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(12) # EUROPEAN PATENT SPECIFICATION

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(54) **Assembled commutator.**

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Description

The present invention relates to an assembled commutator.

The segments of a commutator are subject to a large centrifugal force tending to lift the brush contacting portions of the segments away from the base. Typically there may be a force of 20kg. on a segment rotating at 19,000 r.p.m.

A known commutator design has a cylindrical base with a collar at one end supporting a tang for connecting to an armature winding. A recess is provided at the junction of the collar and base and tabs on the segment extend into the recess.

The invention provides an assembled commutator comprising a base and a plurality of commutator segments mounted on the base, wherein a said segment has a tang pressed from one end thereof to leave a loop which is hooked over a boss on an end of the base to secure the segment in position, the tang being arranged for connection of the segment to an armature winding.

Preferred features and advantages of the invention will be apparent from the following description and the accompanying claims.

The invention will be further, described by way of example only, with reference to the accompanying drawings, in which:-

Figure 1 is a partial end view of one embodiment of a commutator in accordance with the invention;

Figure 2 is a cross-section along the line II-II of figure 1; and

Figure 3 shows a blank for a commutator segment of commutator of figure 1.

Referring to the drawings, an assembled commutator comprises a cylindrical base 1 of plastics material having an axial bore 2 for receiving a motor shaft (not shown). A plurality of commutator segments 3, in this example twelve, are glued on an outer cylindrical surface 4 of the base 1. The segments 3 are stamped from copper sheet and bent and folded to shape. Each segment comprises a brush contacting portion 5 having a tongue 6 at one end which is folded below the plane of the portion 5 and inserted in a recess 7 in one end 8 of the base 1. The tongue 6 has a rib 9 which forms a tight fit in the recess 7. The opposite end of the segment 3 has a tang 10 stamped in it and bent up from the plane of the portion 5. Optionally, an elongate slot 15 is stamped in the central region of the tang 10.

In use, the tang 10 is connected to an armature winding wire by hot forging, an electrode bearing down on the tang 10 (arrow A) and on the segment at either side of the tang (arrow B).

When the tang 10 is bent up it leaves a loop 11 at the end of the segment whichis folded down to lock over a boss 12 on the end 13 of the base 1. The loop 11 is a tight fit about the boss 12 which is chamfered at its edges 14 to allow the loop to be forced over the boss.

To assemble the commutator, the segments are stamped and the tongue 6 and tang 10 folded as seen in Figure 2. The brush contacting portion 5 is bent to sit snugly on the base 1. A layer of glue is placed on the surface 4 of the base 1 and/or the underside of the segments 3. The segments are slid onto the base, the tongues 6 being urged into the recesses 7. The loops 11 are then folded and pressed over the bosses 12.

The loops 11 serve to pull the segments down onto the base 1 and also to prevent circumferential movement of the segments on the base.

Various modifications may be made to the invention and it is desired to include all such modifications as fall within the scope of the accompanying claim.

Claims

1. An assembled commutator comprising a base (1) and a plurality of commutator segments (3) mounted on the base (1), characterised in that at least one segment (3) has a tang (10) pressed from one end thereof to leave a loop (11) which is hooked over a boss (12) on an end of the base (1), to secure the segment (3) in position, the tang (10) being arranged for connection of the segment to an armature winding.

Patentansprüche

1. Zusammengebauter Kommutator mit einer Basis (1) und mit einer Vielzahl von Kommutatorsegmenten (3), die an der Basis montiert sind, dadurch gekennzeichnet, daß zumindest ein Segment (3) eine Fahne (10) hat, die derart aus einem seiner Enden herausgedrückt ist, daß eine Schlinge (11) verbleibt, die über einen Vorsprung (12) an einem Ende der Basis (1) gelegt wird, um das Segment (3) in seiner Lage zu sichern, wobei die Fahne (10) zur Verbindung des Segments mit einer Ankerwicklung angeordnet ist.

Revendications

1. Collecteur assemblé comprenant une base (1) et plusieurs lames de collecteur (3) montées sur la base (1), caractérisé en ce qu'au moins une lame (3) possède une queue (10) pressée à partir d'une de ses extrémités pour former une boucle (11) qui est accrochée par-dessus une saillie (12) à une extrémité de la base (1),

pour fixer la lame (3) en position, la queue (10) étant arrangée pour raccorder la lame à un enroulement d'induit.

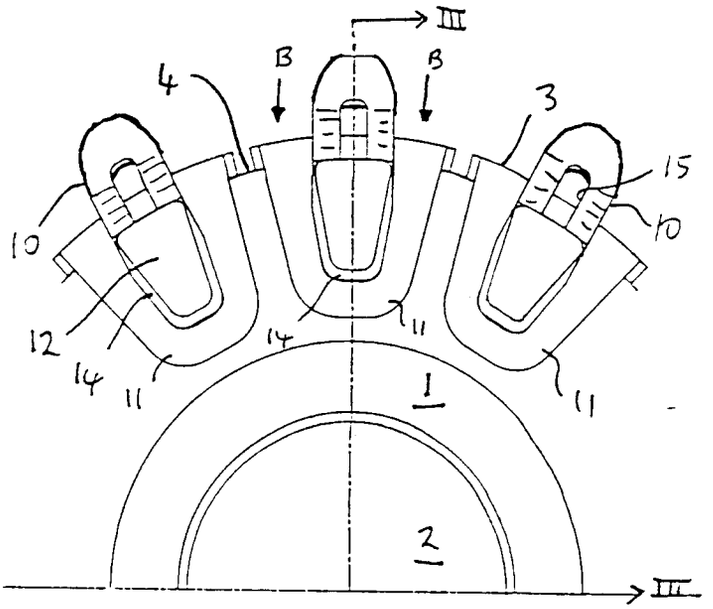

FIG1

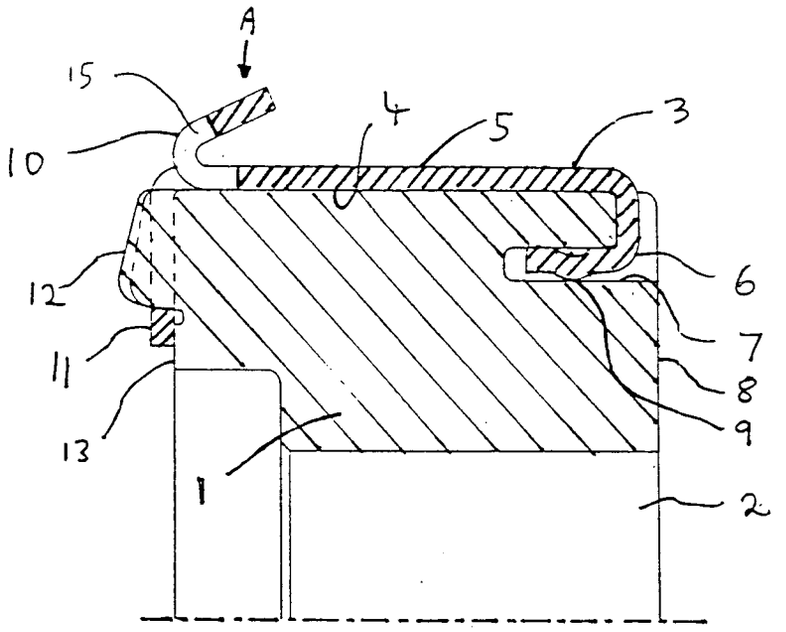

FIG2

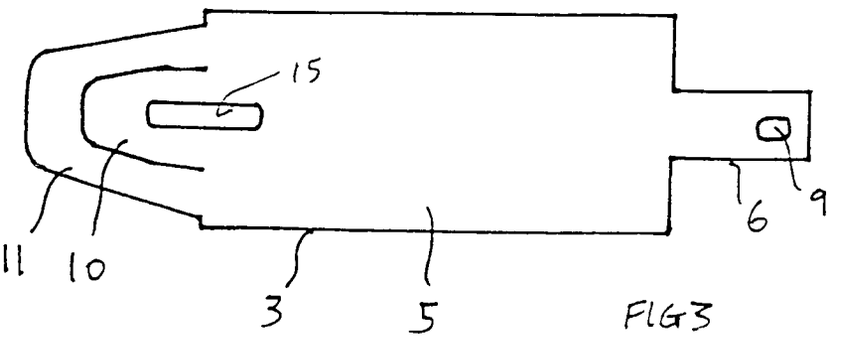

FIG3