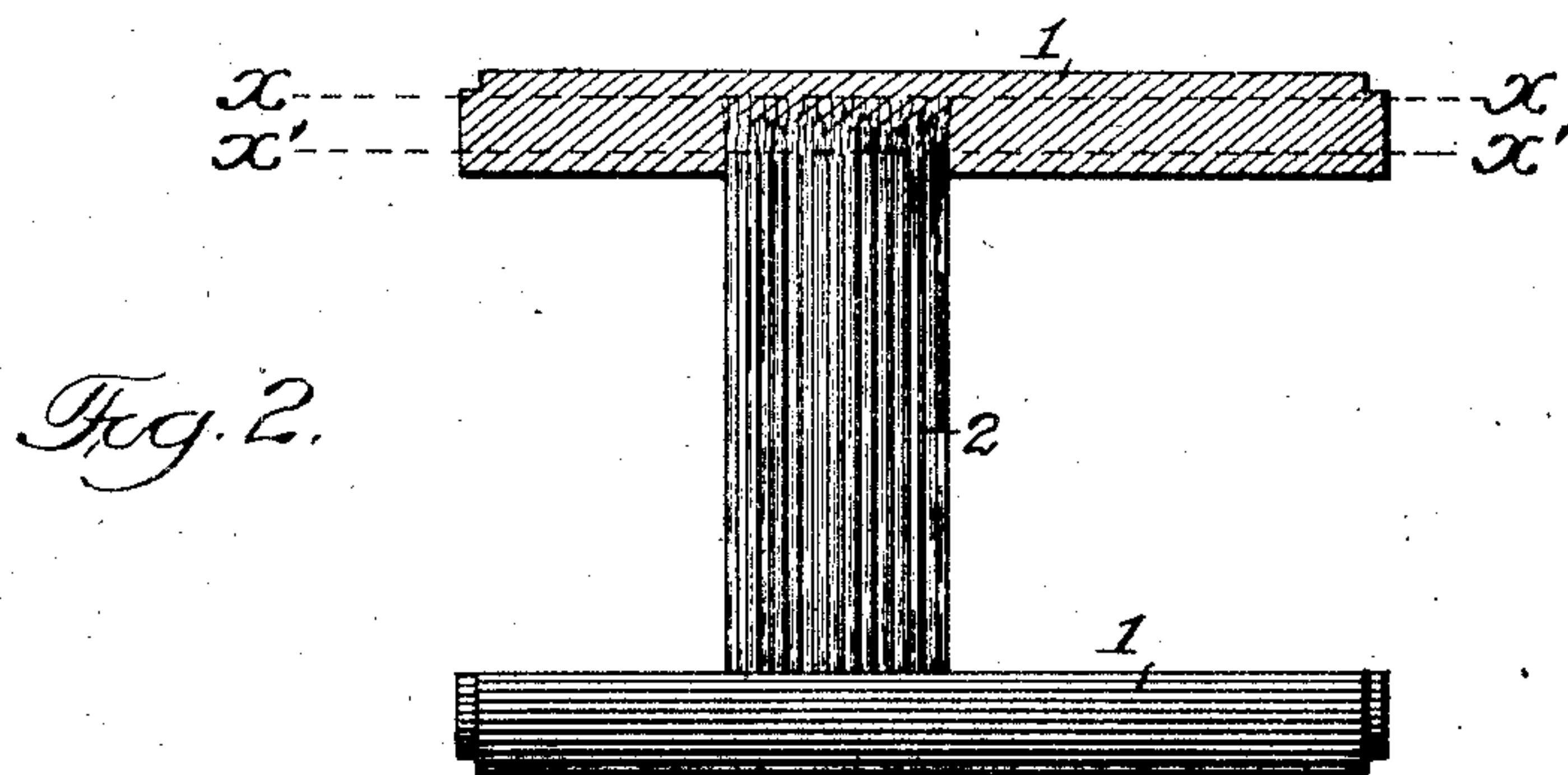
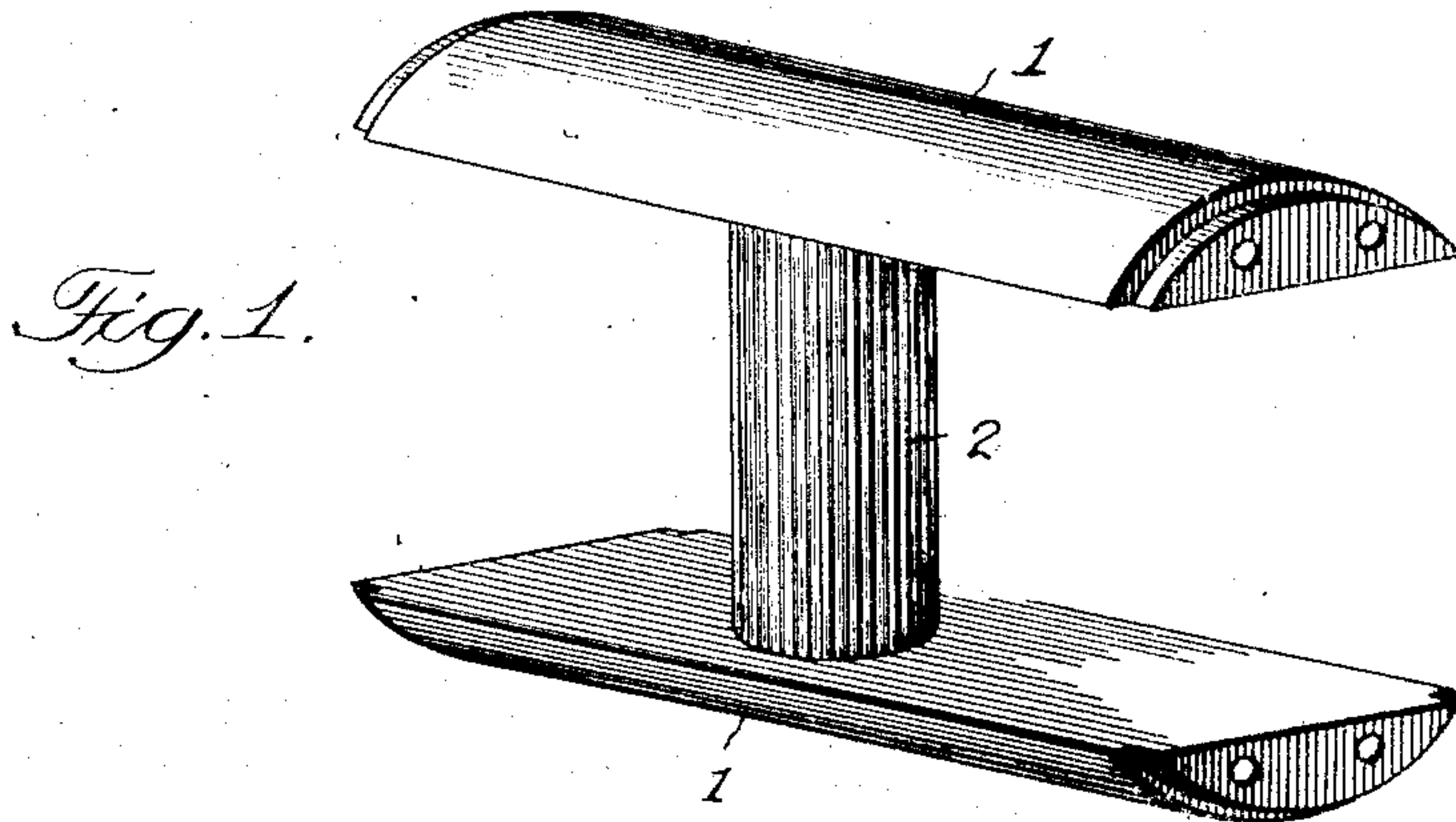


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 ARMATURE FOR MAGNETO ELECTRIC MACHINES.  
 APPLICATION FILED APR. 18, 1910. RENEWED DEC. 14, 1910.

983,308.

Patented Feb. 7, 1911.

2 SHEETS—SHEET 1.



*Attest:*  
*John Enders*  
*Henry Mor.*

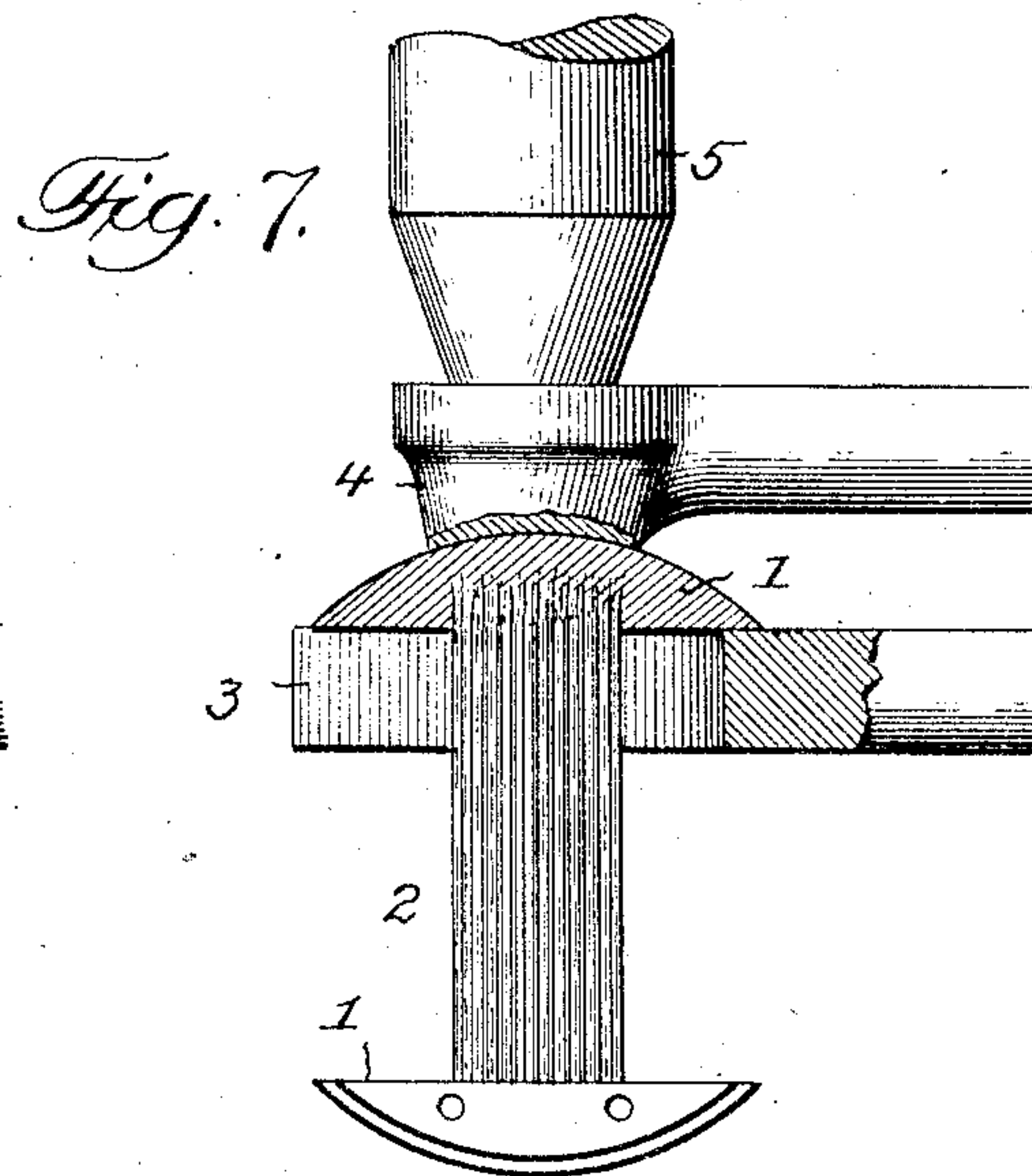
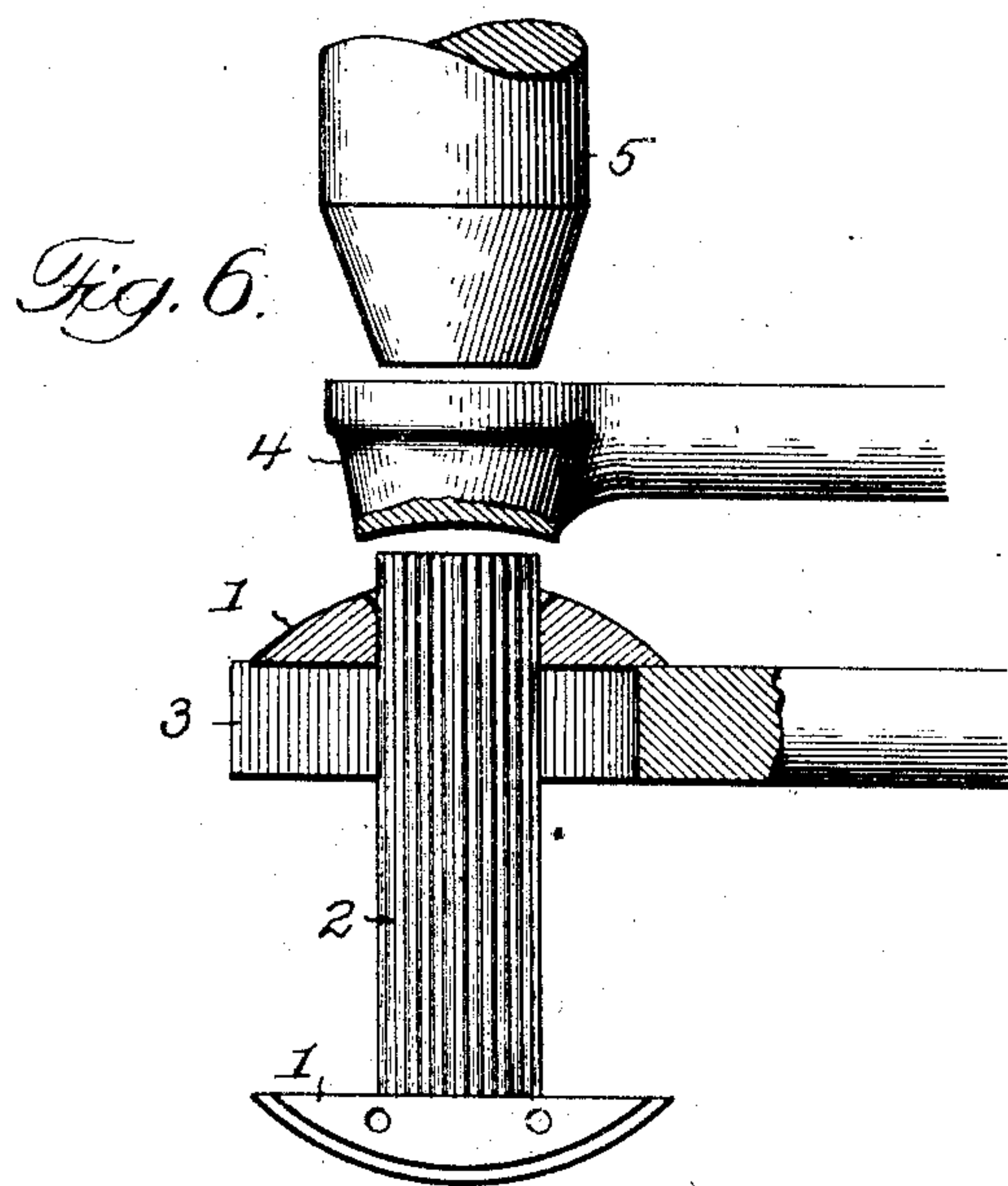
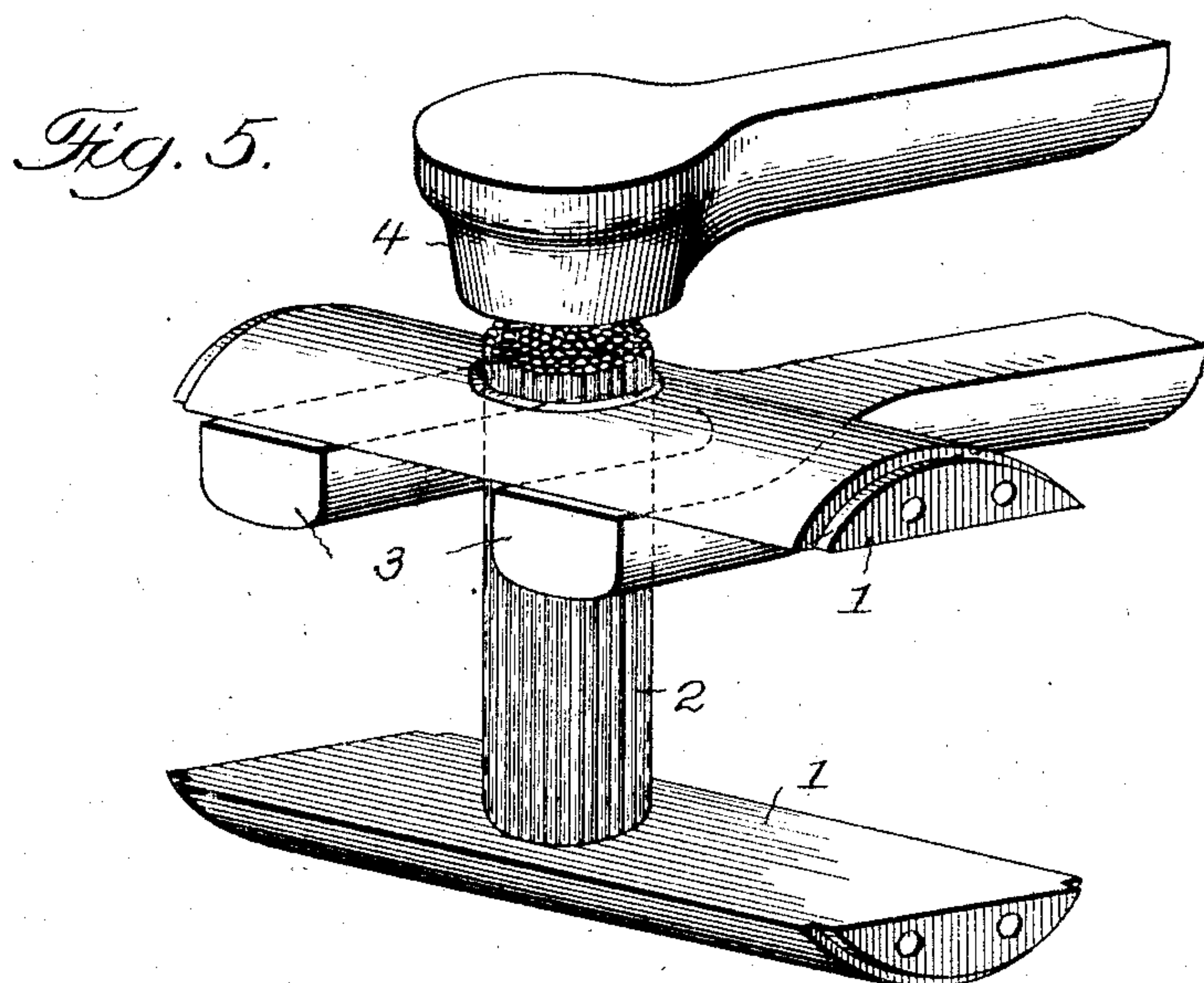
*Inventor:*  
*Carl A. Pfanstiehl,*  
*by Robert Burns*  
*Attorney.*

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2 SHEETS—SHEET 2.



Attest:  
 John Enders  
 Henry Mor.

Inventor:  
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 Attorney



# UNITED STATES PATENT OFFICE.

CARL A. PFANSTIEHL, OF HIGHLAND PARK, ILLINOIS, ASSIGNOR TO PFANSTIEHL ELECTRICAL LABORATORY, OF NORTH CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ARMATURE FOR MAGNETO-ELECTRIC MACHINES.

983,308.

Specification of Letters Patent.

Patented Feb. 7, 1911.

Application filed April 18, 1910, Serial No. 556,249. Renewed December 14, 1910. Serial No. 597,359.

*To all whom it may concern:*

Be it known that I, CARL A. PFANSTIEHL, a citizen of the United States of America, and a resident of Highland Park, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Armatures for Magneto-Electric Machines, of which the following is a specification.

This invention relates to the spool type of armatures of magneto-electric machines, and has for its object to provide a simple and efficient structural arrangement and combination of parts wherein a wire bundle type of armature core and the respective field pieces are connected together in a very efficient and economical manner, all as will hereinafter more fully appear.

In the accompanying drawings: Figure 1, is a perspective view of an armature embodying the present invention. Fig. 2, is a side elevation with the upper field piece in central longitudinal section. Figs. 3 and 4, are horizontal sections on lines  $x-x$  and  $x'-x'$ , respectively. Fig. 5 is a perspective view illustrating the means employed in forming the present armature. Figs. 6 and 7, are side elevations of the same in the initial and final positions.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents the usual armature field or pole pieces of the usual segmental form in cross section and arranged in separated and parallel relation as shown, and 2 the centrally arranged connecting armature core by which said field pieces 1 are connected together, to form a spool and receive the usual armature windings.

The novel feature of the present invention in connection with the above described and ordinary type of armature consists in the connection of the respective ends of the series of wires comprising the core 2 with each other and with the outer portions of the field pieces 1 in an integral and homogeneous manner, and which is attained by a welding operation, preferably by electrical action, and applied to the respective ends of

the core 2 and the adjacent peripheral portions of the pole pieces 1. The high resistance form of electric welding is preferred as giving very efficient and economical results, and is the means employed in the process of manufacture illustrated in Figs. 5, 6 and 7, in which:—3 represents a fixed and forked anvil forming one of the terminals of the welding circuit; 4 the movable welding jaw forming the other terminal of the circuit, and 5 the pressure head by which the movable welding jaw 4 is forced down upon the work after the same has been brought to the proper heated condition by the electric current, and in order to complete the required welding operation.

The described operations provide a weld in which the outer ends of the wires are homogeneously merged into each other and into the outer portion of a pole piece, while said merger as it extends inward grows less and less homogeneous until at the inner sides of the pole pieces no merger exists. So formed a very strong and efficient armature frame is provided for a subsequent application of the armature windings.

Having thus fully described my said invention what I claim as new and desire to secure by Letters Patent is:—

1. An armature frame comprising parallel pole pieces, and a core formed of a bundle of wires, the respective ends of the wires being homogeneously connected to each other and to the outer surface portions of the pole pieces, substantially as set forth.

2. An armature frame comprising parallel pole pieces, and a core formed of a bundle of wires, the respective ends of the wires being homogeneously merged into each other and into the outer surface portions of the pole pieces, the merger gradually decreasing toward the inner surface of said pole pieces, substantially as set forth.

Signed at Highland Park, Ills. this 5th day of April 1910.

CARL A. PFANSTIEHL.

Witnesses:

NEILLIE FITZGERALD,  
HERBERT MOON.