



1 Plaintiff Google LLC (“Google”), for its complaint against Defendant EcoFactor, Inc.  
2 (“EcoFactor”), alleges:

3 **NATURE OF THE ACTION**

4 1. This is an action for declaratory judgment of non-infringement of U.S. Patent Nos.  
5 8,131,497 (“497 Patent”), 8,423,322 (“322 Patent”), 8,498,753 (“753 Patent”) and 10,018,371  
6 (“371 Patent”) (collectively, the “Asserted Patents,” attached as Exhibits 1-4, respectively) against  
7 EcoFactor, pursuant to the Declaratory Judgment Act, 28 U.S.C. §§ 2201-02, and the patent laws  
8 of the United States, 35 U.S.C. § 100 et seq., and for any and all other relief the Court deems just  
9 and proper.

10 2. Google requests this relief because EcoFactor alleges that Google’s smart  
11 thermostat products, including the Nest Thermostat, Nest E and the Nest Generation Learning  
12 Thermostat, 3rd Gen (the “Accused Products”) infringes the Asserted Patents. See Exhibit 5 (W.D.  
13 Tex. Complaint, no.6:22-cv-00032, D.I. 1)

14 3. An actual and justiciable controversy therefore exists under 28 U.S.C. §§ 2201-2202  
15 between Google and EcoFactor as to whether Google is infringing or has infringed the Asserted  
16 Patents.

17 **THE PARTIES**

18 4. Plaintiff Google LLC is a subsidiary of Alphabet Inc. with its principal place of  
19 business located at 1600 Amphitheatre Parkway, Mountain View, California 94043.

20 5. Upon information and belief, Defendant EcoFactor, Inc. is a privately held company  
21 organized under Delaware’s laws, with a principal place of business in the Northern District of  
22 California, specifically at 441 California Avenue, Number 2, Palo Alto, California 94301.

23 **JURISDICTION AND VENUE**

24 6. Google files this complaint against EcoFactor pursuant to the patent laws of the  
25 United States, Title 35 of the United States Code, with a specific remedy sought based upon the  
26 laws authorizing actions for declaratory judgment in the federal courts of the United States, 28  
27 U.S.C. §§ 2201 and 2202, and under the patent laws of the United States, 35 U.S.C. §§ 1-390.

28 7. This Court has subject matter jurisdiction over this action, which arises under the

1 United States' patent laws, pursuant to 28 U.S.C. §§ 1331, 1338(a), and 2201(a).

2 8. This Court has personal jurisdiction over EcoFactor, which has its principal place  
3 of business in Palo Alto, California.

4 9. Venue in this District is proper under 28 U.S.C. §§ 1391(b) because EcoFactor  
5 resides in this District, and also because EcoFactor is subject to personal jurisdiction in this District,  
6 and a substantial part of the events giving rise to Google's declaratory judgment claim of non-  
7 infringement (such as the development and sale of its thermostats) occurred in this District.

8 **INTRADISTRICT ASSIGNMENT**

9 10. Pursuant to Civil L.R. 3-2(c) and 3-5(b), this is an Intellectual Property Rights  
10 Action subject to assignment on a district-wide basis.

11 **FACTUAL BACKGROUND**

12 11. Google's headquarters at 1600 Amphitheatre Parkway, Mountain View, California  
13 94043 are located in this District. Google's mission is to organize the world's information and  
14 make it universally accessible and useful. Over the past two decades, in service of that mission,  
15 Google has become one of the world's most innovative technology companies.

16 12. EcoFactor asserted its patents against allegedly infringing products that originated  
17 at Nest Labs that launched in 2010 in Palo Alto. The founders of Nest sought to save the planet  
18 while saving consumers money with their energy usage. After merging with the Google family of  
19 companies in 2014, the Nest product division has continued to operate primarily in the San  
20 Francisco Bay Area. The vast majority of technical and business activities related to Nest have  
21 occurred and continue to occur in this District. All management decisions regarding Nest are made  
22 in this District.

23 13. Starting in late 2019, EcoFactor has conducted a patent litigation campaign against  
24 Google and other smart thermostat manufacturers, such as ecobee and Vivint. In addition to raising  
25 allegations of infringement against Google in this District in two cases (*Google LLC v. EcoFactor,*  
26 *Inc.*, Case no. 5:21-cv-01468 and *Google LLC v. EcoFactor, Inc.*, Case No. 5:21-cv-03220),  
27 EcoFactor also filed actions against Google in the International Trade Commission (the "ITC"), the  
28 District of Massachusetts and the Western District of Texas.



1 17. Google hereby restates and incorporates by reference the allegations set forth in  
2 paragraphs 1 through 16 of this Complaint as if fully set forth herein.

3 18. EcoFactor claims to own all right, title, and interest in the '497 patent by assignment.

4 19. In its W.D. Tex. complaint against Google, EcoFactor alleges that smart thermostat  
5 systems infringe the '497 patent. *See, e.g.*, Ex. 4, ¶¶ 29-37.

6 20. The Accused Products do not include or practice multiple claim limitations of the  
7 claims of the '497 patent including, but not limited to, having:

- 8 i. a system for calculating a value for the operational efficiency of a  
9 heating, ventilation, and air conditioning (HVAC) system;
- 10 ii. a HVAC control system that receives temperature measurements and  
11 databases that store temperature measurements received by the HVAC  
12 control system;
- 13 iii. processors that receive outside temperature measurements or that  
14 calculate rates of change in temperature measurement received by the  
15 HVAC control system when the HVAC system is “on” or calculate the  
16 rates of change in temperature measurements received by the HVAC  
17 control system when the HVAC system is “off,” or that relate the  
18 calculated rates of change to the outside temperature measurements.

19 21. An actual and justiciable controversy therefore exists between Google and  
20 EcoFactor regarding whether any of the Accused Products infringe any of the asserted claims of  
21 the '497 patent. A judicial declaration is necessary to determine the parties' respective rights  
22 regarding the '497 patent.

23 22. Google seeks a judgment declaring that Google does not directly or indirectly  
24 infringe any asserted claims of the '497 patent, either literally or under the doctrine of equivalents.

25 **COUNT II:**

26 **DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '322 PATENT**

27 23. Google hereby restates and incorporates by reference the allegations set forth in  
28 paragraphs 1 through 22 of this Complaint as if fully set forth herein.



1 systems infringe the '753 patent. *See, e.g.*, Ex. 6, ¶¶ 40-48.

2 32. The Accused Products do not include or practice multiple claim limitations of the  
3 claims of the '753 patent, including, but not limited to:

- 4 i. reducing the cycling time of a climate control system;
- 5 ii. accessing stored data that includes historic internal temperature readings  
6 taken within a structure and measurements relating to a plurality of  
7 historic external temperatures outside the structure during a selected time  
8 period;
- 9 iii. determining the thermal performance values of the structure by  
10 correlating the historic internal temperatures with the historic external  
11 temperatures that both occur at a first time during the at least one selected  
12 time period, and by correlating the historic internal temperatures with the  
13 historic external temperatures that both occur at a second time during the  
14 selected time period, wherein the thermal performance values indicate a  
15 rate of change of temperature in the structure in response to changes in  
16 outside temperatures;
- 17 iv. storing the thermal performance values of the structure;
- 18 v. retrieving a target time at which the structure is desired to reach a target  
19 temperature;
- 20 vi. acquiring a first internal temperature inside the structure at a third time  
21 prior to the target time;
- 22 vii. acquiring a first external temperature relating to a temperature outside  
23 the structure at the third time prior to the target time;
- 24 viii. obtaining a forecasted temperature that occurs outside the structure at the  
25 target time;
- 26 ix. retrieving the thermal performance values of the structure that indicate  
27 the rate of change of temperature in the structure in response to changes  
28 in outside temperatures;

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- x. retrieving the performance characteristic of a climate control system;
- xi. determining a first time prior to the target time at which the climate control system should turn on to reach the target temperature by the target time based on the thermal performance values of the structure, the performance characteristic of the climate control system, the first internal temperature, the first external temperature, and the forecasted temperature;
- xii. calculating intermediate setpoints and setpoint target times that occur between the first time and the target time based on the thermal performance values of the structure, the performance characteristic of the climate control system, the first internal temperature, the first external temperature, and the forecasted temperature, wherein the intermediate setpoints direct a thermostatic controller to change the actual temperature inside the structure to the target temperature in a series of intermediate steps;
- xiii. transmitting the intermediate setpoints to the thermostatic controller; and
- xiv. setting the thermostatic controller with the intermediate setpoints to control the climate control system.

33. An actual and justiciable controversy therefore exists between Google and EcoFactor regarding whether any of the Accused Products have infringed any of the asserted claims of the '753 patent. A judicial declaration is necessary to determine the parties' respective rights regarding the '753 patent.

34. Google seeks a judgment declaring that Google does not directly or indirectly infringe any asserted claims of the '753 patent, either literally or under the doctrine of equivalents.

**COUNT IV:**

**DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '371 PATENT**

35. Google hereby restates and incorporates by reference the allegations set forth in paragraphs 1 through 34 of this Complaint as if fully set forth herein.



1           36.    EcoFactor claims to own all right, title, and interest in the '371 patent by assignment.

2           37.    In its W.D. Tex. complaint against Google, EcoFactor alleges that smart thermostat  
3 systems infringe the '371 patent. Ex. 8, ¶ 51-59.

4           38.    The Accused Products do not include or practice multiple claim limitations of the  
5 claims of the '371 patent, including, but not limited to:

- 6                   i.     detecting manual changes to one or more setpoints for a thermostatic  
7                             controller;
- 8                   ii.    providing a thermostatic controller operatively connected to a heating  
9                             ventilation and air conditioning system, the one or more setpoints of the  
10                            heating ventilation and air conditioning system being manually  
11                            changeable;
- 12                   iii.   calculating the scheduled programming of the thermostatic controller  
13                            for one or more times to control the heating ventilation and air  
14                            conditioning system, the scheduled programming comprising at least a  
15                            first automated setpoint at a first time;
- 16                   iv.    recording, with the thermostatic controller, actual setpoints of the  
17                            heating ventilation and air condition system;
- 18                   v.     communicating the actual setpoints from the one or more thermostatic  
19                            controllers to the at least one computer;
- 20                   vi.    generating with the at least one computer, a difference value based on  
21                            comparing at least one of the actual setpoints at the first time for the  
22                            thermostatic controller to the first automated setpoint for the  
23                            thermostatic controller;
- 24                   vii.   detecting a manual change to the first automated setpoint by  
25                            determining whether the at least one of the actual setpoints and the first  
26                            automated setpoint are the same or different based on the difference  
27                            value; and
- 28                   viii.   logging the manual change to a database.



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**JURY DEMAND**

Pursuant to Federal Rule of Civil Procedure 38 and Civil Local Rule 3-6, Google demands a jury trial on all issues and claims so triable.

Dated: January 10, 2022

Respectfully submitted,

By: /s/Bijal V. Vakil  
Bijal V. Vakil

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