

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

AVIEL D. RUBIN, an individual person,

Plaintiff,

v.

KAHOOT! ASA and KAHOOT EDU, Inc.,

Defendants.

**Case No. 6:22-CV-236**

**JURY TRIAL DEMANDED**

**COMPLAINT FOR PATENT INFRINGEMENT  
AGAINST KAHOOT! ASA AND KAHOOT EDU, INC.**

This is an action for patent infringement arising under the Patent Laws of the United States of America, 35 U.S.C. § 1 *et seq.*, in which Plaintiff Aviel D. Rubin (“Plaintiff” or “Dr. Rubin”) makes the following allegations against Defendants Kahoot! ASA and Kahoot Edu, Inc., (“Defendants” or “Kahoot”):

**INTRODUCTION**

1. This complaint arises from Defendants’ unlawful infringement of United States Patents No. 9,064,376 (the “’376 Patent” or the “Asserted Patent” attached as Exhibit 1) owned by Plaintiff.

**PARTIES**

2. Plaintiff Aviel Rubin is an individual residing in Annapolis, Maryland. Rubin is Professor of Computer Science at Johns Hopkins University (JHU) and Technical Director of the JHU Information Security Institute and the inventor of 10 issued patents. Rubin is the sole owner by assignment of all right, title, and interest in the ’376 Patent.

3. Dr. Rubin’s research specialty is information security. In the early 2010s, a form

of malicious software (malware) called Remote Access Trojans (RAT) was increasingly becoming a threat to online activities such as business and gaming. In addition to his research on Information Security at Johns Hopkins, Dr. Rubin studied the math of Poker. He has taught a college-level course on poker at JHU and has participated in the World Series of Poker in Las Vegas. Dr. Rubin noticed that the threat of RAT attacks was particularly effective against games such as online poker. See for example, **Card sharks infect professional poker player's laptop with a dirty RAT** <https://arstechnica.com/information-technology/2013/12/card-sharks-infect-professional-poker-players-laptop-with-a-dirty-rat/> and **Finnish Poker Pro Kyllönen's Laptop Infected With Remote Access Trojan** <http://www.onlinepoker.net/poker-news/poker-pros-news/finnish-poker-pro-kyllnens-laptop-infected-remote-access-trojan/21699> “a Remote Access Trojan (RAT) had been installed on his laptop via a USB memory stick and configured to allow an attacker to view anything that happens on the machine, including viewing his poker hands in-game.”

4. While thinking about how to protect against RAT attacks on ecommerce, digital healthcare records and online poker, Dr. Rubin observed that personal smartphones had reached a popularity level that practically all individuals who participated in such activities online always had a mobile device with them. It occurred to Dr. Rubin that it is exponentially more difficult for attackers to compromise someone's computer *as well as* their smartphone at the same time, and that by splitting applications into two portions – one which ran on the traditional computing device and one which ran on a user's mobile device, one could achieve much greater security. These observations are what led to the invention of the '376 patent.

5. On information and belief, Defendant Kahoot! ASA (“Kahoot! ASA”) is a company organized under the laws of Norway, with its principal place of business at Fridtjof Nansens Plass 7 Oslo, 0160 Norway. Upon information and belief, Kahoot! ASA sells and offers to sell products and services throughout Texas, including in this judicial district, and introduces products that result in infringement into the stream of commerce knowing that they will be sold in Texas and this judicial district.

6. On information and belief, Defendant Kahoot Edu, Inc. (“Kahoot Edu”) is a Texas corporation, with its principal place of business at 701 Brazos St Ste 521 Austin, TX, 78701-3258. Kahoot Edu may be served with process via its listed registered agent, CT Corporation System, 199 Bryan Street, Suite 900, Dallas, Texas, 75201-3136. On information and belief, Kahoot Edu is a wholly owned subsidiary of Kahoot! ASA. Upon information and belief, Kahoot! EDU sells and offers to sell products and services throughout Texas, including in this judicial district, and introduces products that result in infringement into the stream of commerce knowing that they will be sold in Texas and this judicial district.

### **JURISDICTION AND VENUE**

7. This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. §§ 271 and 281, *et seq.*

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

9. This Court has personal jurisdiction over Defendants in this action because Defendants, directly and/or through subsidiaries or intermediaries, have committed acts within this District giving rise to this action, and have established minimum contacts with this forum such that the exercise of jurisdiction over Defendants would not offend traditional notions of fair play and substantial justice. Defendants, directly and through subsidiaries or intermediaries, have committed and continue to commit acts of infringement in this District by, among other things, importing, offering to sell, and selling products that infringe the '376 Patent, as described herein. Defendants, directly and/or through subsidiaries or intermediaries, are making, using, selling, offering for sale, distributing, advertising, promoting, and otherwise commercializing infringing products in this District. Defendants regularly conduct and solicit business in, engage in other persistent courses of conduct in, and/or derive substantial revenue from goods and services provided to the residents of this District and the State of Texas.

10. Defendants are subject to jurisdiction pursuant to due process and/or the Texas

Long Arm Statute due to its substantial business in this State and District including at least Defendants' infringing activities, regularly doing or soliciting business at their Austin facilities and engaging in persistent conduct and deriving substantial revenues from goods and services provided to residents in the State of Texas.

11. By working in concert to make, use, sell, offer for sale, distribute, advertise, promote, and otherwise commercialize their products to Texas residents, including those of this District, Defendants, directly and/or through subsidiaries or intermediaries, purposefully place the Accused Products in established distribution channels in the stream of commerce.

12. Further, as described below, Defendants have regular and established places of business in this District, have a substantial number of employees that are located in or around Austin Texas, and have job postings for positions located within this District.

13. Defendants, therefore, have purposefully directed their activities at this State and this District, and should reasonably anticipate being brought in this Court.

14. Venue is proper in this District under 28 U.S.C. § 1400(b). Upon information and belief, Defendants have transacted business in this District and have committed acts of direct infringement in this District by, among other things, making, using, offering to sell, selling, and importing products that infringe the '376 Patent. Defendants have regular and established places of business in the District, including offices at 701 Brazos St Ste 521 Austin, TX, 78701-3258. Further, Kahoot's website lists at least one opening for job in this District (*e.g.*, Austin, Texas) (*See e.g.*, Kahoot jobs listed at accessed August 25, 2021). (*See e.g.*, Waco jobs listed at <https://kahoot.com/open-positions/> accessed December 6, 2021). Kahoot! AS is a foreign entity and may be sued in any judicial district under 28 U.S.C. § 1391(c)(3).

#### **INFRINGEMENT OF U.S. PATENT NO. 9,064,376**

15. Dr. Rubin realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

16. Dr. Rubin owns by assignment all right, title, and interest in and to U.S. Patent

No. 9,064,376, titled “Utilization of Multiple Devices to Secure Online Transactions,” issued on June 23, 2015, naming Aviel David Rubin as the inventor. Ex. A (’376 Patent) at 1. The ’376 Patent is based on U.S. Patent Application No. 14/444,955 with a filing date of July 28, 2014. *Id.* at 1. The ’376 Patent claims priority to Provisional Application No. 62/008,561 filed June 26, 2014. *Id.*

17. The ’376 Patent is valid and enforceable.

18. The ’376 Patent discloses a novel method for securing communications against malware. *See* Ex. A at 1:16-18. The inventive concepts disclosed and claimed in the ’376 patent provide for increasing security by utilizing two separate devices with differential or application-specific components during an online session. *See Id.*

19. The Background of the ’376 Patent generally describes how the invention is aimed at improving security over prior art communication methods that included single user device to server, or single device to device connection topographies. *See id.* at 1:26-36; Fig. 1. The ’376 Patent notes that prior art such as anti-virus, firewall and two factor authentication methods failed realistically secure communications from potential malware security threats. *Id.* at 1:47-67. The ’376 Patent identifies that the prior art is “application-agnostic and takes place before a user engages in the specific functionality of a particular application.” *Id.* at 2:33:35

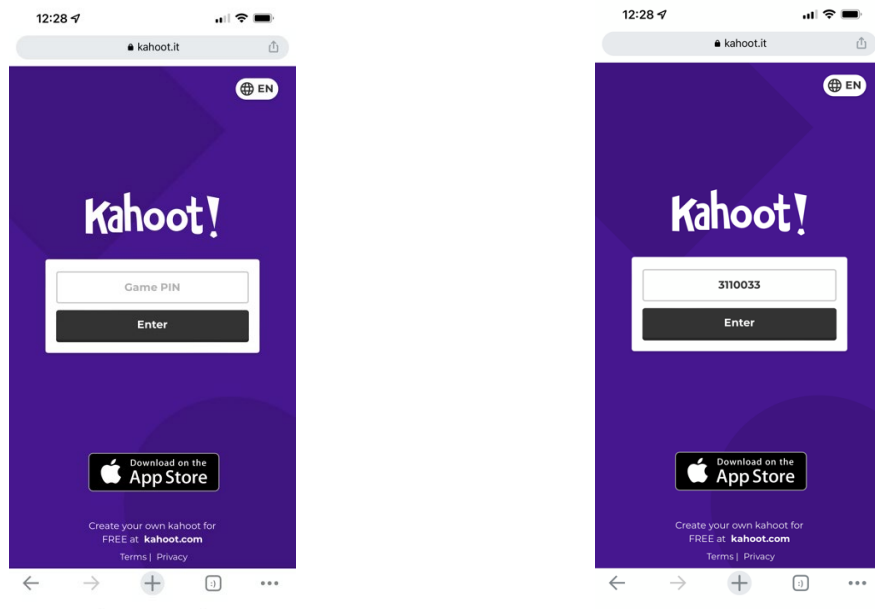
20. The ’376 Patent improves on conventional technology by “a system where the user has persistent use of a first device and a second device throughout the use of an online application to prevent a compromise of the transaction if malware infects either device.” *Id.* at 2:29-32. The problems of the prior art are overcome with the claimed “system that utilizes the two devices at multiple times, and in some cases persistently and/or continuously, during an online session and includes application-specific components in each of the devices.” *Id.* at 2:35-

39. The claimed invention uses separate datastreams where part of the application transaction is performed on one device and part of the transaction is performed on second device. *See id.* at 9:13-15. The '376 Patent specification describes that this “splitting up of the transaction” provides additional security benefits and can be used in conjunction with other security mechanisms.” *Id.* at 9:24-27.

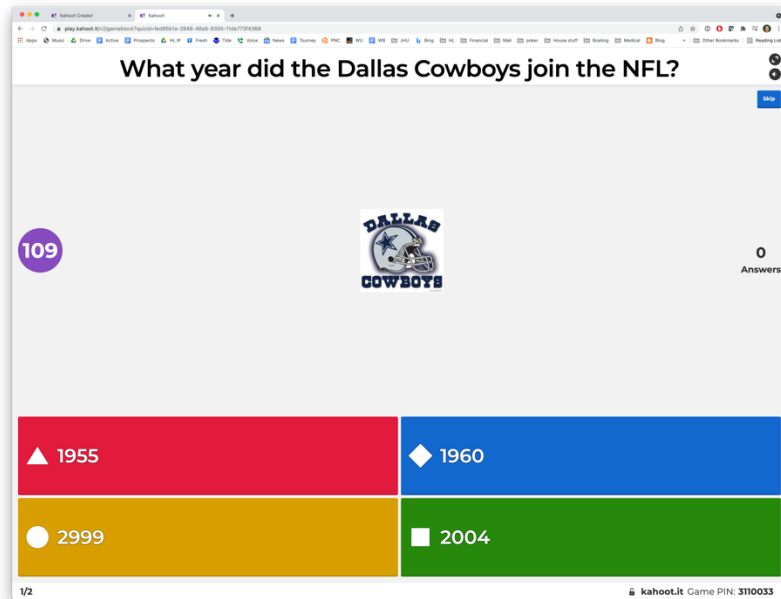
21. The specification of the '376 Patent discloses numerous real-world applications of the claimed invention. The claim inventions have become increasingly useful with the advent and widespread adoption of smart mobile devices.

22. On information and belief, Defendant offers for sale, sells, and/or imports the Kahoot! System. The Kahoot! System is an on-line, game-based learning platform, used as educational technology in schools and other educational institutions. Its learning games, “kahoots”, are user-generated multiple-choice quizzes that can be accessed via a web browser or the Kahoot app. *See* <https://en.wikipedia.org/wiki/Kahoot!>

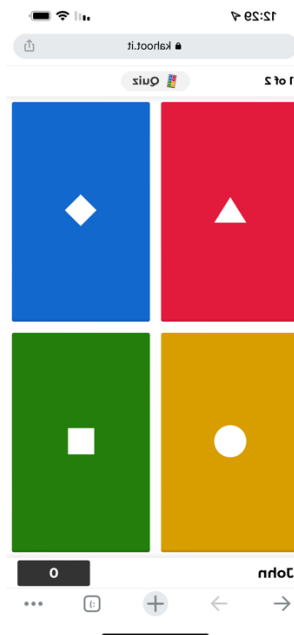
23. Users can create a Kahoot and Kahoots are best played in group settings. To join a game, the user needs a unique PIN. Players log in with the unique PIN. *See* <https://kahoot.com/>



24. Once logging in, the game host initiates the Kahoot and questions are displayed on a shared screen.

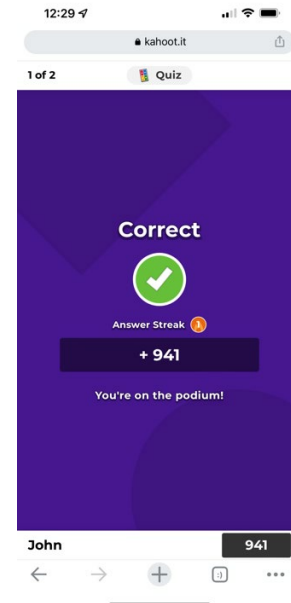
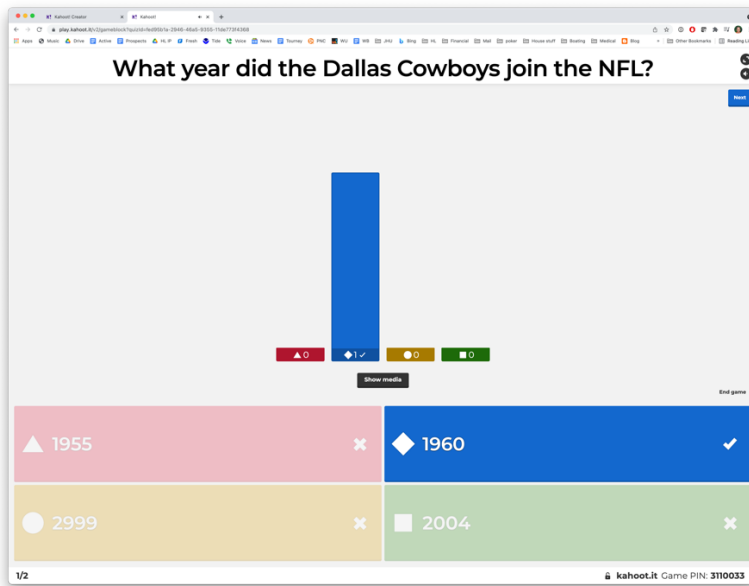


25. Players answer the question on their own separate devices using color and shape codes response buttons.



26. The responses are displayed on the shared screen and player is notified of the

outcome. *See id.*



27. Kahoot! System is available to be sold and delivered, is offered for sale, sold, imported and delivered by Defendants in this District.

28. Kahoot! System is available to be sold and delivered, is offered for sale, sold, imported and delivered by Defendants in this District.

29. The Accused Kahoot! System satisfies all claim limitations of one or more claims of the '376 Patent including, but not limited to, claim 1, as demonstrated below.

30. Claim 1 recites: A method for transmitting information to multiple electronic devices, the method comprising: electronically storing a set of information at a server; identifying a first subset of the information and identifying a second subset of the information, wherein the first and second subsets of information are generated by the same application at the server and are specific to that application; determining at the server whether both a first device in possession of and being directly operated by a first user and a second device also in possession of and being directly operated by the first user are accessible over at least one electronic communications network based on the first user being logged into the application at both the



first and second devices; if and only if both the first and second devices are determined to be accessible by the server, then: transmitting a first subset of the information to the first device from the server; and transmitting a second subset of the information to the second device from the server, wherein the second subset of the information includes information not transmitted to the first device.

31. The Accused Kahoot! System is method for transmitting information to multiple electronic devices. In the Kahoot system <https://kahoot.com/>, a Kahoot server transmits information to multiple electronic devices. There is a shared screen on a device such as a computer or a tablet (first device), that the users can all see, and each user has their own mobile device (second devices). The Kahoot server transmits information to all the devices. For example, in a Kahoot multiple choice quiz, the Kahoot server transmits the questions and answers to the first device and also transmits at the very least a session token to each user's mobile device when a user is joining the quiz.

32. The Accused Kahoot! System electronically stores a set of information at a server. For example, the quiz is managed from a Kahoot server. The server electronically stores information about the particular quizzes, such as questions and answers, and the names of the players at the server. It also stores session tokens that are generated to communicate with each participant. All of this collectively (the questions, answers, and the session tokens) is the set of information.

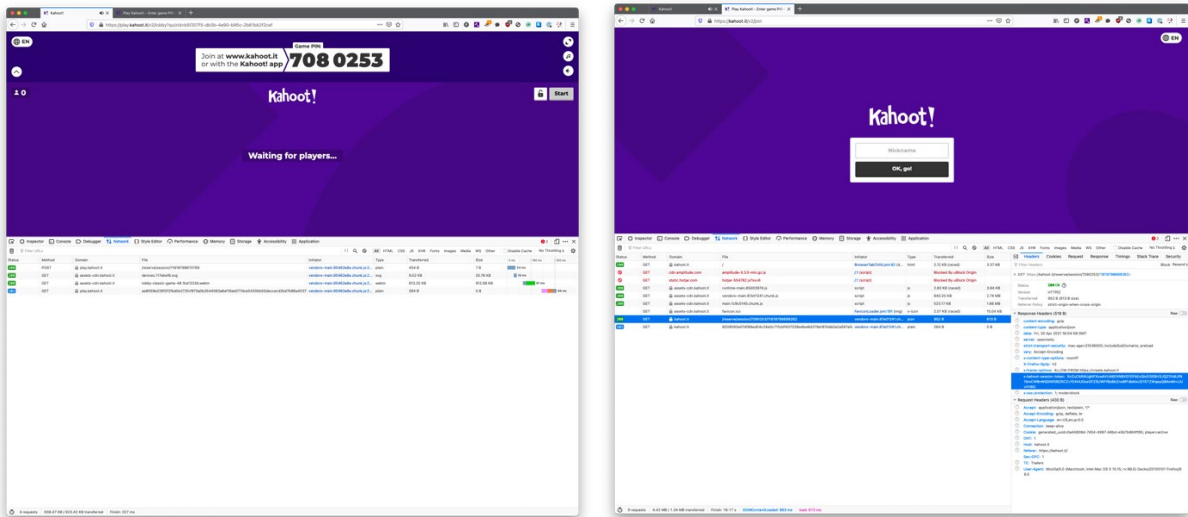
33. The Accused Kahoot! System identifies a first subset of the information and identifies a second subset of the information, wherein the first and second subsets of information are generated by the same application at the server and are specific to that application. For example, The Kahoot system runs an application on its server such as a quiz.

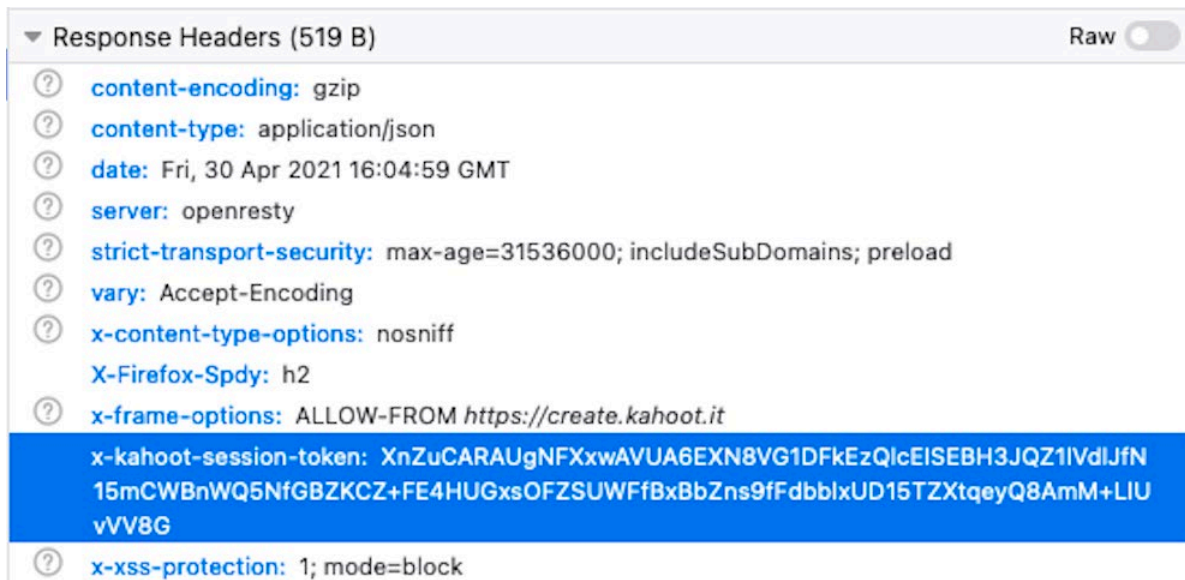
The application generates information for purposes of the quiz. In each quiz, there is a first subset of that information that is identified contains text such as questions in the quiz. The Kahoot server generates and sends to each player a unique session token which is used by the server to link that player's responses to their identity. The Kahoot server generates the session token and does not send the same session token to any two players or to the shared screen. The server therefore stores session tokens as part of the global set of information that it tracks. The server sends a subset of this information, a particular session token, to each user.

34. The Accused Kahoot! System determines at the server whether both a first device in possession of and being directly operated by a first user and a second device also in possession of and being directly operated by the first user are accessible over at least one electronic communications network based on the first user being logged into the application at both the first and second devices. For example, A user, the host, sets up a quiz, which is displayed on a screen on a first device, that is shared with all the players. In many cases the host also participates in the quiz. In particular when a host first sets up a quiz, he/she will often test the quiz by running the game with no other players. In these instances, that user is a first user, and the first device is the device with the screen that displays the questions and answers, and the second device is the user's mobile device. The user is in possession of and directly operates both the first and second devices. The server determines whether both of the first user's devices are accessible over the user's network because the user is logged into the Kahoot server with their Kahoot hosting account, and is also logged into the application on their mobile device using a code generated by the application.

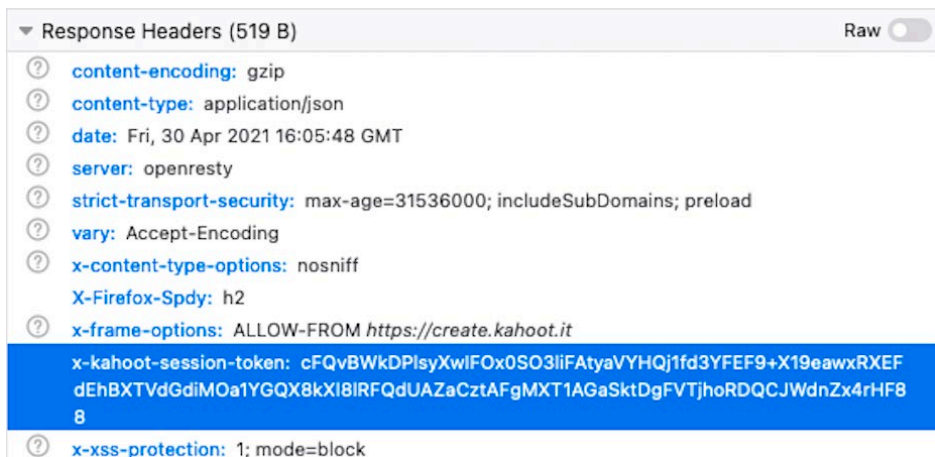
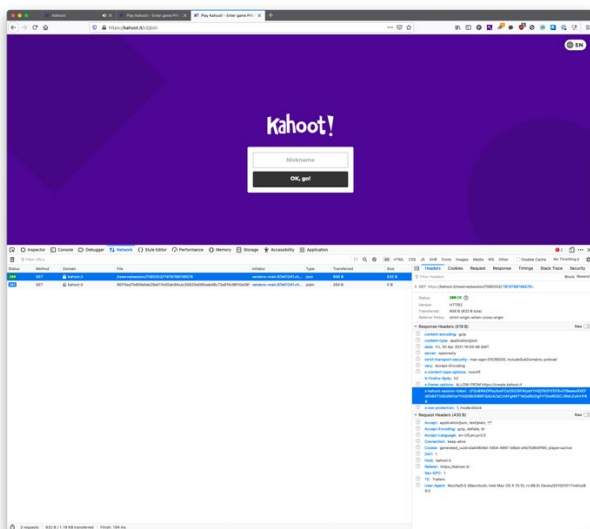
35. If and only if both the first and second devices are determined to be accessible by the server, the Accused Kahoot! System then transmits a first subset of the information to

the first device from the server; and transmits a second subset of the information to the second device from the server, wherein the second subset of the information includes information not transmitted to the first device. For example, if both the device that displays the questions and answers, and the mobile device are not accessible to the Kahoot server, then the server cannot and does not transmit any subset of any information to either of them. If both the device that displays the questions and answers and the mobile device are accessible to the server, then the server transmits the first subset of information that contains the questions and answers to be displayed for all users to the first device, and transmits the second subset of information that contains a session token to the mobile device. Kahoot sends the session token to each device specifically after the user has entered the room code but before the user has entered a user name. An example of a first session token is shown below:





An example of a second session token is shown below:



36. As a result of Defendants' infringement of the '376 patent, Rubin is entitled to monetary damages in an amount adequate to compensate for Defendants' infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendants, together with interest and costs as fixed by the Court.

**PRAYER FOR RELIEF**

WHEREFORE, Dr. Rubin respectfully requests that this Court enter a judgment against Defendants:

- a. determining that Defendants have infringed and continue to infringe, either literally and/or under the doctrine of equivalents, the '376 Patent;
- b. requiring Defendants to pay Dr. Rubin its damages, costs, expenses, and pre-judgment and post-judgment interest for Defendants' infringement of the '376 Patent, including damages for infringement during the six-year period prior to the filing of the complaint;
- c. requiring Defendants to provide an accounting and to pay supplemental damages to Dr. Rubin, including without limitation, an ongoing royalty, pre-judgment and post-judgment interest;
- d. ordering a permanent injunction prohibiting Defendants from further acts of infringement of the '376 Patent;
- e. finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Dr. Rubin its reasonable attorneys' fees and costs against Defendants, and enhanced damages pursuant to 35 U.S.C. § 284; and
- f. granting Dr. Rubin such other and further relief as the Court may deem appropriate and just under the circumstances.

**DEMAND FOR JURY TRIAL**

Dr. Rubin, under Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable by right.

Dated: February 28, 2022

Respectfully submitted,

/s/ William E. Davis, III

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