

No. 706,632.

Patented Aug. 12, 1902.

A. H. ARMSTRONG.

ARMATURE WINDING FOR INDUCTION MOTORS.

(Application filed Jan. 17, 1901.)

(No Model.)

Fig. 1.

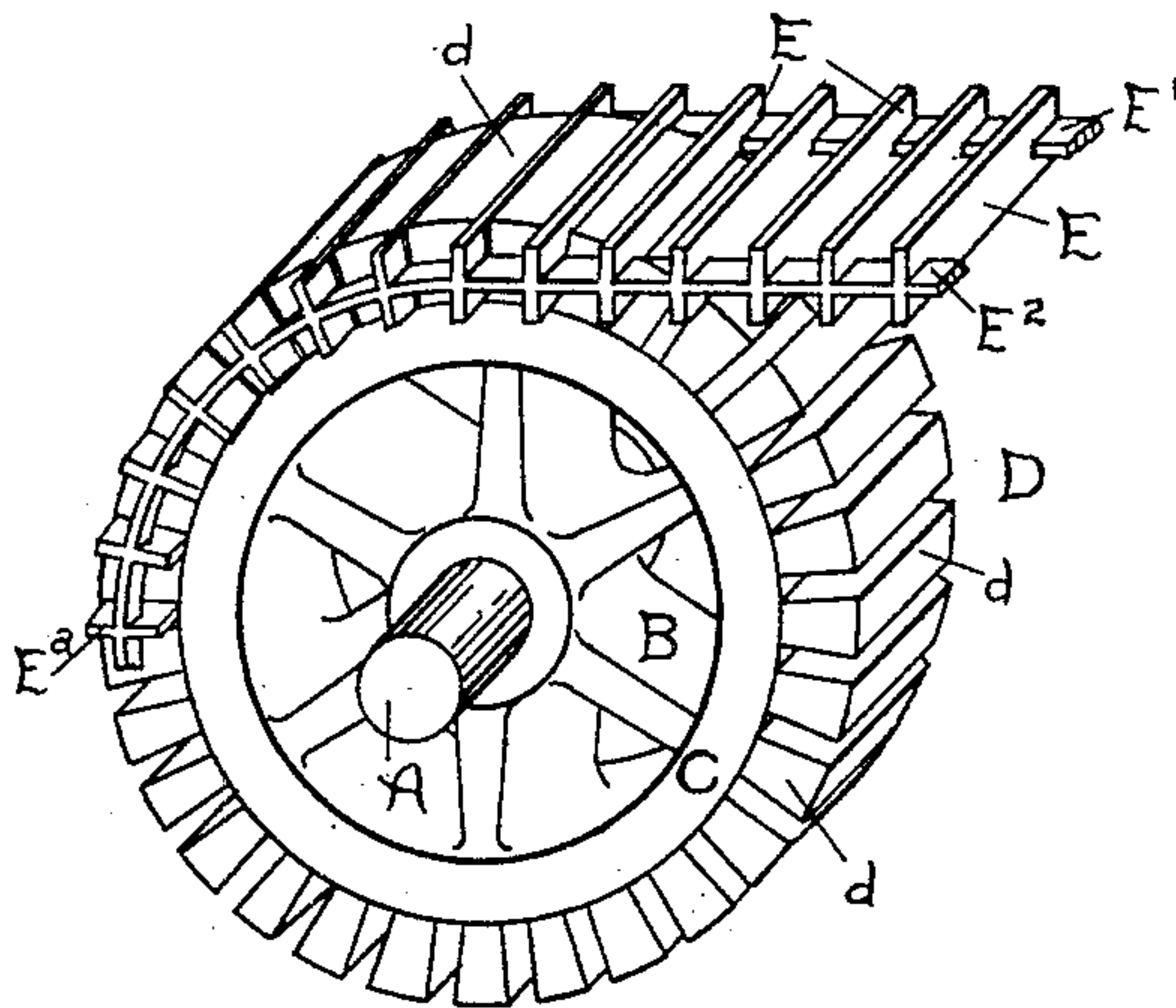


Fig. 2.

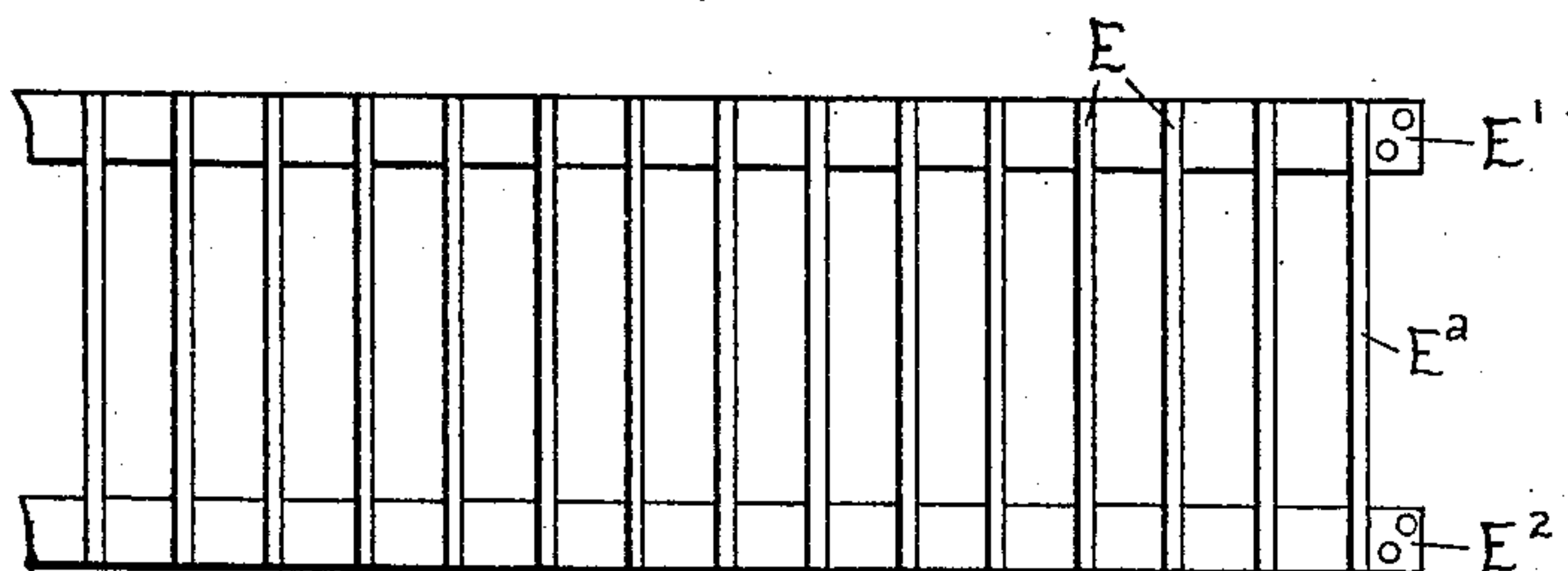
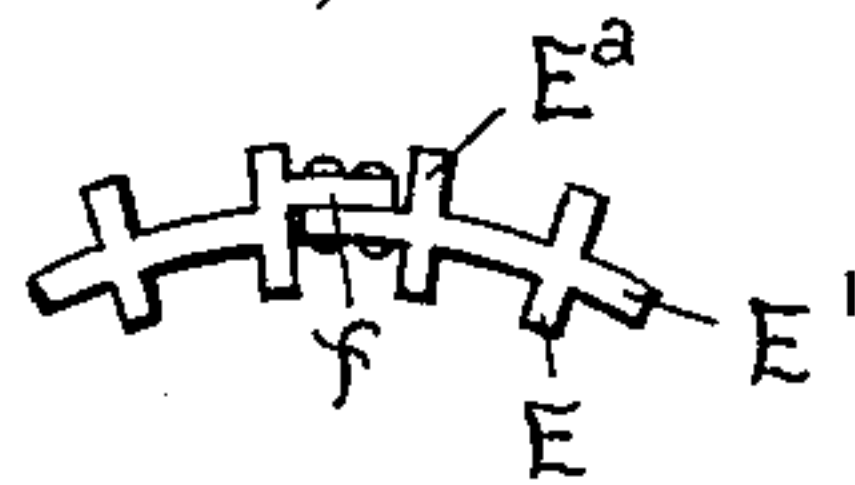


Fig. 3.



Witnesses:

Robert L. Chapman
Benjamin B. Hall

by

Inventor.

Albert H. Armstrong

Albert H. Davis

Att'y.

UNITED STATES PATENT OFFICE.

ALBERT H. ARMSTRONG, OF SCHENECTADY, NEW YORK, ASSIGNOR TO
GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ARMATURE-WINDING FOR INDUCTION-MOTORS.

SPECIFICATION forming part of Letters Patent No. 706,632, dated August 12, 1902.

Original application filed November 3, 1897, Serial No. 657,229. Divided and this application filed January 17, 1901. Serial No. 43,615. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. ARMSTRONG, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Armature-Windings for Induction-Motors, (Case No. 2,037,) of which the following is a specification, this application forming a division of my prior application filed November 3, 1897, Serial No. 657,229.

In certain kinds of induction-motors squirrel-cage armatures are employed, comprising a number of copper bars extending parallel with the shaft and soldered to rings at each end, which connect them in closed circuit relation. The heating of such an armature is limited to the melting-point of the solder used in its construction.

My invention has for its objects to decrease the labor of construction and to provide an armature in which no solder is used and which will stand overheating up to the melting-point of copper without being destroyed.

In the accompanying drawings, Figure 1 is a perspective view of a spider and core with one of my improved windings partially applied thereto. Fig. 2 is a plan view, and Fig. 3 is a detail, of the joint between the ends or sections of the winding.

Mounted on the shaft A is a spider B, comprising a hub and a number of radial arms connected at their outer ends to a cylinder C, which forms a support for the core D, provided with teeth *d*.

The armature-winding consists of a metal grid composed of a plurality of parallel flat bars E, arranged side by side at the same distance apart as the slots between the teeth in the core D. The depth of the bars is preferably the same as that of the slots, and the ends of the bars are connected by intermediate flexible flat portions or webs E' E², cast integral therewith, perpendicular to the bars E. The distance between the inner edges of the webs is substantially the same as the width of the core-teeth. The bars E constitute the armature-conductors, and the webs E' E² the end connections.

In applying the winding to the armature the end conductor E^a is inserted into a slot in the core, and the grid is then wrapped around the core, the bars fitting into the slots and the end connections resting against the ends of the core-teeth. The grid is made just long enough to pass once around the armature, the ends of the webs being overlapped and fastened together, as shown in Fig. 3. One of these meeting web portions is preferably offset, as shown at *f*. By this arrangement the grids can be made in standard lengths and readily cut to fit any machine. A number of windings of this character can be made and kept in stock and may be applied to armatures having different diameters. It is preferable to make a winding of this character in a single piece in order to reduce the joints; but for large armatures the winding may be made in several sections and the sections fastened together.

By the construction above described I am enabled to dispense with the binding-bands commonly employed, and the labor of assembling is greatly decreased.

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

1. An induction-motor winding comprising a plurality of conductors united at their ends by webs integral therewith, the said winding being adapted to be wrapped around an armature-core and secured thereon.

2. As an induction-motor winding, a cast-metal grid comprising a plurality of conductors united by web connections at their ends, the said winding being adapted to be wrapped around an armature-core and secured thereon.

3. An induction-motor winding comprising a plurality of parallel bars connected at their ends by flexible integral intermediate portions.

4. An induction-motor winding comprising a plurality of parallel bars arranged side by side and connected at their ends by flexible integral webs arranged perpendicular to said bars.

5. In combination, a core comprising a body of toothed laminae, a grid, constituting a closed-circuited winding, comprising a plu-

ality of conductors having end connections formed integral therewith, and means for fastening said grid in position on the core.

6. A winding for an electric motor, consisting of a cast-metal grid composed of parallel bars and end webs perpendicular thereto, and provided at one end of the grid with an offset portion.

7. The combination in an induction-motor, of a toothed core and a winding consisting of a grid adapted to be wrapped around the core,

the said grid being composed of parallel bars adapted to fit between the teeth of the core and connected by intermediate portions arranged to lie against the ends of the core. 15

In witness whereof I have hereunto set my hand this 16th day of January, 1901.

ALBERT H. ARMSTRONG.

Witnesses:

BENJAMIN B. HULL,
MARGARET E. WOOLLEY.