



Utility Patents: Subject Matter

Industry & Invention
Patent

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Shout out to 17 U.S.C. § 105!

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Five requirements for a valid patent:

➔ Patentable subject matter

- Novelty
- Nonobviousness
- Utility
- Disclosure

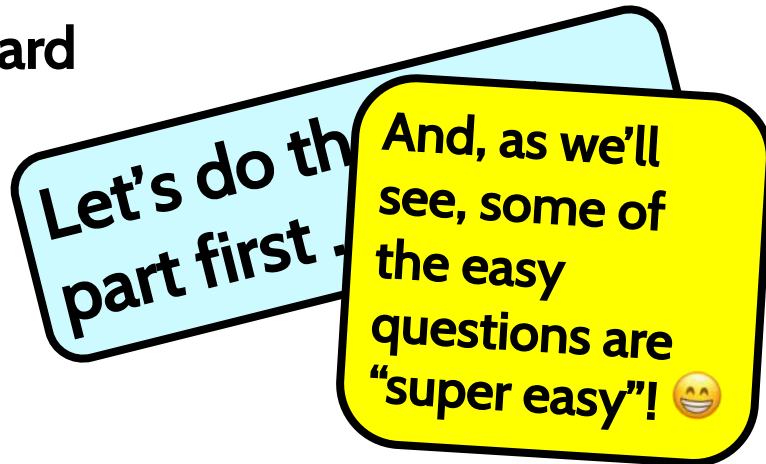
For patentable subject matter, questions are ...

- easy, or
- hard

Let's do the easy part first ... 😊

For patentable subject matter,
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35 U.S.C. § 101

§ 101 - Inventions Patentable:

“Whoever invents or discovers any new and useful **process, machine, manufacture, or composition of matter**, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”

These are the four categories of invention. They define patentable subject matter.

The four statutory categories

Process: “an act, or series of acts or steps”

Machine: “a concrete thing, consisting of parts, or of certain devices and combination of devices”

Manufacture: “an article produced from raw or prepared materials by giving these materials new forms, qualities, properties, or combinations, whether by hand labor or by machinery”

Composition of Matter: “all compositions of two or more substances and all composite articles, whether they be the results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids”



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What's in and what's out as a "process" can often be a difficult problem ...



The four statutory categories

Process: “an act, or series of acts or steps”

Machine: “a concrete thing, or certain devices and combinations thereof”

Manufacture: “an article produced by preparing materials by giving them definite forms, qualities, properties, or characteristics, by hand labor or by machine”

Composition of Matter: “all combinations of more substances and all compounds, whether they be the results of chemical processes, mixtures, or whether they be solids”

But the “product” categories (machine, manufacture, composition of matter) are generally super easy and clear cases of patentable subject matter*!



The four statutory categories

Process: “an act, or series of acts or steps”

Machine: “a concrete thing, or certain devices and combinations thereof”

*Unless they are being used as a drafting device to provide cover for excluded subject matter – like claiming a computing device that calculates a result according to an otherwise patent-ineligible process of simply applying a natural law.

mixture, or whether they be solids”

But the “product” categories (machine, manufacture, composition of matter) are generally super easy and clear cases of patentable subject matter*!



Problem: Show shoveling device

A **device** for shoveling snow, comprising:
a metal scoop having a sharp edge and a wooden handle
extending therefrom for manipulation by a person using said
device.

Is this patentable subject matter?

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Is this patentable subject matter?

Yes. Although a “device” isn’t a word used in the categories of patentable subject matter, that’s okay. Looking at this claim, the device is a machine (a concrete thing consisting of parts or devices), a manufacture (an article produced from raw or prepared materials), and a composition of matter (a composition of substances or composite article).

Problem: Marketing paradigm

A **paradigm** for marketing software, comprising:
a marketing company that markets software from a plurality
of different independent and autonomous software
companies, and carries out and pays for operations
associated with marketing of software for all of said different
independent and autonomous software companies, in return
for a contingent share of a total income stream from
marketing of the software from all of said software
companies, while allowing all of said software companies to
retain their autonomy.

(*In re Ferguson*; claim 24)

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WAIT! Let's stop and
ask this first: *Is this a "super
easy" question of patentable
subject matter?*

(*In re Ferguson*; claim 24)

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WAIT! Let's stop and ask this first: *Is this a "super easy" question of patentable subject matter?*

I'm going to say "no" it's not "super easy" in the sense that, since it's not a genuine "product" (machine, manufacture, composition of matter), we will at least have to stop and think about it.



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WAIT! Let's stop and ask this first: *Is this a "super easy" question of patentable subject matter?*

I'm going to say "no" it's not "super easy" in the sense that, since it's not a genuine "product" (machine, manufacture, composition of matter), we will at least have to stop and think about it.

But don't worry — this is still actually an easy question.



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Review

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via
USPTO

Problem: Marketing paradigm

A **paradigm** for marketing software ...

Is this patentable subject matter?

No. The “paradigm” is a business model for an intangible marketing company, not a process (series of steps), machine (a concrete thing consisting of parts or devices), manufacture (an article produced from raw or prepared materials), or composition of matter (a composition of substances or composite article).

via
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35 U.S.C. § 101

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The last three categories can be grouped together into “products.” So we essentially have two categories:

products and processes

§
“V
useful **process, machine, manufacture, or composition of matter**, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”

These
defin
If it’s a product or a process, it’s patentable subject matter — but not if it falls within a category of excluded subject matter ... **they**

Excluded subject matter

Judicial “exceptions”:

- “Laws of nature, natural phenomena, and abstract ideas”

Diamond v. Diehr (1981)

Statutory exceptions, of which key examples are:


- tax strategies
- nuclear weapons inventions
- human organisms

Excluded subject matter

Judicial “exceptions”:

- “Laws of nature, natural phenomena, and abstract ideas”

Diamond v. Diehr (1981)



The U.S. Supreme Court has called these “exceptions,” but you could also think of these as things that aren’t processes, machines, manufactures, or compositions of matter – and therefore are excluded subject matter.

Excluded subject matter

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- “Laws of nature, natural phenomena, and abstract ideas”

Diamond v. Diehr (1981)

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Excluded subject matter

These statutory exceptions are true exceptions – carve outs by statute. They apply to things that are clearly processes, machines, compositions of matter, and manufactures.

Statutory exceptions, of which key examples are:

- tax strategies
- nuclear weapons inventions
- human organisms

Excluded subject matter — statutory

Statutory exceptions — three worth knowing:

- Tax strategies (post Sept. 16, 2011) — “any strategy for reducing, avoiding, or deferring tax liability” Public Law 112-29, sec. 14 (2011)
- Nuclear weapons inventions — “any invention or discovery which is useful solely in the utilization of special nuclear material or atomic energy in an atomic weapon.” 42 U.S.C. § 2181
- Human organisms — “Notwithstanding any other provision of law, no patent may issue on a claim directed to or encompassing a human organism.” Public Law 112-29, sec. 33 (2011)

Excluded subject matter — judicial

Some easy examples of excluded matter:

- Laws of nature
 - $E=mc^2$
- Natural phenomena
 - Newly discovered sap from a Amazon rain-forest tree that reduces melanoma tumors
- Abstract ideas
 - The idea of using AI to scan a large set of medical records for unknown beneficial side effects of known, prescribed drugs.

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**Let's do the hard
part now ...** 😞

Excluded subject matter — judicial

- We know these are excluded:
 - Laws of nature
 - Natural phenomena
 - Abstract ideas
- But many if not all inventions that are legitimately patentable subject matter make use of some or all of those things!
- So where do the off-limits judicial exceptions end and patentable inventions begin?
- In other words, how do we determine the scope of the judicial exceptions?

What is the scope of the judicial exceptions?

Mayo Collaborative v. Prometheus Labs

(U.S. 2012) created a two-part test:

- (1) Determine whether the claim is directed to a patent-ineligible concept. If not, it's patentable.
- (2) If yes, then ask whether the claim's elements, considered both individually and as an ordered combination, transform the nature of the claim into "significantly more" than the patent-ineligible subject matter.

Problem: Method for determining force required

A **method** for determining the force required to accelerate a mass of a given quantity at a desired rate of acceleration wherein a computer takes inputs for said desired rate of acceleration and said mass and produces a result for said force according to the formula $F=ma$, in which F is said force, m is said mass, and a is said desired rate of acceleration.

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Is this patentable subject matter?

No. Newton's Second Law expressed as $F=ma$ is a law of nature. Adding that a computer will calculate a result according to the formula does not work to transform this law of nature into patentable subject matter.

Problem: Method for determining heating capacity needed

How big of a heater do you need for your house? (I.e., how much heating capacity in BTUs per hour is needed?) HVAC professionals have a well-known rule of thumb: For a newer home in a warm climate, multiply the square footage by 30.

We claim: A **process** for determining the minimum installed heating capacity required for a newer home in a warm climate wherein a computer takes an input for said home's square footage, multiplies said input by 30, and displays the resulting number as said minimum installed heating capacity in BTUs.

Is this patentable subject matter?

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We claim: A **process** for determining the minimum installed heating capacity required for a newer home in a warm climate wherein a computer takes an input for said home's square footage, multiplies said input by 30, and displays the resulting number as said minimum installed heating capacity in BTUs.

Is this patentable subject matter?

No. The rule of thumb is a patent-ineligible concept of how much heating capacity to install. Adding that a computer will calculate a result according to the formula does not transform the rule of thumb into patentable subject matter.