

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK**

CARVANA, LLC,

Plaintiff / Counter-Defendant,

v.

INTERNATIONAL BUSINESS
MACHINES CORPORATION,

Defendant / Counter-Plaintiff.

Case No. 7:23-cv-08616-KMK-VR

**IBM'S FIRST AMENDED ANSWER TO
CARVANA'S COMPLAINT FOR
DECLARATORY JUDGMENT OF NON-
INFRINGEMENT AND IBM'S
COUNTERCLAIMS**

JURY TRIAL DEMANDED

Defendant International Business Machines Corporation ("IBM"), by and through its undersigned counsel, hereby responds to the Complaint [Corrected] for Declaratory Judgment of Non-Infringement ("Complaint"), filed October 2, 2023, by Plaintiff Carvana, LLC ("Carvana").

PRELIMINARY STATEMENT

In 2021, IBM discovered that Carvana was using some of IBM's patents without permission. IBM promptly approached Carvana and attempted to negotiate an amicable resolution to this serious matter. In the following years, IBM has sent numerous letters and claim charts demonstrating Carvana's infringement of IBM's patents and asking to meet with Carvana to discuss the terms of a license agreement. Despite IBM's diligence in providing Carvana with updated evidence of infringement from IBM's ongoing investigation, Carvana refused to engage in good-faith licensing discussions. Beyond a single meeting taking place shortly after IBM's first notice letter, Carvana has repeatedly refused IBM's requests for further meetings and refused all invitations to propose or discuss license agreement terms. After IBM's latest notice, which provided updated evidence of infringement and reiterated IBM's offered license agreement terms,

Carvana acknowledged the update and claimed it would “respond to [IBM’s] Notice Letter and offer to settle in due course.” Instead, without warning, Carvana brought this lawsuit against IBM.

IBM answers the Complaint as follows.

NATURE OF THE ACTION

To the extent the various headings in the Complaint are intended to constitute allegations, IBM denies them.

1. IBM admits that Carvana is seeking a declaration of non-infringement of U.S. Patent Nos. 7,543,234 (the “’234 patent”) and 7,631,346 (the “’346 patent”) (collectively, the “Asserted Patents” or “Patents-In-Suit”)¹ from the Court under the patent laws of the United States, 35. U.S.C. § 1 et seq., and the Declaratory Judgment Act, 28 U.S.C. §§ 2201 and 2202, and is seeking other relief as the Court deems just and proper. IBM denies that any factual or legal basis exists for any of Carvana’s claims against IBM in this action, or that Carvana is entitled to any relief whatsoever. IBM otherwise denies all remaining or different allegations in Paragraph 1 of the Complaint.

THE PARTIES

2. IBM lacks sufficient information or knowledge to admit the allegations in Paragraph 2 of the Complaint, and therefore denies the same.

3. IBM lacks sufficient information or knowledge to admit or deny the allegations in Paragraph 3 of the Complaint, and therefore denies the same.

4. IBM admits the allegations in Paragraph 4 of the Complaint.

5. IBM admits the allegations in Paragraph 5 of the Complaint.

JURISDICTION AND VENUE

¹ On March 22, 2024, the parties filed a Joint Stipulation of Dismissal to dismiss with prejudice all of the parties’ claims and counterclaims with respect to U.S. Patent No. 7,072,849 (the “’849 patent”). D.I. 54. The Joint Stipulation of Dismissal was ordered on March 25, 2024, with the ordered version filed on March 26, 2024. D.I. 55.

44. IBM denies the allegations in Paragraph 44 of the Complaint.

45. The allegations in Paragraph 45 of the Complaint are legal conclusions to which no response is required. To the extent a response is required, IBM denies the allegations in Paragraph 45 of the Complaint.

FIRST CLAIM FOR RELIEF

(Declaratory Judgment of Non-Infringement of the '849 Patent)

46. In response to Paragraphs 46–54 of the Complaint, Carvana has stipulated to dismissal of its claim for Declaratory Judgment of Non-Infringement of the '849 Patent (D.I. 54; D.I. 55), and IBM therefore denies the allegations as moot.

SECOND CLAIM FOR RELIEF

(Declaratory Judgment of Non-Infringement of the '234 Patent)

55. In response to Paragraph 55 of the Complaint, IBM incorporates by reference its Answers to each of the paragraphs above. IBM denies all remaining or different allegations in Paragraph 55 of the Complaint.

56. IBM denies the allegations in Paragraph 56 of the Complaint.

57. IBM admits the allegations in Paragraph 57 of the Complaint.

58. IBM denies the allegations in Paragraph 58 of the Complaint.

59. The allegations in Paragraph 59 of the Complaint are legal conclusions to which no response is required. IBM admits that the quoted language appears in the specification of the '234 patent. To the extent a response is required, IBM denies the allegations in Paragraph 59 of the Complaint.

60. IBM admits Carvana's website infringes the limitation "generating the portal page such that the two or more stacks of portlets are generated as a stack of stacks, wherein the stack of stacks presents a first stack of portlets and a control for selecting a second stack of portlets from

within the two or more stacks of portlets that is not currently presented.” IBM admits that the set of vehicle listings presented on Carvana’s website is an example of a “stack of portlets.” IBM admits that a set of vehicle listings presented on Carvana’s website can be the result of, for example, a user applying filters to query Carvana’s database of used vehicles for sale. IBM admits the filter(s) on Carvana’s website is an example of a control for selecting a second set of vehicle listings from within the two or more sets of vehicle listings that is not currently presented. IBM admits that a user’s selection of a different set of vehicle listings will result in a different set of vehicle listings being presented to the user. IBM denies all remaining or different allegations in Paragraph 60 of the Complaint.

61. IBM denies the allegations in Paragraph 61 of the Complaint.

62. IBM denies the allegations in Paragraph 62 of the Complaint.

63. The allegations in Paragraph 63 of the Complaint are legal conclusions to which no response is required.

64. The allegations in Paragraph 64 of the Complaint are legal conclusions to which no response is required. To the extent a response is required, IBM denies the allegations in Paragraph 64 of the Complaint.

THIRD CLAIM FOR RELIEF

(Declaratory Judgment of Non-Infringement of the '346 Patent)

65. In response to Paragraph 65 of the Complaint, IBM incorporates by reference its Answers to each of the paragraphs above. IBM denies all remaining or different allegations in Paragraph 65 of the Complaint.

66. IBM denies the allegations in Paragraph 66 of the Complaint.

67. IBM denies the allegations in Paragraph 67 of the Complaint.

68. IBM denies the allegations in Paragraph 68 of the Complaint.

69. IBM admits that Carvana’s “account-ui” page of Carvana’s website is an example of a “protected resource.”

70. IBM denies the allegations in Paragraph 70 of the Complaint.

71. IBM denies the allegations in paragraph 71 of the Complaint.

72. The allegations in Paragraph 72 of the Complaint are legal conclusions to which no response is required.

73. The allegations in Paragraph 73 of the Complaint are legal conclusions to which no response is required. To the extent a response is required, IBM denies the allegations in Paragraph 73 of the Complaint.

PRAYER FOR RELIEF

IBM denies that Carvana is entitled to any relief, either as prayed for in the Complaint or otherwise. IBM further denies each allegation contained in the Complaint that was not specifically admitted, denied, or otherwise responded to herein. IBM respectfully requests that the Court enter judgment in its favor and against Carvana on the Complaint, declare this case exceptional under 35 U.S.C. § 285, award IBM its attorneys’ fees, costs, and expenses, and grant IBM such further relief as the Court deems just and proper.

COUNTERCLAIMS

Counterclaim Plaintiff IBM asserts counterclaims of patent infringement against Carvana, demands a trial by jury on all issues so triable, and alleges as follows:

INTRODUCTION

1. IBM is in the innovation business. Every year, IBM spends billions of dollars on research and development to invent, market, and sell new technology. For example, through its investments and innovations in the new frontier of quantum information science, IBM is the leader

9. Rather than negotiate with IBM, Carvana has disregarded IBM's attempts to find a mutually acceptable resolution. In October 2021, IBM informed Carvana it was infringing IBM's patents through operation of its website, www.carvana.com. That same month, IBM provided Carvana with detailed evidence showing how Carvana infringed several IBM patents, including the '849, '234, and '346 patents, and offered to meet with Carvana to discuss a business resolution. After months of delay, on March 18, 2022, Carvana claimed that it did not infringe any of IBM's patents.

10. The parties continued to exchange letters, with IBM repeatedly asking for a meeting and Carvana repeatedly refusing. On August 8, 2023, IBM again provided Carvana with additional detailed notice of IBM's infringement claims and again invited Carvana to engage in meaningful discussion. On August 11, 2023, IBM informed Carvana it was infringing at least claim 7 of the '234 patent through operation of its website, www.carvana.com, and IBM provided Carvana with detailed evidence showing how Carvana infringed the '234 patent. Carvana did not respond to that letter. Then, without warning or notice, on October 2, 2023, Carvana brought this lawsuit against IBM.

11. On March 14, 2023, IBM informed Carvana that, as part of its ongoing investigation into potential infringement by Carvana of other patents in IBM's portfolio, IBM had determined that Carvana infringed at least claim 1 of U.S. Patent No. 7,702,719 (the "'719 patent"), and that IBM intended to move for leave to amend its Counterclaims in the instant case to assert the '719 patent. On March 15, 2023, Carvana confirmed that it would not oppose IBM's motion for leave to amend its Counterclaims in the instant case to assert the '719 patent.

NATURE OF THE CASE

12. This action arises under 35 U.S.C. § 271 for Defendant's infringement of IBM's United States Patent Nos. 7,543,234 (the "'234 patent"), 7,631,346 (the "'346 patent"), and 7,702,719 (the "'719 patent") (collectively the "Patents-In-Suit").

63. On August 8, 2023, IBM provided Carvana with additional detailed notice of IBM's infringement claims and again invited Carvana to engage in meaningful discussion. Instead, Carvana refused to have a meeting to engage in licensing discussions.

64. On August 11, 2023, IBM again provided Carvana with additional detailed notice of IBM's infringement claims showing how Carvana infringes at least claim 7 the '234 patent and again invited Carvana to engage in meaningful discussion. Instead, Carvana refused to have a meeting to engage in licensing discussions.

65. Instead of responding to IBM's most recent letter on August 11, 2023, on October 2, 2023, Carvana brought its declaratory judgment action without notifying IBM beforehand.

66. IBM's investigation into potential infringement by Carvana of the patents in IBM's voluminous portfolio is ongoing. On March 14, 2023, IBM notified Carvana that IBM had determined that Carvana infringed at least claim 1 of the '719 patent. On March 15, 2023, Carvana confirmed that it would not oppose IBM's motion for leave to amend its Counterclaims in the instant case to assert infringement of the '719 patent.

COUNT ONE

[DISMISSED]²

COUNT TWO

INFRINGEMENT OF THE '234 PATENT

67. IBM incorporates by reference paragraphs 1-66.

68. IBM is the owner of all right, title and interest in the '234 patent. The '234 patent was duly and properly issued by the USPTO on February 14, 2017. The '234 patent was duly assigned

² On March 22, 2024, the parties filed a Joint Stipulation of Dismissal to dismiss with prejudice all of the parties' claims and counterclaims with respect to the '849 patent. D.I. 54. The Joint Stipulation of Dismissal was ordered on March 25, 2024, with the ordered version filed on March 26, 2024. D.I. 55.

to IBM. A copy of the '234 patent is attached hereto as Exhibit 2.

69. In violation of 35 U.S.C. § 271(a), Carvana has directly infringed one or more of the claims of the '234 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported its websites (including www.carvana.com) and its mobile applications (including the Carvana applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). Alternatively, Carvana has induced others, including end users and customers, to infringe one or more of the claims of the '234 patent in violation of 35 U.S.C. § 271(b), as described below. Carvana's infringement is continuing.

70. For example, Carvana directly infringes at least claim 7 of the '234 patent at least by controlling and using (e.g., making available and maintaining) www.carvana.com and the Carvana mobile applications, which at least comprise:

- a. An apparatus (such as a Carvana network server) comprising:
 - b. a processor connected to a memory storing instructions (such as Carvana back-end code) that when executed by the processor provide for:
 - c. a plurality of portlet generators, wherein each portlet generator generates a portlet (such as Carvana back-end code and processes for generating the vehicle listings); and
 - d. a portal page generator (such as a Carvana network server and its back-end code and processes for generating the Carvana website or mobile app page), wherein the portal page generator receives a client request for a portal page that includes a subset of portlets (such as a user request for the "Coupe" vehicle listings page on the Carvana website or mobile apps), examines the subset of portlets, identifies at least one commonality in the subset of portlets, determines whether the subset of portlets is stackable (such as organizing the individual vehicle listings in the Carvana website or mobile apps into particular sets of vehicle listings, such as "Coupe" vehicle listings or

“SUV” vehicle listings), and, responsive to the subset of portlets being stackable, identifies two or more stacks of portlets that are stackable (such as the sets of “Coupe” or “SUV” vehicle listings in the Carvana website or mobile apps), and generating the portal page (such as the “Coupe” vehicle listings page on the Carvana website or mobile apps) such that the two or more stacks of portlets are generated as a stack of stacks, wherein the stack of stacks presents a first stack of portlets (such as the display of “Coupe” vehicle listings) and a control for selecting a second stack of portlets from within the two or more stacks of portlets that is not currently presented (such as providing the options for the user to select other stacks of vehicle listings not currently presented to the user, such as “SUV” vehicle listings on the Carvana website or mobile apps).

71. Carvana receives valuable consideration from customers and end users located in this judicial district from Carvana’s control and use of the Carvana website and mobile apps, including information provided by customers and end users, information automatically collected from customers and end users, and monetary consideration from customers and end users who purchase vehicles and use services through Carvana’s website and mobile applications. When customers and end users in this judicial district use the accused website and/or mobile applications, Carvana collects information about the customers and end users, their devices, and their interaction with the accused website and the associated mobile applications. Carvana works with service providers and advertising networks to track and manage cookie information and activities of customers and end users across different websites and devices. Third parties use cookie information collected by Carvana to deliver advertisements to end users and customers based on their use of the accused website and mobile applications. Carvana’s business is funded at least in part through advertising.

72. Carvana has had knowledge of the ’234 patent and its direct and indirect infringement since at least August 11, 2023.

73. Carvana also indirectly infringes one or more claims of the '234 patent through its websites (including www.carvana.com) and its mobile applications (including the Carvana applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). On information and belief, third parties, such as customers and end users, directly infringe the '234 patent by accessing and using the accused Carvana website or mobile applications through the devices and software used by those customers and end users.

74. On information and belief, despite its knowledge of the infringement of the '234 patent, Carvana has intended to induce, and continues to intend to induce, patent infringement by third parties, including at least the direct infringement by end users and customers, as described in this section. Carvana has and continues to encourage and instruct customers and end users to use Carvana's website and the associated mobile applications, which infringe the '234 patent as described above, by advertising the website and mobile applications, providing customer support, and designing its website and mobile applications in such a way that they infringe the '234 patent.

75. On information and belief, to the extent Carvana was not aware that it was encouraging its customers and end users to infringe the '234 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

76. IBM has been damaged by the infringement of its '234 patent by Carvana and will continue to be damaged by such infringement. IBM is entitled to recover from Carvana the damages sustained by IBM as a result of Carvana's wrongful acts.

77. The continued infringement by Carvana of the '234 patent is deliberate and willful, entitling IBM to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT THREE

INFRINGEMENT OF THE '346 PATENT

78. IBM incorporates by reference paragraphs 1-77.

79. IBM is the owner of all right, title and interest in the '346 patent. The '346 patent was duly and properly issued by the USPTO on December 8, 2009. The '346 patent was duly assigned to IBM. A copy of the '346 patent is attached hereto as Exhibit 3.

80. In violation of 35 U.S.C. § 271(a), Carvana has directly infringed one or more of the claims of the '346 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported its websites (including www.carvana.com) and its mobile applications (including the Carvana applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). Alternatively, Carvana has contributed to the infringement of the claims of the '346 patent in violation of 35 U.S.C. § 271(c) by selling, offering to sell, and/or supplying components, materials or apparatuses for use in practicing the patented methods of the '346 patent by end users and consumers, as described in this section. Alternatively, Carvana has induced others, including end users and customers, to infringe one or more of the claims of the '364 patent in violation of 35 U.S.C. § 271(b), as described below. Carvana's infringement is continuing.

81. Carvana infringes at least claims 1 and 5 of the '346 patent, as described below.

82. For example, Carvana directly infringes at least claim 1 of the '346 patent through www.carvana.com and the Carvana mobile applications, at least by:

a. managing user authentication (such as verifying the identity of a Carvana user) within a distributed data processing system (such as a computer network), wherein a first system (such as Facebook and its network) and a second system (such as Carvana and its network) interact within a federated computing environment (such as the environment including Facebook and Carvana) and support single-sign-on operations (such as "Continue with Facebook" sign in

operations) in order to provide access to protected resources (such as access to the <https://www.carvana.com/account-ui/personal-details> page, which exists before the single-sign-on operation), at least one of the first system and the second system comprising a processor, the method comprising;

b. triggering a single-sign-on operation (such as launching a sign in operation to “Continue with Facebook”) on behalf of the user in order to obtain access to a protected resource that is hosted by the second system (such as the <https://www.carvana.com/account-ui/personal-details> page, which exists before the single-sign-on operation, hosted by Carvana and its network), wherein the second system requires a user account (such as a Carvana account) for the user to complete the single-sign-on operation prior to providing access to the protected resource;

c. receiving from the first system (such as Facebook and its network) at the second system (such as Carvana and its network) an identifier associated with the user (such as an access token user id or an email address);

d. creating a user account for the user at the second system based at least in part on the received identifier associated with the user after triggering the single-sign-on operation but before generating at the second system a response for accessing the protected resource (such as creating a Carvana account at Carvana and its network after a “Continue with Facebook” sign in operation is triggered, before permitting access to, for example, the <https://www.carvana.com/account-ui/personal-details> page, which exists before the single-sign-on operation), wherein the created user account supports single-sign-on operations between the first system (such as Facebook and its network) and the second system (such as Carvana and its network) on behalf of the user.

83. Carvana also directly infringes at least claim 5 of the ’346 patent through

www.carvana.com and the Carvana mobile applications, at least by:

- a. managing user authentication (such as verifying the identity of a Carvana user) within a distributed data processing system (such as a computer network), wherein a first system (such as Facebook and its network) and a second system (such as Carvana and its network) interact within a federated computing environment (such as the environment including Facebook and Carvana) and support single-sign-on operations (such as “Continue with Facebook” sign in operations) in order to provide access to protected resources (such as access to the <https://www.carvana.com/account-ui/personal-details> page, which exists before the single-sign-on operation), at least one of the first system and the second system comprising a processor, the method comprising;
- b. triggering a single-sign-on operation (such as launching a sign in operation to “Continue with Facebook”) on behalf of the user in order to obtain access to a protected resource that is hosted by the second system (such as the <https://www.carvana.com/account-ui/personal-details> page, which exists before the single-sign-on operation, hosted by Carvana and its network), wherein the second system requires a user account (such as a Carvana account) for the user to complete the single-sign-on operation prior to providing access to the protected resource;
- c. receiving from the first system (such as Facebook and its network) at the second system (such as Carvana and its network) an identifier associated with the user (such as an access token user id or an email address);
- d. in response to a determination at the second system (such as Carvana and its network) that the second system does not have sufficient user attribute information (such as the user’s name) to complete creation of a user account (such as a Carvana account) for the user at the second system, sending a request message (such as a HTTP request or API call) from the second

system to the first system (such as Facebook and its network) to retrieve user attribute information; and

e. receiving at the second system from the first system a response message (such as a HTTP response or API response) that contains user attribute information (such as the user's name) that is employed by the second system to complete creation of a user account for the user at the second system;

f. creating a user account for the user at the second system based at least in part on the received identifier associated with the user after triggering the single-sign-on operation but before generating at the second system a response for accessing the protected resource (such as creating a Carvana account at Carvana and its network after a "Continue with Facebook" sign in operation is triggered, before permitting access to, for example, the <https://www.carvana.com/account-ui/personal-details> page, which exists before the single-sign-on operation), wherein the created user account supports single-sign-on operations between the first system (such as Facebook and its network) and the second system (such as Carvana and its network) on behalf of the user.

84. Alternatively, to the extent the "triggering" step is performed by a third party (in addition to and/or separate from Carvana's performance), such as a user, browser, or mobile operating system, or identity provider, that performance is attributable to Carvana at least because Carvana has an agency or contractual relationship with said third party, or Carvana controls or directs the performance of said third party. For example, Carvana controls or directs the performance of the "triggering" step by users, browsers, and mobile operating systems because Carvana, for example, conditions receipt of a benefit, such as access to certain applications on Carvana's website and mobile applications, on the performance of the claimed steps, and establishes the manner or timing of the

performance by, for example, triggering the single-sign-on operation using its underlying computer code. As another example, Carvana controls or directs the performance of the “triggering” step by users, browsers, and mobile operating systems because Carvana profits from the performance by, for example, increasing the number of signed-in users accessing Carvana’s website and mobile applications. Carvana has the right to stop or limit infringement, by, for example, not enabling the use of single-sign-on operations.

85. Carvana has had knowledge of the ’346 patent and its alleged direct and indirect infringement since at least October 27, 2021.

86. Carvana also indirectly infringes one or more claims of the ’346 patent through its websites (including www.carvana.com) and its mobile applications (including the Carvana applications for mobile devices running on, for example, the Apple iOS and Google Android operating systems). On information and belief, in certain circumstances, client devices and software (e.g., devices and software used by end users and customers of Carvana’s website and the associated mobile applications) directly infringe the ’346 patent through the use of the website and mobile applications. In particular, to the extent Carvana does not perform the method steps, in certain circumstances, client devices and software (e.g., devices and software used by end users, customers, and potential customers of Carvana’s website and the associated mobile applications) perform at least the method for managing user authentication within a distributed data processing system recited by claims 1 and 5 of the ’346 patent.

87. On information and belief, despite knowledge of the infringement of the ’346 patent, Carvana has intended and continues to intend to contribute to patent infringement by third parties by selling, offering to sell, and/or supplying components, materials, or apparatuses for use in practicing the patented methods of the ’346 patent by end users and consumers, as described in this

section.

88. For example, Carvana provides computer code (such as HTML, Java, JavaScript, JSON, ActionScript, Objective-C, Swift, and image files) underlying the Carvana website and mobile applications to customers and end users for use in infringing the '346 patent, and such computer code does not have substantial non-infringing uses. Such computer code is especially made and/or especially adapted for use in infringing the '346 patent and is not a staple article or commodity of commerce suitable for substantial non-infringing use. The only substantial use of Carvana's computer code responses is for the claimed subject matter involving managing user authentication and access to web content such as protected resources as described in the '346 patent.

89. Further, as a part of providing said computer code, Carvana enters into binding contracts with end users and customers to use Carvana's website and mobile applications, including in an infringing manner, including by binding the users to a terms of use agreement governing access to and use of the accused website and mobile applications.

90. Carvana receives valuable consideration from customers and end users located in this judicial district, including information provided by customers and end users, information automatically collected from customers and end users, and monetary consideration from customers and end users who purchase vehicles and use services through Carvana's website and mobile applications. When customers and end users in this judicial district use the accused website and/or mobile applications, Carvana collects information about the customers and end users, their devices, and their interaction with the accused website and the associated mobile applications. Carvana works with service providers and advertising networks to track and manage activities of customers and end users across different websites and devices. Third parties use information collected by Carvana to deliver advertisements to end users and customers based on their use of the accused website and

mobile applications. Carvana's business is funded in part through advertising. The applications and website are especially made and/or especially adapted for use in infringing the '346 patent, at least as detailed above, and are not a staple article or commodity of commerce suitable for substantial non-infringing uses because, among other things, the components sent to users are uniquely designed only to access the infringing aspects of Carvana's website and mobile applications.

91. On information and belief, despite its knowledge of the infringement of the '346 patent, Carvana has intended and continues to intend to induce patent infringement by third parties, including at least the direct infringement by end users and customers, as described in this section. Carvana has and continues to encourage and instruct customers and end users to use Carvana's website and the associated mobile applications in a manner that infringes the '346 patent by advertising the website and mobile applications, providing customer support, and designing its website and mobile applications in such a way that the use of the website and mobile applications by an end user or customer infringes the '346 patent.

92. On information and belief, to the extent Carvana was not aware that it was encouraging its customers and end users to infringe the '346 patent, its lack of knowledge was based on being willfully blind to the possibility that its acts would cause infringement.

93. IBM has been damaged by the infringement of its '346 patent by Carvana and will continue to be damaged by such infringement. IBM is entitled to recover from Carvana the damages sustained by IBM as a result of Carvana's wrongful acts.

94. The continued infringement by Carvana of the '346 patent is deliberate and willful, entitling IBM to increased damages under 35 U.S.C. § 284 and to attorney fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

COUNT FOUR

INFRINGEMENT OF THE '719 PATENT

95. IBM incorporates by reference paragraphs 1-94.

96. IBM is the owner of all right, title and interest in the '719 patent. The '719 patent was duly and properly issued by the USPTO on April 20, 2010. The '719 patent was duly assigned to IBM. A copy of the '719 patent is attached hereto as Exhibit D.

97. In violation of 35 U.S.C. § 271(a), Carvana has directly infringed one or more of the claims of the '719 patent by having made, designed, offered for sale, sold, provided, used, maintained, and/or supported its websites (including www.carvana.com). Alternatively, Carvana has contributed to the infringement of one or more of the claims of the '719 patent in violation of 35 U.S.C. § 271(c) by selling, offering to sell, and/or supplying components, materials, or apparatuses for use in practicing the patented methods of the '719 patent by end users and consumers, as described below. Alternatively, Carvana has induced others, including third-party server hosts (e.g., CDNs), end users, and customers, to infringe one or more of the claims of the '719 patent in violation of 35 U.S.C. § 271(b), as described below.

98. Carvana has infringed at least claim 1 of the '719 patent, as described below.

99. For example, Carvana has directly infringed at least claim 1 of the '719 patent through www.carvana.com, at least by:

a. configuring the server to store a model associated with the application (such as, for example, objects containing application state, data, rules, and algorithms affecting the data associated with applications on Carvana's webpage) and to execute view-generating and controller logic associated with the application (such as when generating HTML and javascript to represent a portion of the model and updating the model so as to be available for search engine crawling and indexing or in response to user request for the webpage);

b. configuring the client (such as through Carvana's HTML and javascript) to store at least a subset of the model associated with the application (such as when objects containing application state, data, rules, and algorithms affecting the data associated with applications on Carvana's webpage is stored on a user's device) and to execute at least a subset of the view-generating and controller logic associated with the application (such as when generating HTML and javascript to represent a portion of the model and updating the model, including, for example, the subset of HTML and Javascript associated with the specific portion of the model rendered by the user's device (i.e., by a browser));

c. wherein one or more portions of the applications are performed at the client without the client having to interact with the server (such as when the user's device generates Carvana's webpage (e.g., client-side rendering, separate and apart from server-side rendering of Carvana's webpage)), and further wherein the client and the server both locally maintain at least a portion of the model and execute the view-generating and controller logic associated therewith (as demonstrated by how Carvana's webpage can be rendered both server-side (e.g., for purposes of search engine crawling and indexing) and client-side (e.g., for purposes of user access)).

100. Alternatively, to the extent the "configuring the client" step was performed by a third party (in addition to and/or separate from Carvana's performance), such as a user, browser, or mobile operating system, that performance is attributable to Carvana at least because Carvana had an agency or contractual relationship with said third party, or Carvana directed or controlled the performance of said third party. For example, Carvana directed or controlled the performance of the "configuring the client" step by users, browsers, and mobile operating systems because it, for example, established the manner or timing of the performance by, for example, designing and generating the HTML template and computer code (such as JavaScript and JSON), which comprise www.carvana.com.

That HTML template and computer code contained instructions that direct the browser to generate the Carvana webpage in a particular manner (i.e., using client-side rendering). For another example, Carvana directed or controlled the performance of the “configuring the client” step by users and browsers because it, for example conditions receipt of a benefit, such as access to applications on Carvana’s webpage, on the performance of the claimed steps, and establishes the manner or timing of the performance by, for example, directing the browser via underlying computer code to generate Carvana’s webpage using client-side rendering. For another example, Carvana directed or controlled the performance of the “configuring the client” step by browsers because it profited from such performance by, for example, increasing use and user interactions and decreasing latency by having its website generated in a particular manner (i.e., using client-side rendering). Carvana had the right to stop or limit infringement by, for example, redesigning the HTML and computer code of www.carvana.com to function in a non-infringing manner.

101. Alternatively, to the extent the “wherein the client . . . locally maintain at least a portion of the model and execute the view-generating and controller logic associated therewith” step was performed by a third party (in addition to and/or separate from Carvana’s performance), such as a user, browser, or mobile operating system, that performance is attributable to Carvana at least because Carvana had an agency or contractual relationship with said third party, or Carvana directed or controlled the performance of said third party. For example, Carvana directed or controlled the performance of the “wherein the client . . . locally maintain at least a portion of the model and execute the view-generating and controller logic associated therewith” step by users, browsers, and mobile operating systems because it, for example, established the manner or timing of the performance by, for example, designing and generating the HTML template and computer code (such as JavaScript and JSON), which comprise www.carvana.com. That HTML template and computer code contained

instructions that direct the user's browser with respect to locally storing, for example, HTML and Javascript associated with applications on Carvana's webpage, and executing the view-generating and controller logic associated with the Carvana webpage in a particular manner (i.e., client-side rendering). For another example, Carvana directed or controlled the performance of the "wherein the client . . . locally maintain at least a portion of the model and execute the view-generating and controller logic associated therewith" step by users and browsers because it, for example conditions receipt of a benefit, such as access to applications on Carvana's webpage, on the performance of the claimed steps, and establishes the manner or timing of the performance by, for example, directing the browser via underlying computer code to locally store HTML and Javascript associated with Carvana's webpage and execute view generating and controller logic associated with Carvana's webpage using client-side rendering. For another example, Carvana directed or controlled the performance of the "wherein the client . . . locally maintain at least a portion of the model and execute the view-generating and controller logic associated therewith" step by browsers because it profited from such performance by, for example, increasing use and user interactions and decreasing latency by having its website generated in a particular manner (i.e., using client-side rendering). Carvana had the right to stop or limit infringement by, for example, redesigning the HTML and computer code of www.carvana.com to function in a non-infringing manner.

102. IBM has been damaged by the infringement of its '719 patent by Carvana and is entitled to recover from Carvana the damages sustained by IBM as a result of Carvana's wrongful acts.

RELIEF REQUESTED

Wherefore, IBM respectfully requests that this Court enter judgment against Carvana as follows:

- A. That the '234 patent has been and continues to be infringed by Carvana;

- B. That Carvana's infringement of the '234 patent has been and continues to be willful;
- C. That the '346 patent has been and continues to be infringed by Carvana;
- D. That Carvana's infringement of the '346 patent has been and continues to be willful.
- E. That the '719 patent has been infringed by Carvana;
- F. An award of damages adequate to compensate IBM for the patent infringement that has occurred, together with pre-judgment interest and costs;
- G. An award of all other damages permitted by 35 U.S.C. § 284, including increased damages up to three times the amount of compensatory damages found;
- H. That this is an exceptional case and merits an award to IBM of its costs and reasonable attorneys' fees incurred in this action as provided by 35 U.S.C. § 285; and
- I. Such other relief as this Court deems just and proper.

DEMAND FOR JURY TRIAL

IBM hereby demands trial by jury on all claims and issues so triable.

Dated: March 28, 2023

Respectfully submitted,

By: Tamir Packin

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CERTIFICATE OF SERVICE

I hereby certify that that on March 28, 2023, I electrically filed a true and correct copy of the foregoing with the Clerk of the Court using the CM/ECF system, which will then send a notification of such filing (NEF) to all counsel of record.

Dated: March 28, 2023

Respectfully submitted,

By: /s/ Tamir Packin

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