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54 **Engraving tool holder.**

57 A holder for an engraving tool includes a body (1) having a shank (2) for attachment to the rotatable chuck of an engraving machine and a tool holding member (4) slideable in a bore (3) along an axis transverse to the axis of rotation of the tool holder. The tool holding member (4) has a location (5) for receiving the shank (6a) of an engraving tool (6) locked by set screw (7) and the member (4) is slideable such that the tool can be moved translationally from a position in which it lies along the axis of rotation of the tool holder to a position to one side of said axis, and vice versa. Set screws (9) entering offset recess (8) are provided for retaining the tool (6) in an adjusted position. According to another embodiment, the tool is mounted so that it can be rotated about an axis normal to the axis of rotation of the tool holder.

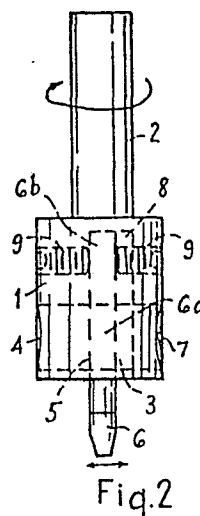


Fig.2

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1 The present invention relates to engraving apparatus
and more particularly to a holder for an engraving tool
by means of which an engraving operation can be carried
out on a workpiece.

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BACKGROUND OF THE INVENTION

 In carrying out an engraving operation the path of
travel of the engraving tool is either controlled by the
10 movement of a stylus or follower over a master pattern
corresponding to the shape to be engraved, often through
the intermediary of a pantograph mechanism, or else the
path of the engraving tool may be controlled in accordance
with data derived from a data processor. In any case the
15 width of an engraved line so formed depends on the cutting
width or tip size of the engraving tool employed. Thus,
it is necessary to have a large number of engraving tools
available having different tip sizes in order to engrave
a wide variety of lines of different widths. This in turn
20 necessitates frequent changes of engraving tool.

 Also, it is frequently a matter of trial and error
in order to obtain an engraved line of a particular thickness
so as to produce a desired aesthetic effect, for example
of a letter or other character being engraved. In practice
25 an engraver may initially produce a thinner line and then
in order to produce the final thickness, the engraving
tool is either changed or else is reground to produce a
thicker line. In the latter event, regrinding of the tool
is time consuming and expensive. Not only does frequent
30 regrinding wear away the tool rapidly, but if the regrinding
is overdone, too thick a line may be produced which causes
wastage of the workpiece as well as requiring another tool
to be ground to the desired width.

1 It is an object of the present invention to provide
an engraving tool holder which enables the aforementioned
disadvantages to be alleviated or overcome.

5 SUMMARY OF THE INVENTION

 From one aspect of the invention provides a holder
for an engraving tool including a body having means for
attachment to the rotatable drive of an engraving machine
10 and a tool holding member displaceable relative to the body
such that an engraving tool carried thereby can be moved
between a position in which the cutting tip of the tool
lies on the axis of rotation of the tool holder to a position
in which the cutting tip of the tool is displaced from said
15 axis of rotation of the tool holder.

 In one form of the invention, the tool is arranged
for translational displacement relative to the axis of rotation
of the tool holder.

 Thus, from another aspect the invention provides a
20 holder for an engraving tool including a body having means
for attachment to the rotatable drive of an engraving machine
and a tool holding member slideable along an axis transverse
to the axis of rotation of the tool holder, said tool holding
member having a location for receiving the shank of an engra-
25 ving tool and being slideable such that the tool can be
moved translationally from a position in which it lies along
the axis of rotation of the tool holder to a position to
one side of said axis, and vice versa, and means for retaining
the tool in an adjusted position.

30 According to another form of the invention, the tool
is mounted so that it can be rotated about an axis normal
to the axis of rotation of the tool holder.

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1 The invention therefore also provides a holder for
an engraving tool including a body having means for attachment
to the rotatable drive of an engraving machine and a bore
receiving a tool holding member rotatable through an angle
5 about an axis normal to the axis of rotation of the tool
holder, said tool holding member having a location for
receiving the shank of an engraving tool such that by rotation
of the tool holding member, the tool can either be caused
to lie along the axis of rotation of the tool holder or
10 at an angle thereto, and means for retaining the tool in
an adjusted position.

The body of the holder is preferably provided with
a shank to fit in the chuck of an engraving machine.

The means for retaining the tool in an adjusted position
15 may comprise two set screws arranged at diametrically opposite
sides of the tool and engageable with the shank of the tool.
By appropriate advancing and retraction of the two set screws,
the shank of the tool and hence its tip can be displaced
towards and away from the axis of rotation of the tool holder
20 and maintained in any desired position within the possible
range of movement. A further set screw may be provided
for securing the shank of the tool relative to the tool
holding member.

25 BRIEF DESCRIPTION OF THE DRAWINGS

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

30 Figure 1 is a side view of one embodiment of engraving
tool holder according to the invention,

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1 Figure 2 is a side view at right angles to the view
in Figure 1,

Figure 3 is a section on the line III-III in Figure 1,

5 Figure 4 is a side view of a further embodiment of
engraving tool holder according to the invention,

Figure 5 is a partial sectional view through the tool
of Figure 4; and

Figure 6 is an underneath plan view of the tool holder.

10 DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Figures 1 to 3, the engraving tool holder
shown in this embodiment is intended to permit translational
displacement of an engraving tool relative to the axis of
15 rotation of the tool holder. The device comprises a cylindri-
cal body 1 having a shank 2 for fitting in the chuck of
an engraving machine. The body 1 is provided with a
cylindrical diametric bore 3 adjacent its lower end in which
can slide with a close fit a correspondingly shaped cylindrical
20 bar 4, forming a tool holding member, having a bore 5 for
locating the shank 6a of an engraving tool 6. A set screw
7 located in a threaded axial passage in the bar 4 is provided
for locking the tool 6 in position in the bore 5. The upper
end 6b of the shank of the tool 6 extends beyond the bar
25 4 and is accommodated in an elongated offset recess 8 in
the body 1. Two diametrically spaced set screws 9 are located
in threaded bores provided in the body 1 above the bore
3 but parallel thereto, such that the set screws can engage
the upper end 6b of the shank of the tool 6.

30 As will be apparent, by appropriate advancing and
retraction of the set screws 9, the shank 6b of the tool
6 can be moved between a position in which the tip of the

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1 tool lies on the axis of rotation of the tool holder and
any of many positions in which the tip of the tool 6 is
translationally displaced from this axis, within the range
of adjustment permitted by the length of the elliptical
5 recess 8. The tool holding member 4 obviously slides to
and fro in the bore 3 as the shank 6b of the tool is moved
by the set screws 9. The set screws also serve to lock
the tool 6 in an adjusted position.

Referring now to the embodiment of Figures 4 to 6,
10 the engraving tool holder shown in this embodiment is intended
to permit rotation of the tool about a horizontal axis normal
to the vertical axis of rotation of the tool holder. The
device comprises a cylindrical body 11 having a shank 12
for fitting in the chuck of an engraving machine. The body
15 is provided with a diametrically extending cylindrical bore
13 which receives a corresponding dimensioned cylindrical
tool holding member 14 having a cross hole 15 to receive
the shank 16a of an engraving tool 16. The tool shank is
held in position in the hole 15 by a set screw 17 extending
20 axially of the cylindrical member 14. The tool 16 extends
through an appropriately aligned elongated aperture 18 in
the lower end of the tool holder 11 so that rotation of
the cylindrical tool holding member 14 about its axis causes
the tip of the tool 16 to move between a position along
25 the axis of rotation of the tool holder (shown in full lines
in Figure 4) and any of many positions displaced from this
axis (as shown in broken lines in Figure 4), within the
range of adjustment permitted by the elongated aperture
18. This adjustment is achieved by means of two diametrically
30 spaced set screws 19 located in threaded bores in the body 11

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1 below the bore 13 and at right angles thereto. These set
screws are respectively retracted and advanced until the
tip of the tool 16 is at the desired position and are then
locked against the shank of the tool to hold it in the adjusted
5 position.

As will be apparent with the arrangement of the present
invention, when the tip of the tool is displaced from the
axis of rotation of the tool holder the tip of the tool
will describe a circular locus which consequently increases
10 the width of the groove cut in a workpiece to be engraved,
the magnitude of this increase in width being dependent
on the amount of displacement of the tool tip from the axis
of rotation of the tool holder.

Clearly the range of adjustment of the width of cut
15 is limited for any one size of tool holder and therefore
different sizes of tool holder may be provided each of which
covers a substantially different range of widths of cut.

The tool holder according to the present invention
provides in particular the following advantages:-

- 20 1. A smaller number of tools than hitherto are needed
to cope with the variety of engraving demanded.
2. It is no longer always necessary to change the engra-
ving tool to produce engraving of different widths.
3. It is a simple matter to adjust the thickness of an
25 engraved line to produce the desired aesthetic effect and
frequent regrinding of tools is avoided.
4. When cutting holes through material the diameter of
the holes can be adjusted within limits thus avoiding the
necessity of having a large number of templates and avoiding
30 the necessity to have engraving tools for this purpose made
accurately.

CLAIMS

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1. A holder for an engraving tool characterised in that it includes a body (1,11) having means (2,12) for attachment to the rotatable drive of an engraving machine and a tool holding member (4,14) displaceable relative to the body such that an engraving tool (6,16) carried thereby can be moved between a position in which the cutting tip of the tool lies on the axis of rotation of the tool holder to a position in which the cutting tip of the tool is displaced from said axis of rotation of the tool holder and means (9,19) for retaining the tool in an adjusted position.

2. A tool holder as claimed in claim 1, characterised in that the tool (6) is arranged for translational displacement relative to the axis of rotation of the tool holder.

3. A tool holder as claimed in claim 2, characterised in that the tool holding member (4) is slideable along an axis transverse to the axis of rotation of the tool holder (1), said tool holding member having a location (5) for receiving the shank (6a) of an engraving tool (6) and being slideable such that the tool (6) can be moved translationally from a position in which it lies along the axis of rotation of the tool holder (1) to a position to one side of said axis, and vice versa, and means (9) for retaining the tool in an adjusted position.

4. A tool holder as claimed in claim 1, characterised in that the tool (16) is mounted so that it can be rotated about an axis normal to the axis of rotation of the tool holder.

5. A tool holder as claimed in claim 4, characterised in that the body (1) has a bore (13) receiving a tool holding member (14) rotatable through

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1 an angle about an axis normal to the axis of rotation
of the tool holder (1), said tool holding member (14)
having a location (15) for receiving the shank (16a) of
an engraving tool (16) such that by rotation of the
5 tool holding member (14), the tool (16) can either be
caused to lie along the axis of rotation of the tool
holder or at an angle thereto, and means for retaining
the tool in an adjusted position.

6. A tool holder as claimed in any preceding claim,
10 characterised in that the body (1,11) of the holder is
provided with a shank (2,12) to fit in the chuck of an
engraving machine.

7. A tool holder as claimed in any preceding claim,
characterised in that the means for retaining the tool
15 (6,16) in an adjusted position comprises two set screws
(9,19) arranged at diametrically opposite sides of the
tool and engageable with the shank of the tool, so that
by appropriate advancing and retraction of the two set
screws, the shank (6a,16a) of the tool and hence its
20 tip can be displaced towards and away from the axis of
rotation of the tool holder and maintained in any
desired position within the possible range of movement.

8. A tool holder as claimed in any preceding claim,
characterised in that it includes a set screw (7,17)
25 for securing the shank of the tool relative to the tool
holding member.

9. A tool holder as claimed in any preceding claim,
in which the tool holding member (4,14), is cylindrical
and is a close fit in a cylindrical bore (3,13).

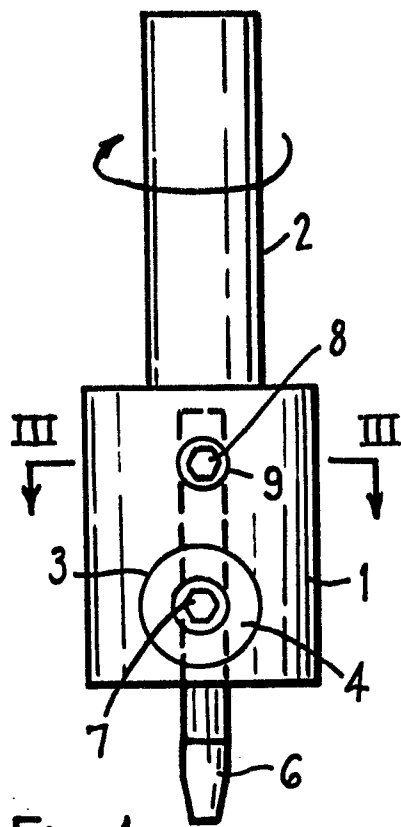


Fig.1

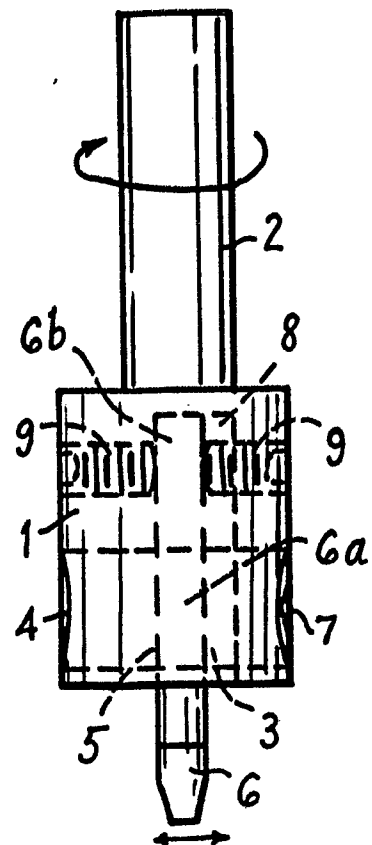


Fig.2

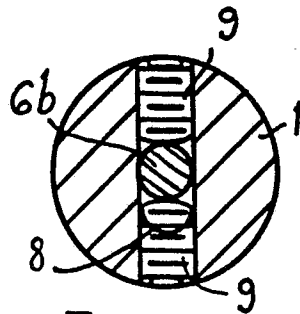


Fig.3

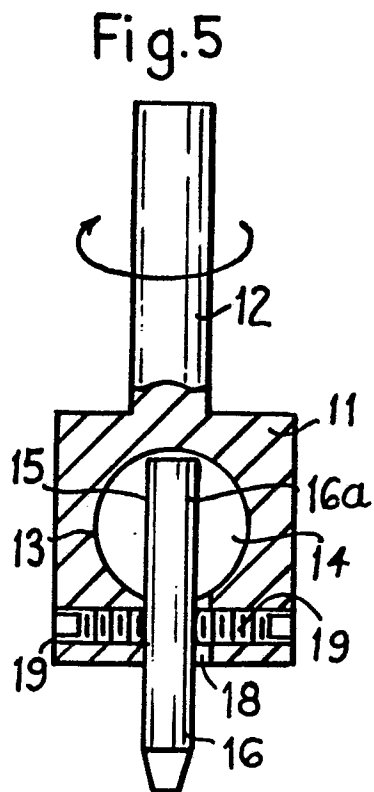


Fig.5

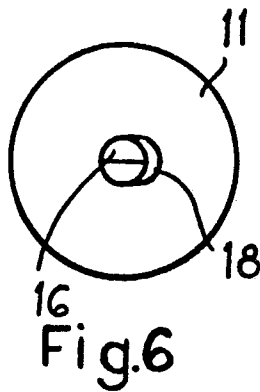


Fig.6

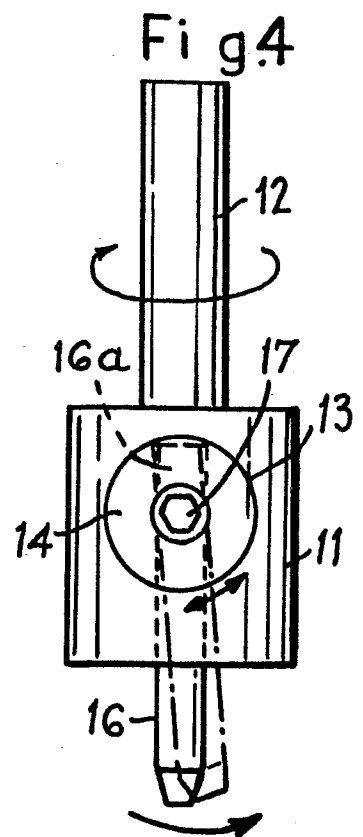


Fig.4