(No Model.)

H. GEISENHÖNER.

APPARATUS FOR BENDING ARMATURE BARS FOR DYNAMO ELECTRIC MACHINES.

No. 532,776. Patented Jan. 22, 1895.

FIG. 1.

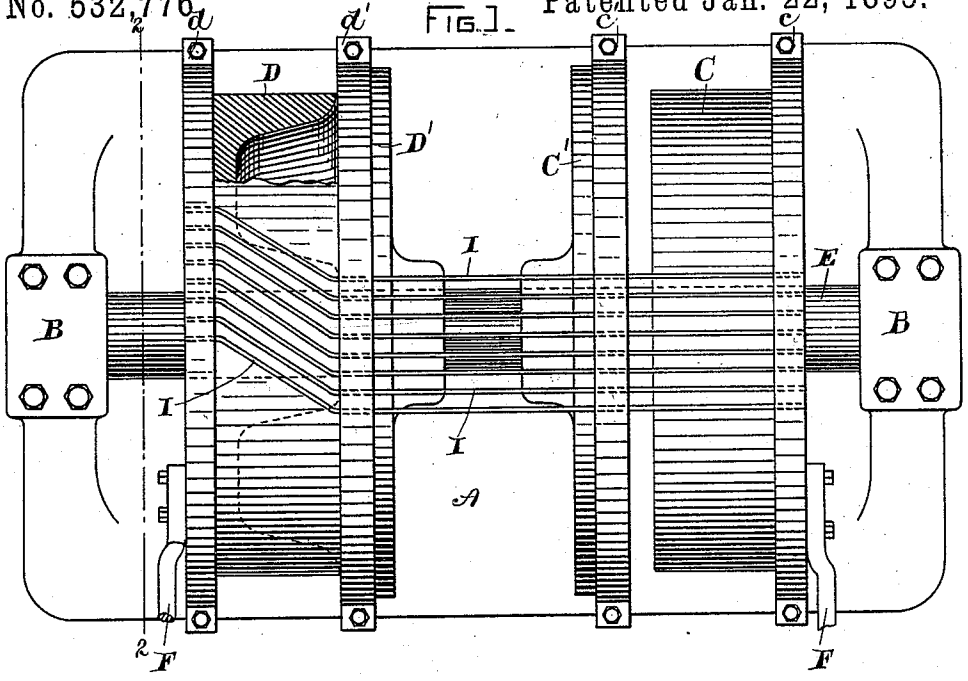
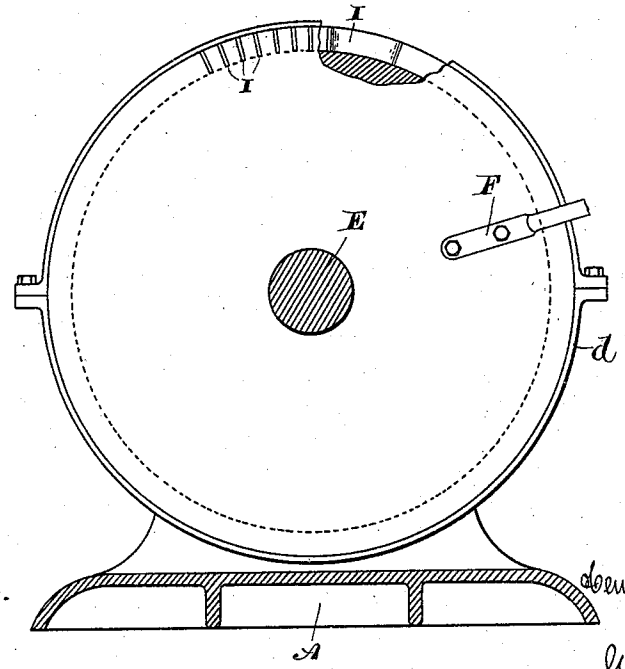


FIG. 2.



WITNESSES.
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UNITED STATES PATENT OFFICE.

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APPARATUS FOR BENDING ARMATURE-BARS FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 532,776, dated January 22, 1895.

Application filed October 23, 1894. Serial No. 526,699. (No model.)

To all whom it may concern:

Be it known that I, HENRY GEISENHÖNER, a citizen of the United States, residing at Schenectady, in the county of Schenectady, State of New York, have invented certain new and useful Improvements in Apparatus for Making Armature-Bars for Dynamo-Electric Machines, of which the following is a specification.

My invention relates to apparatus for making armature bars for dynamo-electric machines; and has particular reference to shaping such parts so that they may be readily applied to the armature core.

In the manufacture of armature conductors it is very desirable that they all be bent to the same form so that they may be interchangeable, and where this is done separately for each one, it becomes difficult to accomplish and is slow and tedious. This defect I overcome in the construction of the machine which is the subject of this application, by bending any convenient number of bars all at the same time and by the same apparatus, which necessarily bends them into the same shape, inasmuch as a single motion effects the whole operation.

For the purposes of my invention I employ drums or cylinders of approximately the curve of the armature body, although this is not essential, and in these drums or cylinders I make slots adapted to hold the armature bars. I then take drums provided with flanges, the drums moving about the same center and being of the same diameter as those to which I have referred and the flanges having similar slots. The first drums being held stationary, I rotate the flanged cylinders either in the same or in opposite directions according to the nature of the winding to be made and thus bend the bars to the form desired, all at one operation.

The accompanying drawings show an illustration of my invention.

Figure 1 is a plan and Fig. 2 a side elevation partly in section, looking to the right, upon the line 2—2 of Fig. 1.

A is a suitable base or frame. B, B are bearings provided therein.

C, D are the drums provided with slotted flanges, one of which is seen in Fig. 2.

C′, D′ are drums having slots in their peripheries, as already described, like those of an armature.

c, *d*, *c′*, *d′* are rings embracing the bars after they are put in position.

F, F are handles attached to the cylinders at the ends of the machine and adapted to rotate them, and E is a fixed central shaft upon which these cylinders and the drums C, D rotate, the cylinders or drums C′, D′ being stationary.

The operation of my improved device is as follows: The upper halves of the rings *c*, &c., being removed, the armature bars I are then inserted in the slots in the stationary parts C′, D′ of the apparatus, and also in the slots provided for them in the flanges of the drums C, D. The rings *c*, *c′*, &c., being then secured in place, the handles F, F are rotated either manually or by any suitable power and the bars are distorted or bent to the proper shape. In this operation the drums C, D will be drawn toward C′, D′ respectively, as the bars shorten in bending, so that they are left free to slide upon the shaft E. The friction of the bars holds them in place in the slots, and the whole operation is conducted expeditiously and with accuracy.

In the drawings, Fig. 1, I have shown one of the drums C with the portion of the bars directly over it straight, in which case it will be at its maximum distance from the drum C′; and I have also shown the other one, D, closely approximated to the stationary drum D′, as the bars therein are bent.

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

1. In a machine for bending armature bars, a frame, a shaft mounted therein, a stationary drum provided with slots to hold the bars, a rotatable drum free to slide on the shaft, also provided with slots to hold the bars, and means for rotating the drums with relation to each other.

2. In a machine of the class described, a frame, a shaft therein, fixed drums having slots for the bars, a rotating drum provided

with flanges having similar slots, and means for rotating the flanged drum and the fixed cylinder with relation to each other.

3. In a machine of the class described, a shaft, fixed cylinders mounted on the shaft, slots in the cylinders to hold the armature bars, rotating cylinders also mounted on the shaft, flanges upon the rotating cylinders provided with slots for the bars, rings for holding the bars in place upon the several cylinders, and means adapted to rotate the fixed and the movable cylinders relatively to one another, substantially as described.

In witness whereof I have hereunto set my hand this 19th day of October, 1894.

HENRY GEISENHÖNER.

Witnesses:
B. B. HULL,
GENEVEIVE HAYNES.