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54 **Honing tool.**

57 A honing tool which can be used on a standard machine, being adjustable by means of a graduated nut which engages a wedge and moves a honing stone assembly which is spring loaded to a larger or smaller diameter.

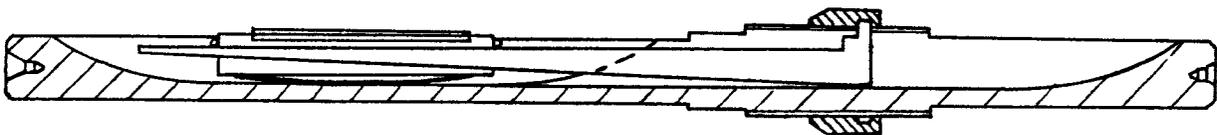


FIG 2

EP 0 225 021 A1

R.M.W. HONING SYSTEM

The purpose of this invention is to enlarge a round hole, making the same perfectly round, parallel and improve the surface finish. This process is generally known as honing.

There are a number of honing tools on the market which consist mainly of a body, an abrasive material and a means of adjustment. These tools need a special purpose machine in order to operate. The design of the R.M.W. Honing System is such that it can be operated on a drill, lathe or any other standard machine incorporating a rotary spindle. The pressure on the abrasive material has, until now, been exerted by a wedge, forcing the abrasive material outwards -a process often causing a sieze up if too much pressure was applied.

The design of the R.M.W. Honing System is such that this danger is avoided.

The adjustment of the abrasive material is by a graduated nut.

A specific embodiment of the invention will now be described by example, with reference to the accompanying drawing, in which:-

Figure 1 shows in perspective the assembled R.M.W. Honing System.

Figure 2 is a cross section a -a of Figure 1.

Figure 3 shows the body.

Figure 4 shows the wedge.

Figure 5 shows the graduated nut.

Figure 6 shows the mounted honing stone assembly.

Figure 7 shows a cross section a -a of Figure 6.

Figure 8 shows the spring.

Referring to Figure 3 the body has a machined slot 1 the width of the mounted honing stone assembly Figure 6, a further slot 2, the width of the wedge, Figure 4; two crosspins 3 and 4, and a threaded section 5.

The wedge Figure 4, has a taper, 6, identical to the taper on Figure 6 number 12. A key, 7, to receive the groove in the graduated nut Figure 5 number 9.

The mounted honing stone assembly Figure 6 consists of the main boot, 10, which has a tapered slot, 12, which is the same taper as on wedge, Figure 4. The abrasive material -the honing stone, 11, is bonded to the boot.

The operation of the R.M.W. Honing System will now be described. Referring to Figure 2 the spring Figure 8 presses against the honing stone assembly, Figure 6 which in turn presses against the tapered end of the wedge Figure 4, which is now firmly pressed against the pins 3 and 4, Figure 3. By turning the graduated nut Figure 5, in either

direction the wedge Figure 4 will either retract or advance and allow the honing stone assembly to increase or decrease the diameter of the working section.

Claims

1 A honing tool comprising a body having slots to fit the honing stone assembly and the wedge, a screw nut section, and two cross pins.

2 A honing tool as claimed in Claim 1 having a wedge with a taper on one side and a key or slot on the other to receive a graduated nut.

3 A honing tool as claimed in Claims 1 and 2 having a honing stone assembly with a tapered slot to correspond with the wedge.

4 A honing tool as claimed in Claims 1, 2 and 3 having a graduated nut to adjust the diameter of the honing stone assembly.

5 A honing tool as claimed in Claims 1, 2, 3, and 4 having a spring which spring loads the honing stone assembly.

6 A honing tool substantially as described herein with reference to Figures 1 -8 of the accompanying drawing.

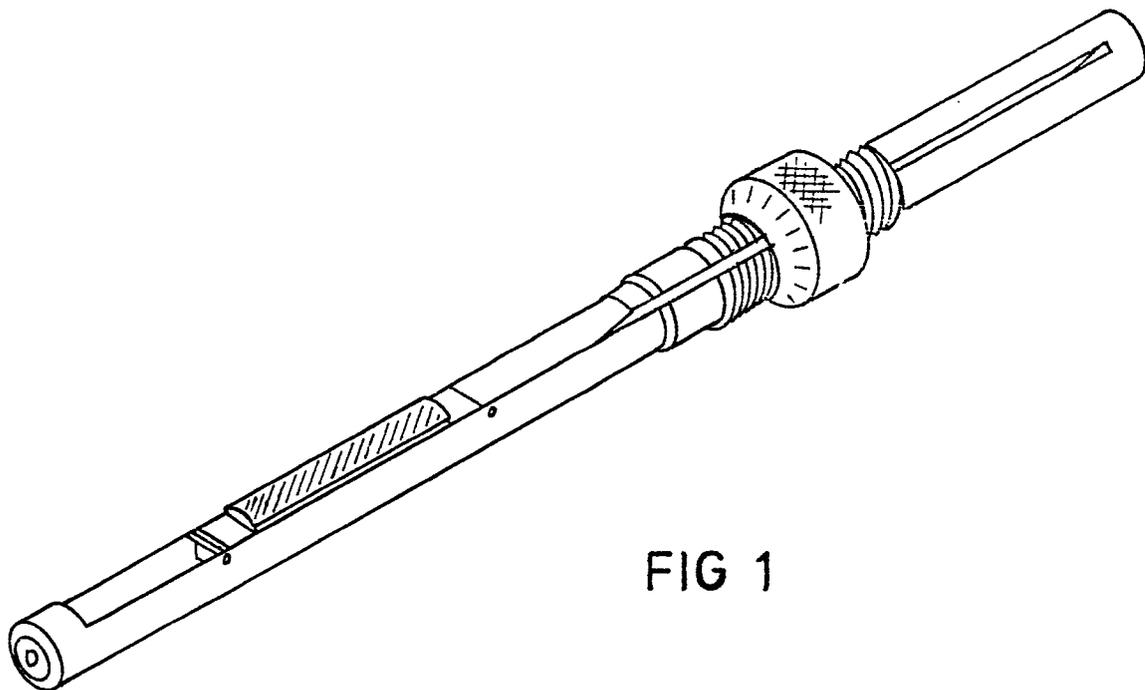


FIG 1

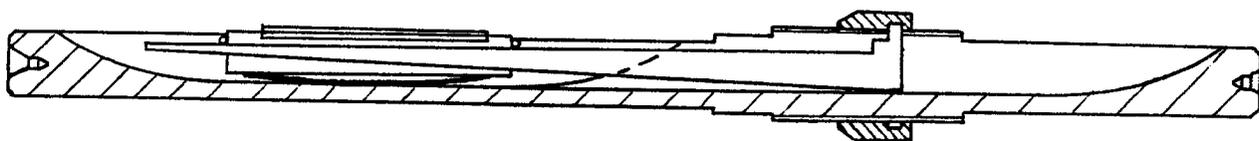


FIG 2

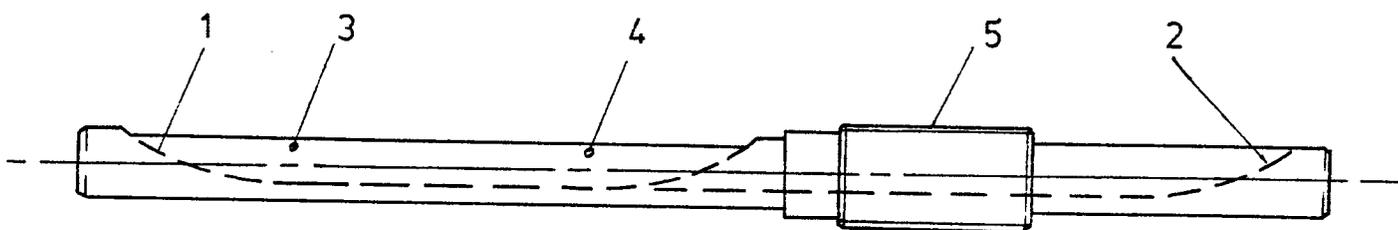


FIG 3

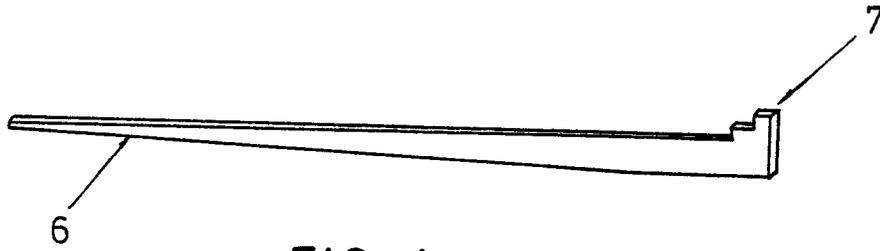


FIG 4

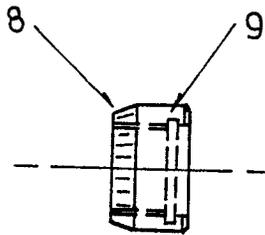


FIG 5

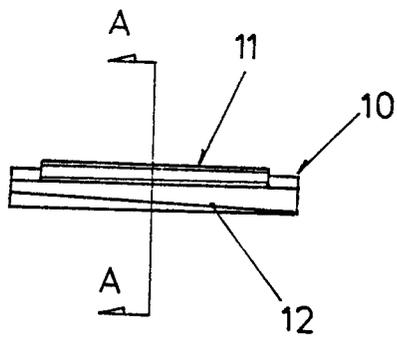


FIG 6



SECTION AA

FIG 7

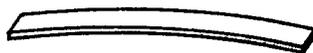


FIG 8



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)
Y	US-A-2 543 515 (WAGSTAFF) * complete document *	1,2,4	B 24 B 33/08
A	---	3,5	
Y	FR-A-1 228 814 (GARNERIE) * figure 3 *	1,2,4	
A	---	1,4,5	
A	US-A-1 913 689 (SUNNEN) * page 3, lines 74-125; figures 4,5 *	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
A	---	1	B 23 D 77/04 B 24 B 33/00
A	US-A-1 883 285 (ZIMMERMAN) * claim 1; figures 1,8 *	1	
A	---	1	
A	GB-A- 996 832 (SUNNEN) * figures 3,11 *	1	
A	---	5	
A	US-A-2 657 507 (SEYMOUR) * figure 2 *	5	

The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 23-02-1987	Examiner MARTIN A E W
CATEGORY OF CITED DOCUMENTS		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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