

No. 755,229.

PATENTED MAR. 22, 1904.

F. KLINGELFUSS.

COIL FOR ELECTROMAGNET OR OTHER PURPOSES.

APPLICATION FILED SEPT. 28, 1900.

NO MODEL.

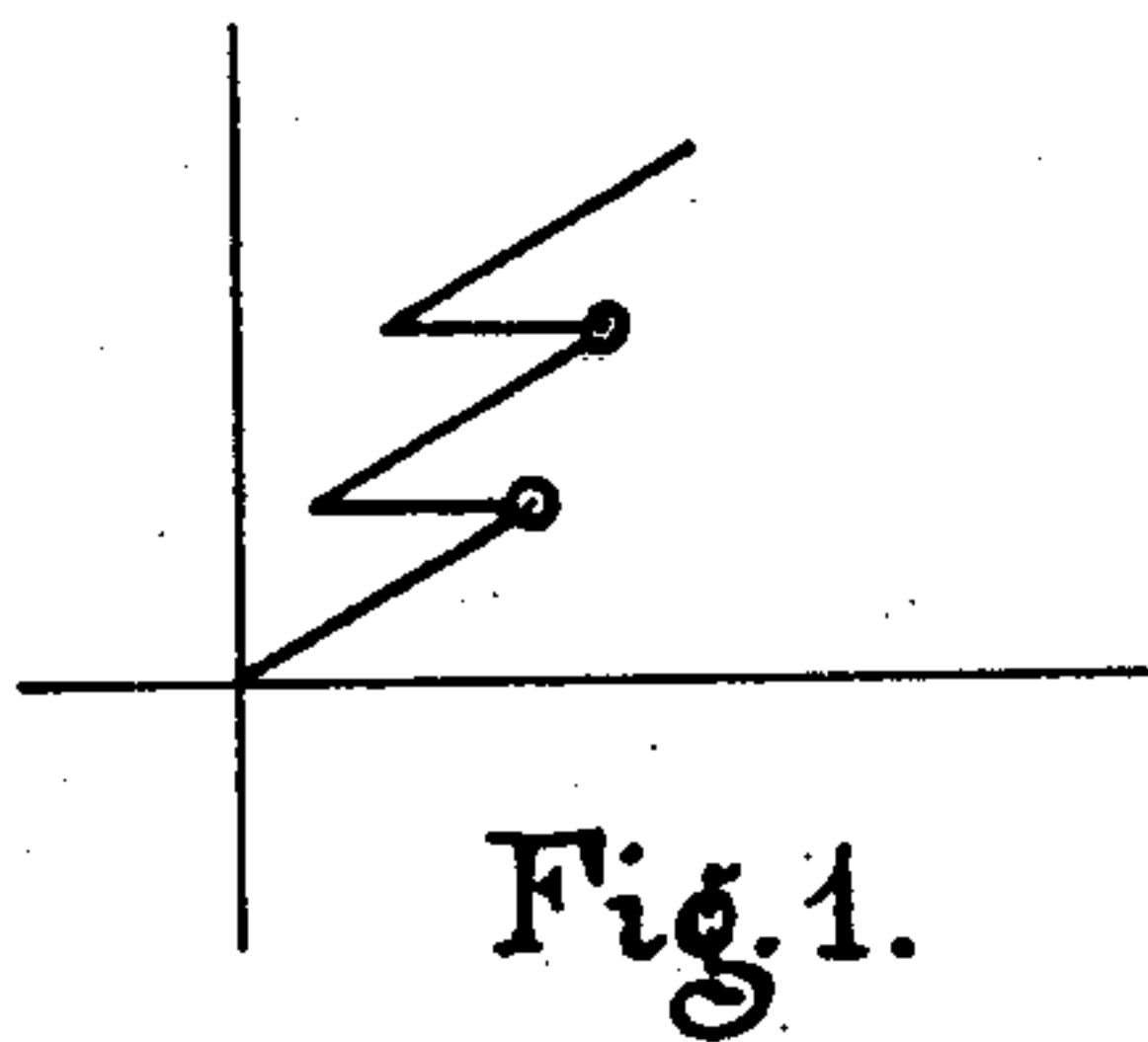


Fig. 1.

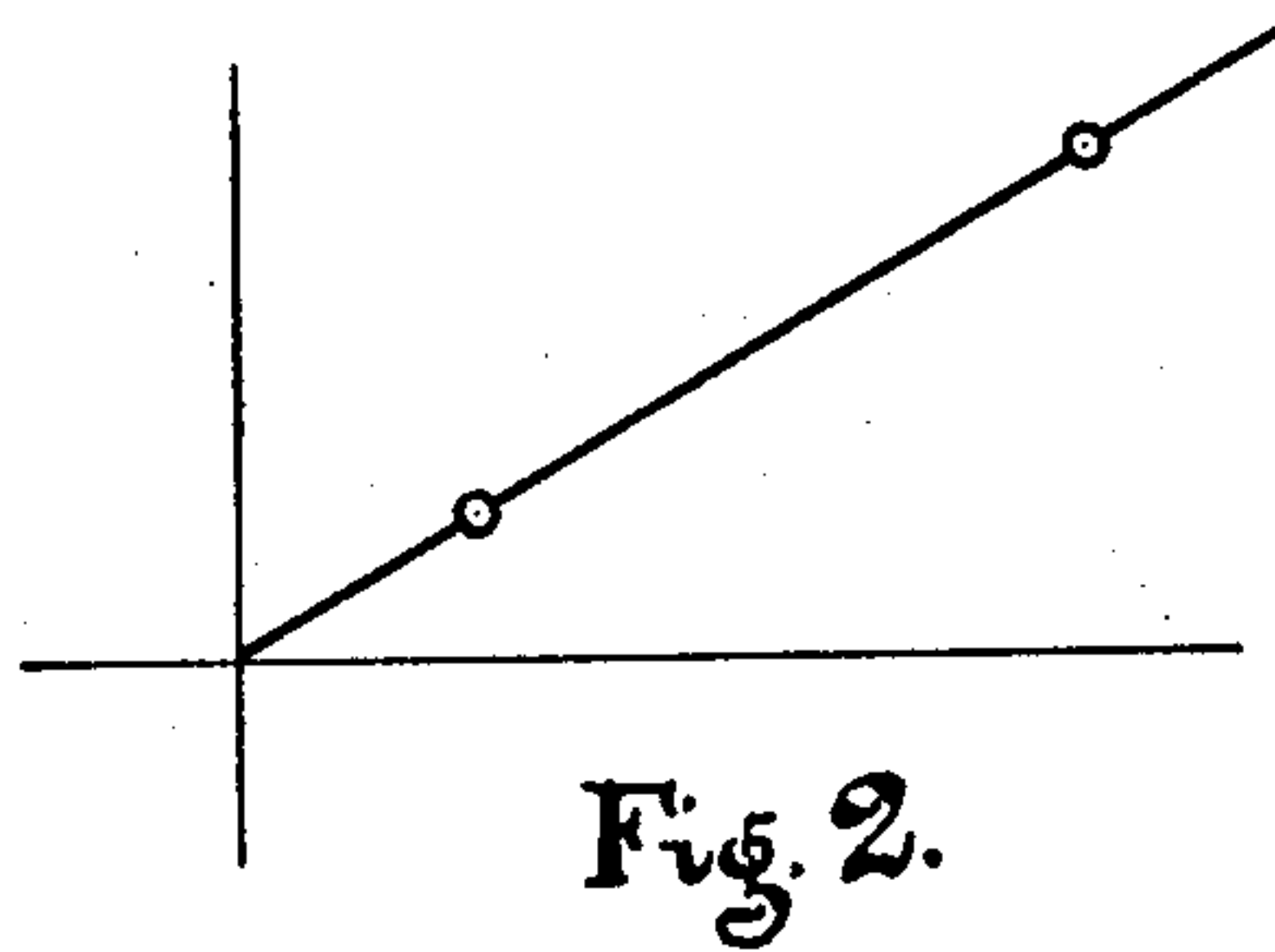


Fig. 2.

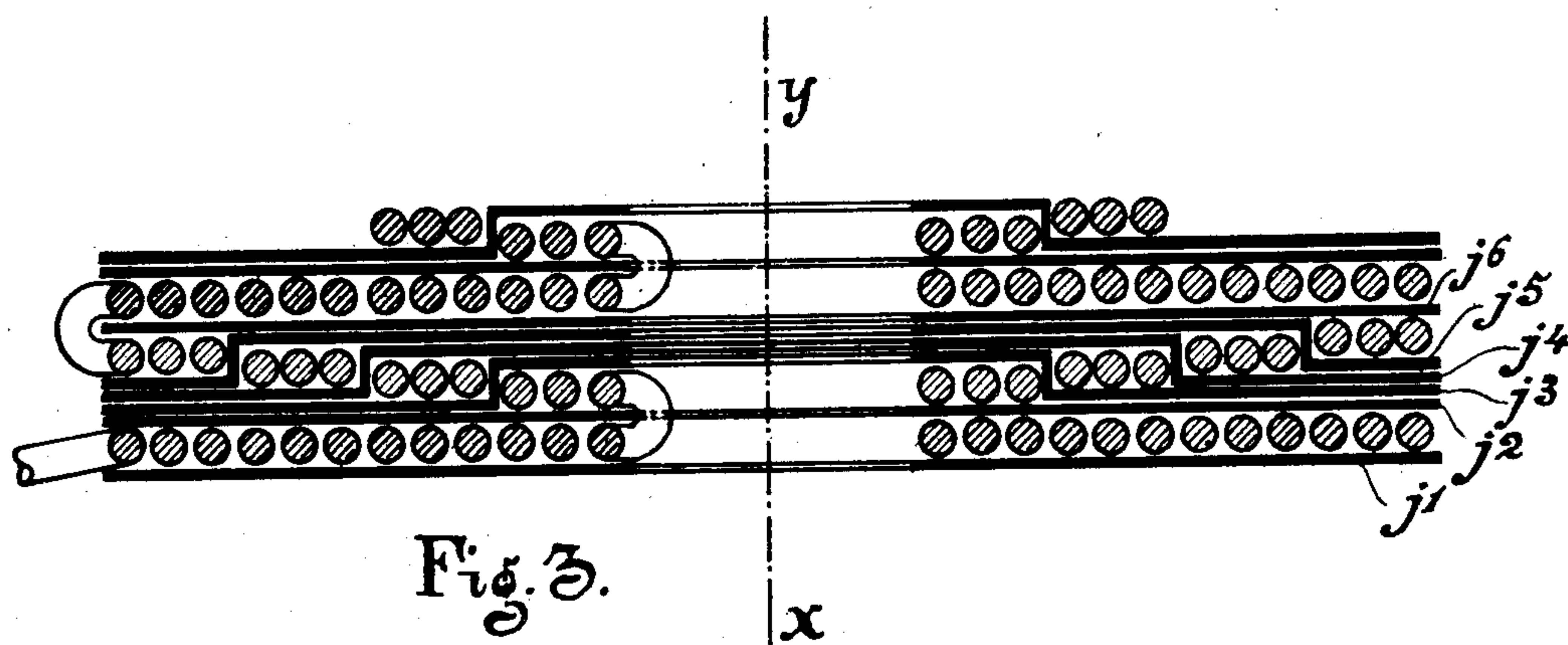


Fig. 3.

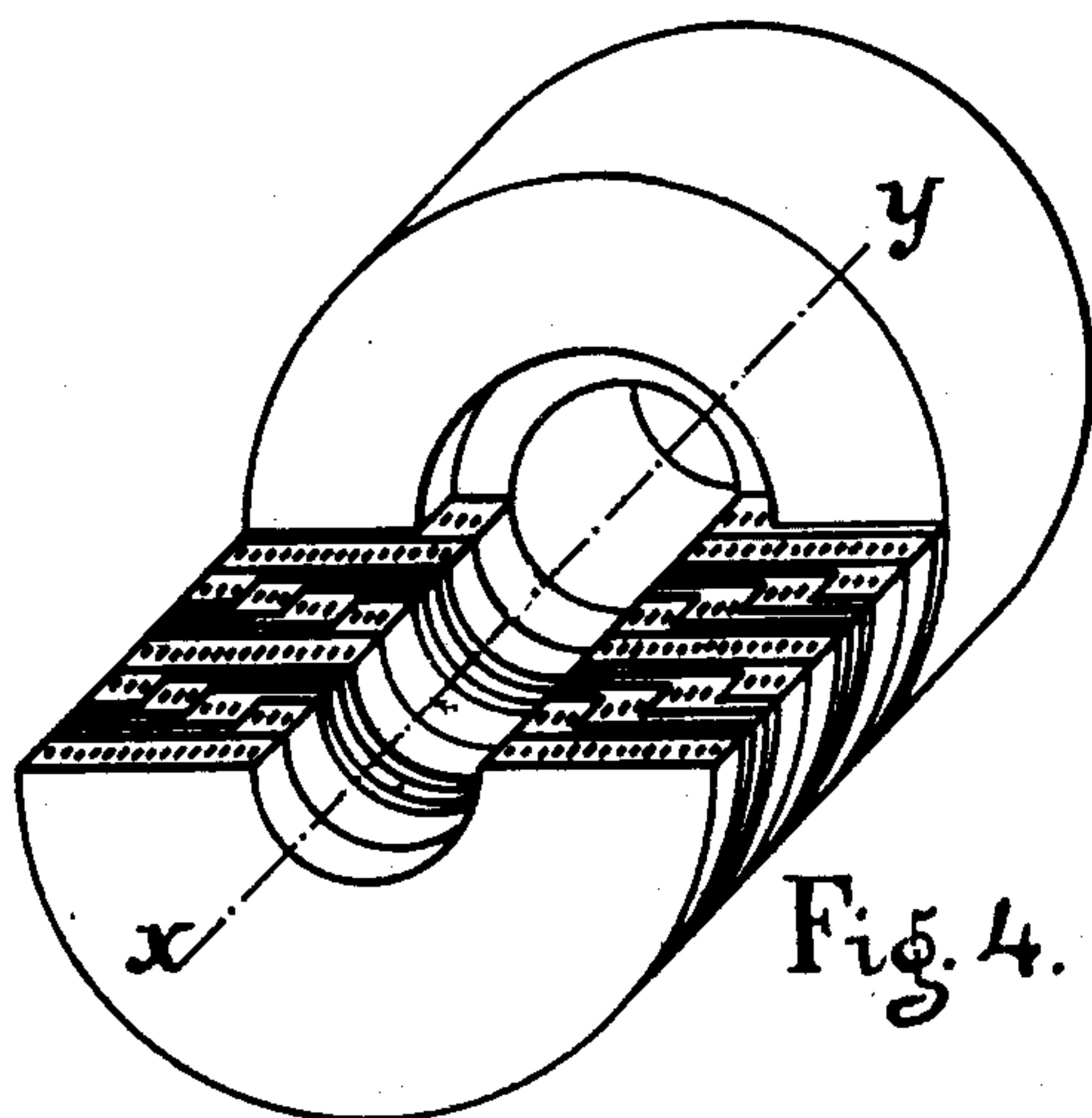


Fig. 4.

WITNESSES:
Ella L. Giles
Oliver R. ...

INVENTOR
Friedrich Klingelfuss
BY *Richard R. ...*
ATTORNEYS

UNITED STATES PATENT OFFICE.

FRIEDRICH KLINGELFUSS, OF BASLE, SWITZERLAND.

COIL FOR ELECTROMAGNETS OR OTHER PURPOSES.

SPECIFICATION forming part of Letters Patent No. 755,229, dated March 22, 1904.

Application filed September 28, 1900. Serial No. 31,389. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH KLINGELFUSS, a citizen of the Swiss Confederation, residing in Basle, Switzerland, have invented certain new and useful Improvements in Coils for Electromagnets or other Purposes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of the present invention is to secure a larger distance of the conducting parts from each other and to secure a closer approach to the ideal proportional between increasing tension differences.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a partial longitudinal section on a large scale; and Fig. 2, a perspective view, partly in section.

The accompanying drawings illustrate by way of example a performance of the invention, representing in Fig. 3 a part of the longitudinal section through the middle axis xy , and in Fig. 4 a perspective view of a coil, partly in section.

On a plate j' of insulating material (as, for instance, ebonite, paper, pressing-board, or the like) placed perpendicularly to the axis xy the windings of the first layer are wound from outside toward inside in a plane, thus forming a spiral. Against the windings of this first layer is put a plate j'' , consisting likewise of insulating material. On the latter rest directly the innermost spiral windings of the second layer. This second winding, however, is interrupted by several insulating-plates j^3 , j^4 , j^5 , each with the middle part bent at right angles, so that the separate parts of the winding layer successively become more distant from the first winding layer toward the periphery, the innermost lot being separated from the first winding layer only by the thick-

ness of one single plate, the following by two, the next by three plate thicknesses, and so on. The number of windings which every single lot contains remains always equal. On the outer portion lot of the second winding layer and on the exposed part of the plate j^5 is again put a plain insulating-plate j^6 , serving as support-plate to the third winding layer, wound from outside to inside, and the windings are then laid in the same manner as above described, and so on until a coil of sufficient length is formed. The particular manner in which the wire is wound and the arrangement of the insulating-disks having annular offset portions dividing alternate coils into concentric sections secures the result that the insulating-layer increases between the windings throughout the whole coil in the same proportion as the potential difference grows between these windings. It is immaterial whether the wire has been insulated or not before the winding.

I claim—

A coil for electromagnets and the like in which the wire windings of the coil are wound in spirals on disks arranged perpendicular to the axis of the coil and consisting of insulating material, these spirals proceeding alternately plainly or in echelon, thus forming layers perpendicular to the axis of the coil, the value of the insulation between every two conductor parts being proportional to their tension difference, the coil being wound in one piece of any length, running by turns alternately from outside to inside and oppositely, at each change forming a layer.

In testimony whereof I affix my signature in presence of two witnesses.

FRIEDRICH KLINGELFUSS.

Witnesses:

GEO. GIFFORD,
HANS STICKELBERGER.