B. E. ERIKSEN.

WATCHMAKER'S TOOL.

APPLICATION FILED APR. 5, 1920.

1,364,625.

Patented Jan. 4, 1921.

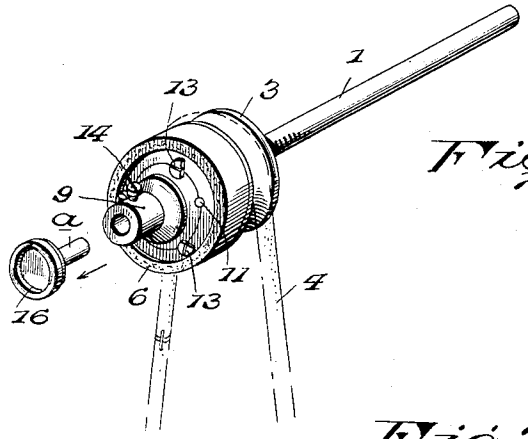



Fig. 1.

Fig. 2.

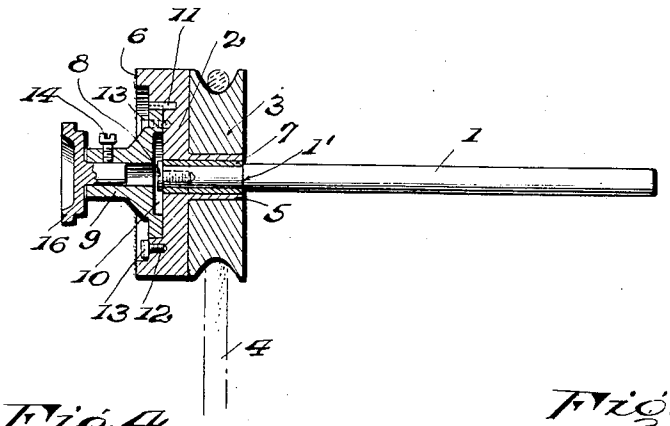



Fig. 3.

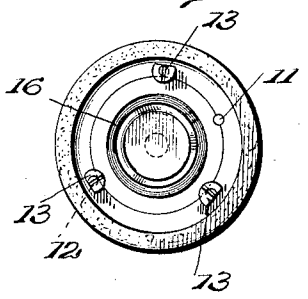



Fig. 4.

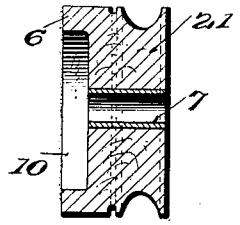
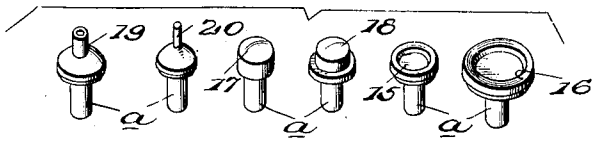



Fig. 5.




Bernhard Edwin Eriksen INVENTOR.

BY

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# UNITED STATES PATENT OFFICE.

BERNHARD EDWIN ERIKSEN, OF WASHINGTON, DISTRICT OF COLUMBIA.

## WATCHMAKER'S TOOL.

1,364,625. Specification of Letters Patent. Patented Jan. 4, 1921.

Application filed April 5, 1920. Serial No. 371,451.

*To all whom it may concern:*

Be it known that I, BERNHARD EDWIN ERIKSEN, a subject of the King of Norway, who have declared my intention of becoming a citizen of the United States, having taken out my first naturalization papers within the last three years, and being a resident of Washington, in the District of Columbia, have invented certain new and useful Improvements in Watchmakers' Tools, of which the following is a specification.

My invention relates to a watchmaker's tool designed especially for damaskeening the winding wheels of watches and for producing other fine decoration on watches. While it is the common practice in the manufacture of watches to damaskeen the winding wheels, there is need of a simple tool for this purpose which can be used by individual watchmakers in damaskeening the winding wheels of old watches, this operation, where attempted at all as a repair operation, being so badly done as to lessen the value of the watch stamping it unmistakably as second hand. My tool is therefore arranged so that it can be used with the ordinary jeweler's lathe which needs no description, my tool being secured in any suitable adjustment in a slide rest of any desired make, which slide rest may be adjustable in different directions. Precision and accuracy, simplicity and the feature of interchangeability are important characteristics of my tool.

Referring to the drawings:

Figure 1 is a perspective view of the tool with tool holder attached and a small tool about to be inserted therein.

Fig. 2 is a cross section through the tool with tool holder and small tool in position.

Fig. 3 is an end elevation corresponding to Fig. 2.

Fig. 4 is a cross section through the axis of a modified form of disk and tool, and

Fig. 5 shows in perspective a series of tools for coöperation with the tool holding socket.

My tool has a spindle 1 which is intended to be held fixed in any desired adjustment in the slide rest in the same way that the shanks of tools are customarily held therein. On this fixed part of the tool is rotatably mounted the tool proper which is a disk 2 having associated with it, either in two parts immovably connected or integral, the pulley 3 driven by the belt 4. In the form shown in Fig. 2 the pulley 3 is separate and forced onto the integral sleeve 5 of the disk so that the two in effect constitute a single element. The disk 2 is provided with an annular abrasive surface 6 on its operative face, this surface being formed in the usual way by pressing diamond dust or carborundum dust into the relatively soft material—as soft iron or copper—of which the disk is made. The pulley is suitably of brass. A steel bushing 7 is forced into the opening through the center of the disk and pulley making a tight fit therewith so that the three parts operate as a unit. This unit, rotatably mounted on the end of the spindle, is removably held in place against the shoulder 1′ by the left handed screw 8. The tool as thus described may be used for damaskeening winding wheels, the size of the disk being chosen to suit the usual size of winding wheel, the diameter of the disk being about half that of the winding wheel and the operation being carried on in the well known manner, the work being held in the lathe and rotated slowly, the face of the disk being at a slight angle to the face of the work and the disk being turned more rapidly by a motor or otherwise. The work and disk turn in opposite directions but the contacting portions of the work and disk move in the same direction since they are respectively on opposite sides of the centers of the work and disk.

In order to adapt the tool for damaskeening winding wheels of other sizes and for fine decorating work, I provide a removable tool holder 9 fitting a depression 10 in the operative face of the disk 2. This tool holder takes the form of a tool holding socket which is coaxial with the spindle 1. It will be observed that surfaces both at the edge and at the base of the holder are in contact with corresponding surfaces at the edge and bottom of the depression and that means to prevent rotation as the pin 11 is employed. Spaced screws having mutilated heads 13 are shown as the means for removably fixing the tool holder in place on the disk. It will be observed that this arrangement, while it permits the ready removal and replacement of the tool holder, makes it practically unitary with the disk when it is fixed in place. This is an important consideration in work of this character where minute accuracy and regularity is necessary. Any one of a number of different tools, as indicated in Fig. 5, may be secured in the tool holder, the shanks of the tools fitting its bore and the

tools being held in place by the set screw 14. The tools 15 and 16 are for damaskeening small wheels and are of the same form as the disk 2 being provided with annular abrasive surfaces surrounding a depression. The tools 17 and 18 have slightly convex working faces, 17 being of box wood and 18 having its operative surface of abrasive material, this part of the tool being of soft metal into which diamond dust or carborundum dust is forced in the ordinary way. Tool 17 is for polishing and tool 18 for grinding. Tools 19 and 20 ornament by forming a series of fine lines, this being also considered a kind of damaskeening. The types of ornamentation for which these various tools are adapted are familiar in the art. All the tools are provided with cylindrical shanks *a* of the same size.

It will be apparent that the construction is such that when the tool holder 9 is removed the abrasive surface 6 on the operative face of the disk 2 can come in contact with the work without interference from any projecting part of the tool, the spindle and the connecting means terminating well to the rear of the plane of the said surface. It will also be evident that when the tool holder is in place and a small tool secured therein the disk 2 does not interfere in any way with the operation of the smaller tool and that there is no wabbling or uncertainty of movement. It has already been explained that the disk 2 and the pulley 3 may be formed as a unit, this construction being illustrated in Fig. 4 in which these parts are combined into a double disk 21 of box wood with a hard steel bushing 7 forced into the axial opening of the combined disk.

What I claim as my invention is:

1. A watchmaker's tool having a spindle a disk mounted on the spindle adjacent one of its ends and having on its operative face an annular surface of abrasive material located in advance of the end of the spindle, a tool holder, means for removably securing the same to the disk, and means for securing any one of a number of interchangeable tools in said holder.

2. A watchmaker's tool having a spindle, a disk mounted on the spindle adjacent one of its ends and having in its operative face a depression, an annular surface of abrasive material surrounding said depression and located in advance of the end of the spindle, a removable tool holding socket coaxial with said spindle, fitting into the said depression and having surfaces in contact with the bottom and sides thereof, means for fixing said tool holding socket against movement relative to the disk including movement of rotation, and means for securing any one of a number of interchangeable tools in said holder.

3. In a watchmaker's tool, a rotatable disk associated for movement as a unit with a pulley and having an operative face provided with a depression, an annular surface of abrasive material surrounding said depression, a removable tool holding socket coaxial with said disk, fitting into the depression and having surfaces in contact with the bottom and sides thereof, spaced screws with mutilated heads for releasably fixing the tool holding socket in place in the depression, means for preventing rotation of the tool holding socket with reference to said disk, and means for securing any one of a number of interchangeable tools in said tool holding socket.

4. A watchmaker's tool having a spindle, a disk rotatably mounted on the spindle adjacent one of its ends, and having a depression in its face and an annular surface of abrasive material surrounding said depression and located in advance of the end of the spindle, a tool holder, and means for fixing the same immovably but removably to the disk, and means for securing any one of a number of tools in said tool holder.

In testimony whereof I affix my signature.

BERNHARD EDWIN ERIKSEN.