IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

STERLING COMPUTERS CORPORATION, Plaintiff, v. X CORP., Defendant.	CASE NO. 1:24-cv-00552 JURY TRIAL DEMANDED

COMPLAINT

Plaintiff Sterling Computers Corporation ("Plaintiff" or "Sterling"), for its Complaint against Defendant X Corp. ("Defendant" or "X CORP"), states and alleges as follows:

I. THE PARTIES

1. Plaintiff Sterling is a corporation organized under the laws of the State of California, with its principal place of business in North Sioux City, South Dakota.

2. Upon information and belief, X CORP is a corporation organized under the laws of the state of Nevada with its headquarters in San Francisco, California. X CORP may be served with process through its registered agent CT Corporation System, 330 N. Brand Blvd., Suite 700, Glendale, CA 91203.

II. JURISDICTION AND VENUE

3. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a), as this is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*

4. Upon information and belief, this Court has personal jurisdiction over X CORP because it has one or more regular and established places of business in this District, including an

office in Austin, Texas, where employees work and additional employees are being hired to work. X CORP's in-house litigation leader, Adam Mehes, has registered, including with the State Bar of Texas, as counsel for X CORP at this Austin, Texas, address. X CORP has availed itself of courts in Texas, including filing suit in Williamson County. X CORP's owner, executive chairman, and CTO, Elon Musk, resides in Boca Chica, Texas. For all of these reasons, X CORP is essentially "at home" in this District. Further, X CORP has caused tortious injury to Sterling through its acts of patent infringement in this District, and, on information and belief, regularly does or solicits business, or engages in a persistent course of conduct in this District or derives substantial revenue from things used or consumed in this District.

5. Venue is proper in this District under 28 U.S.C. §§ 1391(b)(1) and 1400(b), because X CORP has committed acts of infringement in this District and upon information and belief has a regular and established place of business in this District as described above.

III. FACTUAL ALLEGATIONS

6. Sterling owns U.S. Patent No. 7,716,217 ("the '217 patent"), entitled "Determining Relevance of Electronic Content," which issued on May 11, 2010. A copy of the '217 Patent is attached as Exhibit A.

7. The '217 Patent claims priority to provisional application no. 60/758,828, filed on January 13, 2006.

8. The inventors of the '217 Patent are Justin Marston and Paul Marston.

9. When they came up with the inventions in the '217 Patent, the Marstons were trying to solve the problem of e-mail users receiving unwieldly volumes of e-mail messages (e.g., 200 e-mail messages per day), and the mail overload was unmanageable. '217 Patent, at 1:23-34. Prior to the invention, the only way to limit the number of e-mails received was through the use of spam

filters, but spam filters in email were just looking at general content of a message to determine whether the message was spam to all recipients. *Id*.

10. This method of filtering email messages prior to the inventions of the ’217 Patent were inefficient. One problem with the prior method was that it only filtered out messages that were true spam (e.g., marketing emails from unknown third parties), whereas users were looking for a way to figure out which of their many emails were most important to the user.

11. The Marstons wanted to come up with a more efficient solution for filtering email messages based upon relevancy to the user. The solution that the Marstons came up with focused on having the system learn what is relevant to each specific user based upon actions each user takes.

12. The Marstons came up with the idea of looking at the actions of individual users to determine what content was relevant to the particular user.

13. The inventions in the ’217 Patent had multiple benefits, including making sure that a user sees the messages that are most important to that particular user and saving the user time by indicating that other messages are less important or relevant to that particular user.

14. The ’217 patent is directed to determining the relevance of electronic content.

15. X CORP makes, uses, offers for sale, and sells a computer-implemented system – i.e., the social media platform known as “Twitter,” or “X” (hereinafter “Twitter”).

16. X CORP has infringed and continues to infringe the ’217 patent through conduct including, but not limited to, making, using, offering for sale, and selling Twitter.

17. Twitter is a computer-implemented system.

18. Twitter’s computer-implemented system can determine a relevance score of a piece of electronic content sent from a sender to a user.

19. Twitter's computer-implemented system determines the relevance score with respect to the user.

20. Twitter's computer-implemented system includes a computer processor.

21. Twitter's computer-implemented system includes a computer-readable storage medium storing computer program modules configured to execute on the computer processor.

22. Twitter's computer program modules include a monitoring module configured to track actions by a plurality of users associated with an application for managing electronic content.

23. Twitter's computer program modules include a first relevance measurement module coupled to the monitoring module and configured to determine a first measure of relevance of the piece of electronic content based at least in part on one or more actions of the user on the piece of electronic content.

24. Twitter's computer program modules include a second relevance measurement module coupled to the monitoring module.

25. The second relevance measurement module in Twitter's computer program modules is configured to identify at least one other of the plurality of users that is a recipient of the piece of electronic content and that is cognate to the user.

26. The second relevance measurement module in Twitter's computer program modules is configured to determine a second measure of relevance of the piece of electronic content based at least in part from one or more of the following:

a. a local importance describing an importance of the sender to the user;

b. a global importance describing an importance of the sender within an organization with which the plurality of users are associated;

c. a content relevance determined responsive to content of the piece of electronic content; and

d. one or more actions on the piece of electronic content of the at least one other of the plurality of users that is a recipient of the piece of electronic content and that is cognate to the user.

27. Twitter's computer program modules include a relevance analysis module configured to determine the relevance score of the piece of electronic content sent from the sender to the user, the relevance score being determined based at least in part on the first determined measure of relevance and on the second determined measure of relevance.

IV. PATENT INFRINGEMENT
COUNT I: INFRINGEMENT OF U.S. PATENT NO. 7,716,217

28. Sterling incorporates by reference the above paragraphs as if stated herein.

29. The '217 patent is valid, enforceable, subsisting, and in full force and effect.

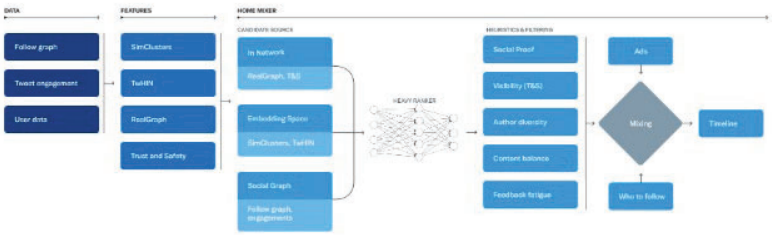
30. X CORP has directly infringed and continues to infringe the '217 patent, including but not limited to at least claim 1 of the '217 patent, by making, using, offering for sale, and selling Twitter, all to the harm and detriment of Sterling, and to the benefit and profit of X CORP.

31. X CORP has infringed and continues to infringe at least claim 1 of the '217 patent by making, using, offering for sale, and selling Twitter, as set forth in the claim chart below:

'217 Patent Claim Limitation	**Twitter**
1. A computer-implemented system for determining a relevance score of a piece of electronic content sent from a sender to a user,	Twitter/X is a computer-implemented system for determining a relevance score of a piece of electronic content sent from a sender to a user. "Twitter aims to deliver you the best of what's happening in the world right now. This requires **a recommendation algorithm**[1] to distill the roughly 500 million Tweets posted daily down to a handful of top Tweets that ultimately show up on your device's For You timeline. This blog is an introduction to how the algorithm selects Tweets for your timeline. * * *

[1] Throughout this chart, all bolded/underlined emphasis has been added.

'217 Patent Claim Limitation	**Twitter**
	Our recommendation system is composed of many interconnected services and jobs, which we will detail in this post. While there are many areas of the app where Tweets are recommended—Search, Explore, Ads—this post will focus on the home timeline's For You feed. Ranking **The goal of the For You timeline is to serve you relevant Tweets**. At this point in the pipeline, we have ~1500 candidates that may be relevant. **Scoring directly predicts the relevance** of each candidate Tweet and is the primary signal for ranking Tweets on your timeline. At this stage, all candidates are treated equally, without regard for what candidate source it originated from. Ranking is achieved with a ~48M parameter neural network that is continuously trained on Tweet interactions to optimize for positive engagement (e.g. Likes, Retweets, and Replies). This ranking mechanism takes into account thousands of features and outputs ten labels **to give each Tweet a score**, where each label represents the probability of an engagement. We rank the Tweets from these scores." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm
the relevance score determined with respect to the user,	In Twitter/X, the relevance score is determined with respect to the user: "Ranking The goal of **the For You timeline** is to serve you relevant Tweets. At this point in the pipeline, we have ~1500 candidates that may be relevant. **Scoring directly predicts the relevance of each candidate Tweet** and is the primary signal for ranking Tweets on your timeline. At this stage, all candidates are treated equally, without regard for what candidate source it originated from." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm
the computer-implemented system	The computer-implemented system comprises a computer processor.

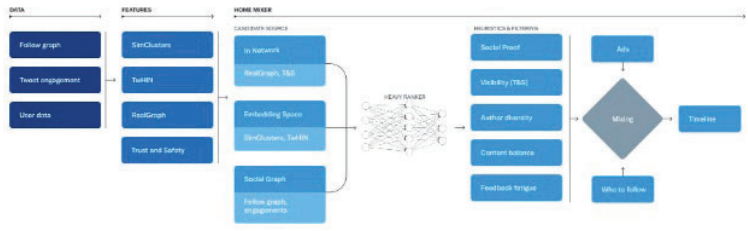
'217 Patent Claim Limitation	**Twitter**
comprising: a computer processor; and	"The service that is responsible for constructing and serving the For You timeline is called Home Mixer. Home Mixer is built on Product Mixer, our custom Scala framework that facilitates building feeds of content. This service acts as **the software backbone** that connects different candidate sources, scoring functions, heuristics, and filters." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm
a computer-readable storage medium storing computer program modules configured to execute on the computer processor,	Twitter/X includes a computer-readable storage medium for storing computer program modules configured to execute on the computer processor. The computer program modules include those set forth below. "The service that is responsible for constructing and serving the For You timeline is called Home Mixer. Home Mixer is built on Product Mixer, our custom Scala framework that facilitates building feeds of content. This service acts as **the software backbone** that connects different candidate sources, scoring functions, heuristics, and filters. This diagram below illustrates the major components used to construct a timeline:  https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm
the computer program modules comprising: a monitoring module configured to track actions by a plurality of users associated with an application for managing electronic content;	Twitter/X has a monitoring module configured to track actions by multiple users associated with an application for managing electronic content. "How do we choose Tweets? The foundation of Twitter's recommendations is a set of core models and features that **extract latent information from Tweet, user, and engagement data**. These models aim to answer important questions

'217 Patent Claim Limitation	**Twitter**
	about the Twitter network, such as, 'What is the probability you will interact with another user in the future?' or, 'What are the communities on Twitter and what are trending Tweets within them?' Answering these questions accurately enables Twitter to deliver more relevant recommendations. The recommendation pipeline is made up of three main stages that consume these features: 1. Fetch the best Tweets from different recommendation sources in a process called candidate sourcing. 2. Rank each Tweet using a machine learning model. 3. Apply heuristics and filters, such as filtering out Tweets from users you've blocked, NSFW content, and Tweets you've already seen. The service that is responsible for constructing and serving the For You timeline is called Home Mixer. Home Mixer is built on Product Mixer, our custom Scala framework that facilitates building feeds of content. This service acts as the software backbone that connects different candidate sources, scoring functions, heuristics, and filters." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm
a first relevance measurement module coupled to the monitoring module and configured to determine a first measure of relevance of the piece of electronic content based at least in part on one or more actions of the user on the piece of electronic content;	Twitter/X has a first relevance measurement module that is coupled to the monitoring module and configured to determine a first measure of relevance of the piece of electronic content based at least in part on one or more actions of the user on the piece of electronic content. As discussed above, the monitoring module tracks the actions of multiple users. The first relevance measurement module is configured to determine a first measure of relevance of the piece of electronic content based at least in part on one or more actions of the user on the piece of electronic content. "Apply heuristics and filters, such as **filtering out** Tweets from **users you've blocked**, NSFW content, and **Tweets you've already seen**."

'217 Patent Claim Limitation	**Twitter**
	https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm "How do we choose Tweets? The foundation of Twitter's recommendations is a set of core models and features that **extract latent information from Tweet, user, and engagement data**." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm
a second relevance measurement module coupled to the monitoring module and configured to: identify at least one other of the plurality of users that is a recipient of the piece of electronic content and that is cognate to the user, and determine a second measure of relevance of the piece of electronic content as based at least in part on one or more measures derived from the group consisting of:	Twitter/X has a second relevance measurement module which is connected to the monitoring module. The second relevance measurement module is configured to identify at least one other of the plurality of users of the recipient that is cognate to the user. "Social Graph Our first approach is to estimate what you would find relevant by **analyzing the engagements of people you follow or those with similar interests**. We traverse the graph of engagements and follows to answer the following questions: • What Tweets did the people I follow recently engage with? • Who likes similar Tweets to me, and what else have they recently liked? We generate candidate Tweets based on the answers to these questions and rank the resulting Tweets using a logistic regression model." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm
a local importance describing an importance of the sender to the user,	In Twitter/X, the second measure of relevance may include a local importance describing an importance of the sender to the user. "In-Network Source

'217 Patent Claim Limitation	**Twitter**
	The In-Network source is the largest candidate source and aims to deliver the most relevant, recent Tweets from users you follow. It efficiently ranks Tweets of those you follow based on their relevance using a logistic regression model." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm
a global importance describing an importance of the sender within an organization with which the plurality of users are associated,	In Twitter/X the second measure of relevance may be a global importance describing the importance of the sender in the organization as a whole. "One of Twitter's most useful embedding spaces is SimClusters. SimClusters discover communities anchored by a cluster of influential users using a custom matrix factorization algorithm." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm
a content relevance determined responsive to content of the piece of electronic content, and	In Twitter/X the second measure of relevance may be a content relevance determined responsive to content of the piece of electronic content, such as based on keywords. "Apply heuristics and filters, such as **filtering out** Tweets from users you've blocked, **NSFW content**, and Tweets you've already seen." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm "Embedding Spaces Embedding space approaches aim to answer a more general question about **content similarity**: What Tweets and Users are **similar to my interests**? Embeddings work by generating numerical representations of users' interests and Tweets' content. We can then calculate the similarity between any two users, Tweets or user-Tweet pairs in this embedding space. Provided we generate accurate embeddings, we can use this similarity as a stand-in for relevance." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm

'217 Patent Claim Limitation	**Twitter**
one or more actions on the piece of electronic content of the at least one other of the plurality of users that is a recipient of the piece of electronic content and that is cognate to the user; and	In Twitter/X the second relevance measure may be one or more actions on the piece of electronic content by other users/recipients who are cognate to the user. "Social Graph Our first approach is to estimate what you would find relevant by **analyzing the engagements of people you follow or those with similar interests**. We traverse the graph of engagements and follows to answer the following questions: • What Tweets did the people I follow recently engage with? • Who likes similar Tweets to me, and what else have they recently liked? We generate candidate Tweets based on the answers to these questions and rank the resulting Tweets using a logistic regression model." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm
a relevance analysis module configured to determine the relevance score of the piece of electronic content sent from the sender to the user, the relevance score being determined based at least in part on the first determined measure of relevance and on the second determined measure of relevance.	Twitter/X includes a relevance analysis module configured to determine the relevance score of the piece of electronic content, based at least in part on the first and second measures of relevance. Twitter/X scores the relevance of various data based at least in part on the first and second relevance measures. "How do we choose Tweets? The foundation of Twitter's recommendations is a set of core models and features that extract latent information from Tweet, user, and engagement data. These models aim to answer important questions about the Twitter network, such as, "What is the probability you will interact with another user in the future?" or, "What are the communities on Twitter and what are trending Tweets within them?" Answering these questions accurately enables Twitter to deliver more relevant recommendations.

'217 Patent Claim Limitation	**Twitter**
	The recommendation pipeline is made up of three main stages that consume these features: 1. Fetch the best Tweets from different recommendation sources in a process called candidate sourcing. 2. Rank each Tweet using a machine learning model. 3. Apply heuristics and filters, such as filtering out Tweets from users you've blocked, NSFW content, and Tweets you've already seen. The service that is responsible for constructing and serving the For You timeline is called Home Mixer. Home Mixer is built on Product Mixer, our custom Scala framework that facilitates building feeds of content. This service acts as the software backbone that connects different candidate sources, scoring functions, heuristics, and filters. This diagram below illustrates the major components used to construct a timeline:  Ranking The goal of the For You timeline is to serve you relevant Tweets. At this point in the pipeline, we have ~1500 candidates that may be relevant. **Scoring directly predicts the relevance of each candidate Tweet and is the primary signal for ranking Tweets on your timeline**. At this stage, all candidates are treated equally, without regard for what candidate source it originated from. Ranking is achieved with a ~48M parameter neural network that is continuously trained on Tweet interactions to optimize for positive engagement (e.g. Likes, Retweets, and Replies). This ranking mechanism takes into account thousands of features and outputs ten labels to give each Tweet a score, where each label represents the probability of an engagement. We rank the Tweets from these scores.

'217 Patent Claim Limitation	**Twitter**
	Heuristics, Filters, and Product Features After the Ranking stage, we apply heuristics and filters to implement various product features. These features work together to create a balanced and diverse feed. Some examples include: • Visibility Filtering: Filter out Tweets based on their content and your preferences. For instance, remove Tweets from accounts you block or mute. • Author Diversity: Avoid too many consecutive Tweets from a single author. • Content Balance: Ensure we are delivering a fair balance of In-Network and Out-of-Network Tweets. • Feedback-based Fatigue: Lower the score of certain Tweets if the viewer has provided negative feedback around it. • Social Proof: Exclude Out-of-Network Tweets without a second degree connection to the Tweet as a quality safeguard. In other words, ensure someone you follow engaged with the Tweet or follows the Tweet's author. • Conversations: Provide more context to a Reply by threading it together with the original Tweet. • Edited Tweets: Determine if the Tweets currently on a device are stale, and send instructions to replace them with the edited versions." https://blog.x.com/engineering/en_us/topics/open-source/2023/twitter-recommendation-algorithm

32. X CORP's acts of direct infringement include, but are not limited to, making, using, offering for sale, and selling Twitter in the United States.

33. X CORP's infringement is irreparably harming Sterling.

34. Sterling is entitled to money damages in an amount to be determined at trial, and no less than a reasonable royalty, and to preliminary and permanent injunctive relief.

V. JURY DEMAND

35. Pursuant to Fed. R. Civ. P. 38, Sterling hereby demands a jury trial as to all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Sterling prays for relief as follows:

1. A judgment that, by making, using, offering for sale, and selling Twitter, X CORP has infringed the ’217 patent;

2. A judgment awarding Sterling damages in an amount to be determined at trial, but not less than a reasonable royalty, including all pre-judgment and post-judgment interest at the maximum rate allowed by law;

3. An order enjoining X CORP preliminarily, and permanently thereafter, from infringing the ’217 Patent;

4. A judgment awarding Sterling its costs incurred herein, including attorneys’ fees for an exceptional case pursuant to 35 U.S.C. § 285; and

5. A judgment awarding Sterling such other and further relief as the Court may deem just and equitable.

Dated: May 22, 2024

Respectfully submitted,

By: *Devan V. Padmanabhan by Christopher V. Goodpastor with permission*

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