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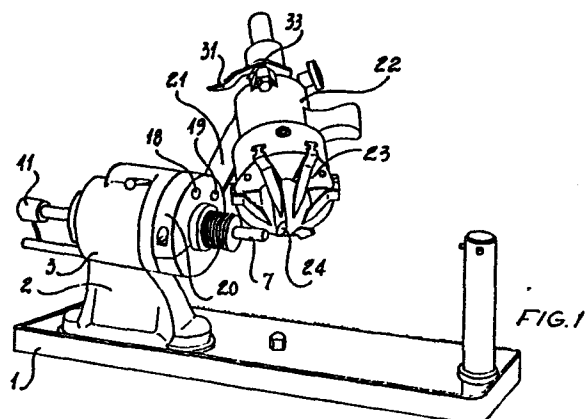
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(54) **Device for sharpening points, reamers and threading-parts.**

(57) A cylindrical setter (3) supports a conical stabilizer (8) which can be turned and is supporting a surface delimitator (7) for the point (24) to sharpen. The point is fixed in the spindle (23) of a support (22) born by an arm (21) on a turning ring (20) on the axle of the setter. By turning the surface delimitator (7), the exposure of the point (24) to be treated is changed. For sharpening reamers, a conical part (42) supporting a dead center (43) is introduced into the setter (3) and a supporting assembly is fitted which consists of a fixing flange (44) with a longitudinal bar (45) holding a mobile bracket (46) fitted with dead centre (47) on the other end. The reamer (48) supported by the two dead centres can be sharpened by changing the tilting of the tool. For sharpening threading-parts (40) the ring (20) is removed and into the setter (3) a supporting pin (38) with clamping part (39) is fitted in order to block the part (40).



TITLE MODIFIED
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Tool for sharpening points, borers and threading parts.

The invention refers to an accessory tool for grinding machines which, according to three different pre-settings, enables to sharpen helical steel and metal points, to carry out boring as well as threading operations. The tool performs the support of the parts being treated in centered longitudinal position. This permits the centering effect operations which carry out a greater penetration, a lower effort with low limits of tolerance, and it allows to change the position of the part being treated by rotation.

For sharpening points, grinding machines are at present used with circular motion and intermittent progression by means of cams.

For the boring operations, at present a different machine is required, and for threading too. It has to be born in mind, on the other hand, that this device operating with intermittent progression, carry out threading operations but on the entrance of the cutting parts, and they are inefficient in cavity operations.

The invention permits to carry out the above three operations by means of only one accessory tool which can be set on the plane of the grinding machine and it can be set each time by adding or taking away organs

according to the operation to carry out. Therefore, only one grinding machine can be used.

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The tool employs on a table a base holding a cylindrical coaxial part of axial turning piece to set on ball bearing and with a conical stabilizer of integral axial support of pivot operating on the top, as a surface delimitator on the point to sharpen of the part held on hanging support. From the back position of rest, the delimitator can be brought on the top. After having performed sharpening on one of its sides, the protection is changed for the subsequent phase by turning the delimitator and by fixing it in position by means of a pin. On the inside head of the setter, a turning ring can be fitted which on the arm holds the support of the part to be treated by means of a handle. From the upper rest position, the support is brought by hand into working position. By means of a small mirror, the alignment of the exposure point wall can be observed on the surface limitator. With an insertion pin foreseen longitudinally on the setter body, the ring and, therefore, the point bearing spindle can be fixed in the two positions.

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For the boring operation, the ring is removed as well as the surface delimitator with the relevant support, and a conical part is fitted into the setter which axially holds a projecting pointed pin; on this one, by means of a fixing flange, a supporting tool with adjustable slope is fitted for the right position of the part to be bored. At the beginning, the support consists of the said coaxially gripping flange, which on the lower side bears a longitudinal bar having a mobile bracket on the other end with an upper dead centre aligned with the first one.

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To preset the tool for the threading operation, a special supporting pin foreseen for this purpose is fitted in the setter; the said supporting pin is equipped with gripping parts which axially block the part to treat in the right position by introduction.

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A form of execution is shown in the drawings of Tables 1 and 2; Fig. 1 is the perspective view of the tool preset for the sharpening operation. Fig. 2 is the longitudinal section of the presetter only to point out the conical stabilizer holding the face delimitating pivot and, on the upper side, the fixing pin of the presetter ring. Fig. 3 is the partial longitudinal section of the support with the point to sharpen inserted into it. Fig. 4 is the view of the presetter with fitted threading tool and inserted part to treat. Fig. 5 is the transversal view of the previous picture complex in correspondence with the gripping part of the supporting tool. Fig. 6 is the section of the presetter prepared for a threading operation.

The version foresees the base 2, on table 1, which supports the cylindrical setter 3 with ball bearings 4 for the rotation of part 5. In this one, pin 6 can be set in a sliding way to surface end delimitator 7. The said pin passes through the conical stabilizer 8 and can rotate with it. Outside the guide collar 9 is foreseen which holds the rubber bellow 10 fit for preventing the dust entrance. At the head, knob 11 with pivot 12 is initially foreseen which acts as a guide by means of its gliding on the lower bar 13. At the end 14 of bar 13, pin 12 can be positioned in rest condition. Above, in a longitudinal cylindrical seat, pin 16 with knob 15 can slide on advance spring 17 to allow the input of pin 16 into one of the notches 18 and 19 on the ring, in order to change the incidence angle. The moving part consists of ring 20 holding support 20 on arm 21. The operation point 24 can be set in support 22 with axial introduction and blocking in spindle 23; the said point 24 is introduced into bearing 25 supporting spindle, rotating in 22. By means of knob 26 with pivot 27, the whole is blocked in position after having checked by means of mirror 29 the horizontal position of the cutter. When the alignment has been reached, bearing 25 is subsequently brought in rotation by 180°. Since tilting has thus been reached, the subsequent operating positions are then obtained according to mnemonic checking sequences. The shim adjustment of bearing 28 is given by support 22 and ring-like part 30. In order to fix the point in subsequent positions, the lifting lever device 31 is foreseen which, by means of tooth 32 with return spring 33, is

introduced into the counterposed pair of hollows 34 on pivot 35. The point positioning can become easier by means of cylindrical support 36 for points fitted with a conical setting part 37. In order to pre-set for threading operations, ring 20 is taken away and the supporting pin 38 is inserted into the pre-setter; by means of pinching part 39, part 40 to treat is blocked. For boring operations, part 42 supporting dead-centre 43 is inserted into the conical hollow 41 of the setter rotating part. On this one, the supporting tool is fitted for inserting its flange 44. In the lower side of the tool, bar 45 is foreseen on which the mobile bracket 46 can be fixed, fitted with dead centre 47 for supporting the operation part 48 between it and part 43.

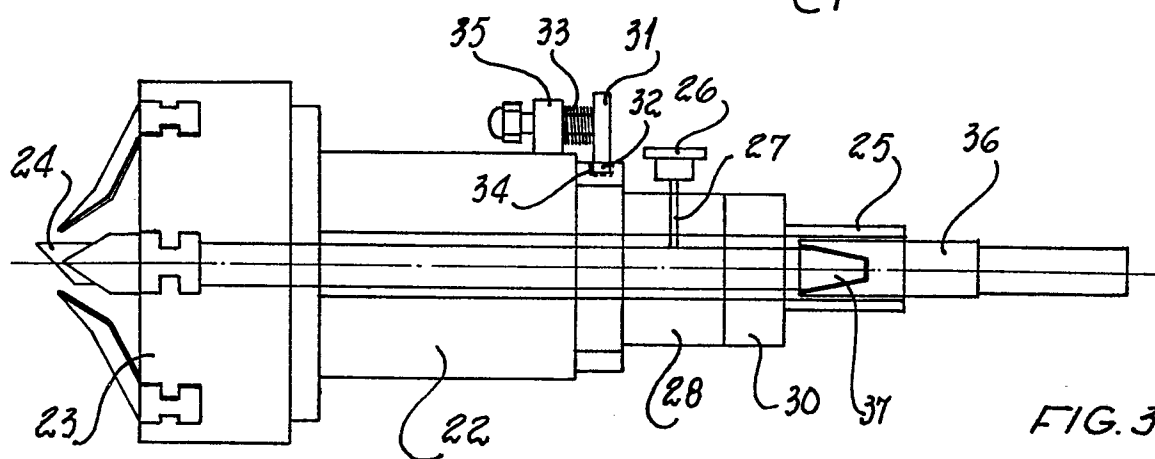
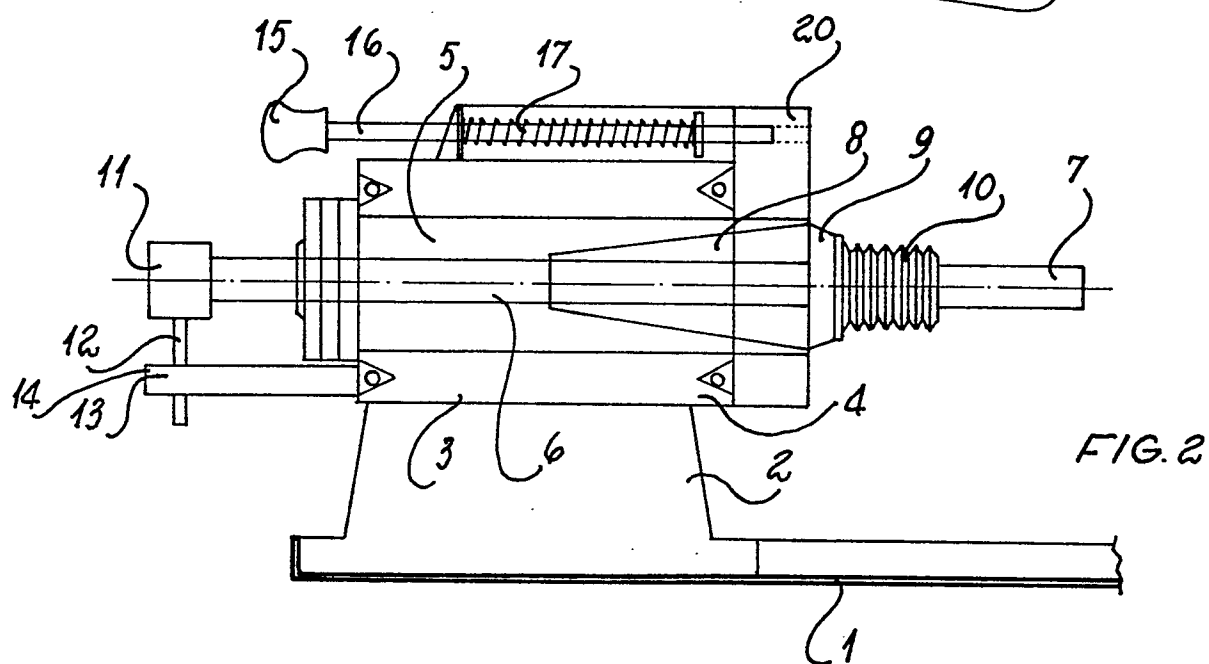
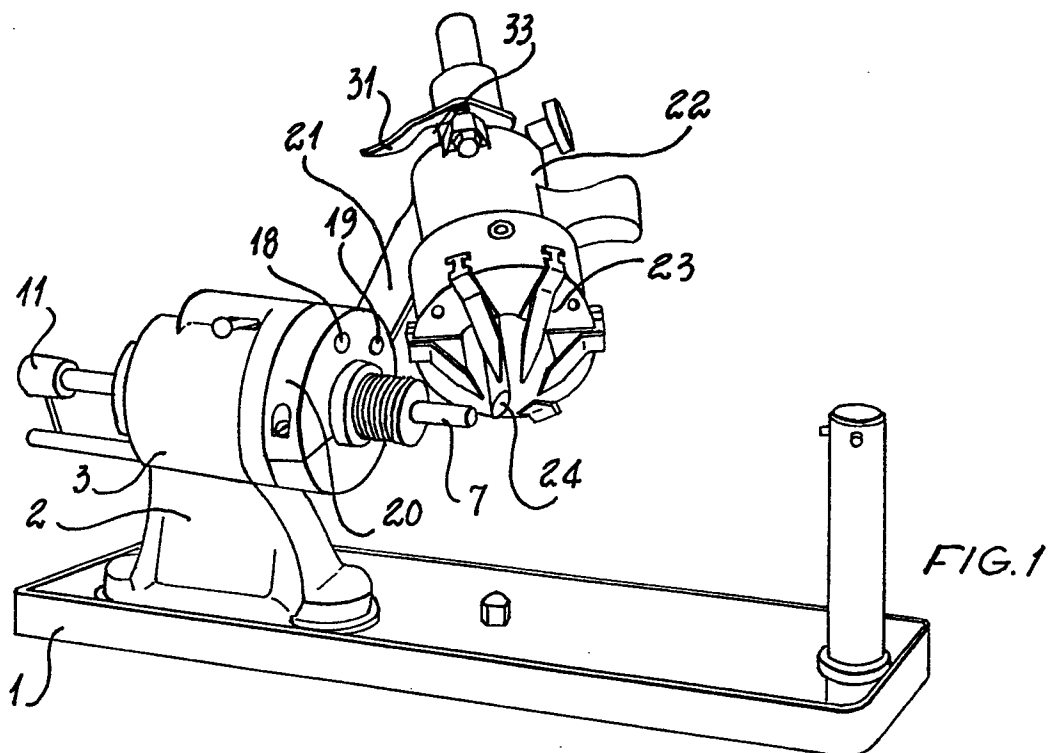
By changing the inclination, the incidence angle of the tool can be changed.

Claims.

- 1) Tool for sharpening points, borers and threading parts, characterized by the fact that employs on a table a base holding a cylindrical coaxial part of axial turning piece to set on ball bearing and with a conical stabilizer of integral axial support of pivot operating on the top, as a surface delimitator on the point to sharpen of the part held on hanging support. From the back position of rest, the delimitator can be brought on the top. After having performed sharpening on one of its sides, the protection is changed for the subsequent phase by turning the delimitator and by fixing it in position by means of a pin. On the inside head of the setter, a turning ring can be fitted which on the arm holds the support of the part to be treated by means of a handle. From the upper rest position, the support is brought by hand into working position. By means of a small mirror, the alignment of the exposure point wall can be observed on the surface limitator. With an insertion pin foreseen longitudinally on the setter body, the ring and, therefore, the point bearing spindle can be fixed in the two position.
- 2) Tool for sharpening points, borers and threading parts, according to the claim 1, characterized by the fact that for the boring operation, the ring is removed as well as the surface delimitator with the relevant support, and a conical part is fitted into the setter which axially holds a projecting pointed pin; on this one, by means of a fixing flange, a supporting tool with adjustable slope is fitted for the right position of the part to be bored. At the beginning, the support consists of the said coaxially gripping flange, which on the lower side bears a longitudinal bar having a mobile bracket on the other end with an upper dead centre aligned with the first one.
- 3) Tool for sharpening points, borers and threading parts, accord

ing to the claim 1, characterized by the fact that to preset the tool
for the threading operation, a special supporting pin foreseen for
35 this purpose is fitted in the setter; the said supporting pin is equipp
ed with gripping parts which axially block the part to treat in the
right position by introduction.

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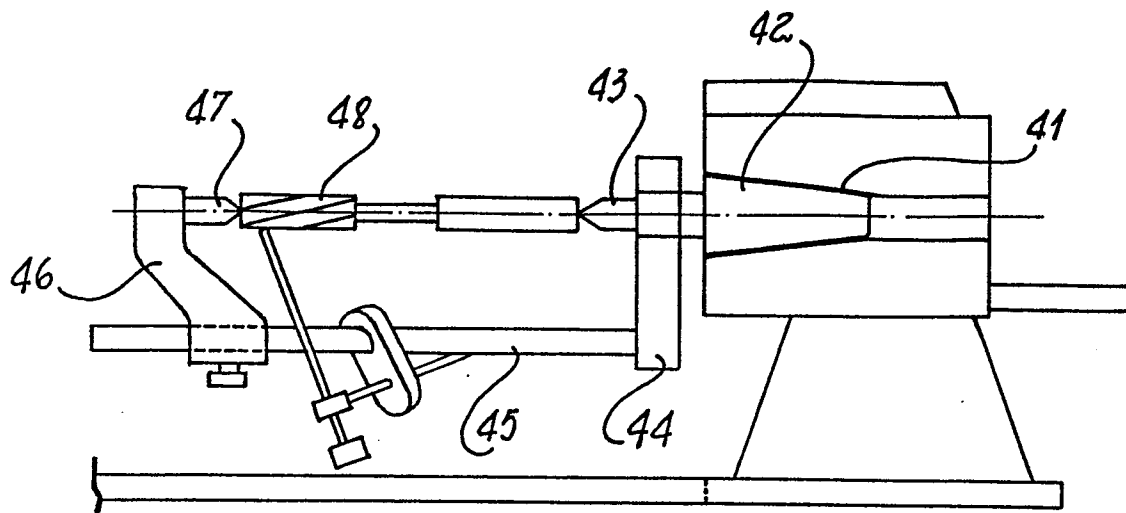


FIG. 4

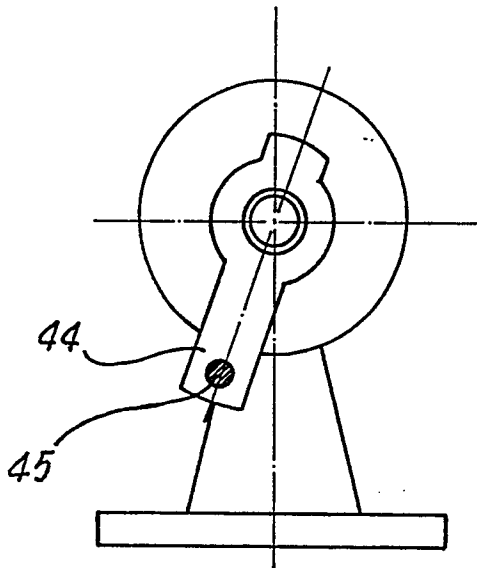


FIG. 5

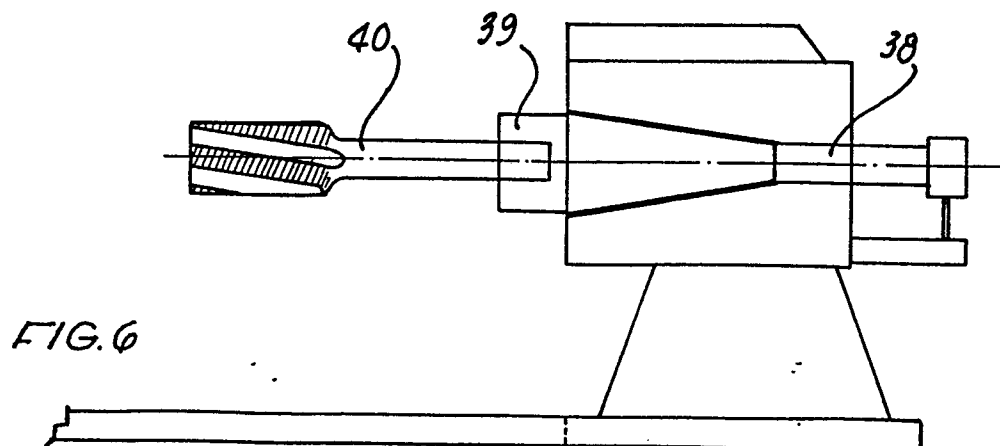


FIG. 6



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EUROPEAN SEARCH REPORT

0182954
Application number

EP 84 83 0323

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	GB-A-1 475 902 (TRINKLER) * Page 1, line 46 - page 3, line 28; figures 1, 4, 8 *	1,2	B 24 B 3/00 B 24 B 41/06
A	WO-A-8 202 507 (THE ESTATE OF HÖGFORS) * Abstract; claim 1; figures 2, 7, 8 *	1,3	
A	CA-A-1 161 648 (KALSI) * Pages 1, 2; claim 1 *	1	
A	US-A-3 039 244 (VICKERMAN) * Column 1, lines 7-39; figures 1, 3 *	1	
A	US-A-2 342 889 (POLSON) * Column 1, lines 5-9; figures 1, 15 *	1	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	CH-A- 381 553 (HOFMANN & CO.) * Figures 1-3 *	1	B 24 B 3/00 B 24 B 41/06
A	DE-A-1 805 161 (BLATZHEIM) * Figure 3 *	1	
A	US-A-3 828 480 (WENG) * Abstract *	1	
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The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 15-07-1985	Examiner MARTIN A E W
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			



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Application number

EP 84 83 0323

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	DE-A-1 652 123 (MICRON ETS.) * Figure 2 * -----	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 15-07-1985	Examiner MARTIN A E W
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	