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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

WISK AERO LLC,

Plaintiff,

vs.

ARCHER AVIATION INC.,

Defendant.

CASE NO. 5:21-cv-02450

COMPLAINT

1. **MISAPPROPRIATION OF TRADE SECRETS UNDER 18 U.S.C. §§ 1836 *ET SEQ.***
2. **MISAPPROPRIATION OF TRADE SECRETS UNDER CALIFORNIA CIVIL CODE §§ 3426 *ET SEQ.***
3. **PATENT INFRINGEMENT UNDER 35 U.S.C. §§ 100 *ET SEQ.***

DEMAND FOR JURY TRIAL

Plaintiff Wisk Aero LLC ("Wisk") submits this Complaint against Archer Aviation Inc. ("Archer") and alleges as follows:

INTRODUCTION

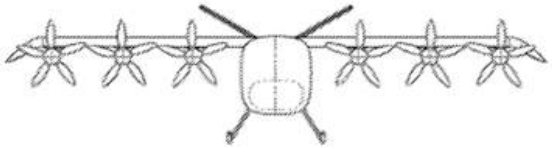
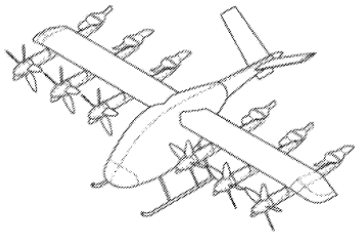
1. This is an action for trade secret misappropriation and patent infringement, which seeks to protect the valuable intellectual property rights of Wisk, one of the leaders in the nascent but burgeoning market for electric vertical takeoff and landing ("eVTOL") aircraft. Wisk brings this lawsuit to stop a brazen theft of its intellectual property and confidential information, and protect the substantial investment of resources and years of hard work and effort of its employees and their vision of the future in urban air transportation.

2. Over ten years ago, Wisk began developing eVTOL aircraft that could use all electric power to transition from rising like a helicopter to flying like a plane, portending a future of air taxi transportation that is safe, quiet, fast, affordable and pollution-free. Because no such aircraft had ever existed, Wisk designed and developed the technology and the components largely in-house with a team of hundreds of engineers. By early 2019, Wisk had completed over a thousand test flights with several generations of prototype aircraft, well on the way to delivering on the promise of urban air transportation. Wisk is currently developing its sixth-generation aircraft, which it plans to certify with the Federal Aviation Administration ("FAA") in the U.S.

3. As a business developing such cutting-edge technology, Wisk has taken numerous steps to protect its intellectual property, including in the form of trade secrets and patents. Indeed, the U.S. Patent and Trademark office has awarded Wisk nearly 80 patents, including the specific patents asserted here, with many additional patent applications pending. Wisk's intellectual property is core to its business.

4. In February 2021, a new entrant in the eVTOL market, Archer, announced that it soon would be going public and release its own eVTOL aircraft. This announcement was surprising for at least a couple of reasons. First, only about a year prior to its announcement, Archer appears to have had little or no meaningful operations, let alone all of the research, development and testing completed that would be a predicate to flying even a prototype of an eVTOL aircraft. Archer's timeline to release an aircraft was a fraction of the time taken by its

serious competitors, who spent a decade researching, developing and testing their aircraft. Second, Archer employed perhaps a few dozen engineers, a fraction of the number employed by those competitors. But perhaps the most surprising of all was the design that Archer released for its eVTOL aircraft. Archer's aircraft appeared to be a copy of a potential design that Wisk had developed for its next-generation aircraft and submitted in a confidential patent application to the U.S. Patent and Trademark Office in January 2020, as shown below:

Wisk (January 2020 Patent Application)	Archer Investor Deck 2021
	
	

5. The disclosures in Archer's 2021 investor materials further reveal that the design touted by Archer is infringing at least several patents issued to Wisk, which cover innovations related to aircraft design for enhanced stability and control, thermal management of rotor control assemblies, and battery architecture to enable fast charging.

6. That Archer's aircraft design bears such a striking resemblance to the design in Wisk's recent, confidential patent application (and, indeed, infringes multiple issued Wisk patents), could not have been a coincidence. In January of last year—the same month that Wisk had submitted that patent application—Archer recruited and hired ten of Wisk's engineers. Concerned about this targeted recruiting, Wisk hired a third party to conduct a forensic investigation. What it discovered was unsettling. One of those engineers surreptitiously downloaded thousands of files near midnight, shortly before he announced his resignation and immediately departed to Archer. Those files contain immensely valuable trade secrets and

confidential information about Wisk's aircraft development spanning the history of the company. Another engineer downloaded numerous files containing test data, while yet another wiped any trace of his computer activities, in each case shortly before departing to Archer.

7. In response to Archer's targeted recruiting effort, and the suspicious forensic evidence, Wisk immediately took steps to demand the return of its proprietary and trade secret information. The former Wisk employees, however, claimed ignorance, denied possessing such information, or suggested that such information had been subsequently destroyed. Similarly, Archer denied any wrongdoing. Only when Archer released its February 2021 investor materials, containing a technical description and detailed photos of its proposed aircraft architecture, was the full scope of Archer's intellectual property theft revealed.

8. Given the design of the aircraft that Archer has now publicly disclosed and touted to investors, the confidential information and trade secrets contained in the files downloaded by the former Wisk engineers now at Archer are all the more relevant and valuable for that aircraft and Archer's operations. Indeed, it appears Archer is hardly keeping the origins of its aircraft a secret, explaining the astonishing timeline for its development in quite candid terms.

9. In an interview, Archer's co-founder, Adam Goldstein, acknowledged that "a lot of the folks from Archer came from Wisk." Archer's other co-founder, Brett Adcock, said "our team here at Archer has been working on this for 10 years." Goldstein heaped praise on former Wisk engineers, stating "this is the sixth aircraft that they're building, sixth full scale aircraft." This "sixth aircraft" was, in reality, a virtual copy of a potential design for the sixth-generation aircraft Wisk is currently developing. Goldstein elaborated, "it's not a question to us whether the technology work, you can literally just go to a Wisk website . . . you can see these vehicles work." He called Wisk's former engineers an "[i]ncredible group with incredible technology." Adcock confirmed that "we're not waiting on any technology breakthroughs."

10. Apparently oblivious to the import of these admissions, Archer's co-founders only reinforced the conclusion that their business is built on "incredible technology" that is not their own. Archer's blatant trade secret misappropriation and patent infringement must be enjoined.

THE PARTIES

11. Plaintiff Wisk Aero LLC is a limited liability company organized under the laws of the State of Delaware, with its principal place of business located at 2700 Broderick Way, Mountain View, California 94043.

12. On information and belief, Defendant Archer Aviation Inc. is a corporation organized under the laws of the State of Delaware, with its principal place of business located at 1880 Embarcadero Road, Palo Alto, California 94303.

JURISDICTION AND VENUE

13. This Court has subject matter jurisdiction over the trade secret claims asserted herein under 18 U.S.C. § 1836(c), and 28 U.S.C. §§ 1331, 1367. The Court has subject matter jurisdiction over the patent infringement claims pursuant to the Federal Patent Act, 35 U.S.C. § 101 *et seq.* and 28 U.S.C. §§ 1331 and 1338(a).

14. Venue is proper in this District under the provisions of 28 U.S.C. § 1391(b), because a substantial portion of the events or omissions giving rise to the claims occurred in this judicial district, the intellectual property that is the subject of this suit is situated in this judicial district, and Defendant Archer resides in this District for the purposes of 28 U.S.C. § 1391. Venue is also proper in this District under the provisions of 28 U.S.C. § 1400(b), because this is the judicial district where Defendant "resides" and/or where the Defendant "has committed acts of infringement and has a regular and established place of business."

15. This Court has personal jurisdiction over Defendant Archer because Archer has continuous and systematic contacts with the State of California, including because its principal place of business is located within this judicial district. Additionally, and on information and belief, Archer has intentionally targeted and misappropriated Wisk's technology, and in the process Archer has directed its tortious behavior at this District.

INTRADISTRICT ASSIGNMENT

16. Because this action is an Intellectual Property Action within the meaning of Civil Local Rule 3-2(c), the action is to be assigned on a district-wide basis.

FACTS COMMON TO ALL CLAIMS

17. Wisk is a leader in the nascent market for eVTOL aircraft, beginning its journey in 2010. Wisk employs hundreds of engineers and other professionals in its offices in Northern California, Georgia and New Zealand who are developing the future of urban air mobility. Wisk's full-scale aircraft have logged approximately 1,500 flights since first taking to the skies.

18. Wisk's aircraft represents the culmination of a decade of technological development, countless man hours of research, labor, and flight testing, and very significant investments.

The eVTOL Market

19. Recent advances in electric propulsion and battery technology have created new opportunities for the development of eVTOL aircraft. This new class of aircraft uses electric power to take off and land vertically, hover in place, and fly forward at a constant altitude.

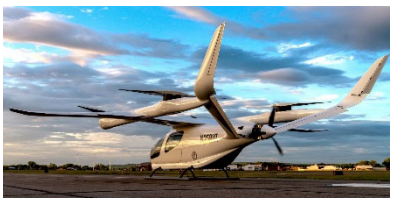
20. As eVTOL aircraft technology continues to evolve, it promises to revolutionize the field of urban mobility. A technological solution capable of providing passengers with clean, fast, safe, and efficient air travel on-demand could drastically alleviate urban congestion and save commuters thousands of hours in wasted travel time.

21. The market for a viable technological solution is projected to be quite significant. For example, in 2018, Morgan Stanley released a research report that estimates the global total addressable market for urban air mobility could be conservatively valued at $1.5 trillion dollars by 2040.

22. While the state of current technology has created the opportunity for eVTOL, there are a number of technical challenges that remain to be solved. Air travel generally requires a large energy to weight ratio, which is not easily achieved through electrical power sources. Moreover, aerial passenger air travel in urban areas must achieve an exacting level of safety, which requires a design that is robust and redundant. There is also the need to balance technological complexity (*e.g.*, propulsion, batteries, human-machine interfaces, etc.) with the need for mass manufacturability of any potential solution. Moreover, any eVTOL aircraft must be certified by the FAA in order to fly in the national airspace system and carry passengers in the United States.

FAA certification standards are highly rigorous and exacting, requiring significant effort and resources for traditional aircraft. eVTOL aircraft are a completely new concept and different companies are working closely with the FAA on the certification process, and it has taken more than a decade of advancement for designs to evolve to the point where companies can attempt to seek certification. These are just a few of the difficult challenges and tradeoffs that make development of a commercially viable eVTOL aircraft time- and resource-intensive.

23. Many different entrants to the eVTOL market have grappled with these and other challenges for years, spending hundreds of millions of dollars in research and development to generate aircraft designs that potentially could fulfill the promise of safe and efficient urban air mobility. As different companies have attempted to address these challenges, they have predictably experimented with a wide range of solutions, arriving at various potential configurations for aircraft design and architecture. This is demonstrated by the wide range of conceptual vehicle architectures that have recently emerged as potential solutions:



The History of Wisk

24. Wisk was originally founded in 2010 as Levt, Inc., a startup focused on the development and manufacture of eVTOL aircraft, including both piloted and autonomous aircraft. Levt was then renamed Zee.Aero Inc., and from 2011 through 2014, Zee.Aero was engaged in extensive research and development into "next generation" electric aircraft. Zee.Aero undertook significant research into battery and power systems designs, because the battery was typically the

heaviest part of the aircraft. Throughout this period, Zee.Aero tested multiple, different aircraft configurations, such as the following design reported on by eVTOL News:

25. After each test, Zee.Aero iterated its designs and design concepts. As part of this process, in 2015, Zee.Aero began testing an aircraft design designated "Grits." The Grits design relied on a single fixed wing, mounted high on the aircraft's fuselage, with 12 rotors, two of which could tilt from a vertical to a horizontal position, and a V-shaped tail:

26. In 2016, Zee.Aero and a sister company, Kitty Hawk Corporation, merged and continued to operate under the Kitty Hawk name.

27. By 2016, Zee.Aero (and later Kitty Hawk) had found success with the fixed-wing, 12-rotor design, and continued to iterate on that design with the aircraft shown here:

28. Wisk further developed this fixed-wing, 12-rotor design into its current flagship aircraft, Cora. Publicly announced under the Kitty Hawk name in 2018, Cora is the fifth generation of aircraft developed by Wisk, and it continues to use a fixed-wing, 12-rotor design, as shown here:

29. In June 2019, Kitty Hawk and The Boeing Company ("Boeing") formed a joint venture in order to advance the development of safe urban air vehicles, focusing on the Cora aircraft as a potential air taxi. In order to create this joint venture entity, Kitty Hawk spun off the former Zee.Aero business under the name Cora Aero LLC. Cora Aero LLC continued development on the Cora and next-generation aircraft throughout 2019. In late 2019, Cora Aero LLC was renamed Wisk Aero LLC, which continues to operate as a joint venture between Boeing and Kitty Hawk.

30. In 2019, Wisk became the first member of the eVTOL industry to partner with the New Zealand government for the Integrated Airspace Trials—a program created by New Zealand to accelerate the integration of advanced unmanned aircraft into commercial flight. In 2020, Wisk and the government of New Zealand announced the first ever passenger-transport trial for an autonomous eVTOL aircraft.

31. In early 2020, Wisk was accepted into the Center for Emerging Concept and Innovation ("CECI") program by the FAA, leveraging previous FAA engagements. Since the CECI on-boarding, Wisk has maintained frequent engagements with the FAA regarding airworthiness certification, airspace integration, and autonomy certification, as well as more recent discussions on airport integration, among other topics. All of Wisk's FAA engagements are supported by work conducted with the Civil Aviation Authority of New Zealand and other regulatory bodies

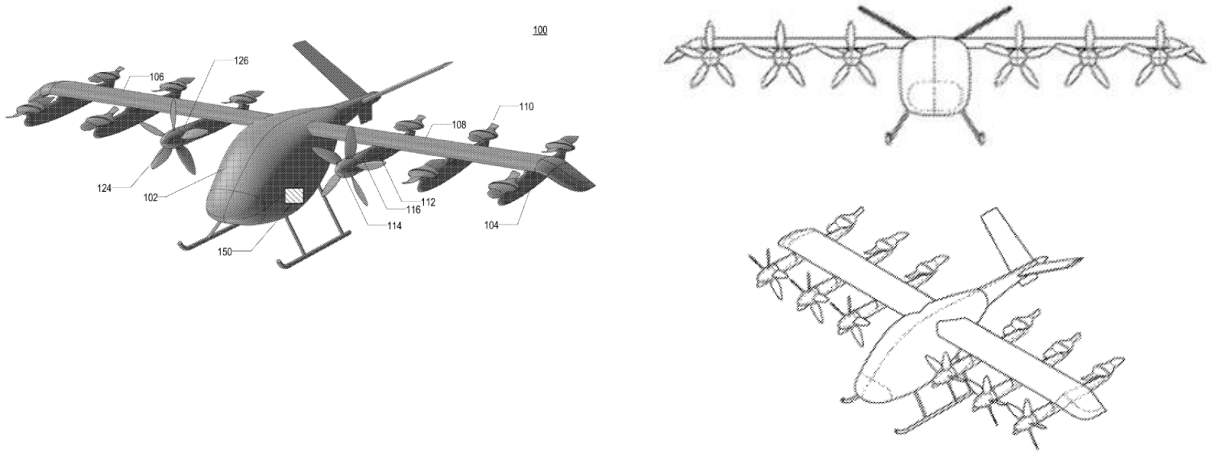
32. In Fall 2020, Wisk entered into a Space Act Agreement with the National Aeronautics and Space Administration ("NASA"). The partnership is part of NASA's Advanced Air Mobility National Campaign strategy to develop key guidance for urban air mobility operations, while addressing key challenges, such as certification and standards development, in an effort to accelerate U.S. leadership in emerging automated aviation technology. Specifically, the partnership initially addresses critical National Campaign safety scenarios with a focus on autonomous flight and contingency management, including collision avoidance and flight path management. Through the partnership, NASA and Wisk are working to execute on opportunities to evaluate architectures, perform simulation studies, and develop an overall validation framework that can be leveraged for autonomous flight assessments.

33. Since 2020, Wisk has been actively engaged with various cities in the U.S. for potential deployment of its aircraft. Wisk has helped cities evaluate not only autonomous eVTOL infrastructure and logistical needs, but more importantly, the community engagement needed for successful deployment of autonomous air taxi services. In addition to the U.S., Wisk has engaged cities and communities around the world, leveraging its many years of deep experience gained from Wisk's New Zealand operations.

34. As of today, Wisk has grown into a company of approximately a few hundred employees that continues to research and develop eVTOL aircraft. Wisk is currently developing its sixth-generation aircraft, which will surpass Cora's performance and is planned for certification by the Federal Aviation Administration in the U.S.

35. As a testament to the hard work and repeated innovations of its many engineers, and as part of its continuous efforts to protect its intellectual property, Wisk has secured many patents on various aspects of its aircraft, and elected to keep confidential many innovations as trade secrets. Wisk's innovations span numerous aspects covering the entirety of an eVTOL aircraft, including propulsion, power management, avionics, flight control, and manufacturing, among other areas. In one example that is relevant here, in January 2020, Wisk filed a confidential, provisional patent application that discloses an "Aircraft with Tilting Fans." Excerpts from figures in that application disclose the following aircraft designs:

Wisk (January 2020 Patent Application)



Developing and Commercializing eVTOL Aircraft

36. The development and eventual commercialization of an eVTOL aircraft is an iterative process that involves several distinct phases, some of which may need to be repeated several times.

37. **Concept**. The first step in eVTOL design is to create an overall aircraft concept – develop the objectives and high-level functionality that are desired, and a conceptual vehicle that could enable these to be achieved. As the concept is further developed and refined, systems and subsystems will be conceived regarding propulsion, aerodynamics, energy requirements, etc. Developing a conceptual design requires determining how the aircraft will achieve lift (*e.g.*, lift fans vs. wings vs. rotors), determining the aerodynamics of the aircraft, the aircraft's overall design, estimating mass ratios including the percentage of the aircraft's weight attributable to the battery, and all of the other steps required to design an aircraft "on paper."

38. **Prototype**. A conceptual design will often be developed into models, usually in computer-aided design (CAD) models, and sophisticated modeling and simulation tools will be used to advance the prototype design. Systems and subsystems will be developed and refined. The prototype and its various systems will be "tested" with simulation tools to further refine the design. Finally, a physical sub-scale model often will be built and may be configured with some of the aforementioned systems and subsystems components, and sometimes with off-the-shelf parts when warranted.

39. **Testing and Evaluation**. The prototype and its various systems will be tested and evaluated for performance during normal operation and during extreme situations and fault/failure conditions. These tests may be done within simulation, with physical prototypes, or a combination. These tests will be used to further refine the design and successively more complex prototypes may be built and evaluated as a result of these tests. The prototyping and testing/evaluation steps are an iterative process, and determine whether the concept can be successfully developed into a full-size aircraft—or if it is necessary to "go back to the drawing board" to the concept phase.

40. **Manufacturing**. If the concept succeeds through the prototyping and testing/evaluation phases, demonstrating the potential for success of the aircraft concept, then the next step is to manufacture a full-size aircraft to test and iterate the design further. Initially, this is an extension of the prior processes, since a full-scale aircraft is really a prototype itself. However, a full-scale prototype does not simply involve building a "larger" version of the sub-scale model, and often requires developing and machining custom parts, and even building custom tools for the purpose of manufacturing custom parts besides the design and development of the full-scale power, propulsion, avionics systems, etc. While developing this full-scale aircraft, manufacturability is also a key consideration, so that a successful design could be manufactured in volume. Manufacturing a full-scale aircraft is also not the end of the process. Wisk has manufactured multiple full-scale aircraft for testing, before returning to the concept stage for a new design. This process is depicted in the images above, which show full-scale aircraft built using various designs. Even now, the process is not complete: Wisk is currently developing a sixth-generation aircraft to succeed Cora. As companies mature in their development, the time to achieve flight of a full-size aircraft can be shortened if the design depends on prior generation aircraft.

41. **Certification**. Once the full-size aircraft is built and proven to succeed, the aircraft must be "certified" for commercial operation by a governmental aviation authority. For traditional aircraft, certification involves a standard "set of rules" with which the aircraft must comply in order to qualify for commercial operation. However, the set of rules differs according to the

aircraft: for example, a single-engine Cessna and a Boeing 747 will need to follow different sets of rules in order to qualify for commercial operation. There is currently no recognized certification standard for eVTOL aircraft in the U.S. In 2019, Wisk began developing certification rules with the government of New Zealand.

42. Wisk's decade-long development timeline, from concept to commercialization, is consistent with Wisk's competitors in the eVTOL industry. For example, Joby Aviation was founded in 2009, but reports that it did not complete its first flight with a sub-scale model of its most current aircraft design until 2015. Moreover, Joby still does not have a certified commercial aircraft, despite beginning development a year before Wisk was founded, and working with a large team—recent filings with the United States Securities and Exchange Commission ("SEC"), and statements on Joby's website, reveal that Joby has between 500 and 700 employees.

43. Even companies founded later than Joby and Wisk recognize that developing an eVTOL aircraft requires a decade's worth of development time and investment. For example, Lilium was founded in 2015 in order to develop eVTOL aircraft used for "regional transportation." According to Lilium's public statements, Lilium does not expect to introduce a commercial product until 2024—nearly a decade after its founding.

44. Similarly, Volocopter, another eVTOL aircraft developer, was founded in 2007, but did not conduct the first flight of its current aircraft design until 2011, and still has yet to qualify for certification of commercial aircraft a full decade later.

45. In contrast to every other serious competitor, Archer claims to have completed multiple stages of the development and commercialization process in less than two years.

Wisk's Efforts to Maintain the Secrecy of Its Proprietary Information

46. During the past decade, Wisk has developed substantial volumes of valuable, proprietary intellectual property. With the exception of its published patents and patent applications and carefully chosen information disclosed on its website and other promotional materials, Wisk maintains confidentiality and secrecy over its intellectual property using physical security measures, document marking, electronic security measures, and legal security measures.

47. **Wisk's Physical Security Measures.** Wisk has implemented a number of security policies and practices at its physical offices, including:

(a) Wisk employees are required to wear badges while present in Wisk's facilities;

(b) Visitors to Wisk's facilities are required to sign a nondisclosure agreement, and are issued a "Visitor" badge that must be visible at all times within the facilities;

(c) Access to sensitive locations within Wisk's facilities is controlled by employee badges, which must be swiped on a badge-reader in order to gain access;

(d) Wisk maintains logs of after-hours access to its facilities; and

(e) Wisk uses closed circuit cameras to monitor its facilities and facility access.

48. **Wisk's Document Marking.** Wisk employees are instructed to use document templates that are stamped "Proprietary" or "Confidential and Proprietary" when preparing reports and other documents that contain, reveal, or reflect sensitive or proprietary intellectual property.

49. **Wisk's Electronic Security Measures.** Wisk has installed a number of electronic security measures to control access to its confidential and proprietary information, including:

(a) Wisk's internal network uses Juniper Gear hardware that employs switches and firewalls to protect against illicit network access;

(b) Wisk's corporate documents are stored using Google LLC's Gsuite document management products, including Google Drive and corporate Gmail. Employees cannot access those locations without using a password;

(c) Wisk's servers may be accessed using a virtual private network ("VPN") set up by Wisk, and which requires a Wisk-issued password with certain "minimum strength requirements";

(d) Computers at Wisk's facilities can only access the internet through a firewall;

(e) Wisk updates its firewalls and security software every three to six months;

(f) Wisk maintains logs of network accesses, including accesses and downloads from its corporate Google Drive document repositories;

(g) Wisk encrypts the hard drives on Wisk-issued laptops that contain removable hard drives; and

(h) Wisk maintains file backups using third party software from Code42 and Backupify.

50. **Legal Security Measures.** In addition to physical and electronic security, and document marking, Wisk also employs a number of legal security measures to protect the secrecy of its intellectual property, including:

(a) Wisk requires all employees to sign an "Employee Invention Assignment and Confidentiality Agreement," which requires Wisk employees to maintain the confidentiality of Wisk's intellectual property, and to assign to Wisk all intellectual property developed in the course of employment, as a condition of employment;

(b) Wisk requires all employees to sign an agreement to abide by the Wisk employee handbook and/or other policies which contain nondisclosure and confidentiality provisions, requiring Wisk employees to maintain the strictest confidence over Wisk's intellectual property;

(c) Wisk requires all employees to attend a security training regarding the proper steps, and methods, to maintain confidentiality over Wisk's intellectual property; and

(d) Wisk requires all departing employees to participate in an "exit interview," and to certify during that interview that they have returned all of Wisk's confidential information, as required by the Employee Invention Assignment and Confidentiality Agreement and the Wisk employee handbook and/or policies. During the exit interview, the employee must also return any badges, keys, keycards, notebooks, notes, and other documents created in the course of their employment at Wisk, and to certify that all such objects have been returned.

51. In short, Wisk has implemented substantial security measures, including physical security, document marking, electronic security and legal measures to maintain confidentiality over the valuable intellectual property it has developed over the last decade.

Archer's Development Claims

52. On information and belief, and given the near-industry-standard decade-long timeline, Archer's claim to be able to develop a full-scale aircraft in just two years (or less), with

full commercialization in four, cannot be explained through independent development. Instead, it appears that Archer's business is built on intellectual property that is not its own.

53. Archer was not founded by industry insiders or experienced engineers. According to online profiles, Archer's co-founders, Brett Adcock and Adam Goldstein, both attended the University of Florida and worked in the finance industry before founding an "online hiring marketplace" in 2012. On information and belief, Adcock and Goldstein lacked any meaningful technical experience developing eVTOL aircraft when they founded Archer. Instead, the two raided the workforces of more experienced companies.

54. On information and belief, Archer was incorporated "on paper" on October 16, 2018, but it does not appear to have had any real operations at that time—in fact it does not even appear to have had an office. According to records from the Florida Secretary of State, Archer applied for authorization to transact business in Florida in November 2019. At that time, Archer listed its offices as located at the University of Florida (which both Adcock and Goldstein attended), and its contact information was listed as a post office box in New York City.

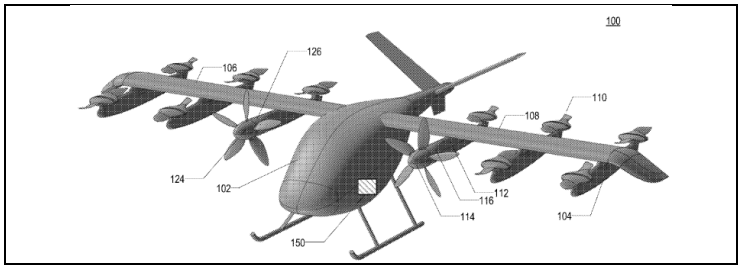
55. A Wisk employee who was approached by Archer with a job offer in late 2019 reported that Adcock and Goldstein could not say where the company would be located, because Archer was "still shopping" for office space at that time. Archer could not even confirm whether its offices would be in the San Francisco or Los Angeles areas. The Wisk employee turned down Archer.

56. Others, however, bought into the sales pitch. In late 2019, Archer recruited Thomas Muniz, who was Wisk's Vice President of Hardware Engineering. He resigned in December 2019 to join Archer. Since resigning from Wisk, Muniz has been prominently featured in Archer's investment and other materials.

57. On information and belief, after Muniz was hired by Archer, Muniz helped Archer hire away more Wisk employees. For example, another current Wisk employee reports that he agreed to have coffee with Adcock and Goldstein, and listen to their job offer, on the basis of Muniz's recommendation in late 2019. During the coffee, Adcock and Goldstein could not confirm that Archer had any other employees, beyond Muniz. However, after having hired Muniz,

Archer's co-founders did reveal the design they were considering for their aircraft: it would have six fans along the front wing, with the inner two fans capable of tilting, and six stationary lift fans in the back. The design described appeared to be the confidential Grits aircraft design that Wisk had already been working on years earlier, discussed above.

58. In fact, Wisk submitted that design in a confidential patent application to the U.S. Patent and Trademark Office, as shown here:



59. Despite Archer apparently having no offices and no employees beyond Muniz as of December 2019, Adcock and Goldstein were ultimately successful in hiring away ten Wisk engineers between January 8 and January 14, 2020. As of today, Archer has hired at least 20 former Wisk employees.

60. If Archer had merely hired away employees, Wisk would have little reason to complain: Wisk also depends on a fluid and elastic market for talent and strongly believes in the ability of employees to have the freedom to choose where they work. But Archer did not stop with employees.

Archer's Raid on Wisk's Confidential, Proprietary, and Trade Secret Information

61. After the departure of ten employees to Archer within a week, in keeping with its efforts to protect its valuable intellectual property, Wisk hired a third party to conduct a forensic investigation to determine whether it had any cause for concern. It did not take long to uncover suspicious activity. One of Muniz's direct reports left Wisk for Archer on January 8, 2020. Prior to departing, he wiped forensic evidence from one of his computer hard drives, eliminating evidence of his computer activity such as file browsing, downloads, internet history, and other records. When asked to explain why he wiped this information from his laptop, he denied doing so and could not explain the evidence to the contrary.

62. Similarly, an analysis of a Wisk-issued laptop returned by another employee, who also left on January 8, revealed that on December 19, 2019, he downloaded nearly two dozen slide presentations from Wisk's secure, corporate Google Drive repository. The downloaded presentations comprise that employee's regular reports to Wisk on the outcome of his research; and the total download constitutes that employee's findings over the course of nearly two years of work. After downloading the presentations, the employee then inserted a USB storage device into the laptop and, on information and belief, copied the files onto that storage device—a device he did not turn in to Wisk. When asked to explain this behavior, he claimed that he had been trying to download a "joke" slide presentation, and that he had turned in the USB device. But this story was inconsistent with the evidence: he downloaded nearly two dozen presentations, not just one; and none of the USB devices he returned matched the serial number of the USB device he used on the day he downloaded the presentations.

63. But however suspicious the foregoing activities were, they were just the beginning. On January 10, 2020, another Wisk engineer announced that he was resigning from Wisk to join Archer ("Engineer Z"). The announcement came as a surprise to Wisk and Engineer Z's coworkers. In connection with his departure, Engineer Z dropped a curt note: "I've decided to leave Wisk Aero LLC today." However, he appears to have planned his departure some weeks in advance.

64. On his last day with Wisk, Engineer Z turned in his Wisk-issued laptop computer. A forensic analysis of that computer revealed that, between 3:00 and 4:30 pm, on December 25, 2019, he downloaded approximately 380 files from Wisk's secure, corporate Google Drive repository. During that same time period, he also inserted two USB storage devices into the Wisk-issued laptop and copied files to those storage devices. He did not turn in those USB storage devices before leaving Wisk and, on information and belief, the files written to those devices remain in his possession while he works at Archer.

65. The USB devices were just the tip of an iceberg. After downloading hundreds of files in the afternoon, Engineer Z did not call it a night. Instead, forensic records from Wisk's Google Drive account reveal that, between 10:52 pm and midnight on December 25, 2019, he

connected to Wisk's Drive account from a private network and downloaded thousands of additional files—more than 3,400 files. This download is not reflected on any device he turned in to Wisk when he resigned and, on information and belief, those files remain in his possession while he works at Archer.

66. That was not all. Apparently not content with the scope of his holiday download, forensic records reveal that Engineer Z downloaded nearly 1,200 files from Wisk's Google Drive account between 3:00 and 5:30 pm on December 26, 2019. And several hours later, he downloaded a few additional files. These downloads are not reflected on any device he turned in to Wisk when he resigned and, on information and belief, those files remain in his possession while he works at Archer.

67. On April 3, 2020, Wisk contacted Engineer Z and asked him to return the USB device(s) that were inserted into his Wisk-issued laptop and used on December 25, 2019. He did not respond. Wisk followed up with him on April 20, 2020, and he still did not respond.

68. In fact, Wisk received no response or explanation from him until May 21, 2020. At that time, Engineer Z responded by email claiming that any observed activity on his laptop from December 25, 2019 was part of his normal work, and that he had been trying "to solve a critical problem with the motor controller overheating." This explanation did not make any sense, because the problem he cited had been solved several days before the downloads occurred.

69. Separately, he admitted that he "looked and . . . found" two USB devices that were the same brand as the USB devices used on his Wisk-issued computer, but he claimed he did not know whether either was the USB device Wisk observed. He then claimed the USB devices did not have "any user files," he believed he "reformatted" the devices, and there was supposedly "nothing there for [Wisk] to collect."

70. The files downloaded by Engineer Z contained Wisk's highly confidential, proprietary, trade secret information. On information and belief, Engineer Z improperly retained these files after his employment with Wisk concluded, and Archer knew, or at a minimum had reason to know, that Engineer Z had improperly retained these files from his employment at Wisk. Indeed, last year Wisk informed Archer about Wisk's concerns, but Archer failed to take

reasonable steps to address them. As Wisk anticipates discovery will further uncover and add to the evidence discussed herein, Archer improperly relied on the information contained in these files for its own benefit to build its business in brazen disregard of Wisk's intellectual property rights.

The Trade Secrets at Issue

71. The sheer volume of the theft makes it impractical to describe every single stolen Wisk trade secret in this Complaint. Nonetheless, the stolen files can be categorized into at least five general categories of trade secrets: aircraft designs, component designs, system designs, facility inventory, and test data.

72. **Aircraft Designs.** The files stolen disclose confidential aircraft designs in four general categories: Flight Readiness Reviews ("FRRs"), Conceptual Design Reviews ("CoDRs"), Preliminary Design Reviews ("PDRs"), and Critical Design Reviews ("CDRs"). FRRs are typically large slide presentations, sometimes over 100 slides, that disclose years of work on an aircraft design. The purpose of an FRR is to determine whether the design is ready for flight, so each FRR discloses simulation and test data in addition to aircraft design. By contrast, CoDRs represent more "conceptual" documents that disclose and compare high-level design concepts (such as hypothetical system architecture) before committing to a detailed specific design. PDRs and CoDRs disclose years of aircraft design work by Wisk, generally involving iterative prototyping and testing/evaluation development steps. Using the information contained in these files, Archer could take the years of lessons learned by Wisk's engineers and rely on the countless hours they spent designing and developing the various generation of aircraft in order to drastically shortcut this process. Indeed, that appears to be exactly what happened here.

73. **Component Designs**. In addition to designs for entire aircraft, the files stolen also contain explicit instructions regarding how to manufacture and assemble certain components for use in the aircraft. For example, the stolen files include printed circuit board ("PCB") schematics, along with bills of materials that disclose the components to be used in the PCB, as well as instructions for assembling and setting up the PCB using the components from the bill of materials. Additionally, the stolen files also include CoDRs, PDRs, and CDRs that Wisk created for certain aircraft components and systems. Using the information contained in these files,

Archer could precisely replicate multiple, custom components in Wisk's aircraft, including motor controllers, power controllers, power distribution systems, and other features.

74. **System Designs.** This category consists of files that disclose confidential designs of the various systems within the aircraft. Generally, these electric aircraft have multiple systems, including flight controls, guidance/navigation and control systems, low voltage power systems, high voltage power systems, charging systems and so forth. These systems consist of devices that are interconnected via electric power, communications, and control wiring, in some cases using harnesses. The system design documents will include flight safety-critical configurations to ensure redundancy and mitigate faults to minimize risk, as incorporated by system design as well as physical layout and configuration. These systems work interactively, where the individual components are incorporated as part of a system and interact with the system, sometimes using a master controller, and the system will interface with and interact with other systems as part of the overall aircraft operation. The stolen files are related to designs of these systems and the interfacing of components and other systems, and the interaction and compatibility among components and systems due to issues such as electromagnetic interference (EMI). These files relate to the evolution of the designs over many months and years, from the high-level system architecture and functionality down to detailed interconnections and circuits, all focused on aircraft performance, safety, and manufacturability. Numerous CoDRs, PDRs, and CDRs as well as other design and issue focused files related to specific aircraft systems (*e.g.*, the low voltage power system, motor control system, etc.) are included in the files in this category. Using the information contained in these files, Archer could take years of accumulated, evolutionary and innovative design and engineering knowledge to develop aircraft systems with integrated components that achieve performance requirements, compatibility and fault tolerance while minimizing risk.

75. **Manufacturing.** The stolen files include details of Wisk's manufacturing facilities, tooling and processes for aircraft structures, electronic systems, and components. These files include facility floorplans and layouts, photographs of machining equipment and tools, molds for structures, various jigs, hand tools, etc. A large number of photos depict the machines and

tooling Wisk uses to design and manufacture their aircraft and aircraft components. Many of the machines were photographed twice: one photo depicting the whole machine, and one photo containing a "close up" showing the label with the machine's manufacturer information. Photos also depict testing equipment that was used as part of the prototype development and evaluation processes, including non-destructive inspection (NDI) and thermography equipment, and electrical testing equipment. The files include materials, tooling and vendor information for composite structures and bonding as well as test results on physical attributes of these structures. Using the information contained in these files, Archer could replicate Wisk's manufacturing and machining capabilities, and skip years of trial and error to determine the most effective vendors and necessary machines.

76. **Test Data.** The stolen files also contain raw Wisk testing data, including tests of various aircraft configuration, system and component designs during their development phases. This test data included both raw outputs such as screenshots of oscilloscope readings as well as charts and graphs of data points designed to report on the outcome of Wisk's experiments. This data would be particularly valuable to a competitor such as Archer that intended to build an aircraft replicating Wisk's design.

77. Each of these categories of information is valuable to Wisk specifically because it is confidential and proprietary. Wisk's aircraft, component and system designs reflect hundreds of thousands—if not millions—of man hours spent developing, simulating, and testing aircraft concepts. As long as those concepts, and the designs built on those concepts, remain confidential to Wisk, then only Wisk benefits from that work. However, once these trade secrets and confidential information are improperly taken and used by a competitor, then the competitor—in this case Archer—unfairly benefits from Wisk's work. The competitor not only saves significant resources by avoiding the development process and testing that Wisk invested in, but also saves critical time by building a finished aircraft (or aircraft components and systems) much more quickly than otherwise would be possible for certification and deployment early in a competitive market.

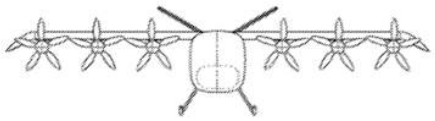
78. Similarly, Wisk's manufacturing is valuable insofar as it remains secret, because Wisk had to build up its manufacturing facilities and processes over many years and through extensive testing. As discussed above, when testing a concept design using a sub-scale model, it is not unusual for a company to use "off the shelf" commercially available products. However, once the concept is proven using a sub-scale model, transitioning to a full-scale aircraft typically requires designing and building custom parts. As with any other iterative process, Wisk had to invest significant time and resources determining the best processes and machines to use in order to, among other things, tool custom parts—in addition to determining which aircraft components should be custom-designed in the first place. A competitor that gains access to this information may be able to determine the nature and types of custom aircraft parts built by Wisk, the optimal processes and methodologies to use to manufacture such parts, and the vendors used for sourcing and contract manufacturing.

79. Finally, Wisk's test data derives value from remaining confidential because it reflects the results of Wisk's experiments into "what works and what doesn't work" when developing a new design for aircraft and aircraft systems. Knowing what doesn't work is just as important as knowing what does. If Wisk's competitors obtained or benefited from the information in the test data, they could avoid the substantial investment in time and money required to make the same evaluations about the design concepts of the aircraft and its systems and components.

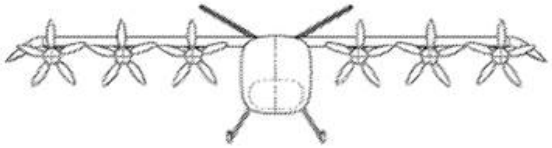
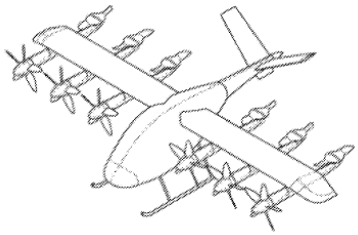
Archer's Use of Wisk's Trade Secrets

80. Despite apparently having no meaningful operations as of January 2020, just over a year later, Archer announced it would have an eVTOL aircraft ready within months. Other competitors took years to get to that stage. In retrospect, the explanation for Archer's surprising apparent progress became more and more self-evident as it began revealing designs of its aircraft.

81. First, in May 2020, Archer released a cropped rendering of its aircraft that appeared quite similar to one of the figures from Wisk's confidential, provisional patent application that it had submitted to the U.S. Patent and Trademark Office in January 2020:

Wisk (January 2020 Patent Application)	Archer (May 2020 Press Release)
	

82. Then, in February 2021, further images of Archer's aircraft became publicly available as part of an investor presentation filed with the SEC, entitled "Archer Investor Deck 2021."[1] The similarities became even clearer. For example, here is a comparison of two figures in Wisk's confidential January 2020 patent application and Archer's 2021 investor materials:

Wisk (January 2020 Patent Application)	Archer Investor Deck 2021
	
	

83. Notably, the six front rotors on Archer's aircraft each consist of five blades and can tilt to be positioned either horizontally (as in the top rendering) or vertically (as in the bottom rendering). Each of the six rear rotors has two blades and remain fixed in a vertical position. Archer's aircraft also has an unconventional "V" tail. That is the same overall aircraft configuration that is disclosed in Wisk's January 2020 patent application, which has not been publicly disclosed. The striking similarity in aircraft configuration is not only troubling in and of itself, it also reflects a keen understanding by Archer of Wisk's extensive aerodynamic test and

[1] *See* https://sec.report/Document/0001213900-21-007940/; https://investors.archer.com/files/doc_presentations/Investor-Presentation.pdf.

evaluation data based on years of experimentation and modeling. The similarity in overall aircraft design further indicates use of more detailed design features, including features related to aircraft propulsion, power management, avionics, flight control, and manufacturing methodology.

84. Wisk's technology and design, disclosed in part in Wisk's January 2020 patent application, is based upon information accumulated over countless hours of incremental progress by scores of engineers, including information contained in the files stolen by Engineer Z just before he began working at Archer. For example, files downloaded by Engineer Z include voluminous confidential presentations reporting on the development, simulation and testing of Wisk aircraft with different wing and rotor configurations, including aircraft having the fixed wing, 12-rotor configuration that Archer copied from Wisk. The files include highly technical confidential documents focused on research, design, development, testing and fabrication of specific systems, which compile years of effort by engineers to develop Wisk's proprietary technology, such as the battery and power distribution systems and electrically driven propulsion system. These are just a few examples of the type of information contained in the stolen files.

85. Notably, prior to January 2020 when Wisk filed its patent application, other major participants in the eVTOL industry had not used the fixed wing, 12-rotor configuration. For example, the 2021 Archer investor presentation noted above identifies five potential competitors for Archer: Wisk, Joby, Lilium, Volocopter and eHang. None of those competitors use a wing and rotor design similar to Wisk:

Joby	**Lilium**

Volocopter	eHang

86. As a result of that iterative, time-intensive, creative process and independent development, the aircraft designed by Wisk, Joby, Lilium, Volocopter, and eHang look nothing like each other.

87. Moreover, each of these competitors required many years (often a decade) to independently develop these eVTOL aircraft—with teams of hundreds of engineers and other professionals. In its 2021 investor presentation, Archer highlighted an engineering team that included about 35 engineers—half of whom came from Wisk. Archer's competitors in the eVTOL industry typically have spent ten years (or more) to develop an aircraft to certify, which will be followed by a years-long certification process; but Archer inexplicably claims it has the ability to design, manufacture, and certify an aircraft by 2024—despite not even having any facilities as of December 2019. Indeed, in its investor presentation, Archer emphasized several times that its business is vertically integrated in key technology areas, suggesting it is not relying on off-the-shelf components for those key technologies but instead purportedly developing them in-house. Such custom components, which require significant time to properly design, develop, test and certify further confirms the improbability of Archer having legitimately developed its own eVTOL aircraft. In short, Archer knew or should have known that it was not possible to develop and certify an eVTOL aircraft in the timeframe it claimed and with the number of personnel it employed without relying on intellectual property that was not its own.

88. Recent interviews Archer's co-founders have given publicly have done little to assuage any concern or even provide any sensible explanation for Archer's progress. To the contrary, the co-founders appear to have all but admitted that their aircraft is built on technology that is not their own. For example, in February 2021, Archer's co-founder Adam Goldstein participated in an interview and acknowledged "[a] group that started the [eVTOL] industry about

10 years ago. So [Wisk-backer] Larry Page basically invents the industry 10 years ago with a company that was originally called Zee Aero, you might know it now called Wisk. Wisk is the name that they took after they did the big joint venture with Boeing." Goldstein then continued:

> Larry Page spent, I don't know, it's not publicly disclosed, I'm guessing, maybe something like a billion dollars of capital over 10 years building five full-scale aircraft and dozens of those aircraft. The latest one is called Cora. That's the one you can see on the Wisk.Aero website. Incredible group with incredible technology. A lot of the folks from Archer came from Wisk. So Tom Muniz, our head of engineering, ran engineering at Wisk. Jeff Bauer [*sic*] was an early employee at Wisk as well, but he left around five years ago or so to go run Airbus's program called Airbus Vahana. And so he was the chief engineer there. So Jeff and Tom came back together. And then when those guys came together, it was this huge moment in eVTOL industry.

89. Goldstein did not explain why subsequent companies—like Archer—would not also have to spend "something like a billion dollars" and "10 years" to achieve the same levels of success. However, the reason became clear when Goldstein candidly admitted: "And so this is the sixth aircraft that they're building, sixth full scale aircraft. So it's not a question to us whether the technology work, you can literally just go to a Wisk website or go on YouTube and . . . you can see these vehicles work. And so now you're at the point where you need to get through certification."

90. He continued: "There's no actual new science breakthrough that we're waiting for, there's no regulatory changes that we're waiting for." Again, Goldstein did not explain why there was no "new science breakthrough" needed, when others in the industry have spent hundreds of millions of dollars developing new technology to be able to release eVTOL aircraft. Nonetheless, Archer's other co-founder, Brett Adcock, also confirmed in another interview that "we're not waiting on any technology breakthroughs."

91. Indeed, Archer's co-founders doubled down on these statements in other interviews, apparently oblivious to their import. Goldstein admitted "this is technology that's been worked on for over a decade now" and "there's actually no new technology that needs to be invented." While appearing in front of a green screen with a background containing an image of Archer's prototype aircraft, Adcock boasted that "our team here at Archer has been working on

this for 10 years," and "over the last 10 years, so the aircraft, you see behind us, this is the sixth one."

92. For a company that by all indications had no meaningful operations prior to last year, Archer's co-founders must have been quite proud of their purported achievement. Of course, what their statements reveal is that Archer has not actually been engaged in the kind of research and development in which Archer's competitors invested significant time and resources. Indeed, Archer's co-founders candidly rely on "10 years" of development by Wisk. It is hardly a coincidence their aircraft explicitly is the "sixth" aircraft their team is building. That aircraft is a copy of a confidential potential design for Wisk's sixth-generation aircraft, and relies on innovations that Wisk has kept confidential and others that it has patented. Apparently, Archer views the work performed by Wisk employees and owned by Wisk as freely available.

93. But Wisk's intellectual property is not freely available to Archer. It is the confidential and proprietary property of Wisk, exemplifying the intense work and dedication by hundreds of Wisk employees over the course of more than a decade that continues to this day. There is only one conclusion to be drawn from the brief time Archer has had any meaningful operations, its small number of employees, the stunning apparent progress in its development of an eVTOL aircraft, the copy of Wisk's unreleased design, and the download of thousands of Wisk's highly confidential trade secrets by an Archer employee and other suspicious, unexplained activity. Archer's business is built on Wisk's intellectual property. If left unremedied, Archer's misappropriation of Wisk's trade secrets for its own benefit will cause Wisk irreparable harm and permit Archer to compete unfairly in the nascent eVTOL market.

Wisk's Patent Portfolio

94. Based on Wisk's multiple innovations in the eVTOL market, it has been granted nearly 80 U.S. patents, with many additional applications pending. This robust and diverse portfolio of patents covers a broad range of eVTOL technologies, including aircraft architecture, propulsion systems, battery design, power distribution, and thermal management. These disclosed inventions are distinct from the information and innovations that Wisk has elected to retain as trade secrets. Along with its massive investment in intellectual property, Wisk chooses to seek

patent protection for some inventions, while relying on trade secret protections for other valuable innovations and information.

95. Wisk's patents are well-known in the eVTOL market, garnering forward citations by a number of other innovators in the field. Moreover, Wisk's patents are specifically known to Archer based at least in part on Archer's hiring of multiple engineers from Wisk with intimate knowledge of the scope and content of Wisk's patent portfolio. Indeed, Archer's engineering team comprises at least 17 former Wisk engineers, including inventors on Wisk patents. Based on the information currently available, Archer's infringement of several Wisk patents is described in more detail below.

U.S. Patent No. 10,364,036 (the "'036 Patent")

96. The '036 Patent is entitled "Multicopter with Boom-Mounted Rotors," and is assigned to Wisk. The patent is directed to a multicopter aircraft that is capable of vertical flight for take-off and landing, hover, and forward flight. As the patent explains, these type of aircraft "typically include a plurality of horizontally oriented rotors, sometimes referred to as 'lift fans,' to provide lift, stability and control." '036 Patent at 1:6-8. A copy of the '036 Patent is attached hereto as Exhibit A.

97. The '036 Patent teaches that aircraft typically are considered to have six degrees of freedom of movement: "forces in the forward/back, side/side, and up/down directions (e.g., Fx, Fy, and Fz) and moments about the longitudinal (roll) axis, the transverse (pitch) axis, and the vertical (yaw) axis (e.g., Mx, My, and Mz)." '036 Patent at 1:25-30. During forward flight, an aircraft can conventionally be controlled around the roll, pitch, and yaw axis using aerodynamic control surfaces such as ailerons, elevators, and rudders. *Id.* at 4:19-46. These control surfaces, however, are dependent upon the aerodynamic forces acting on the surfaces as a result of forward flight, and they become less effective at the slower, or zero, forward speeds associated with a vertical take-off, vertical landing, or hover in place. These control surfaces are further subject to failure, which could cause diminished or even a total loss of control in an axis of movement. *Id.* at 4:39-46.

98. The invention of the '036 Patent addresses these problems by providing an additional means of aircraft stability and control. Specifically, the patent teaches the use of vertical lift fans mounted to booms, which are oriented at "cant angles." '036 Patent at 4:59-65. By orienting the boom mounted lift fans "at an angle relative to the horizontal plane of the aircraft," the invention allows the aircraft to "generate a horizontal force component and a vertical force component, and each force may generate a corresponding moment about one or more axes of the aircraft." *Id.* at '036 Patent at 5:51-55. This is depicted in Figure 2B of the patent:

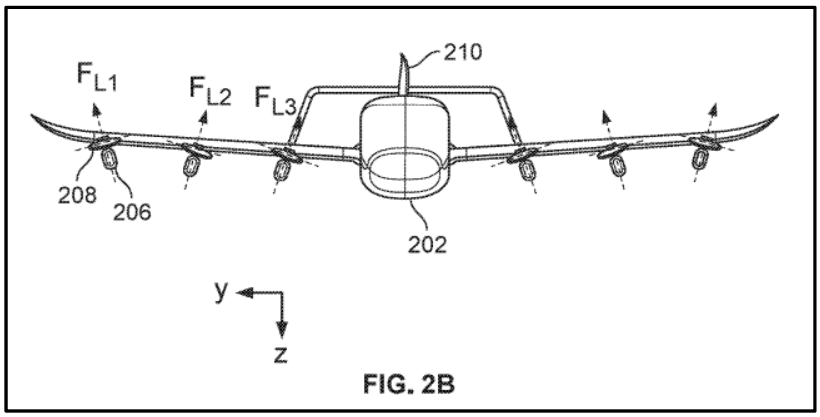


FIG. 2B

99. Accordingly, when these angled lift fans are operated with independent levels of thrust, the aircraft is capable of generating a net force or moment causing the aircraft to move in a desired direction or to rotate about a desired axis. '036 Patent at 6:28-56. This provides for additional stability and control options which are particularly effective during vertical take-off, vertical landing, or hover flight. *Id.* at 5:1-4 ("different combinations of fans may be used to exercise yaw control (e.g., rotate around z axis), to slip sideways or counteract the force of wind while in a hover (y axis), etc."); 8:3-6 ("angling rotors as disclosed herein may provide a degree of authority over (ability to control or influence) yaw of the aircraft, e.g., during hover or vertical takeoff (lift) or landing operations"). This also provides a degree of redundancy that allows the aircraft to remain controllable in the event of a component failure.

100. Thus, the invention of the '036 Patent solved a specific technological problem with the stability and control of an eVTOL aircraft. Namely, the patent introduced an aircraft architecture including multiple boom-mounted lift fans, capable of independent levels of thrust, positioned at a distance from the aircraft center of gravity, and oriented at an angle relative to the

horizontal plane of the aircraft. This overall architecture introduced the ability to generate different forces and moments using just the thrust of the rotors, which enhanced the stability and control of the aircraft during vertical take-off, vertical landing, and hover. The claims of the '036 Patent are directed to this specific technological solution.

101. Given the state of the art at the time of the invention of the '036 Patent, including deficiencies in the stability and control of eVTOL aircraft at the time, the inventive concept of the '036 Patent cannot be considered to have been conventional, well-understood, or routine. A person of ordinary skill in the art would have recognized that the invention of the '036 Patent includes a substantially inventive feature that advances the state of the art for stability and control of eVTOL aircraft.

U.S. Patent No. 9,764,833 (the "'833 Patent")

102. The '833 Patent is entitled "Ventilated Rotor Mounting Boom for Personal Aircraft," and is assigned to Wisk. The patent is directed to a "rotor mounting boom for a personal aircraft configured to provide safe operations while achieving robust control and efficient maintenance." '833 Patent at 1:7-9. A copy of the '833 Patent is attached hereto as Exhibit B.

103. As the '833 Patent teaches, an aircraft capable of taking off and landing vertically (as opposed to using a runway to develop sufficient velocity for takeoff) requires the capability to generate sufficient vertical thrust to lift the vehicle as well as horizontal thrust to provide forward movement, and to control these forces of vertical and horizontal thrust in a balanced fashion. '833 Patent at 1:15-22. The patent explains that prior art rotary wing aircraft (*i.e.*, helicopters) made use of large, mechanically complex rotors that required regular maintenance and also introduced a single point of failure. *Id.* at 1:40-51.

104. The '833 Patent teaches how other types of vertical takeoff and landing ("VTOL") aircraft use multiple, less mechanically complex, rotor systems in order to eliminate the single-point of failure. '833 Patent at 1:52-53. However, this configuration introduces its own complication, as the motor controllers for each of these rotors need to be sufficiently cooled without increasing design complexity and aircraft weight. *Id.* at 1:52-62. The '833 Patent

therefore teaches an improved aircraft architecture, involving a ventilated rotor mounting boom, in order to simplify the cooling of motor controllers in a multi-rotor VTOL aircraft.

105. Specifically, the '833 Patent teaches mounting vertical lift rotor assemblies to a rotor mounting boom assembly, that is in turn attached to the aircraft wing. '833 Patent at 4:32-59. Each vertical lift rotor assembly may comprise its own, independent electric motor and rotor controller assembly to provide increased redundancy, a faster response rate, and a greater degree of aircraft stability and control. *Id.* at 2:19-40. In one embodiment, the rotor controller assemblies are disposed within a controller enclosure within the rotor mounting boom. *See id.* at 5:22-41. The enclosure includes ventilation openings, such as air inlets and outlets, and may further include airflow channels, to direct air into the enclosure and allow it to more effectively circulate within the enclosure to cool the rotor controller assemblies. *Id.* at 5:44-52.

106. Many different embodiments for a ventilated rotor mounting boom are discussed and disclosed by the '833 Patent. To take just one example, the disclosure accompanying Figure 8 of the '833 Patent discusses an air inlet coupled to a forward duct allowing airflow through one or more rotor controller assembly enclosures disposed within the boom, and out one or more aft outlets. '833 Patent at 8:21-33. Additionally, a vertical lift assembly mounted to the boom may include a drive shaft that is rotated by the rotor and coupled to an auxiliary fan for drawing airflow into the duct. *Id.* at 8:34-49. Figure 8 of the patent is shown here:

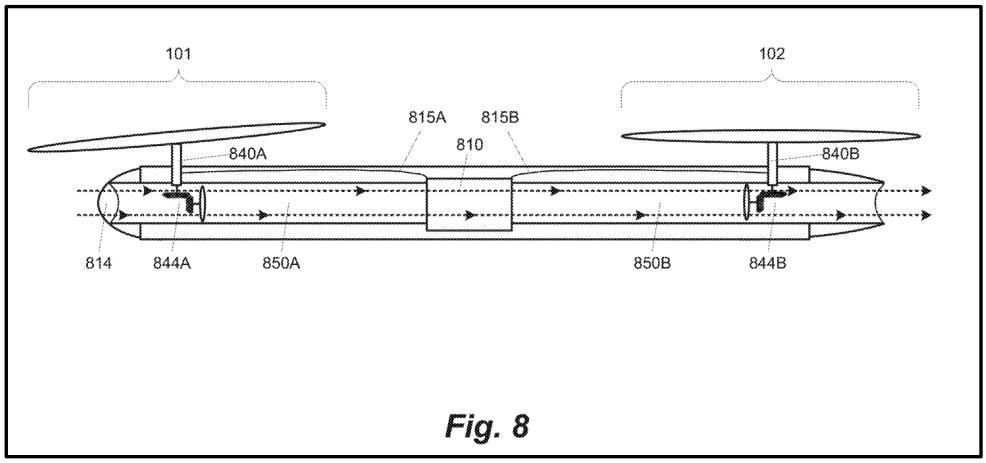


Fig. 8

107. Thus, the invention of the '833 Patent solved a specific technological problem with thermal management in a vertical take-off and landing aircraft. Namely, the patent introduced an

aircraft architecture including a rotor mounting boom for mounting one or more vertical lift rotor assemblies and enclosing one or more rotor controller assemblies, with air inlets and outlets disposed on the boom to increase the effectiveness of air flow through a controller enclosure. This overall architecture introduced the ability to direct airflow across the rotor controller assemblies, allowing the rotor controller assemblies to be cooled without the need for specialized cooling machinery that would introduce complexity and weight to the aircraft. As the patent teaches, this concrete architecture solves the problem of excess heat generation that arises in the specific field of a VTOL aircraft having simplified and redundant vertical lift rotor assemblies.

108. Given the state of the art at the time of the invention of the '833 Patent, including the challenges and tradeoffs involved in removing excess heat from rotor controller assemblies in a VTOL aircraft, the inventive concept of the '833 Patent cannot be considered to have been conventional, well-understood, or routine. A person of ordinary skill in the art would have recognized that the invention of the '833 Patent includes a substantially inventive feature that advances the state of the art for cooling rotor controller assemblies of VTOL aircraft.

U.S. Patent No. 10,110,033 (the "'033 Patent")

109. The '033 Patent is entitled "Multi-battery charging station which selectively connects battery sub-modules to a common power bus for charging," and is assigned to Wisk. The patent relates generally to technology for facilitating fast charging of "a battery system with a plurality of battery sub-modules on a common power bus." '033 Patent at 2:20-33. A copy of the '033 Patent is attached hereto as Exhibit C.

110. The '033 Patent recognized a particular problem. Specifically, the '033 Patent recognized that "[n]ew types of aircrafts are being developed which rely solely upon battery power," and "existing support and/or maintenance system" (*e.g.*, existing battery systems) "will not work with these new all-electric aircraft." '033 Patent at 1:7-14. The '033 Patent thus recognized that "with these new all-electric aircraft" it was necessary to develop "new types" of battery charging systems. *Id*. at 1:9-14. The '033 patent provides an unconventional technological solution by describing a novel battery system specifically designed to accommodate

certain specific charging techniques that are suitable for these all-electric aircraft, and address needs relating to fast, reliable, and safe charging.

111. For example, the '033 Patent describes a battery system that "includes multiple, independent battery sub-modules." *Id*. at 4:12-14. The battery system monitors various metrics of the individual battery sub-modules (*e.g.*, metrics relating to current and voltage characteristics) and individually selects and configures the multiple battery sub-modules for connection to "a shared or common power bus which supplies power to electronics (*e.g.*, at a relatively low voltage, such as on the order of 5V) and lift fans (*e.g.*, at a relatively high voltage, such as on the order of 700V)." *Id*. at 3:4-17; *see also id*. at 2:42-50, 4:10-23, Fig. 3. This means that the '033 Patent allows these all new electric aircraft to maintain "redundancy in the system (*e.g.*, so the aircraft will not crash)," and to "electrically disconnect a failing battery sub-module from the common power bus in order to keep the aircraft airborne and/or prevent further damages to the power system" by electrically "isolating the failing battery sub-modules." *Id*. at 3:4-17, 4:11-23.

112. Moreover, the '033 Patent's use of a common bus to which the battery submodules can be individually attached, along with its ability to monitor individual battery metrics, allows for fast and efficient charging that includes various benefits for electric aircraft. These benefits include, for example, the ability to select a particular subset of batteries for charging "which will collectively charge quickly" and "minimize a charging time," the ability to detach from the bus batteries that "may be damaged if they are charged under certain conditions" (*e.g.*, temperature conditions that are not suitable for the battery), and permitting "the charging current and/or charging voltage output by the charger onto the common power bus" to be "set to values" that optimize charging and "prevent damage to the battery sub-modules being charged." *Id*. 2:51-64. In line with these teachings, the '033 Patent describes and claims battery systems and methods that selectively connect one or more of a plurality of battery sub-modules to a common power bus and charge the selected set of batteries using an optimized charging technique that employs metrics obtained from the plurality of battery sub-modules. *See, e.g.*, '033 Patent, Claim 1, Fig. 6.

113. Given the state of the art at the time of the invention of the '033 Patent, including the lack of battery systems that satisfied the safety and fast charging needs of new all-electric

aircraft, the inventive concept of the '033 Patent cannot be considered to have been conventional, well-understood, or routine. A person of ordinary skill in the art would have recognized that the invention of the '033 Patent includes a substantially inventive feature that advances the state of the art for battery systems of eVTOL aircraft.

U.S. Patent No. 10,333,328 (the "'328 Patent")

114. The '328 Patent is entitled "Multi-battery charging station which selectively connects battery sub-modules to a common power bus for charging," and is assigned to Wisk. A copy of the '328 Patent is attached as Exhibit D.

115. The '328 Patent is related to the '033 Patent in that it is a continuation of U.S. Application No. 15/885,303 filed on January 31, 2018, which issued as the '033 Patent. Thus, the '328 and '033 Patents share essentially the same specification. Wisk incorporates by reference and realleges the paragraphs discussing the '033 Patent above as if fully set forth herein.

116. Like the '033 Patent, the '328 Patent claims systems and methods for facilitating fast charging of "a battery system with a plurality of battery sub-modules on a common power bus," which provide an unconventional solution to the technological problems described in the '033 and '328 Patents. For example, claim 1 of the '328 Patent recites a system with specific hardware configurations, including a processor and memory that stores instructions that can be executed by the system's processor(s). *See* '328 Patent, claim 1. When the instructions are executed, the system can select one or more battery sub-modules from a plurality of battery sub-modules to electrically connect to a common power bus. *Id.* The selection can include determining if a given one of the battery sub-modules is in a discharge-related fault condition (*e.g.*, if the battery has been discharged to 0V and remained discharged for a relatively long time or if other condition will cause damage to the battery if charged). *Id.*; *see also id.* at 6:59-7:50. The instructions cause the processor to disconnect batteries in a discharge-related fault condition from the common power bus, while configuring the batteries that are selected so that they are electrically connected to the common power bus and charged via the common power bus. *Id.*

Archer's Infringement Of Wisk's Patents

117. In February 2021, a presentation from Archer entitled "Archer Investor Deck 2021" became publicly available in a filing made with the SEC, as discussed above. This presentation contains multiple images and technical details regarding the aircraft design and architecture of Archer's eVTOL aircraft, "Maker." As explained more fully below, these technical details disclose an architecture that is not only designed to incorporate multiple Wisk trade secrets, but also meets the limitations of one or more claims of each of the '036 Patent, the '833 Patent, the '033 Patent and the '328 Patent.

118. Under 35 U.S.C. § 271(a), Archer has at least sold and/or offered for sale in the United States, and on information and belief made and used, an aircraft and related components having the designs disclosed in the February 2021 presentation. The presentation itself states that Archer has a "contracted order book" with United Airlines, Inc. ("United") for its aircraft, and that it has booked ">$1 billion in orders." *See* Archer Investor Deck 2021 at 6, 27. According to the presentation, "Archer is the only eVTOL company in the world with a contract from a major airline, which will help finance and accelerate Archer's expansion into Urban mobility." *Id*. at 21. The presentation includes an image of the Maker aircraft, comprising Wisk's patented features, with United's logo and paint scheme:

119. Archer also issued a press release on February 20, 2021, stating that it had an agreement with United and that "[u]nder the terms of the agreement, United has placed an order, subject to United's business and operating requirements, for $1 billion of Archer's aircraft, with an option for an additional $500 million of aircraft."[2]

120. Filings with the SEC further describe the aircraft purchase agreement between Archer and United. According to an SEC filing, "the Purchase Agreement provides for the purchase by United of a given quantity of Aircraft at a fixed base price per unit for an aggregate base purchase price of US$1 billion and grants United an option, at its election, to order an additional quantity of Aircraft at the same unit price for an additional aggregate base purchase price of up to US$500 million."[3]

121. On information and belief, in order to meet its contractual obligations to United, Archer is also in the process of designing, developing, building, testing, and using aircraft and related components having the designs disclosed in the February 2021 presentation in the United States. For example, press reports regarding the Archer aircraft indicate that "Prototype test flights are already underway . . . ."[4] The photograph below is reported to be a prototype of the Maker aircraft that Archer has built and tested in the United States:

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[2] *See* https://investors.archer.com/news/news-details/2021/Archer-A-Leading-Urban-Air-Mobility-Company-To-List-On-NYSE-Through-Merger-With-Atlas-Crest-Investment-Corp/default.aspx.

[3] *See* https://www.sec.gov/Archives/edgar/data/1824502/000121390021007940/ea134984ex99-3_atlascrest.htm.

[4] *See* https://newatlas.com/aircraft/archer-aviation-evtol-united/.

122. On information and belief, numerous former Wisk engineers who are now employed by Archer were aware of the Wisk patents asserted here because of their work at Wisk. Prior to leaving Wisk, these former Wisk employees were intimately involved in the development of Wisk's eVTOL technology. For example, Scott Furman, Archer's "Chief Avionics Architect," joined Archer in January 2020 after spending years as the "Chief Avionics Architect" at Wisk and Kitty Hawk. Mr. Furman is a named inventor on two of the patents asserted in this Complaint—namely the '033 Patent and the '328 Patent—and had knowledge of these patents when he joined Archer. Mr. Furman and other former Wisk employees took their knowledge of the asserted Wisk patents to Archer when they became Archer employees. On information and belief, numerous former Wisk employees have a connection to Archer's decision to willfully infringe because they are integral members of Wisk's engineering team, and thus are involved in decision making relating to the design and development of Archer's Maker aircraft. *See* Archer Investor Deck 2021 at 13.

123. Archer, having learned of the asserted patents and the likelihood of infringement of the asserted patents, nevertheless continued to infringe. Archer's infringement was egregious and consciously wrongful, and done in bad faith. On information and belief, as a late entrant into the eVTOL market, Archer engaged in a deliberate plan to recruit former Wisk employees for their ability to bring with them knowledge of Wisk's patented technology and confidential and

proprietary information and trade secrets. Archer availed itself of the specific knowledge of these former Wisk employees regarding Wisk's patents and confidential and proprietary information and trade secrets to develop and market its infringing products.

FIRST CAUSE OF ACTION

Violation of Defend Trade Secrets Act, 18 U.S.C. §§ 1836 *et seq.*

124. Wisk incorporates the foregoing paragraphs as though fully set forth herein.

125. The information Archer misappropriated constitutes protectable trade secrets owned by Wisk, as set forth in 18 U.S.C. § 1839(3). Based on an analysis of the files downloaded, and Archer's publicly available materials, Archer has misappropriated at least the following trade secrets from Wisk:

- Aircraft Designs;
- Component Designs;
- System Designs;
- Manufacturing; and
- Test Data.

126. On information and belief, Archer's theft of Wisk's trade secrets goes well beyond the specific examples of trade secrets identified here, as will be demonstrated after Wisk receives discovery in this litigation.

127. Wisk has taken reasonable measures to protect the confidentiality of its trade secrets, including through the measures alleged above. Wisk does not and did not consent to the use of any of its trade secrets by anyone other than authorized personnel using them within the scope of their duties for Wisk.

128. Wisk's trade secrets derive independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, another person who can obtain economic value from the disclosure or use of the information.

129. Archer misappropriated Wisk's trade secrets using the improper and unlawful machinations alleged herein. Archer's misappropriation was intentional, knowing, willful,

malicious, fraudulent, and oppressive. Archer has attempted, and continues to attempt, to conceal its misappropriation and to obstruct Wisk's efforts to remedy the misappropriation.

130. On information and belief, if Archer is not enjoined, it will continue to misappropriate and use Wisk's trade secret information for its own benefit and to Wisk's detriment, and may disseminate Wisk's trade secrets to other third parties who have no right to access or use Wisk's trade secrets.

131. As the direct and proximate result of Archer's conduct, Wisk has suffered and, if Archer's conduct is not stopped, will continue to suffer, severe competitive harm, irreparable injury, and significant damages, in an amount to be proven at trial. Because Wisk's remedy at law is inadequate, Wisk seeks, in addition to damages, preliminary and permanent injunctive relief to recover and protect its trade secrets and to protect other legitimate business interests. Wisk's business operates in a competitive market and will continue suffering irreparable harm absent injunctive relief.

132. In addition to equitable relief, Wisk demands (i) monetary damages in an amount to be proven at trial, (ii) exemplary damages in an amount equal to two times the amount of its compensatory damages pursuant to 18 U.S.C. § 1836(b)(3)(C), because Archer's misappropriation was willful and malicious, and (iii) reasonable attorneys' fees pursuant to 18 U.S.C. § 1836(b)(3)(D) because Archer's misappropriation was willful and malicious.

SECOND CAUSE OF ACTION

Violation of California Uniform Trade Secrets Act, Cal. Civ. Code §§ 3426 *et seq.*

133. Wisk incorporates the foregoing paragraphs as though fully set forth herein.

134. The information Archer misappropriated constitutes protectable trade secrets owned by Wisk, as set forth in Cal. Civ. Code § 3426.1(d). Based on an analysis of the files downloaded, and Archer's publicly available materials, Archer has misappropriated at least the following trade secrets from Wisk:

- Aircraft Designs;
- Component Designs;
- System Designs;

- Manufacturing; and
- Test Data.

135. On information and belief, Archer's theft of Wisk's trade secrets goes well beyond the specific examples of trade secrets identified here, as will be demonstrated after Wisk receives discovery in this litigation.

136. Wisk's trade secrets derive independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from their disclosure or use as set forth in Cal. Civ. Code § 3426.1(d)(1).

137. Wisk has taken reasonable measures to keep such information secret, including through the measures alleged above. Wisk does not, and did not, consent to the use of any of its trade secrets by anyone other than authorized personnel using them, within the scope of their duties for Wisk.

138. Archer misappropriated Wisk's trade secrets using the improper and unlawful machinations alleged herein. Archer's misappropriation was intentional, knowing, willful, malicious, fraudulent, and oppressive. Archer has attempted, and continues to attempt, to conceal its misappropriation and to obstruct Wisk's efforts to remedy the misappropriation.

139. On information and belief, if Archer is not enjoined, it will continue to misappropriate and use Wisk's trade secret information for its own benefit and to Wisk's detriment, and may disseminate Wisk's trade secrets to other third parties who have no right to access or use Wisk's trade secrets.

140. As the direct and proximate result of Archer's conduct, Wisk has suffered and, if Archer's conduct is not stopped, will continue to suffer, severe competitive harm, irreparable injury, and significant damages, in an amount to be proven at trial. Because Wisk's remedy at law is inadequate, Wisk seeks, in addition to damages, preliminary and permanent injunctive relief to recover and protect its trade secrets and to protect other legitimate business interests. Wisk's business operates in a competitive market and will continue suffering irreparable harm absent injunctive relief.

141. In addition to equitable relief, Wisk demands (i) monetary damages in an amount to be proven at trial, (ii) exemplary damages in an amount equal to two times the amount of its compensatory damages pursuant to Cal. Civ. Code § 3426.3, because Archer's misappropriation was willful and malicious, and (iii) reasonable attorneys' fees and costs pursuant to Cal. Civ. Code § 3426.4 because Archer's misappropriation was willful and malicious.

THIRD CAUSE OF ACTION

Infringement of U.S. Patent No. 10,364,036

142. Wisk incorporates the foregoing paragraphs as though fully set forth herein.

143. The '036 Patent, entitled "Multicopter with Boom-Mounted Rotors," was duly and lawfully issued on July 30, 2019.

144. Wisk is the owner of all rights, title, and interest in the '036 Patent, including the right to bring this suit for injunctive relief and recover past and ongoing damages.

145. The '036 Patent is valid and enforceable.

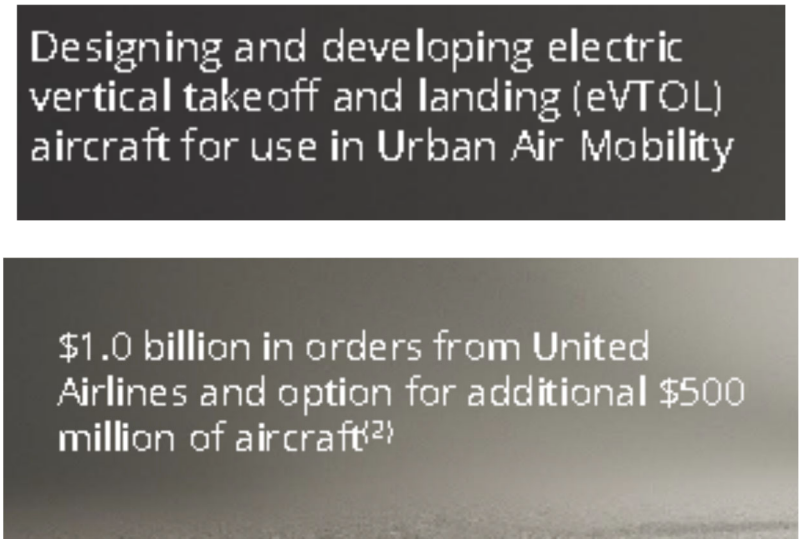
146. Archer has infringed, and continues to infringe, literally and/or under the doctrine of equivalents, one or more claims of the '036 Patent, including but not limited to claim 1 pursuant to 35 U.S.C. § 271(a), by making, using, selling, and/or offering to sell, within the United States, without authority, the Maker aircraft and related components.

147. As just one non-limiting example, set forth below (with claim language in italics) is a description of infringement of exemplary claim 1 of the '036 Patent in connection with Archer's making, using, selling, and/or offering for sale the Maker aircraft. This description is based on currently available public information, and Wisk reserves the right to modify this description including, for example, on the basis of information obtained during discovery.

1[pre]*: An aircraft, comprising:*

148. Archer has made, used, sold, and/or offered to sell its "Maker" aircraft. The Maker aircraft as made, used, sold, and/or offered for sale is an electric vertical take-off and landing aircraft.

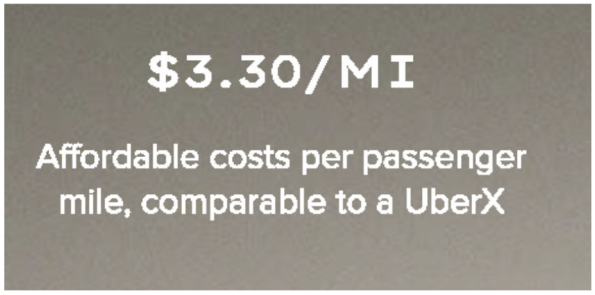
See https://newatlas.com/aircraft/archer-aviation-evtol-united/.



See Archer Investor Deck 2021 at 6.

1[a]*: a fuselage;*

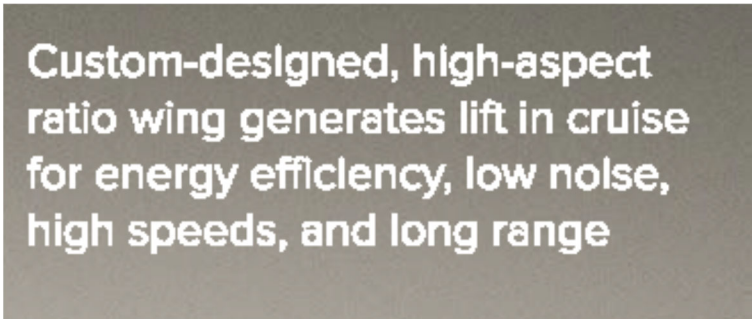
149. The Maker aircraft comprises a fuselage for carrying passengers.



See Archer Investor Deck 2021 at 15.

1[b]*: a port side wing coupled to the fuselage;*

150. The Maker aircraft comprises "a custom-designed, high-aspect ratio wing that generates lift in cruise . . . ." The wing is comprised of two portions that are coupled to the fuselage and extend outward from each of the "port" and "starboard" sides of the aircraft.



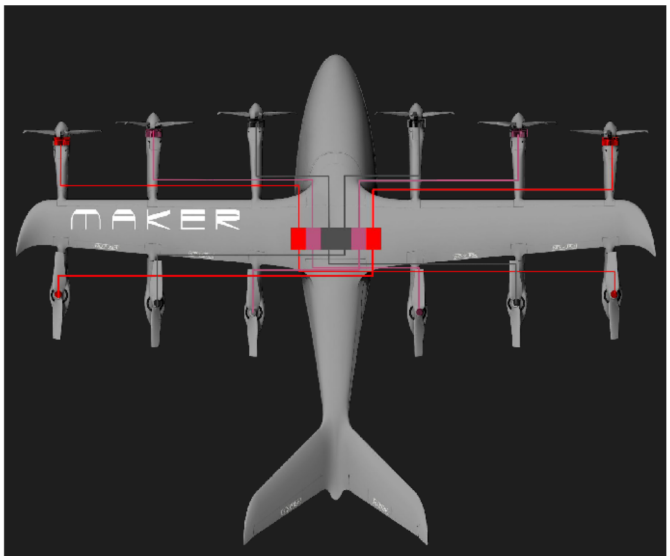
See Archer Investor Deck 2021 at 32.

1[c]*: a starboard side wing coupled to the fuselage;*

151. The Maker aircraft comprises "a custom-designed, high-aspect ratio wing that generates lift in cruise . . . ." The wing is comprised of two portions that are coupled to the fuselage and extend outward from each of the "port" and "starboard" sides of the aircraft. *See* citations for 1[b].

***1[d]**: wherein each of said wings has mounted thereto two or more booms, each boom having a forward end extending forward of a corresponding wing to which the boom is mounted and an after end extending aft of said corresponding wing to which the boom is mounted;*

152. Each of the port- and starboard-side wings has three mounted booms. Each of these booms has a forward end extending forward of the corresponding wing, and an after end extending aft of the corresponding wing.



See Archer Investor Deck 2021 at 37.

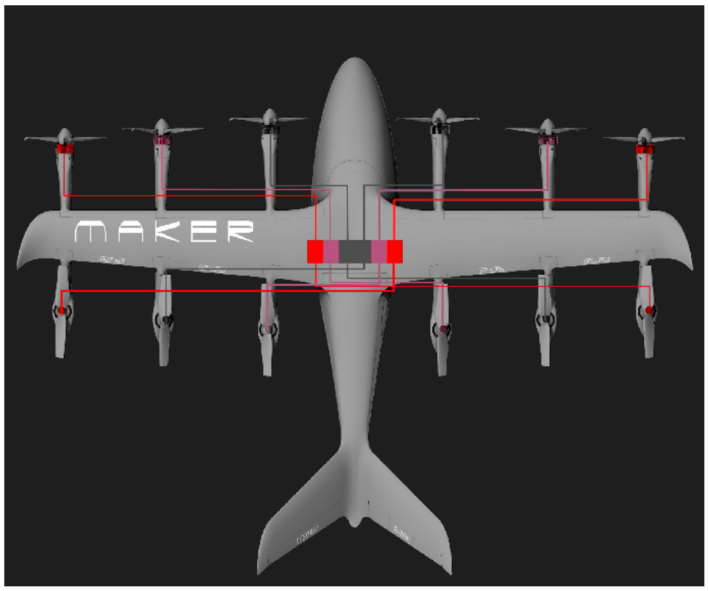
***1[e]**: a first plurality of lift rotors, each rotor in said first plurality being mounted on the forward end of a corresponding one of said booms; and*

153. The Maker aircraft has a first plurality of lift rotors, each of which are mounted on the forward end of a corresponding one of said booms.

See Archer Investor Deck 2021 at 15.

***1[f]**: a second plurality of lift rotors, each rotor in said second plurality being mounted on the after end of the corresponding one of said booms;*

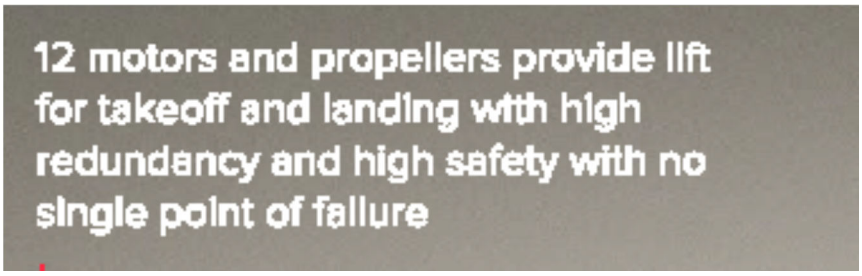
154. The Maker aircraft has a second plurality of lift rotors, each of which are mounted on the after end of a corresponding one of said booms.



See Archer Investor Deck 2021 at 37.

***1[g]**: wherein each rotor in said first plurality and each rotor in said second plurality produces an amount of vertical thrust independent of levels of vertical thrust produced by the other rotors;*

155. Each rotor in the first plurality and in the second plurality produces an amount of vertical thrust independent of vertical thrust provided by all other rotors. For example, Archer represents that each of its 12 rotors and propellers "provide lift for takeoff and landing with high redundancy" and "no single point of failure."



See Archer Investor Deck 2021 at 32.

***1[h]**: wherein a first subset of said booms each is mounted to said port side wing or said starboard side wing at a non-zero angle relative to a substantially vertical axis of the aircraft such that the boom is tilted inboard towards the fuselage; and*

156. The Maker aircraft has a first subset of booms on the port-side wing or starboard-side wing that are mounted at a non-zero angle relative to a substantially vertical axis of the aircraft, such that the boom is tilted inboard towards the fuselage. For example, the middle boom on each of the port- and starboard-side wings is tilted inwards as shown below.

See Archer Investor Deck 2021 at 15.

***1[i]**: wherein a second subset of said booms each is mounted to said port side wing or said starboard side wing at a non-zero angle relative to the substantially vertical axis of the aircraft such that the boom is tilted outboard away from the fuselage.*

157. The Maker aircraft has a second subset of booms on the port-side wing or starboard-side wing that are mounted at a non-zero angle relative to a substantially vertical axis of the aircraft, such that the boom is outboard, away from the fuselage. For example, the inner-most boom on each of the port- and starboard-side wings is tilted outboard, away from the fuselage as shown below.

See Archer Investor Deck 2021 at 15.

158. On information and belief, Archer and its employees knew of the '036 Patent, or should have known of the '036 Patent but have been willfully blind to its existence. For example, Archer acquired knowledge of the patents prior to the filing of this Complaint at least by virtue of its hiring of former Wisk employees and inventors, as explained above. At a minimum, Archer has knowledge of the '036 Patent as of the filing of this Complaint. Archer's infringement was and continues to be egregious, consciously wrongful, and done in bad faith.

159. Wisk has been damaged by Archer's infringement of the '036 Patent and will continue to be damaged unless Archer is enjoined by this Court. Wisk has suffered and continues to suffer irreparable injury for which there is no adequate remedy at law. The balance of hardships favors Wisk, and the public interest is not disserved by an injunction.

FOURTH CAUSE OF ACTION

Infringement of U.S. Patent No. 9,764,833

160. Wisk incorporates the foregoing paragraphs as though fully set forth herein.

161. The '833 Patent, entitled "Ventilated Rotor Mounting Boom for Personal Aircraft," was duly and lawfully issued on September 19, 2017.

162. Wisk is the owner of all rights, title, and interest in the '833 Patent, including the right to bring this suit for injunctive relief and recover past and ongoing damages.

163. The '833 Patent is valid and enforceable.

164. Archer has infringed, and continues to infringe, literally and/or under the doctrine of equivalents, one or more claims of the '833 Patent, including but not limited to claim 1 pursuant

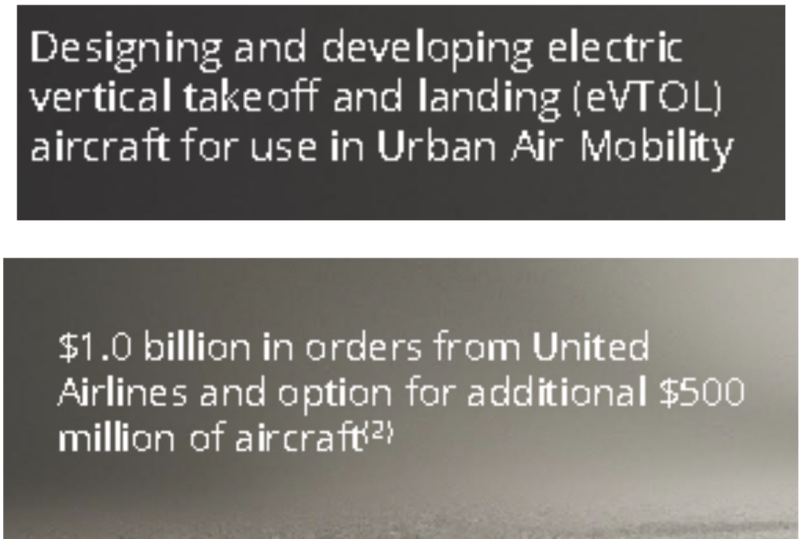
to 35 U.S.C. § 271(a), by making, using, selling, and/or offering to sell, within the United States, without authority, the Maker aircraft and related components.

165. As just one non-limiting example, set forth below (with claim language in italics) is a description of infringement of exemplary claim 1 of the '833 Patent in connection with Archer's making, using, selling, and/or offering for sale the Maker aircraft. This description is based on currently available public information, and Wisk reserves the right to modify this description including, for example, on the basis of information obtained during discovery.

***1[pre]**: A rotor mounting boom assembly for a personal aircraft, the rotor mounting boom assembly comprising:*

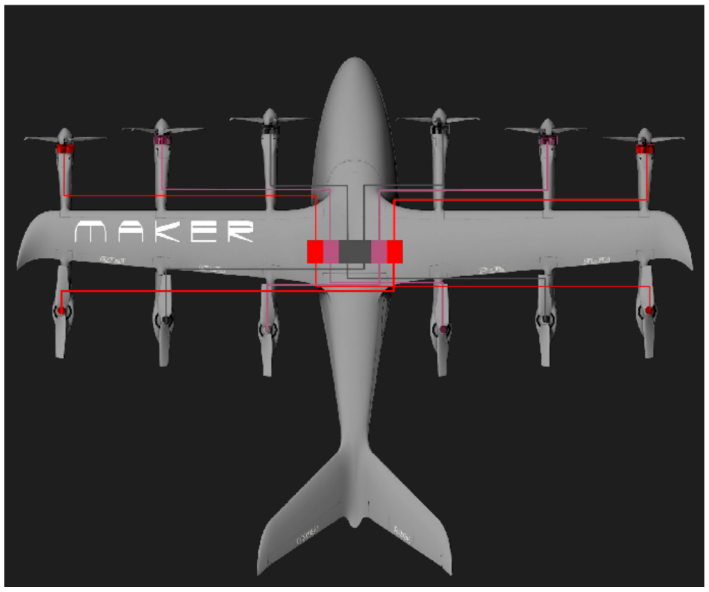
166. Archer has made, used, sold, and/or offered to sell its Maker aircraft. The Maker aircraft as made, used, sold and/or offered for sale is an electric vertical take-off and landing aircraft.

See https://newatlas.com/aircraft/archer-aviation-evtol-united/.



See Archer Investor Deck 2021 at 6.

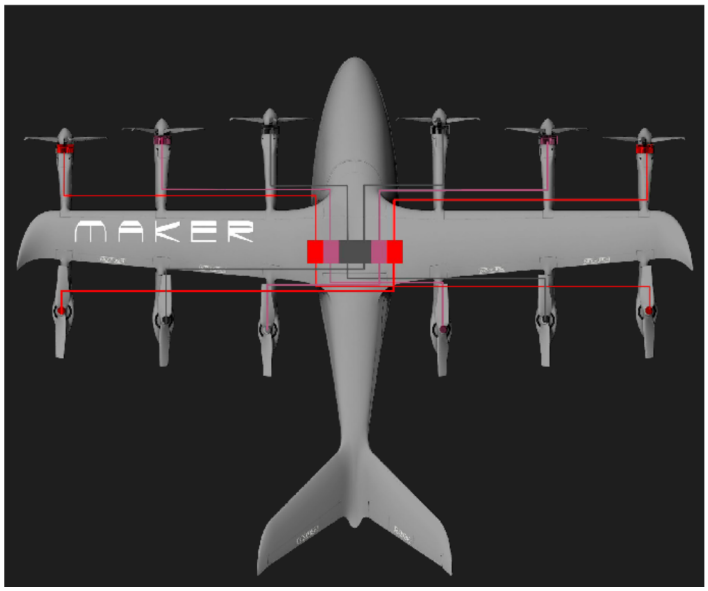
167. The Maker aircraft as made, used, sold and/or offered for sale is a personal aircraft that comprises six rotor mounting boom assemblies:



See Archer Investor Deck 2021 at 37.

1[a]*: a boom capable of being coupled to a wing of the personal aircraft via a boom attachment interface;*

168. The Maker aircraft comprises six booms that are capable of being coupled to a wing of the aircraft via a boom attachment interface:



See Archer Investor Deck 2021 at 37.

See Archer Investor Deck 2021 at 1.

169. The six booms are attached to the underside of the wing, and thus comprise a boom attachment interface.

***1[b]**: a vertical lift rotor assembly coupled to the boom, the vertical lift rotor assembly having a rotor;*

170. Each of the six booms of the Maker aircraft have a vertical lift rotor assembly coupled to the forward end of the boom. The vertical lift rotor assemblies each have a rotor:

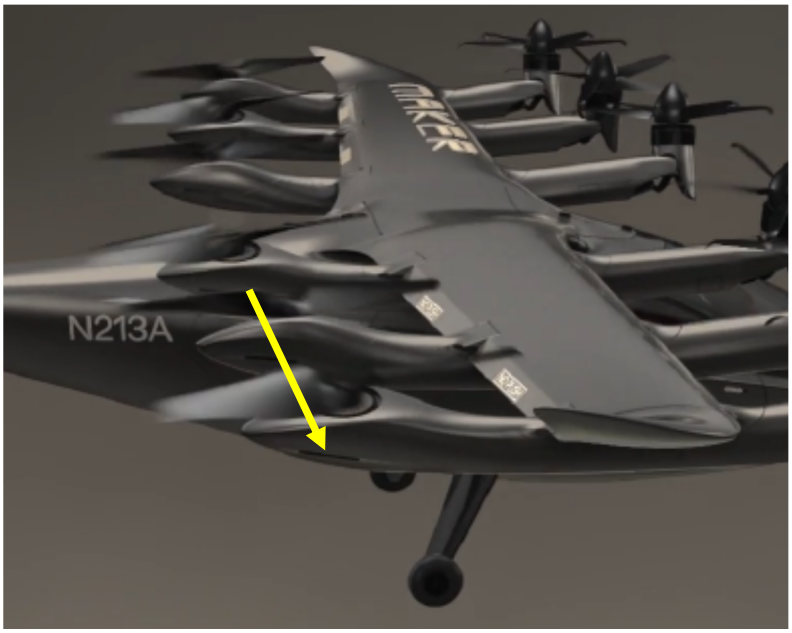
See Archer Investor Deck 2021 at 15.

1[c]*: an air inlet positioned on the boom such that airflow generated by the rotor is directed through the air inlet;*

171. There is an air inlet positioned on the forward end of each of the six booms such that airflow generated by the rotor is directed into the air inlet:

See Archer Investor Deck 2021 at 16.

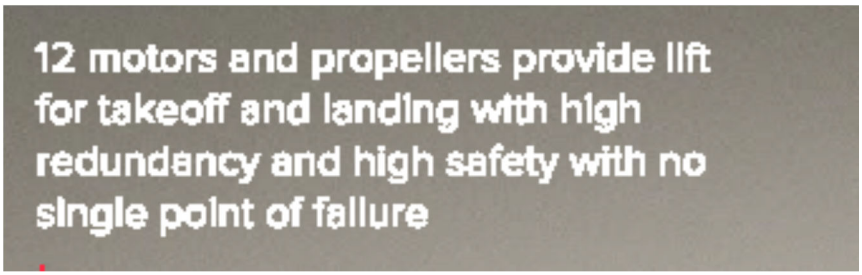
172. In addition and/or alternatively, there is a ventilation opening positioned along both sides of the aft end of each boom.



See video at www.archer.com/maker.

1[d]*: a rotor controller assembly disposed on the boom, the rotor controller assembly comprising a rotor controller for sending control signals to the vertical lift rotor assembly; and*

173. Each of the vertical lift rotor assemblies disposed on the boom comprises a rotor controller assembly comprising a rotor controller for sending control signals to the vertical lift rotor assembly. As Archer represents, each of its 12 rotors and propellers "provide lift for takeoff and landing with high redundancy" and "no single point of failure."



See Archer Investor Deck 2021 at 32.

1[e]*: a controller enclosure disposed around the rotor controller, the controller enclosure in fluid communication with the air inlet and an air outlet for allowing air to flow through the controller enclosure.*

174. Each of the rotor controller assemblies are housed in a controller enclosure, as indicated by the shape and dimensions of the booms. The positioning of the air inlets and outlets

on the boom indicates that they are positioned such that the controller enclosure is in fluid communication with the air inlet and an outlet such that air is allowed to flow through the controller enclosure.

See Archer Investor Deck 2021 at 6.

175. On information and belief, Archer and its employees knew of the '833 Patent, or should have known of the '833 Patent but have been willfully blind to its existence. For example, Archer acquired knowledge of the patents prior to the filing of this Complaint at least by virtue of its hiring of former Wisk employees and inventors, as explained above. At a minimum, Archer has knowledge of the '833 Patent as of the filing of this Complaint. Archer's infringement was and continues to be egregious, consciously wrongful, and done in bad faith.

176. Wisk has been damaged by Archer's infringement of the '833 Patent and will continue to be damaged unless Archer is enjoined by this Court. Wisk has suffered and continues to suffer irreparable injury for which there is no adequate remedy at law. The balance of hardships favors Wisk, and the public interest is not disserved by an injunction.

FIFTH CAUSE OF ACTION

Infringement of U.S. Patent No. 10,110,033

177. Wisk incorporates the foregoing paragraphs as though fully set forth herein.

178. The '033 Patent, entitled "Multi-battery charging station which selectively connects battery sub-modules to a common power bus for charging," was duly and lawfully issued on October 23, 2018.

179. Wisk is the owner of all rights, title, and interest in the '033 Patent, including the right to bring this suit for injunctive relief and recover past and ongoing damages.

180. The '033 Patent is valid and enforceable.

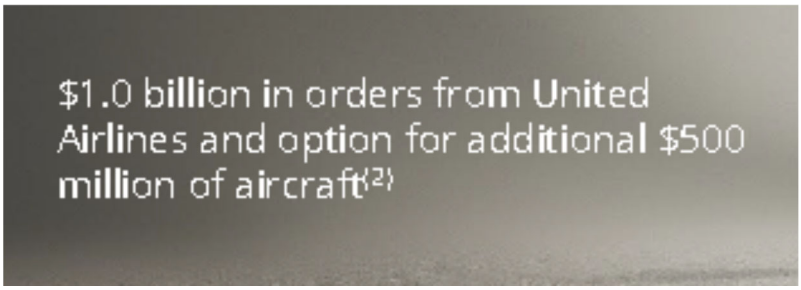
181. Archer has infringed, and continues to infringe, literally and/or under the doctrine of equivalents, one or more claims of the '033 Patent, including but not limited to claim 1 pursuant to 35 U.S.C. § 271(a), by making, using, selling, and/or offering to sell, within the United States, without authority, the Maker aircraft and related components.

182. As just one non-limiting example, set forth below (with claim language in italics) is a description of infringement of exemplary claim 1 of the '033 Patent in connection with Archer's making, using, selling, and/or offering for sale the Maker aircraft. This description is based on currently available public information, and Wisk reserves the right to modify this description including, for example, on the basis of information obtained during discovery.

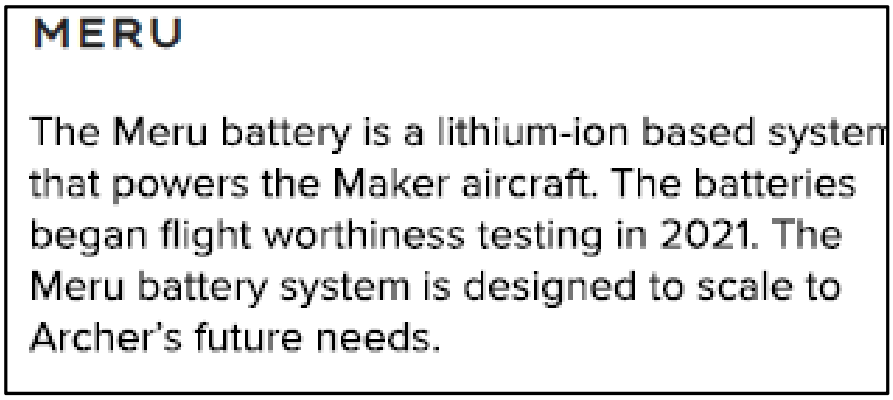
1[pre]*: A system, comprising:*

183. Archer has made, used, sold and/or offered to sell the Maker aircraft and battery charging system.

See https://newatlas.com/aircraft/archer-aviation-evtol-united/.



See Archer Investor Deck 2021 at 6.



See Archer Investor Deck 2021 at 36.

***1[a]**: A processor; and a memory coupled with the processor, wherein the memory is configured to provide the processor with instructions which when executed cause the processor to:*

184. The Maker aircraft includes a processor and memory coupled with the processor that are configured to provide the processor with instructions for fast charging. When executed the instructions cause the processor to perform the limitations of Claim 1.

See Archer Investor Deck 2021 at 36.

***1[b]**: receive, for each battery sub-module in a plurality of battery sub-modules, a metric in order to obtain a plurality of metrics associated with the plurality of battery sub-modules;*

185. The Maker aircraft comprises a plurality of battery sub-modules. For example, the Maker's battery system is separated into "[s]ix independent batteries, each powering two motors

(one forward and one aft)" such that if one battery fails, the aircraft still has five to rely upon (there is no "single point of failure"). On information and belief, one or more metrics for each battery sub-module are received by the computer system of the Maker, including metrics to ensure that the batteries are functioning, to determine charge level, to determine health/operation of the battery sub-modules, and to monitor current and voltage levels of the batteries.

> The Maker's "Meru" battery system is interesting too; it's separated into six independent units, each powering a pair of forward and rear props such that if one battery fails, the aircraft still has five to rely on to get it down safely. The one flying in the current Maker prototype is a 74 kWh pack offering a maximum power draw of 672 kW, but the one slated for the production aircraft is a 143 kWh monster that Archer claims will give the Maker a 60-mile (96 km) range, with proper reserves, capacity fade and inaccessible power taken into account, using currently-available battery technology.

See https://newatlas.com/aircraft/archer-aviation-evtol-united/.

See Archer Investor Deck 2021 at 36.

> Designed to meet aerospace certification standards (RTCA DO-311A)

See Archer Investor Deck 2021 at 36.

> a. The battery system should include monitors to detect battery fault conditions (including overtemperature, undervoltage, and overvoltage) and provide appropriate warning signals. The battery system may or may not include cell level or bus level monitoring.

See RTCA-DO-311A (December 19, 2017) at Section 2.1.4.2(a).

> k. The design of the battery system should include provisions to monitor the voltage of individual cells or banks of parallel cells.

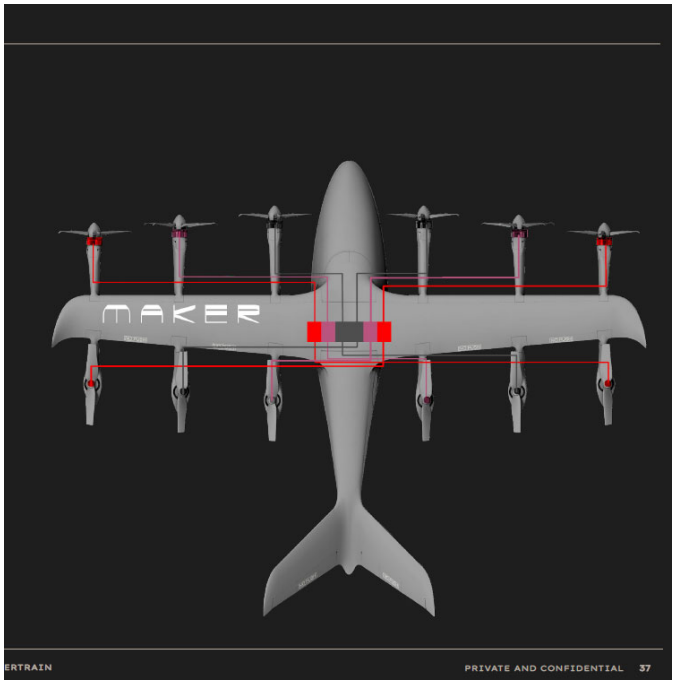
See RTCA-DO-311A (December 19, 2017) at Section 2.1.10.1(k).

1[c]*: select, from the plurality of battery sub-modules, one or more battery sub-modules to electrically connect to a common power bus;*

186. The Maker aircraft comprises a plurality of battery sub-modules, such as the "[s]ix independent batteries, each powering two motors (one forward and one aft)." The Maker aircraft also comprises a "detachable bus" which the one or more battery sub-modules are selected and configured to electrically attach or detach from. On information and belief, batteries are selected for attachment or detachment based on, for example, whether they are in a state that would cause damage to the battery if charged. The detachable bus "allows for current sharing across busses in normal operation" in order to provide power to the selected batteries and support fast charging.

> Passive detachable bus allows for current sharing across busses in normal operation without introducing a single point of failure

See Archer Investor Deck 2021 at 37.



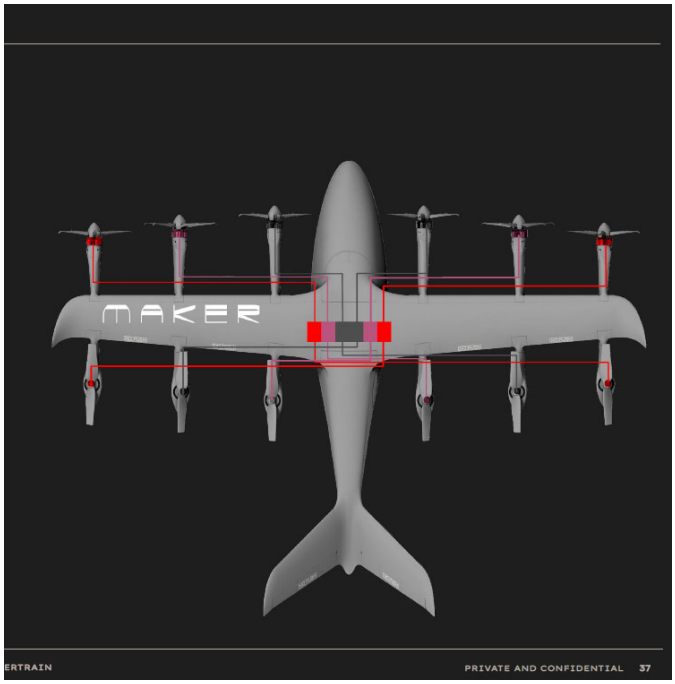
See Archer Investor Deck 2021 at 37.

***1[d]**: configure the selected battery sub-modules so that the selected battery sub-modules are electrically connected to the common power bus; and*

187. The Maker aircraft comprises a plurality of battery sub-modules, such as the "[s]ix independent batteries, each powering two motors (one forward and one aft)." The Maker aircraft also comprises a "detachable bus" which the one or more battery sub-modules are selected and configured to electrically attach or detach from in order to allow for fast charging.

> Passive detachable bus allows for current sharing across busses in normal operation without introducing a single point of failure

See Archer Investor Deck 2021 at 37.



See Archer Investor Deck 2021 at 37.

***1[e]**: charge the selected battery sub-modules that are electrically connected to the common power bus, including by:*

188. The Maker aircraft comprises charging the selected battery sub-modules that are electrically connected to the common power bus. For example, the Maker aircraft supports fast charging of the batteries that are selected and connected to the "detachable bus."

> Fast charge enables high aircraft utilization

See Archer Investor Deck 2021 at 36.

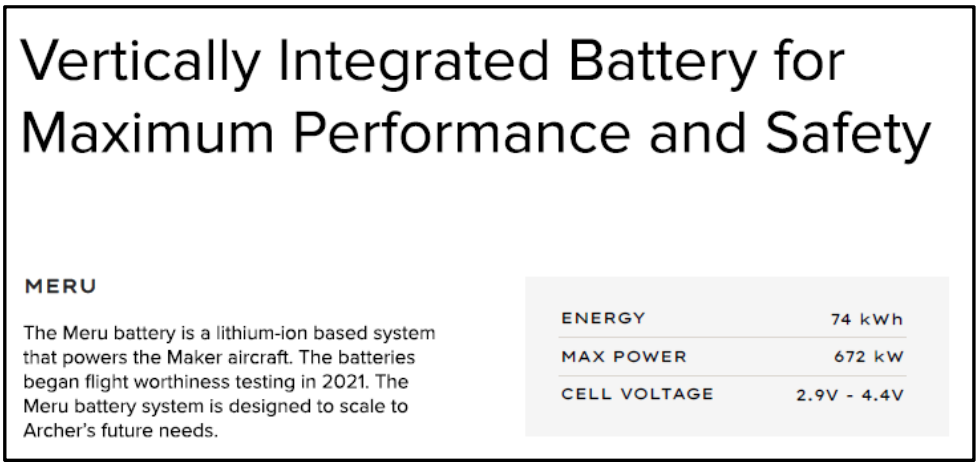
> Passive detachable bus allows for current sharing across busses in normal operation without introducing a single point of failure

See Archer Investor Deck 2021 at 37.

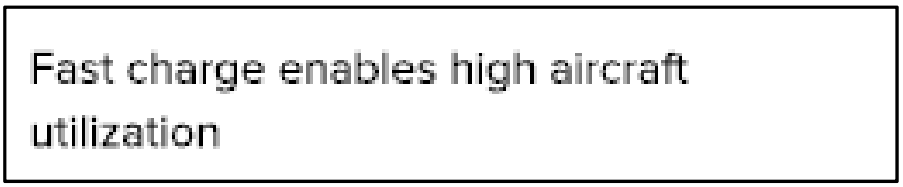
***1[f]**: obtaining a minimum sub-module current, wherein the minimum sub-module current is determined by selecting a minimum from a plurality of sub-module currents in the*

plurality of metrics; setting a charging current based at least in part on the minimum sub-module current, wherein the charging current is used to charge the selected battery sub-modules;

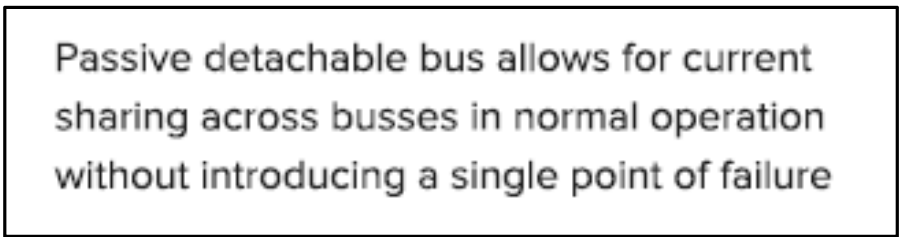
189. The Maker aircraft comprises a plurality of battery sub-modules, for example "[s]ix independent" Meru batteries that are each "a lithium-ion based system." The selected battery sub-modules are charged by attaching and detaching the selected lithium batteries to a "detachable bus" to "allow[] for current sharing." On information and belief, the lithium-ion based Meru batters are charged using a constant-current constant-voltage (CC/CV) system in which charging the lithium-ion batteries begins with a constant current charge in which the charging current is set based at least in part on an obtained sub-module minimum current that is determined by selecting a minimum from a plurality of sub-module currents in the plurality of metrics.



See Archer Investor Deck 2021 at 36.



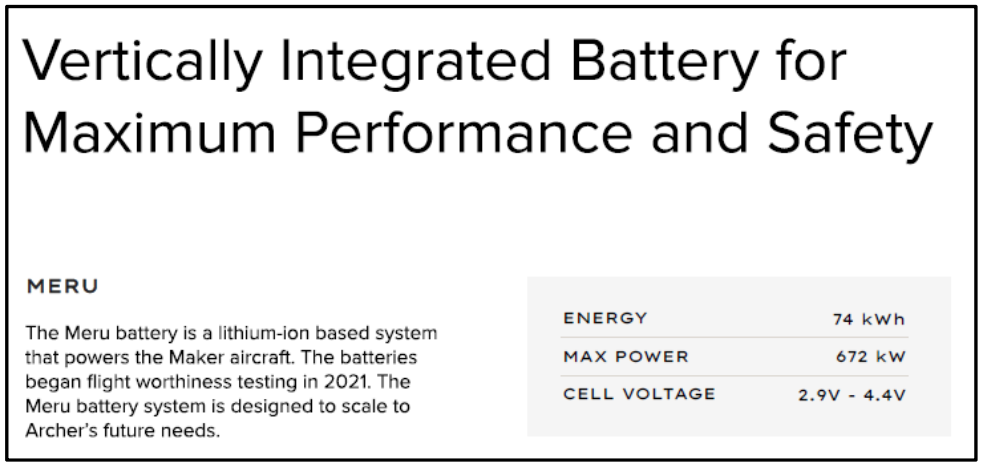
See Archer Investor Deck 2021 at 36.



See Archer Investor Deck 2021 at 37.

***1[g]**: obtaining a global maximum cell voltage, wherein the global maximum cell voltage is determined by selecting a maximum from a plurality of maximum cell voltages in the plurality of metrics; determining whether the global maximum cell voltage exceeds a voltage threshold; and in the event it is determined that the global maximum cell voltage exceeds the voltage threshold, setting the charging current based at least in part on the global maximum cell voltage.*

190. The Maker aircraft's Meru batteries have a recommended upper cell voltage of 4.4V and are vulnerable to damage if the upper cell voltage is exceeded. On information and belief, the batteries are charged using a constant-current constant-voltage (CC/CV) system. In order to avoid overcharging the batteries, the global maximum cell voltage of each battery is monitored individually to assure that no single battery cell voltage exceeds the maximum upper cell voltage. When an obtained global maximum cell voltage selected from a plurality of maximum cell voltages exceeds a voltage threshold that is at or around the upper cell voltage, the charging system of the Maker aircraft transitions to a constant-voltage charging state to protect against overcharging. In the constant voltage state, the charging current is set based at least in part on the global maximum cell voltage.



See Archer Investor Deck 2021 at 36.

See Archer Investor Deck 2021 at 36.

> a. The battery system should include monitors to detect battery fault conditions (including overtemperature, undervoltage, and overvoltage) and provide appropriate warning signals. The battery system may or may not include cell level or bus level monitoring.

See RTCA-DO-311A (December 19, 2017) at Section 2.1.4.2(a).

> k. The design of the battery system should include provisions to monitor the voltage of individual cells or banks of parallel cells.

See RTCA-DO-311A (December 19, 2017) at Section 2.1.10.1(k).

191. On information and belief, Archer and its employees knew of the '033 Patent, or should have known of the '033 Patent but have been willfully blind to its existence. Archer acquired knowledge of the patents prior to the filing of this Complaint at least by virtue of its hiring of former Wisk employees and inventors. For example, Scott Furman, Archer's "Chief Avionics Architect," joined Archer in January 2020 after spending years in the same role at Wisk and Kitty Hawk. Mr. Furman is a named inventor on the '033 Patent and had intimate knowledge of the '033 Patent when he joined Archer. Mr. Furman and other former Wisk employees took their knowledge of the '033 Patent to Archer when they became Archer employees. On information and belief, Archer availed itself of the specific knowledge of these former Wisk employees regarding Wisk's patents and confidential and proprietary information and trade secrets to develop and market its infringing products. Thus, Archer had knowledge of the '033 Patent no later than the date on which Mr. Furman was hired. Archer also has knowledge of the '033 Patent as of the filing of this Complaint. Archer's infringement was and continues to be egregious, consciously wrongful, and done in bad faith.

192. Wisk has been damaged by Archer's infringement of the '033 Patent and will continue to be damaged unless Archer is enjoined by this Court. Wisk has suffered and continues to suffer irreparable injury for which there is no adequate remedy at law. The balance of hardships favors Wisk, and the public interest is not disserved by an injunction.

SIXTH CAUSE OF ACTION

Infringement of U.S. Patent No. 10,333,328

193. Wisk incorporates the foregoing paragraphs as though fully set forth herein.

194. The '328 Patent, entitled "Multi-battery charging station which selectively connects battery sub-modules to a common power bus for charging," was duly and lawfully issued on June 25, 2019.

195. Wisk is the owner of all rights, title, and interest in the '328 Patent, including the right to bring this suit for injunctive relief and recover past and ongoing damages.

196. The '328 Patent is valid and enforceable.

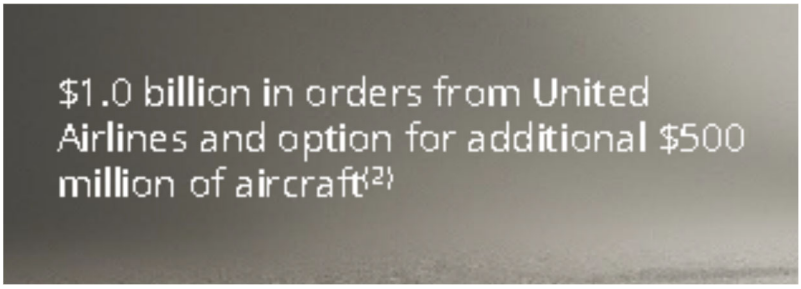
197. Archer has infringed, and continues to infringe, literally and/or under the doctrine of equivalents, one or more claims of the '328 Patent, including but not limited to claim 1 pursuant to 35 U.S.C. § 271(a), by making, using, selling, and/or offering to sell, within the United States, without authority, the Maker aircraft and related components.

198. As just one non-limiting example, set forth below (with claim language in italics) is a description of infringement of exemplary claim 1 of the '328 Patent in connection with Archer's making, using, selling, and/or offering for sale the Maker aircraft. This description is based on currently available public information, and Wisk reserves the right to modify this description including, for example, on the basis of information obtained during discovery.

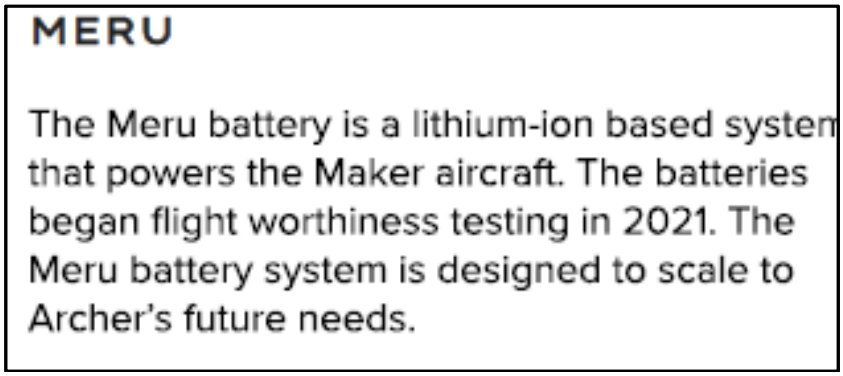
1[pre]*: A system, comprising:*

199. Archer has made, used, sold and/or offered to sell the Maker aircraft and battery charging system.

See https://newatlas.com/aircraft/archer-aviation-evtol-united/.



See Archer Investor Deck 2021 at 6.



See Archer Investor Deck 2021 at 36.

***1[a]**: A processor; and a memory coupled with the processor, wherein the memory is configured to provide the processor with instructions which when executed cause the processor to:*

200. The Maker aircraft includes a processor and memory coupled with the processor that are configured to provide the processor with instructions for fast charging. When executed the instructions cause the processor to perform the limitations of Claim 1.

See Archer Investor Deck 2021 at 36.

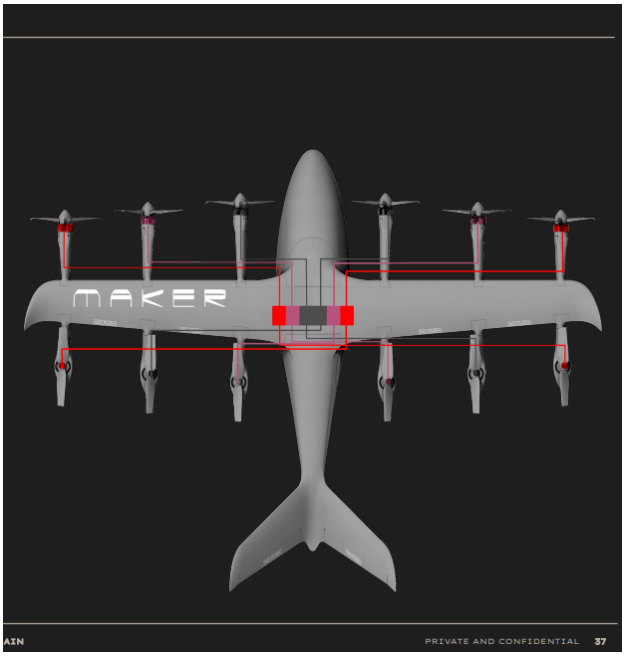
***1[b]**: select one or more battery sub-modules from a plurality of battery sub-modules to electrically connect to a common power bus, including by: determining if a discharge-related fault indication for a given battery sub-module in the plurality of battery sub-modules indicates that said given battery sub-module is in a discharge-related fault condition; and in response to determining that the discharge-related fault indication indicates that said given battery sub-module is in the discharge-related fault condition, excluding the given battery sub-module from the selected battery sub-modules such that said given battery sub-module is electrically disconnected from the common power bus;*

201. The Maker aircraft comprises a plurality of battery sub-modules. For example, the Maker aircraft's battery system is separated into "[s]ix independent batteries, each powering two motors (one forward and one aft)" such that if one battery fails, the aircraft still has five to rely upon (there is no "single point of failure").

> The Maker's "Meru" battery system is interesting too; it's separated into six independent units, each powering a pair of forward and rear props such that if one battery fails, the aircraft still has five to rely on to get it down safely. The one flying in the current Maker prototype is a 74 kWh pack offering a maximum power draw of 672 kW, but the one slated for the production aircraft is a 143 kWh monster that Archer claims will give the Maker a 60-mile (96 km) range, with proper reserves, capacity fade and inaccessible power taken into account, using currently-available battery technology.

See https://newatlas.com/aircraft/archer-aviation-evtol-united/.

See Archer Investor Deck 2021 at 36.



See Archer Investor Deck 2021 at 37.

202. The Maker aircraft's battery system is "[d]esigned to meet aerospace certification standards," such as "RTCA DO-311A," which provides at Section 2.1.4.2 that a compliant battery system "should include monitors to detect battery fault conditions (including overtemperature, undervoltage and overvoltage) and provide appropriate warning signals." Thus, on information and belief, the Maker aircraft's battery system determines if a discharge-related fault indication for a given battery sub-module in the plurality of battery sub-modules indicates that said given battery sub-module is in a discharge-related fault condition.

> The Maker's "Meru" battery system is interesting too; it's separated into six independent units, each powering a pair of forward and rear props such that if one battery fails, the aircraft still has five to rely on to get it down safely. The one flying in the current Maker prototype is a 74 kWh pack offering a maximum power draw of 672 kW, but the one slated for the production aircraft is a 143 kWh monster that Archer claims will give the Maker a 60-mile (96 km) range, with proper reserves, capacity fade and inaccessible power taken into account, using currently-available battery technology.

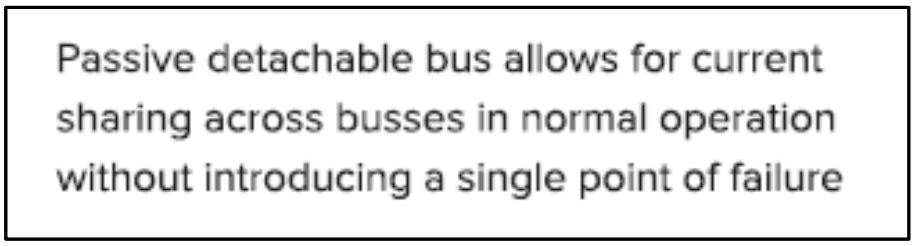
See https://newatlas.com/aircraft/archer-aviation-evtol-united/.

See Archer Investor Deck 2021 at 36.

> **2.1.4.2 Battery Warning Features**
>
> a. The battery system should include monitors to detect battery fault conditions (including overtemperature, undervoltage, and overvoltage) and provide appropriate warning signals. The battery system may or may not include cell level or bus level monitoring.
>
> b. Warning circuits should be suitably protected from cell failure conditions within the battery system such that the warning signal is not compromised.
>
> ***Note***: *The above features may be required when the battery is essential for flight critical systems. Refer to section 2.1.2 for more details.*

See RTCA-DO-311A (December 19, 2017) at Section 2.1.4.2(a).

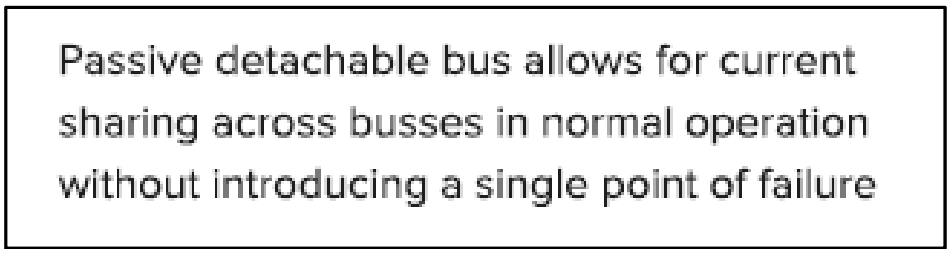
203. Further, the Maker aircraft comprises a "detachable bus" which the one or more battery sub-modules are selected and configured to electrically attach or detach from. The detachable bus "allows for current sharing across busses in normal operation" in order to provide power to the selected batteries and support fast charging. The batteries of the Maker aircraft are selected for electrical connection or disconnection to the detachable bus. For example, on information and belief, determining that the discharge-related fault indication indicates that a given battery sub-module is in the discharge-related fault condition, results in the system excluding the given battery sub-module from the selected battery sub-modules such that the battery sub-module is electrically disconnected from the detachable bus.



See Archer Investor Deck 2021 at 37.

***1[c]**: configure the selected battery sub-modules so that the selected battery sub-modules are electrically connected to the common power bus, wherein in response to determining that the discharge-related fault indication indicates that said given battery sub-module is in the discharge-related fault condition, the given battery sub-module is excluded from the selected battery sub-modules such that said given battery sub-module is not electrically connected to the common power bus whereas the selected battery sub-modules are electrically connected to the common power bus; and*

204. The Maker aircraft comprises a plurality of battery sub-modules, such as the "[s]ix independent batteries, each powering two motors (one forward and one aft)." The Maker aircraft also comprises a "detachable bus" which the one or more battery sub-modules are selected and configured to electrically attach or detach from. The Maker aircraft's battery system is "[d]esigned to meet aerospace certification standards," such as "RTCA DO-311A," which provides at Section 2.1.4.2 that a compliant battery system "should include monitors to detect battery fault conditions (including overtemperature, undervoltage and overvoltage) and provide appropriate warning signals." Thus, on information and belief, in response to determining that the discharge-related fault indication indicates that said given battery sub-module is in the discharge-related fault condition, the given battery sub-module is excluded from the selected battery sub-modules such that said given battery sub-module is not electrically connected to the common power bus whereas the selected battery sub-modules are electrically connected to the common power bus.



See Archer Investor Deck 2021 at 37.

See Archer Investor Deck 2021 at 36.

2.1.4.2 Battery Warning Features

a. The battery system should include monitors to detect battery fault conditions (including overtemperature, undervoltage, and overvoltage) and provide appropriate warning signals. The battery system may or may not include cell level or bus level monitoring.

b. Warning circuits should be suitably protected from cell failure conditions within the battery system such that the warning signal is not compromised.

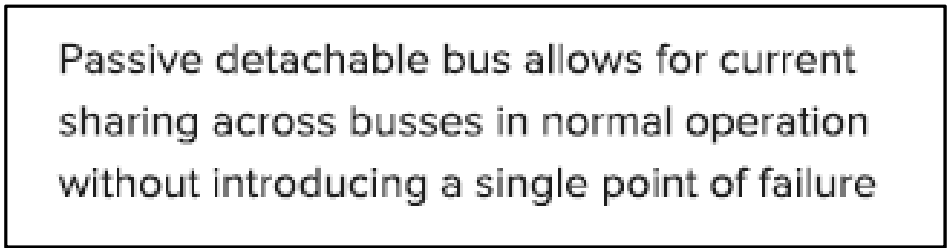
Note: *The above features may be required when the battery is essential for flight critical systems. Refer to section 2.1.2 for more details.*

See RTCA-DO-311A (December 19, 2017) at Section 2.1.4.2(a).

1[d]*: charge the selected battery sub-modules that are electrically connected to the common power bus, wherein in response to determining that the discharge-related fault indication indicates that said given battery sub-module is in the discharge-related fault condition, the given battery sub-module is excluded from the selected battery sub-modules such that said given battery sub-module is not charged whereas the selected battery sub-modules that are electrically connected to the common power bus are charged.*

205. The Maker aircraft includes a processor and memory coupled with the processor that are configured to provide the processor with instructions for fast charging. When executed the instructions cause the processor to perform the limitations of Claim 1.

See Archer Investor Deck 2021 at 36.



See Archer Investor Deck 2021 at 37.

206. On information and belief, Archer and its employees knew of the '328 Patent, or should have known of the '328 Patent but have been willfully blind to its existence. Archer acquired knowledge of the patents prior to the filing of this Complaint at least by virtue of its hiring of former Wisk employees and inventors. For example, Scott Furman, Archer's "Chief Avionics Architect," joined Archer in January 2020 after spending years in the same role at Wisk and Kitty Hawk. Mr. Furman is a named inventor on the '328 patent and had intimate knowledge of the '328 Patent when he joined Archer. Mr. Furman and other former Wisk employees took their knowledge of the '328 Patent to Archer when they became Archer employees. On information and belief, Archer availed itself of the specific knowledge of these former Wisk employees regarding Wisk's patents and confidential and proprietary information and trade secrets to develop and market its infringing products. Thus, Archer had knowledge of the '328 Patent no later than the date on which Mr. Furman was hired. Archer also has knowledge of the '328 Patent as of the filing of this Complaint. Archer's infringement was and continues to be egregious, consciously wrongful, and done in bad faith.

207. Wisk has been damaged by Archer's infringement of the '328 Patent and will continue to be damaged unless Archer is enjoined by this Court. Wisk has suffered and continues to suffer irreparable injury for which there is no adequate remedy at law. The balance of hardships favors Wisk, and the public interest is not disserved by an injunction.

PRAYER FOR RELIEF

208. Wisk hereby requests the following relief from the Court:

(a) That judgment be entered in favor of Wisk and against Archer on all of Wisk's claims asserted in this Complaint;

(b) That the Court award to Wisk such damages as may be proven at trial, in accordance with each of the claims asserted in this Complaint;

(c) That the Court award to Wisk double the damages proven at trial on Wisk's trade secret claims pursuant to 18 U.S.C. § 1836(b)(3)(C) and Cal. Civ. Code § 3426.3;

(d) That the Court award to Wisk enhanced damages for Archer's willful infringement of each of the asserted patents pursuant to 35 U.S.C. § 284;

(e) That the Court enter judgment that this case is exceptional under 35 U.S.C. § 285, and award reasonable attorneys' fees pursuant thereto;

(f) That the Court establish a constructive trust, and require Archer to transfer legal title to Wisk of any and all intellectual property, devices, machines, software, documents, or other objects or data that was developed or created using Wisk's trade secrets and confidential information;

(g) That the Court issue preliminary and permanent injunctions against Archer, forever barring Archer from using Wisk's trade secrets, requiring Archer to return to Wisk any and all documents and information that reflect Wisk's trade secrets, and barring Archer from infringing the asserted patents;

(h) That the Court award to Wisk pre-judgment and post-judgment interest on all damages awarded;

(i) That the Court award to Wisk reasonable attorneys' fees and costs related to the trade secret claims pursuant to 18 U.S.C. § 1836(b)(3)(B) and Cal. Civ. Code § 3426.4;

(j) That the Court award to Wisk costs and expenses in this action;

(k) That the Court award to Wisk such other and further relief as the Court may deem just and proper.

JURY DEMAND

209. Pursuant to Federal Rule of Civil Procedure 38(b), Wisk hereby demands trial by jury of all issues properly triable thereby.

DATED: April 6, 2021

Respectfully submitted,

QUINN EMANUEL URQUHART & SULLIVAN, LLP

By */s/ Yury Kapgan*
Yury Kapgan
Patrick Schmidt
Michael LaFond

Attorneys for Plaintiff Wisk Aero LLC