

UNITED STATES DISTRICT COURT FOR THE
WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

HARPER ENGINEERING COMPANY,

Plaintiff,

v.

AMERICAN AIRLINES, INC.,

Defendant.

CASE NO. 1:22-cv-826

JURY DEMAND

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Harper Engineering Co. (“Harper Engineering”) files this complaint against Defendant American Airlines, Inc. (“American Airlines”) to stop Defendant’s infringement of U.S. Patent No. 11,352,823 (“the ’823 Patent”) and recover all appropriate legal and equitable relief. Harper Engineering alleges as follows:

1. Harper Engineering is a corporation organized under the laws of the State of Washington and has a principal place of business at 700 SW 7th Street, Renton, Washington 98057-2919.

2. On information and belief, American Airlines, Inc. is a corporation organized under the laws of Delaware, has a principal place of business at 4333 Amon Carter Blvd., Fort Worth, Texas, 76155, and maintains multiple regular and established places of business within this district, including at least at 3600 Presidential Boulevard, Suite 102, Austin, Texas 78719, 7909 Karl May Dr., Waco, Texas 76708, and at 9800 Airport Blvd., San Antonio, Texas 78216.

3. American Airlines has significant operations in this venue and in the Austin area in particular. For example, on information and belief, American Airlines operates up to five gates at the Austin-Bergstrom International Airport (“AUS”). According to statements attributed to

American Airlines, it expects to have at least 530 weekly departures from AUS during the summer and offers non-stop flights to 42 destinations. American Airlines stated that it had more than 3.2 million fliers in Austin, and according to statistics from January of this year, it handled about a quarter of all passenger traffic at AUS, making it the second largest carrier at the airport. American Airlines has increased its traffic to AUS by 119% since 2019.

4. American Airlines also has a sizeable number of employees in this district, including in Austin, and the number of American Airlines employees in Austin continues to grow. According to a recent statement, American Airlines is looking to add up to 70 new employees as part of its operations at AUS.

JURISDICTION AND VENUE

5. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 100 *et seq.*

6. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

7. This Court has personal jurisdiction over American Airlines because it has purposefully and intentionally availed itself of the privileges of doing business in Texas and in this district. American Airlines has multiple regular and established places of business in the State of Texas, including its headquarters and principal place of business in Fort Worth and at multiple airports where it conducts ground operations, operates flights carrying passengers and cargo into and out of the airports, and conducts other business operations. American Airlines' tortious acts giving rise to this lawsuit, which have harmed Harper Engineering, have occurred and are continuing to occur within Texas and within this district. American Airlines further acted with knowledge, at least from the filing and/or service of this complaint, that its actions infringing the

'823 Patent, including the use of infringing products, would cause harm to Harper Engineering in Texas. On information and belief, American Airlines is transacting business and benefitting financially from the Texas market, including for example, through at least the use of infringing products in the State of Texas.

8. Venue is proper pursuant to 28 U.S.C. §§ 1391 and 1400 because American Airlines maintains a regular and established place of business in this district and has committed acts of infringement in this district, as described below. In addition, a substantial part of the events giving rise to this cause of action occurred in Texas and, in particular, in this district, as described below.

FACTUAL BACKGROUND

9. Harper Engineering designs, develops, and manufactures devices and components used in commercial aircraft. Harper Engineering was founded in the 1960s by Mr. OJ Harper, a former employee of The Boeing Company. Since its founding, Harper Engineering has dedicated itself to finding innovative solutions to technical problems and challenges in aircraft, including for aircraft interiors.

10. One such problem that has long been known within the industry is the limited storage space available in airplane cabins. In most narrow body passenger jets – those with a single center aisle – cabin storage is provided in large part by overhead bins that are located to the left and the right of the center aisle. For these narrow body passenger jets, the overhead bins have doors that open to provide passengers with access to the bins in which their luggage can be stored. The bin doors are attached to the bins using two or more hinges.

11. The design and functionality of the hinges is controlled by regulations provided by the Federal Aviation Administration (“FAA”). For example, under FAA regulations, the hinges

must be capable of withstanding certain extreme conditions and still maintain the safety of the passenger cabin. As a result, conventional bin hinges were generally bulky to provide the strength and durability required for the passenger plane environment.

12. This bulk, however, caused the bin hinges to extend into the bin space thereby reducing the amount of space that was available for passengers to store their luggage. Although this issue was well-known, the industry was unable to provide a solution, much less a solution that was safe and effective.

13. The following images show conventional hinge assemblies (identified by the red arrows):





14. Against this backdrop, Harper Engineering invented its novel integrated stowage bin assembly. As part of this innovation, the integrated stowage bin assembly included a hinge assembly that was placed flush with the sidewall of the storage bin. As a result, the hinge assembly increased the volume of the available storage space of the overhead bin as compared to conventional bin hinges, thereby increasing the effective storage space of the overhead bin and facilitating the loading and unloading of luggage. Harper Engineering's innovative hinge assembly was also lighter than conventional bin hinges and had a more aesthetic look. This invention came about as a result of Harper Engineering's significant research and design efforts combined with the extensive knowledge it gained over years of working with aircraft interiors.

15. Recognizing the importance and groundbreaking innovation provided by its integrated stowage bin assembly, Harper Engineering took steps to protect its invention, including by filing provisional United States Patent Application No. 62/533,575 on July 17, 2017, which was directed toward its inventive integrated stowage bin assembly.

16. On June 7, 2022, the United States Patent Office duly issued the '823 Patent, which claims priority to U.S. Provisional Patent Application No. 62/533,575, as well as to U.S. Patent

No. 10,760,315 (the “’315 Patent”), which issued on September 1, 2020, and U.S. Patent No. 10,801,244 (the “’244 Patent”), which issued on October 13, 2020, each of which also claim priority to U.S. Provisional Patent Application No. 62/533,575. A true and correct copy of the ’823 Patent is attached as Exhibit A to this Complaint.

17. Harper Engineering owns all rights, title, and interest in the ’823 Patent, including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the ’823 Patent.

18. In or about 2017, airplane manufacturer Airbus Americas, Inc. (“Airbus”) introduced its Airspace XL overhead stowage bin, promising several advantages over conventional bins, including more storage space, faster boarding and deplaning, and an improved travel experience for airline passengers and cabin crews. *See* <https://www.aviation24.be/airlines/american-airlines/american-airlines-first-retrofit-customer-airbus-new-airspace-xl-luggage-bins-a321-fleet/> (attached as Exhibit B).

19. Airbus relied on the Airspace XL bins to promote its A320 family of airplanes. For example, the Airbus website advertises that the “new Airspace XL bins have capacity for 60% more bags” and includes the following illustration to show that increased storage space:

Illustration 2: Airbus Advertisement for FACC Airspace XL Bins

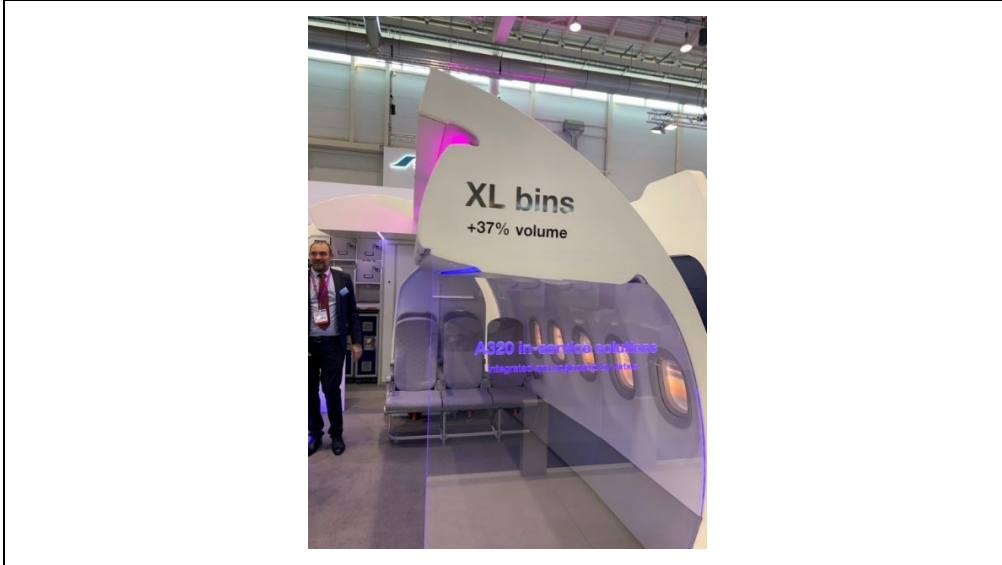


See https://www.airbus.com/aircraft/passenger-aircraft/cabin-comfort/airspace/a320neo-airspace.html#A320_space (attached as Exhibit C).

20. Airbus announced in 2017 that American Airlines would be the launch partner for the Airspace XL bins. In addition to all new A321 airplanes (part of the A320 series airplanes) for American Airlines being equipped with the Airspace XL bins, Airbus also announced that existing A321 airplanes for American Airlines would be retrofitted with the Airspace XL bins. See Exhibit B.

21. At the Aircraft Interiors Expo 2019 (“AIX 2019”), held in Hamburg, Germany, the Airbus booth included a display featuring the Airspace XL bin as shown in the following illustration (available at <https://economyclassandbeyond.boardingarea.com/2019/04/02/aix19-airbus-and-american-airlines-launch-the-airspace-xl-overhead-bin/>):

Illustration 3: Airbus Booth at AIX Expo



22. During AIX 2019, Airbus also promoted its partnership with American Airlines as the launch partner for the Airspace XL bins, as shown in the following tweet from Airbus:

Illustration 4: Tweet Regarding Use of Airspace XL Bins by American Airlines



23. The first flight of an American Airlines airplane having the Airspace XL bins was announced on April 2, 2019. The airplane, an Airbus A321neo, flew from Phoenix to Orlando. (<https://economyclassandbeyond.boardingarea.com/2019/04/02/aix19-airbus-and-american-airlines-launch-the-airspace-xl-overhead-bin/>). According to industry reports, all new Airbus A321neo airplanes delivered to American Airlines will include the Airspace XL bins. *See* <https://www.airbus.com/newsroom/en/press-releases/2019-04/american-airlines-launches-a321neo-service-with-new-cabin-larger-overhead-luggage-bins.html> (attached as Exhibit D).

24. On information and belief, American Airlines has taken delivery from Airbus of a substantial number of Airbus A321neo airplanes that include the infringing Airspace XL bins. *See* <https://news.aa.com/news/news-details/2021/A-neo-is-born-FLT-11/> (attached as Exhibit E).

25. On information and belief, American Airlines continues to take delivery of Airbus A321neo airplanes that include the infringing Airspace XL bins for operations within the United States, and plans to continue to do so in the future.

26. On information and belief, American Airlines is currently operating in the United States multiple A321neo aircraft that include the infringing Airspace XL bins. American Airlines continues to operate flights in the United States using these airplanes with the infringing Airspace XL bins, including flights that operate within this district.

27. American Airlines continues to promote the Airspace XL bins to its customers and potential customers as a beneficial feature of its A321neo aircraft that improves the travel experience for its customers. For example, American Airlines boasts that it “was the launch customer for the Airspace XL bins,” “[s]tandard carry-on bags can be loaded on their sides instead of flat,” and “[e]ach bin has room for up to four bags, giving customers 60% more bag space.” *See* Exhibit E.

COUNT I:

PATENT INFRINGEMENT UNDER 35 U.S.C. § 271 OF THE '823 PATENT

28. Harper Engineering incorporates by reference the allegations in Paragraphs 1-27 above.

29. American Airlines uses, sells, offers to sell, and/or imports into the United States Airspace XL Bins without the authorization or consent of Harper Engineering.

30. American Airlines directly infringes one or more claims of the '823 Patent by using, selling, offering to sell, and/or importing into the United States the Airspace XL bins.

31. American Airlines regularly operates domestic passenger flights between U.S. cities using the A321neo airplanes it receives from Airbus. These flights are on a daily basis between multiple U.S. cities across the country. *See* <https://flightaware.com/live/aircrafttype/A21N?;offset=0;order=ident;sort=ASC> (attached as Exhibit F). American Airlines has operated such domestic passenger flights of the A321neo planes regularly since 2019 and continues to operate them.

32. Based on publicly available information, American Airlines operates flights into and out of airports in this district using A321neo airplanes. For example, American Airlines has operated daily flights between Dallas-Fort Worth and San Antonio since at least as early as June 7, 2022, the date of issue of the '823 Patent, using one or more A321neo airplanes that include the infringing Airspace XL bins. *See* <https://flightaware.com/live/flight/AAL1967/history/20220724/1740Z/KDFW/KSAT> (a screenshot obtained on July 24, 2022, is attached hereto as Exhibit G); <https://flightaware.com/live/flight/AAL1967/history/160> (a screenshot obtained on July 24, 2022, is attached hereto as Exhibit H). On information and belief, American Airlines will continue in the future to operate flights with the A321neo airplanes, which include the infringing

Airspace XL bins, into and out of airports in this district, including in San Antonio, Texas, such that infringement of the '823 Patent will continue to occur in this district.

33. On information and belief, during the domestic passenger flights of its A321neo aircraft, American Airlines promotes the Airspace XL bins onboard to its passengers and provides instructions for using the bins to passengers, including how to maximize the storage of luggage and other belongings in the bins.

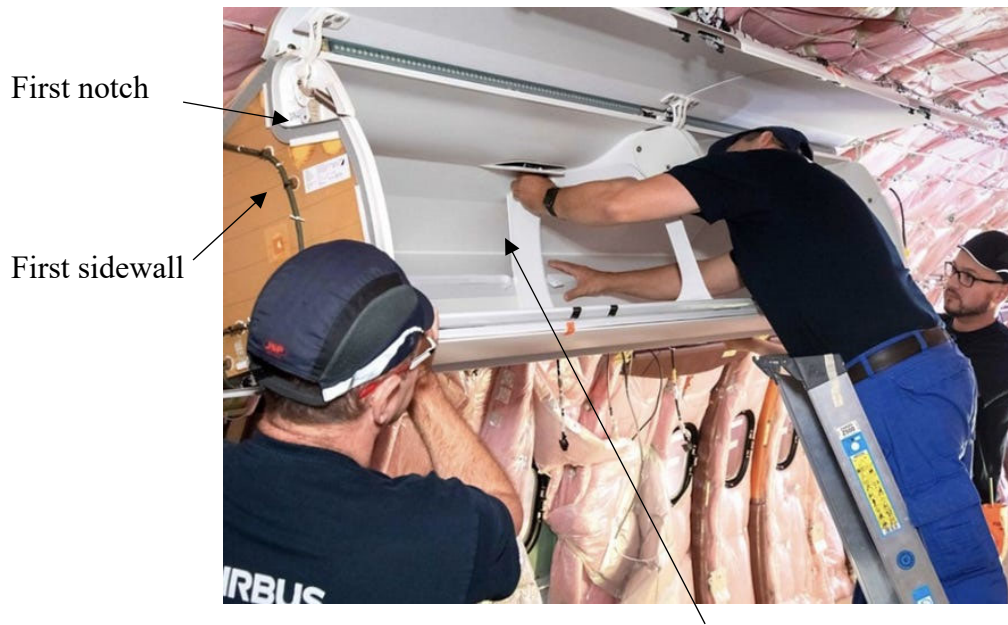
34. On information and belief, American Airlines passengers and crewmembers use the Airspace XL bins on all A321neo flight operated by American Airlines. On information and belief, the Airspace XL bins on these flights are used throughout the flights to stow luggage and other belongings, as well as when passengers and crewmembers actively place luggage and other belongs in the bins and retrieve luggage and other belongings from the bins. On information and belief, American Airlines uses the Airspace XL bins on these flights as stowage for medical kits and other emergency supplies.

35. On information and belief, American Airlines, its crewmembers, and its passengers will continue to use the Airspace XL bins on American Airlines' domestic flights of its A321neo aircraft in the future.

36. The infringing Airspace XL bins used by American Airlines, its crewmembers, and its passengers are stowage bin assemblies that meet each of the elements of at least claim 1 of the '823 Patent. The following paragraphs provide a non-limiting explanation of how the Airspace XL bins correspond to each limitation of claim 1. The discussion in the following paragraphs is exemplary only and does not limit the '823 Patent:

a. The Airspace XL bin is a stowage bin assembly that has a bin bucket assembly. The bin bucket assembly includes a first bin bucket having an opening and a first

sidewall. The first sidewall includes a first notch. The elements are shown, for example, in the representative images of the Airspace XL bin below:



Bin bucket assembly with first bin bucket and opening

See <https://www.businessinsider.com/the-evolution-of-cabin-overhead-bins-improved-the-flying-experience-2021-10#in-response-to-the-issue-boeing-and-airbus-engineered-large-overhead-bins-capable-of-fitting-twice-as-many-bags-as-earlier-designs-9> (accessed July 13, 2022) (attached as Exhibit I).

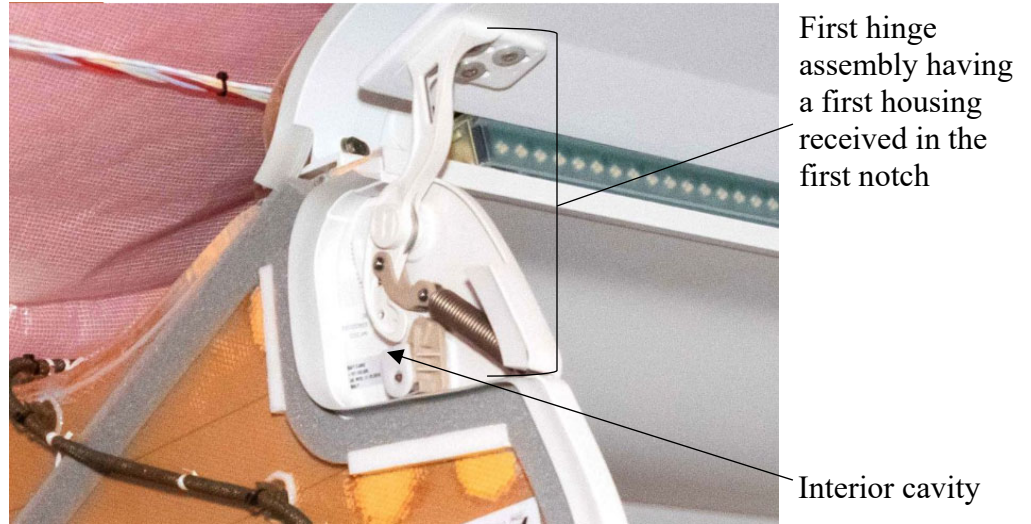
b. The Airspace XL bins also include a bin door coupled to the bin bucket assembly. The bin door of the Airspace XL bin is movable relative to the first bin bucket between an open position and a closed position and covers the opening of the bin bucket when in the closed position.

Bin door coupled to bin bucket assembly and movable between an open position and a closed position



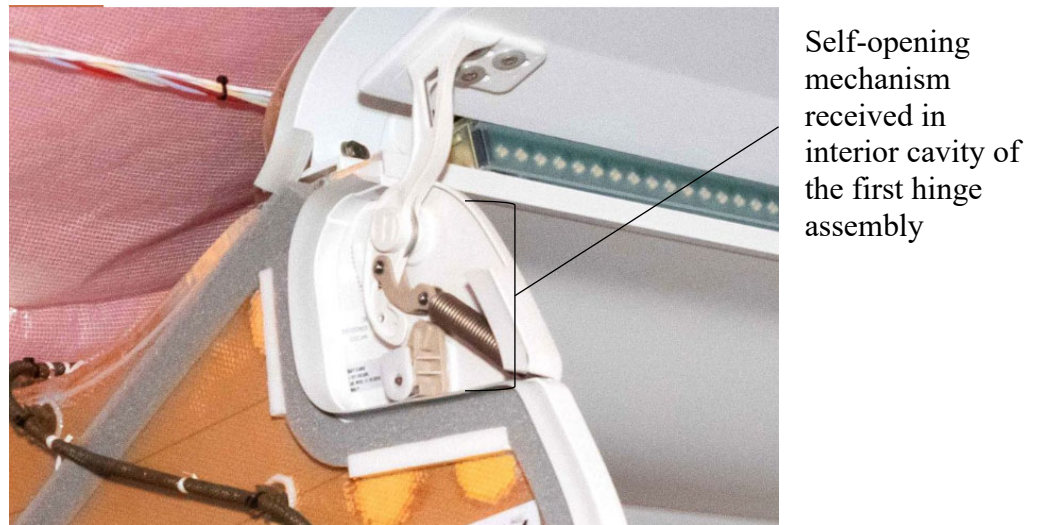
See <https://economyclassandbeyond.boardingarea.com/2019/04/02/aix19-airbus-and-american-airlines-launch-the-airspace-xl-overhead-bin/> (last accessed July 25, 2022) (attached as Exhibit J).

c. The Airspace XL bins include a first hinge assembly having a first housing received in the first notch. The first hinge assembly has an interior cavity.



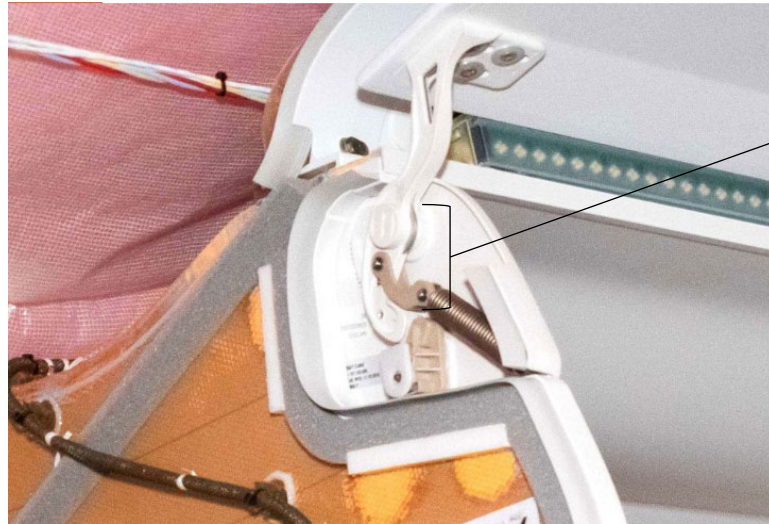
See Exhibit I (enlarged).

d. The Airspace XL bins include a first self-opening mechanism that is received in the interior cavity of the first hinge assembly.



See Exhibit I (enlarged).

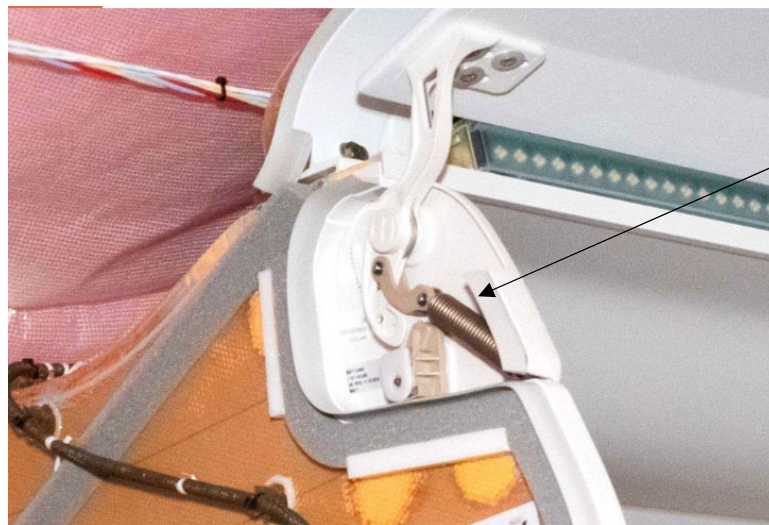
e. The first self-opening mechanism of the Airspace XL bins includes a rotatory crank that has a pivot pin aperture and an opening aperture and a rotary pin received in the opening aperture.



Rotary crank with pivot pin aperture, opening aperture, and rotary pin received in opening aperture

See Exhibit I (enlarged).

f. The first self-opening mechanism of the Airspace XL bin includes a biasing device that is directly coupled to the rotary pin. The biasing device urges the rotary crank about the rotary pin to counteract a gravitational torque applied to the rotary crank by the bin door when the bin door moves between the open position and the closed position.



Biasing device directly coupled to rotary pin

See Exhibit I (enlarged).

37. Accordingly, the Airspace XL bin includes every element of claim 1 of the '823 Patent.

38. The Airspace XL bins include every element of additional claims in the '823 Patent. For example, and without limitation, the Airbus Airspace XL bins also include each element of claims 2-6, 13, and 14 of the '823 Patent.

39. The actions by American Airlines of at least using the Airspace XL bins in the United States result in direct infringement of one or more claims of the '823 Patent. Such direct infringement occurs at least through the customary and ordinary use of the Airspace XL bins during flights operated by American Airlines on its A321neo aircraft in the United States.

40. American Airlines had knowledge of the claims in the '823 Patent at least by the date it was served with the complaint in this lawsuit. On information and belief, American Airlines will continue to take delivery of new aircraft that include the Airspace XL bins and will continue to operate flights in the United States on which the Airspace XL bins are used by its crewmembers and its customers.

41. American Airlines also induces its passengers and other individual onboard its airplanes to use the infringing Airspace XL bins in a manner that infringes the claims of the '823 Patent. For example, on information and belief, American Airlines instructs its passengers to use the Airspace XL bins for the storage of luggage and other belongings and further provides instructions regarding the proper methods for opening and closing the bins and arranging luggage and other belonging within the bins. On information and belief, these instructions include verbal instructions given by employees of American Airlines to passengers of its A321neo airplane regarding the proper methods for storing luggage in the Airspace XL bins. In addition, on information and belief, American Airlines displays illustrations contained within the bin itself instructing passengers on the proper use of the Airspace XL bins. On information and belief, the

illustrations provided by American Airlines to its passengers are similar to the illustrations shown below:



See <https://laptrinhx.com/news/touring-jetblue-s-new-economy-cabin-on-the-airbus-a321neo-QLddNeR/> (attached as Exhibit K).

42. American Airlines' infringements have been willful, intentional, and deliberate. American Airlines knew or should have known at least by the date that it received notice of this lawsuit that using the Airspace XL bin in the United States would directly infringe claims of the '823 Patent, and that its actions result in direct and indirect infringement of the claims of the '823 Patent. American Airlines, however, has infringed and, on information and belief, continues to infringe claims of the '823 Patent.

JURY DEMAND

43. Pursuant to Federal Rule of Civil Procedure 38(b), Harper Engineering hereby demands a trial by jury of all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Harper Engineering respectfully prays for:

A. Judgment that American Airlines has infringed the '823 Patent by making, using, offering to sell, selling, and/or importing the Airbus XL bin in the United States;

B. Judgment that American Airlines has induced infringement of the '823 Patent as of the date that it first gained knowledge of the claims of the '823 Patent;

C. Judgment that American Airlines has willfully infringed the '823 Patent as of the date that it first gained knowledge of the claims of the '823 Patent;

D. A permanent injunction enjoining American Airlines and its affiliates, officers, agents, employees, attorneys, and all other persons acting in concert with American Airlines from infringing, either directly, contributorily, and/or by inducement, the '823 Patent;

E. An award of damages adequate to compensate Harper Engineering for American Airlines' infringements, both direct and indirect, of the '823 Patent, together with prejudgment and post-judgment interest and costs;

F. An award of enhanced damages pursuant to 35 U.S.C. § 284;

G. A declaration that this case is exceptional under 35 U.S.C. § 285, and that Harper Engineering be awarded reasonable attorneys' fees and costs; and

H. Such other and further relief as this Court deems just and proper.

DATED this 12th day of August 2022.

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