

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION**

AR Design Innovations LLC

Plaintiff,

v.

Ashley Furniture Industries, Inc.

Defendant.

Civil Action No. 4:20-cv-392

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff AR Design Innovations LLC (“ARDI” or “Plaintiff”), for its Complaint against Defendant Ashley Furniture Industries, Inc. (referred to herein as “ASHLEY” or “Defendant”), alleges the following:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq.*

THE PARTIES

2. Plaintiff ARDI is a limited liability company organized under the laws of the State of Texas with a place of business at 815 Brazos St. Ste 500, Austin, TX 78701-2509.

3. Upon information and belief, Defendant ASHLEY is a corporation organized under the laws of the State of Wisconsin with a place of business at 1 Ashley Way, Arcadia WI 54612-1218. Upon information and belief, ASHLEY sells, offers to sell, and/or uses products and services throughout the United States, including in this judicial district, and introduces infringing

products and services into the stream of commerce knowing that they would be sold and/or used in this judicial district and elsewhere in the United States.

JURISDICTION AND VENUE

4. This is an action for patent infringement arising under the Patent Laws of the United States, Title 35 of the United States Code.
5. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).
6. Venue is proper in this judicial district under 28 U.S.C. § 1400(b).
7. This Court has personal jurisdiction over the Defendant ASHLEY under the laws of the State of Texas due at least to their substantial business in Texas and in this judicial district, directly or through intermediaries, including: (i) at least a portion of the infringements alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct and/or deriving substantial revenue from goods and services provided to individuals in the State of Texas. Venue is also proper in this district because ASHLEY has a regular and established place of business in this district. For instance, ASHLEY has store locations in this judicial district. For example, Defendant ASHLEY has an Ashley HomeStore establishment located at 1201 North Central Expressway, Plano TX 75075. (*See, e.g.*, [https://www.texasashley.com/plano/.](https://www.texasashley.com/plano/))

BACKGROUND

The Invention

8. Cathryn Macinnes and Gerald Pearlstein are the inventors of U.S. Patent No. 7,277,572 (“the ’572 patent”). A true and correct copy of the ’572 patent is attached as Exhibit A.

9. The ’572 patent resulted from the pioneering efforts of Ms. Macinnes and Mr. Pearlstein (hereinafter “the Inventors”) in the area of interactive, three-dimensional (3D) interior

design systems. These efforts resulted in the development of a method and apparatus for generating and rendering a photorealistic 3D perspective view of a 3D object (*e.g.*, a piece of furniture) that can be selectively positioned and manipulated within a 3D scene, such as a living room in a person's house, in the early 2000s. At the time of these pioneering efforts, the most widely implemented technology used to try to address the need for a real-time, network-based interactive system for use in visualizing furniture in a room prior to placing an order for that furniture was either limited by its capability of using only two-dimensional (2D) images of the furniture or, if it had such 3D capability, the 3D furniture could not be rendered for manipulation within a 3D representation of the room into which the furniture was to be placed.

10. On information and belief, another furniture company, La-Z-Boy, Inc. ("LZB") at that time offered such a 2D system for use by sales associates in LZB stores. That LZB system mapped a fabric onto a static perspective view of the selected furniture item and the system generated furniture images in 2D, but did not enable them to be shown in the context of a background scene (*e.g.*, a particular room), and did not enable them to be manipulated, *e.g.*, for scaling, rotation and particular placement within the background scenes.

11. Other systems at that time allowed users to import photographs of actual rooms into the program, and then place 3D furniture objects into the room, which could be rotated to fit the scene. However, the room images for such systems were not associated with a 3D model of the room and lacked the capability of rendering furniture objects placed onto floor plans in photographically-derived scenes, and/or did not provide for the manipulation of 3D furniture objects at the client computer.

12. The Inventors conceived of the inventions claimed in the '572 patent as a way to provide an improved 3D design and visualization system that includes an easy to use Graphical

User Interface (GUI), which is capable of enabling a user to quickly and conveniently generate or import 3D scenes from a sever, import and manipulate 3D objects (like furniture) in the scenes in real time, and render them in photorealistic detail on a client computer.

13. For example, the Inventors developed a method in a client-server computing environment for generating and rendering a photorealistic 3D perspective view of a 3D object selectively positioned within a 3D scene. The method includes operating a client application with a GUI and displaying a 3D scene with the GUI. It also includes configuring the 3D scene for being selectively displayed in a plurality of views; retrieving at least one 3D object (*e.g.*, furniture) from a server; importing the 3D object into the 3D scene to generate a composite; and manipulating the 3D object within the composite for placement and orientation. A 3D image of the composite may be rendered at the client and selectively reconfigured in real time.

Luminosity characteristics may be applied to the 3D image and a photorealistic 3D view of the composite image may be rendered with the client application, including the luminosity characteristics.

Advantage Over the Prior Art

14. The patented invention disclosed in the '572 patent provides many advantages over the prior art, and in particular improved systems for depicting a realistic 3D rendering of a space with architectural and design elements therein capable of real time, user-friendly manipulation by a client. The system may be used by interior designers and architects (or by their clients) to easily design interior spaces with the help of an intuitive and easy to use custom interface. The resulting design may then be displayed on any number of suitable displays, such as phones or tablets, to improve customer visualization of proposed designs. (*See* '572 patent at 6:53-67.) One advantage of the patented invention is the easy to use GUI that is capable of

enabling a user to quickly and conveniently generate or import 3D scenes, import and manipulate at the client computer 3D objects in the scenes in real time, and which is capable of rendering them in photorealistic detail on the client computer. (*See* '572 patent at 4:18-25.)

15. Another advantage of the patented invention is that it provides the ability to represent changes in both natural and artificial light, which may be precise enough to depict lighting and shadow associated with a particular exposure during a particular season at a predetermined hour of the day at a particular geographic location worldwide. Advantageously, this ability enables the aesthetics of the conceptualized design to be accurately communicated prior to build-out of the actual room(s). (*See* '572 patent at 7:12-17.)

16. Because of these significant advantages that can be achieved through the use of the patented invention, ARDI believes that the '572 patent presents significant commercial value for companies like ASHLEY. Indeed, use of the patented method has become widespread among members of the public interested in buying furniture products, including customers of ASHLEY. It has become quite popular and advantageous as part of the furniture buying process for a customer to first utilize the patented invention offered by ASHLEY and other furniture sellers, to import 3D objects (like furniture) from the seller's server and render them in photorealistic detail, including with luminosity effects, within a room setting on the client computer.

Technological Innovation

17. The patented invention disclosed in the '572 patent resolves technical problems related to computerized three-dimensional modeling systems, particularly problems related to the utilization of technology for rendering and manipulating in real-time 3D furniture objects on a client computer with a user-selected or user-generated interior design scene, as well as editing of

those objects to apply lighting and shadow effects (called luminosity effects). As the '572 patent explains, one of the limitations of the prior art as regards such prior art modeling systems was that many of them generated furniture images in 2D as opposed to 3D, which did not enable them to be shown in context of a background scene (*e.g.*, a particular room), and did not enable them to be manipulated, *e.g.*, for scaling, rotation and particular placement within the background scenes. Some prior art systems did include 3D furniture models, which can be rotated and scaled to fit the scene. However, for example, the room images for such systems were not associated with a 3D model of the room and lacked the capability of rendering furniture objects placed onto floor plans in photographically-derived scenes, and/or did not provide for the manipulation of 3D furniture objects at the client computer. (*See* '572 patent at 2:6-64, 3:12-29 and 3:58-4:17.)

18. Moreover, the claims of the '572 patent recite inventive concepts that are not merely routine or conventional use of computerized three-dimensional modeling systems and, more particularly, to a software application configured to reside on a client computer, which is capable of manipulating 3D object representations in-situ with a user-selected or user-generated interior design scene, and rendering quality perspective images of the composite scene. Instead, the patented invention disclosed in the '572 patent provides a new and novel solution to specific problems related to improving a software application configured to reside on a client computer, which is capable of manipulating 3D object representations at the client computer with a user-selected or user-generated interior design scene, including selectively reconfiguring a given 3D object in real time and applying luminosity characteristics to the 3D image, thereby rendering quality perspective images of the composite scene.

19. And finally, the patented invention disclosed in the '572 patent does not preempt all the ways that a method in a client-server computing environment for generating and rendering a photorealistic 3D perspective view of a 3D object selectively positioned within a 3D scene may be used to improve computerized 3D modeling systems, nor does the '572 patent preempt any other well-known or prior art technology.

20. Accordingly, the claims in the '572 patent recite a combination of elements sufficient to ensure that the claims in substance and in practice amount to significantly more than a patent-ineligible abstract idea.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 7,277,572

21. The allegations set forth in the foregoing paragraphs 1 through 20 are incorporated into this First Claim for Relief.

22. On October 2, 2007, the '572 patent was duly and legally issued by the United States Patent and Trademark Office under the title “Three-Dimensional Interior Design System.”

23. Plaintiff ARDI is the assignee and owner of the right, title and interest in and to the '572 patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

24. Upon information and belief, Defendant ASHLEY has and continues to directly infringe one or more claims of the '572 patent by selling, offering to sell, making, using, and/or providing and causing to be used products, specifically one or more augmented reality products, which by way of example include the Ashley HomeStore Mobile App, which is available for downloading onto a user's phone or tablet, for example (*see, e.g.*, <https://www.ashleyfurniture.com/mobileapp/>) (the “Accused Instrumentalities”).

25. Upon information and belief, the Accused Instrumentalities perform a method in a client-server computing environment for generating and rendering a photorealistic three-dimensional (3D) perspective view of a 3D object selectively positioned within a 3D scene.

26. Upon information and belief, the Accused Instrumentalities include each of the steps in each of at least claims 1, 2, 4, 5, 6, 8, 9, 17 and 18, as set forth in ASHLEY Exhibit 1, attached to this Complaint.

27. The Accused Instrumentalities infringed and continue to infringe at least claims 1, 2, 4, 5, 6, 8, 9, 17 and 18 of the '572 patent during the pendency of the '572 patent.

28. Upon information and belief, since at least the time of receiving this Complaint, ASHLEY has induced and continues to induce others to infringe at least claims 1, 2, 4, 5, 6, 7, 8, 9, 17 and 18 of the '572 patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent or willful blindness, actively aiding and abetting others to infringe, including but not limited to ASHLEY's partners and customers, whose use of the Accused Instrumentalities constitutes direct infringement of at least claims 1, 2, 4, 5, 6, 7, 8, 9, 17 and 18 of the '572 patent.

29. In particular, Defendant ASHLEY's actions that aid and abet others such as their partners and customers to infringe include distributing the Accused Instrumentalities and providing materials and/or services related to the Accused Instrumentalities. On information and belief, ASHLEY has engaged in such actions with specific intent to cause infringement or with willful blindness to the resulting infringement because ASHLEY has had actual knowledge of the '572 patent and that its acts were inducing infringement of the '572 patent since at least the time of receiving this Complaint.

30. For example, on information and belief ASHLEY actively aids and abets others, including its partners and customers, to infringe through at least one of its websites. (*See, e.g.,*

<https://www.ashleyfurniture.com/mobileapp/>). On that website, under the heading “The Ashley HomeStore Mobile App by Ashley Furniture HomeStore,” ASHLEY announces that “The future of furniture shopping apps is here!” The website also states that: “[t]hrough an enhanced mobile shopping experience and sophisticated augmented reality (AR), you can easily search for the perfect furniture and decor for your space. With the app’s AR technology, you can turn your home into a showroom by viewing Ashley furniture as it would look in your living space.” Further, the website states that “[o]ur furniture mobile app lets you browse through thousands of pieces for living room, bedrooms, outdoor, kids’ rooms and more.” Moreover, as has been publicly reported in the news, ASHLEY has stated through its CEO and President, Todd Wanek, that “[a]ugmented and virtual reality are essential to our growth and vision for the future,” and “[o]ur data shows that a combination of 3D visualization, seeing, touching and feeling actual products, combined with the consultation of our knowledgeable salespeople, will lead to a stand-apart customer experience that is location-flexible.” (*See* <https://www.businesswire.com/news/home/20161130005323/en/Ashley-Furniture-Partners-Virtual-Reality-Leader-Virtual>).

31. Plaintiff ARDI has been harmed by Defendant ASHLEY’s infringing activities.

JURY DEMAND

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Plaintiff ARDI demands a trial by jury on all issues triable as such.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff ARDI demands judgment for itself and against ASHLEY as follows:

- A. An adjudication that the ASHLEY has infringed the '572 patent;
- B. An award of damages to be paid by ASHLEY adequate to compensate ARDI for ASHLEY's past infringement of the '572 patent, and any continuing or future infringement through the date such judgment is entered, including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;
- C. A declaration that this case is exceptional under 35 U.S.C. § 285, and an award of ARDI's reasonable attorneys' fees; and
- D. An award to ARDI of such further relief at law or in equity as the Court deems just and proper.

Dated: May 12, 2020

DEVLIN LAW FIRM LLC

/s/ Timothy Devlin

Timothy Devlin
tdevlin@devlinlawfirm.com
Paul Richter (*pro hac vice* to be filed)
prichter@devlinlawfirm.com
1526 Gilpin Avenue
Wilmington, Delaware 19806
Telephone: (302) 449-9010
Facsimile: (302) 353-4251

Attorneys for Plaintiff AR Design Innovations LLC