

# *Tapped Holes Detector “Electronic Eye” Patent*

Inventor: Francisco A Garcia Vasconcelos

Threaded Holes Manufacturing Challenge

# Long Term Non Destructive Inspection / Test

- This electronic eye is capable to “See” electronically the tap left or molded in threaded holes
- Capable to “See” external threads
- Even in outer threaded surfaces

# Customer Wishes

- Current manufacturers need to guarantee to their customers a 100% compliance to their specifications and regulations
- This “Electronic Eye” can be used in other applications like “Product Design, Test and performance”:
  - a) Product Quality Compliance
  - b) Real time inspection and Monitoring
  - c) Lab Contrast / Color analysis

# Customer Needs

- This “Electronic Eye” will help customers to comply with product development phases and high precision applications as follows but not limited to others:
  - a) Precision inspection
  - b) Color analysis
  - c) Control and Automation
  - d) Light sensor
  - e) Non-destructive tests

# Cost Analysis

- The Financial advantage can be quantified in different “spheres” and “environments”
- Examples:
  - a) No more destructive tests
  - b) Extra - High speed sensing
- Signature analysis - Capability to connect to any electronic device or computer or high level controllers like Allen Bradley or as simple as to a cell phone wire/wireless.
- Competition? This electronic eye still under

# Strengths and Advantages

- Customization Flexibility
  - a) Size b) Sensitivity c) Accuracy d) Price.
- Signature analysis - Capability to connect to any electronic device or computer or high level controllers like Allen Bradley or as simple as to a cell phone wire/wireless.
- Competition? This electronic eye still under patent protection as the main advantages
- Already prototypes/tested in the auto industry

# Next Steps of Action

- Already piloted and tested successfully in the auto manufacturing industry, now it is a matter of advertising and not only apply it into the auto industry, now extend it to all the other industries rainbow.
- Marketing study
  - a) Select the industries
  - b) Sell and make profits satisfying customer wishes and needs

# Auto Industry Applications

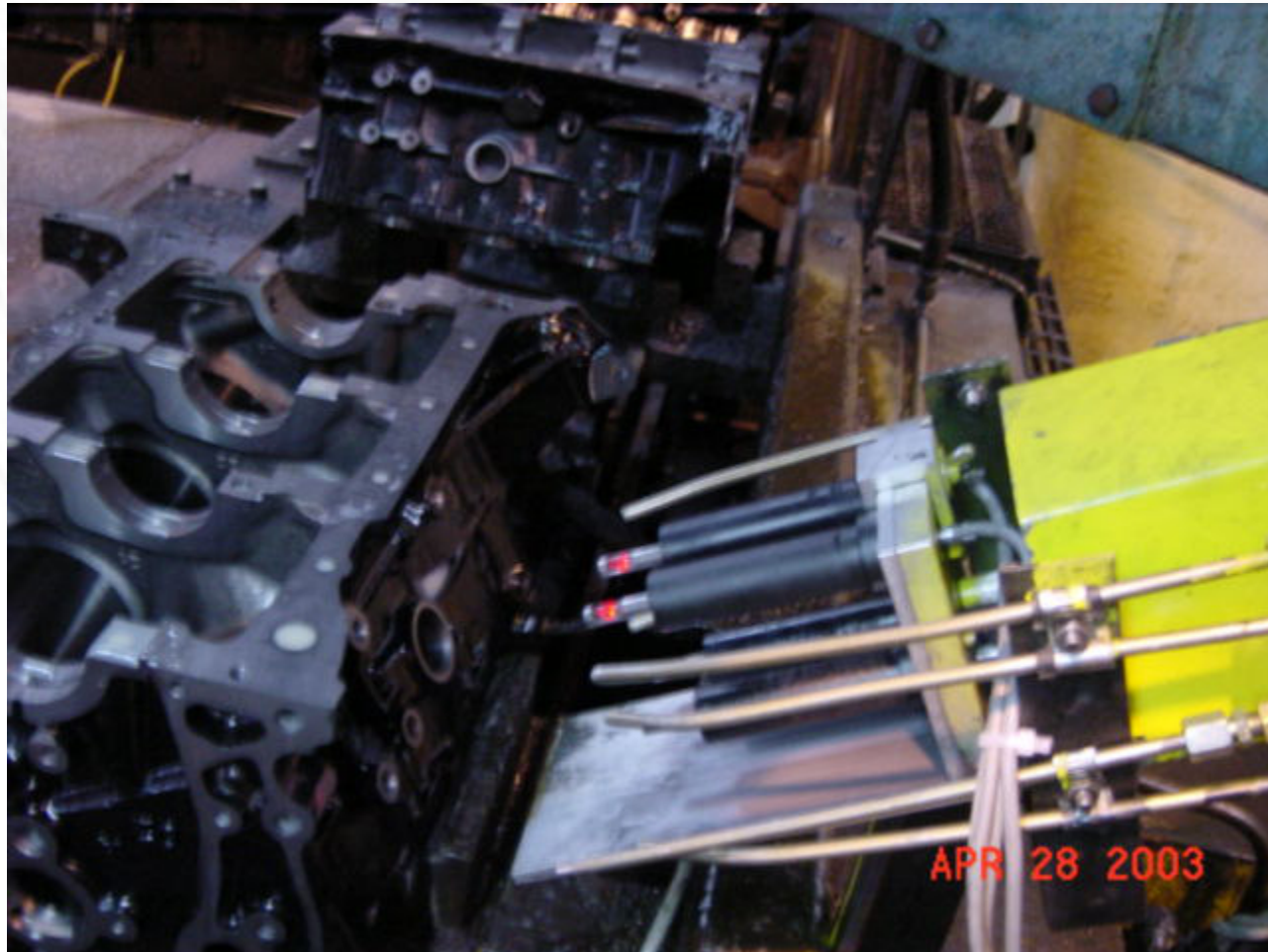
## General Motors Company

- Cylinder Block Air Compressor Threaded Holes Inspection – On-Line application – 18 seconds cycle time 6 cylinder fuel engine manufacturing facility (1650 engines/day).

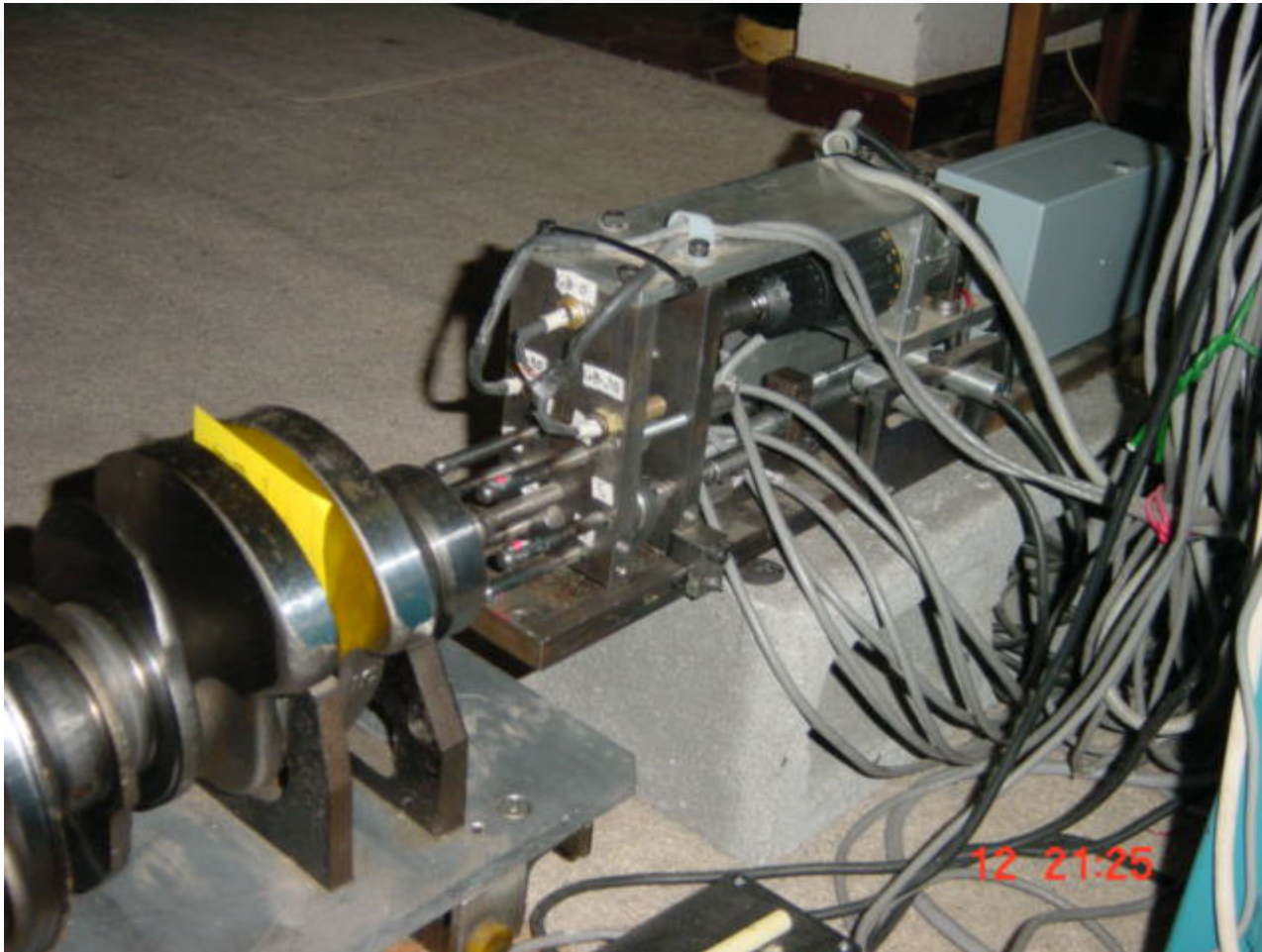


# Auto Industry Applications

## General Motors Company



# Auto Industry Applications - GM Tier 3 Companies: Crankshaft Thread Analysis



# Google Search Link

<https://patents.google.com/patent/MXPA03004421A/es?q=ojo&q=electronico&q=detector+de+roscas&oq=ojo+electronico+detector+de+roscas>

The screenshot shows the Google Patents search interface. At the top left is the 'Google Patents' logo. A search bar contains the text 'ojo electronico detector de roscas'. To the right of the search bar are icons for a lightbulb, a graduation cap, and a magnifying glass, followed by the text '1 of 108'. Below the search bar, the search terms are listed: 'ojo x or + Synonym', 'electronico x or + Synonym', 'detector de roscas x or + Synonym', and '+ Synonym'. To the right of the search terms, it says 'About 108 results' and 'Sort by · Relevance · Grouped by · None · Results / page · 10'. Below this, the title of the patent is 'Ojo electronico detector de roscas.' followed by the patent number 'MX • MXPA03004421A' and the inventor 'Vasconcelos Francisco A Garcia • Vasconcelos Francisco A Garcia'. The priority date is '2003-05-20', the filing date is '2003-05-20', and the publication date is '2004-11-25'. The abstract text reads: 'Esta invencion se refiere a un dispositivo **electronico** llamado: **ojo electronico detector de roscas** (figura 1), el cual tiene la capacidad de ver la presencia de los hilos de una rosca en un barreno o en una tuerca o en cualquier superficie que contenga crestas y valles tanto en seco como en mojado.'

# Google Link

## Results

MXPA03004421A - Ojo electroni... x +

patents.google.com/patent/MXPA03004421A/es?q=ojo&q=electronico&q=detector+de+roscas&oq=ojo+electronico+detector+de+roscas

Apps ProTrain LMS: Log i... Six Sigma Belt Logi... Free Servers Ottat Member Login - Fr...

### Ojo electronico detector de roscas.

#### Abstract

Esta invencion se refiere a un dispositivo **electronico** llamado: **ojo electronico detector de roscas** (figura 1), el cual tiene la capacidad **de** ver la presencia **de** los hilos **de** una rosca en un barreno o en una tuerca o en cualquier superficie que contenga crestas y valles tanto en seco como en mojado. Este **ojo electronico detector de roscas** fue disenado para ser utilizado en la industria manufacturera que tiene en su proceso **de** produccion el maquinado o el moldeo **de roscas**. Algunos ejemplos **de** aplicaciones pudieran se: Industria automotriz y del transporte para sujetar los diferentes componentes **de** un vehiculo. La industria **de** la fabricacion **de** tuercas, tornillos, carcazas y todo tipo **de** producto que tenga la configuracion **de** un rosca compuesta por hilos, maquinados o fundidos o estampados. El objeto **de** esta invencion es proporcionar un sensor que pueda detectar la presencia o ausencia **de** una rosca en una pieza, evitando tener defectos **de** produccion y calidad en el producto terminado, y que este llegue al cliente, provocando altos costos **de** reparacion y **de** garantias para el fabricante.

MXPA03004421A

Mexico

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Other languages: [English](#)

Inventor: [Vasconcelos Francisco A Garcia](#)

#### Worldwide applications

2003 · [MX](#)

#### Application events

2003-05-20 • Application filed by Vasconcelos Francisco A Garcia

2003-05-20 • Priority to MXPA03004421

2004-11-25 • Publication of MXPA03004421A

Info: [Legal events](#), [Similar documents](#), [Priority and Related Applications](#)

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Results – Abstract Section - Translation

- This invention refers to an electronic device named: Threaded holes Electronic Eye detector (figure 1), which has the capacity to see the presence of the tap threads in a hole or in a nut or in any surface that contains peaks and valleys under dry or wet conditions.
- This Threaded holes Electronic Eye detector was designed to be used in the manufacturing industry that has in the production process machining or molding taps and threads. Some examples of this applications could be: Automotive and transportation industry to fasten different components of a vehicle. The nut fabrication industry, bolts frames and all type of product that have the thread configurations compounded by threads, machined or foundry formed or stamped. The object of this invention is to provide a sensor capable to detect the presence or absence of a tap in a piece, avoiding production and quality defects in the finished product, and that this arrives to the client, provoking high repair costs and warranty costs to the manufacturer.

# Applications Web page

Website with some of the implemented applications in the manufacturing industry

**[www.ottat.com](http://www.ottat.com)**