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Mr. Drew Hirshfeld
Commissioner for Patents
Performing the functions and duties of the Director
United States Patent and Trademark Office
Department of Commerce
*via* [www.regulations.gov](http://www.regulations.gov)

## Exhaustless Inc. Comments for Patent Eligibility Jurisprudence Study, 86 Fed. Reg. 36257 (July 9, 2021); Docket PTO-P-2021-0032

My name is Steven P. Endres, and I am the founder of Exhaustless Inc. We own several U.S. and foreign patents, have patents pending, and have a patent that was rejected under §101 and is currently before the PTAB. I am an inventor that licenses and uses patented technology. I have filed four U.S. patent applications; hold three U.S. patents; and have not licensed or sold any U.S. patent. I have filed three foreign patents, hold two foreign patents, and have not licensed or sold any foreign patents. I have not been involved in any other patent case since the Supreme Court's decision in *Bilski* in 2010.

In addition to my own comments below, I agree with the well-articulated comment of IBM, and echo their recommendation: "Reforms should reduce bias in patent eligibility jurisprudence against certain types of inventions. For software and other information technology inventions, the focus on "abstract ideas" and the subjective "something more" standard particularly impacts an innovator's ability to obtain appropriate patent protection."[1]

### Topic 1: The effect of patent eligibility jurisprudence on the conduct of business in my technology area.

My technology area covers systems, software, and aerospace engineering. I developed three innovations for civil aeronautics hardware that increase the throughput of the airspace, reduce reliance on jet fuel, and decrease noise, pollution, and green-house gases.[2] These technologies are sought by Congress in Title 51 statutes and in air transportation treaties. Those patents were issued relatively quickly and easily. But we could procure no private-sector license nor investment to develop the technology.

[1] IBM Cover Letter, Docket PTO-P-2021-0032 (Oct. 5, 2021).

[2] U.S. Patents 9,156,564, 9,079,671, and 9,920,695.

I then discovered a market failure in the reservation system that allocates the use of the national airspace, which was reducing industry profits and, in turn, preventing private investment and innovation in the air transportation system. I developed a market-clearing service to correct the structural defect causing the market failure.[3] This service creates new commerce as sought by Congress in Title 49 and in treaties related to commerce and trade.

Yet, the patent was denied under Title 38 U.S.C. § 101 grounds without citing any case text from judicial exceptions.

Despite the fact that a regulatory agency *currently manages delays at an airport using time slots* the examiner stated that "managing delay at an airport using time slots" was abstract — because it uses a mathematical concept. The examiner stated, "The claimed computer components are recited at a high level of generality and are merely invoked as tools to perform an existing airport management process." IBM explains the flaw with this rejection:

> *Because software transforms algorithms into meaningful results that can be replicated and easily modified, software is the medium of modern innovation. Software enabled innovations are the main value driver throughout our economy, and software is expected to play an even bigger role in the future because innovations in almost every economic sector generally involve and are embodied in computer technology (i.e., software).*[4]

The confusion of patent eligibility jurisprudence has prevented Exhaustless from discovering and disseminating market price information. Rather than granting Exhaustless the temporary exclusivity it has earned for developing and disclosing this solution, the patent examiner has *de facto* denied Congress and the Courts the only solution to emerge to a fifty-three-year market failure.

## Topic 2: Impacts I have experienced due to the current state of patent eligibility jurisprudence in the United States.

Patent prosecution strategy and portfolio management: As IBM stated, patent application prosecution "often requires an extensive dialogue with examiners about eligibility jurisprudence and how it applies to our inventions, which can resemble a philosophical debate."[5]

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[3] Patent Application US15/241,230.

[4] IBM 2021 Comments to USTPO on Eligibility (Oct. 7, 2021).

[5] *Id.*

The USPTO states that, "The guidance was developed as a tool for internal USPTO management and does not create any right or benefit, substantive or procedural, enforceable by any party against the USPTO. Rejections will continue to be based upon the substantive law, and it is those rejections that are appealable to the Patent Trial and Appeal Board (PTAB) and the courts."[6]

Yet in our case, the examiner does not base the rejection on substantive law but on the internal guidance document and the generic 'abstract idea and nothing significantly more.' The examiner states, "There is no indication that the combination of elements improves the functioning of a computer or improves any other technology" — overlooking the improvement of the entire process required to allocate the use of the national airspace to both carriers and passengers with prices. There has been no judicial exception to a market-clearing service in aviation: The only judicial review of the solution was in *Exhaustless Inc. v. FAA*, 931 F. 3d. 1209 (D.C. Cir. 2019) in which the Court declared Exhaustless' rights to operate the service and collect the market-clearing proceeds from carriers and passengers.

Citing a case without quoting the case text to support a rejection is a short-cut for the USPTO and all but ensures the case will be appealed to the PTAB. This practice does nothing to ensure high-quality patents, but rather unnecessarily drives up the cost of prosecution and delays progress.

Research and development / Employment / Product development: Our plans to hire software engineers to support the rollout of our market-clearing service at large hub airports across the U.S. and at over 300 foreign airports to allocate airspace reservations are on hold. In addition, our plans to hire electrical and aerospace engineers and professionals in other technical fields to develop the technologies that increase airspace capacity are one hold.

Without issuance of the pending patent the industry is unable to progress.

Ability to obtain financing from investors: Investors have told us to come back after the patent is issued.

Licensing of patents and patent applications: Our patents and pending patents are linked together in a new operating standard that fulfill legal requirements in commerce as declared by the Court in *Exhaustless Inc. v. FAA*. An issued patent would promote a competitive global standard as mandated by Congress.

[6] 84 Fed. Reg. 50 (Jan. 7, 2019).

Innovation: We have a pipeline of innovations for which we would like to file patent applications to provide new commerce in interstate and foreign transportation — but we cannot provide the public these needed products or services while we wait on patent protection for our current application. And other inventors cannot build upon these innovations until we disclose them.

In addition, our allotted time for exclusivity is being squandered in the appeals process rather than being productive in the market.

### Topic 7: The state of patent eligibility jurisprudence has caused us to change business strategies for protecting our intellectual property.

We should have been able to rely on the USPTO to uphold the statutory framework in defending our patent application. Instead, we had to adopt riskier strategies to protect our first-mover advantage while our patent case is delayed. These strategies involved researching the evolution of aviation law in the framework of our Constitutional rights to understand how regulators are still regulating a deregulated market.

### Topic 10: The state of patent eligibility jurisprudence impacts the global strength of U.S. intellectual property.

In our case, we implement new commerce sought by many trading partners. We thought the U.S. was the best place to start the market and the new operating standard since the U.S. government advertises itself as a free market economy, and because as citizens we have a constitutional right to conduct commerce. It would be odd for this commerce to originate outside the U.S. instead, but the confusion in the U.S. patent jurisprudence makes that more likely.

### Topic 11: The state of patent eligibility jurisprudence impacts the U.S. Economy as a whole.

Congress recognizes the importance that air transportation has on the U.S. economy as a whole, which is why airlines were singled out for subsidies in the CARES Act in response to the COVID-19 pandemic. Congress and the Supreme Court also recognize the importance of market competition to the public's everyday market decisions.[7] The lack of a market in airspace

[7] See *Va. Pharmacy Bd. v. Va. Consumer Council*, 425 U.S. 748, 762 (1976) ("As to the particular consumer's interest in the free flow of commercial information, that interest may be as keen, if not keener by far, than his interest in the day's most urgent political debate. . . . So long as we preserve a predominantly free enterprise economy, the allocation of our resources in large measure will be made through numerous private economic decisions. It is a matter of public interest that those decisions, in the aggregate, be intelligent and well informed. To this end, the free flow of commercial information is indispensable.")

reservations — and the related chronic-congestion delays — cause an enormous strain on carriers, passengers, and the entire U.S. economy as evidenced by Congressional and follow-on studies.[8] Our patent application overcomes a market failure, so the delay in the issuance of our patents is very costly to the public interest.

[8] *See* Charles E. Schumer, et al., Your Flight Has Been Delayed Again, Report by the Joint Economic Committee Majority Staff (May 2008), which estimated that flight delays cost the U.S. economy $41 billion in 2007. *See also*, Michael Ball, et al., Total Delay Impact Study, National Center of Excellence for Aviation Operations Research ("NEXTOR") (Nov. 3, 2010) which estimated that flight delays cost the U.S. economy $31 billion in 2007.