

Guidebook of IP/Technology Transfer

Track 1

Entry-level Tech Transfer Professional

Topic 1.5.4

**What is “prior art”? How do you find it?
How to interpret it?**

The Prior Art & an Invention

- The “Prior Art” is all information that is available to the public in any form before a given date that is relevant to an invention’s novelty and inventiveness (non-obvious)
- If an invention has been described in the Prior Art, or is not inventive/obvious relative to what has been described in the Prior Art, it is not patentable.

What is a Prior Art Search?

- A systematic search of the Prior Art that is relevant to an invention
- In practice:
 - keyword searching
 - on-line databases
 - Patentscope (WIPO), USPTO,
 - espacenet (EPO), JPO-IPDL,
 - Google-Patent, FPO

What is a Prior Art Search?

- In practice, a well-crafted keyword search of on-line databases:
- Will produce concentric “rings” of larger-to-smaller numbers of relevant patents, patent applications, and articles
- The searcher’s target: identify the “small” number of “closest” prior art patents
- “Small” is relative; usually <10 and >3
- Art likely from all over the world
- The Goal: find the “closest” prior art!

Prior Art Search

Example

The Invention:

A toothbrush with elastomer bristles with biofilm-removing properties

160,000 brushes

35,000 tooth brushes

1,200 tooth brushes with elastomer
bristles

10 tooth brushes with elastomer bristles
with biofilm removing properties

**Number of “hits” in databases, depending on
keywords in search**

Examining the closest Prior Art to define Inventiveness of your Invention

The Invention:

a device that writes

under-water and upside-down

by using a finger-pressurized ink tank

and water-proof ink.

Closest Prior Art?

New writing device

<u>Keyword</u>	<u># of database hits</u>
Writing	75,000
Writing & ink	7,500
Writing & ink & pressurized	1,750
Writing & ink & pressurized & finger/hand	55
Writing & ink & pressurized & finger/hand & water-proof	4

Examining the closest Prior Art to define Inventiveness of your Invention

Invention: *device that writes under-water and upside-down by using a finger-pressurized ink tank*

Closest Prior Art

CN875,098: *a pressurized tattoo ink-pen*

UK3-09839: *a tool to apply paint to a car body*

IN909-498: *underwater writing device*

US9,450,750: *hand-held, pressurized-ink pen*

Analyzing the prior art to define your inventiveness

- Use the independent claims
- Independent claims make no reference to any other claim
- Dependent claims refer to another claim
- Describe EXACTLY how your invention is different from the claim's wording

AND

- Define why that difference produces some advantage or superiority

11. The pen refill according to claim 9, wherein the first opening is formed into a slit shape.

The invention claimed is:

1. A pen comprising: an *ink* reservoir configured to store an *ink*; a pen tip having a proximal end and a distal end opposite to the proximal end, the pen tip being configured to apply an *ink* to an *ink* coating target; an *ink* guide configured to guide the *ink* in the *ink* reservoir toward the pen tip; and a holder part comprising a through hole through which the pen tip is inserted, the holder part being configured to hold at least the proximal end of the pen tip while exposing the distal end of the pen tip in the state where the pen tip is inserted through the through hole, wherein the holder part comprises: an *ink* holding part capable of holding the *ink* from the *ink* guide and formed at least partially around a circumference of the through hole; and a first opening opening on an inner circumferential surface that defines the through hole and communicating with the *ink* holding part.
2. The pen according to claim 1, wherein the *ink* holding part is formed into a slit shape.
3. The pen according to claim 1, wherein the first opening is formed into a slit shape.

Analyzing the closest Prior Art

defining Inventiveness

Invention: device that writes under-water and upside-down by using a hand-pressurized ink tank

CN875,098: a pressurized tattoo ink-pen

Claim 1:

A tube for holding ink, pressurized by external gas-line connected to needle end of tattooing device.

Differences = no finger-pressurized tank, uses an external gas-line

Analyzing the closest Prior Art

defining Inventiveness

Invention: device that writes under-water and upside-down by using a hand-pressurized ink tank

UK3-09839: a tool to apply water-proof paint

Claim 1:

An elongated cylinder with attached vibrating sleeve and conical delivery port for water-proof paints and inks with high polymer content.

Differences: no finger-pressurized ink reservoir

Analyzing the closest Prior Art

defining Inventiveness

Invention: device that writes under-water and upside-down by using a hand-pressurized ink tank

IN909-498: underwater writing device

Claim 1:

A writing instrument with a reservoir of water-proof ink on one end, a rubber one-way valve on the distal end, and a metering module at the ink-delivery port.

Differences: no finger-pressurized ink reservoir

Analyzing the closest Prior Art

defining Inventiveness

Invention: device that writes under-water and upside
-down by using a hand-pressurized ink tank

US9,450,750: hand-held, pressurized-ink pen

Claim 1:

A writing device which delivers ink, from a reservoir pressurized by a gas canister, to a delivery emitter by means of parallel capillary tubes.

Differences: no finger-pressurized ink reservoir

Refining Inventiveness in discussion with the Inventor with Prior Art context

The Invention (as originally defined): *a device that writes under water and upside down by using a pressurized ink tank and water-proof ink.*

But, what makes it work that is unique?

(compared to the prior art)



this is the heart of inventiveness

- a finger-pressurized ink tank
- Fluid flow control? emitter? Water-proof ink?
- Emitter tube rifling !!

(a surprise while discussing with inventor)

The Invention refined in discussion with Inventor & Prior Art context

The Invention:

*a writing device with ink reservoir
pressurized by finger-powered pump, and rifled
fluid flow control at ink-emitter.*

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Thank you