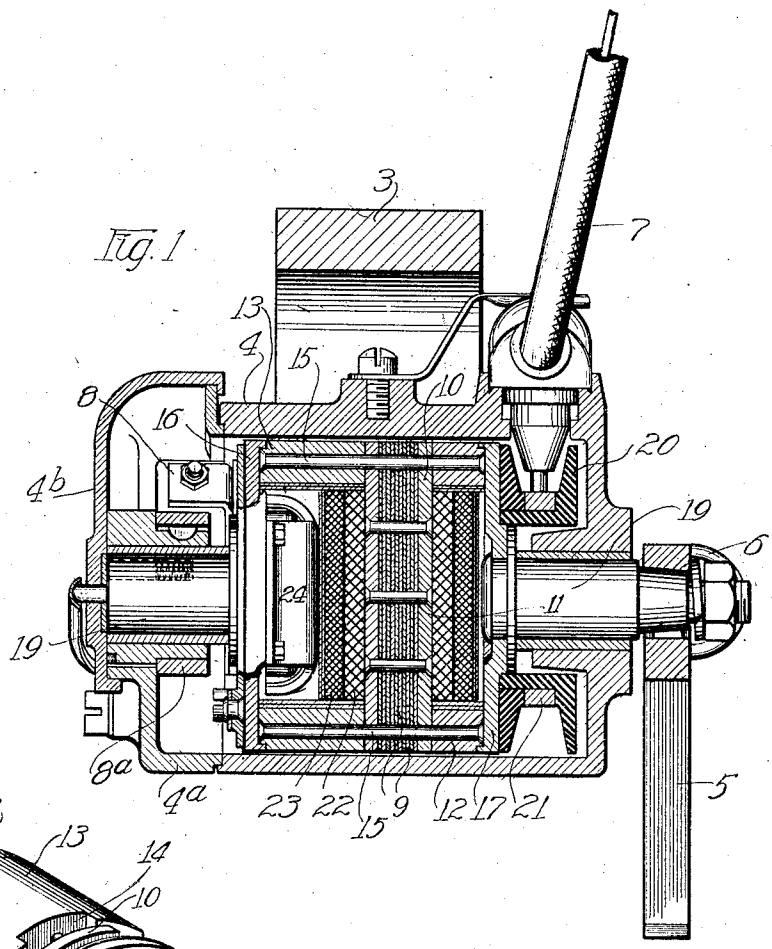
J. R. STARK.

ARMATURE FOR MAGNETO MACHINES.

APPLICATION FILED AUG. 25, 1920. RENEWED NOV. 25, 1921.

1,422,145. **Patented July 11, 1922.**

Fig. 1



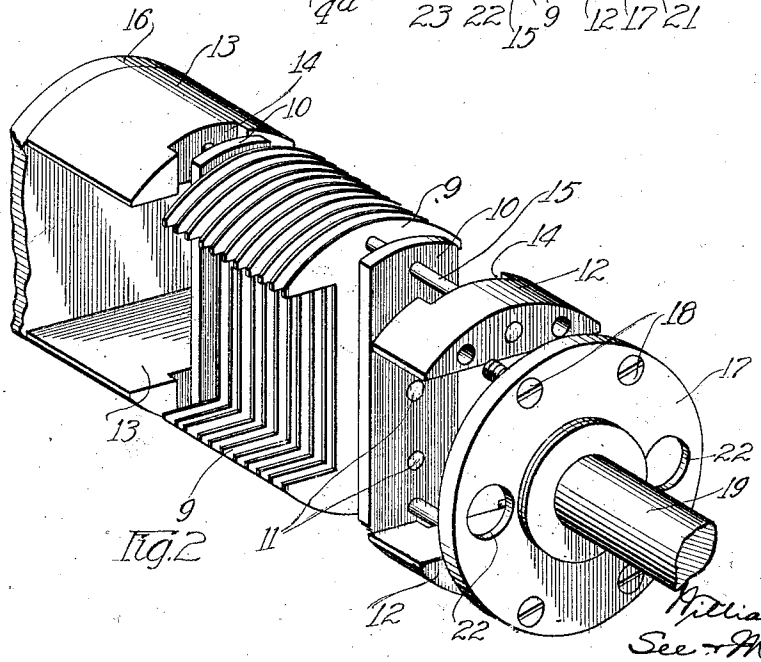


Fig. 2

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JOHN ROY STARK, OF RACINE, WISCONSIN, ASSIGNOR TO WEBSTER ELECTRIC COMPANY, OF RACINE, WISCONSIN, A CORPORATION OF WISCONSIN.

ARMATURE FOR MAGNETO MACHINES.

1,422,145. Specification of Letters Patent. Patented July 11, 1922.

Application filed August 25, 1920, Serial No. 405,958. Renewed November 25, 1921. Serial No. 517,837.

To all whom it may concern:

Be it known that I, JOHN ROY STARK, a citizen of the United States, and resident of Racine, in the county of Racine and State of Wisconsin, have invented a certain new and useful Improvement in Armatures for Magneto Machines, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention is concerned with the provision of an extremely sturdy, compact, and efficient armature structure for magneto machines and contemplates the provision of such an armature which is so arranged that the several parts thereof may be very easily assembled and rigidly held together by means of a minimum number of rivets or other equivalent fastening devices.

While my invention is illustrated in the accompanying drawings as applied to that type of magneto generally known as a high tension oscillating ignition magneto, the features of novelty, wherewith my invention is concerned, may be incorporated in the armatures of various other types and kinds of magneto machines.

In the accompanying drawings illustrating my invention,

Figure 1 illustrates an oscillating high tension ignition magneto, the armature of which is constructed in accordance with my invention, this view illustrating certain parts in section and others in elevation, and

Figure 2 is a partially disassembled view in perspective of certain parts of the armature structure.

Similar characters of reference refer to similar parts throughout.

The magneto shown, comprises the field magnet 3, the housing or magneto frame 4, the removable housing end closure 4^a and its cap 4^b, suitable pole pieces (not shown), tripping lever 5 and springs, one of which is shown at 6, said springs serving to retain the tripping lever in a given position in a well known manner. The magneto also comprises the high tension lead 7, the movable part of the interrupter mechanism indicated at 8, and its stationary cam indicated at 8^a. The respective functions of the several parts of the apparatus just mentioned are generally well known and these parts may be of any suitable construction although I prefer that said parts of the apparatus shall be constructed and arranged substantially in accordance with the disclosures of my copending applications, Serial Nos. 405,957 and 405,959, both filed of even date herewith.

The armature of the magneto, being the part thereof with which my present invention is particularly concerned, comprises a core structure consisting of a plurality of substantially I-shaped soft iron laminæ 9—9 and a pair of steel bars 10—10. The bars 10—10 are disposed on opposite sides of the laminæ 9—9 and parallel therewith, attention being directed to the fact that the said bars 10—10 are of substantially the same length as the laminæ and have their arcuate ends struck on the same radius as the ends of the laminæ with the result that when the core structure is assembled as shown in Figure 1, the arcuate ends of bars 10—10 lie flush with the arcuate ends of the laminæ. The several parts of the core structure just mentioned are preferably rigidly secured together by a plurality of rivets 11—11 which pass through the bars 10—10 and through the laminæ 9—9 at points intermediate the segmental ends of the latter.

Disposed on each side of each end of the core structure just mentioned is one of the segmental steel blocks 12—12 and 13—13, the arcuate surfaces of these blocks being struck on the same radius as are the ends of the laminæ 9—9 and lie flush therewith when the armature structure is assembled as shown in Figure 1. Each of the blocks 12—12 and 13—13 is provided on the side thereof next adjacent the core structure with a notch 14—14 that is of such size and shape that the block may snugly embrace the adjacent end of its associated armature core bar 10. By virtue of this arrangement, I am enabled to secure both of the bars 12 and 13 associated with each end of the core structure rigidly in position by the use of a single rivet 15 which rivet extends through registering apertures in the blocks 12 and 13, the bars 10—10 and the laminæ 9—9. It will thus be seen that I am enabled rigidly to secure all of the segmental blocks 12—12 and 13—13 in position by means of only two rivets, whereas in the conventional armature structure, it is necessary to employ at least four and often times as many as six or eight rivets to accomplish this purpose. The ar-

rangement shown has been found to be very satisfactory and generally more desirable than the conventional armature construction because of the fact that it is stronger and because of the further fact that the armature structure of my invention may be manufactured at less cost than can the conventional armature construction.

At the ends of the armature structure are provided the disks 16 and 17, each of which may be of brass or other suitable material and is secured to the adjacent pair of segmental blocks 12—12, or 13—13, by screws 18—18. The disks are fixed to the armature trunnions 19—19 which are carried in suitable bearings provided by the ends of the housing 4. It will be noted that the disk 16 carries the movable elements of the interrupter mechanism while disk 17 carries the spool 20 which, in the arrangement shown, is provided with the collector ring 21. If the armature of my invention is used in a rotary ignition magneto for a multiple cylinder engine, the spool 20 would, of course, be provided with a suitable distributor segment and that distributor segment would co-operate with a plurality of brushes electrically connected with the spark plugs in the several cylinders of the engine, in a well known manner. The spool 20 is conveniently held in driven relation to disk 17 by being provided with a pair of driving studs which project through apertures 22—22 in the disk 17 and are held therein by suitable spring clips, all as shown and described in my co-pending application, Serial No. 405,957.

The primary and secondary windings 22 and 23 are diagrammatically shown in Figure 1. The usual condenser indicated at 24 is carried in the space between the windings and the disk 16. The several electrical connections of the apparatus need not be illustrated, as these connections are generally well known and since any suitable circuit arrangement may be employed.

Having thus described my invention, what I claim is new and desire to secure by Letters Patent of the United States, is:—

1. An armature for a magneto machine comprising a core structure consisting of a group of substantially I-shaped laminæ and a pair of bars, one disposed on each side of the laminæ and rigidly secured thereto, segmental blocks disposed at the ends of the core structure and provided with notches whereby the blocks may embrace said bars, and means extending through the blocks and through the core structure arranged to hold the blocks upon the core structure.

2. An armature for a magneto machine comprising a core structure consisting of a group of substantially I-shaped laminæ and a bar disposed at one side of said laminæ and rigidly secured thereto, segmental blocks disposed immediately adjacent the ends of said laminæ and provided with notches whereby the blocks may embrace the bar, each block being secured to the core structure by a single fastening means extending through the block and core structure.

3. An armature for a magneto machine comprising a core structure consisting of a group of substantially I-shaped laminæ having segmental ends, a bar disposed at one side of the laminæ and rigidly secured thereto, said bar being of the same length as the laminæ and provided with arcuate ends arranged to lie flush with the ends of the laminæ, together with segmental blocks disposed at the ends of the core structure with their arcuate faces flush with the ends of the laminæ and of the said bar, there being notches in said blocks whereby they may embrace the bar and lie against the laminæ and rivets for securing the segmental blocks to the core structure.

4. An armature for a magneto machine comprising a group of substantially I-shaped laminæ having segmental ends and segmental blocks disposed adjacent the ends of the laminæ with their arcuate faces flush with the ends of the laminæ together with means for securing each of the blocks to the laminæ consisting of a bar of less width than the ends of the laminæ and rigidly secured thereto, the bar being received in a notch in the block, together with a single rivet, passing through the block and laminæ and holding said parts together.

In witness whereof, I hereunto subscribe my name this 5th day of August, 1920.

JOHN ROY STARK.

Witnesses:

C. OEHORT,

P. CREWE.