

Title (en)
An automated chemical milling process.

Title (de)
Automatisiertes chemisches Fräsverfahren.

Title (fr)
Procédé automatisé de fraisage chimique.

Publication
EP 0179940 A1 19860507 (EN)

Application
EP 84113095 A 19841031

Priority
EP 84113095 A 19841031

Abstract (en)
The specification discloses an automated chemical milling process for metal articles. The metal article is first coated with an etchant resist coating. In one embodiment, the area to be etched is digitized to define the x, y coordinate values for the perimeter line around the area. A CPU is used to control a flatbed drafting table with a tangentially controlled scribing tool to cut through the resist coating along the perimeter line. If plural etching steps are used, each perimeter line is digitized and scribed or cut in a similar manner. All but one of the perimeter lines are recoated and marked, and the resist coating within the remaining perimeter line is removed. The metal part is then etched as desired. If plural etching steps are used, the resist coating for each separate area is removed between sequential etching baths. In a second embodiment, the x, y, z point coordinate values for a perimeter line on a three-dimensional workpiece are defined, and the scribing operation is done by a robotic device controlled by a CPU. In a third embodiment, new template or mask geometry is created on a CRT and digitized for subsequent control of the plotting table or other robotic device. Digital signals are used to define the x, y or x, y, z point coordinate values while analog signals are used to control the scribing tool.

IPC 1-7
C23F 1/04; G05B 19/405; G05B 19/19

IPC 8 full level
C23F 1/04 (2006.01)

CPC (source: EP)
C23F 1/04 (2013.01)

Citation (search report)

- [Y] US 4137118 A 19790130 - BRIMM DANIEL J
- [Y] US 3803960 A 19740416 - PEARL D, et al
- [Y] US 4117751 A 19781003 - INOUE YOSHIO
- [A] EP 0122941 A1 19841031 - FANUC LTD [JP]
- [A] US 4120583 A 19781017 - HYATT GILBERT P
- [A] US 4364110 A 19821214 - HYATT GILBERT P
- [A] US 4370720 A 19830125 - HYATT GILBERT P [US]
- [A] US 4371923 A 19830201 - HYATT GILBERT P [US]
- [A] US 4340166 A 19820720 - BILANE GLENN B, et al
- [A] US 3881379 A 19750506 - STUMPF GUNTER OTTO

Cited by
CN106541418A; CN102912347A; US10563309B1; WO9928535A1; EP2572802B1

Designated contracting state (EPC)
CH DE FR GB LI NL SE

DOCDB simple family (publication)
EP 0179940 A1 19860507; **EP 0179940 B1 19880921**; DE 3474167 D1 19881027

DOCDB simple family (application)
EP 84113095 A 19841031; DE 3474167 T 19841031