







is mounted.

It is a further object of the invention to provide a tool post that is readily indexable.

It is an advantage of the invention that it provides a tool post that permits selective disengaging of tool holders.

It is a further advantage of the invention that it provides a tool post that resists rotation relative to the surface on which it is mounted.

It is a further advantage of the invention that it provides a tool post that is readily indexable.

Further objects and advantages of the invention will become evident from perusal of the detailed description of a preferred embodiment which follows.

## SUMMARY OF THE INVENTION

According to an aspect of the invention, a tool post has a body block with tool mounts on an outer side surface thereof. Each mount has a substantially vertical planar side wall and vertically undercut grooves. In each of the grooves, there is mounted a tapered gib having a wedge shape which moves vertically the groove. The vertical range of movement of the gib is at least about one-quarter inch. The gib and the mount are adapted to lock a tool holder of suitable size to the mount in a range of vertical positions of more than about one-quarter inch.

In another aspect of the invention, a tool post has a body block having a generally vertical outer surface and tool holder mounts on the outer surface. A gib is associated with each of the mounts. Each gib is movable with respect to the corresponding mount so that movement of said gib effectively alters a dimension of said mount. Each gib has attached thereto a helically scribed curving surface. Helically threaded screws are rotatably mounted in the body block, and each screw is threaded and mounted to engage with the curving surface of one of the gibs. As a result, rotation of one of said screws moves one and only one of said gibs. Rotation of the gibs permits locking and unlocking of tool holders mounted on each of the mounts on the tool post independently of tool holders on any other mounts.

According to another aspect of the invention, a tool post includes a body block which has a central vertical axis, a top surface, a bottom surface, and tool holder mounts on an outer side surface thereof. A selected angular distance about the axis separates adjacent pairs of mounts. A central vertical bore is defined in the body block. An indexing plate is positioned below the body block, and is selectively engageable with the bottom surface of, and coaxial with, the body block. A vertical cylindrical sleeve is attached at its lower end to the indexing plate, is located in the bore and extends above the top surface of the body block. A handle is rotatably mounted on the sleeve. The handle has, rotatably mounted thereon and depending downward therefrom a pawl, which is rotatable between first and second positions. Rods project upward from the top surface. The pawl and the rods are so mounted and dimensioned that the pawl engages the rods in its first position and does not engage said rods in its second position. The angular separation between the rods corresponds to the positions of tool holder mounts on each side of the tool post. The pawl permits rough adjustment of the tool post when it is desired to cease using a tool held by a tool holder mounted on one side of the tool post and commence using a tool held by a tool holder mounted on a different side of the tool post.

In another aspect of the invention, A tool post has a body block having a mounts for tool holders, an indexing plate located below the body block, and a non-circular element rigidly attached to and depending downward from the indexing plate.

## BRIEF DESCRIPTION OF THE FIGURES

FIG. 1 is an exploded isometric view of a tool post according to the invention showing the positioning of tool holders.

FIG. 2 is a top view of a tool post according to the invention showing the positioning of tool holders.

FIG. 3 is an isometric view of a partially-disassembled exemplary tool post according to the invention.

FIG. 4 is an isometric view showing the bottom of a partially-disassembled exemplary tool post of the invention.

FIG. 5 is an isometric view of an exemplary screw for use in the tool post of FIG. 3.

FIGS. 6, 6A and 7 are isometric views of an exemplary wedge for use in the tool post of FIG. 3.

FIG. 8 is an isometric view of an exemplary sleeve in the lower enlargement of the central vertical bore of the tool post of FIG. 3.

FIG. 9 is an isometric view of the bottom surface of an exemplary index plate of the tool post of FIG. 3.

FIG. 10 is an isometric view of the top surface of the index plate of FIG. 9.

FIG. 11 is an isometric view of the index plate and sleeve for the tool post of FIG. 3.

FIG. 12 is an isometric view of the bottom of the index plate of FIG. 11.

FIG. 13 is an isometric view of an exemplary handle for turning the screw heads on the tool post of FIG. 3.

FIG. 14 is an isometric view showing the bottom of the body of the tool post of FIG. 3.

#### DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Referring to the Figures, there is shown a tool post 10 having body block 12 generally in the form of a rectangular prism having a generally planar horizontal bottom surface, four generally vertical sides 16, a generally planar top surface 22, and a central vertical axial bore 24. On each of the four sides 16 there is provided a radially-outwardly projecting mount or tongue 26. Mounts 26 have a dovetail configuration, having a vertical planar outer wall and undercut grooves on the sides of the outer wall to define a dovetail form, as may best be seen in FIG. 2. The four mounts 26 are all of identical dimensions. The dimensions of the mounts are selected to permit substantial movement of a conventional tool holder in a vertical direction on the mount. By substantial movement, the inventor means more than about one-eighth of an inch. Preferably, the range of movement is at least about one inch. The dimensions vary depending on the size of tool post and tool holder selected.

Four vertical slots 41, which may be seen in FIGS. 3 and 4, are provided in body 12, and specifically in the undercut portions of each mount 26. Wedge-shaped gibs 42 are mounted in each of the slots. Referring to FIGS. 6 and 7, gib 42 has four substantially vertical sides. A planar outer side 45 aligns with the outer side of mount 26, and an opposite inner side 46 has rigidly attached thereto a metal piece 43 formed to a cylindrical section, defining a curving surface 44 threaded to mate with the corresponding screw. A first planar side surface of gib 42 intermediate the inner and outer sides is designed to abut against an inner surface of mount 26. An opposite planar side surface is adapted to abut against the inner surface of the receiving slot on the tool holder. Each gib 42 is mounted with the thicker portion at the top. Each gib 42 is the same length as the height of mount 26 to permit mounting of tool holder 110 at a full range of vertical positions.

Radially inward of and communicating with each of vertical slots 41 and radially outward of central bore 24, and not in communication with central bore 24, there are provided cylindrical vertical screw bores. A screw bore 25 may best be seen in FIG. 4. Each screw bore 25 extends through the bottom of body 12 with the full diameter of the screw bore. In each screw bore 25 there is vertically mounted a screw 60. An exemplary screw 60 is shown in FIG. 5. Screws 60 are threaded so as to engage with curving surface 44, which is a cam follower surface, on each gib 42. Screws 60 may have a double lead thread to permit relatively rapid movement of the gib 42 with a



Tool holders 110 are substantially conventional tool holders, except that they are beveled at a 45 degree angle at 112 and 114 to permit four tool holders to fit on a single tool post.

The invention has been explained with respect to a preferred embodiment, but it will be understood by those of skill in the art that numerous alterations and variations in the illustrated apparatus may be made without departing from the scope of the invention.

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