IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

ALTO DYNAMICS, LLC, Plaintiff, v. BOOHOO.COM UK LIMITED, Defendant.	Case No. 2:24-cv-00719 **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Alto Dynamics, LLC (hereinafter, "Alto Dynamics" or "Plaintiff") files this complaint against Defendant boohoo.com UK Limited (hereinafter, "Boohoo" or "Defendant") alleging, based on its own knowledge as to itself and its own actions, and based on information and belief as to all other matters, as follows:

NATURE OF THE ACTION

1. This is a patent infringement action to stop Defendant's infringement of the following United States Patents (collectively, the "Asserted Patents"), copies of which are available below, respectively:

	Patent No.	Title	Available At
A.	6,604,100	Method For Converting Relational Data Into A Structured Document	USPTO.GOV, https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/6604100, https://patentcenter.uspto.gov/applications/09778749.
B.	7,152,018	System And Method For Monitoring Usage Patterns	USPTO.GOV, https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/7657531, https://patentcenter.uspto.gov/applications/10499578.

	Patent No.	Title	Available At
C.	7,392,160	System And Method For Monitoring Usage Patterns	USPTO.GOV, https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/7392160, https://patentcenter.uspto.gov/applications/11557170.
D.	7,657,531	Systems And Methods For State-Less Authentication	USPTO.GOV, https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/7657531, https://patentcenter.uspto.gov/applications/11325463.
E.	RE 46,513	Systems And Methods For State-Less Authentication	USPTO.GOV, https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/RE46513, https://patentcenter.uspto.gov/applications/13369112.

2. Alto Dynamics seeks monetary damages.

PARTIES

3. Alto Dynamics is a limited liability company organized under the laws of the State of Georgia, with its principal place of business at 4275 Peachtree Corners Circle, Suite 230, Peachtree Corners, Georgia 30092 (Gwinnett County).

4. On information and belief, Boohoo is a corporation with its principal place of business 49/51 Dale Street, Manchester, England M1 2HF, United Kingdom (Registered Company No. 05723154) (UK VAT No. 185-4874-61).

5. On information and belief, Boohoo owns, operates, and sells products through the websites https://us.boohoo.com/ and www.boohoo.com.

6. Upon information and belief, Defendant engages in making, using, selling, offering for sale, importing, or otherwise providing, directly or indirectly, in the United States and in this State and District, products and services with features and functionalities that infringe the Asserted Patents.

7. Upon information and belief, Defendant is currently registered to do business in the State of Texas, but has not designated a registered agent within the state, as of the filing of this Complaint.

BOOHOO.COM UK LIMITED	
Texas Taxpayer Number	32071845005
Mailing Address	49-51 DALE STREET MANCHESTER, UNITED KINGDOM-M1 2HF
Right to Transact Business in Texas	ACTIVE
Country of Formation	UNITED KINGDOM
Effective SOS Registration Date	Not Registered
Texas SOS File Number	Not Registered
Registered Agent Name	Not on file
Registered Office Street Address	

Source: *Franchise Tax Account Status*, COMPTROLLER.TEXAS.GOV, https://mycpa.cpa.state.tx.us/coa/coaSearchBtn# (Search for entity name "boohoo.com UK Limited")

JURISDICTION AND VENUE

8. Alto Dynamics repeats and re-alleges the allegations in the Paragraphs above as though fully set forth in its entirety.

9. This is an action for infringement of a United States patent arising under 35 U.S.C. §§ 271, 281, and 284–85, among others. This Court has subject matter jurisdiction of the action under 28 U.S.C. §§ 1331 and 1338(a).

10. Defendant is subject to this Court's specific and general personal jurisdiction under due process because of Defendant's substantial business in this judicial District, in the State of Texas, and in the United States, including: (i) at least a portion of the infringement alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, or deriving substantial revenue from goods and services provided to individuals in this state, in this

District, and in the United States.

11. Specifically, Defendant intends to do and does business in, and has committed acts of infringement in in this District, in this State of Texas, and in the United States, directly, through intermediaries, and offers and sends its products or services, including those accused of infringement here, to customers and potential customers located in this state, including in this District, and in the United States.

12. Defendant has committed acts of infringement from this District, including, but not limited to, making, using, selling, offering for sale, and importing of the Accused Products.

13. Defendant has purposefully directed infringing activities at residents of the State of Texas, and this litigation results from those infringing activities. Defendant regularly sells (either directly or indirectly), its products within this District. For example, Defendant has placed infringing products into the stream of commerce *via* an established distribution channel with the knowledge or understanding that such products are being sold in this Judicial District and the State of Texas. Defendant is subject to this Court's specific and/or general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due to its substantial and pervasive business in this State and Judicial District, including its infringing activities alleged herein, from which Defendant has derived substantial revenue from goods sold to Texas residents and consumers.

14. Venue is proper in this District pursuant to 28 U.S.C. § 1391 because, among other things, Defendant is not a resident of the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See also In re: HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) ("The Court's recent decision in TC Heartland does not alter" the alien-venue rule).

THE ACCUSED PRODUCTS

15. Alto Dynamics repeats and re-alleges the allegations in the Paragraphs above as though fully set forth in its entirety.

16. Based upon public information, Defendant owns, operates, advertises, and/or controls the websites https://us.boohoo.com/ and www.boohoo.com, and associated hardware, software, and functionality that among other features allows users to view, search, save, and buy items on Defendant's online shopping platform, allows for the tracking of user activities and preferences (*e.g.*, using cookies), and provides website and user authentication (*e.g.*, using user login processes and secured sessions) (the "Accused Products"). *See About Cookies*, BOOHOO, https://us.boohoo.com/page/about-cookies.html; *see also Cookies We Use*, BOOHOO https://us.boohoo.com/page/cookies.html; *see also Privacy Notice,* BOOHOO, https://us.boohoo.com/page/privacy-notice.html; *see also Log In*, BOOHOO, https://www.boohoo.com/login; *see also Log In*, BOOHOO, https://us.boohoo.com/login?registrationPage=true; *see also Log In*, https://us.boohoo.com/on/demandware.store/Sites-boohoo-NA-Site/en_US/Account-EditPassword.

17. Each of the Accused Products is provided by and imported and distributed in the United States and this judicial district by and/or at the direction and control and/or instigation of Defendant, who is responsible for the infringing activity identified in this Complaint.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 6,604,100

18. Alto Dynamics repeats and re-alleges the allegations in Paragraphs 1-15 above as though fully set forth in their entirety.

19. The USPTO duly issued U.S. Patent No. 6,604,100 (the "'100 patent") on August 5, 2003, after full and fair examination of Application No. 09,778,749, which was filed on February 8, 2001. *See* '100 patent at 1. A Certificate of Correction was issued on November 25, 2003. *See id.*, at 18.

20. Alto Dynamics owns all substantial rights, interest, and title in and to the '100 patent, including the sole and exclusive right to prosecute this action and enforce the '100 patent against infringers, and to collect damages for all relevant times.

21. The claims of the '100 patent are not directed to an abstract idea and are not limited to well-understood, routine, or conventional activity. Rather, the claimed inventions include inventive components that provide technical solutions to technical problems of preexisting systems and methods for viewing and querying relational data.

22. For example, the '100 patent recites "[a] method for converting relational data to XML (extensible Markup Language)." *See generally* '100 patent at 1 (abstract).

23. The specification of the '100 patent describes multiple problems with conventional methods and systems for "converting relational data into XML," including "**the problem of automating the conversion of relational data into XML**." *See* '100 patent col. 1:13-14, 2:27-27.

24. The specification explains that, in Internet-based systems, "[m]ost data is stored in relational or object-relational database management systems (RDBMS) or in legacy formats." *Id.*, 1:35-36. The specification also notes that prior methods and systems lacked tools that could "automatically convert the vast stores of relational data into XML," explaining that such tools needed to "be general, dynamic, and efficient." *Id.*, 1:37-40.

25. The specification further explains that problems arose in the art because "[r]elational data [was] tabular, flat, normalized, and its schema is proprietary" while "XML data [was] nested and un-normalized," therefore, as a result, mapping from relational data to XML [was] complex and require[d] a conversion tool. *Id.*, 1:41-46. Existing conversion tools were insufficient to adequately address this problem because they lacked generality, required multiple steps to map the data, were not dynamic, and "the resulting XML data [was] nested and un-normalized and therefore [could not] be nested arbitrarily." *Id.*, 1:47-2:24.

26. The specification then explains that the disclosures of the '100 patent solves these problems by describing a novel "**general, dynamic, and efficient tool for viewing and querying relational data in XML**" that can "**express mappings of relational data into XML that conform to arbitrary [document type definitions] ("DTDs"), not just a canonical mapping of the relational schema.**" *Id.*, 2:30-35. Claim 1 of the '100 patent describes a specific step-by-step process for generating such structured documents **using tuple streams and a construction portion of an executable query, which provides the benefit of producing a structured document that defines a document of arbitrary nesting depth**. *Id.*, claim 1.

27. Claim 1 of the '100 patent recites "[a] method for converting relational data from a relational database into a structured document," wherein the method includes, among other things, "storing a view query that defines a structured document view of the relational database, a structure of the view query being independent of a structure of data in the relational database;" and "**receiving at least one tuple stream from the relational database according to the data extraction portion; and merging the at least one tuple stream and the construction portion to generate a structured document, wherein the structured document view is capable of defining a document of arbitrary nesting depth**." *Id.*, claim 1.

28. For at least these reasons, claim 1 recites inventive components that improve upon the function and operation of preexisting systems and methods for or viewing and querying relational data, for example, by automating the conversion of relational data into XML by using unconventional method of forming an executable query which is divided into a data extraction portion (*e.g.* an SQL query) and a construction portion (*e.g.* an XML document template).

29. The written description of the '100 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patently distinct from and improved upon what may have been considered conventional or generic in the art priority date. The '100 patent also identifies and circumscribes all information necessary for a skilled artisan to perform each limitation in the claims in light of that which was known in the art at the priority date.

30. Defendant has infringed one or more claims of the '100 patent by making, using, providing, supplying, selling, offering for sale, or distributing the Accused Products, including, but not limited to, automating the conversion of relational data into XML in the Accused Products for viewing and querying relational data.

31. Defendant has directly infringed, either literally or under the doctrine of equivalents, at least claim 1 of the '100 patent. *See* Evidence of Use Chart for U.S. Patent No. 6,604,100 attached hereto as **Exhibit A**.

32. For example, the Accused Products employ database searching and viewing capabilities, including by performing, and allowing users to perform, a method for converting relational data from a relational database into a structured document, comprising the steps of storing a view query that defines a structured document view of the relational database, a structure

of the view query being independent of a structure of data in the relational database; receiving a user query against the structured document view; forming an executable query by determining a composition of the view query and the user query; partitioning the executable query into a data extraction portion and a construction portion; transmitting the data extraction portion to the relational database; receiving at least one tuple stream from the relational database according to the data extraction portion; and merging the at least one tuple stream and the construction portion to generate a structured document, wherein the structured document view is capable of defining a document of arbitrary nesting depth. *See* **Figures 1A-1C** (below).

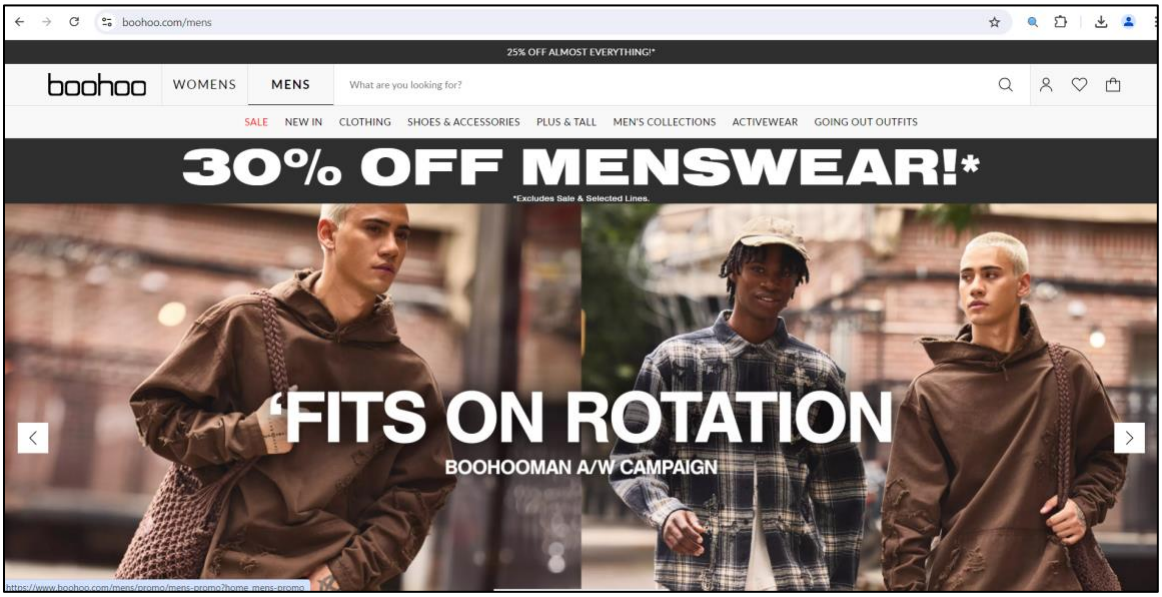

Figure 1A
Source: BOOHOO, https://www.boohoo.com/mens.

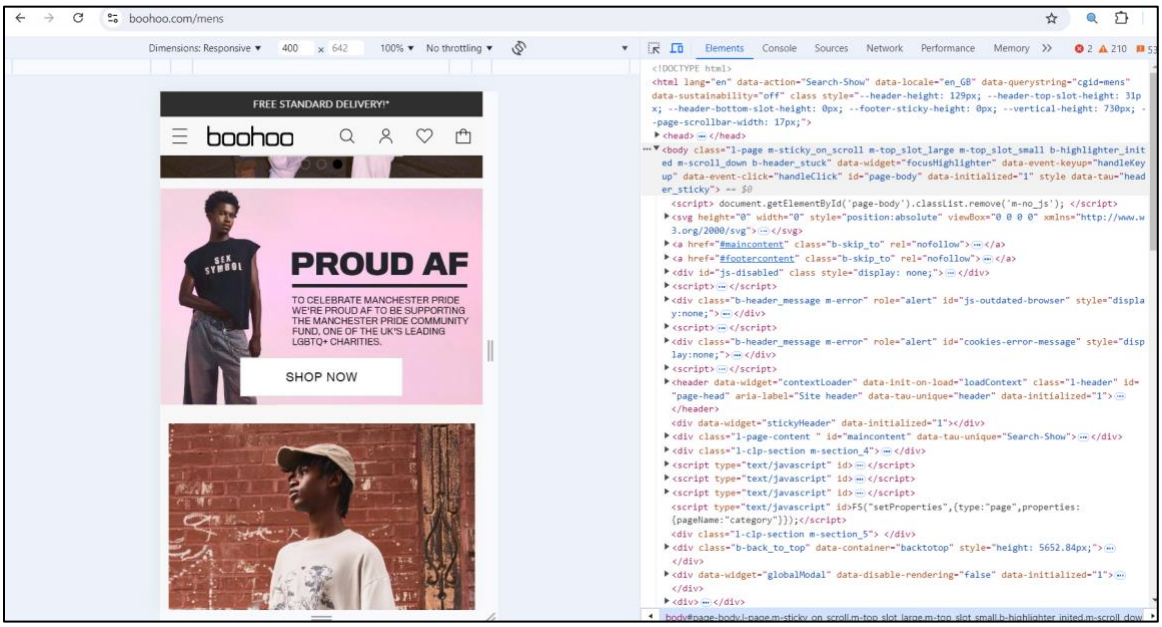

Figure 1B

Source: BOOHOO, https://www.boohoo.com/mens.

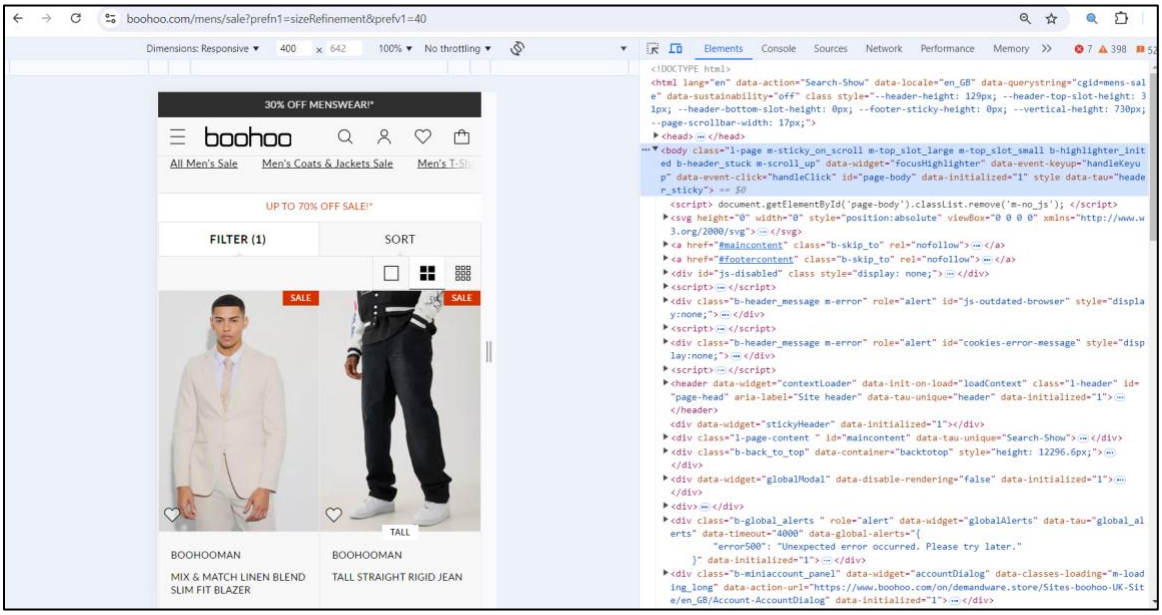

Figure 1C

Source: BOOHOO, https://www.boohoo.com/mens.

33. Alto Dynamics or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '100 patent.

34. Plaintiff has been damaged as a result of the infringing conduct by Defendant alleged above. Thus, Defendant is liable to Alto Dynamics in an amount that compensates it for such infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II: INFRINGEMENT OF U.S. PATENT NO. 7,152,018

35. Alto Dynamics repeats and re-alleges the allegations in Paragraphs 1-15 above as though fully set forth in their entirety.

36. The USPTO duly issued U.S. Patent No. 7,152,018 (the "'018 patent") on December 19, 2006, after full and fair examination of Application No. 10/499,578, which was filed on December 18, 2002. *See* '018 patent at 1. A Certificate of Correction was issued on December 19, 2006. *Id.* 11-12.

37. Alto Dynamics owns all substantial rights, interest, and title in and to the '018 patent, including the sole and exclusive right to prosecute this action and enforce the '018 patent against infringers, and to collect damages for all relevant times.

38. Alto Dynamics or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '018 patent.

39. The claims of the '018 patent are not directed to an abstract idea and are not limited to well-understood, routine, or conventional activity. Rather, the claimed inventions include inventive components that provide technical solutions to technical problems of preexisting systems and methods for monitoring, recording and analysis of user activity.

40. For example, claim 1 of the '018 patent recites "[a] method of monitoring user usage patterns of a system," which includes "providing at least one state object, the object including a

profile representative of user usage; **storing the state object at a client location**." '018 patent, claim 1 (emphasis added). After a central server provides a response to the state object, "the profile representative of user usage. . . **is modified, to reflect the interaction between the client location and the central server, by one of one or more scripts** within or included in information/resources provided to the client location by the central server, and one or more programs executed at the client location, **thus precluding manipulation of the profile by the server**." '018 patent, claim 1 (emphasis added).

41. The specification explains that "[t]hrough the use of scripts within web pages, or included in web pages, it will be understood that it is possible to update and manipulate the contents of the cookie profile **without requiring any server side manipulation**. In this case, each web page may call the same function in a single script file, which passes an enumerated identity number that classifies the web page content, to update the profile cookie value." '018 patent, 6:18-25 (emphasis added).

42. The specification further explains that this functionality "**is computationally efficient** in that profile details are stored and updated on the client machine, rather than the server machine, **and, unlike other systems, does not require database storage and lookup on the server side, since the profiles are readily available from the client machine**." *Id.*, 4:1-6 (emphasis added).

43. For at least that reason, claim 1 recites inventive components that improve upon the function and operation of preexisting systems and methods for monitoring, recording and analysis of user activity by, *inter alia*, providing improved computational efficiency over conventional systems and methods of monitoring user usage patterns.

44. The written description of the '018 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-

conventional and non-generic combination of claim limitations is patently distinct from and improved upon what may have been considered conventional or generic in the art at the priority date. The '018 patent also identifies and circumscribes all information necessary for a skilled artisan to perform each limitation in the claims in light of that which was known in the art at the priority date.

45. Defendant has infringed one or more claims of the '018 patent by making, using, providing, supplying, selling, offering for sale, or distributing the Accused Products, including, but not limited to, Defendant's use of cookies, *e.g.*, through the "Secure Flag" functionality.

46. Defendant has directly infringed, either literally or under the doctrine of equivalents, at least claim 1 of the '018 patent. *See* Evidence of Use Chart for U.S. Patent No. 7,152,018 attached hereto as **Exhibit B**.

47. For example, the Accused Products perform a method of monitoring user usage patterns of a system, comprising the steps of providing at least one state object, the object including a profile representative of user usage, storing the state object at a client location, passing, to a central server, the state object with each subsequent interaction initiation, and receiving, from the central server, the state object along with the response of the central server, wherein the profile is modified, to reflect the interaction between the client location and the central server, by one of one or more scripts within or included in information/resources provided to the client location by the central server, and one or more programs executed at the client location, thus precluding manipulation of the profile by the server, at least during testing of the relevant functionality by Defendant's employees and/or affiliates using a client device and a server operated by Defendant and/or affiliates and by virtue of Defendant's direction and control of customers and/or affiliates' performance of any steps deemed to require activity at a client. *See* **Figure 2** (below).

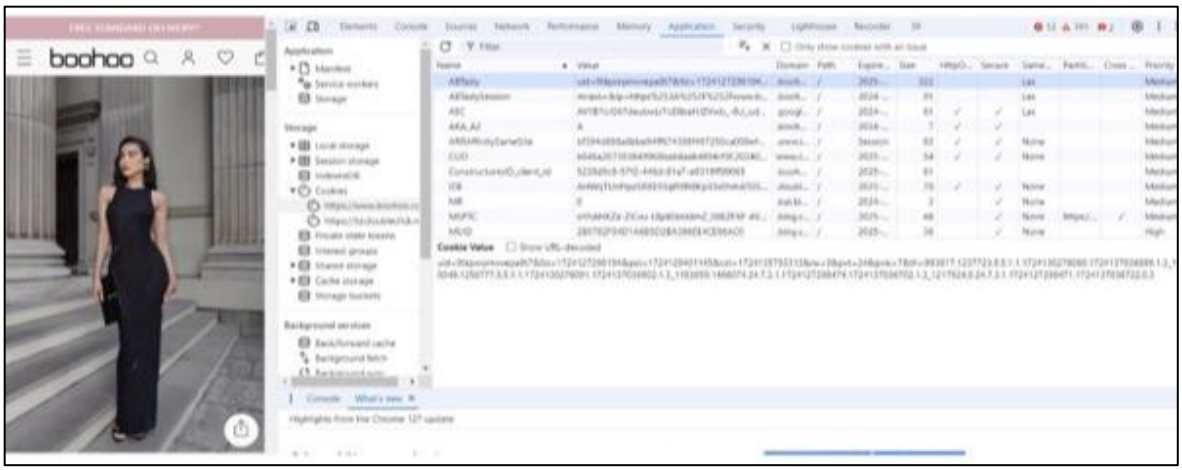

Figure 2
Source: BOOHOO, https://us.boohoo.com/

48. Plaintiff has been damaged as a result of the infringing conduct by Defendant alleged above. Thus, Defendant is liable to Alto Dynamics in an amount that compensates it for such infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT III: INFRINGEMENT OF U.S. PATENT NO. 7,392,160

49. Alto Dynamics repeats and re-alleges the allegations in Paragraphs 1-15 above as though fully set forth in their entirety.

50. The USPTO duly issued U.S. Patent No. 7,392,160 (the "'160 patent") on June 24, 2008, after full and fair examination of Application No. 11/557,170, which was filed on November 7, 2006. *See* '160 patent at 1.

51. Alto Dynamics owns all substantial rights, interest, and title in and to the '160 patent, including the sole and exclusive right to prosecute this action and enforce the '160 patent against infringers, and to collect damages for all relevant times.

52. Alto Dynamics or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '160 patent.

53. The claims of the '160 patent are not directed to an abstract idea and are not limited to well-understood, routine, or conventional activity. Rather, the claimed inventions include inventive components that provide technical solutions to technical problems of preexisting systems and methods for monitoring, recording and analysis of user activity.

54. For example, claim 1 of the '160 patent recites "[a] method of monitoring user usage patterns of a system," which includes "providing at least one state object, the object including a profile representative of user usage; **storing the state object at a client location**." '160 patent, claim 1 (emphasis added). After a central server provides a response to the state object, the "profile [of the state object] is modified [at a client location] to reflect the interaction between the client location and the central server." *Id*.

55. The specification further explains that this functionality "**is computationally efficient** in that profile details are stored and updated on the client machine, rather than the server machine, **and, unlike other systems, does not require database storage and lookup on the server side, since the profiles are readily available from the client machine**." *Id.*, 4:6-10 (emphasis added).

56. For at least that reason, claim 1 recites inventive components that improve upon the function and operation of preexisting systems and methods for monitoring, recording and analysis of user activity by, *inter alia*, providing improved computational efficiency over conventional systems and methods of monitoring user usage patterns.

57. The written description of the '160 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-

conventional and non-generic combination of claim limitations is patently distinct from and improved upon what may have been considered conventional or generic in the art at the priority date. The '160 patent also identifies and circumscribes all information necessary for a skilled artisan to perform each limitation in the claims in light of that which was known in the art at the priority date.

58. Defendant has infringed one or more claims of the '160 patent by making, using, providing, supplying, selling, offering for sale, or distributing the Accused Products, including, but not limited to, Defendant's deployment of cookies through the Accused Products.

59. Defendant has directly infringed, either literally or under the doctrine of equivalents at least claim 1 of the '160 patent. *See* Evidence of Use Chart for U.S. Patent No. 7,392,160 attached hereto as **Exhibit C**.

60. For example, the Accused Products perform, and allow users to perform, a method for monitoring user usage patterns of a system, comprising the steps providing at least one state object, the object including a profile representative of user usage, storing the state object at a client location, passing, to a central server, the state object with each subsequent interaction initiation, and receiving, from the central server, the state object along with the response of the central server, wherein the profile is modified to reflect the interaction between the client location and the central server, and wherein the central server audits the state object/profile passed to it, and performs analysis on the audited profile in order to direct services and/or information suited to the profile to the client location, at least during testing of the relevant functionality by Defendant's employees and/or affiliates using a client device and a server operated by Defendant and/or affiliates and by virtue of Defendant's and/or affiliates' direction and control of customers and/or affiliates' performance of any steps deemed to require activity at a client. *See About Cookies*, BOOHOO,

https://us.boohoo.com/page/about-cookies.html; *see also Privacy Notice*, BOOHOO, https://us.boohoo.com/page/privacy-notice.html.

61. Plaintiff has been damaged as a result of the infringing conduct by Defendant alleged above. Thus, Defendant is liable to Alto Dynamics in an amount that compensates it for such infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT IV: INFRINGEMENT OF U.S. PATENT NO. 7,657,531

62. Alto Dynamics repeats and re-alleges the allegations in Paragraphs 1-15 above as though fully set forth in their entirety.

63. The USPTO duly issued U.S. Patent No. 7,657,531 (the "'531 patent") on February 2, 2010, after full and fair examination of Application No. 11/325,463, which was filed on January 5, 2006. *See* '531 patent at 1. A Certificate of Correction was issued on November 13, 2010. *See id.* at 20.

64. Alto Dynamics owns all substantial rights, interest, and title in and to the '531 patent, including the sole and exclusive right to prosecute this action and enforce the '531 patent against infringers, and to collect damages for all relevant times.

65. Alto Dynamics or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '531 patent.

66. The claims of the '531 patent are not directed to an abstract idea and are not limited to well-understood, routine, or conventional activity. Rather, the claimed inventions include inventive components that provide technical solutions to technical problems of preexisting systems

and methods for authenticating users of program objects in distributed computing environments based on negotiated security contexts.

67. The specification of the '531 describes multiple problems with conventional systems for "authenticating users of program objects in distributed computing environments based on negotiated security contexts." *See,* generally, '531 patent, 1:14–5:4. The specification notes that previous "[s]ystems and methods for providing a verifiable chain of evidence and security for the transfer and retrieval of electronic records and other information objects in digital formats" had been described, but that such previous systems and methods provide "flexible business rules that enable users to have roles that are required or enabled **only at particular points in a transaction or process. For example, a user may have a role of title agent only after a transaction has closed.**" *Id.*, 4:53-56; 4:63-65.

68. Moreover, the specification explains that "[s]uch work flows and processes can be more complex than those typically associated with single-logon techniques. Moreover, many electronic records available to online inquiry **are neither encrypted, nor hashed, nor digitally signed since to do so increases the processing time and resources needed for authorized users to access such information**." *Id.*, 4:66–5:4.

69. The specification then explains that the disclosures of the '531 patent "solve[] the above-described and other problems suffered by computer and communication systems having restricted access" by, among other things, the creation and use of "**an encrypted data element called a security context, which is securely built and accessible only by a trusted computing environment, thereby eliminating the risk of interception, modification, or unauthorized use**." *Id.*, 5:14-18. The specification goes on to describe various ways to construct and use the

described "security context" to achieve results superior to those of conventional systems. *See, e.g., id.*, 5:19–6:67; 10:40-65; FIGS. 4A-4C.

70. Claim 1 of the '531 patent then recites "[a] method of enabling access to a resource of a distributed application server or processing system by a user/client application possessing **a valid security-context**." *Id.*, claim 1 (emphasis added). "[T]he security-context and an appended protected security-context renewal request [is] provided by the user to an access authorization component of the application server or processing system." *Id.* Among other features, claim further recites "**generating an updated security-context based on the verifying of the user's identity and authorization** and based on the user having requested authority for access to the resource and services," "providing the updated security context to the user," and "**sending the updated security-context and a request for access to the resource and services by the user to the application server or processing system**." *Id.*

71. For at least these reasons, claim 1 recites inventive components that improve upon the function and operation of preexisting systems and methods for authenticating users of program objects in distributed computing environments by using unconventional "security contexts."

72. The written description of the '531 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patently distinct from and improved upon what may have been considered conventional or generic in the art at the priority date. The '531 patent also identifies and circumscribes all information necessary for a skilled artisan to perform each limitation in the claims in light of that which was known in the art at the priority date.

73. Defendant has infringed one or more claims of the ’531 patent by making, using, providing, supplying, selling, offering for sale, or distributing the Accused Products, including, but not limited to, the renewal of cookies after their expiration by the Accused Products.

74. Defendant has directly infringed, either literally or under the doctrine of equivalents, at least claim 1 of the ’531 patent. *See* Evidence of Use Chart for U.S. Patent No. 7,657,531 attached hereto as **Exhibit D**.

75. For example, the Accused Products perform, and allow users to perform, a method of enabling access to a resource of a distributed application server or processing system by a user/client application possessing a valid security-context, comprising the steps of, receiving the security-context and an appended protected security-context renewal request provided by the user to an access authorization component of the application server or processing system, verifying the validity of the security-context and the security-context renewal request, extracting content of both the security-context and the security-context renewal request, comparing current time to an expiration time identifying time of expiration of the security-context, if the expiration time is less than the current time, comparing the security-context renewal request with stored identity and authorization information comprising at least one of a user identifier, an organization identifier, a sub-organization identifier, a key, an authentication certificate, an user location, a user role, and an user position identifying the user to the access authorization component and generating a new symmetric key, and other access and authorization information, generating an updated security-context based on the verifying of the user's identity and authorization and based on the user having requested authority for access to the resource and services; providing the updated security context to the user, and sending the updated security-context and a request for access to the resource and services by the user to the application server or processing system, at least during testing of the

relevant functionality by Defendant's employees and/or affiliates using a client device and a server operated by Defendant and/or affiliates and by virtue of Defendant's direction and control of customers and/or affiliates' performance of any steps deemed to require activity at a client. *See* **Figures 3A-3B** (below).

Figure 3A
Source: *Log in*, BOOHOO, https://us.boohoo.com/login?registrationPage=true

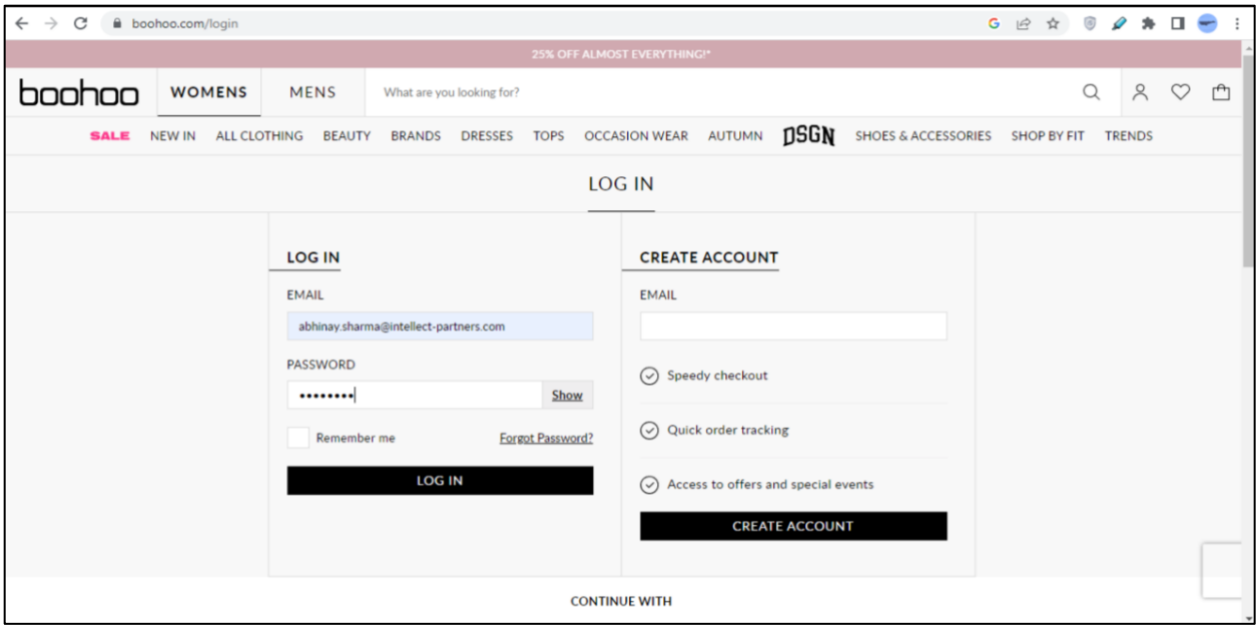

Figure 3B
Source: *Log in*, BOOHOO, https://www.boohoo.com/login

76. Plaintiff has been damaged as a result of the infringing conduct by Defendant alleged

above. Thus, Defendant is liable to Alto Dynamics in an amount that compensates it for such infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT V: INFRINGEMENT OF U.S. PATENT NO. RE46,513

77. Alto Dynamics repeats and re-alleges the allegations in Paragraphs 1-15 above as though fully set forth in their entirety.

78. The USPTO duly issued U.S. Patent No. RE46,513 (the "'513 patent") on August 15, 2017, after full and fair examination of Application No. 13/369,112, which was filed on February 8, 2012. *See* '513 patent at 1. The '513 patent is a reissue of U.S. Patent No. 7,020,645, which was issued on March 28, 2006, after a full and fair examination of Application No. 09/839,551, which was filed on April 19, 2001. *See id.*

79. Alto Dynamics owns all substantial rights, interest, and title in and to the '513 patent, including the sole and exclusive right to prosecute this action and enforce the '513 patent against infringers, and to collect damages for all relevant times.

80. Alto Dynamics or its predecessors-in-interest have satisfied all statutory obligations required to collect pre-filing damages for the full period allowed by law for infringement of the '513 patent.

81. The claims of the '513 patent are not directed to an abstract idea and are not limited to well-understood, routine, or conventional activity. Rather, the claimed inventions include inventive components that provide technical solutions to technical problems of preexisting systems and methods for authenticating users of program objects in distributed computing environments based on negotiated security contexts.

82. The specification of the ’513 describes multiple problems with conventional systems for “authenticating users of program objects in distributed computing environments based on negotiated security contexts.” *See,* generally, ’513 patent, 1:14–5:9. The specification notes that previous “[s]ystems and methods for providing a verifiable chain of evidence and security for the transfer and retrieval of electronic records and other information objects in digital formats” had been described, but that such previous systems and methods provide “flexible business rules that enable users to have roles that are required or enabled **only at particular points in a transaction or process. For example, a user may have a role of title agent only after a transaction has closed.**” *Id.*, 5:63-66; 6:5-9.

83. Moreover, the specification explains that “[s]uch work flows and processes can be more complex than those typically associated with single-logon techniques. Moreover, many electronic records available to online inquiry **are neither encrypted, nor hashed, nor digitally signed since to do so increases the processing time and resources needed for authorized users to access such information**.” *Id.*, 5:10-16.

84. The specification then explains that the disclosures of the ’513 patent “solve[] the above-described and other problems suffered by computer and communication systems having restricted access” by, among other things, the creation and use of “**an encrypted data element called a security context, which is securely built and accessible only by a trusted computing environment, thereby eliminating the risk of interception, modification, or unauthorized use**.” *Id.*, 5:20-30. The specification goes on to describe various ways to construct and use the described “security context” to achieve results superior to those of conventional systems. *See, e.g., id.*, 5:31-7:9; 10:51–11:10; FIGS. 4a-4c.

85. Claim 16 of the ’513 patent recites “[a] processing system having resources that are selectively accessible to users, the resources including processors, program objects, and records” that comprises, among other things, “a logon component that communicates with the communication device and with the information database, **wherein the logon component receives logon information provided by the user during the secure communication session, verifies the received logon information by matching against information identifying the user to the processing system that is retrieved from the information database, and generates a security context from the received logon information and authorization information**” and which “**provides the security context to the user’s communication device**.” *Id.*, claim 16.

86. For at least these reasons, claim 16 recites inventive components that improve upon the function and operation of preexisting systems and methods for authenticating users of program objects in distributed computing environments by using unconventional “security contexts.”

87. The written description of the ’513 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the non-conventional and non-generic combination of claim limitations is patently distinct from and improved upon what may have been considered conventional or generic in the art at the priority date. The ’513 patent also identifies and circumscribes all information necessary for a skilled artisan to perform each limitation in the claims in light of that which was known in the art at the priority date.

88. Defendant has infringed one or more claims of the ’513 patent by making, using, providing, supplying, selling, offering for sale, or distributing the Accused Products, including, but not limited to, the Accused Products’ employ of secure communication sessions.

89. Defendant has directly infringed, either literally or under the doctrine of equivalents at least claim 16 of the ’513 patent. *See* Evidence of Use Chart for U.S. Patent No. RE46,513 attached hereto as **Exhibit E**.

90. For example, the Accused Products include a processing system having resources that are selectively accessible to users, the resources including processors, program objects, and records, the processing system comprising: a communication device through which a user desiring access to a resource communicates sends and receives information in a secure communication session with the processing system; an information database that stores information identifying users to the processing system and authorization information that identifies resources accessible to users and that is necessary for access to resources; and a logon component that communicates with the communication device and with the information database, wherein the logon component receives logon information provided by the user during the secure communication session, verifies the received logon information by matching against information identifying the user to the processing system that is retrieved from the information database, and generates a security context from the received logon information and authorization information; wherein the logon component provides the security context to the user’s communication device, and the user sends, to the processing system, the security context and a request for access to a resource. **Figure 4** (below).

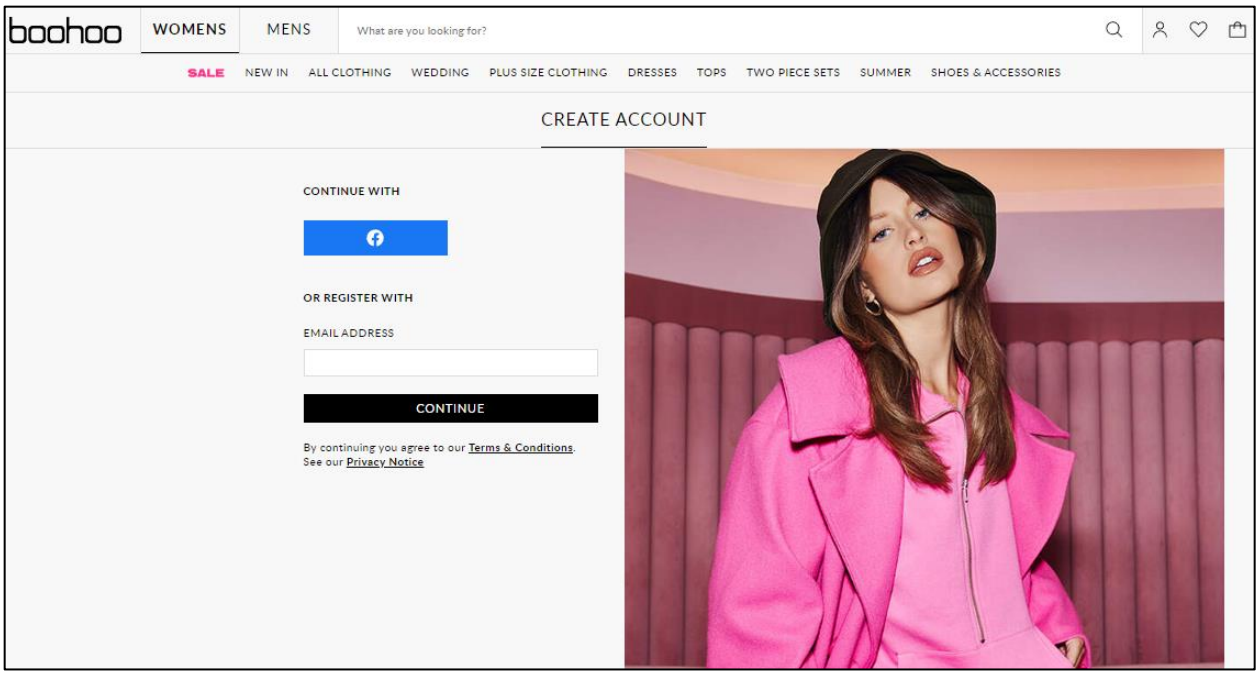

Figure 4
Source: BOOHOO, https://us.boohoo.com/login?registrationPage=true.

91. Plaintiff has been damaged as a result of the infringing conduct by Defendant alleged above. Thus, Defendant is liable to Alto Dynamics in an amount that compensates it for such infringement, which by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

JURY DEMAND

92. Plaintiff hereby requests a trial by jury on all issues so triable by right.

PRAYER FOR RELIEF

93. WHEREFORE, Alto Dynamics requests that the Court find in its favor and against Defendant, and that the Court grant Alto Dynamics the following relief:

a. Judgment that one or more claims of the Asserted Patents has been infringed, either literally or under the doctrine of equivalents, by Defendant or all others acting in concert therewith;

b. An award of a reasonable royalty by Defendant to Plaintiff for infringement of Asserted Patents in accordance with 35 U.S.C. § 284;

c. Judgment that Defendant accounts for and pays to Alto Dynamics all damages to and costs incurred by Alto Dynamics because of Defendant's infringing activities and other conduct complained of herein;

d. Pre-judgment and post-judgment interest on the damages caused by Defendant's infringing activities and other conduct complained of herein;

e. That this Court declare this an exceptional case and award Alto Dynamics its reasonable attorneys' fees and costs in accordance with 35 U.S.C. § 285; and

f. All other and further relief as the Court may deem just and proper under the circumstances.

Date: September 3, 2024

Respectfully submitted,

/s/ James F. McDonough, III

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Attorneys for Plaintiff ALTO DYNAMICS LLC

* Admitted to the Eastern District of Texas

List of Exhibits

A. Evidence Of Use Chart For U.S. Patent No. 6,604,100

B. Evidence Of Use Chart For U.S. Patent No. 7,152,018

C. Evidence Of Use Chart For U.S. Patent No. 7,392,160

D. Evidence Of Use Chart For U.S. Patent No. 7,657,531

E. Evidence Of Use Chart For U.S. Patent No. RE46,513

List Of Supportive Links

1. U.S. Patent No. 6,604,100, USPTO.GOV, https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/6604100, https://patentcenter.uspto.gov/applications/09778749.

2. U.S. Patent No. 7,152,018, USPTO.GOV, https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/7657531, https://patentcenter.uspto.gov/applications/10499578.

3. U.S. Patent No. 7,392,160, USPTO.GOV, https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/7392160, https://patentcenter.uspto.gov/applications/11557170.

4. U.S. Patent No. 7,657,531, USPTO.GOV, https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/7657531, https://patentcenter.uspto.gov/applications/11325463.

5. U.S. Patent No. RE 46,513, USPTO.GOV, https://image-ppubs.uspto.gov/dirsearch-public/print/downloadPdf/RE46513, https://patentcenter.uspto.gov/applications/13369112.

6. BOOHOO, https://us.boohoo.com/.

7. BOOHOO, www.boohoo.com.

8. *See About Cookies*, BOOHOO, https://us.boohoo.com/page/about-cookies.html.

9. *Cookies We Use*, BOOHOO https://us.boohoo.com/page/cookies.html.

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11. *Log In*, BOOHOO, https://www.boohoo.com/login.

12. *Log In*, BOOHOO, https://us.boohoo.com/login?registrationPage=true.

13. *Log In*, BOOHOO, https://us.boohoo.com/on/demandware.store/Sites-boohoo-NA-Site/en_US/Account-EditPassword.