

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

HUMAN DIFFERENTIAL INTELLIGENCE LLC,	§	
	§	
<i>Plaintiff,</i>	§	Case No. 6:20-cv-00310
	§	
v.	§	JURY TRIAL DEMANDED
	§	
BED BATH & BEYOND, INC.,	§	
	§	
<i>Defendant.</i>	§	

CORRECTED FIRST AMENDED COMPLAINT¹

Plaintiff Human Differential Intelligence LLC (“Plaintiff” or “HDI”), by and through its attorneys, for its Corrected First Amended Complaint against Bed Bath & Beyond, Inc. (“Defendant” or “BBB”), and demanding trial by jury, hereby alleges as follows:

I. 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. §§ 271, *et seq.*, to enjoin and obtain damages resulting from Defendant’s unauthorized use, sale, and offer to sell in the United States of products, methods, processes, services, and/or systems that infringe HDI’s United States patents, as described herein.

2. Defendant manufactures, provides, uses, sells, offers for sale, imports, and/or distributes infringing products and services; and encourages others to use its products and services in an infringing manner, including their customers, as set forth herein.

3. HDI seeks past and future damages and prejudgment and post judgment interest for Defendant’s past infringement of the Patents-in-Suit, as defined below.

¹ This complaint has been corrected to revise a transcription error in the patent number listed in paragraph 73 (under the section titled, Count Three). No substantive changes have been made.

II. PARTIES

4. Plaintiff HDI is a limited liability company organized and existing under the laws of the State of Texas. HDI's registered agent for service of process in Texas is Capital Corporate Services, Inc., 206 E. 9th Street, Suite 1300, Austin, Texas 78701.

5. On information and belief, Defendant is a corporation organized under the laws of New York, having established places of business in this District at 9333 Research Blvd., Suite A4, Austin, Texas 78759. Defendant's registered agent for service of process in Texas is Prentice Hall Corporation System, 211 E. 7th Street, Suite 620, Austin, Texas 78701.

III. JURISDICTION AND VENUE

6. This is an action for patent infringement which arises under the Patent Laws of the United States, namely, 35 U.S.C. §§ 271, *et seq.*

7. This Court has original and exclusive jurisdiction over the subject matter of this action under 28 U.S.C. §§ 1331 and 1338(a).

8. On information and belief, venue is proper in this District pursuant to 28 U.S.C. §§ 1391(b), 1391(c), and 1400(b) because Defendant has a regular and established place of business in this District, transacted business in this District, and has committed and/or induced acts of patent infringement in this District.

9. On information and belief, Defendant is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to its substantial business in this forum, 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 Texas and in this Judicial District.

IV. FACTUAL ALLEGATIONS

PATENTS-IN-SUIT

10. HDI is the owner of all right, title, and interest in and to U.S. Patent No. 8,752,141 (the “’141 Patent”), entitled “Methods for Presenting and Determining the Efficacy of Progressive Pictorial and Motion-Based Captchas,” issued on June 10, 2014. A true and correct copy of the ’141 Patent is attached hereto as **Exhibit A**.

11. HDI is the owner of all right, title, and interest in and to U.S. Patent No. 9,192,861 (the “’861 Patent,” and together with the ’141 Patent “the Patents-in-Suit”), entitled “Motion, Orientation, and Touch-Based Captchas,” issued on November 24, 2015. A true and correct copy of the ’861 Patent is attached hereto as **Exhibit B**.

12. Together, the foregoing patents are referred to herein as the “Patents-in-Suit.” HDI is the assignee of the Patents-in-Suit and has all rights to enforce the Patents-in-Suit against infringers, sue for infringement of the Patents-in-Suit, and collect past and future damages for all relevant times, including the right to prosecute this action.

13. The Patents-in-Suit are directed to, *inter alia*, methods for distinguishing a human from a computer using a graphical/pictorial and/or motion-based verification or challenge system(s).

DEFENDANT’S ACTS

14. Defendant offers and/or operates one or more website(s), for example the website accessible at <https://www.bedbathandbeyond.com>, as well as associated backend web servers. Defendant directs customers and other end-users that wish to access offerings, resources, services, electronic transactions, and/or purchases from Defendant to visit <https://www.bedbathandbeyond.com>.

15. Defendant protects access to certain resources and/or content of its website(s) from Internet bots (a/k/a web bots or robots), which are automated software applications that run tasks over the Internet with minimal, if any, human intervention. Defendant restricts access to these protected resources/content through the use of Completely Automatic Public Turing Test to Tell Humans and Computers Apart (“CAPTCHA”).

16. Specifically, Defendant implements Google’s reCAPTCHA v2 framework on its commercial websites, as exemplified at the URL <https://www.bedbathandbeyond.com/store/account/Login> of Defendant’s website(s), as a precondition to customers, end-users, or third parties accessing the protected website resource or content. The screenshot below is one excerpt of the HTML and JavaScript source code and other computerized instructions that, upon information and belief, are incorporated by Defendant into Defendant’s website(s) to use the reCAPTCHA v2 technology.

```
{ "src": "https://www.mapquestapi.com/search/v2/radius", "reverseURL": "https://www.mapquestapi.com/geocoding/v1/reverse", "jsSrc": "https://api.mqcdn.com/sdk/mapquest-js/v1.2.0/mapquest.js", "key": "Gmjtd|lu6120u8nh,2w=05-lwt2l", "tableName": "mqap.34703_AllInfo", "maxMatches": 20, "ambiguities": "ignore", "units": "m"}, "webInstantCredit": { "adsUrl": "https://c.comenity.net/bedbathandbeyond/pub/apply/Apply.xhtml", "recaptcha": { "enable": true, "scriptId": "recaptchaScript", "src": "https://www.google.com/recaptcha/api.js", "siteKey": "6LdD2woTAAAAAJVqBmfM4jQaokGCYyg8DQPjW6-j", "containerClass": "g-recaptcha", "socialAnnex": { "requestUrl": "https://s22.socialannex.com/api/product/photos/9411181/:productCode/8749bdc9798a71a8e30b4738b4f7956", "productComparisonClass": "sa_s22_comapare_page_slider_s22_multiple_product_", "siteId": { "US": 9411181, "Baby": 9411351, "Ca": 9411361 }, "src": "//cdn.socialannex.com/partner/9411181/bb-feo/universal.js", "scriptId": "socialAnnexContent", "pageType": { "CLP": 3, "SEARCH": 3, "HOMEPAGE": 1, "REVIEWYOURPRODUCTS": 9, "GALLERY": 7, "PLP": 3, "COLLEGE": 3, "REGISTRYDASHBOARD": 1, "PRODUCTCOMPARISON": 2, "COLLEGELOKBOOK": 7, "PDP": 2 }, "homePageClass": "sa_s22_instagram_home", "orderHistoryClass": "sa_s22_photoupload_product_holder", "defaultClass": "sa_s22_instagram_product", "orderPageId": "sa_track", "socialAnnexPrefix": "sa_", "token": "8749bdc9798a71a8e30b4738b4f7956", "categoryClass": "sa_s22_instagram_category", "id": "sa_s22_instagram", "defaultId": "sa_s22_instagram", "socialAnnexPhotoRegistry": { "baseUri": "https://s22.socialannex.com/v2/api/photoregistry/images/9411181", "narvar": { "url": "http://bedbathandbeyond.narvar.com/bedbathandbeyond/tracking/" }, "merkle": { "src": "https://cdn.merklesearch.com/merkle_track.js", "merchantId": "bedbathandbeyond", "loadInHead": false }, "quantumMetric": { "src": "https://cdn.quantummetric.com/qscripts/quantum-
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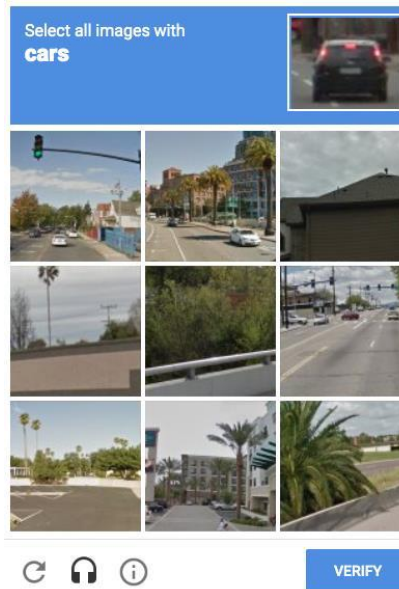
17. Defendant operates and/or is responsible for the operation of the reCAPTCHA v2 technology on its website, in the manner set forth herein.

18. Defendant, not Google, decided to implement and operate the reCAPTCHA v2 technology on its public-facing website. Defendant created or registered a reCAPTCHA account with Google. Upon information and belief, during registration Defendant elects which version of reCAPTCHA it wants to implement on its website, including for purposes of this action, electing reCAPTCHA v2 rather than other possible versions, such as reCAPTCHA v3. As part of the registration, Defendant obtains an individualized API key pair. Upon information and belief, the API key pair consists of a site key and secret key. The site key is used by Defendant to invoke, implement, and operate the reCAPTCHA service on Defendant's website(s) or mobile application. The secret key is used by Defendant to authorize communication between Defendant's website(s) or application (including the website/application backend) and the reCAPTCHA server.

19. It is Defendant's implementation of its individualized API key pair, along with Defendant's implementation other code and computerized instructions, into the architecture, design, and construction of its accused website(s) and the execution of that code by and/or at the direction or control of Defendant that controls and instructs the operation of the reCAPTCHA v2 service on Defendant's website(s). Specifically, Defendant's implementation and use of its individualized key, and execution of HTML and JavaScript source code and other computerized instructions implemented by Defendant in Defendant's website(s), in association with Defendant's individualized key that directs and controls the electing, associating, presentation, processing, and calculation or determination of information related to the image-based and/or motion-based CAPTCHA presented to a user of Defendant's website(s).

20. Upon execution by Defendant and/or at Defendant's direction or control, the HTML and JavaScript code and other computerized instructions implemented by Defendant in Defendant's website(s), in association with Defendant's individualized API key, perform or direct

and control the performance of the following actions, among others: When a customer, end-user, or other third party wishes to access a protected resource or content of Defendant's website(s) and is suspected of being a robot, Defendant's website(s) displays an image-based CAPTCHA. When Defendant first displays the image-based CAPTCHA, 9-image tiles are shown to the website user. Defendant instructs the user to select all tiles within the displayed tiles that contain a certain concept, for example fire hydrants, crosswalks, buses, street signs, etc. As the user selects or clicks on an image-tile, the tile is replaced, and an additional image tile(s) is shown to the user. Defendant further instructs the participant to click "VERIFY" once no tiles with the specified concept remain. At the verification stage, the user's responses are either deemed accurate (no remaining tile of the image contains the specified concept) or inaccurate (any tile of the image contains the specified concept).



21. Upon execution by Defendant and/or at Defendant's direction or control, the HTML and JavaScript source code and other computerized instructions implemented by Defendant into Defendant's website(s), in association with Defendant's individualized API key, perform or direct and control the performance of the following actions, among others: When a customer, end-

user, or other third party wishes to access a protected resource or content of Defendant's website(s), Defendant's website(s) automatically loads a checkbox labeled "I'm not a robot." Defendant instructs and requires the user to check the box in order to access the protected record and processes, for example, the user's mouse movements and click manipulation. If such movements and/or manipulation from the user meet a required threshold, the user is deemed human and granted access to the protected resource or content.

22. Claim 1(a) & (b) of the '141 Patent recite: “automatically electing an electronic image” and “associating said electronic image with one or more concepts.” Defendant performs these steps and/or directs or controls Google and/or a Google server(s)/computer(s) to perform these steps or portion thereof in the manner required by Defendant. For example, Defendant includes HTML and JavaScript source code, its personalized site key, and other computerized instructions in its accused website(s). *See, e.g.,* <https://developers.google.com/recaptcha/docs/display>;

<https://developers.google.com/recaptcha/docs/verify>. Upon information and belief, Defendant executes or directs or controls the browser to execute that code and other computerized instructions to initiate, configure, and send a request, along with Defendant's site key, to a Google server(s)/computer(s) and that request from and/or initiated by Defendant and mandated by Defendant as a condition of use directs, controls, and/or causes a Google server(s)/computer(s) to automatically elect a set of image-tiles and associate those tiles with one or more concepts, such as a fire hydrant, crosswalk, bus, or other concept(s), in the manner claimed in the '141 Patent.

23. But for Defendant including this code and Defendant's individualized site key into Defendant's accused website(s) and the execution of this code by or at the direction or control of Defendant in association with Defendant's site key, no image-based captcha or tiles would be elected nor associated with one or more concepts for use in or display by Defendant's website(s). *See, e.g.,* <https://developers.google.com/recaptcha/docs/faq>.

24. Claim 1(c) of the '141 Patent recites: "presenting said electronic image" Defendant performs this step and/or directs or controls the performance of this step or portion thereof by another, for example Google, in the manner required by Defendant. For example, Defendant displays on its accused website(s) the elected image-based captcha. In doing so, Defendant's accused website(s) first displays to the end-user only 9-image tiles, and then upon an end-user selecting or clicking on a tile, Defendant's accused website(s) replaces the corresponding slot with an additional tile, such that Defendant's accused website presents the electronic image in "a first image state" and "progressively reveal[s] information," in the manner claimed in the '141 Patent. Google also performs this step at the direction and control of Defendant. For example, in response to the request from Defendant, a Google server(s) sends a response(s) that includes the HTML code for the image tiles.

25. But for Defendant including this code and Defendant's site key into Defendant's accused website(s) and the execution of this code by or at the direction or control of Defendant in association with Defendant's site key, no image-based captcha would be presented.

26. Claim 1(d) of the '141 Patent recites: "automatically processing responses from the participant . . . to correlate an accuracy of guesses" Defendant performs this step and/or directs or controls Google and/or a Google server(s)/computer(s) to perform this step or portion thereof in the manner required by Defendant. For example, upon information and belief, Defendant includes HTML and JavaScript source code, as well as other instructions for performing validation, into its website. When an end-user enters his or her selections/responses to the captcha (by, for example, clicking on or selecting tiles with a fire hydrant, crosswalk, bus, or other associated concept and/or selecting the "Verify" button), that code included by Defendant within its website receives the selection(s)/response(s). Upon information and belief, that code upon execution by Defendant and/or at the direction or control of Defendant, *inter alia*, packages the end-user's selections/responses for transmission to a Google server(s)/computer(s) and passes the end-user's selections/responses, along with Defendant's site key, to a Google server(s)/computer(s) in a request to determine if the end-user has solved the captcha (*e.g.*, the selection is a fire hydrant, crosswalk, bus, *etc.*). Further, prior to Defendant granting the end-user access to the protected content or resource on Defendant's website(s), Defendant's website(s) asks a Google server(s)/computer(s) to verify that the end-user successfully solved the image-based captcha by sending another request along with a secret key. Google and/or a Google server(s)/computer(s) also perform this claimed step in response to and at the direction or control of Defendant and its accused website(s) at least insofar as Defendant implements code that when executed by Defendant and/or as directed or controlled by Defendant sends a request to Google

server(s)/computer(s) that directs, controls, and/or causes a Google server(s)/computer(s) to determine the accuracy of the end-user's selections/responses (*e.g.* is the selection a fire hydrant, crosswalk, bus, etc.).

27. But for Defendant including this code and Defendant's site key into Defendant's accused website(s) and the execution of this code by or at the direction or control of Defendant in association with Defendant's site key, the end-user's selections would not be processed to make an accuracy determination and further no accuracy determination would be made.

28. '141 Patent, claim 1(e) recites "calculating a percentage of participants able to decode and accurately guess said one or more concepts within a predetermined time." Defendant performs this step and/or directs or controls Google and/or a Google server(s)/computer(s) to perform this step or portion thereof in the manner required by Defendant. For example, upon information and belief, Defendant sets the security preference for the accused website(s) (or elects to use the default setting), which sets the threshold for satisfying the captcha and/or provides mathematical values required for the determination. *See* <https://developers.google.com/recaptcha/docs/settings>. Additionally, upon information and belief, Defendant includes HTML and JavaScript source code, as well as other computerized instructions for performing validation, in its accused website(s) in association with Defendant's site key. Upon information and belief, in response to and at the direction and control of Defendant, including in response to requests by Defendant on its admin console, Google and/or a Google server(s)/computer(s) tabulates the total number of participants that used reCAPTCHA v2 on Defendant's website(s) "and the percentage of end-users able to solve the captcha within the allowable time period." *See, e.g.*, <https://developers.google.com/recaptcha/docs/faq>.

29. But for Defendant including this code and Defendant's site key into Defendant's accused website(s) and execution of this code by or at the direction or control of Defendant, in association with Defendant's site key, no calculation of a percentage of participants able to solve the image-based captcha presented on Defendant's website(s) would be performed.

30. Claim 1(a) of the '861 Patent recites: "automatically electing a manipulation challenge for a user" Defendant performs this step and/or directs or controls Google and/or a Google server(s)/computer(s) to perform this steps or portion thereof in the manner required by Defendant. For example, Defendant includes HTML and JavaScript source code, its personalized site key, and other computerized instructions in its accused website(s). *See, e.g.,* <https://developers.google.com/recaptcha/docs/display>; <https://developers.google.com/recaptcha/docs/verify>. Upon information and belief, Defendant executes and/or directs or controls the browser to execute that code and other computerized instructions to initiate, configure, and send a request, along with Defendant's site key, to a Google server(s)/computer(s) and that request from and/or initiated by Defendant directs, controls, and/or causes a Google server(s)/computer(s) to automatically elect a motion-based captcha, in the manner claimed in the '861 Patent.

31. But for Defendant including this code and Defendant's site key into Defendant's accused website(s) and execution of this code by or at the direction or control of Defendant, in association with Defendant's site key, no motion-based captcha or "checkbox" captcha would be elected, including for use in or display by Defendant's website(s). *See, e.g.,* <https://developers.google.com/recaptcha/docs/faq>.

32. Claim 1(b) of the '861 Patent recites: "automatically processing sensory data associated with user movements and/or manipulations" Defendant performs this step and/or

directs or controls Google and/or a Google server(s)/computer(s) to perform this steps or portion thereof in the manner required by Defendant. For example, upon information and belief, Defendant includes HTML and JavaScript source code, as well as other instructions for performing validation, into its website. That code included by Defendant within its website receives, for example, data reflecting or relating to the user's scroll and other movements as the user interacts with, hovers over, approaches, and/or selects or clicks the checkbox with, for example, a mouse or touchscreen. Upon information and belief, that code upon execution by and/or at the direction or control of Defendant, *inter alia*, passes data regarding the end-user's scroll and other movements to a Google server(s)/computer(s). Further, prior to Defendant granting the end-user access to the protected content or resource on Defendant's website(s), Defendant's website(s) asks a Google server(s)/computer(s) to verify that the end-user successfully solved the reCAPTCHA v2 by sending another request along with a secret key. Google and/or a Google server(s)/computer(s) also perform this claimed step in response to and at the direction or control of Defendant and its accused website(s) at least insofar as Defendant implements code that when executed by Defendant and/or as directed or controlled by Defendant sends information about the end-user's scroll and other movements to a Google server(s)/computer(s) for processing.

33. But for Defendant including this code and Defendant's site key into Defendant's accused website(s) and the execution of this code by or at the direction or control of Defendant in association with Defendant's site key, the end-user's scroll, movements, or other interactions with Defendant's website(s) would not be processed, including for use by Defendant in granting or denying access to protected content and resources on Defendant's website(s).

34. Claim 1(c) of the '861 Patent recites: "automatically determining if said user movements and/or manipulations from the user meet a required threshold for satisfying" the

motion-based captcha. Defendant performs this step and/or directs or controls Google and/or a Google server(s)/computer(s) to perform this steps or portion thereof in the manner required by Defendant. For example, upon information and belief, Defendant sets the security preference for the accused website(s) (or elects to use the default setting), which sets the threshold for satisfying the motion-based captcha and/or provides mathematical values required for the determination. *See* <https://developers.google.com/recaptcha/docs/settings>. Further, upon information and belief, Defendant includes HTML and JavaScript source code, Defendant's individualized site key, and other computerized instructions in its accused website(s). Upon information and belief, Defendant executes or directs or controls the browser to execute that code and other computerized instructions to initiate, configure, and send a request, along with Defendant's site key, to a Google server(s)/computer(s) and that request from and/or initiated by Defendant directs, controls, and/or causes a Google server(s)/computer(s) to determine if the end-user's movements and/or manipulation satisfied the motion-based captcha at the specified security threshold.

35. But for Defendant including this code and Defendant's site key into Defendant's accused website(s) and the execution of this code by or at the direction or control of Defendant in association with Defendant's site key, no determination regarding whether the end-user's movements and/or manipulation satisfied the specified security threshold would be made.

36. Without the HTML and JavaScript source code and other computerized instructions, along with Defendant's site key, included by Defendant in Defendant's website(s) and executed or run by and/or at the direction or control of Defendant, the accused website would not operate to automatically elect a graphical/pictorial and/or motion-based verification or challenge system, automatically process responses to that verification or challenge system, and/or calculate a percentage of participants able to decode the graphical/pictorial verification or

challenge system or determine if the user's movements and/or manipulations meet the required threshold for satisfying the motion-based verification or challenge system as set forth in claim 1 of the '141 Patent or claim 1 of the '861 Patents.

37. Likewise, without the HTML and JavaScript source code and other computerized instructions, along with Defendant's site key, included by Defendant in Defendant's website(s) and executed or run by and/or at the direction or control of Defendant, a Google server(s)/computer(s) would not operate to automatically elect a graphical/pictorial and/or motion-based verification or challenge system, automatically process responses to that verification or challenge system, and/or calculate a percentage of participants able to decode the graphical/pictorial verification or challenge system or determine if the user's movements and/or manipulations meet the required threshold for satisfying the motion-based verification or challenge system as set forth in claim 1 of the '141 or claim 1 of the '861 Patents.

38. Defendant had the right and ability to stop, limit, and/or refuse to implement the reCAPTCHA v2 technology and associated HTML and JavaScript source code, Defendant's site key, and other computerized instructions in its website. Defendant benefitted (and continues to benefit) from its use of the reCAPTCHA v2 technology and inclusion and execution of that code and did not exercise the right to stop, limit, or refuse to restrict/grant access to protected resources or content on Defendant's website(s) using the reCAPTCHA v2 technology.

39. Upon information and belief, Google enjoys various benefits from Defendant's implementation and use of reCAPTCHA v2 in Defendant's website(s). For example, Google describes "using the [reCAPTCHA] solutions to digitize text, annotate images, and build machine-learning datasets." *See, e.g.,* <https://support.google.com/recaptcha/?hl=en>.

40. Upon information and belief, end-users or customers of Defendant's website(s) enjoy various benefits from Defendant implementation and use of reCAPTCHA v2 in Defendant's website(s), including for example, protection from spammers or spambots and access to all of the resources or content, including the protected resources or content, of Defendant's website(s).

41. Upon information and belief, Defendant benefits and/or profits from its implementation and use of the reCAPTCHA v2 technology by, for example, being able to provide or offer a website(s) including online submission forms that is secure from spammers and spambots programmed to attack websites, including by entering fake data such as comments on posts, emails, fraudulent transactions, contact form entries, and/or registration submissions, which may skew acquisition flow metrics for Defendant's business. As another example, Defendant benefits and/or profits from using the reCAPTCHA v2 service because Defendant is better able to ensure that a subscription or other interaction or purchase is intentional and thus better prevent bots from utilizing an email address without the owner's knowledge. As a further example, Defendant benefits and/or profits from using the reCAPTCHA v2 service because Defendant is better able to protect its website(s) from spammers or spambots that interfere in genuine user interactions, which may frustrate end-users of Defendant's website(s) and/or otherwise affect end-user satisfaction.

42. Upon information and belief, Defendant and Google are in a contractual relationship relating to the implementation and use of the reCAPTCHA v2 service by Defendant in its website(s). *See, e.g.,* <https://policies.google.com/terms>; <https://policies.google.com/terms/archive>; <https://www.google.com/recaptcha/admin/create>.

43. Upon information and belief, as part of Defendant's contract and relationship with Google, Defendant agreed to indemnify Google for claims arising out of or related to Defendant's

use of reCAPTCHA v2 on Defendant's website(s). *See, e.g.,* <https://policies.google.com/terms>; <https://policies.google.com/terms/archive>.

44. Alternatively, upon information and belief, Defendant has acknowledged and agreed that Google acts on behalf of Defendant for purposes of using reCAPTCHA v2 technology on Defendant's website(s), and that Defendant is responsible for any unlawful use or infringement of any third party's intellectual property rights. *See, e.g.,* <https://policies.google.com/terms>; <https://policies.google.com/terms/archive>.

45. Defendant is thus directly infringing via joint or divided infringement through its contractual agreements, agency relationships, and/or equivalent agreements with Google wherein Google may perform certain steps of the Patents-in-Suit, including at least claim 1 of the '141 Patent and claim 1 of the '861 Patent. Upon information and belief, Defendant exercises direction or control over Google as a result of its agency and/or other like contractual agreements to implement and use reCAPTCHA v2 technology in Defendant's website(s) sufficient to hold Defendant vicariously liable for infringement the Patents-in-Suit.

46. Alternatively, upon information and belief, Defendant directs or controls Google by conditioning receipt of a benefit or participation in some business activity upon performance of a step or steps of the asserted method claims and establishes the manner or timing of that performance.

47. By controlling whether the accused reCAPTCHA v2 technology is implemented or used in accessing protected resources or content on Defendant's website(s), by controlling the timing of any use of the accused reCAPTCHA v2 technology to protect resources or content on Defendant's website(s), by controlling the timing and initiation of the accused reCAPTCHA v2 technology to access protected resources or content on Defendant's website(s), Defendant is

responsible for the actions of Google and/or Google's servers/computers in performing any steps of the Patents-in-Suit, including at least claim 1 of the '141 Patent and claim 1 of the '861 Patent. Accordingly, any and all actions taken by Google in "electing" an image-based or motion-based captcha (and, with regard to an image-based captcha, "presenting" and "associating [it] with one or more concepts"), "processing" end-user responses or movements/manipulations, "determining" whether an end-user's movements and/or manipulations solved the motion-based captcha, and/or "calculating" what percentage of end-user are able to solve the image-based captcha are attributable to Defendant.

48. Alternatively, upon information and belief, Defendant and Google have formed a joint enterprise, wherein Defendant can be charged with the acts of Google who may be performing certain steps of the asserted method claims, including at least claim 1 of the '141 Patent and claim 1 of the '861 Patent.

49. Upon information and belief, there are numerous express and implied agreements between Defendant and Google regarding the reCAPTCHA v2 technology and Defendant's website. *See, e.g.*, <https://policies.google.com/terms>; <https://policies.google.com/terms/archive>; <https://www.google.com/recaptcha/admin/create>. Further, upon information and belief, Defendant must create and register a reCAPTCHA v2 account and sign in with the reCAPTCHA admin console.

50. Upon information and belief, there is a common purpose to be carried out by Defendant and Google regarding the reCAPTCHA v2 technology, for example to develop and provide a website(s) for use by Defendant's end-users that implements and uses the reCAPTCHA v2 technology.

51. Upon information and belief, Defendant and Google have a community of pecuniary interest in that purpose. Upon information and belief, both Defendant and Google derive financial benefit from the implementation and use of reCAPTCHA v2 technology in Defendant's website(s). For example, upon information and belief, Defendant is financially incentivized to implement and use reCAPTCHA v2 to provide a secure platform to advertise, explain, and/or offer its products, services, product literature, customer service articles, and/or coupons; Google is financially incentivized to have Defendant implement and use the reCAPTCHA v2 technology in Defendant's website(s) because it assists Google in training and strengthening its various algorithms and other data gathering, which Google uses to improve the products and services it offers and/or sales.

52. Upon information and belief, Defendant and Google have an equal right to a voice in the direction of the enterprise, which gives an equal right of control. For example, upon information and belief, Defendant has the right to control its website(s). Defendant has the right to remove reCAPTCHA v2 technology from its website. Likewise, upon information and belief, Google has the right to refuse to provide reCAPTCHA v2 services for implementation or use in Defendant's website(s).

53. Thus, to the extent that Defendant does not perform each and every step of the asserted claims, upon information and belief, any step that Google performs is attributed to Defendant under vicarious liability pursuant to joint or divided infringement because (1) Defendant directs or controls Google's performance through an agency relationship, a contract, or because Defendant conditions the receipt of a benefit upon Google's performance of the step(s) of the patented method and establishes the manner or timing of that performance; or, in the alternative (2) because Defendant and Google have formed a joint enterprise.

54. Defendant's website(s) identified herein are exemplary infringing products. Defendant practices the claimed methods by using reCAPTCHA v2 technology and/or other technology that operates in a reasonably similar manner in any of its website(s), webpage(s), and/or mobile applications.

55. The exemplary infringement allegations set forth herein are based on HDI's current understanding of Defendant's implementation and use of the accused reCAPTCHA v2 technology, which is based on publicly available information only. HDI reserves the right to amend or supplement its infringement theories, including in its preliminary infringement contentions, and based upon more information becoming available through formal discovery and/or this Court completing its claim construction proceedings.

KNOWLEDGE OF PATENTS-IN-SUIT

56. Defendant had knowledge of the Patents-in-Suit and the infringing conduct as early as the date when HDI effected service of the Complaint.

57. Google had knowledge of the Patents-in-Suit and the infringing conduct as early as the date when HDI effected service of the Complaint.

58. Upon information and belief, by letter dated April 30, 2016, Google was provided and actually received notice of the Patents-in-Suit and the infringing conduct, and consequently has actual or constructive knowledge of each of Patent and the infringing conduct.

59. Upon information and belief, Google and/or the examiner cited the '141 Patent in patents or patent applications owned or assigned to Google, including U.S. Patent 9,977,892. Upon information and belief, Google and/or the examiner has cited family members of the '141 and/or '861 Patents in various Google patents or patent applications, including for example U.S. Patent Nos. 8,542,251; 8,621,396; 8,136,167; 8,196,198; 8,397,275; 8,392,986; 10,055,767; 9,760,700; and 9,977,892. Upon information and belief, some or all of these patents and applications relate to image-based and/or motion-based captcha technology.

V. COUNTS OF PATENT INFRINGEMENT

COUNT ONE

DIRECT INFRINGEMENT OF THE '141 PATENT PURSUANT TO 35 U.S.C. § 271(a)

60. HDI incorporates by reference its allegations in the paragraphs above as if fully restated herein.

61. On information and belief, Defendant, without authorization or license, has been and is presently directly infringing one or more claims of the '141 Patent, including at least claim 1 of the '141 Patent, as infringement is defined by 35 U.S.C. § 271(a), including through using in the United States methods infringing one or more claims of the '141 Patent. Defendant practices each element of at least claim 1 of the '141 Patent because it performs each step of the claimed method or performance of the step by a third party(s) is attributable to Defendant. Defendant is thus liable for direct infringement of at least claim 1 the '141 Patent pursuant to 35 U.S.C. § 271(a).

62. Defendant's infringement is based upon literal infringement or infringement under the doctrine of equivalents, or both.

63. As a result of Defendant's infringement of the '141 Patent, HDI has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no event, less than a reasonable royalty.

COUNT TWO

INDIRECT INFRINGEMENT OF THE '141 PATENT PURSUANT TO 35 U.S.C. § 271(b)

64. HDI incorporates by reference its allegations in the paragraphs above as if fully restated herein.

65. On information and belief, without authorization or license Defendant has been and is presently indirectly infringing one or more claims of the '141 Patent, including at least claim 1 of the '141 Patent, by *inter alia* actively inducing infringement of the '141 Patent under 35 U.S.C. § 271(b). Such inducements include without limitation, with specific intent to encourage the

infringement, knowingly inducing Google to use infringing articles and methods that Defendant knows or should know infringe one or more claims of the '141 Patent. Defendant, *inter alia*, creates and provides its accused website(s), implements and uploads the code for implementation of the reCAPTCHA v2 technology, and/or instructs, directs, and/or requires Google, including through source code and computerized instructions, to perform one or more steps of the method claimed in the '141 Patent either literally or under the doctrine of equivalents, where all steps of the method claims are performed by, or performance of one or more steps is attributable to, Google.

66. In the alternative or in addition, such inducements include without limitation, with specific intent to encourage the infringement, knowingly inducing end-users of Defendant's accused website(s) to use infringing articles and methods that Defendant knows or should know infringe one or more claims of the '141 Patent. Defendant, *inter alia*, creates and provides its accused website(s), instructs, directs, and/or requires end-users to use the patented inventions of the '141 Patent by directing end-users (including customers and/or other third parties) to Defendant's website(s) and requiring end-users to solve a reCAPTCHA v2 image-based and/or motion-based captcha to access certain protected resources or content on Defendant's website in accordance with the code, service script(s), and other computerized instructions implemented by and/or for Defendant.

67. Defendant knew or was willfully blind to the fact that it was inducing others, including at least Google and/or end-users of Defendant's accused website(s), to infringe by practicing, either themselves or in conjunction with Defendant, one or more of method claims of the '141 Patent, including at least claim 1.

68. Defendant knowingly and actively aided and abetted the direct infringement of the '141 Patent by, *inter alia*, providing a mechanism through which Google and/or end-users of

Defendant's website(s) infringe the '141 Patent, requiring its end-users to solve a reCAPTCHA v2 image-based captcha to access protected content and resources in Defendant's website(s), and instructing, directing, and/or requiring Google to perform the steps of the asserted method claims, including at least claim 1 of the '141 Patent.

69. Defendant's inducement to infringe is based upon literal infringement or infringement under the doctrine of equivalents, or both.

70. As a result of Defendant's infringement of the '141 Patent, HDI has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no event, less than a reasonable royalty.

COUNT THREE

INDIRECT INFRINGEMENT OF THE '141 PATENT PURSUANT TO 35 U.S.C. § 271(c)

71. HDI incorporates by reference its allegations in the paragraphs above as if fully restated herein.

72. On information and belief, Defendant, without authorization or license, has been and is presently indirectly infringing one or more claims of the '141 Patent, including at least claim 1, by contributing to infringement of the '141 Patent under 35 U.S.C. § 271(c) and/or §271(f), either literally and/or under the doctrine of equivalents.

73. Defendant has contributed to the infringement of the '141 Patent by, with knowledge of the '141 Patent and its infringing use, offering and/or providing to its end-users, customers, and/or other third parties and/or importing into the United States, its website(s), application(s), and/or other products. That website(s), application(s), and/or other product(s) (i) being a material part of the patented inventions claimed in the '141 Patent, (ii) is not a staple article or commodity of commerce suitable for substantial noninfringing use, and (iii) was

especially made or especially adapted for use in an infringement of the '141 Patent, which Defendant knew.

74. As a result of Defendant's infringement of the '141 Patent, HDI has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no event, less than a reasonable royalty.

COUNT FOUR
DIRECT INFRINGEMENT OF THE '861 PATENT PURSUANT TO 35 U.S.C. § 271(a)

75. HDI incorporates by reference its allegations in the paragraphs above as if fully restated herein.

76. On information and belief, Defendant, without authorization or license, has been and is presently directly infringing one or more claims of the '861 Patent, including at least claim 1 of the '861 Patent, as infringement is defined by 35 U.S.C. § 271(a), including through using in the United States methods infringing one or more claims of the '861 Patent. Defendant practices each element of at least claim 1 of the '861 Patent because it performs each step of the claimed method or performance of the step by a third party(s) is attributable to Defendant. Defendant is thus liable for direct infringement of at least claim 1 the '861 Patent pursuant to 35 U.S.C. § 271(a).

77. Defendant's infringement is based upon literal infringement or infringement under the doctrine of equivalents, or both.

78. As a result of Defendant's infringement of the '861 Patent, HDI has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no event, less than a reasonable royalty.

COUNT FIVE
INDIRECT INFRINGEMENT OF THE '861 PATENT PURSUANT TO 35 U.S.C. § 271(b)

79. HDI incorporates by reference its allegations in the paragraphs above as if fully restated herein.

80. On information and belief, without authorization or license Defendant has been and is presently indirectly infringing one or more claims of the '861 Patent, including at least claim 1 of the '861 Patent, by *inter alia* actively inducing infringement of the '861 Patent under 35 U.S.C. § 271(b). Such inducements include without limitation, with specific intent to encourage the infringement, knowingly inducing Google to use infringing articles and methods that Defendant knows or should know infringe one or more claims of the '861 Patent. Defendant, *inter alia*, instructs, directs, and/or requires Google to perform one or more steps of the method claimed in the '861 Patent either literally or under the doctrine of equivalents, where all steps of the method claims are performed by, or performance of one or more steps is attributable to, Google. Defendant knew or was willfully blind to the fact that it was inducing others to infringe by practicing, either themselves or in conjunction with Defendant, one or more of method claims of the '861 Patent, including at least claim 1.

81. In the alternative or in addition, such inducements include without limitation, with specific intent to encourage the infringement, knowingly inducing end-users of Defendant's accused website(s) to use infringing articles and methods that Defendant knows or should know infringe one or more claims of the '861 Patent. Defendant, *inter alia*, creates and provides its accused website(s), instructs, directs, and/or requires end-users to use the patented inventions of the '861 Patent by directing end-users (including customers and/or other third parties) to Defendant's website(s) and requiring end-users to solve a reCAPTCHA v2 image-based and/or motion-based captcha to access certain protected resources or content on Defendant's website in accordance with the code, service script(s), and other computerized instructions implemented by and/or for Defendant.

82. Defendant knew or was willfully blind to the fact that it was inducing others, including at least Google and/or end-users of Defendant's accused website(s), to infringe by practicing, either themselves or in conjunction with Defendant, one or more of method claims of the '861 Patent, including at least claim 1.

83. Defendant knowingly and actively aided and abetted the direct infringement of the '861 Patent by, *inter alia*, providing a mechanism through which Google and/or end-users of Defendant's website(s) infringe the '861 Patent, requiring its end-users to solve a reCAPTCHA v2 image-based captcha to access protected content and resources in Defendant's website(s), and instructing, directing, and/or requiring Google to perform the steps of the asserted method claims, including at least claim 1 of the '861 Patent.

84. Defendant's inducement to infringe is based upon literal infringement or infringement under the doctrine of equivalents, or both.

85. As a result of Defendant's infringement of the '861 Patent, HDI has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no event, less than a reasonable royalty.

86. Defendant knowingly and actively aided and abetted the direct infringement of the '861 Patent by, *inter alia*, providing a mechanism through which Google and/or end-users of Defendant's website(s) infringe the '861 Patent, requiring its end-users to solve a reCAPTCHA v2 image-based captcha to access protected content and resources in Defendant's website(s), and instructing, directing, and/or requiring Google to perform the steps of the asserted method claims, including at least claim 1 of the '861 Patent.

87. Defendant's inducement to infringe is based upon literal infringement or infringement under the doctrine of equivalents, or both.

88. As a result of Defendant's infringement of the '861 Patent, HDI has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no event, less than a reasonable royalty.

COUNT SIX

INDIRECT INFRINGEMENT OF THE '861 PATENT PURSUANT TO 35 U.S.C. § 271(c)

89. HDI incorporates by reference its allegations in the paragraphs above as if fully restated herein.

90. On information and belief, Defendant, without authorization or license, has been and is presently indirectly infringing one or more claims of the '861 Patent, including at least claim 1, by contributing to infringement of the '861 Patent under 35 U.S.C. § 271(c) and/or § 271(f), either literally and/or under the doctrine of equivalents.

91. Defendant has contributed to the infringement of the '861 Patent by, with knowledge of the '861 Patent and its infringing use, offering and/or providing to its end-users, customers, and/or other third parties and/or importing into the United States, its website(s), application(s), and/or other products. That website(s), application(s), and/or other product(s) (i) being a material part of the patented inventions claimed in the '861 Patent, (ii) is not a staple article or commodity of commerce suitable for substantial noninfringing use, and (iii) was especially made or especially adapted for use in an infringement of the '861 Patent, which Defendant knew.

92. As a result of Defendant's infringement of the '861 Patent, HDI has suffered monetary damages, and is entitled to an award of damages adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no event, less than a reasonable royalty.

VI. JURY DEMAND

93. HDI demands a trial by jury of all matters to which it is entitled to trial by jury, pursuant to FED. R. CIV. P. 38.

VII. PRAYER FOR RELIEF

WHEREFORE, HDI prays for judgment and seeks relief against Defendant as follows:

- A. That the Court determine that one or more claims of the Patents-in-Suit is infringed by Defendant, either literally or under the doctrine of equivalents;
- B. That the Court award damages adequate to compensate HDI for the patent infringement that has occurred, together with prejudgment and post-judgment interest and costs, and an ongoing royalty for continued infringement;
- C. That the Court permanently enjoin Defendant pursuant to 35 U.S.C. § 283; and
- D. That the Court award such other relief to HDI as the Court deems just and proper.

DATED: July 21, 2020

Respectfully submitted,

/s/ Andrew G. DiNovo

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