

# How to Protect Consumable Spare Parts by Patents?



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Business of consumable spare parts

# Sales of spare parts can be larger than that of main body

- Laser beam printer

Price of a printer: 80,000

Price of toner: 120,000 / year

- Ink jet printer

Price of printer: 30,000

Ink/paper: 30,000 / year

- Selling main body at a low price, and making profits from spare parts.

# Consumable spare parts must be protected from compatible ones

Spare parts bring long lasting sales, however, compatible spare parts are often made

ex.      Printer toner and ink  
            Machine blades and nails  
            Water filter

Focus patents and profits on “spare parts.”

ex.      Laser beam printer ⇒ toner cartridge  
            Ink jet printer    ⇒ ink cartridge

# We suggest adding features to spare parts and obtaining patents

Mere toner ··· harder to patent

Toner cartridge (with drum, IC) ··· patentable

Mere ink ··· harder to patent

Ink cartridge (with head, IC) ··· patentable

Design main body so as to

**require patented features** of spare parts

Providing patentable features can be categorized to the following five

1. Featuring electrical connections
2. Featuring mechanical connections
3. Providing a digital communication interface
4. Installing a memory in a spare part
5. Installing sensors in a spare part

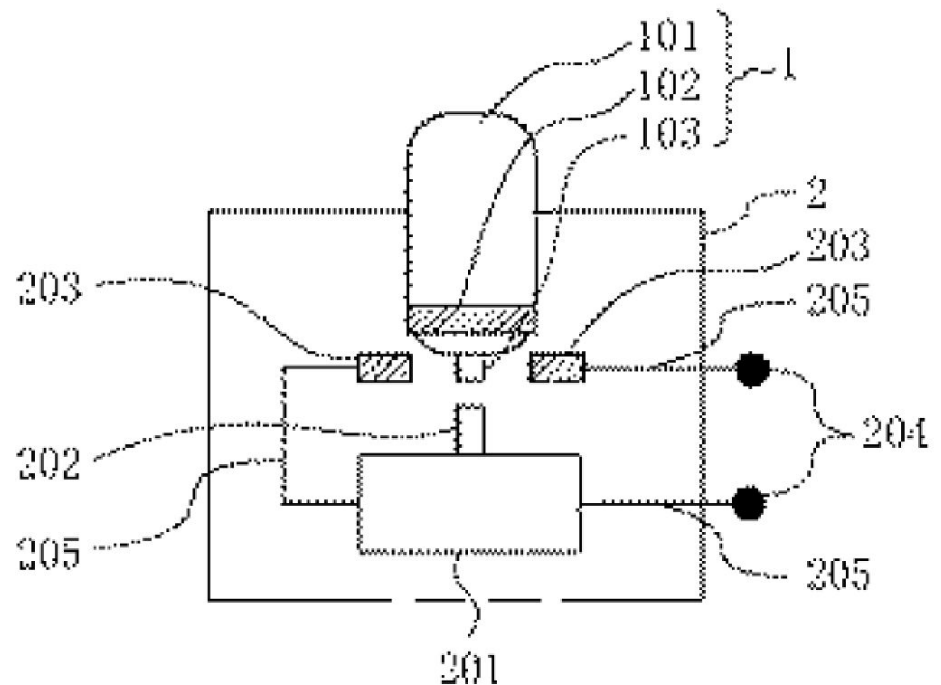
# 1. Featuring electrical connections

JP2007-294234

Canon

Filing Date: April 25, 2006

1. A fuel cartridge comprising ...  
an electrically  
conductive region ...,  
...



## 2. Featuring mechanical connections

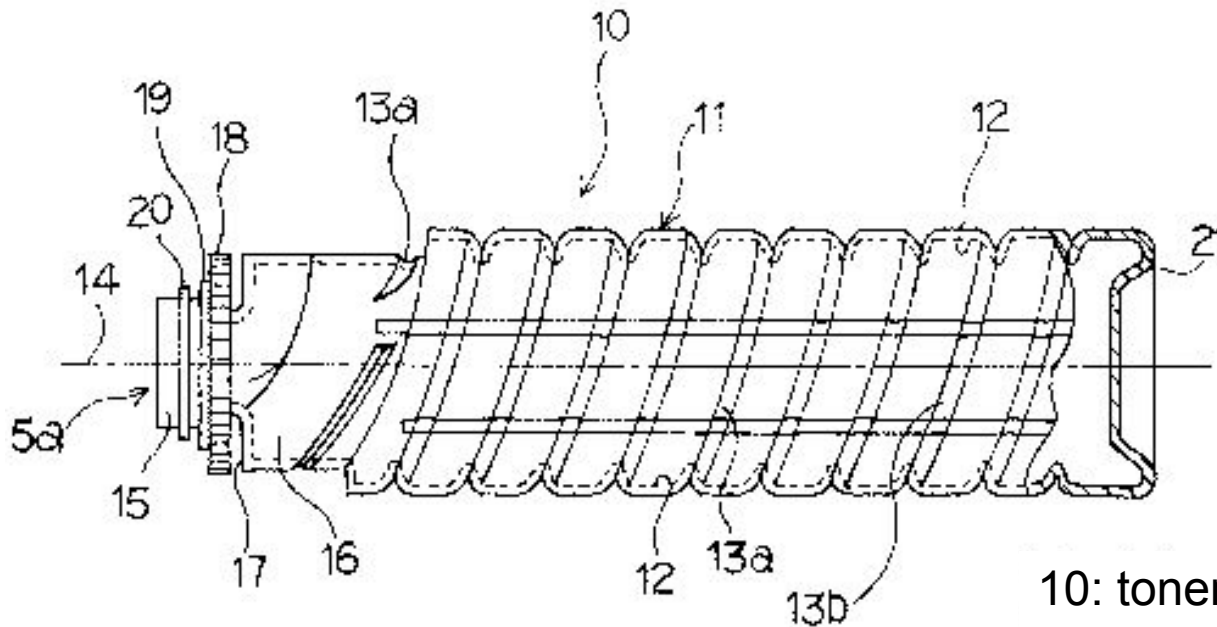
JP2005-221825

Ricoh

Filing Date: February 6, 2004

1. A toner bottle comprising:

...



10: toner bottle  
11: cylindrical bottle  
18: ring gear



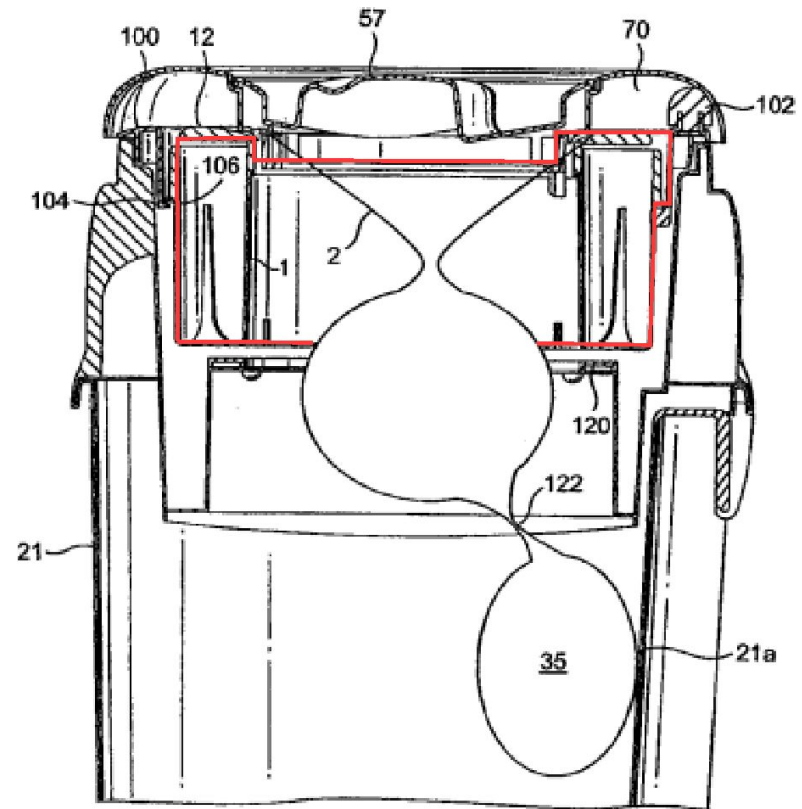
## 2. Featuring mechanical connections

Japanese Patent No. 4402165

Sangenic International Ltd.

Filing Date: June 5, 2009

14. A waste storage cassette to be inserted within a cassette rotation means that is provided in an upper portion of a waste storage, comprising ...



Infringed by a **compatible cassette vendor**.

⇒ JPY 148M (about US\$1.2 M) was awarded.

*Sogenic v. Applicia* (IP High Ct., February 1, 2012)

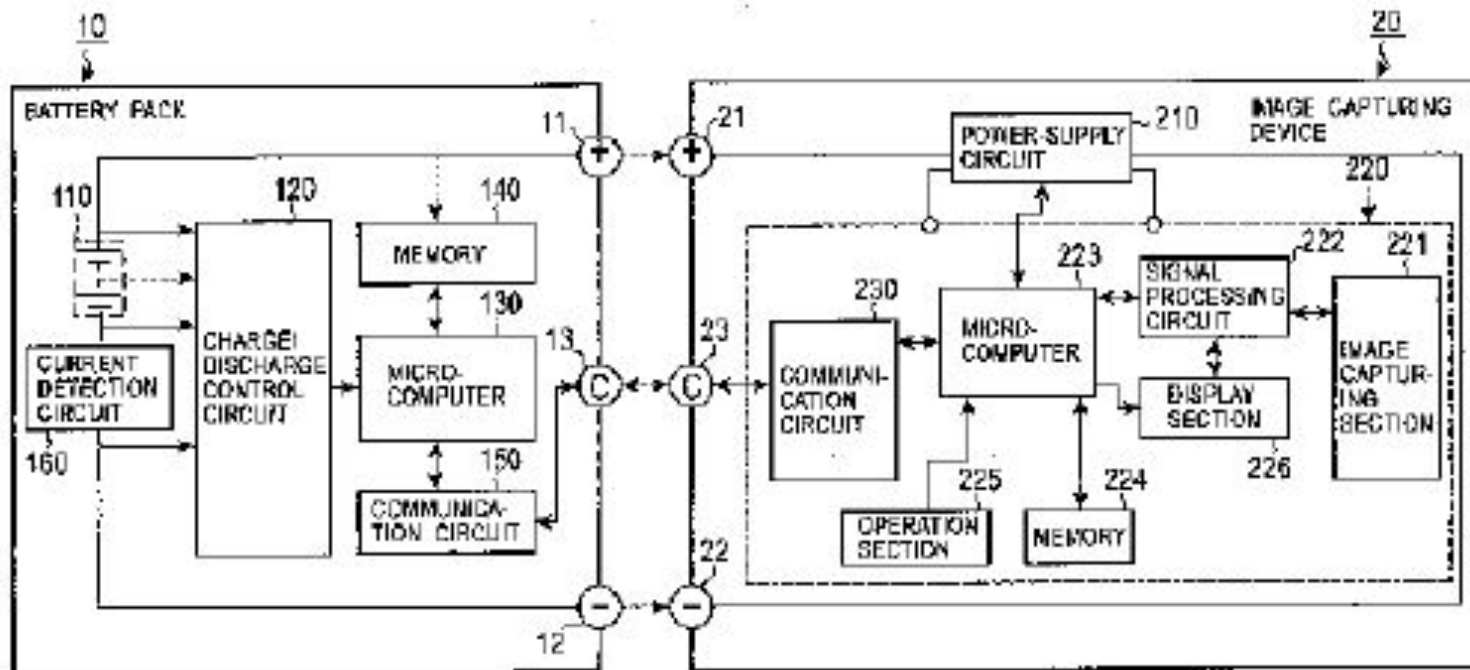
# 3. Providing digital communication interface

JP2004-335247

Sony Corp

Filing Date: May 7, 2003

1. A battery pack comprising:
  - a terminal connected to an electronic device for supplying electrical power;
  - ...
  - communication means for transmitting said information via said terminal.



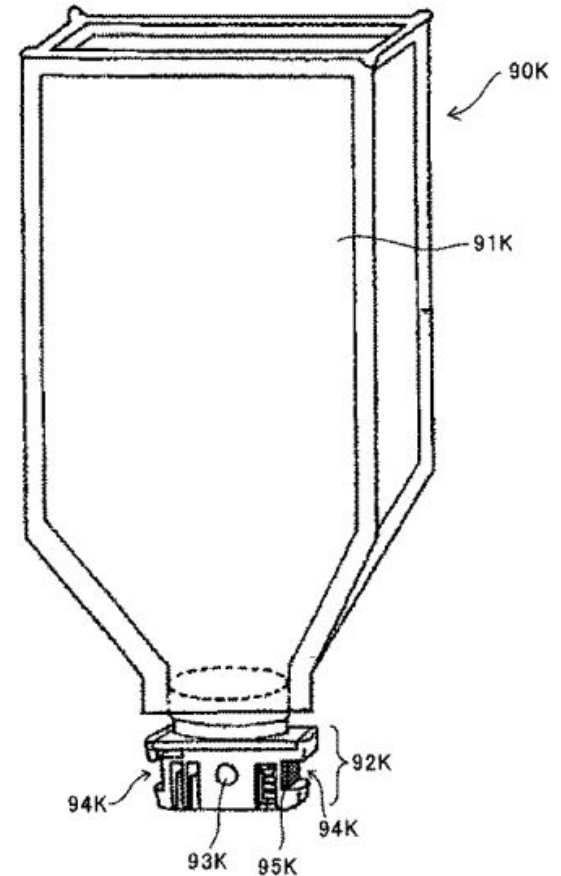
# 4. Installing a memory in a spare part and using its data within spare part

JP2012-128131

Ricoh

Filing Date: December 15, 2010

1. A toner container comprising: ...  
a memory for storing adequate concentration information of the toner, and  
supply controller for supplying the toner based on the adequate concentration information.



# What shall we store in a memory in a spare part?

- Charged amount or history of electricity,
- Consumption amount or histories,
- Temperature or temperature histories,
- Adequate concentration,

and

Anything else!

As long as the main body requires the process of the stored data, spare parts are protected.

# 5. Installing a sensor in a spare part

JP2006-99984

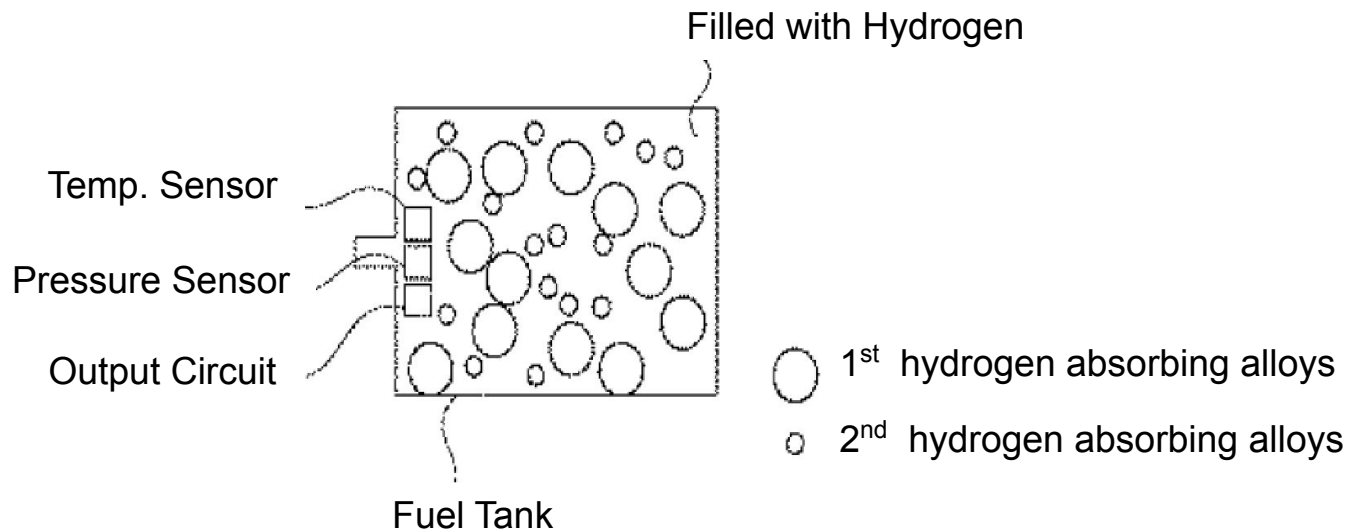
Canon

Filing Date: September 28, 2004

1. A tank for fuel cell battery, comprising:

...

a pressure detector for detecting a pressure of the hydrogen....



# For obtaining a patent with a sensor, what should we consider?

What to sense

⇒ How to sense

⇒ Where to sense

⇒ How many areas to sense

⇒ Differences of plural sensors

How to protect spare parts from reuse?

Patents could be “exhausted,” once spare parts are sold (Sup. Ct. July 1, 1997)

Recycle Assist Inc. collected used ink cartridges of Canon, refilled ink and sold them.

Recycle Assist asserted that the patent was exhausted once the cartridge was sold.

*Canon v. Recycle Assist* (Sup. Ct., November 8, 2006)

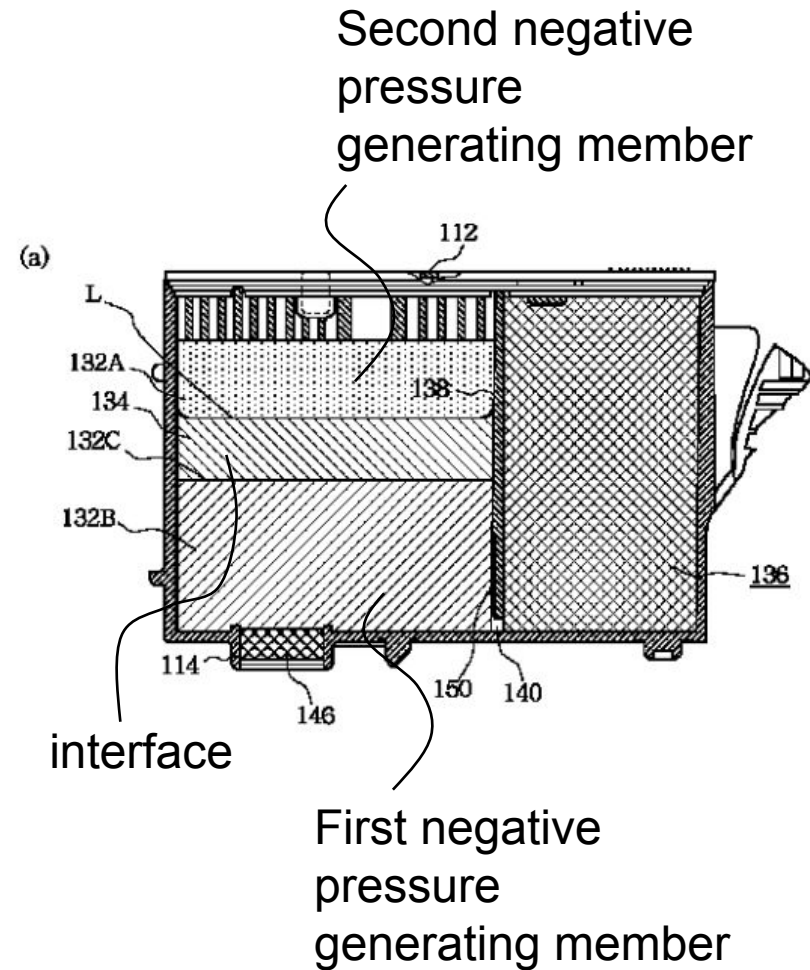


# *Canon v. Recycle Assist* (Sup. Ct., November 8, 2006)

## Japanese Patent No. 3278410

1. A liquid container ... comprising a chamber containing first and second negative pressure generating members urged against each other via an interface...,  
...wherein:  
the capillary force of the interface is higher than the capillary forces of the first and second negative pressure generating members, and  
the chamber further contains enough liquid for filling the entire interface ....

The Court found that underlined element was essential to the patent



# When essential element of patent is lost and remade, exhaustion can be denied

In *Canon v. Recycle Assist*, the Supreme Court said:

“The products lost the essential element when it was used. Then, Recycle remade the essential element by filling ink. Namely Recycle made new products.”

The Supreme court denied the exhaustion and affirmed infringement.

# Include as an essential element of patent a part of the product that is:

- used up, or
- damaged when the spare part is mounted or used in the main body

How to encourage engineers to create spare part inventions?

# Assistance from IP Division is essential for creating inventions of spare parts

- The features must be intentionally added to the spare parts
- The invention is not automatically made

## Steps for creating the inventors

1. Identify spare parts that are likely copied
2. Show inventors the five categories with examples
3. Carry out brain storming

# Relevant legal issues

1. Spare parts manufactured in China were imported to Japan and other countries by a number of small traders.

⇒ Hard to pursue a number of traders

⇒ Obtain patents in countries where spare parts can be made

2. Unfair competition or antitrust law may apply.

× for excluding competitors or protecting profits

○ for security and convenience of users

⇒ Care should be taken to wording used in internal documents to prepare for the US discovery.

# Thank you

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