

ENGR 399

- Open the in-class quiz now... today, quiz questions will be distributed throughout the lecture. Quiz access code = sushi
- There is no asynchronous assignment this week!

This lecture... what we will cover

1. Only “novel” inventions can be patented... what is “novel”?
2. An “obvious” invention cannot be patented... what is “obvious”?
3. How are the boundaries of the invention staked out?
4. A patent must be “enabling”... what does this mean?
5. When does a patent expire?

UNITED STATES PATENT AND TRADEMARK OFFICE

Daniel J. Lacks

has made application for registration and has complied with all of the requirements of law and the rules of the United States Patent and Trademark Office for registration on the 6th day of September 2022. Now, therefore, the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, pursuant to the authority conferred by statute, does hereby license the above-named applicant as an

Agent

Registration No. 81,042

to practice before the United States Patent and Trademark Office in Patent Cases.

In Witness Whereof, the seal of the United States Patent and Trademark Office is hereby affixed.



A handwritten signature in black ink, appearing to read "Well R. Day".

Deputy General Counsel for Enrollment and Discipline and
Director of the Office of Enrollment and Discipline

Where am I?



Hint: I ate
vegetarian
haggis!

What is my drink?
(hint in background)

... and why did
they serve it
with a beaker of
water?!?!



The Washington Post

August 18, 2017

<p>Uneasy future for Arlington's Confederate Memorial</p> <p>Controversy over a statue depicting soldiers and slaves could distract itself in the spotlight.</p> <p>By T. Ross Freeman</p> <p>On a stone pedestal overlooking the Potomac River, a bronze statue of Confederate General Robert E. Lee stands next to a black slave woman, her hands clasped in front of him. The scene depicts Lee's 1865 visit to the plantation where he was born, and it has become one of the most controversial statues in the nation, drawing national attention to the history of slavery and racism in the country.</p> <p>The statue is in Arlington, Va., the same place where the American Civil War began. It is the latest in a series of monuments erected to honor the Confederacy in the last century, and it has sparked a new wave of debate about the legacy of the Civil War and the role of African Americans in the conflict.</p> <p>The statue is part of a larger effort to create a better understanding of the Civil War and its impact on African Americans. It is also a reminder of the ongoing struggle for civil rights and equality in America.</p>	<p>Top officials move to clarify U.S. policy on North Korea</p> <p>Tensions, which strain diplomatic and economic efforts, may ease after</p> <p>U.S. Secretary of State Mike Pompeo, along with Defense Secretary Jim Mattis, will travel to South Korea and Japan to discuss the situation. They will also meet with their counterparts from both countries to discuss ways to strengthen the alliance between the United States and its allies in Asia.</p> <p>During his trip, Pompeo will also meet with Chinese Foreign Minister Wang Yi and other Chinese officials to discuss ways to improve relations between the two countries. He will also meet with Japanese Foreign Minister Taro Kono and other Japanese officials to discuss ways to strengthen the alliance between the United States and Japan.</p> <p>These meetings are likely to focus on issues of trade, security, and democracy, as well as ways to promote economic development and cooperation in the region.</p> <p>The visit is expected to help clarify U.S. policy on North Korea and to strengthen the alliance between the United States and its allies in Asia.</p>
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IN THE NEWS		INSIDE	
	State farm bills face no action The Senate农业委员会通过了两部旨在帮助农民的法案，但参议院尚未采取行动。参议院农业委员会主席、共和党人Mike Johanns表示，参议院尚未就这两项立法进行投票。这两项立法是参议院农业委员会在2013年春季通过的。Johanns说：“我们希望参议院能够通过这两项立法，帮助农民。”这两项立法包括：一项旨在帮助农民应对自然灾害的法案，以及一项旨在帮助农民应对气候变化的法案。	THE BIG BUD The members of the Clark family are going to have a lot more money after a California court ruled that the state must pay them \$1.2 million in damages for a 2008 wildfire that destroyed their home. THE BUD BUD Senate agriculture committee chairman Mike Johanns, R-Neb., has introduced legislation that would provide \$1 billion in disaster relief for farmers and ranchers who lost land to the 2012 drought. Johanns said his bill would help farmers and ranchers who lost land to the 2012 drought. Johanns said his bill would help farmers and ranchers who lost land to the 2012 drought.	THE BIG BUD The members of the Clark family are going to have a lot more money after a California court ruled that the state must pay them \$1.2 million in damages for a 2008 wildfire that destroyed their home. THE BUD BUD Senate agriculture committee chairman Mike Johanns, R-Neb., has introduced legislation that would provide \$1 billion in disaster relief for farmers and ranchers who lost land to the 2012 drought. Johanns said his bill would help farmers and ranchers who lost land to the 2012 drought.
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IN THE NEWS



IBRAHIM ABU MUSTAFA/RFI

Suicide bomb kills Hamas member The attack in the Gaza Strip was a first and could escalate tensions among rival factions. A13

Trump ends bottled water ban The White House halted the 2011 action at national parks that was meant to cut down on pollution. A3

THE NATION

The architects of the CIA's interrogation program settled a lawsuit brought on behalf of torture victims. A2

An online activist group said it's publishing the private contact details of 22 GOP members of Congress. [A2](#)

New research aimed to explain how complex life emerged during a period when Earth was ravaged by ice and roasted by volcanoes. [A3](#)

There's a scientific explanation why whiskey tastes better with water, a study said. A3

The two top officers

aboard the USS Fitzgerald are among those who will face discipline after the June 17 collision that killed seven crew members. A9

THE WORLD

India and China are locked in a dangerous border standoff involving the tiny kingdom of Bhutan, with which India has a long history.

India has strong ties. [A10](#)
Russia's Yeltsin-era
democrats show envy
for the resilience of U.S.
institutions. [A11](#)

Three Hong Kong activists involved in the 2014 Umbrella Movement protests were sen-

PressRe

We'll find our
answer here!

POLITICS & THE NATION

Science chases the reason why whiskey diluted with water may taste better

BY JENNA GALLEGOS

Whiskey contains fatty acid esters that have two very differ-

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ers, but R
land, and
the locals

down even the fanciest Scotch.

Like a good scientist, he wanted to test the assumption so he teamed up with used computer scientists to model the molecule motion of whiskey.

There are twoories for why adding whiskey might improve flavor, Karlsson said. He suggests that adding compounds that are unpleasant.

Key its distinctive taste could become trapped in clusters of ethanol and water molecules.

Like a good scientist, he wanted to test the assumption so he teamed up with used computer scientists to model the molecule motion of whiskey.

water, ethanol and an aromatic compound called guaiacol.

Guaiacol is what gives whiskey

in the researchers' simulations, they found that the concentration of ethanol had a large

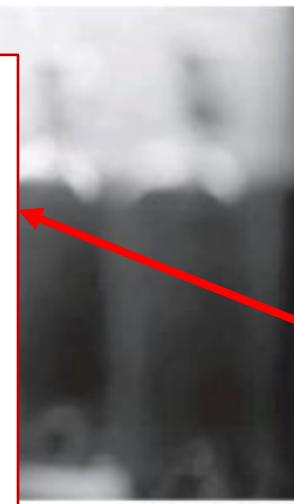
about 27 percent the ethanol began to aerosolize, presumably freeing the guaiacol even further.

It's a delicate balance: Without enough water, the guaiacol won't bubble up into the nostrils of whiskey drinkers. Too much, and the spirits would seem flavorless and thin.

"Adding water changes the equilibrium," said Daniel Lacks, who was not involved with the study but conducts similar modeling experiments at Case Western University. The new model shows that diluting the whiskey "causes molecules to rise to the surface."

But Paul Hughes, a food scientist and distilling expert at Oregon State University, was not convinced that the propensity of ethanol to rise to the surface when whiskey is diluted tells the whole story. In the simulation, only three times more molecules

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AMIR COHEN/REUTERS
Water to whiskey has the flavor compounds.

ethanol clusters within the bulk of the whiskey may also be important.

Whether by disrupting ethanol clusters or encouraging the molecules to rise to the surface, it's clear that adding water to whiskey has the molecular potential to release important flavor compounds such as guaiacol. So why isn't whiskey simply bottled at lower alcohol concentrations?

If diluting whiskey really does mean that aromatic molecules evaporate from the surface, "by bottling at higher concentrations, you get less deterioration of taste," Lacks said. Whiskey, by definition, has to be 40 percent alcohol, Hughes said. Diluting it would also increase packaging and distribution costs and take away the choice from the consumer.

At the end of the day, individuals should drink their whiskey however they prefer it, Hughes said, but "if someone says they don't like whiskey," he added, "they just haven't tried the right one yet."

jenna.gallegos@washpost.com

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How did I develop this expertise?



OTHER

3M Accuses Purell Maker of Patent Infringement

The Maplewood-based manufacturer recently filed a complaint alleging that Gojo Industries is infringing on its foamable products patent.

Around this time, I did consulting work with GOJO to develop new surfactants that could make Purell foam

October 28, 2010



The consulting work led to two patents...

(12) United States Patent
Hillman et al.

(10) Patent No.: US 10,674,722 B2
(45) Date of Patent: Jun. 9, 2020

- (54) **ANTIMICROBIAL AND FOAMABLE ALCOHOLIC COMPOSITIONS**
- (71) Applicant: **GOJO Industries, Inc.**, Akron, OH (US)
- (72) Inventors: **Evan D. Hillman**, North Canton, OH (US); **Daniel J. Lacks**, Shaker Heights, OH (US); **Mitchell J. Cohen**, Salisburg, NC (US)
- (73) Assignee: **GOJO Industries, Inc.**, Akron, OH (US)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.
- (21) Appl. No.: **16/177,489**
- (22) Filed: **Nov. 1, 2018**
- (65) **Prior Publication Data**
US 2019/0069540 A1 Mar. 7, 2019
- Related U.S. Application Data**
- (63) Continuation of application No. 14/380,183, filed as application No. PCT/US2013/027314 on Feb. 22, 2013, now abandoned.
- (60) Provisional application No. 61/602,834, filed on Feb. 24, 2012, provisional application No. 61/621,763, filed on Apr. 9, 2012, provisional application No. 61/644,595, filed on May 9, 2012.
- FOREIGN PATENT DOCUMENTS
- EP 0796610 A1 9/1997
EP 1764135 A1 3/2007
EP 1769824 A1 4/2007
- (Continued)
- OTHER PUBLICATIONS

(12) United States Patent
Hillman et al.

(10) Patent No.: US 11,737,457 B2
(45) Date of Patent: *Aug. 29, 2023

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- (73) Assignee: **GOJO Industries, Inc.**, Akron, OH (US)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 206 days.
This patent is subject to a terminal disclaimer.
- (21) Appl. No.: **16/864,315**
- (22) Filed: **May 1, 2020**
- (65) **Prior Publication Data**
US 2020/0253198 A1 Aug. 13, 2020
- Related U.S. Application Data**
- (63) Continuation of application No. 16/177,489, filed on Nov. 1, 2018, now Pat. No. 10,674,722, which is a continuation of application No. 14/380,183, filed as application No. PCT/US2013/027314 on Feb. 22, 2013, now abandoned.
- (60) Provisional application No. 61/644,595, filed on May 9, 2012, provisional application No. 61/621,763, filed on Apr. 9, 2012, provisional application No. 61/602,834, filed on Feb. 24, 2012.
- FOREIGN PATENT DOCUMENTS
- EP 0796610 A1 9/1997
EP 1764135 A1 3/2007
- (Continued)
- OTHER PUBLICATIONS

After the consulting ended, I got an NSF grant to study this effect

Who are my co-authors?

THE JOURNAL OF CHEMICAL PHYSICS 142, 084702 (2015)



Surface activity of octanoic acid in ethanol-water solutions from molecular simulation and experiment

April N. Htet,^{1,2} Phwey S. Gil,¹ and Daniel J. Lacks¹

¹Department of Chemical and Biomolecular Engineering, Case Western Reserve University, Cleveland, Ohio 44106, USA

²Department of Chemical Engineering, Yangon Technological University, Yangon, Myanmar

(Received 20 December 2014; accepted 5 February 2015; published online 24 February 2015)

The surface activity of a typical surfactant, octanoic acid (OA), in ethanol-water solutions is investigated with a combined experimental and molecular simulation approach. The experiments show that OA reduces the surface tension of ethanol-water solutions at low ethanol concentration, but the effectiveness decreases with increasing ethanol concentration and vanishes for ethanol concentrations above 60%. Molecular dynamics simulations are used to obtain free energy landscapes for OA as a function of the distance from the surface. The free energy driving force pushing OA to the surface decreases with increasing ethanol concentration, and becomes insignificant (i.e., less than kT) for ethanol concentrations above 70%. Thus, the decrease in the effectiveness of OA in reducing the surface tension at higher ethanol concentrations can be attributed to the decrease in the free energy driving force keeping OA at the surface. We expect these results to apply generally to hydrocarbon-based surfactants. © 2015 AIP Publishing LLC. [<http://dx.doi.org/10.1063/1.4908539>]

THE JOURNAL OF
PHYSICAL CHEMISTRY C

Article

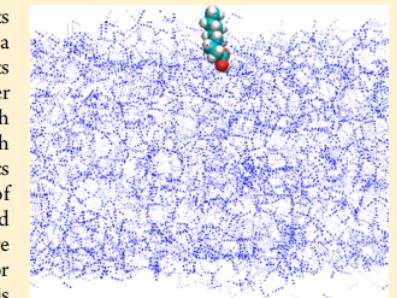
pubs.acs.org/jpc

Geometric Origins of Surfactant Effectiveness in Mixed Solvent Systems

Phwey S. Gil and Daniel J. Lacks*

Department of Chemical and Biomolecular Engineering, Case Western Reserve University, Cleveland, Ohio 44106, United States

ABSTRACT: The surface activity of perfluorooctanoic acid (PFOA) and its hydrocarbon analog octanoic acid (OA) in ethanol–water solutions is studied with a combined experimental and molecular dynamics simulation approach. Experiments show that PFOA is more effective at reducing surface tension in ethanol–water solvents than OA. The surface tension at the CMC is lower with PFOA than with OA, and PFOA is effective at lowering the surface tension in solutions with high ethanol content (up to 60%) while OA is not. We use molecular dynamics simulations to determine the underlying basis for these differences. The tendency of PFOA and OA molecules to partition to the surface at infinite dilution is evaluated using free energy profiles. Features of these free energy profiles at infinite dilution are shown to correlate with the experimental surface tension results. PFOA's superior surfactant properties are attributed to PFOA having a larger girth than OA, which is largely a consequence of the C–F bond being longer than the C–H bond. We expect the relationship between surfactant girth and effectiveness in reducing surface tension in mixed solvent systems to be general.

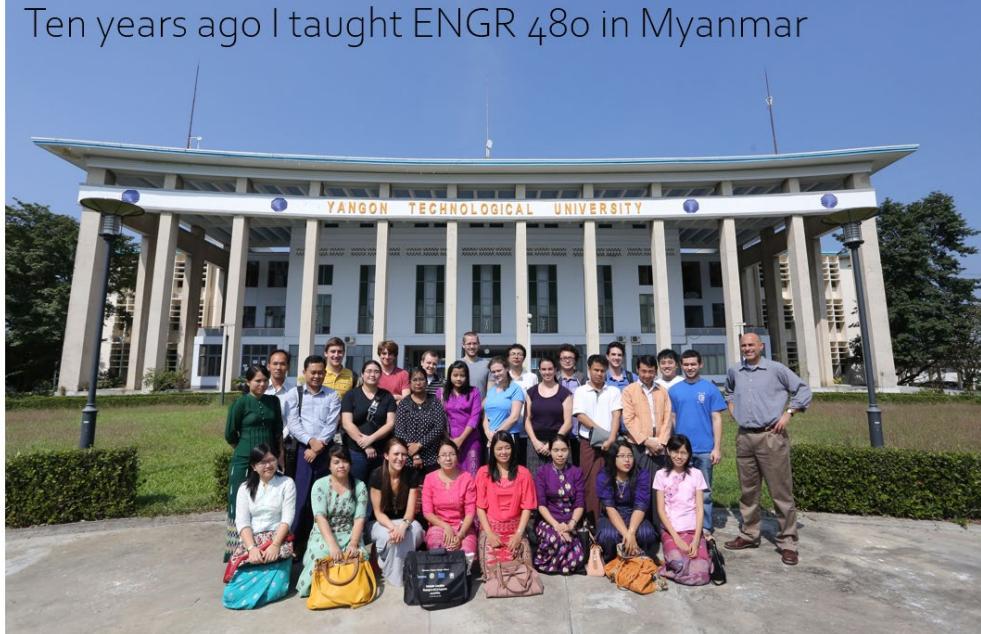


Hand sanitizer is mostly ethanol and water
... in some cases with surfactant added to make it foam

Whiskey is mostly ethanol and water... with flavor from molecules that are surfactant-like

Recall from two lectures ago...

Ten years ago I taught ENGR 480 in Myanmar



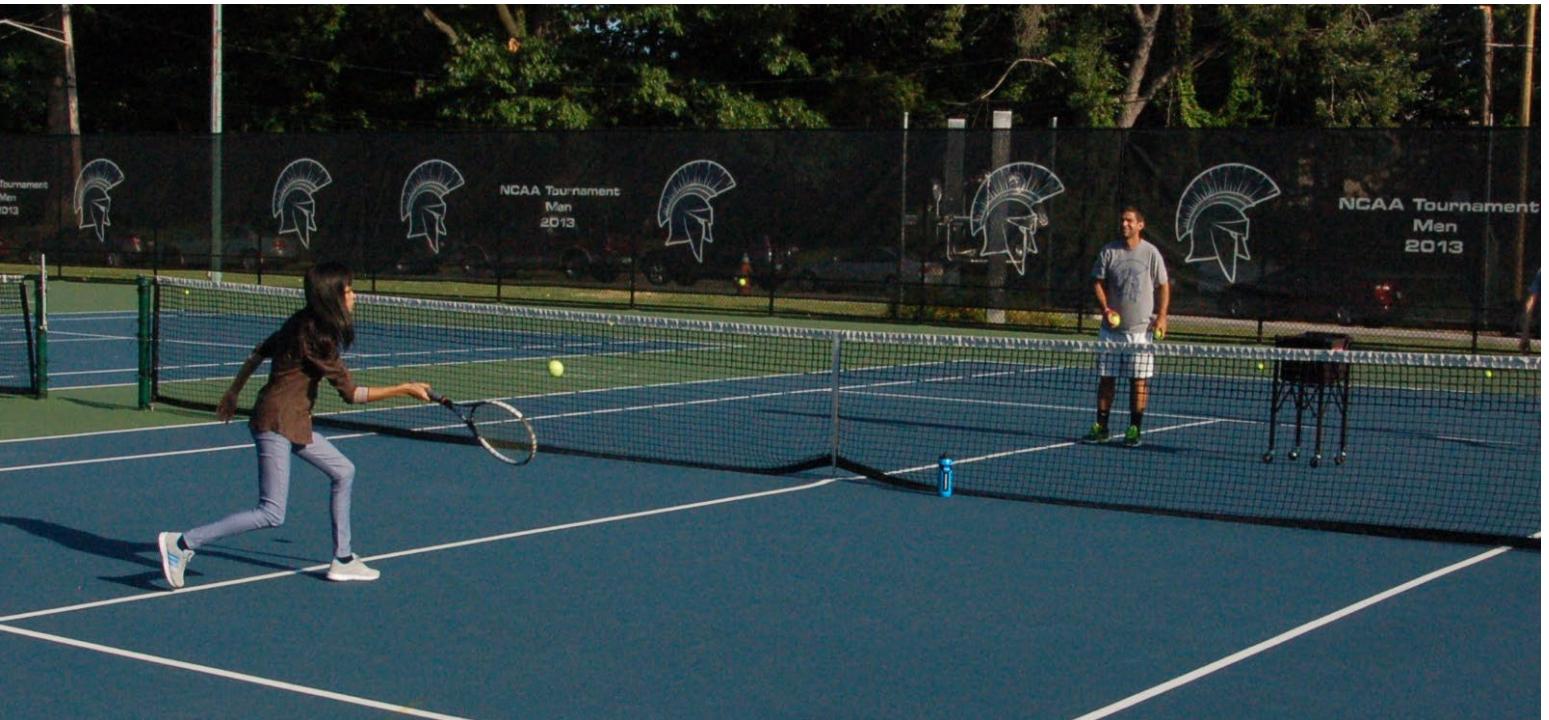
Myanmar is a REALLY amazing place!!!



At the time, Myanmar didn't have international IP agreements



Trademarks are intended to stop situations like this



Huge protests against the coup
... including many protesters from universities
... military govt cracked down & closed universities



1 of 18 | A protester holds a placard with an image of Myanmar military Commander-in-Chief Senior Gen. Min Aung Hlaing and Justice For Myanmar as fellow protesters march around Mandalay, Myanmar on Monday, Feb. 8, 2021. A protest against Myanmar's one-week-old military government swelled rapidly Read More



Published 9:17 PM EST, February 8, 2021





My collaborator, April Htet, during her sabbatical here in 2014

June 2023 email:

"Both my husband and I lost our jobs in May 2021. Some people (you know them) who joined the International Engineering Entrepreneurship class also lost their jobs.

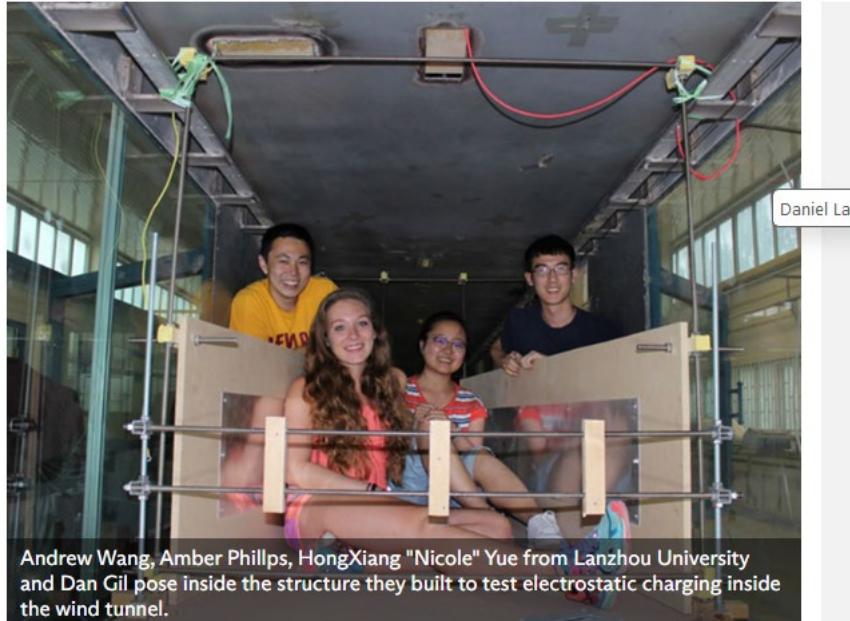
I am still trying to get a new job. Now my husband, Shwebo, some friends, and I are in Yangon. Because one of my teachers (you met him during your second visit to Yangon) supports us during these years. Now we are safe and try our best to rebuild our lives."

Sept 2024 email:

"Here, I don't think the situation is getting better. People are facing rising commodity prices, drug shortages, flooding, etc.

Now I'm doing research projects supported by Myanmar Association of Chemical Engineering. I made up my mind to accept where I am and I do as much as I can."

the daily

[Campus & Community ▾](#)[University News ▾](#)[Research ▾](#)[Events](#)[People](#)

the daily

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5 questions with... Dan Gil, recent PhD grad who led workshop for Congolese scientists

Phwey (Dan) Gil started work on the project as an undergrad, and stayed on for his PhD

Students create wind-tunnel sandstorms on visit to China



Dan Gil

PATENT AGENT

Patents and Innovations

Washington, D.C.

Dan is now a patent agent, and is completing law school and will soon be a patent attorney

Only “novel” inventions can be patented... what is “novel”?

35 U.S.C. 102:

- (a) NOVELTY; PRIOR ART. – A person shall be entitled to a patent unless –
 - (1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention

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“prior art”

“PRINTED publication” now interpreted as “made available to the extent that persons interested and ordinarily skilled in the subject matter, exercising reasonable diligence, can locate it.”

Important... YOU can make your own invention not novel & invalidate patentability!!!

A question from the patent bar exam...

Which of the following would not disqualify a patent application?

- (A) A paper that was orally presented at a meeting, where the meeting was open to all interested persons and the paper was distributed in written form to six people without restriction.
- (B) A doctoral thesis that was indexed, cataloged, and shelved in a single, university library.
- (C) A research report distributed in numerous copies but only internally within an organization to persons who understood the organization's policy of confidentiality regarding such reports.
- (D) A reference available only in electronic form on the Internet, which states when it was publicly posted.
- (E) A technical manual that was shelved and cataloged in a public library, where there is no evidence that anyone ever actually looked at the manual.

Why do companies you intern/co-op with often ask you to sign a non-disclosure agreement (NDA)?

One reason is that an NDA makes it so that things you see on the job don't become prior art that can invalidate a patent application

You invent a new type of underwear. Your partner likes it and wears this type of underwear for a couple of years before you decide to file a patent for it...

... does this count as "public use" that disqualifies your patent?

YES, this will disqualify your patent!

This was a real case decided by the US Supreme Court:
Egbert v Lippmann (1881)

Only “novel” inventions can be patented... what is “novel”?

what is the “effective filing date”?

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First, note you can file:

- provisional patent app: a “placeholder” for 1 yr; must submit the real patent app within 1 yr
- continuation patent app: change the “bounds” of your invention but don’t add “new matter”

The “effective filing date” is the earliest of the:

- actual filing date
- earliest filing date of an associated provisional app
- earliest filing date of a prior app for which your patent is a continuation

Did this patent start with provisional patent app?

Did this patent involve a continuation application?

When was the effective filing date for this patent?

Feb 24, 2012

(12) **United States Patent**
Hillman et al.

(10) **Patent No.:** US 10,674,722 B2
(45) **Date of Patent:** Jun. 9, 2020

(54)	ANTIMICROBIAL AND FOAMABLE ALCOHOLIC COMPOSITIONS	6,096,297 A	8/2000	Jones et al.
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(Continued)

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(Continued)

OTHER PUBLICATIONS

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(10) **Patent No.:** US 11,737,457 B2
(45) **Date of Patent:** *Aug. 29, 2023

(54) **ANTIMICROBIAL AND FOAMABLE ALCOHOLIC COMPOSITIONS**

(71) Applicant: **GOJO Industries, Inc.**, Akron, OH (US)

(72) Inventors: **Evan D. Hillman**, North Canton, OH (US); **Daniel J. Lacks**, Shaker Heights, OH (US); **Mitchell J. Cohen**, Salisburg, NC (US)

(73) Assignee: **GOJO Industries, Inc.**, Akron, OH (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 206 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **16/864,315**

(22) Filed: **May 1, 2020**

(65) **Prior Publication Data**

US 2020/0253198 A1 Aug. 13, 2020

Related U.S. Application Data

(63) Continuation of application No. 16/177,489, filed on Nov. 1, 2018, now Pat. No. 10,674,722, which is a continuation of application No. 14/380,183, filed as application No. PCT/US2013/027314 on Feb. 22, 2013, now abandoned.

(60) Provisional application No. 61/644,595, filed on May 9, 2012, provisional application No. 61/621,763, filed on Apr. 9, 2012, provisional application No. 61/602,834, filed on Feb. 24, 2012.

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(12) **United States Patent**
Buggy et al.

(10) **Patent No.:** US 8,754,090 B2
(45) **Date of Patent:** *Jun. 17, 2014

(54) **USE OF INHIBITORS OF BRUTON'S TYROSINE KINASE (BTK)**

(75) Inventors: **Joseph J. Buggy**, Mountain View, CA (US); **Gwen Fyfe**, San Francisco, CA (US); **David J. Loury**, San Jose, CA (US)

(73) Assignee: **Pharmacyclics, Inc.**, Sunnyvale, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: 13/340,522

(22) Filed: Dec. 29, 2011

(65) **Prior Publication Data**

US 2012/0183535 A1 Jul. 19, 2012

Related U.S. Application Data

(63) Continuation of application No. 13/153,317, filed on Jun. 3, 2011.

(60) Provisional application No. 61/351,130, filed on Jun. 3, 2010, provisional application No. 61/351,655, filed on Jun. 4, 2010, provisional application No. 61/351,793, filed on Jun. 4, 2010, provisional application No. 61/351,762, filed on Jun. 4, 2010, provisional application No. 61/419,764, filed on Dec. 3, 2010, provisional application No. 61/472,138, filed on Apr. 5, 2011.

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Q1:

What was the effective filing date for this patent?

What would happen if a competitor published a description of what's in this patent before this date?

What would happen if a competitor published a description of what's in this patent after this date?

Only “novel” inventions can be patented... what is “novel”?

35 U.S.C. 102:

- (a) NOVELTY; PRIOR ART.—A person shall be entitled to a patent unless—
 - (1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention

(b) Exceptions.—

(1) Disclosures made 1 year or less before the effective filing date of the claimed invention.—A disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) if—

(A) the disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor; or

i.e., there is a 1-year grace period where the inventor can disclose their invention and still be able to patent it
(but only in the US)

A question from the patent bar exam...

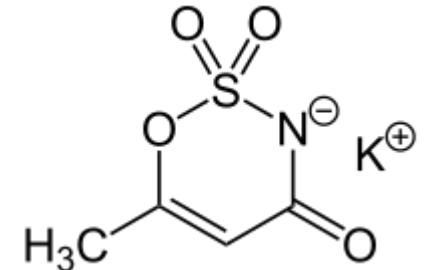
Which of the following, if done more than a year before filing a patent application, would not disqualify a patent on a device?

- (A) A sale of the device conditioned on buyer satisfaction.
- (B) A sale of the device that did not result in a profit.
- (C) A single sale of the device.
- (D) A commercial offer to sell the device.
- (E) An offer to sell the patent rights for the device.

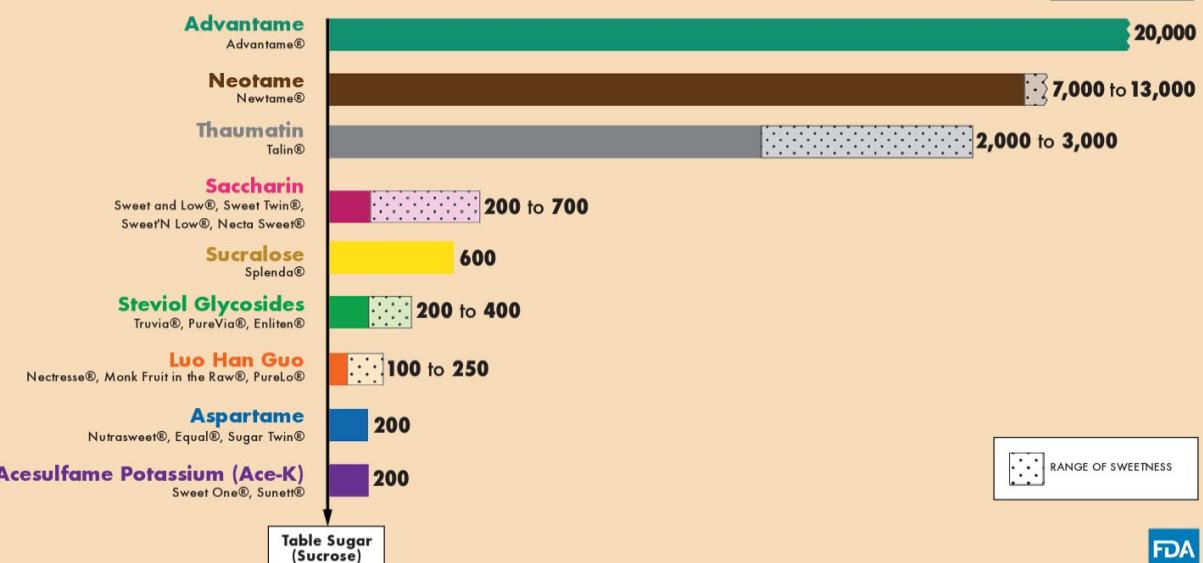
October 14, 2019

CELANESE SUES CHINESE SWEETENER MANUFACTURER ANHUI JINHE INDUSTRIAL FOR PATENT INFRINGEMENT

DALLAS (October 15, 2019) – Celanese Corporation (NYSE: CE), a global chemical and specialty materials company, today announced that it has filed a patent infringement lawsuit against a Chinese manufacturer of high-potency sweeteners, specifically Acesulfame Potassium (Ace-K).



Sweetness Intensity of Sweeteners Compared to Table Sugar



What happened with the lawsuit?

"critical date of Sept 21, 2015, i.e., one year before the effective filing date... Celanese had sold Ace-K made using the patented process in the US before the critical date"

United States Court of Appeals for the Federal Circuit

CELANESE INTERNATIONAL CORPORATION,
CELANESE (MALTA) COMPANY 2 LIMITED,
CELANESE SALES U.S. LTD.,
Appellants

v.

INTERNATIONAL TRADE COMMISSION,
Appellee

ANHUI JINHE INDUSTRIAL CO., LTD., JINHE USA
LLC,
Intervenors

2022-1827

Appeal from the United States International Trade Commission in Investigation No. 337-TA-1264.

Decided: August 12, 2024

It is undisputed that Celanese's patented process was in secret use in Europe before the critical date of September 21, 2015, i.e., one year before the effective filing date of the asserted patents. *Id.* at *3. It is also undisputed that Celanese had sold Ace-K made using the patented process in the United States before the critical date. *Id.*

CONCLUSION

We have considered Celanese's remaining arguments and find them unpersuasive. For the reasons set forth above, we conclude that Celanese's claims at issue are invalid under the on-sale bar in AIA Section 102. Accordingly, the Commission's judgment is affirmed.

"Celanese's claims at issue are invalid under the on-sale bar in AIA Section 102"

But is the saga over?

just a couple
months ago!



Bloomberg Law

Log In

IP Law



The US Supreme Court is seen on the first day of a new term in Washington, DC, Oct. 7, 2019.
Photo by SAUL LOEB/AFP via Getty Images

December 12, 2024, 5:56 PM EST

Celanese Files High Court Patent Challenge to On-Sale Bar Ruling



Michael Shapiro
Senior Reporter

✉ X

Texas chemical giant Celanese International Corp. is seeking US Supreme Court review of the Federal Circuit's August [ruling](#) axing patents relating to its Ace-K artificial sweetener.

A (simplified) question from the patent bar exam...

A claim in a patent application recites a “composition containing: (a) 35-55% polypropylene; and (b) 45-65% polyethylene.”

The sole prior art reference describes, as the only relevant disclosure, a composition containing 34.9% polypropylene and 65.1% polyethylene.

Should this patent application be rejected under 35 USC 102 as not being novel?

The patent should NOT be rejected under 35 USC 102!!!

It is “novel” – the patent app describes something different than the prior art

But could you really get a patent for this?!?!

35 U.S.C. 102:

- (a) NOVELTY; PRIOR ART. – A person shall be entitled to a patent unless –
(1) the claimed invention was patented, described in a printed publication, or
in public use, on sale, or otherwise available to the public before the
effective filing date of the claimed invention

An “obvious” invention cannot be patented... what is “obvious”?

35 U.S.C. 103

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102 , **if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious** before the effective filing date of the claimed invention **to a person having ordinary skill in the art** to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

A (simplified) question from the patent bar exam...

A claim in a patent application recites “[a] composition containing: (a) 35-55% polypropylene; and (b) 45-65% polyethylene.”

The sole prior art reference describes, as the only relevant disclosure, a composition containing 34.9% polypropylene and 65.1% polyethylene.

The patent should be:

- (A) Granted
- (B) Rejected under 35 USC 102 as anticipated by the prior art reference.
- (C) Rejected under 35 USC 103 as obvious over the prior art reference.

“obvious” ...

An invention is obvious if:

- the new invention is a combination of A and B
- both A and B were previously known (separately)
- and it was obvious to combine A and B to make the new invention

Obvious to whom?

- obvious to a “Person having Ordinary Skill in the Art”

The inventor can provide evidence to show that the invention is non-obvious

- commercial success
- long-felt but unsolved needs
- failure of others
- unexpected results

United States Patent Office

3,351,836

Patented Nov. 7, 1967

1

3,351,836

WINDSHIELD WIPER SYSTEM WITH INTERMITTENT OPERATION

Robert W. Kearns, Detroit, Mich., assignor, by mesne assignments, to Tann Company, Detroit, Mich., a partnership of Michigan

Filed Dec. 1, 1964, Ser. No. 414,973
19 Claims. (Cl. 318—443)

The present invention relates to windshield wiper systems and more particularly to a windshield wiper system of the intermittent type in which the wiper dwells for a time interval during a portion of each cycle of wiper operation.

Under certain conditions, such as light rain or splash-back produced by other vehicles on wet roads, the condition of the windshield is often in what may be termed a wet-dry condition. Continuous windshield wiper operation with such a windshield condition may cause smearing to obscure the vision of the driver. The wiper element also may be inadequately lubricated, causing undue wear on the wiper blade. To overcome these problems, it is de-

2

by the wiper blades moving over the windshield to determine whether the wiper blades are stopped for a dwell period at the end of each cycle or whether the dwell period is skipped to provide continuous operation. In accordance with one embodiment of the invention involving an electric windshield wiper system for automotive vehicles, the electric motor is deenergized at a predetermined point near the end period durin

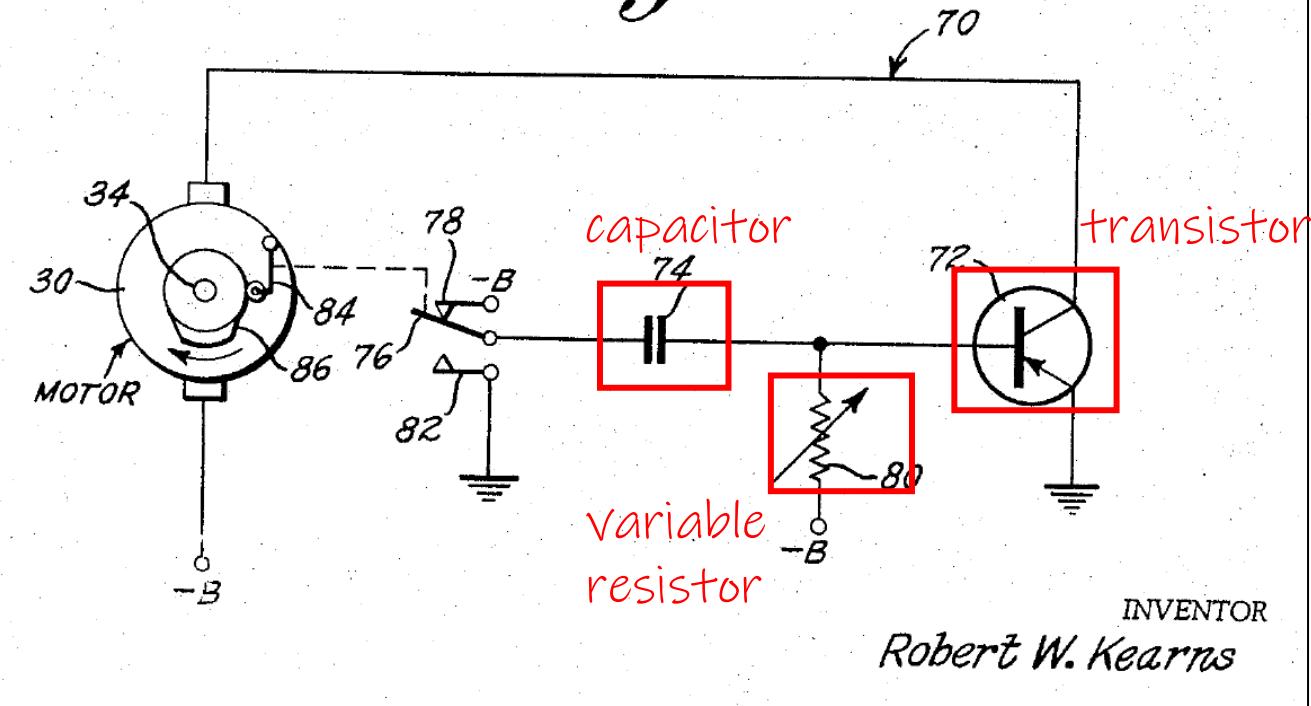
10 a small angle the deceleration of the wiper blades moving on the motor shaft. When

15 windshield, lubricated and the wiper blades braking force on the windshiel

20 period so as fewer number. By selecting

these components were all covered in ENGR 210!

Fig. 2.



CWRU alum – movie Flash of Genius made about him and this invention!

Q2: Was Ford trying to invalidate Kearns's patent through 35 USC 102 or 35 USC 103? Describe how the Kearns character in the movie used the "A Tale of Two Cities" analogy to counter Ford's assertion?

35 U.S.C. 102:

- (a) NOVELTY; PRIOR ART. – A person shall be entitled to a patent unless –
- (1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention

35 U.S.C. 103

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

What does this patented technology do?

United States Patent

[19]

Kretchman et al.

[11] Patent Number: **6,004,596**

[45] Date of Patent: **Dec. 21, 1999**

[54] SEALED CRUSTLESS SANDWICH

[75] Inventors: **Len C. Kretchman**, Fergus Falls,
Minn.; **David Geske**, Fargo, N. Dak.

[73] Assignee: **MenuSaver, Inc.**, Orrville, Ohio

[21] Appl. No.: **08/986,581**

[22] Filed: **Dec. 8, 1997**

[51] Int. Cl.⁶ **A21D 13/00**

[52] U.S. Cl. **426/94**; 426/274; 426/275;
426/297

[58] Field of Search 426/94, 274, 275,
426/297, 138

[56] References Cited

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10 Claims, 4 Drawing Sheets

Orrville is about 50 miles
south of CWRU

"The upper and lower fillings are
preferably comprised of peanut butter
and the center filling is comprised of
at least jelly..."

The center filling is prevented from
radiating outwardly into and through
the bread portions from the
surrounding peanut butter"

... and a Cleveland Heights connection on the next slide!



PHOTOGRAPHS BY DWIGHT ESCHLIMAN

THE NBA'S SECRET ADDICTION

ESPN exclusive! How one performance-enhancing treat became the NBA's Most Valuable Sandwich.

BY BAXTER HOLMES

03/21/17

"the Cavs, courtesy of a partnership with fellow Ohio-based outfit Smuckers, foist about a dozen of the company's prepackaged PB&J's on opposing teams each night..."

"...but the Cavs fare far better with their fare, serving themselves 20 artisanal PB&J's prior to tip-off, with homemade grape and raspberry jelly."

And Smuckers applied for another patent on this technology...

(19) **United States**

(12) **Patent Application Publication**

Kretchman et al.

(10) **Pub. No.: US 2004/0180116 A1**

(43) **Pub. Date: Sep. 16, 2004**

(54) **SEALED CRUSTLESS SANDWICH**

(75) Inventors: **Len C. Kretchman**, Fergus Falls, MN
(US); **David Geske**, Fargo, ND (US)

Correspondence Address:

ROBERT V. VICKERS
FAY, SHARPE, FAGAN, MINNICH & MCKEE
Seventh Floor
1100 Superior Avenue
Cleveland, OH 44114-2579 (US)

(73) Assignee: **The J.M. Smucker Company, an Ohio corporation**

(21) Appl. No.: **10/806,554**

(22) Filed: **Mar. 23, 2004**

Related U.S. Application Data

(63) Continuation of application No. 10/314,770, filed on Dec. 9, 2002, now abandoned, which is a continuation of application No. 09/821,137, filed on Mar. 30, 2001, which is a continuation of application No. 09/404,

701, filed on Sep. 24, 1999, now abandoned, which is a continuation of application No. 08/986,581, filed on Dec. 8, 1997, now Pat. No. 6,004,596.

Publication Classification

(51) Int. Cl.⁷ **A23G 3/00**
(52) U.S. Cl. **426/94**

(57) **ABSTRACT**

A sealed crustless sandwich for providing a convenient sandwich without an outer crust which can be stored for long periods of time without a central filling from leaking outwardly. The inventive device includes a lower bread portion, an upper bread portion, an upper filling and a lower filling between the lower and upper bread portions, a center filling sealed between the upper and lower fillings, and a crimped edge along an outer perimeter of the bread portions for sealing the fillings therebetween. The upper and lower fillings are preferably comprised of peanut butter and the center filling is comprised of at least jelly. The center filling is prevented from radiating outwardly into and through the bread portions from the surrounding peanut butter.

is this related to the
earlier patent?

Yes, it's a continuation
of the earlier patent!

Patent No. 6,004,596: Peanut Butter and Jelly Sandwich

By Sara Schaefer Muñoz Staff Reporter of THE WALL STREET JOURNAL

April 5, 2005 12:01 am ET



WASHINGTON -- Shortly after lunch tomorrow, judges in a federal court that specializes in patent appeals will ponder an existential question: Can a company patent how it makes a peanut butter and jelly sandwich?

Specifically, the judges will consider whether J.M. Smucker Co.'s method for making Uncrustables -- sealed, crustless peanut butter and jelly pockets -- is worthy of legal protection against imitators.

The patent examiner ruled that the invention was "obvious", citing a 1994 Wichita newspaper article on back-to-school tips that offered the layering approach as a way for parents to keep peanut butter and jelly sandwiches from getting soggy.



Appeals Court Rejects Patent For Smucker's 'Uncrustables'

By Sara Schaefer Muñoz Staff Reporter of THE WALL STREET JOURNAL

April 11, 2005 12:01 am ET



WASHINGTON -- A federal appeals court rejected a bid to expand the patent on a proprietary brand of peanut butter and jelly sandwich.

Judges at the U.S. Court of Appeals for the Federal Circuit upheld a patent board's decision to turn down two applications for expanding the patent on Uncrustables, J.M. Smucker Co.'s round, sealed and crustless sandwiches that are popular lunchbox fare and one of the Orrville, Ohio, jam-maker's most successful products.

How are the boundaries of the invention staked out?

Patent claims:

- each claim is a different set of boundaries staked out for the invention
- each claim is one sentence
- can have independent claims (e.g., claim 1) or dependent claims (e.g., claims 2, 3, 4)
- dependent claims must narrow the scope of the claim it depends on

Why so many claims?

Why not just Claim 1?

Example: first 4 claims from my 2020 patent

We claim:

1. An alcoholic composition comprising:
at least 50 wt. % of a C₁₋₄ alcohol or a mixture of two or more C₁₋₉ alcohols, based upon the total weight of the alcoholic composition;
a polyalkoxylated silane surfactant consisting of bis-PEG-18 methyl ether dimethyl silane; and
glycerin.
2. The alcoholic composition of claim 1, wherein the alcohol comprises methanol, ethanol, propanol, isopropanol, butanol, isobutanol, tertiary butanol, or mixtures thereof.
3. The alcoholic composition of claim 1, wherein the alcoholic composition comprises from 0.01 to 10 wt. % of the polyalkoxylated silane surfactant.
4. The alcoholic composition of claim 1, wherein the alcoholic composition comprises from 0.05 to 4 wt. % of the polyalkoxylated silane surfactant.

What's the difference between my two patents?

(12) **United States Patent**
Hillman et al.

(10) Patent No.: US 10,674,722 B2
(45) Date of Patent: Jun. 9, 2020

(54) ANTIMICROBIAL AND FOAMABLE
ALCOHOLIC COMPOSITIONS

6,096,297 A 8/2000 Jones et al.
6,096,349 A 8/2000 Petri et al.
6,123,953 A 9/2000 Greff

We claim:

1. An alcoholic composition comprising:
at least 50 wt. % of a C₁₋₄ alcohol or a mixture of two or more C₁₋₉ alcohols, based upon the total weight of the alcoholic composition;
a polyalkoxylated silane surfactant consisting of bis-PEG-18 methyl ether dimethyl silane; and
glycerin.

2. The alcoholic composition of claim 1, wherein the alcohol comprises methanol, ethanol, propanol, isopropanol, butanol, isobutanol, tertiary butanol, or mixtures thereof.

3. The alcoholic composition of claim 1, wherein the alcoholic composition comprises from 0.01 to 10 wt. % of the polyalkoxylated silane surfactant.

4. The alcoholic composition of claim 1, wherein the alcoholic composition comprises from 0.05 to 4 wt. % of the polyalkoxylated silane surfactant.

(12) **United States Patent**
Hillman et al.

(10) Patent No.: US 11,737,457 B2
(45) Date of Patent: *Aug. 29, 2023

(54) ANTIMICROBIAL AND FOAMABLE
ALCOHOLIC COMPOSITIONS

5,340,570 A 8/1994 Wong et al.
5,658,552 A 8/1997 Bunning et al.
5,714,135 A 2/1998 Lee et al.

We claim:

1. An antimicrobial alcoholic composition comprising:
at least 60 wt. % of an antimicrobial ingredient comprising a C₁₋₄ alcohol or a mixture of two or more C₁₋₉ alcohols, based upon the total weight of the alcoholic composition; and
a polyalkoxylated silane surfactant consisting of bis-PEG-18 methyl ether dimethyl silane.

2. The alcoholic composition of claim 1, wherein the alcohol comprises methanol, ethanol, propanol, isopropanol, butanol, isobutanol, tertiary butanol, or mixtures thereof.

3. The alcoholic composition of claim 1, wherein the alcoholic composition comprises from 0.01 to 10 wt. % of the polyalkoxylated silane surfactant.

4. The alcoholic composition of claim 3, wherein the alcoholic composition comprises from 0.05 to 4 wt. % of the polyalkoxylated silane surfactant.

United States Patent [19]

Kretchman et al.

[11] Patent Number: 6,004,596

[45] Date of Patent: Dec. 21, 1999

[54] SEALED CRUSTLESS SANDWICH

5,853,778 12/1998 Mayfield 426/89

[75] Inventors: Len C. Kretchman, Fergus Falls, Minn.; David Geske, Fargo, N. Dak.

OTHER PUBLICATIONS

[73] Assignee: Menusaver, Inc., Orrville, Ohio

"50 Great Sandwiches", Carole Handslip, pp. 81-84,86,95, 1994.

We claim:

1. A sealed crustless sandwich, comprising:

a first bread layer having a first perimeter surface coplanar to a contact surface;

at least one filling of an edible food juxtaposed to said contact surface;

a second bread layer juxtaposed to said at least one filling opposite of said first bread layer, wherein said second bread layer includes a second perimeter surface similar to said first perimeter surface;

a crimped edge directly between said first perimeter surface and said second perimeter surface for sealing said at least one filling between said first bread layer and said second bread layer;

wherein a crust portion of said first bread layer and said second bread layer has been removed.

Q3: Why do they have 7 claims, and wait until the 7th claim to mention peanut butter and jelly?

Why not just have one claim, and this one claim specifies peanut butter and jelly?

2. The sealed crustless sandwich of claim 1, wherein said crimped edge includes a plurality of spaced apart depressions for increasing a bond of said crimped edge.

4. The sealed crustless sandwich of claim 3, wherein said at least one filling comprises:

a first filling;

a second filling;

a third filling; and

wherein said second filling is completely surrounded by said first filling and said third filling for preventing said second filling from engaging said first bread layer and said second bread layer.

7. The sealed crustless sandwich of claim 6, wherein said first filling and said third filling are comprised of peanut butter; and said second filling is comprised of a jelly.

A patent must be “enabling”... what does this mean?

Enablement:

- must describe the invention well enough to **enable a person having ordinary skill in the art to make and use the invention without “undue experimentation”**
- must also describe the **“best mode”** of the invention
- but you don’t need a working prototype!

Why is the enablement required?

- a patent is an exchange: inventor gets the monopoly for a limited time, but then society learns the invention

A (simplified) question from the patent bar exam...

The specification of a patent application contains three examples of applying antisense technology to regulating three particular genes in *E. coli* cells. However, claims in the application are broadly directed to the application of antisense technology to any cell. As background, it is known in the art that similar technologies are often unpredictable and require testing to see if the technology works in a particular type of cell. The patent application should be:

- (A) granted because the inventor is not required to theorize or explain why others sometimes had failures with similar technologies.
- (B) granted because the claims are original, and therefore are self-supporting.
- (C) rejected because the the working examples in the application are narrow compared to the wide breadth of the claims and the unpredictability of the technology.

Amgen Seeks to Monopolize Nature

The Supreme Court takes up an overbroad patent that seeks to preempt a competitor's pharmaceutical product.

By Gregory Winter

March 26, 2023 2:50 pm ET

Nobel prize winner

The patent system is a key engine of scientific innovation. By encouraging scientists and innovators to publish their inventions in exchange for a temporary monopoly, patents promote the public exchange of ideas that leads to scientific progress. For that system to work, however, patents must be limited to what was actually invented and disclosed. If patents go too far—by allowing inventors to monopolize entire fields of future scientific endeavor—they can create barriers to innovation by preventing the very research that the patent system should be encouraging.

This is a real-world example of the question on the previous slide!

As both

courts explained, Amgen's broad patents on all PCSK9 antibodies failed to meet the basic patent requirement of "enablement"—they failed to provide enough information to enable a skilled person to make and use the full scope of the claimed invention, that is, the entire class of PCSK9 antibodies that Amgen's patents claimed. Instead, the patents described a few dozen antibodies within that class and outlined an arduous trial-and-error process for finding more, essentially a plan for research based on long-established antibody science.

HEALTH

Sanofi Wins Supreme Court Patent Dispute With Amgen

Justices rule unanimously that Amgen patents relating to its cholesterol drug Repatha shouldn't have been granted

By [Jan Wolfe](#) [Follow](#) and [Joseph Walker](#) [Follow](#)

Updated May 18, 2023 1:58 pm ET

WASHINGTON—The Supreme Court said [Amgen](#) patents relating to its cholesterol drug Repatha shouldn't have been granted by the patent office, handing a victory to rival pharmaceutical firm [Sanofi](#).

The 9-0 decision, written by Justice Neil Gorsuch, makes it more difficult for pharmaceutical companies to obtain broadly worded patents used to block competitors from the market.

In recent years, sales of Amgen's Repatha have picked up partly because of the company's aggressive discounting strategy. Repatha sales last year were \$1.3 billion; Sanofi and Regeneron's Praluent 2022 sales were \$408.2 million last year

Q4: This patent was invalidated by the US Supreme Court because the patent did not appropriately describe something... what did it not describe?

When does a patent expire?

Recall this from our discussion of effective filing dates...

First, note you can file:

- provisional patent app: a “placeholder” for 1 yr; must submit the real patent app within 1 yr
- continuation patent app: change the “bounds” of your invention but don’t add “new matter”

A patent expires 20 years after the earliest of:

- The actual filing date
- The earliest filing date of a prior application for which your patent is a continuation
- (in contrast to effective filing dates, provisional patent apps do NOT affect expiration dates)

... and then there can be an adjustment based on factors occurring during the review process...
this is described by the following text in the patent header:

“the term of this patent is extended or adjusted under 35 USC 152(b) by...”

Did this patent involve
a continuation
application?

Is there an adjustment
based on factors in the
review process?

When does this
patent expire?

Feb 22, 2033

(12) **United States Patent**
Hillman et al.

(10) **Patent No.:** US 10,674,722 B2
(45) **Date of Patent:** Jun. 9, 2020

(54) **ANTIMICROBIAL AND FOAMABLE
ALCOHOLIC COMPOSITIONS**

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(US)

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Salisbury, NC (US)

(73) Assignee: **GOJO Industries, Inc.**, Akron, OH
(US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: **16/177,489**

(22) Filed: **Nov. 1, 2018**

(65) **Prior Publication Data**

US 2019/0069540 A1 Mar. 7, 2019

Related U.S. Application Data

(63) Continuation of application No. 14/380,183, filed as
application No. PCT/US2013/027314 on Feb. 22,
2013, now abandoned.

(60) Provisional application No. 61/602,834, filed on Feb.
24, 2012, provisional application No. 61/621,763,
filed on Apr. 9, 2012, provisional application No.
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(12) **United States Patent**
Buggy et al.

(10) **Patent No.:** US 8,754,090 B2
(45) **Date of Patent:** *Jun. 17, 2014

(54) **USE OF INHIBITORS OF BRUTON'S TYROSINE KINASE (BTK)**

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(73) Assignee: **Pharmacyclics, Inc.**, Sunnyvale, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: 13/340,522

(22) Filed: Dec. 29, 2011

(65) **Prior Publication Data**

US 2012/0183535 A1 Jul. 19, 2012

Related U.S. Application Data

(63) Continuation of application No. 13/153,317, filed on Jun. 3, 2011.

(60) Provisional application No. 61/351,130, filed on Jun. 3, 2010, provisional application No. 61/351,655, filed on Jun. 4, 2010, provisional application No. 61/351,793, filed on Jun. 4, 2010, provisional application No. 61/351,762, filed on Jun. 4, 2010, provisional application No. 61/419,764, filed on Dec. 3, 2010, provisional application No. 61/472,138, filed on Apr. 5, 2011.

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Q5: When does this patent expire?