



Beginning Machining

- Introduction to CNC

History of Machining

1775 Lathe is invented

John Wilkinson

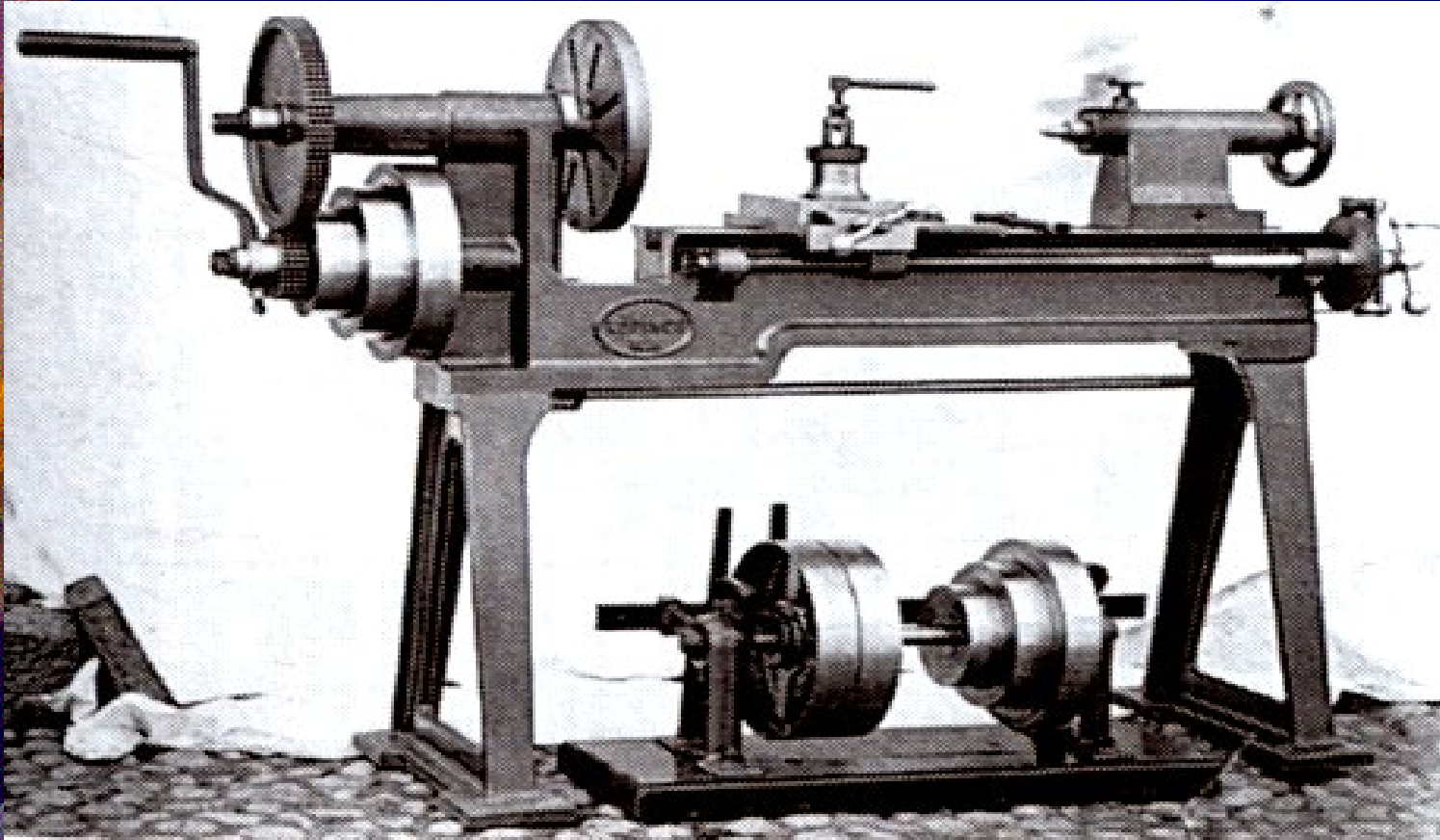
1818 Milling machine

Eli Whitney

1952 NC (Numerical Control)

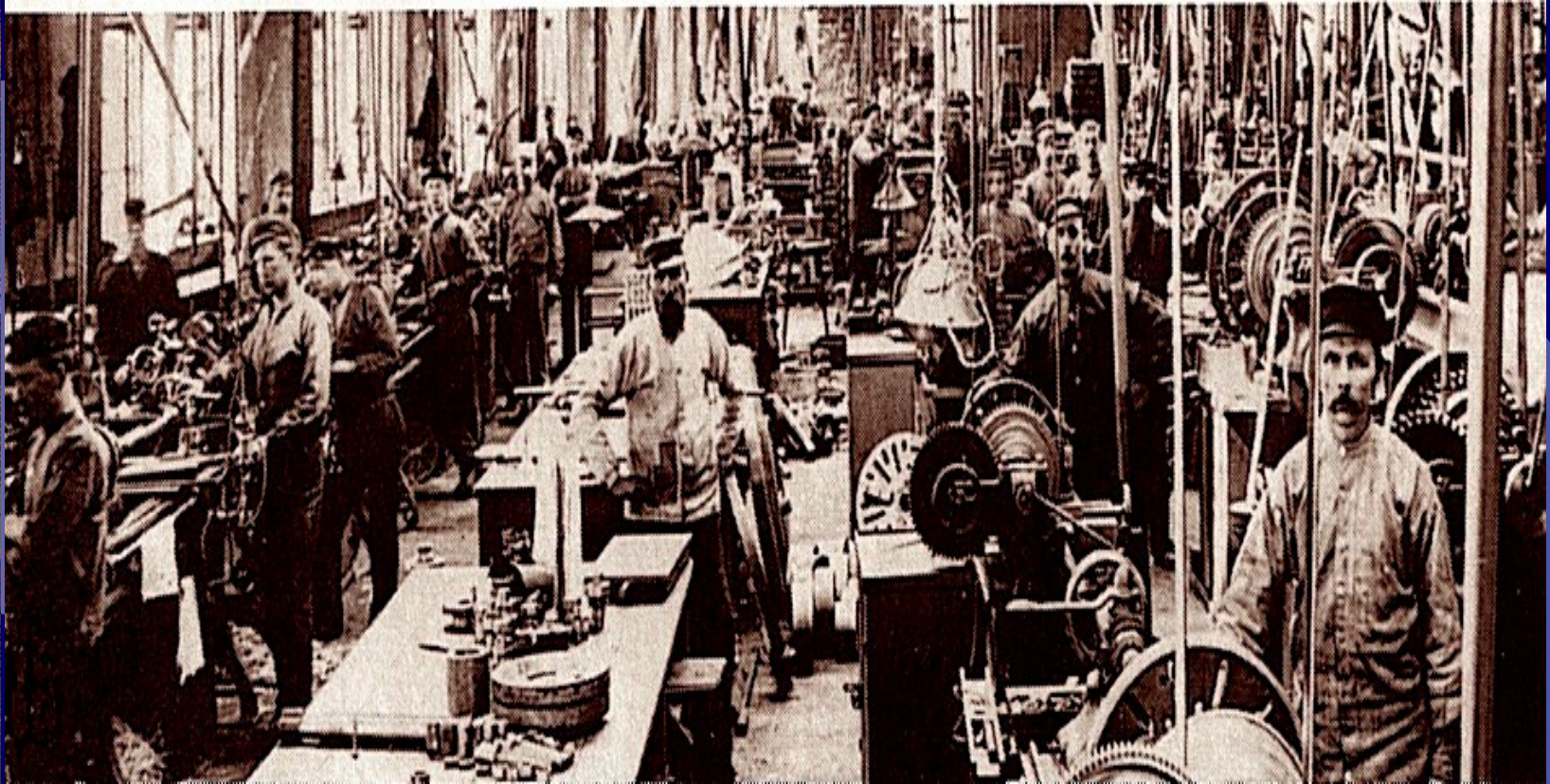
John Parsons

Early Engine Lathe



Modern Medal Cutting Sandvik

1900's Machine shop



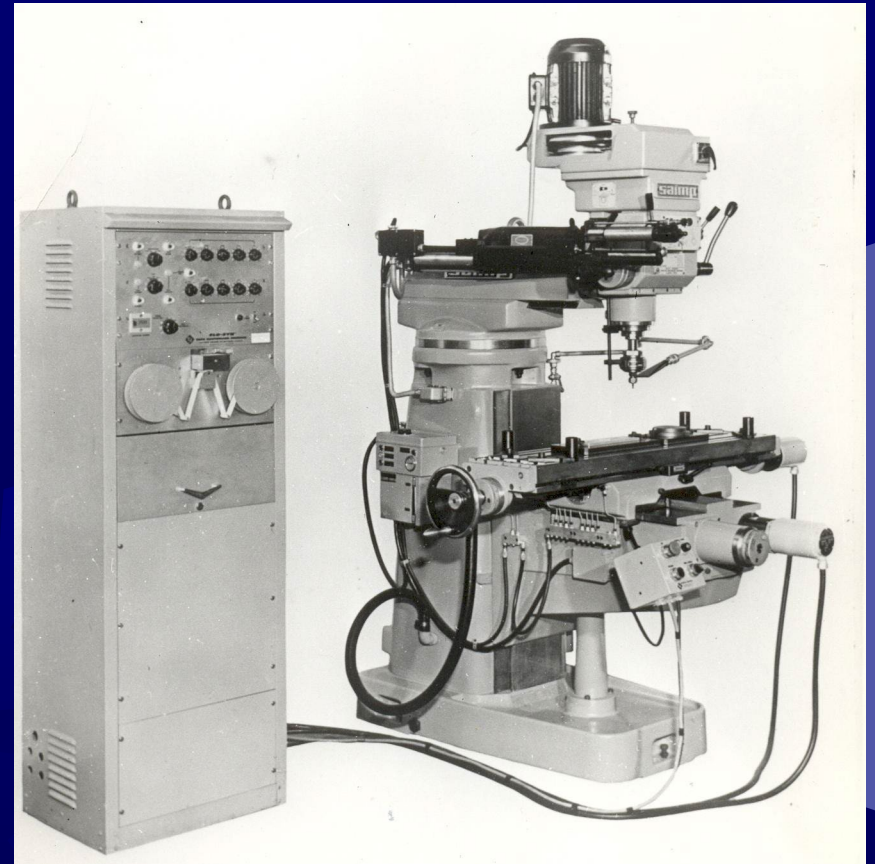
Modern Medal Cutting Sandvik

1950's Machine Shop



Photo's Courtesy of Jason Davis

NC Machines



Modern Production Shop

Royal Work holding



CED Services Oxford,CT

G and M code

G- Code

Developed by Gerber Scientific Instruments for X-Y drafting plotters

Typically motion or canned cycle codes

M- Code

Machine Code

Typically used for machine functions (i.e. coolant on/off, spindle on/off, etc)

G and M code

Some Simple G and M codes

G00 Rapid Linear move

G01 simple linear move

G02/03 Circular Move

M03 Spindle Start CW

M08 Coolant On

M05 Spindle Stop

M30 Program end

Program Sample

```
%  
O01234 (Sample Program)  
G20 G40 G80 G99  
G54  
G53 Z0.0  
M06 T1  
M03 S6000  
G00 X0.25 Y-0.25  
G43 H01  
G01 Z0.1 F40.0 M8  
G01 Z-0.25 F10.  
Y-4.25  
X4.25  
Y-0.25  
X0.25  
G00 Z1.  
G00 X1.25 Y-2.5  
G00 G53 Z0.  
G53 Y0.  
M30  
%
```

Interesting Videos

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[CNC Fails #1](#)

[CNC Fails #2](#)

[History of Machine Tools \(History Channel\)](#)