

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

**TEXAS SECURE AUTHENTICATION, LLC,**

Plaintiff,

v.

**CULLEN/FROST BANKERS, INC and FROST BANK,**

Defendants.

C.A. No. 6:21-CV-01069-ADA

**TRIAL BY JURY  
DEMANDED**

**FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

COMES NOW, Plaintiff TEXAS SECURE AUTHENTICATION, LLC (“TSA”), for its Complaint against Defendants CULLEN/FROST BANKERS, INC. and FROST BANK (collectively, “Defendants” or “Frost”), alleges as follows:

**THE PARTIES**

1. Plaintiff Texas Secure Authentication, LLC (“TSA”) is a limited liability company organized under the laws of the State of Texas, having its principal place of business located at 4300 W. Waco Drive, Suite 2, Building B, Waco, Texas 76710.

2. On information and belief, Cullen/Frost Bankers, Inc. (“CF”) is a corporation organized under the laws of Texas with its headquarters located at 100 West Houston St., San Antonio, Texas 78205. CF has regular and established places of business in this District, including its San Antonio headquarters. CF may be served with process through its registered agent, Trey Banack, 111 W. Houston St., San Antonio, TX 78205.

3. On information and belief, Frost Bank (“FB”), is a Texas-chartered bank, the principal operating subsidiary and sole banking subsidiary of CF, with its headquarters and executive offices located at 100 West Houston St., San Antonio, Texas 78205. FB may be served

with process through its registered agent, Stan McCormick, 100 W. Houston St., San Antonio, TX 78205.

4. TSA is further informed and believes, and on that basis alleges, that Defendants CF and FB (collectively, “Frost”) operate and have operated websites, including those at <http://www.frostbank.com> and <http://www.frostcashmanager.com>, which have provided a web interface through which users have accessed Frost’s Online Banking services via the secure authentication methods claimed by TSA’s patent. In addition, Frost has operated and provided mobile applications, the “Frost App for iPhone” and “Frost App for Android,” which have provided a login interface through which users have accessed Frost’s Mobile Banking services via the secure authentication methods claimed by TSA’s patent. Frost has derived a significant portion of its revenue from customers utilizing its Online Banking services and Mobile Banking services, which have been accessed on, using at least, but not limited to, the Internet websites located at <http://www.frostbank.com> and <http://www.frostcashmanager.com>, the Frost App for iPhone and Frost App for Android mobile applications, and/or functionalities available thereon, and incorporated and/or related systems (collectively the “Accused Instrumentality”). TSA is informed and believes, and on that basis alleges, that, at all times relevant hereto, Frost has done and continues to do business in this judicial district, including, but not limited to, providing products/services to customers located in this judicial district by way of the Accused Instrumentality.

#### **JURISDICTION AND VENUE**

5. This is an action for patent infringement in violation of the Patent Act of the United States, 35 U.S.C. §§ 1 *et seq.*

6. This Court has original and exclusive subject matter jurisdiction over the patent infringement claims for relief under 28 U.S.C. §§ 1331 and 1338(a).

7. This Court has personal jurisdiction over Frost because it maintains regular and established places of business within this judicial district. On information and belief, Frost has transacted and is continuing to transact business in this District that includes, but is not limited

to, committing acts of patent infringement giving rise to this action by use of products and systems that practice the subject matter claimed in the patents involved in this action.

8. Venue is proper in this district under 28 U.S.C. § 1400(b) because Frost is registered with the Secretary of State in the State of Texas, maintains regular and established places of business in this district, and thus resides in this district under the Supreme Court’s opinion in *TC Heartland LLC v. Kraft Foods Group Brands LLC*, 137 S. Ct. 1514 (2017). Further, upon information and belief, Frost has committed acts of infringement in this district and a regular and established place of business in this district.

### **FACTS**

9. On January 18, 2011, United States Patent No. 7,873,682 entitled “System and method for creating and manipulating information containers with dynamic registers,” was duly and legally issued to Incandescent, Inc. as assignee with a priority date of January 30, 1998, and later assigned to Plaintiff. A true and correct copy of United States Patent No. 7,873,682 (“the ‘682 Patent”) is attached hereto as Exhibit A and incorporated herein by this reference.

10. Plaintiff is the assignee of the entire right, title and interest in and to the ‘682 Patent, including all rights to enforce the ‘682 Patent and to recover for infringement.

11. The ‘682 Patent claims priority to U.S. Provisional Pat. App. No. 60/073,209, filed on January 30, 1998.

12. The ‘682 Patent expired on February 25, 2019.

13. The ‘682 Patent claims an unconventional method of determining identification information using unconventional software structures—including dynamic “registers,” as claimed in the ‘682 Patent—in order to upgrade the utility of, and develop intelligence in, a computer network and to enable the dynamic governance of information. *See Ex. A at 1:22-31.*

14. At the time of filing in 1998, dynamic “registers” as claimed in the ‘682 Patent did not exist in the prior art. Conventional “registers” prevailing in the prior art of the time were hardware structures and were built directly into CPU architectures as temporary storage areas for storing data. However, in 1998, so-called “metadata” (as information about information) was

limited to inert fixed labels, and there were no software registers of the kind claimed in the ‘682 Patent capable of updating data dynamically through gateways from sources external to the computer network, such as GPS listening devices, or from sources associated with other Web container operations on the network. At the time, there was no World Wide Web Consortium (“W3C”) published specification for Web containers, and such structures lacked unique identifiers and could not interact with the conventional registers of the prior art.

15. Thus, one of the inventive concepts of the ‘682 Patent is its use of unconventional software structures—among them, the dynamic “registers” as claimed in the ‘682 Patent—that enabled new functionality not possible using the conventional hardware “registers” of the prior art, such as the dynamic modification of metadata or content on a computer network. For example, the dynamic “registers” claimed in the ‘682 Patent were capable of interacting with other software structures claimed as “containers,” and of governing the interaction of such containers with other containers or with container gateways. *See* Ex. A at 9:20-28. By contrast, conventional hardware registers of the prior art could not function as software registers to establish certain parameters in interaction with other containers or gateways, or to govern the interaction of containers with other containers, as explicated and claimed in the ‘682 Patent. *Id.* at 9:26-28.

16. Thus, in 1998, conventional hardware registers could not address many of the technical limitations overcome by the ‘682 Patent. As the ‘682 Patent explains at length, the functionality of existing computer systems and computer networks was limited in 1998 because such systems lacked software structures enabling the dynamic modification of metadata or content on a computer network. *See* Ex. A, 1:33-3:8. For example, as the ‘682 Patent notes, “on a wide area or public network, specific content such as a document remains inert, except by the direct intervention of users, and is modified neither by patterns or history of usage on the network, or the existence of other content on the network.” *Id.* at 2:1-5. Using conventional computer systems and software available at the time of filing in 1998, such content had “no possibility of evolution” without the direct intervention of users. *Id.* at 2:29. As explained in the

‘682 Patent, “one problem” in the prior art “is that on a wide area or public network, specific content such as a document remains inert, except by the direct intervention of users, and is modified neither by patterns or history of usage on the network, or the existence of other content on the network.”

17. To achieve the “possibility of evolution” of metadata or content on a computer network without the direct intervention of the user, it was necessary to overcome the technical limitations of the prior art with unconventional software structures, and unconventional methods employing such structures, that would enable the dynamic governance of information. As the ‘682 Patent explains:

“there is a need for a system and methods for creating and manipulating information containers with dynamic interactive registers...in order to manufacture information on, **upgrade the utility of, and develop intelligence in, a computer network by providing a searching user the means to utilize the searches of other users or the historically determined and compiled searches of the system,** [and] a means to containerize information with multiple registers governing the interaction of that container...”

Ex. A [‘682 Patent] at 2:61-3:4 (emphasis added).

18. The ‘682 Patent addressed and overcame the technical limitations of the prior art by disclosing and claiming methods that “upgrad[ed] the utility of, and develop[ed] intelligence in” computer networks in a way that enabled, among other things, the dynamic modification of metadata or content on a computer network. *Id.* For example, ‘682 Patent explains that the invention’s “value evolving container registers” used “in conjunction with gateways” “allows the container to establish and evolve its own identity on the system,” thus enabling the “dynamic governance of information”—a function that was “**utilized for the first time**” in the ‘682 Patent. *Id.* at 12:49-13:50 (emphasis added). The ‘682 Patent explains that registers, as claimed, “are unique in that their internal values evolve through interaction with other containers,” among other things. *Id.* at 13:12-14. As such, the claimed method employs an unconventional arrangement of unconventional components (including dynamic “registers,” as claimed) to

improve computer functionality and “upgrade the utility of, and develop intelligence in, a computer network” and to enable the “dynamic governance of information” that was “utilized for the first time” in various aspects in the ‘682 Patent. *Id.* at 2:61-3:4; 13:43-14:2.

19. The use of unconventional dynamic software “registers” enabled the “dynamic governance of information” in a way that did not require direct user modification of content on a computer network, in contrast to the mere holding of information by conventional hardware registers. Software structures interacting to enable the dynamic governance of information were “utilized for the first time” in the ‘682 Patent, which is replete with examples in which information may be dynamically governed via the use of unconventional dynamic software “registers.” Ex. A, 13:43-14:2.

20. In particular, the method of claim 1 contains inventive concepts in its steps of:

determining whether an interaction between the first container and the second container can occur using the first gateway and a first register of the first container;

determining whether the interaction between the first container and the second container can occur using the second gateway and a second register of the second container;

Among the inventive concepts claimed in these steps was the use of unconventional software structures governing the interaction of containers with other containers—namely, a “first register of the first container” and a “second register of the second container”—in order to determine whether an interaction between containers can occur. Further, the interaction of the “first register” and “first container” (as well as the interaction of the “second register” and “second container,” respectively) was an unconventional arrangement, in light of the fact that conventional registers of the prior art were hardware components that did not interact with software containers, nor did they govern the interaction of containers with other containers.

21. The method of claim 1 contains an additional inventive concept in the step of:

performing the interaction between the first and second containers prescribed by the first gateway and the first register of the first container if the interaction between the first container and the second container can occur, wherein the first gateway and the second gateway collect and store register information from the first container and the second container, the register information including container interaction information.

As explained in the '682 Patent, this step permitted the “dynamic governance of information according to its unique history of interaction as an identity on a network,” which was a “unique aspect[] of information about information” that was “utilized for the first time” in the '682 Patent. Ex. A, at 12:49-13:50.

22. The method of claim 6 contains an additional inventive concept in its step of “adding the new third register to the first container.” This claimed step allows a container to be updated with a “new third register,” to dynamically modify information, e.g., to prevent re-use of an expired or invalid login code, where the database is first searched and then updated via the claimed method. The claimed method thus allows a computer network to become “progressively more responsive,” and “learn[] to become more useful,” via the “dynamic governance of information” (here, for example, the determination whether to update a database with a “new third register”). Ex. A, 13:35-14:2. By employing a method that progressively updates the gateway storage, registers, container-register interaction history and information stored in the new identified software structure, the computer network becomes more useful than one that merely employs a static, permanent username/password. As illustrated in Fig. 5 of the '682 Patent below, a register may be added and modified to a container to achieve the dynamic modification of information:





Patent to become “progressively more responsive,” and “learn[] to become more useful,” via the “dynamic governance of information.” Ex. A, 13:35-14:2.

24. TSA is the assignee of the entire right, title and interest in and to the ‘682 Patent, including all rights to enforce the ‘682 Patent and to recover for infringement. The ‘682 Patent is valid and expired on February 25, 2019.

25. As more fully laid out below, Frost has infringed the ‘682 Patent, in this judicial district and elsewhere, by providing its Online Banking services using the claimed methods for determining identification information and securely authenticating its users, which activities, individually or in combination, incorporate and/or use subject matter claimed by the ‘682 Patent.

### **FIRST CLAIM FOR RELIEF**

#### **(Direct Infringement of the ‘682 Patent, in Violation of 35 U.S.C. § 271(a))**

26. TSA refers to and incorporates herein by reference paragraphs 1-25.

27. The Federal Financial Institutions Examination Counsel (“FFIEC”), of which Frost is a member institution, on June 29, 2011 issued a Supplement to its “Authentication in an Internet Banking Environment” recommending that member “institutions offer multifactor authentication to their business customers.” [https://www.ffiec.gov/pdf/Auth-ITS-Final%206-22-11%20\(FFIEC%20Formatted\).pdf](https://www.ffiec.gov/pdf/Auth-ITS-Final%206-22-11%20(FFIEC%20Formatted).pdf)

28. On or about March 15, 2013, “Frost Bank announced a new iOS app that lets its customers login to their accounts with a four-digit code rather than a user name.” <https://www.americanbanker.com/news/frost-bank-launches-four-digit-pin-login-in-new-ios-app>  
In its 10-K report for fiscal year 2015, CB stated that it uses “authentication technology” to mitigate threats to its customers and employees. *See* <https://www.sec.gov/Archives/edgar/data/39263/000003926316000073/a20151231-10k.htm>

29. On information and belief, a manual describing Frost’s “Cash Manager” functionality stated that its “Security Token adds an additional layer of security, authenticating the user into our system and helping to keep their banking information safe.” *See*

<https://www.birdvilleschools.net/cms/lib/TX01000797/Centricity/Domain/5255/FROSTCashManagerhelps.pdf>

30. On information and belief, a video describing Frost’s “Cash Manager” functionality describes its multi-factor authentication process. *See* <https://www.youtube.com/watch?v=d-0Y0r5NFo>. On information and belief, a video describing Frost’s “Frost App for iPhone” functionality describes the multi-factor authentication process of its mobile application for the iOS platform. *See* <https://www.youtube.com/watch?v=3v9V4Rqk3O4>. On information and belief, a video describing Frost’s “Frost App for Android” functionality describes the multi-factor authentication process of its mobile application for the Android platform. *See* <https://www.youtube.com/watch?v=wKJqNaMxyaI>.

31. On information and belief, during the term of the ‘682 Patent, Frost has directly infringed by practicing at least the methods claimed by Claims 1, 6, and 7 of the ‘682 Patent in this judicial district and elsewhere in the state of Texas and the United States, employing multi-factor authentication methods at least by operation of the “login,” “security token,” and multi-factor authentication functions of its “Cash Manager” and other Online Banking services at its Internet websites located at <http://www.frostbank.com> and <http://www.frostcashmanager.com> (collectively, the “Frost Website”), through which users have accessed its Online Banking services, and the incorporated and/or related systems conducted on and using at least, but not limited to, the Frost Website and Cash Manager functionality. In addition, on information and belief, during the term of the ‘682 Patent, Frost has directly infringed by practicing at least the methods claimed by Claims 1, 6, and 7 of the ‘682 Patent in this judicial district and elsewhere in the state of Texas and the United States, employing multi-factor authentication methods at least by operation of the “login,” “reset your security code” and multi-factor authentication functions of its “Frost App for iPhone” and “Frost App for Android” mobile applications.

32. The Frost Website, Frost App for iPhone, and Frost App for Android Devices functionalities referenced above are or employ the claimed method(s) of determining

identification information using dynamic interactive registers in order to upgrade the utility of, and develop intelligence in, a computer network and to enable the dynamic governance of information, practicing the asserted claims of the '682 Patent.

33. By way of example only, and without limitation, on information and belief, during the term of the '682 Patent the Accused Instrumentality has infringed at least Claims 1, 6, and 7 of the '682 Patent in that the Frost Website's functionality and supporting server(s) have utilized a method of multi-factor authentication practicing all of the limitations at least Claims 1, 6, and 7 on the website through which Frost provides its Frost Online Banking Services. Further, by way of example only, and without limitation, on information and belief, during the term of the '682 Patent the Accused Instrumentality has infringed at least Claims 1, 6, and 7 of the '682 Patent in that the Frost App for iPhone and Frost App for Android functionalities and supporting server(s) have utilized a method of multi-factor authentication practicing all of the limitations at least Claims 1, 6, and 7 on mobile applications through which Frost provided its mobile banking services. TSA has outlined a sample of Frost's infringement of Claims 1, 6, and 7 in the claim chart attached as Exhibit B and hereby incorporated by this reference.

34. Further, on information and belief, Frost's Website exerted control over use of the claimed methods via its website. On information and belief, when users have accessed Frost's Website, Frost's server has caused the browser to place a "cookie" on the user's computer. *See, e.g.,* <https://www.frostbank.com/agreements-disclosures/internet-privacy-disclosure> ("A "cookie" is a small data file that is transferred to your device. We use cookies to collect information in order to study, enhance and improve the use and capabilities of our Websites.") On information and belief, Defendant has used "cookies" on its Cash Manager and other websites prior to the expiration of the '682 patent.

35. Frost, on information and belief, has also been engaged in internal use of the claimed methods, by developing and testing systems and/or methods utilizing the claimed methods on its own computers. For example, Frost has employed a "senior developer" and "eCommerce DevOps Team Lead" who has "perform[ed] development and operation tasks for

the Frost Bank web site.” <https://www.linkedin.com/in/taylor-benson-1509a1a5/>. Further, Frost, on information and belief, has also been engaged in internal use of the claimed methods, by developing and testing systems and/or methods utilizing the claimed methods on its own mobile devices. For example, Frost has employed a “Software Development Team Lead” for its Mobile Apps Team” and a “Mobile Software Engineer.” *See* <https://www.linkedin.com/in/roland-esquivel-8461586>; *see also* <https://www.linkedin.com/in/brandon-lyssy-a551a660>. Frost, therefore, by the acts complained of herein, has made, used, sold, or offered for sale in the United States, including in this District, products and/or services utilizing the invention, and has in the past infringed the ‘682 Patent, either literally or under the doctrine of equivalents, in violation of 35 U.S.C. § 271(a).

36. By reason of the acts of Frost alleged herein, TSA has suffered damage in an amount to be proved at trial.

### **SECOND CLAIM FOR RELIEF**

#### **(Inducing Infringement of the ‘682 Patent, in Violation of 35 U.S.C. § 271(b))**

37. TSA refers to and incorporates herein by reference paragraphs 1-36.

38. TSA is informed and believes, and on that basis alleges, that Frost has actively and knowingly induced infringement of the ‘682 Patent, in violation of 35 U.S.C. § 271(b) by, among other things, inducing its customers to utilize their own devices in combination with the Frost Website, and incorporated and/or related systems, in order to securely authenticate their accounts so as to log in to Frost’s Online Banking services via the Frost Website in such a way as to infringe the ‘682 Patent. Further, Frost induced its customers to use the login functionality of its Frost App for iPhone and Frost App for Android Devices in such a way as to infringe the ‘682 Patent, providing videos instructing them to “log in,” “enter your security code,” and “reset your security code.” *See* <https://www.youtube.com/watch?v=3v9V4Rqk3O4>; *see also* <https://www.youtube.com/watch?v=wKJqNaMxyaI>.

39. For example, Frost has induced its customers to infringe by encouraging them to create new accounts and to sign in to their accounts using the secure authentication methods as claimed by TSA's patent

40. By reason of the acts of Frost alleged herein, TSA has suffered damage in an amount to be proved at trial.

**PRAYER FOR RELIEF**

WHEREFORE, TSA prays for relief as follows:

A. Judgment that Frost has directly infringed, and induced others to infringe, the '682 Patent either literally and/or under the doctrine of equivalents;

B. Judgment awarding TSA general and/or specific damages, including a reasonable royalty and/or lost profits, in amounts to be fixed by the Court in accordance with proof, including enhanced and/or exemplary damages, as appropriate, as well as all of Frost's profits or gains of any kind from its acts of patent infringement from six years prior to the filing of the complaint until February 25, 2019;

C. Judgment awarding TSA all of its costs, including its attorneys' fees, incurred in prosecuting this action, including, without limitation, pursuant to 35 U.S.C. § 285 and other applicable law;

D. Judgment awarding TSA pre-judgment and post-judgment interest; and

E. Judgment awarding TSA such other and further relief as the Court may deem just and proper.

**JURY DEMAND**

Pursuant to Federal Rule of Civil Procedure 38(b), TSA hereby demands a trial by jury on all issues triable to a jury.

Dated: December 27, 2021

Respectfully submitted,

/s/ Raymond W. Mort, III  
Raymond W. Mort, III  
Texas State Bar No. 00791308  
[raymort@austinlaw.com](mailto:raymort@austinlaw.com)

**THE MORT LAW FIRM, PLLC**  
100 Congress Ave, Suite 2200  
Austin, Texas 78701  
Tel/Fax: (512) 865-7950

John A. Lee (pro hac vice to be filed)  
jlee@banishlaw.com  
**BANIE & ISHIMOTO LLP**  
2100 Geng Road, Suite 210  
Palo Alto, CA 94303  
T: 650.241.2774  
F: 650.241.2770